Industrial Tube Fittings Europe

Technical handbook

Catalogue 4100-7/UK



For your safety!

Under certain circumstances, tube fittings can be subjected to extreme loadings such as vibration and uncontrolled pressure peaks.

Only by using genuine Parker Components and following Parker assembly instructions can you be assured of the reliability and safety of the products and their conformity to the applicable standards.

Failure to follow this rule can adversely affect the functional safety and reliability of products, cause personal injury, property damage, and result in loss of your guarantee rights.



Subject to alteration

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The Tube Fittings Authority:

Performance Plus

Since 1929, Parker Hannifin Corporation has served the marketplace with dependable fluid power technology. Today, Parker offers more than 100,000 quality products for a broad range of industries and applications. No other manufacturer presents a product line as broad as Parker's, nor an expertise as far-reaching in hydraulic and pneumatic systems and components. Much of that expertise originates with Parker's precision-made tube fittings, which were among the first products manufactured by the company. As such, they reflect Parker's ongoing commitment to excellence. With more than seventy years of experience in product design, engineering, applications technology and manufacturing, the Tube Fittings Division Europe holds a leadership position few other manufacturers can claim. This leadership is further heightened and enhanced by the sharing of technology only possible in Parker's corporate family.



Topflight Experience

Parker has used the background data and knowledge gained from important industrial, mobile, offshore and other applications to create the broadest and best performing line of standard tube fittings in the world.

Why is Parker a topflight manufacturer of fittings?

There are many reasons, but at the heart is the design and manufacturing excellence that goes into every Parker product.

Worldwide standardizing Activities

The Parker FluidConnectors Group supports the national and international standardizing activities. Experienced

Tube Fittings Division Europe

Parker

engineers from certain countries and Divisions give their input to national committees like SAE, BS, and DIN committees in cooperation with the users of the products. As a result, many ISO FluidConnector standards have been published. These ISO standards are the platform for the international trading, interchangeability and availability that is necessary for all globally operating companies using fluid power technology.



Worldwide Supplier

The Tube Fittings Division Europe manufactures high performance, soft-sealed tube fittings as part of the Parker Dry Technology programme, and traditional metallically-sealed tube fittings. The EO2-Plus fitting (metric bite type with elastomeric seal), EO2-FORM system and O-Lok-Plus® fitting (O-ring face seal) form the Dry Technology „family“. EO-Plus fitting (metric bite type), 24° cone weld nipples, Triple-Lok-Plus® fitting (37° flare) and Pipe Adapters are the metallically sealed group. In addition, Ferulok fittings (inch tube bite type), Intru-Lok (Brass flareless) and JIS fittings are available via the Tube Fittings Division in the USA. This variety makes up the broadest line of tube fittings in the industry. Parts are manufactured with ISO 6149, metric, BSPP, BSPT, NPT, UNF, SAE straight threads and flange ports.

There are 6 manufacturing plants in Europe - UK (Derby, Cradley Heath), Germany (Bielefeld-Windelsbleiche, Schloß Holte), Austria (Wiener Neustadt) and Poland (Wroclaw). Some parts are shipped from the USA or manufactured locally in other places of the world. The fittings are stocked in the Parker Service Centers and are the choice of Original Equipment Manufacturers and Maintenance, Repair and Overhaul customers throughout the world.

Plus

NEW GENERATION

EO-Plus | EO2-Plus | EO2-FORM

HIGH PERFORMANCE TUBE FITTINGS

SAE-PLUS SERIES

O-Lok Plus | O-Lok FLANGE SEAL | Triple-Lok Plus

HIGH PERFORMANCE TUBE FITTINGS

DryTechnology

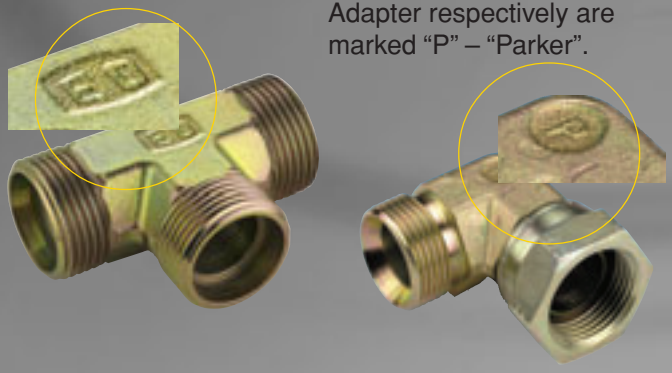
It's more than just metal

The Parker Plus

How to identify Parker Quality

Each Parker product is marked with a Parker trademark.

The 24° items standardised in ISO 8434-1 & 4 are branded with “EO” – “Ermeto Original”. Parker Triple-Lok®, O-Lok® and BSP-Adapter respectively are marked “P” – “Parker”.



Stainless Steel items are supplied with “EO-DUR” nuts – sizes bigger than 12S have silver plated threads, smaller nuts are waxed. Furthermore the Stainless Steel products are provided with heat codes to enable Parker to issue certificates.

Innovative Performance

Parker does not keep its best ideas in the lab. The engineering departments from the Tube Fittings Division Europe in Bielefeld, Germany and Annemasse, France take them to the factory floor, integrating state-of-the art technology with innovative, yet practical products that consistantly outperform current standards and competitive offerings.

Because of technical evolution new market requirements develop in hydraulic systems. Higher pressure, shorter cycle times and the idea of maintenance-free systems lead to the necessity of absolutely leak-free systems.

The Tube Fittings Division Europe developed the patented Parflange® tube preparation system as an alternative to preparing tube ends by brazing. This enabled the market for O-Lok® ORFS soft sealed fittings to expand strongly in Europe. Further, the soft sealed solution EO-2 was developed and launched in 1991 to provide the first soft-sealed alternative to the DPR-Progressive Ring and New Generation fitting technology was launched in 2001.

Parker



Derby
England



Bielefeld-Windelsbleiche
Germany



Wiener Neustadt
Austria



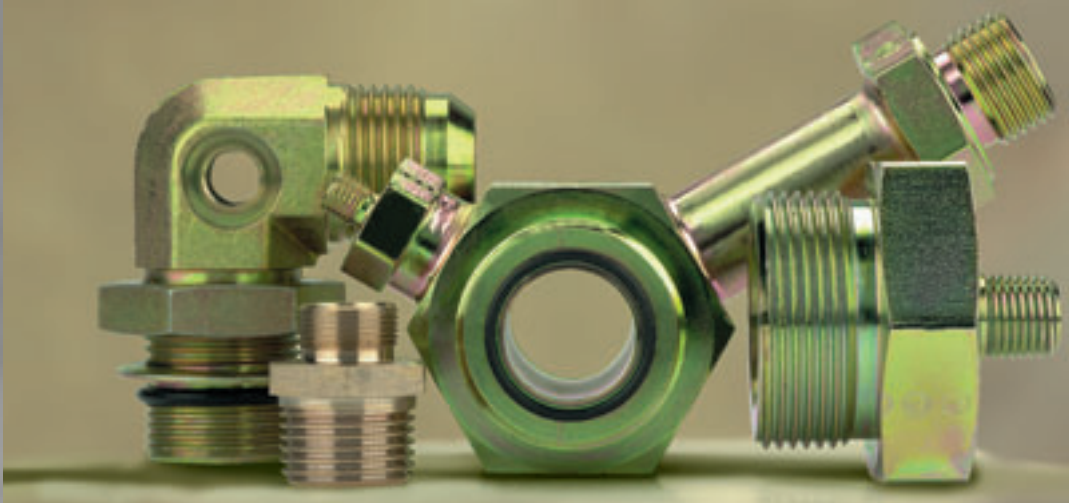
Wroclaw
Poland

These facilities are very high volume machining and finishing plants supplying completed parts to the Divisions Service Centers throughout the world. The manufacturing plant in Poland is built to be near the new market of Eastern Europe. Millions of steel, stainless steel and brass fittings are manufactured out of forgings and bar materials per month. They are shipped to Customers around the world.

On the Cutting Edge



Focused Product Unit Custom Products
This business unit, located in Wiener Neustadt, Austria, is specialised in offering non-standard fittings according to customer requests. Due to modern CNC-machinery, they are able to produce a huge variety of customised and jump size fittings in different materials such as steel, stainless steel, brass and others. Virtually any straight or shape can be machined with a multitude of fitting systems and thread forms.



Highest Quality

Both bar stock and forged shapes are machined by state-of-the-art equipment into finished tube fittings that meet or exceed global standards.

All critical production steps are controlled by SPC (Statistic Process Control).

Parker has installed a Quality management system according to ISO 9001 in all locations.

Cradley Heath, England and Schloß Holte, Germany



These facilities are the metal forming plants supplying raw materials to the manufacturing locations throughout Europe. Thousands of tons of steel, stainless steel and brass are processed each year.
The Tube Fittings Division Europe forges its products from the best materials available to ensure strength and durability. For example, tube nuts are “cold-formed” from quality materials for close grained toughness. The result is a fitting with total reliability – a fitting that can stand up to years of service.

Chromate Protective Coating

Steel EO New Generation fittings are zinc plated and then chrome^{6}-free chromated on a new state-of-the-art plating line providing corrosion protection equal to or exceeding ISO, DIN and SAE standards. The chrome^{6}-free coating meets already the Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles. This process is more environmentally friendly than other plating methods. The nuts are specially treated for reduced friction.



A Material Difference

High value TFDE fittings components

The manufacture of high quality, high value fittings components starts already with the ordering of tensile-tested raw materials; these have to comply with the Parker material specifications specially determined for the products concerned. All their properties are guaranteed by the process stages triggered both before and after manufacture, in order to meet ever-increasing market requirements.

Development- and manufacturing-related Tests

In order to guarantee high quality in the material employed and in the resulting tube fittings, tests are carried out continually in Tube Fittings Division Europe’s own laboratories and testing area. Forging blanks are subjected to additional magnetic particle crack testing as well as to colour penetration checks, so that cracks and faults can be excluded. Spectrographic analysis shows whether the high requirements for chemical composition have been met. Microscopic investigation and the determination of mechanical properties are a further guarantee of outstanding and consistent quality. The capacity of fittings systems to resist corrosion, and static and dynamic loads, are very thoroughly tested on the Division’s own test stands. The performance of these fittings components is further confirmed independently by tests at testing institutes and research bodies.

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Inch and metric Production

All TFDE fittings are produced with external hexagons and body flats in metric sizes according to ISO 8434. This meets the requirements of the European market, where metric tools are used. For customer projects specified the USA, SAE fittings like Triple-Lok® and O-Lok® are also available with imperial flat size for inch-based tooling.

Whatever kind of knowledge and skills are needed – Parker field sales representatives and certified distributors offer a range of training. From Product Training to practical hands-on trainings a lot of variations to improve knowledge and effectiveness.

With a flexible training concept and the use of modern presentation techniques the Tube Fittings Division is able to offer individual customised practical in-house training.
These trainings are completed with an up-to-date handbook, topical literature, wall charts and samples. After the training the customer gets all materials needed for further internal training events.
With up-to-date product knowledge TFDE training team creates the best conditions to establish modern effective processes and selection of Parker TFDE hydraulic fittings.



Training Activities





Benefits for Customers and Parker Certified Distributors:

- ***Reduced leakage***
- ***Reduce the loss of oil***
- ***"Better hydraulic system" as a sales argument for their vehicles***
- ***Reduction of cost by using easiest and fastest assembly techniques***
- ***Avoidance of maintenance, warranty costs and down town time***
- ***No scrap / no rework***

CAD-Software (CAD-Software 2D)

Hose and Fittings InPHormTM

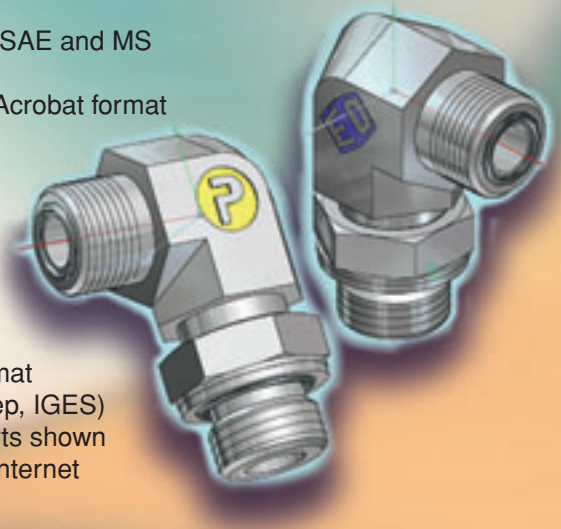
The Hose and Fittings inPHorm package is a powerful Windows-based software system designed to make selection of hoses, tubing and fittings very simple. Products from three divisions (Tube Fittings, Hose Products and Parflex) are included in this package. InPHorm can also generate a dimensioned CAD drawing of a selected fitting and add it to a Bill of Material.



CD-ROM
Part-No.: InPHorm-3400-CD

Specifications

- Systematic design for assistance in the proper selection of hose, tubing, hose fittings, hose assemblies, tube fittings and plastic fittings
- Quote sheet for logging product selections (bill of material)
- Complete product summary reports, customised to your customer
- Customised distributor information file
- Fully parametric, customised CAD file output in DWG (R12), DXF, HPGL and IGES
- Interchange tool for competitor, SAE and MS part numbers
- On-line user manual, in Adobe Acrobat format



Software for 3D-applications

- Fitting types of the Tube Fittings Division Europe now available in more than 100 different versions of 3D format
- Neutral format possible (e.g. Step, IGES)
- Single parts and assembled parts shown
- 3D drawings only available via Internet

www.partserver.de

Catalogues and Bulletins

For literature on TFDE products, please contact your closest service center.



4312/UK



4313/UK



4314/UK


4032/UK

Application Reports


4115/UK


4116/UK


4117/UK



4118/UK

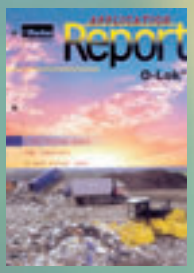


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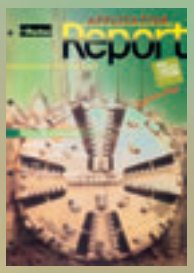
Software and Literature



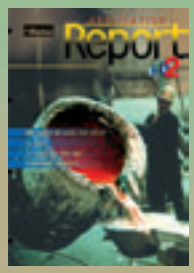
4121/UK



4122/UK



4123/UK



4124/UK



4125/UK

Wall Charts



4310-P1/UK

Handbook



TFDEBOOKUK



Parker Store, Total Hose and Fittings Service
The first self-service shop for hydraulic and pneumatic connectors. This offers:
– More than 3,000 items in stock
– The immediate, on site making of hoses
– "Mr. ParkerStore", the expert, trained and certified by Parker, is always available to help and to offer the best solutions to problems



Hose Doctor Service, Hydraulic Hose Replacement Service
This emergency service is available 24 hours a day and 7 days a week via free phone help line. The Hose Doctor Service van is a truly mobile workshop with a stock of hoses, tube fittings, adaptors, quick couplings and hydraulic lubricant. The technician is therefore able to replace any defective assembly, quickly and on site.

Value Added Services



Technical Services
With this service, Parker offers customers a true partnership:
– Parker engineers study with the manufacturer the best circuit for its equipment
– They work on site, with the customer
– they are present from the conception up to installation and take charge of the training of operators





Kitting – personalised Orders
When a manufacturer regularly needs a group of connectors and accessories, Parker proposes to gather the items under one reference and delivers them as a kit.





Breadman
This service entails the delivery of products or Parker kits directly to the manufacturer's assembly line, work station or warehouse. This service can be provided by Parker Certified Distributors or by Parker.
Advantages for the customer: stocks are reduced, just-in-time delivery, less handling, no more stock-outs.



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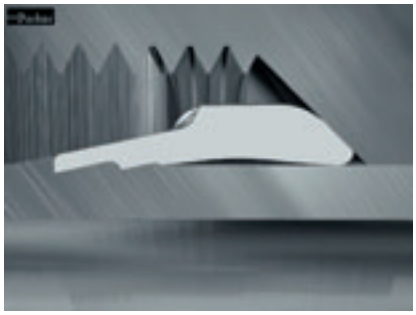
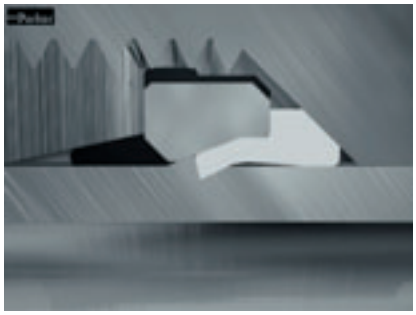
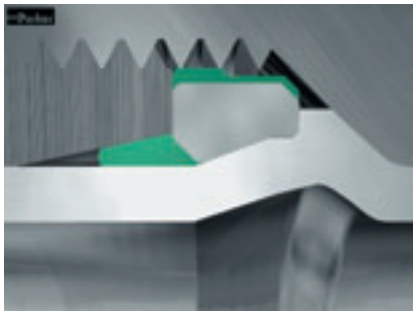
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Ermeto Original tube fittings

Metal sealing	Soft seal bite type	Soft seal tube forming
		
	Dry Technology	Dry Technology

Introduction:

The bite type fitting was designed by Ermeto in Germany in the early 1930's.

Ermeto-fittings soon became popular due to the simple assembly which basically just requires two wrenches. Today, the EO fitting is the most widely used bite-type fitting in the world.

EO fittings are designed for metric tube. All threads, hexagons, bores and other dimensions are purely metric. Historically it is based on German national standards 2353, DIN 3861, DIN 3859 and DIN 2353, which today are represented in the international standards ISO 8434.

EO fittings are recognised for the high pressure performance from a compact body. EO fittings are available in the three series for low, medium and high pressures (LL, L and S-Series). This allows cost savings and -space minimised solutions for each specific application.



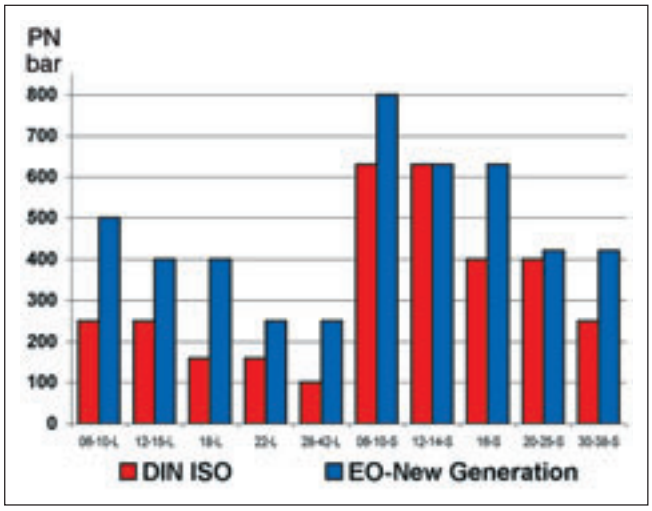
NEW GENERATION

EO-Plus EO2-Plus EO2-FORM

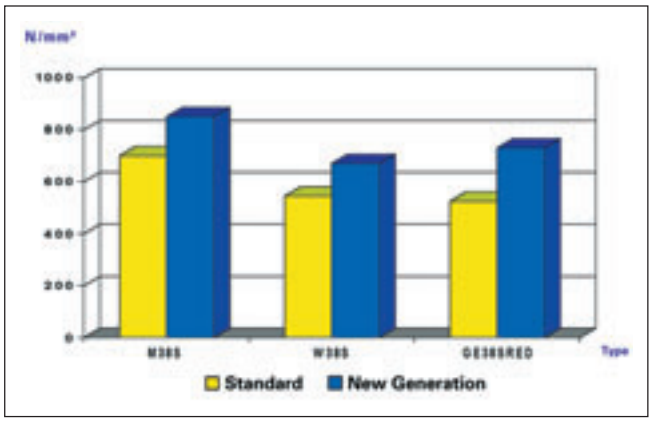
HIGH PERFORMANCE TUBE FITTINGS

New Generation: High performance tube fittings

The new, chromium^{6}-free fitting generation from Parker Ermeto is called EO-Plus for metallic sealed connections, EO2-Plus for Dry Technology systems and EO2-FORM for formed tube soft-sealed systems without cutting rings. The new generation is characterised by maximum safety even under extreme pressures of up to 800 bar nominal pressure.



Nominal pressure ratings



Material tensile strength

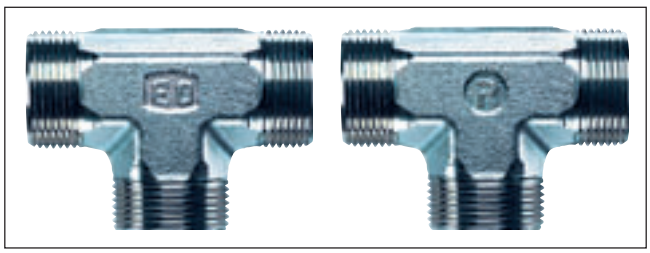
The new multifunctional PSR cutting ring, the heart of the EO-Plus fitting, ensures a uniquely simple and easy assembly through its multifunctional ring geometry.

The further development of the proven Dry Technology EO-2 concept is designated EO2-Plus and gives extremely high pressure ratings and greatly reduced tightening torques for the larger fitting sizes.

EO2-FORM is the new high pressure tube connection from Parker Ermeto. This concept unites the advantages of welded connections with those of EO-2 technology proven worldwide in millions of applications.

The New Generation from Parker Ermeto clearly exceeds the performance requirements of DIN/ISO standards: with its guaranteed 4-fold design factor, the new fitting generation can be used at the following nominal pressures in steel:

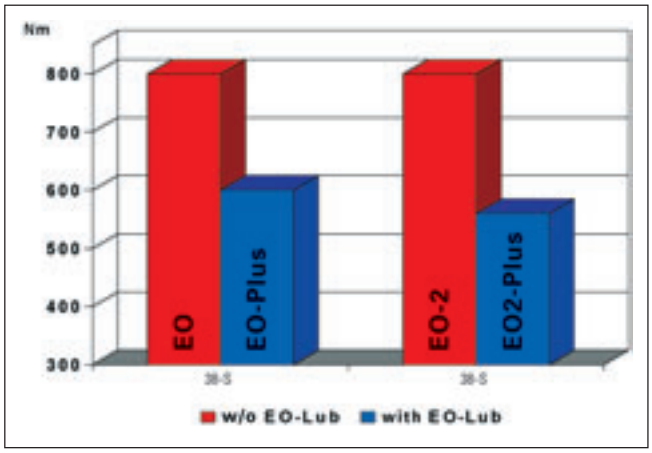
- Up to 500 bar in the L series
- Up to 800 bar in the S series
- A unique 420 bar in the 20 S–38 S sizes!



New forging design (front and back)

This extraordinary pressure and assembly performance can only be achieved by the use of even better and more resistant materials in combination with a special coating of individual components.

This greatly extends the application range and the user does not have to sacrifice any advantages. Thanks to the higher pressure levels, less expensive “L” series fittings can now be used instead of the heavier “S” series.



Assembly torques

The new high performance forging design with its considerably larger flats size makes assembly even safer and easier.

Through the application of a chromium^6-free surface treatment, Parker Ermeto meets future requirements of the automotive industry today, and respects the directive of the European Parliament to eliminate the use of Chromium^6. The removal of Chromium^6 reflects Parker's ongoing commitment to an environmentally clean and safe production process. The additional "Plus": the corrosion resistance is increased to more than 500 hrs. to white rust.

The EO-LUB procedure is yet another innovation unique to Parker. In addition to the standard dry wax lubrication of the tube nuts, all larger fittings (25S/28L and above) are EO-LUB treated. EO-LUB reduces the assembly torques by approximately 25%, which makes assembly easier and prevents underassembly, the most common reason for bite-type tube fitting failure.
This latest fitting generation benefits from Parker's long years of experience combined with continuous innovation. It is made with our state-of-the-art production methods, controlled by the strictest quality assurance systems and procedures.

EO-Plus: Progressive Stop Ring PSR for steel fittings

Introduction

The original fitting system used worldwide in millions of applications is now available in a new design: more safety even under the highest pressure, chromium^{6}-free surface treatment with significantly higher corrosion resistance, and considerably reduced tightening torques.

The ingenious invention of the cutting ring fitting was made by the founder of Parker Ermeto in the late nineteen twenties. In 1934, this idea was patented and today it is just as useful as it was on the very first day. Considering the range of applications, quality, reliability and functional safety, the principle of the Parker's cutting ring fitting has been a leading system up to today.
Of course, this has only been possible by continuously adapting the original invention from 1934 to the practical requirements of state of the art technology. Thus, the first Parker Ermeto cutting ring has little left in common with the latest multifunctional PSR cutting ring, the heart of EO-Plus.

The EO-Plus fitting meets the requirements of modern hydraulic systems. This is especially true for applications where the systems are exposed to extremely high loads.

EO-Plus is designed for metric tube and based on German Standards DIN 3861 and DIN 2353, which today are represented by the international standard ISO 8434-1. EO-Plus is available in "L"- and "S"-Series.

The PSR (Progressive Stop Ring) is available for the steel fitting range. For stainless steel applications, the Progressive ring DPR 71 is used and the Cutting ring for brass fittings and series LL.

EO-Plus fitting features

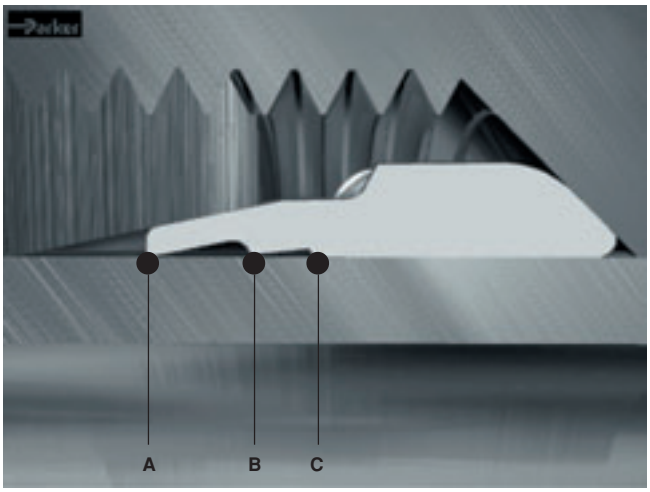
The EO-Plus fitting produces high pressure, leak free connection of tubes and components in fluid systems. The basic function of EO-Plus is the controlled progressive bite of the PSR into the tube due to a unique internal geometry.

The front cutting edge A has already started cutting into the tube before the second cutting edge B begins. As soon as both cutting edges have cut into the tube to the designed depth further advance is limited by the stop shape C and the new overtightening protection D. Additionally, the special form of the PSR with its dimples at the front shoulder section gives an assembly state control.

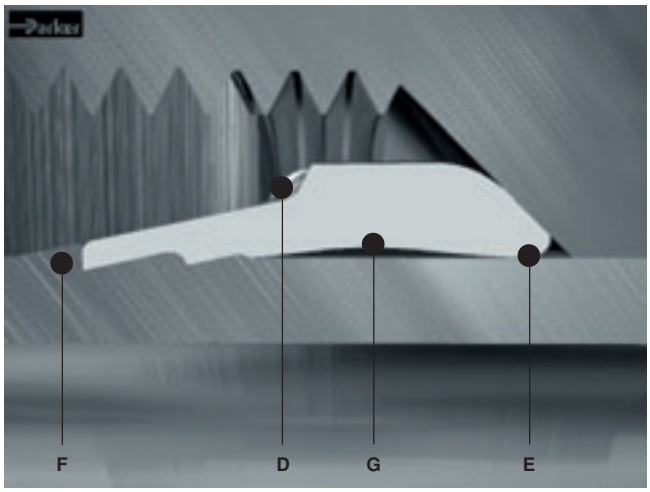
Owing to the design of both cutting edges and stop shape all forces arising are equally distributed. This distribution along with the specially designed interior collar E of the ring guarantees increased safety, particularly with regard to vibration and flexure stresses. Service vibration loading is not present in the areas of the tubing where the bite is made.

The stop shape as well as the overtightening protection cause a clear sharp increase in tightening forces. After assembly, a visible collar F of cut tube material must completely fill the space in front of the first cutting edge.
A slight bowing up of the ring G is desirable. This spring effect provides permanent compensation for flexural vibration and settling effects in the thread of the fitting nuts.

Assembly
Assembly process is similar to EO-Progressive ring. See chapter E.



Before tightening the nut



After tightening the nut

Features, advantages and benefits of EO-Plus fittings

Naturally all advantages of the proven EO Progressive ring fittings are also present in EO-Plus, however, the new EO-Plus Generation additionally offers the following:

- **Plus: Highest corrosion resistance** – The corrosion resistance is increased to more than 500 hours to white rust.
- **Plus: Increased pressure** – Due to the application of even better materials combined with the special processing of individual components, EO-Plus can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO-Plus considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive "L" series fittings can now be used instead of the heavier "S" series, which also is of benefit in limited or tight space applications.
- **Plus: EO-LUB** – Due to the special treatment of the larger sized nuts by the EO-LUB procedure (25S/28L and larger), the tightening torques of EO-Plus fittings have been reduced by 25%. This makes assembly easier and prevents underassembly, the most common reason for tube fitting failure.
- **Plus: Safe assembly** – Two distinctive cutting edges provide a progressive increase of the tightening torque of the PSR. The noticeable end point of assembly contributes to maximum safety of assembly, and the multifunctional ring geometry prevents over-tightening.
- **Plus: Overtightening protection** – The special geometry of the PSR prevents the overassembly of EO-Plus fittings.
- **Plus: Spring effect** – Thanks to the spring effect, retightening of the fitting is not necessary. Upon the completion of the assembly (due to the geometry, material and heat treatment) an elastic initial tension is achieved which compensates displacement effects in the thread and at the bite point of the tube.
- **Plus: Chromium^6-free** – Due to its chromium^6-free treated surface, Parker Ermeto now meets the expected requirements to be expected in the automotive industry and the requirements issued by the European Parliament to eliminate the use of materials and surfaces containing chromium^6. The removal of chromium^6 reflects Parker's ongoing commitment to an environmentally clean and safe production process.
- **Plus: Worldwide availability** – EO-Plus is available worldwide and meets the requirements of the applicable standards for 24° cutting ring fittings. The multifunctional PSR can be used with all types, series and dimensions of the wide range of EO-Plus fittings.

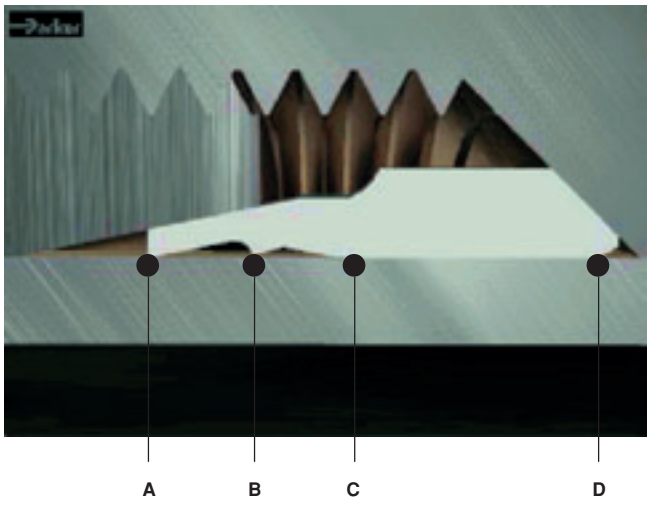


The new multifunctional PSR

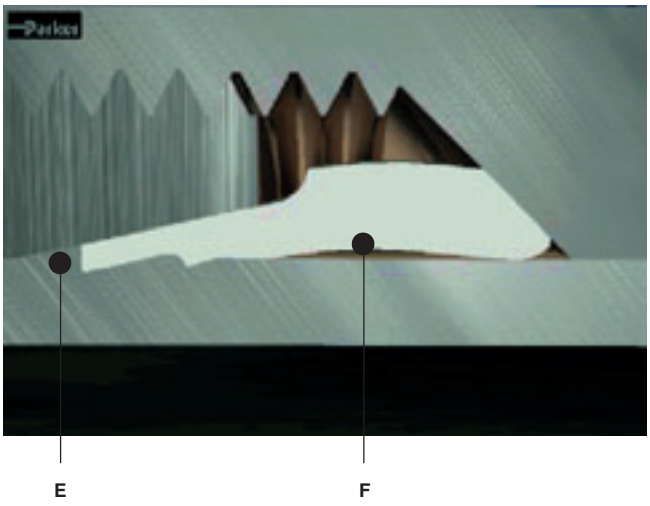


Cranes – one of numerous applications for EO-Plus fittings

EO-DUR Progressive Ring DPR for stainless steel fittings



Before tightening the nut



After tightening the nut

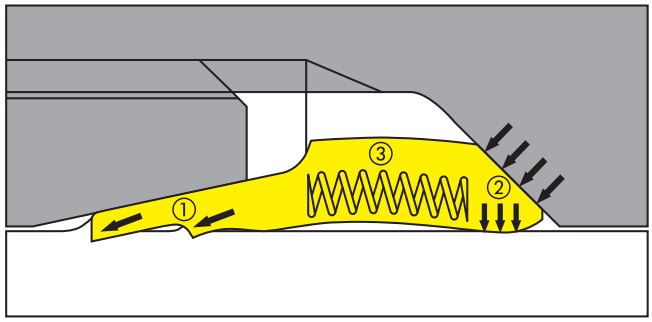
The proper assembly result is achieved by $1^1/_2$ turns of the nut.

The function of the EO-DUR stainless steel progressive ring fitting

The EO progressive ring fitting produces a low to high pressure, leak free connection of tubes and components in fluid systems. The basic function of the EO progressive ring is the controlled progressive bite of the ring into the tube due to its unique internal geometry. The design of the EO-DUR stainless steel progressive ring is based on three essential functions.
The front cutting edge (A) has already started cutting into the tube before the second cutting edge (B) starts. As soon as both cutting edges have cut into the tube to the designed depth further advance is limited by the stop shape (C).
Owing to the design of both cutting edges and stop shape all forces arising are equally distributed. This distribution along with the specially designed interior collar (D) of the ring guarantees increased safety, particularly with regard to vibration and flexure stresses. The design and function of the cutting ring ensure that service vibration loading is not present in the areas of the tubing where the bite is made.
The stop shape causes a sharp increase in tightening forces which is perceptible. After assembly, a visible collar (E) of cut tube material must completely fill the space in front of the first cutting edge. With stainless steel tube and standpipe hose connections, the collar is smaller due to the harder material.
A slight bowing up of the ring (F) is desirable while this happens. This spring effect provides permanent compensation for flexural vibration and setting effects in the thread of the fitting nuts.
All EODUR stainless steel fittings show a special progressive ring design for best performance with stainless steel tubes. LL – series fittings and all brass fittings are equipped with a single bite “D”-ring.

The spring effect

① + ② + ③ = $1^1/_2$



The 3 vital effects of Progressive-Ring assembly: sealing (1), tube clamping (2), spring effect (3).

At assembly of the EO progressive ring fitting, three essential functions are achieved:

① Tube bite
The tube bite guarantees the leak free sealing and ensures the necessary holding power for high operating pressures. After assembly, a collar of cut tube material in front of the cutting edge is the visible control for the proper function of the connection.

② Tube clamping
The rear section of the progressive ring is designed for clamping the tube firmly. This ensures that service vibration loading is not present in the tube bite area.

③ Spring effect
Towards the end of assembly, the special EO progressive ring design, material and heat treatment allow a defined elastic deformation of the ferrule. This spring effect compensates subsidences of tube bite and threads, thus ensuring long term leakfree performance without retightening.

EO-DUR stainless steel products with silver plated threads
All threads of the EO-DUR stainless steel nuts are surface treated to reduce the tightening-torques by 40 % compared to non treated products. The treatment also avoids galling of the threads. The nuts bigger than size 12S/15L are delivered with silver plated threads, all smaller sizes are treated with a special wax.

The EO-DUR Suparcased SPH cutting ring
On the basis of the proven progressive ring design, the suparcased stainless steel bite-type ring has been developed especially for aggressive internal and external media. The special geometry and thermochemical hardening process guarantee a permanently leak-proof and corrosion-resistant connection under extreme conditions. Typical applications are in the food, chemical and medical industries as well as in process engineering.

Common features, advantages and benefits of the EO Bite type system

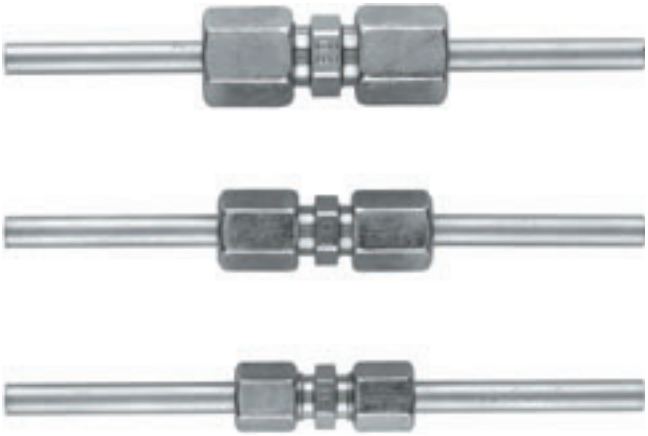
- **Field assembly –** EO fittings can be assembled virtually anywhere with just a couple of wrenches. For stainless steel tube simple presetting tools are available. No additional equipment or machine is required.

- **Low cost assembly –** Using an EOMAT machine is the most economic method to preassemble EO rings onto tube ends. Whereas the actual preassembly process only takes some 1.4 seconds on the EOMAT III/A, the total “floor-to-floor” time averages around 15 seconds.

- **3 series –** Very Light (LL), Light (L) and Heavy (S) series can be individually selected. For each application there is a solution for best flow rate, sufficient pressure resistance, smallest envelope size, low assembly force and minimum fitting cost.

- **Available sizes –** Most EO fittings are available in 25 sizes from 4 to 42 mm tube OD. Additional reducers allow optimum dimensioning of each individual fluid line. This saves space and material costs.

- **Tube wall –** EO fittings are suitable for use with light wall, medium wall, heavy wall, and extra heavy wall tubing. (Light wall tube may require support sleeve VH.)



Top to bottom: EO Heavy (S), Light (L) and Very Light (LL) series: Best choice for each individual application (Illustration: Straight union 6 mm tube OD)

- **Tube material** – EO-bite type fittings can be used with most tube materials, such as high and low-grade steel or stainless steel, copper, aluminium or CuNiFe. Even plastic tubes such as nylon, polyurethane, PVC or PTFE can be easily connected by using additional support sleeves E.

- **Visible bite –** The critical ferrule to tube front bite is clearly visible to tube fitters & inspectors. The presence of the recommended bite virtually eliminates any risk of catastrophic blow-off. This is a very important safety feature.

- **Reduced torque –** All nuts of EO-fittings are coated with a highly effective lubricant. Reduced assembly effort help to prevent underassembly which is the most common reason for bite type fitting failure.

- **Sealing capability –** EO fittings have demonstrated a remarkable ability to remain leak free under various service conditions ranging from sealing high vacuum and small molecule gases to high pressure hydraulic fluids.

- **Distributed stresses –** Stresses due to flexural loading in service are distributed at several points in the joint, thus stress concentration in the bite is minimised.

- **Vibration control –** The rear bevel of the ferrule firmly grips tubing, thus dampening the effects of system vibration in the joint.

- **Envelope size –** EO fittings are comparatively small and compact, making it a suitable selection for tube connections in limited or tight spaces.

- **Temperature rating –** EO fittings are suitable for sub zero through elevated temperature applications. Service temperature rating is limited by the material chosen.

- **Compatibility –** Since EO fittings can be manufactured from a wide range of metals, compatibility factor with various fluids and atmospheric conditions is extensive.

- **Manufacture** – EO fittings are manufactured under tight quality controls which ensures that the product routinely satisfies or surpasses the requirements of the pertinent military and industrial standards. All manufacturing locations are ISO 9001 certified.

- **Silver plated nuts** – Stainless steel tube nuts are prelubricated with silver plated threads (size 15L-42L, 12S-38S). The threads of smaller sized stainless steel nuts are waxed. Thread galling is eliminated and assembly torque is reduced by as much as 40 percent. The EODUR treatment increases the speed and efficiency of stainless steel fitting assembly.

- **Tube length determination –** Exact tube length and bending can easily be checked by just trying out before assembly. This makes on-site piping very efficient.

- **Broad range of configurations –** EO fittings are available in more than 50 configurations. Especially for orientable fittings there is a wide variety of banjos, adjustable elbows or swivel combinations that allow an optimum solution for each application.

- **Functional fittings –** A variety of rotary fittings, non-return valves, Shut-off valves and test point connectors are available with the original EO-joint. This greatly reduces assembly time and cost of additional fittings and also eliminates possible leak paths.

- **True metric design –** EO fittings are designed to metric standards. All threads, hexagons, bores and other dimensions are purely metric.

- **No restrictions –** All bores of each fitting fit the inner diameter of the matching tube. LL, L and S-Series fittings are designed for best flow rate with thin, medium and heavy wall tube. Therefore, best performance without excessive noise or heat generation is always guaranteed.

- **World wide popularity –** The bite type fitting has worldwide acceptance. Most European, Asian, African and South American industry standards are purely metric. But also in Australia and Northern America DIN bite type fittings are gaining acceptance due to the metrification and end user specifications. Many machine operators prefer fittings that can be assembled without any additional equipment.

EO2-Plus

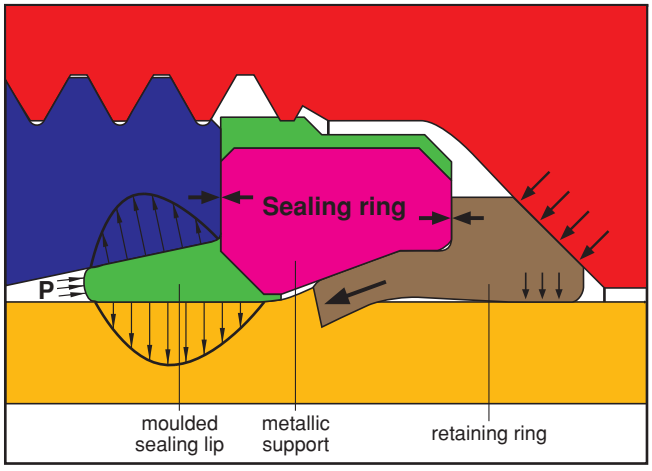
Introduction

As a part of Parker Ermeto's New Generation fittings, the Dry Technology EO-2 Plus Concept proven worldwide has been further developed. EO2-Plus means maximum pressure capability, as well as a new chromium^{6}-free surface with significantly higher corrosion resistance, and greatly reduced tightening torques for larger sized fittings.

The common feature of all EO2-Plus fittings is elastomeric seals on all joints. These are also now available in FKM (e.g. Viton®)* for applications with higher temperatures or aggressive media. This assures leak free operation without retightening – even under extreme working conditions. The easy handling, time and cost saving features, and many assembly advantages of the unique EO2-Plus functional nuts have made EO2-Plus fittings increasingly popular.



EO-2: Safe dry – clean – leakfree



The metallic support of the sealing ring acts just like an integrated pre-assembly tool.

EO2-Plus is designed for metric tube and based on German Standards DIN 3861 and DIN 2353, which today are represented by the international standard ISO 8434-1. EO2-Plus is available in "L"- and "S"-Series.



The new chromium^{6}-free EO2-Plus Functional Nut: also with FKM sealing ring

Features, advantages and benefits of EO2-Plus fittings

Naturally all advantages of the proven EO-2 soft sealed technology are also present in EO2-Plus, however, the new EO2-Plus Generation additionally offers the following:

- **Plus: Highest corrosion resistance** – The corrosion resistance is increased by 400% to more than 500 hrs. to white rust.
- **Plus: Increased pressure** – Due to the application of even better materials combined with the special processing of individual components, EO2-Plus can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO2-Plus considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive "L" series fittings can now be used instead of the heavier "S" series, which also is of benefit in limited or tight space applications.
- **Plus: EO-LUB** – Due to the special treatment of the larger sized nuts by the EO-LUB procedure (25S/28L and larger), the tightening torques of EO2-Plus fittings have been reduced by 25%. This makes assembly easier and prevents underassembly, the most common reason for tube fitting failure.
- **Plus: Chromium^{6}-free** – Due to its chromium^{6}-free treated surface, Parker Ermeto now meets the requirements to be expected in the automotive industry and the expected requirements issued by the European

*Viton® = registered Trademark of DuPont

Parliament to eliminate the use of materials and surfaces containing chromium[6]. The removal of chromium[6] reflects Parker's ongoing commitment to an environmentally clean and safe production process.

- **Plus: Worldwide availability** – EO2-Plus is available worldwide and meets the requirements of the applicable standards for 24° cutting ring fittings.

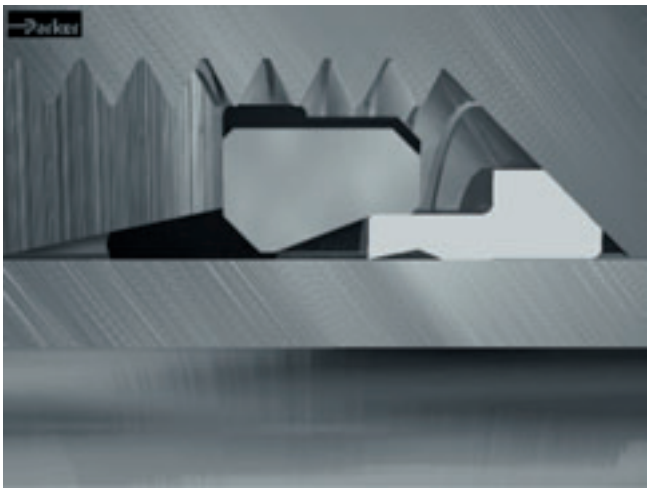
Function of the EO2-Plus fitting system

Elastomeric sealing

The elastomeric seal assures a hermetically sealed tube joint. It is located in between the inner cone of the fitting body and the tube surface, thus blocking the only possible leak path. Due to its large cross-section, the seal effectively compensates for all manufacturing tolerances on tube and fitting cone.

The sealing effect is pressure supported which makes the EO2-Plus fitting suitable for high pressure applications. The static compression also eliminates air-ingress into the fluid system at underpressure conditions.

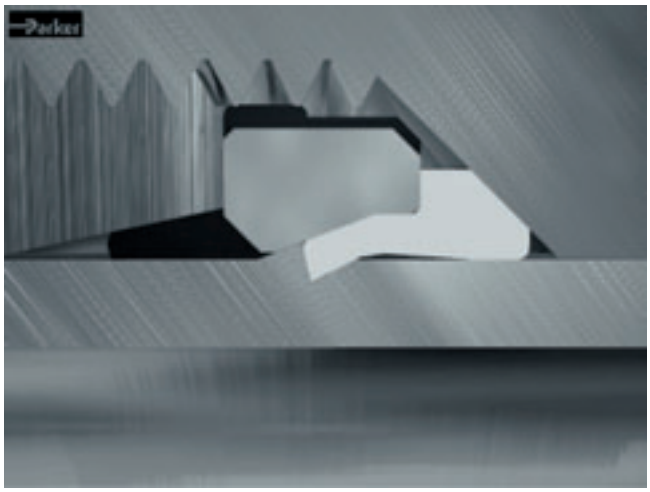
Elastomerically sealed EO2-Plus fittings do not require any retightening even in heavy duty applications. Seal extrusion is prevented by proper housing without gaps or dead volume. The sealing lip is bonded to a metallic support ring.



Before tightening the nut

Assembly "to block"

The retaining ring bites into the tube in accordance to the proven bite ring principle. The support ring reduces the danger of over- or underassembly by a special EO2-Plus design feature: Before assembly there is a gap in between the flat surfaces of the retaining ring and the metallic support ring of the seal. As soon as the retaining ring has reached the proper bite depth, the gap closes, resulting in a sharp increase of assembly torque. This results in uniform and reliable fitting assemblies. The assembly result can easily be inspected by just checking if the gap is closed.



After tightening the nut

Closing the gap at the end of assembly provides a clear "Hit-Home-Feel".

The separation of sealing and fixing function to two separate elements finally allows a more effective solution of the over- and untertightening problems of bite type fittings than increasing the number of cutting edges.

Integrated assembly tool

The metallic support ring of the seal is made of a special design, material and heat-treatment to act as a assembly tool. This makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body.

This unique feature of EO2-Plus fittings even allows direct assembly of stainless steel tube without any additional pre-assembly process. Of cause, an EOMAT machine can be used to allow easy assembly of large dimension tube and drastically save total assembly time, effort and costs.

The integrated assembly tool of EO2-Plus fittings even helps to save further costs and trouble when using an EOMAT-type presetting machine:
As the presetting cone is only in contact with the elastomeric sealing lip, it cannot be worn out or damaged even after thousands of assemblies. This does not only save replacement costs but also avoids leakage problems caused by worn presetting tools.

The functional nut

The unique functional nut simplifies handling of fitting components and helps to minimise storage and procure-



The unique functional nut allows easy handling and quick assembly.

ment costs. The sealing and retaining rings are combined as a pair and are inserted into the internal thread of the nut in such a manner that they cannot fall out, so that these three parts form one functional element.

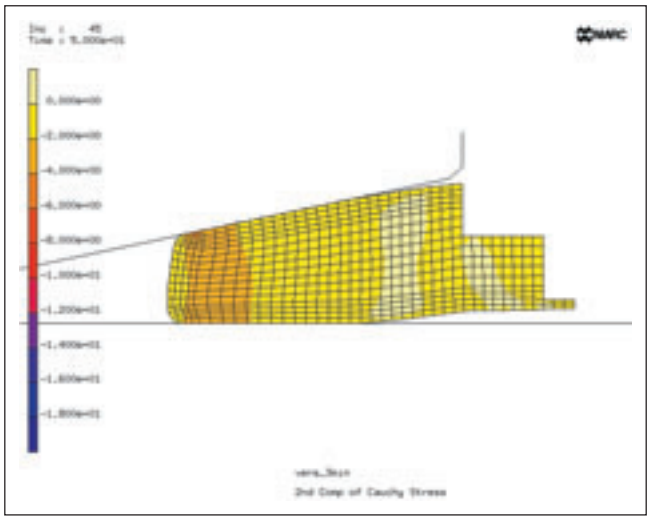
Individual components such as seals or retaining rings cannot be forgotten, confused or assembled in the wrong orientation. Time and cost is saved, arranging the components to make up individual joints.

The functional nuts match all EO tube fitting joints. After assembly and disassembly, the sealing ring can be replaced individually without cutting off the tube end.

Common features, advantages and benefits of the EO-2 and EO2-Plus fitting system

In addition to the general advantages of the EO tube fitting system, the unique EO2-Plus fitting features even more specific benefits:

- **Sealing capability** – An elastomeric seal forms the primary sealing element, thus assuring leakfree sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not "sweat" at fittings.
- **Durability** – The elastomeric seal does not require any retightening even after years of operation under extreme working conditions.
- **Bite control** – The ideal bite depth is controlled by the fitting design rather than by the fitters force. Closing the gap at the end of manual assembly, the fitter gets clear signal that setting is completed and the joint is ready for inspection.
- **Functional nut** – Individual components such as the retaining ring or seal cannot be lost, forgotten, confused or assembled in the wrong orientation. This dramatically saves assembly cost and helps to avoid dangerous assembly errors.



FEM (Finite Element Method) has been used to optimize the seal design (Picture: FES, Raiffeisenstr. 10a, D-74343 Sachsenheim).

- **Assembly cost** – With less than 10 seconds cycle time on the EOMAT III/A (actual presetting process: 1.4 seconds) the cost of presetting EO2-Plus is extremely low.
- **Integrated preassembly tool** – Each EO2-Plus functional nut comes assembled with an integrated assembly tool that makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body. This greatly reduces the danger of tube blow-off, even when using stainless steel tube.
- **Reliable reproducibility** – When EOMAT machines are used for cost-efficient presetting, the preassembly tools do not wear out as they are only in contact with the rubber seal. This avoids leaks and dangerous blow-off which can result when traditional bite-type fittings are assembled using worn presetting tools.
- **Final assembly** – From the wrench-tight position of the preset EO2-Plus joint, one short pull on the wrench (approx. 1/6 to 1/4 turn) gives the assembly a quick high rise to required torque. EO2-Plus fittings have a solid "Hit-home-feel" and excellent over-torque resistance.
- **Visible inspection** – There is no doubt if an EO2-Plus functional nut has been preset correctly or not. Inspection is as simple as checking if the gap between retaining ring and sealing ring is completely closed. The tube end does not have to be disassembled out of the fitting for bite inspection.
- **No phantom leaks** – Lubrication is not mandatory for the assembly of steel EO2-Plus fittings. The machine operator will not be irritated about lubricant coming out of the fittings once the hydraulic system gets hot.

- **Reusability/Remakeability** – EO2-Plus fittings can be disassembled and reassembled many times. There is no wear or widening of the vulnerable inner cone. Damaged seals can easily be replaced. All spare DOZ-seals are marked by size-code (e.g.: 12–L).

- **On-Site-Maintenance** – For the maintenance and replacement of EO2-Plus fittings a set of wrenches is sufficient. Additional in – line – components, such as test points (GMA), ball valves (KH) or Tee-fittings can be added to an existing assembly within minutes.

- **Interchangeability** – The EO2-Plus functional nut can be used for the whole variety of the broad range of more than 50 configurations in some 25 sizes of standard EO LL, L and S-series fittings. Changeover from progressive ring or weld nipple is easy by the simple use of EO2-Plus functional nuts.

- **Reliability** – Millions of EO2-Plus fittings are working trouble free in applications like: Mobile Construction equipment, stationary machine tools, hydraulic presses, plastic injection moulding machines, shipbuilding, offshore exploration, submarines, railway trains and military equipment. Leakage does not occur on EO2-Plus pipework.

- **Trouble-free** – Regular bite type fittings allow typical assembly-errors such as: confusion of bite type ring material and size. Also, the use of worn-out pre-assembly tool may result in fitting failure. The clever EO2-Plus design does not allow most of these mistakes without making the assembly process more complicated.

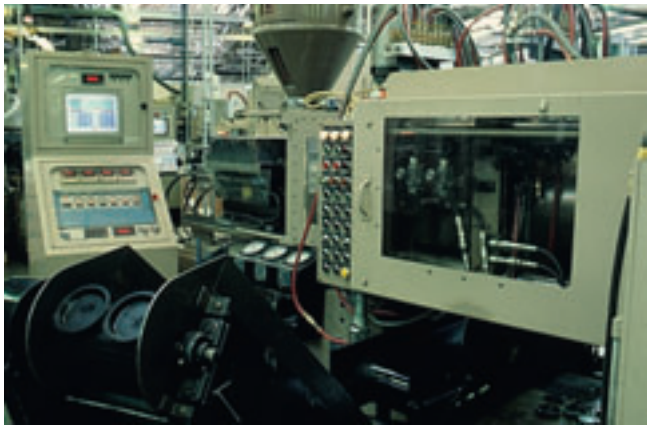
- **Popularity** – EO2-Plus fittings are as easy to assemble as traditional bite type fittings, but they eliminate most of their typical assembly problems. EO2-Plus fittings are therefore appreciated by an increasing number of original equipment manufactures. EO2-Plus also has become the fitting of choice of end-users that appreciate the leakfree performance, the easy maintenance and the global availability of the metric soft-seal bite type system.

Suitable FM-type

	Steel tube	Stainless tube	Plastic tube
Steel fittings body (EO2-Plus)	FM…CF	FM…SSA	FM…CF
Stainless steel fitting body (EO-2)	—	FM…71	FM…71

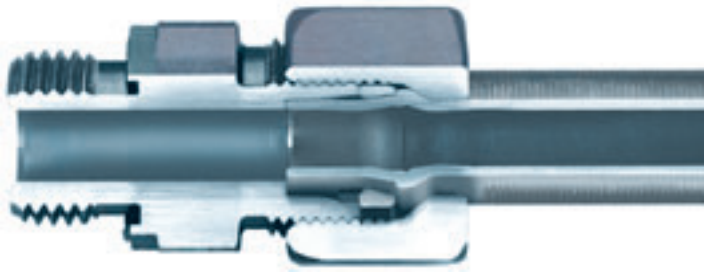


EO-2 fittings are used for heavy-duty applications, such as construction equipment or plastic injection molding.



Every day millions of EO-2 fittings perform absolutely trouble-free.

EO2-FORM



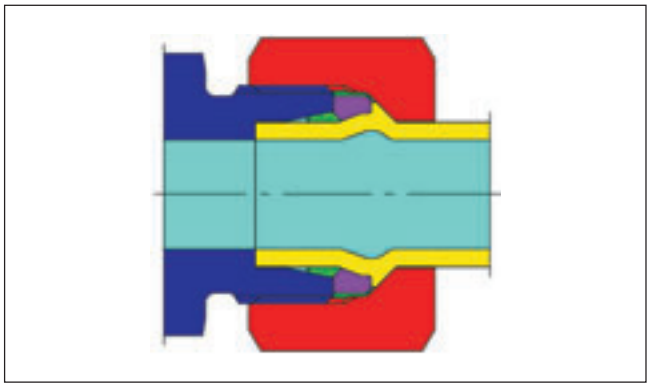
Introduction

EO2-FORM is the new high pressure formed tube Generation of the Tube Fittings Division Europe. As with EO2-Plus, it is designed in to eliminate leakage in all fluid systems, by using elastomeric sealing systems.

The common feature of all EO2-FORM connections are the EO2 seal elements (Dry Technology) as well as the new cold forming process, that gives extreme rigidity and low tightening torques. The seals are now also available in FKM (e.g. Viton®)* for applications with higher temperatures or aggressive media.

Through EO2-FORM, elastomeric sealing technology is made available even where bite-type connectors are not popular, like in hydraulic presses, cranes, lifts or ship canal locks. Compared to welding or brazing, the EO2-FORM process is faster and easier. It does not require special tube treatment, heating or chemicals.

EO2-FORM is designed for metric tube and fully interchangeable to the complete Ermeto Original product range according to ISO 8434-1 / DIN 2353. EO2-FORM is available in “L”- and “S”-Series.



**The new EO2-FORM connection:
Extreme rigidity and low tightening torques**



The EO2-FORM F3 machine

Function of EO2-FORM

EO-2/EO2-FORM system

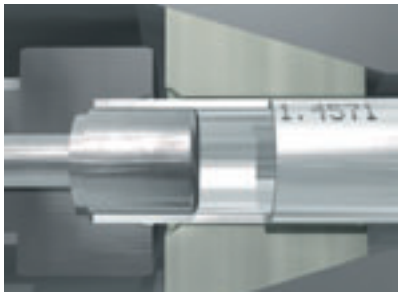
EO2-FORM is not a stand-alone product. It has been developed as an extension of the proven EO2-Plus system product range. All EO2-FORM components like nuts, seals and fitting bodies come from the EO2-Plus program. The only investment needed is the forming machine, which pays off quickly as it reduces assembly time and effort. Assembly characteristics of EO2-FORM are similar to

*Viton® = registered Trademark of DuPont

The EO2-FORM process



Tube end is prepared and equipped with EO nut



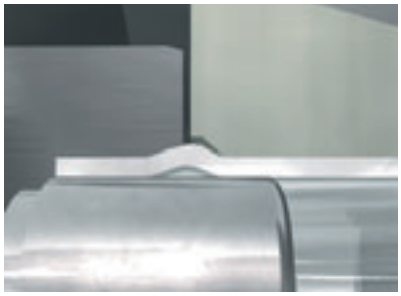
Tube is inserted into the tools until it firmly touches the stop at the end



After starting the process, the dies clamp the tube and the forming pin starts to move forward



While moving, the pin is continuously forming the tube wall and compressing the material



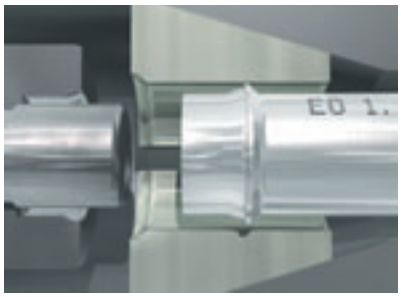
The tool shape defines the outer contour of the formed tube wall



The inner contour also gets slightly deformed but remains smooth and unrestricted for good flow characteristics



As soon as the moving pin touches the clamping jaws, the forming process is completed



The tube end is released and ready for attaching the EO-2 seal



Installation is made in the fitting body

EO2-Plus too. This allows the customer to use both products for his hydraulic pipework without increasing stock or confusing workfloor engineers with new components.

Elastomeric sealing

For EO2-FORM, the same sealing ring “DOZ” is used as for EO2-Plus. The high volume elastomeric seal assures a hermetically sealed tube joint. It is located in between the inner cone of the fitting body and the tube surface, thus blocking the only possible leak path. Due to its large cross section, the seal effectively compensates for all manufacturing tolerances between the tube and fitting cone.

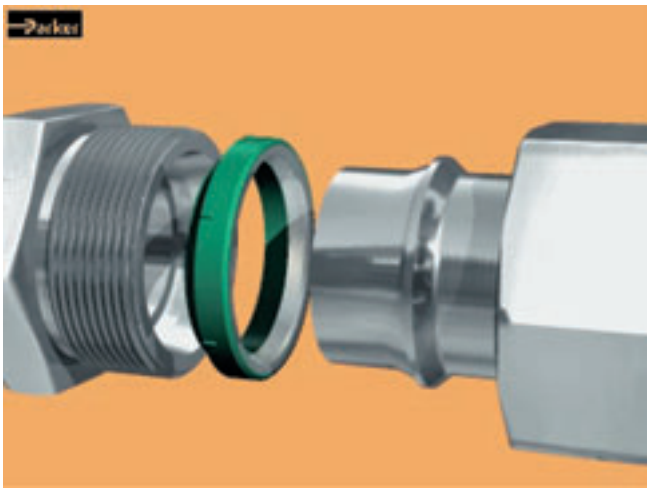
The sealing effect is pressure supported which makes the EO2-FORM fitting ideal for high pressure applications. The static compression also eliminates air-ingress into the fluid system in vacuum conditions.

Elastomerically sealed EO2-FORM fittings do not require any retightening even in heavy-duty applications. Seal extrusion is prevented by proper housing without gaps or dead volume areas. The sealing lip is bonded to a metallic support ring.

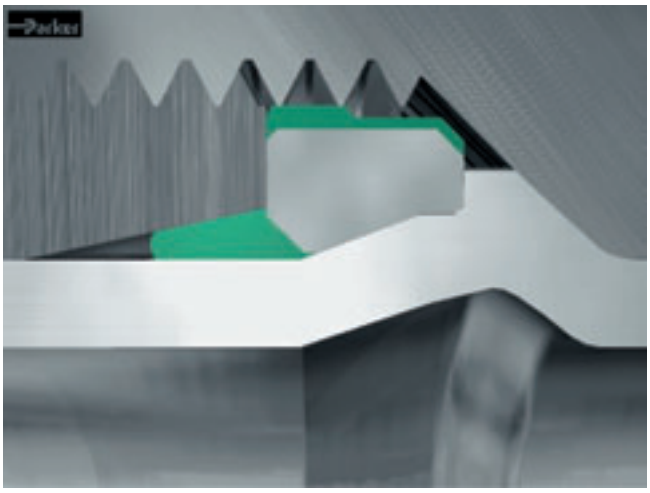
Cold-formed tube

The cold-forming of the tube is carried out by the EO2-FORM machine. Machine operation and tool setup are optimised for short cycle times, which makes the process easy and fast. The tube is connected when the sealing ring is fixed and the nut is tightened.

The working contact area of the EO2-FORM connection is the flat front surface of the metallic support ring which is made of heat-treated, high-strength steel. This provides superior mechanical strength without settling, loosening or need for re-tightening.



Before tightening the nut

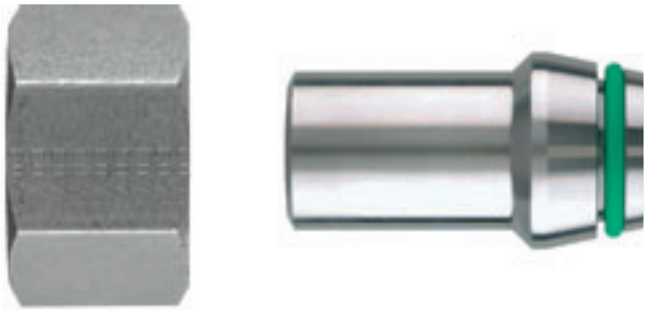


After tightening the nut

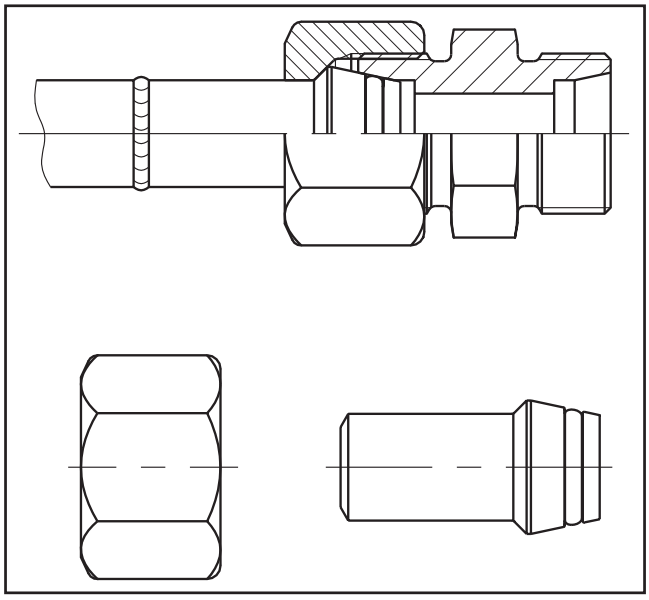
Features, advantages and benefits of the EO2-FORM fitting system

- **System solution** – No additional items need to be purchased or stocked on top of the existing EO-2 product range. Assembly characteristics of EO-2-FORM are similar to EO2-Plus, too. Therefore, EO2-FORM can be introduced with minimum effort.
- **Flexible concept** – The product family of EO-2 and EO2-FORM allows the application of the optimum product within a complex hydraulic system or a whole manufacturing facility. EO2-FORM can be used for heavy duty applications like presses, EO-2 is ideal for general hydraulic and pneumatic pipework. This allows maximum total system performance with minimum component, assembly and stocking cost.
- **No risk** – EO2-FORM technology is based on the proven EO-2 technology. All components and the assembly technology are approved. The customer does not have to test a new system.
- **Highest pressure performance** – Due to the application of even better materials combined with the special processing of individual components, EO2-FORM can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO2-FORM considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive “L” series fittings can now be used instead of the heavier “S” series, which also is a benefit in limited or tight space applications.
- **Sealing capability** – The high volume elastomeric seal forms the primary sealing element, thus assuring leak-free sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not “sweat” at the fitting joints.
- **No phantom leaks** – Lubrication is not mandatory for the assembly of steel EO weld nipples. The machine operator will not be irritated about lubricant coming out of the fittings once the hydraulic system gets hot.
- **Universal** – The EO2-FORM machine can cold-form all common steel tubes used in hydraulic systems (the EO2-FORM process also allows the use of stainless steel and exotic materials such as CuNiFe; please ask for separate catalogue). EO2-FORM tools cover metric tube from 6 to 42 mm OD. Thin wall tube of 1 mm wall thickness can be formed, too.
- **Superior vibration resistance** – The new EO2-FORM process achieves a smooth structural transformation of the tube wall allowing superior vibration resistance.
- **Durability** – The elastomeric seal does not require any re-tightening even after years of operation under extreme working conditions.
- **Efficient** – Compared to welding or brazing, EO2-FORM is much less time consuming. Special tube preparation and finishing are not necessary. Forming uses only a fraction of the energy needed for brazing or welding.
- **Quality** – Tube clamping and tooling are fully automated. Therefore, high and consistent quality is achieved without manual adjustment.
- **Noise reduction** – Compared to other forming methods, the EO2-FORM process results in a smooth inner contour of the tube that does not allow the accumulation of air, dirt or other sources of trouble. Less pressure drop, heat and noise is created.
- **Re-usability** – EO2-FORM connections can be disassembled and reassembled many times. There is no wear or widening of the vulnerable fitting inner cone.
- **Approved** – Both, EO-2 high pressure tube fittings and the EO2-FORM process are tested and approved by independent organisations such as Germanischer Lloyd and Det Norske Veritas (DNV).
- **Small bending radii** – The compact clamping device and special dies are suitable for forming short tube ends.
- **Clean** – The EO2-FORM process is environmentally clean and safe. As no heat is used, hazards from chemicals, fumes or heat do not occur.

EO weld nipple



The leakfree performance of EO Weld nipples is assured by an O-ring seal.



EO-Weld Nipples match to all fittings of the wide EO-range.

Introduction

EO-weld nipples have been introduced to the market in the late 60's. The simple bite ferrules off the 60's were designed for hydraulic applications of pre-war time and did not match growing market demands on high pressure performance, impulse and vibration resistance. Also, the single bite ferrule was easy to over- or undertighten. Most assembly workshops could not afford assembly machines so that large size fittings often failed due to underassembly. Still, European customers preferred to stay with the established EO fitting body range, as it provides unbeaten advantages like: full metric system, repair possible with just two wrenches and 3 series of different design and pressure performance.

EO weld nipples provide all these benefits based on replacing the bite type ring by a welded connection. Today, modern solutions like EO2-FORM and O-Lok® provide the same performance without the effort of welding.

Applications

EO weld nipples are used for applications where the advantages of the EO program are appreciated and the rigidity of a solid weld connection is required. EO weld nipples are traditionally used for heavy duty applications such as hydraulic presses, mining, steel mills and shipbuilding.

Today, many users of weld nipples are switching to modern "Dry Technology" fittings using reliable assembly methods such as O-Lok®/Parflange® or EO-2/EOMAT.

Function of the EO weld nipple

The wide EO fitting range allows welded tube connections. Therefore, the EO weld nipple has to be welded onto the tube end.

Using the standard EO nut, this weld nipple can then be connected to the tube joint of any EO tube fitting.

EO weld nipples are available for L and S-series tubes of 6–38/42 mm diameter. A broad range of weld nipple fittings including reducers or elbows covers most applications.

The use of EO weld nipples allows remakeable pipe systems based on rigid weld connections.

Features, advantages and benefits of the EO weld nipple

EO weld nipples feature most advantages of the attractive EO fitting program. The specific benefits of the EO weld nipple program are:

- **Low quality tube** – Unlike bite-type or flared fittings, dimensional tolerances and rough tube surface are not very critical. Therefore weld nipples are suitable for countries where only poor quality tube is available.
- **Sealing capability** – An elastomeric seal forms the primary sealing element, thus assuring leakfree sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not "sweat" at fittings.
- **Durability** – The O-ring seal is assembled with a high initial compression. It does not require any retightening

even after years of operation under extreme working conditions.

- **Failure mode –** Unlike bite type fittings there is little danger of tube blow off if the fitting is not properly tightened. A loose joint shows excessive leakage before total failure.

- **Reusability/Remakeability** – EO weld nipples can be disassembled and reassembled many times. There is no wear or widening up of vulnerable inner fitting cone. Damaged O-rings can easily be replaced.

- **Smooth edge** – Under extreme working conditions, weld nipples are most likely to crack at the dimensional step just under the nut. In an additional rolling process this critical edge is smoothened for increased vibration strength.

- **Stress-free** – By welding, small deviations on tube cutting or bending can be compensated. Tension-free pipework is not likely to break even under extreme working conditions.

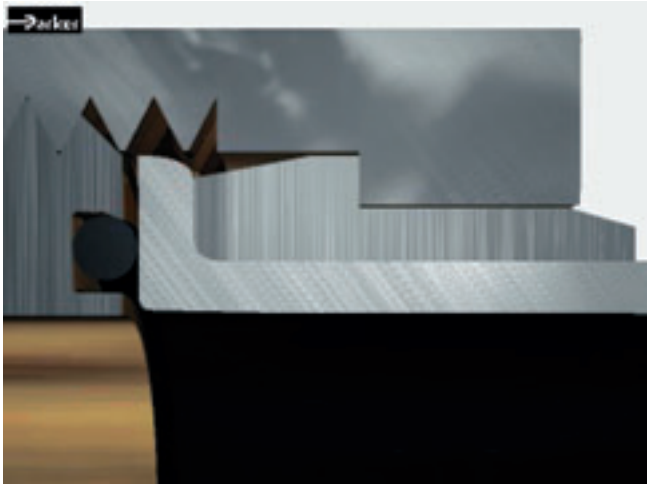
- **Welding process** – EO weld nipples are designed to be used for most popular welding processes.

Introduction to O-Lok® Plus

The O-Lok® fitting was developed by Parker Tube Fittings Division in the USA in the early 1980's. This product has proven to be extremely effective in eliminating leaks at the higher pressures found in today's hydraulic systems.

The O-Lok® Plus fitting is an O-ring face seal (O.R.F.S.) type fitting that consists of a nut, a body, an O-ring and a sleeve. As shown in Fig. 1 the tube is flanged to 90° using the patented Parflange® system (or the tube may be brazed instead to a braze-type sleeve). When the fitting is assembled, it compresses an O-Ring in the precision-machined groove in the fitting body to form a leak-tight seal.

O-Lok® Plus fittings are suitable for a wide range of tube wall thickness and are also readily adaptable to inch or metric tubing and hose connections.



Before tightening the nut



After tightening the nut

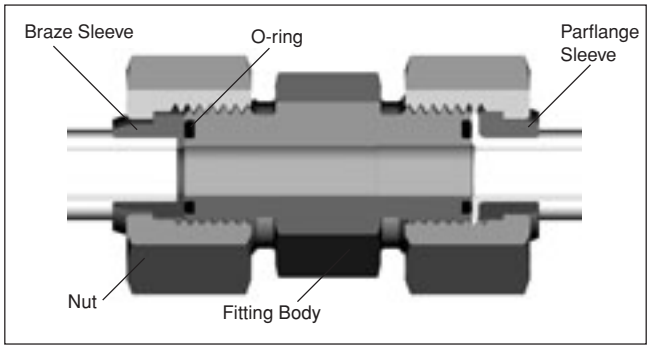


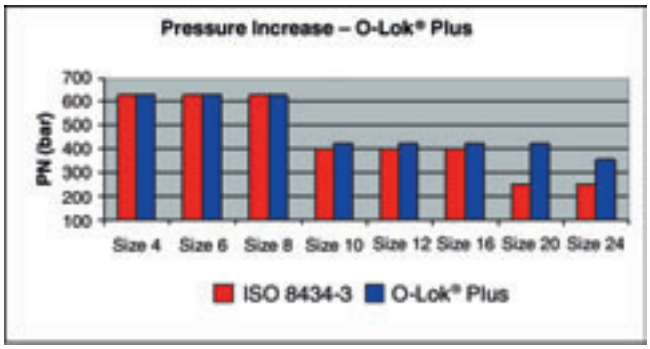
Fig. 1 – O-Lok Union cutaway with flanged and brazed assemblies

O-Lok® Plus

The last twenty years of experience supplying O-Lok® Plus have been well used in terms of listening to customer needs and refining design and material details to achieve the optimum mix of headline performance and a long trouble-free service life. After extensive product testing, it has been recognised that Parker O-Lok® Plus fittings can be uprated to higher performance levels. The O-Lok® Plus fitting system is characterised by the words.

'Durability' and 'leakfree performance'.

- **Pressure Plus** – Larger fitting sizes nominal pressure increased
  –20 from 280 to 420 bar*
  –24 from 280 to 350 bar*



- **Flange Seal Plus** – A development of the patented Parflange® system, the Flange Seal gives a cold-formed tube end connection to eliminate the need for costly brazing in Hose – Tube and Tube – Tube connections.

- **Plating Plus** – Resistance to white rust corrosion increased and exceeds international standards.

*For detailed pressure ratings see chapter C.

- **Cleanliness Plus** – Contamination is the biggest source of early component failure in hydraulic systems. Parker O-Lok® Plus fittings meet all requirements from the factory to the point of use – backed up by individual bagging.

- **CORG Plus** – All Parker O-Lok® Plus fittings are manufactured with Captive O-Ring Grooves as standard.

- **Range Plus** – Parker offers the widest range of catalogue standard materials, seal combinations, styles and sizes in the industry. Only Parker has all this.

Applications

The original development of the O-Lok® Plus fitting was heavily influenced to meet the needs of international mobile equipment companies, mining, site clearance, agricultural and other heavy duty equipment. Today, the O-Lok® Plus fitting is becoming an industry standard hydraulic fitting system for rugged duty equipment mounted on tracks or wheels. Equipment in these fields of application endure some of the highest levels of use, sometimes round the clock operation, in tough environments with extremes of temperature and mechanical stress. The simple, but effective design of the O-Lok® Plus connection when used with the Parflange® tube preparation technology mean that long term 'fit and forget' performance is ensured, despite the physical conditions.

Simple, low torque assembly, no tube entry breakaway feature, 2˝/50 mm max. tube size, and the ease of use with inch or metric tubing also make O-Lok® Plus eminently suitable for general hydraulic applications in hydraulic presses, injection moulding equipment, shipbuilding, machine tools and a range of other areas. Anywhere in fact where a high quality leak-free tube or hose connection is needed.

Function of O-Lok® Plus fittings

The O-Lok® Plus fitting consists of four main components: a body, a sleeve, an O-ring and a nut.

The O-Lok® Plus fitting body
There are over 40 different body configurations to choose from for specific applications. The body face has a groove, which contains a high durometer O-ring that is held captive during installation. In addition, the O-Lok® Plus fitting body shapes are all forged for added strength and longer service life.

Straight fittings are made from cold drawn barstock. The cold drawing process ensures consistent dimensional tolerances, improved strength and consistent surface finish.

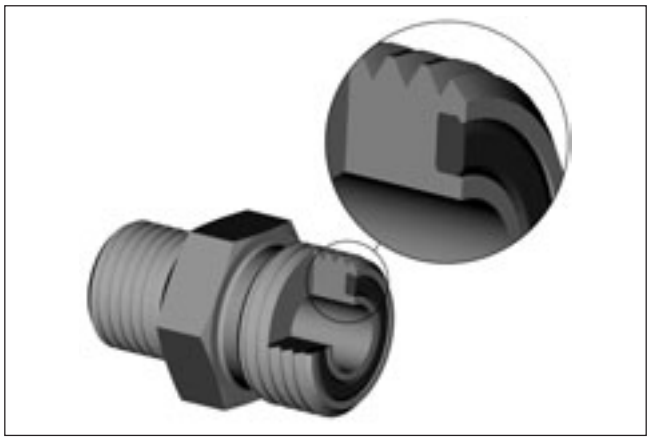


Fig 1 – Captive O-ring Groove (CORG) cutaway

CORG Groove
O-Lok® Plus fittings are manufactured with a Captive O-ring Groove (CORG) design for prevention of O-ring fall out prior to final assembly. The international standards for ORFS fittings contain two versions of the O-ring groove. The original design had straight sides and under certain conditions of tolerance between the O-ring and the groove, it was possible for the O-ring to be dislodged. As a further refinement of the O-Lok® Plus fitting, Parker introduced the CORG groove as standard production in all it's plants in 1998.

O-ring
From the design of the system, the O-ring compression gives excellent sealing characteristics from low pressure, low temperature circumstances found in winter during machine storage, to full pressure, high temperature cycles.

The O-Lok® Plus fitting nut
Smaller size O-Lok® Plus fitting nuts are cold-formed to provide a more tightly packed grain structure, resulting in a much stronger component. Larger size nuts are made of warm-forged steel-blanks.

The O-Lok® Plus Parflange® sleeve
The preferred method of making an O-Lok® Plus tube connection is by using the Parker Parflange® process to create the 90° flange on the tube end. A flange sleeve is used to support the flange and the tube, and provides the contact shoulder for the nut. After the Parflange® process, the sleeve is permanently fixed on the end of the tube reinforcing the joint.

The O-Lok® Plus connection using the Parflange® method can be made with either metric or inch tubing by choosing the appropriate sleeves and tooling.

Parflange® sleeves from Parker are manufactured to exacting tolerances and geometry to work with the Par-

flange® machine and tooling, producing the robust, reinforced tube end connection. Failure to use the correct components can result in premature joint failure in the final application.

The O-Lok® Plus braze sleeve
The braze sleeve provides the mating surface between the tube and the fitting body. Secondly, the braze sleeve, as the name implies, is attached to the tube through silver brazing. The braze provides holding power as well as a method to seal the joint. It also has a flat and smooth contact shoulder for the nut to connect the tube to the fitting body.

O-Lok® Plus braze sleeves are manufactured to exacting dimensions. Tightly toleranced dimensions are required to prevent binding in the nut when torqued, to provide a flat and smooth sealing surface against the O-ring, and to give the appropriate clearance for silver brazing to the tube.

The O-Lok® Plus connection can be made with either metric or inch tubing by choosing the appropriate braze sleeve.

The O-Lok® Plus reducing braze sleeves
O-Lok® Plus braze sleeves are manufactured in both even and reducing sizes. The reducing sleeves make it easy to adapt a larger face seal fitting to a smaller tube connection.

O-Lok® Plus fitting function
The O-Lok® Plus fitting body face contains a high durometer O-ring that is held captive in a precision machined groove. As the nut is tightened onto the fitting body, the O-ring is compressed between the body and flat face of the tube flange or braze sleeve to form a tight, positive seal (see Fig. 1).

As the two faces come in contact, further tightening of the nut produces a sharp rise in assembly torque. A solid pull of the wrench at this point, to the recommended assembly torque, completes the assembly.

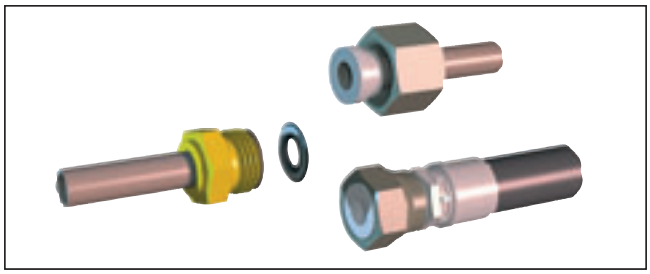
The sharp torque rise gives a “solid feel” at assembly, and minimises the possibility of over tightening.

Because the sealing surfaces are flat and perpendicular to the assembly forces, they remain virtually free of distortion during assembly, giving O-Lok® Plus fittings virtually unlimited remakeability. The O-ring should be inspected at each disassembly and replaced when necessary.

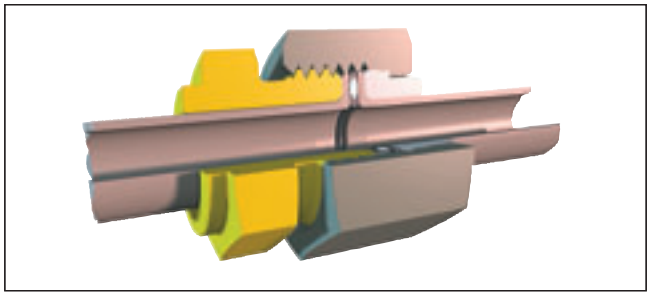
The Flange Seal System

Parker’s new Flange Seal Fitting System, provides an efficient, fast, and economical method to connect a tube line to a hose assembly, or another tube line. It replaces the need for conventional braze-on male ORFS ends by a modern tube preparation method. By eliminating the brazing operation, this creates several advantages – flexibility of batch sizes, and production location, safer finished result, fewer process stages, all resulting in cost reduction opportunities.

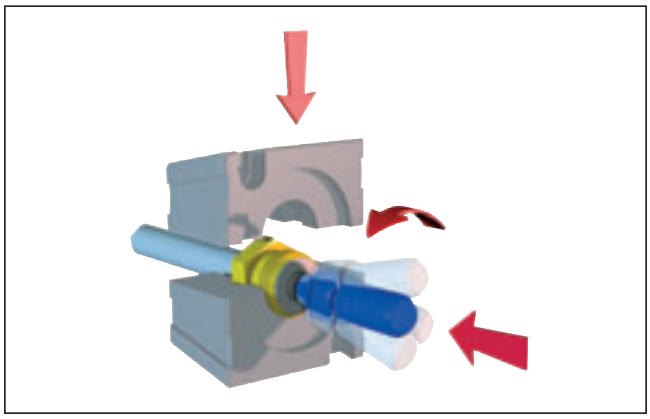
The Flange Seal System is a development of the patented and proven Parflange® process to create a 90° flange on the tube end. A custom-designed bonded elastomeric seal is positioned between the Flange Seal tube line and the mating hose/tube assembly. The seal is designed with rubber tabs on the outside diameter, allowing it to be securely positioned within the tube nut or hose end swivel prior to assembly. When assembled by tightening the nut, the seal is compressed between the two flat surfaces, providing a leak-tight connection.



Flange-Seal fitting system



Dry Technology **connection**



Orbital flanging

Flange Seal features, advantages and benefits

- Eliminates potential leak path and reduces costs
- Reduced assembly costs
- Leak free connection, lower assembly and rework costs
- Assures reliable sealing
- Reduced tube preparation cost
- Flexible, reduced batch sizes, lower stock costs
- Safer process
- Reduced cost and complexity
- Better asset utilisation

For full details see brochure 4353/UK.

O-Lok Plus: Features, advantages and benefits

- **Leak-free** – The O-Lok® Plus fitting system provides a leak-free, 'fit and forget' performance due to the elastomeric sealing design. O-Lok® Plus fittings form part of Tube Fitting Division's 'Dry Technology' family of products.

- **Pressure rating** – With pressure ratings up to 630 bar, the O-Lok® Plus system meets the requirements of today's high pressure hydraulic systems.

- **Heavy duty capability** – In addition to high pressure resistance, O-Lok® Plus fittings have been tested and proven in the heaviest duty applications known against the effects of shock and vibration, and are becoming the 'fitting of choice' in construction equipment.

- **Corrosion resistance** – O-Lok® Plus fittings achieve corrosion resistance, far above industry standards.

- **Flexibility** – O-Lok® Plus is available in steel, stainless steel and brass (on request). By selecting body materials and changing industry standard sized O-rings, the O-Lok® Plus system can adapt to the extremes of temperatures and specified fluid media.

- **Hose or tube connections** – O-Lok® Plus fittings can be used equally well as a tube fitting or a high performance hose adapter.

- **Ease of tube preparation** – The patented Parflange® tube preparation system flanges the tube end to 90 degrees to give a high quality seal face against the fitting O-ring seal.

- **Ease of tube preparation** – the new Flange Seal system allows the elimination of costly brazing for hose – tube and tube – tube connections.

- **Tube materials** – O-Lok® Plus fittings can be used with most tube materials, such as high and low-grade steel or stainless steel, copper and aluminium.

- **Metric or inch tube compatibility** – Just by changing the tube sleeve, either inch or metric O.D. tube can be used. Customer tube specifications can be followed without changing the complete fitting system. O-Lok® Plus is one of the few designs of tube fitting to allow this.

- **Range of standard sizes** – the O-Lok® Plus system is available in sizes to suit from 6 mm/$^1/_4$″ to 50 mm/2″ tubes, or their equivalent hose sizes. No other manufacturer makes this range as standard.

- **Ease of assembly** – Because the system design requires no component deformation or tube forming during the final assembly, the O-Lok® Plus fitting is exceptionally easy to assemble, requiring lower assembly torque than comparable fittings of similar working pressure.

- **Consistancy of assembly** – At final assembly, metallic faces are in direct contact, giving a clear signal to the assembler. After this point, a short sharp pull is all that is needed to complete the joint. This short assembly tightening angle means that fittings are much easier to assemble in areas with poor access or little space.

- **Visible quality check** – Due to the design, quality checking prior to final assembly is simple and therefore reliable.

- **No tube entry** – O-Lok® Plus fittings and the corresponding tube end both have a flat face. This means that tube lines can be more easily installed without 'springing', and during maintenance, it is easier to disassemble hydraulic components without completely stripping the line.

- **Breadth of fitting styles** – O-Lok® Plus is available as standard in over forty basic fitting body styles, making it a flexible system.

- **Worldwide availability** – O-Lok® Plus fittings are available worldwide for the Parker network of sales locations and Certified Distributors, giving back-up wherever it is needed.

- **Standardised** – Parker O-Lok® Plus fittings conform to the relevant international standards (SAE J1453 & ISO8434-3), which means that specification of the fitting system is easy, consistent and low cost compared to writing 'in-house' standards.

Parflange® orbital flaring process and the Flange Seal* system

The Parflange® process
With the Parflange® process, the tube to sleeve attachment is achieved mechanically during an orbital cold forming process with a Parflange® machine. The process progressively flares then flanges the tube. The final dwell action in the cycle ensures that the seal surface produced is smooth and flat, and also eliminates springback effects in the material. This flange provides both the holding power and sealing surface (eliminating the braze joint, and hence, a potential leak path found with brazed sleeve attachment). The only sealing point is between the fitting body and the tube flange face via the high durometer O-ring.

The flanging process is very fast and requires very little cleaning prior to or after flanging. Thus, the process enhances the integrity of the joint and reduces cost.



Parflange 1025

The Parflange® process utilises an orbital cold flow forming process to produce a flat, smooth, rigidly supported 90° sealing surface on the tube end. The process progressively flares then flanges the tube.

*See brochure 4353 for full details.



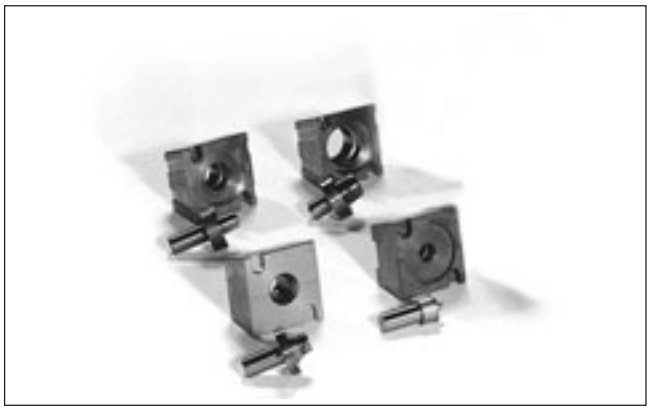
Parflange 1040

The Parflange® process conforms to the requirements for mechanical tube forming shown in the SAE J1453 standard, and has been specified after extensive testing by the majority of the large mobile equipment manufacturers.

Flanging with Parflange® eliminates the need for welding or brazing of the sleeve to the tube end.

Parflange® advantages over brazing or welding

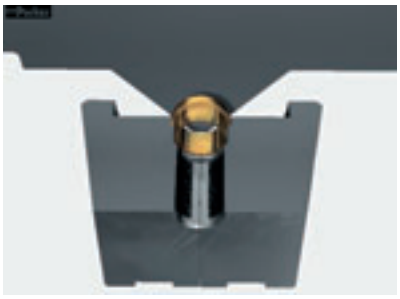
- **Faster** – 9 to 12 times the speed of comparable induction brazing.
- **Simple tube preparation** – The Parflange® process does not require any special pre- or post-flange cleaning of the tube and sleeve.
- **Safety** – Unlike brazing, the Parflange® process does not require any flux, braze alloy, post braze cleaner or rust inhibitor. An environmentally safe lubricant applied to the flanging pin is the only additive associated with the Parflange®.



Parflange tools

- **Environment** – The Parflange® process is environmentally clean and safe. It does not require open flame or any form of heating. Additionally, there is no emission of hazardous fumes, as is typical with welding and brazing.
- **Energy** – The Parflange® process uses only a fraction of the energy needed for welding or brazing.
- **Corrosion resistance** – The Parflange® process accommodates the use of plated or unplated components (i.e. tube and sleeve). Thus, the high costs of electroplating assemblies after fabrication is eliminated by using pre-plated tube.

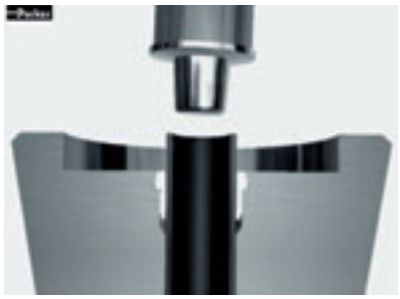
The Parflange® process



For O-Lok®, the sleeve is placed into clamping dies first



Tube is inserted into the tools until it firmly touches the stop at the end



After starting the process, the dies clamp the tube and the flanging pin starts the orbital movement and the forward stroke



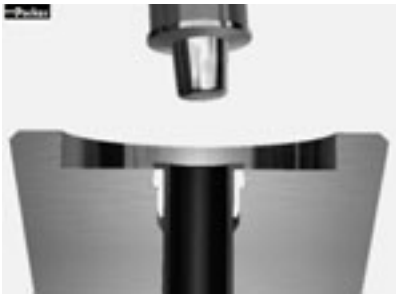
While moving, the front pin expands the tube wall from the inside



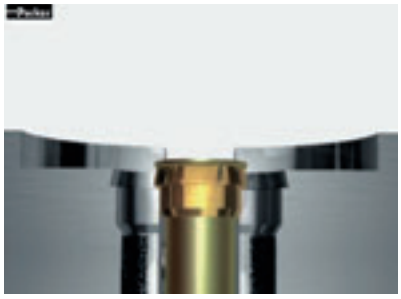
As soon as the flat working surface of the pin contacts the tube end, the flanging process begins



The front surface is continuously rolled and compressed. From the inside, the tube surface is slightly expanded to clamp the sleeve



As soon as the defined flange contour is achieved, the orbital movement stops and the pin withdraws



The tube end is released and can be taken out of the machine



The connection is ready for assembly

- **Excellent surface quality** – The Parflange® process eliminates the potential leak path present at the braze or weld joint.
  The Parflange® process produces a burnished sealing surface, typically much smoother than the 3.1 µm/125 micro-inch Ra surface smoothness requirement of SAE J1453.

Users of Parflange® and Parker's O-Lok® fittings enjoy all the inherent sealing, reliability, time and cost saving benefits, without the many drawbacks which accompany welding or brazing.

Therefore, Parker strongly recommends the Parflange® process for the assembly of Triple-Lok® and O-Lok® connections. Parflange® machines range from desktop 1025 for flexible workshop use to 1040 for economic industrial production.

Features, advantages and benefits of the Parflange® process for Triple-Lok®, O-Lok® and Flange Seal connections

- **Superior sealing performance** – The patented Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.

- **Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.

- **Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustment.

- **Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.

- **Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.

- **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning, post process plating or painting can be saved.

- **Process/Product concept** – Parflange® machines are specially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.

- **Proven technology** – For more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

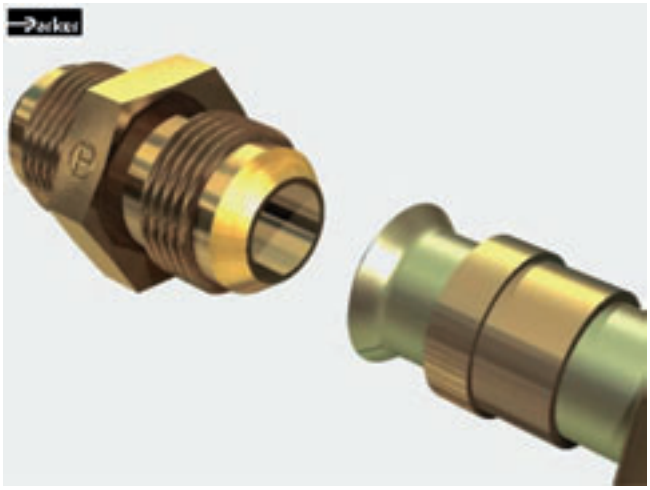
Introduction to Triple-Lok® Plus

The concept of flaring tube to provide a seal and holding power to the connection is very old. It's origin goes back to the early days of the automobile. Different types of flared connections including 45° single and double flares, inverted flare, 30° flare, etc., were developed for coolant, fuel, brake and lube systems of the early automobile.

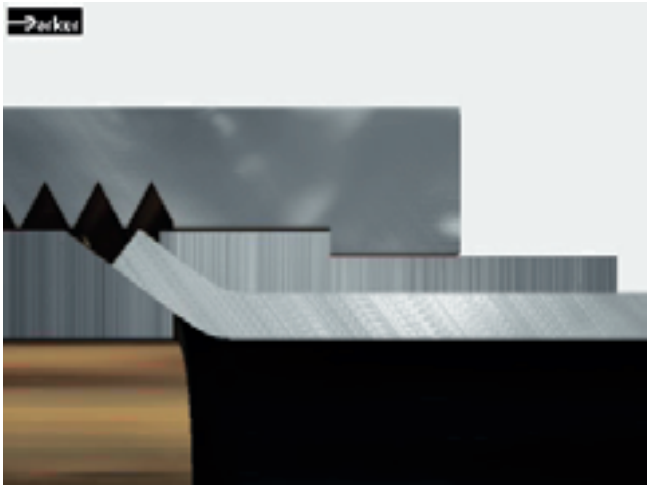
Pioneered by Parker Hannifin, the Triple-Lok® Plus 37° flared fitting evolved as a higher pressure version of the above connections. Its initial use was in the developing hydraulic systems of agriculture and earth moving machinery, automotive transfer lines and other machine tools.

As exports of machinery increased after World War II, the Triple-Lok® Plus fitting gained worldwide use and acceptance. Today it is the most widely used fitting in the world. It enjoys conformance approvals by a range of national and international technical and certifying organisations.

Its appeal is in its simplicity, compact design, ease of assembly, reliability (single sealing point), wide availability and acceptance. It is especially suited for low and medium wall thickness tubing. Triple-Lok® Plus capabilities range from 500 bar for smaller sizes to 140 bar for largest – 2˝ size. Currently it is used in virtually every application that uses fluid power for motion control.



Before tightening the nut



After tightening the nut

Triple-Lok® Plus

Parker have supplied more Triple-Lok® Plus fittings than any other manufacturer over the last seventy years. Parker engineers take a leading position in advising both customers and the international standards committees concerning 37° flare fittings. This experience, combined with optimised manufacturing methods and materials have resulted in steady product performance improvements verified by extensive testing in the laboratory. A combination of simple burst tests (with a 4× design factor), impulse and vibration tests have shown Parker Triple-Lok® Plus fittings can be uprated to higher performance levels in the smaller and in the larger sized parts. Additionally, the corrosion protection level has been improved by 100% due to effective process control.

- **Pressure Plus** – Following fitting sizes nominal pressure increased
  - – 4 from 350 to 500 bar
  - – 5 from 350 to 420 bar
  - – 6 from 350 to 420 bar
  - – 8 from 350 to 420 bar
  - –20 from 210 to 280 bar
  - –24 from 140 to 210 bar
  - –32 from 105 to 140 bar

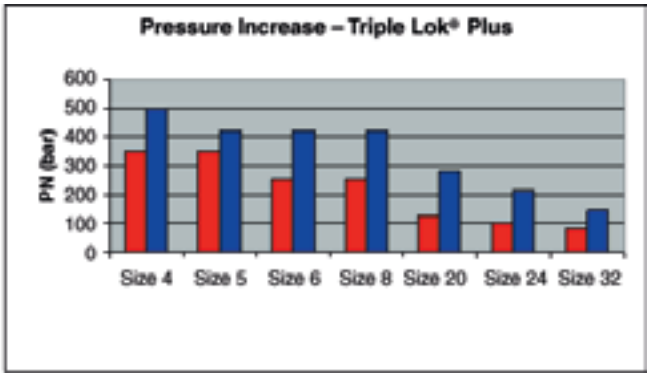




Fig. C1 – Triple-Lok® fitting components (fitting body with O-ring, sleeve and nut) and assembled Triple-Lok® fitting cutaway

- **Plating Plus** – Resistance to white rust corrosion increased and exceeds far above international standards.
- **Cleanliness Plus** – Contamination is the biggest source of early component failure in hydraulic systems. Parker O-Lok® Plus fittings meet all requirements from the factory to the point of use – backed up by individual bagging.
- **Range Plus** – Parker offers the widest range of catalogue standard materials, seal combinations, styles and sizes in the industry. Only Parker has all this.

This all adds up to an unbeatable combination of performance and customer-friendly features.

Applications

Because of it's long history and the heavy influence of American industry worldwide, Triple-Lok® Plus fittings designed to the original American SAE standard are found in almost every branch of hydraulics, from garbage trucks to shipbuilding. They are particularly prevalent in those branches of mobile hydraulics where medium pressure systems are used. The Triple-Lok® Plus fitting system is especially applicable where high volumes of tubes are prepared, and efficient tube flaring equipment can be employed. Still field repairs can be made with hand tools where needed.

Function of Triple-Lok® Plus fittings

The Triple-Lok® Plus fitting design is very simple. It uses an easily produced flare at the tube end to seal and hold fluid under high pressure. The fitting consists of three pieces: the body, sleeve and nut. The tube end is flared to a 37° angle and held between the fitting nose (seat) and the sleeve (support) with the nut as shown in Fig. C1, providing a very effective single seal point between the fitting nose and the tube flare.



The support sleeve serves several important functions:

- It provides a clamping surface against the rear of the tube flare and a bearing shoulder for the nut. This minimises tube twisting during assembly.
- It provides support to the tube flare. The tapered fitting nose tends to wedge open the flare during assembly. The sleeve helps to resist this expansion, allowing the fitting to be tightened adequately.
- It makes the fitting adaptable to both metric and inch O.D. tubing merely by changing the sleeve. This feature has made Triple-Lok® Plus fittings accepted worldwide.

The Triple-Lok® Plus design is also very efficient. It has the smallest seal area of all fitting designs. The seal area is only slightly larger than the fluid flow area. The small seal area results in compactness and low assembly torque compared to the holding power of the joint.

The design was standardised initially as a J.I.C. (Joint Industrial Council) design and was later adopted by the S.A.E. (Society of Automotive Engineers) and I.S.O. (International Standards Organisation) to assure complete dimensional interchangeability between various manufacturers.

Even though many manufacturers conform to the same dimensional standard, there are significant differences in actual performance of the fittings because of a variety of methods of manufacture and quality standards used.

Triple-Lok® Plus fitting components are produced using the best methods of manufacture and state of the art equipment to assure construction integrity, high strength, long service life and high quality.

The Triple-Lok® Plus body – Straight bodies are made from either cold drawn bar stock, or cold-formed construction. All shapes are of one-piece forged construction eliminating potential leak paths of multiple component constructions such as brazed shapes. The Triple-Lok® Plus

steel forged shapes also feature higher hardness for high pressure capability and minimising nose collapse (typical of sizes – 10 and under) during repeated assembly. This compares very favourably to parts of brazed construction, which typically exhibit lower hardness and hence much more nose deformation.

The Triple-Lok® Plus sleeve – Triple-Lok® Plus fitting support sleeves are cold-formed and heat treated for an optimum combination of strength and ductility. Cold forming also eliminates the problems of laps, folds, stringers, etc., associated with sleeves machined from bar stock.

The Triple-Lok® Plus nut – Nuts for all but the three largest sizes (–20, –24 and –32) are cold formed. Cold forming increases material strength and its fatigue properties, imparting high strength and longer service life to the nuts.

Larger nuts which are less severely stressed, are hot forged.

Triple-Lok® Plus fittings sealing function

As seen in Fig. C2, tightening of the nut clamps the tube flare against the body nose, producing a leak tight joint. This clamping onto the 37° cone provides a measure of elasticity to the joint helping it to resist loosening under vibration. The clamping force results in a radial load (F_R) that tends to deform the fitting nose inwards. The resistance of the nose to elastic deformation provides a constant pre-load (similar to a spring washer) keeping it tight.

The clamping force provided by the nut resists the opposing force of the fluid under pressure. The joint remains leak tight as long as the clamping force is higher than the opposing pressure load. Properly assembled Triple-Lok® Plus fittings with appropriate tube will seal consistently under pressure until the tube bursts.

Sealing in Triple-Lok® Plus fittings takes place between two smooth metal surfaces, the fitting nose and inside of the tube flare. Therefore, the sealing surfaces have to be round and smooth, free of any, scratches, dents, spiral tool marks, splits or weld beads, in the seal area.

Seamless or welded and redrawn fully annealed tubing is recommended for Triple-Lok® Plus fittings for ease of flaring and tube bending.

Features, advantages and benefits

- **Pressure** – Triple-Lok® Plus fittings are rated up to 500 bar nominal pressure with 4× design factor. Triple-Lok® Plus can be used in more applications.
- **Corrosion resistance** – Triple-Lok Plus® fittings achieve corrosion resistance far above industry standards.
- **Safety** – The flared tube provides a solid and visible stop for the nut. The tube flare means there is no risk of tear out of the tube, thus giving the Triple-Lok® Plus system a reputation for safety.
- **Single seal point** – Triple-Lok® Plus fittings have only one seal (between the fitting nose and flare I.D.). This makes a highly reliable joint that is easily maintained.
- **Easy to assemble** – Small seal area under pressure makes for high-pressure capability at relatively low torque levels. This allows the use of small wrenches for easy installation and maintenance.
- **Wide temperature and media compatibility** – Metal to metal seal allows a range of uses and many applications.
- **Tube materials** – Triple-Lok® Plus fittings can be used with most tube materials, such as high and low-grade steel or stainless steel, copper and aluminium.
- **No minimum tube wall limitation** – Triple-Lok® Plus fittings are suitable for very thin to medium wall tubing. The optimum wall thickness tubing can be used, reducing overall system cost.
- **Ease of installation and maintenance** – Short tube entry means that installation is simplified and minimum tube prying is necessary when maintenance is required on the system. It is easy and quick.
- **Adaptability to metric & inch tubing** – Triple-Lok® Plus fitting sleeves make the system suitable for inch and metric tubing by merely changing the sleeve.
- **Adaptability to hose assembly** – Triple-Lok® Plus fittings allow for direct connection to 37° flare hose assemblies, the most popular industrial hose connection worldwide.
- **Forged shapes** – Triple-Lok® Plus fittings have no braze joints to leak. Forgings provide higher dependability and longer life compared to multiple component brazed constructions.
- **Hard forgings** – High hardness of Triple-Lok® Plus fittings forged shapes minimises the deformation of the 37° nose during assembly, maintaining full flow area and good reuseability.
- **Cold formed sleeves and nuts** – Sleeves and nuts in popular sizes are cold formed for high strength and toughness through optimum grain flow. This imparts high dependability and long service life.
- **International standard design** – Triple-Lok® Plus fittings offer worldwide availability and interchangeability, they conform to SAE and ISO standards. 37° fittings are the most widely used fitting type in the world.
- **Availability** – Triple-Lok® Plus fittings offer the broadest range of sizes and configurations of any fitting. This provides users with the optimum choice of tube fitting options. Standard materials offered are steel, stainless steel and brass.

Adapters – introduction

In addition to the tube fittings described earlier, there are needs for other adapters to complete hydraulic circuits which perform different functions:

- **Thread size adapters** – to reduce or expand the existing thread
- **Thread conversion adapters** – to change from one port thread to another to allow tube fitting or hose connections
- **Hose end adapters** – hose to port, hose to hose etc.
- Blanking plugs.

The range of Tube Fittings products, when used without the tube nut and ring/sleeve, can also be used as hose adapters to allow the corresponding hose assembly to connect to a port.

Adapters are frequently used in maintenance situations, where equipment is used outside the region in which it was manufactured. For example to convert BSPP threads from a European manufacturer to an American thread alternative – UNF or NPT. Adapters are therefore often the most economical way to solve short-term problems.

There are many types of threads used in the Fluid Power industry throughout the world. This section contains adapters with a wide range of those thread types including: NPT, NPTF, NPSM, BSPT, BSPP, SAE, UN/UNF, and Metric. All threads in this section are made to industry specifications with conformance shown in Table F1.

Thread	Standard
NPT	ANSI B1.21.1, FED-STD-H28/7
NPTF	SAE J476, ANSI B1.20.3, FED-STD-H28/8
NPSM	ANS1 B1.20.1, FED-STD-28/7
BSPT	BS 21, ISO 7/1
BSPP	BS 2779, ISO 228/1
Metric	ISO 261, ANSI B1.13M,FED-STD-H28/21
UN/UNF*	ANSI B1.1, FED-STD-H28/2

Table F1 – Thread conformance standards

Adapters from Parker Hannifin are manufactured from drawn barstock for straight parts, or from forgings in the case of elbows, tees and crosses, to give higher durability and long term performance. Pressure ratings are based on the same requirements used for the tube fittings product ranges. Parts are corrosion protected also to the same high standard found in other Tube Fitting Division products.

Adapters – function

NPT/NPTF adapters

Commonly known as pipe thread adapters in USA, NPT and NPTF (Dryseal) adapters have tapered threads. These threads feature a 60° flank angle and 1°47′ taper, as shown in Fig. F1. Because of the taper, they are commonly used in the USA as adjustable fittings in the elbow and tee forms. It has been found that although NPT/NPTF have a high static pressure capability, they are unreliable in dynamic applications, especially in the larger thread sizes 1″ and above. Parker therefore recommends the use of alternative thread forms and sealing, based on elastomeric seals for new applications and designs.

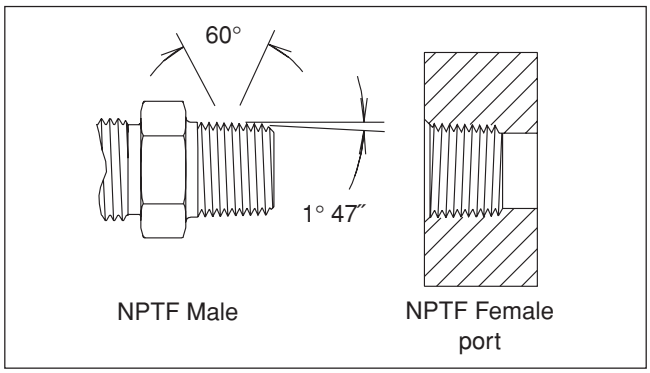


Fig. 1 – NPTF thread

NPT threads when assembled without a sealant, leave a spiral leak path at the crest-root junction as shown in Fig. F2. To seal pressurised fluid, NPT threads need a suitable sealer.

NPTF threads (Dryseal) on the other hand, when assembled, do not leave such spiral leak path. This is because they have controlled truncation at the crest and root, ensuring metal to metal crest-root contact as the male-female thread flanks make contact as seen in Fig. F3. Upon further tightening, the thread crests are flattened out until the flanks also make metal to metal contact as seen in Fig. F4. Theoretically, at least, there is no passage left for the fluid to leak, provided all surfaces are flawless and dimensions exact. In the real world, however, this is not the case and a sealant/lubricant is necessary to achieve a leak free joint even with NPTF threads. Because of the higher surface pressure contact with the NPTF design, Parker manufactures all Stainless steel adapters with the NPT thread form to reduce the possibility of thread galling (Cold welding effects).

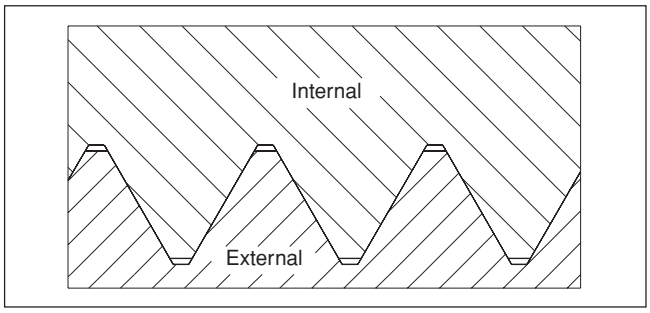


Fig. 2 – NPT – Wrench tight – No Crest-Root contact, Flank contact only.

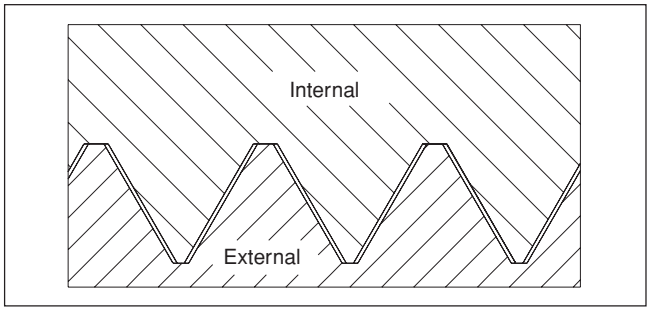


Fig. 3 – NPTF – Hand tight crest-root contact

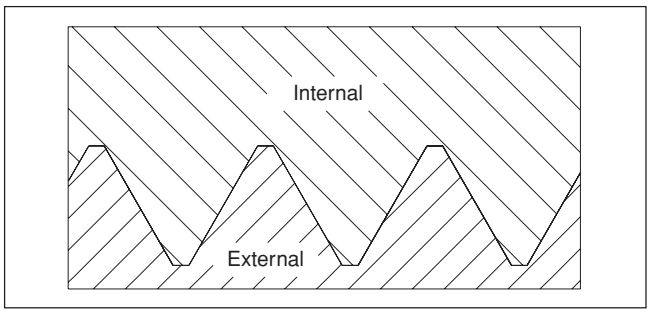


Fig. 4 – NPTF – Wrench tight crest-root and flank contact

Type of sealant/lubricant

Sealant/Lubricant assist in sealing and provide lubrication during assembly, reducing the potential for galling. Pipe thread sealants are available in various forms such as dry pre-applied, tape, paste and anaerobic liquid. PTFE tape, if not applied properly, can contribute to system contamination during assembly and disassembly. Paste sealants can also contribute to system contamination, if not applied properly. They are also messy to work with, and some types require a cure period after component installation, prior to system start up.

BSPT adapters

BSPT threads came from the British gas industry, where the outside diameter of a gas pipe was threaded at the end to allow a connection to be made. The thread form has a 55 degree flank angle, and the thread pitch is different generally to NPT threads. Therefore the two forms are not compatible. Today the BSPT thread is used in the pneumatics industry, but use on the hydraulics side is limited. In most cases, the BSPT male stud is screwed into a BSPP – parallel – port. Thread engagement in this situation is limited, giving lower holding power compared to NPT equivalents.

To seal BSPT threads, a sealant is always needed, since the sealing function is on the threads. BSPT fittings offer a limited adjustability when using elbow or tee types, and it is easy to overtighten and damage the port thread, stud thread or both. Re-useability is also therefore very limited. For all these reasons, BSPT threads should be limited to lower pressure applications with limited dynamic changes in pressure. Parker Hannifin does not use BSPT threads in it's "Dry Technology" programmes for this reason.

UNF thread adapters

Function of UNF adapters

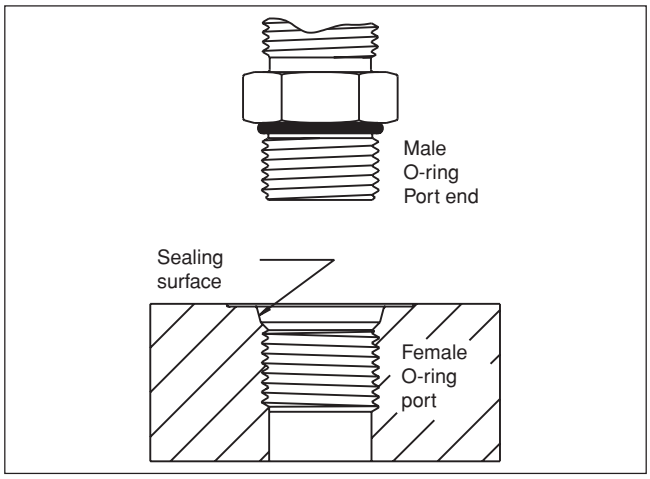


Fig. 5 – UNF port

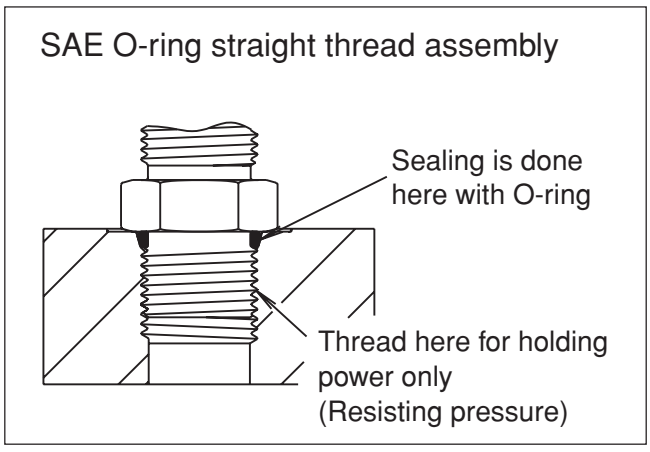


Fig. 6 – UNF port assembly

Parker fittings incorporating UN/UNF thread, O-ring port studs shown in this section are for connection with the UN/UNF thread ports. They are also known as O-Ring Boss (O.R.B.) connections. When properly assembled, they give performance equal to the best leak-free port connection available.

For this style of connection, the sealing and holding functions are separated. The threads have only the holding function. Thread tolerances are wider between the male stud and female port, and so the sensitivity to damage of the threads is much lower than the NPT for example. Sealing is achieved via a high durometer O-ring seal seated in a specially machined chamfer at the top of the port thread. When energised under pressure, the O-ring seals the only leak path. Good inititial compression of the seal, means that the joint is leak tight at low and high pressures.

Features, advantages and benefits

SAE straight thread

- **Elastomeric seal** – SAE straight thread O-ring connections offer a high sealing reliability, especially in dynamic and shock loading applications. The O-ring seal offers a high tolerance to minor surface imperfections and damage.
- **Ease of assembly** – This design is extremely easy to assemble, even for less experienced workers.
- **Infinite positioning of shaped fittings** – Due to the design of shaped fittings, incorporating adjustable SAE straight thread connections, they allow for infinite positioning of the port end. Aligning for tube and hose connections is much easier as compared to tapered threads.
- **Reusability** – Since the sealing and mechanical holding functions are separated, the SAE straight thread male studs can be re-used many times simply by changing the O-ring.

ISO 6149 adapters

The ISO 6149 connection design is similar to the UN/UNF, but with metric threads. The pressure performance of the connections is therefore similar, and also the user-friendly assembly characteristics. This design is recommended by the ISO standards committee for all new applications and designs. The ISO 6149 thread has gained widespread use with OEM's in the agricultural and construction equipment segments. Parker Hannifin offers one of the widest range of tube fittings and adapters to the ISO6149 standard.

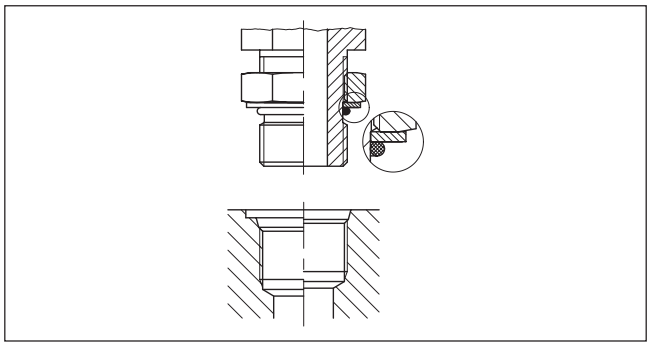


Fig. 7 – Adjustable UNF Port connection

Japanese Industrial Standard (JIS) adapters

JIS adapters are typically used as hose adapters on equipment designed or built in Japan or Korea. Sealing is achieved with a line contact between the surfaces of mating 60 degree cones on the fitting and the hose end. These adapters are made according to the JIS B8363 standard. Although they have the same cone angle and threads as the BSPP 60 degree cone adapters below, they are not interchangeable. (Longer thread lengths on the JIS female swivel fittings lead to threads bottoming out before the seal is made on the corresponding BSPP fitting).

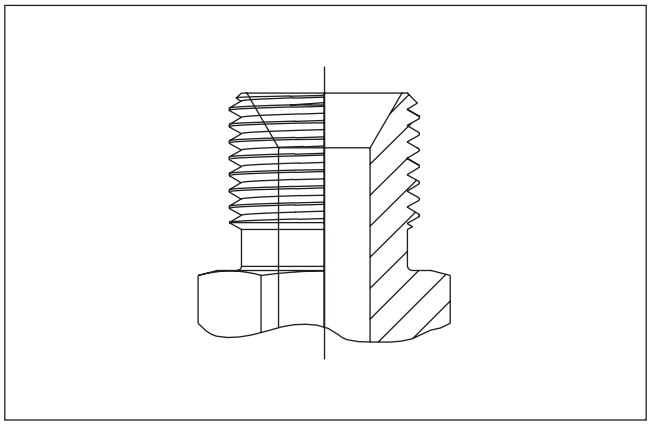


Fig. 8 – JIS adapter

BSPP thread adapters

British Standard Pipe (Parallel) threads are still the most widely type used today in the Fluid Power Industry in Europe. This section is split into two parts, covering the thread adapters and later the BSP hose adapters.

Function of 60 Deg cone

This form of BSPP adapter which has been modified to work as a hose adapter is still popular in the UK, Scandinavia and throughout the rest of Europe. These connections are standardised in BS5200. The bore of the BSPP thread is coned inwards with a 60 degree included angle to

match with a male cone of the same angle on a Swivel Female hose end see figure 9 below. When the nut is tightened, the two cone halves are clamped together to form a metallic seal. This type of connection is flexible in use, since the same thread end could also be used to screw into a BSPP threaded port. In this case a seal would be needed, normally a bonded washer consisting of a metallic outer ring and an elastomeric inner seal part.

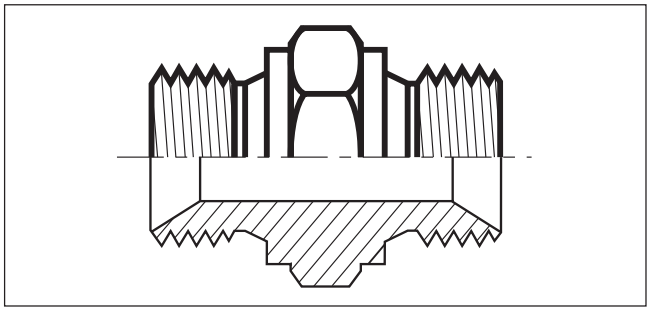


Fig. 9 – BSPP 60° cone adapter

Despite this flexibility, these adapters cannot be used as tube fittings in the same way as Triple-Lok®, O-Lok® or EO fittings, and therefore cannot be classed as a "universal system".

Many manufacturers produce the elbow and tee adapters by brazing together straight parts. This can result in the fitting being effectively annealed during the brazing process, and therefore the material is left in it's softest state. Parker tees and elbows are manufactured from high integrity forgings and offer superior long term performance.

Function of BSPP thread adapters

BSPP thread adapters are designed to work with ports that have been machined with a flat 'spot face' concentrically around the thread. This spot face provides a consistent flat sealing area, whether the port is in a machined valve block, or on the face of a pump housing casting. Originally, the sealing was in the form of a copper (or other ductile metal) washer, but today most adapters use some form of elastomeric seal. The four main types are shown below.

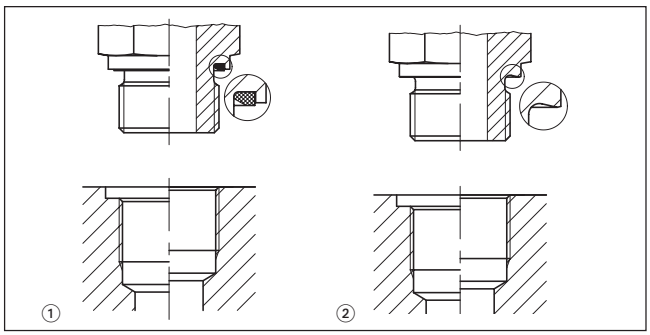


Fig. 10 – ① O-ring with retainer ring; ② Form A

The highest performance is achieved by the ED seal version, followed by the O-ring and retainer ring, bonded washer and lastly the German "Form-B" metallic sealed design. In terms of adjustable fittings, they are only normally available in the O-ring and retainer version. The ED seal design does not lend itself to adjustability.

Metric thread adapters

Metric thread adapters have developed in parallel with the BSPP threaded adapters with a similar design based around the metric thread sizes.

Pipe (NPSM) swivel adapters

Function of NPSM swivels

NPSM swivel adapters are designed for use with male NPT/NPTF hose fittings that have a 30° machined seat. NPSM adapters do not seal on the threads like most NPT thread adapters, they seal on the nose of the NPSM swivel and the seat on the male NPT/NPTF pipe thread. This creates a metal to metal seal as shown in Fig. 11. The most important preparation prior to assembly is to make certain that the mating male NPT/NPTF pipe thread has a 30° seat as shown in Fig. 12.

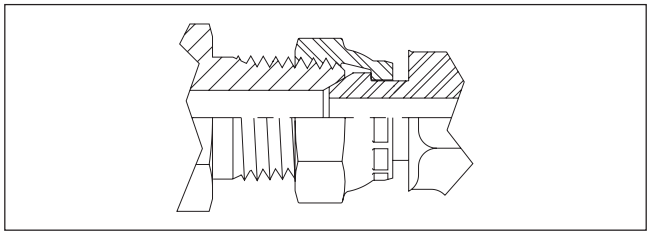


Fig. 11 – Illustration showing how NPSM swivel adapters seal on mating chamfer in male NPT thread

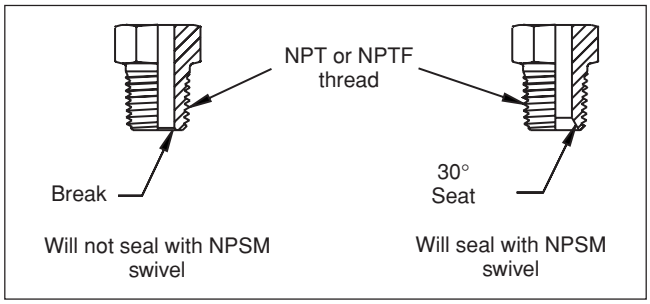


Fig. 12 – Illustration showing the required 30° seat on NPT/NPTF threads for NPSM swivel to seal

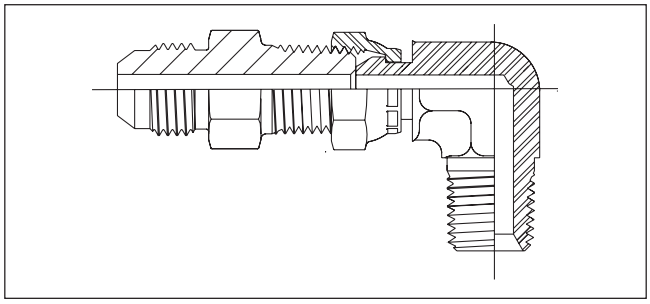
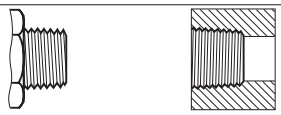
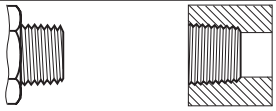
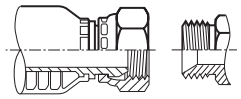
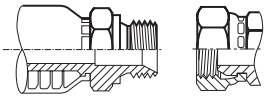
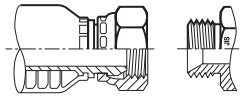
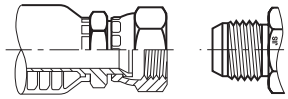
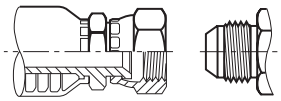
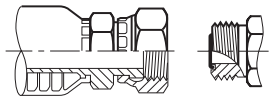
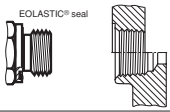
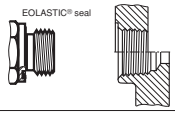
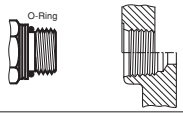
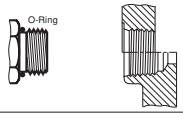
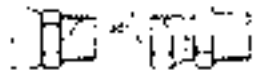


Fig. 13 – Chamfer of NPT/NPTF male thread does not provide appropriate contact for a reliable seal with cone of NPSM swivel

Thread configurations

Taper thread adapters NPTF and		NPTF thread SAE J476-B2
BSPT		BSPT taper thread ISO 7
BSPP 60° cone adapters		BSPP male parallel thread 60° female cone BS5200
		BSPP female parallel thread 60° male cone BS5200
JIS adapters		BSPP male parallel thread JIS B8363 60° female cone
		BSPP female parallel thread JIS B8363 60° male cone
37° Flare (Triple-Lok®) and		SAE 37° Flare UNF thread SAE J514 ISO 8434-2
ORFS (O-Lok®) adapters		ORFS (O-ring Face Seal) UNF thread SAE J1453 ISO 8434-2
Male studs and female port threads		BSPP parallel thread O-ring and retaining ring according to ISO 1179
		BSPP parallel thread with ED seal according to ISO 1179-2
		Metric parallel thread with ED seal according to ISO 9974-2
		Metric straight thread ISO 6149-2+3
		UN/UNF threads SAE J475 thread ISO 11926-2/-3
NPSM female Swivel adapters		Hose adapters National pipe straight thread for mechanical joint 30° cone male / NPTF male thread. SAE J516

Systematic fitting selection

Introduction

Product selection
Ultimate target is to find the “best solution”. This optimum solution provides high system reliability, easy assembly characteristics, low maintenance effort and avoids the use of exotic components.
This “best solution” is not the ultimately achieveable technology, but an adequate solution which fulfils the requirements of the individual application with minimum system cost.
The “best solution” looks different depending on the specific criteria of the given application.

Dry Technology
Modern TFDE fittings are designed for high reliability, easy assembly and lowest toal cost performance.

These products are marked *Dry Technology* and indicated grey in selection charts.

Parker recommends to select only *Dry Technology* products for all new designs.

Design criteria for fitting selection

Step 1
First clarify all design criteria for the given application or project.

Step 2
Then determine the “best solution” product. Use selection charts on following pages.



Application
- Hydraulic
- Pneumatic
- central lubrication
- process industry
- severeness



Pressure
- System pressure
- Pressure peaks



Temperature
- Medium
- Environment
- Operation/standstill



Medium
- hydraulic oil type
- Compressed air
- Water/seawater
- other fluids

Best solution

- **zero leakage**
- **high reliability**
- **easy assembly**
- **low total cost**
- **standard products**

Dry Technology



Assembly
- Mass production
- On-site installation
- Industrial assembly
- Field repair



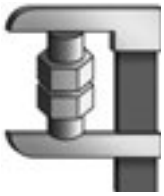
Flow rate
- Volume flow
- medium viscosity
- System dynamics
- Tube selection



Specifications
- International standards
- End user specification
- approvals
- availability



Environment
- weather
- humidity
- Stationary/mobile



Space
- Space limitations
- Tube bending capabilities

B

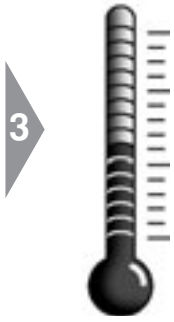
Material selection: Fitting material



Environment
- **select fitting material with suitable corrosion resistance**



Medium
- **select compatible fitting material**



Temperature
- **check suitability**

Tube Material: **Fitting material:**	**Steel, zinc-plated** **Steel, zinc-plated**	**Stainless steel** **Stainless steel**	**Copper** **Brass**	**Stainless steel** **Steel**	**Plastic** **Steel, Stainless steel, Brass**
Performance characteristics:					
Pressure capability	Excellent	Excellent	Good	Excellent	Low
External temperature capability	Very good	Excellent	Very good	Very good	Depending on tube and material
Corrosion resistance	Good	Excellent	Very good	Good	Good
Internal media compatibility	Good	Excellent	Very good	Good	Good
Current use	Standard material combination for general use in hydraulic systems	Standard material combination for use with aggressive media or application in corrosive environments	Low to medium pressure applications in corrosive environment Use with compressed air (condensed water) or slightly corrosive media (water)	Special material combination for middly corrosive environments	Special material combination for low pressure applications
Typical applications:	Machine tools, Mobile construction equipment	Shipbuilding, Offshore exploration, Process engineering, Paper machines costal installations	Central lubrication systems, Pneumatics, cooling water tubes	Some airbrake systems in railway industry wet machining area on machine tools	Pneumatic systems on machine tools central lubrication and airbrakes in truck industry

Only Technology

Material selection: Sealing material

1



Medium
- **select compatible fitting material**

2



Temperature
- **check suitability**

3

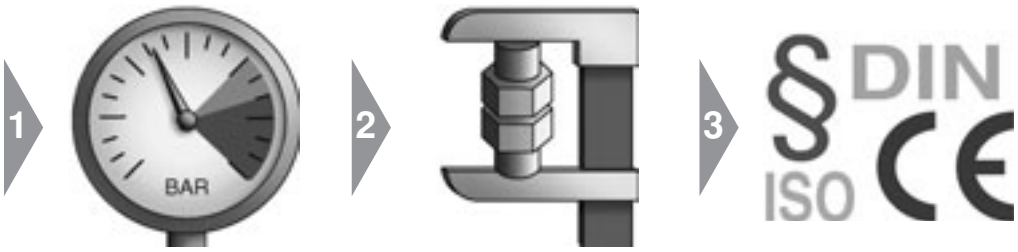


Assembly
- **Prefer elastomer sealing for easy assembly and economic service**

Sealing technology	metal-to-metal	nitrile rubber (NBR)-Elastomer	Fluorcarbon (FKM)-Elastomer
Performance characteristics:			
High pressure capability	Good	Excellent	Excellent
Low temperature capability	Excellent	Very good	Good
High temperature capability	Excellent	Good	Very Good
Media compability	Excellent	Good	Very Good
Long term reliability	Good	Excellent	Excellent
Assembly characteristics:			
Ease of initial assembly	Good	Excellent	Excellent
Repeated assembly	Good	Excellent	Excellent
Replacement of seal	Not possible	Easy	Easy
Current use	Suitable for aggressive media respectively for very low or very high temperatures	General use in – hydraulic – pneumatic – lubrication – airbrake systems	Hydraulic and pneumatic systems with high operating temperature process engineering: some aggressive media
Typical applications	Process engineering Agricultural Equipment	Machine tools Hydraulic presses Mobile construction equipment	Steelmill equipment Casting machines

my Technology

LL/L/S Series selection for EO fittings



Pressure
- **select series with adequate pressure performance**

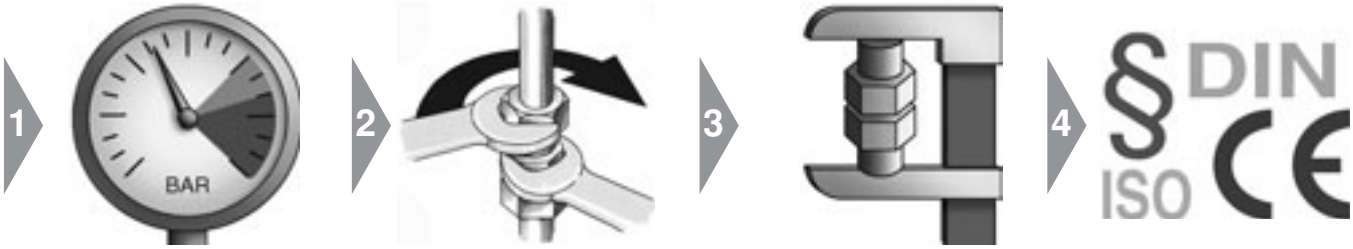
Space
- **select series according to available space**

Specification
- **prefer L or S series for best availability**

			
Series	**LL**	**L**	**S**
Example of order code	G06ZLLCF	G06ZLCF	G06ZSCF
Design	very Light	Light	Heavy
Performance PN Suitability for heavy duty applications	 100 bar Good	 160–500 bar Good	 315–800 bar Excellent
Tube dimension	4, 6, 8, 10, 12 mm	6, 8, 10, 12, 15, 18, 22, 28, 35, 42 mm	6, 8, 10, 12, 14, 16, 20, 25, 30, 38 mm
Assembly Tightening effort Space requirement	 Very low Very low	 Normal Low	 High High
Current use	Very light design for space-limited assemblies in low to medium pressure applications	medium to high pressure fitting for general use in hydraulic and pneumatic systems	Rigid design for use in heavy-duty applications
Typical applications	Central lubrication Airbrake systems fuel lines oil/gas stoves micro hydraulics	machine tools agricultural vehicles	hydraulic presses plastic injection molding steel mills shipbuilding Mobile construction equipment

Parker Hydraulics

Tube end selection

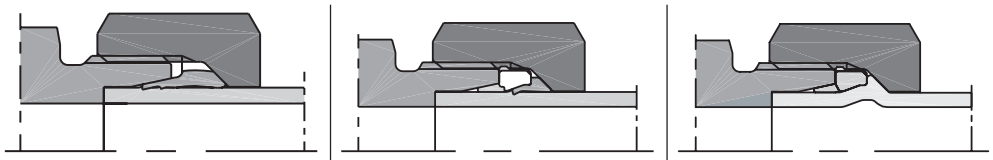


Pressure
- **select connection type with adequate pressure performance**
- **prefer elastomeric seal for most reliable sealing performance**

Assembly
- **select product with adequate assembly process**

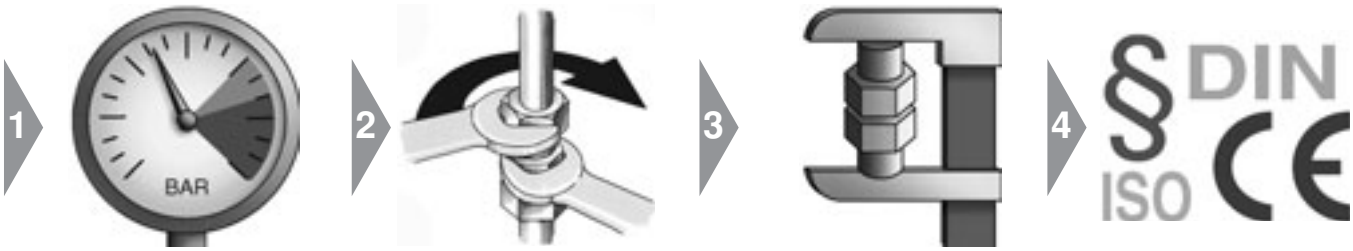
Space
- **select most suitable product**

Specification
- **fitting type according to project specification**



Type	**EO PSR/DPR** Metal seal bite type	**EO-2** Soft seal bite type	**EO2-FORM** Tube forming
Sealing method	Metal seal	Elastomeric seal	Elastomeric seal
International Standard	ISO 8434-1	ISO 8434-1	ISO 8434-1/4
National Standards	DIN 2353 DIN 3861	DIN 2353 DIN 3861	DIN 2353
Tube compatibility	Metal and plastic tube (steel, stainless steel, copper, aluminium, polyamide …)		Steel, stainless steel, copper alloy
Available sizes (Tube O.D.)	4 LL–12LL 6L–42L 6S–38S	4LL–6LL 6L–42L 6S–38S	Tube O.D. 6 to 42 mm 6L–42L 6S–38S
Performance seal reliability	Very good	Excellent	Excellent
Assembly Tube preparation Installation Field repair	 Excellent Good Very good	 Excellent Very good Excellent	 Good Excellent Use EO2
Space requirements	Excellent	Excellent	Good
Current use	Most popular fitting for metric tube		Heavy duty alternative to EO/EO2 and EO wld nipple
	Traditional bite type fitting new designs	Global popularity for all	
Typical applications	General use in hydraulic, pneumatic, lubrication and coupling systems		General use in high pressure applications
	Agricultural equipment Process engineering	Hydraulic presses Injection Molding Mobile equipment Heavy machinery Ship building	Hydraulic presses Injection Molding Mobile equipment Heavy machinery Ship building

Tube end selection

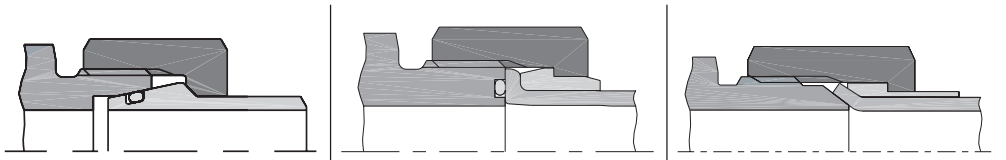


Pressure
- **select connection type with adequate pressure performance**
- **prefer elastomeric seal for most reliable sealing performance**

Assembly
- **select product with adequate assembly process**

Space
- **select most suitable product**

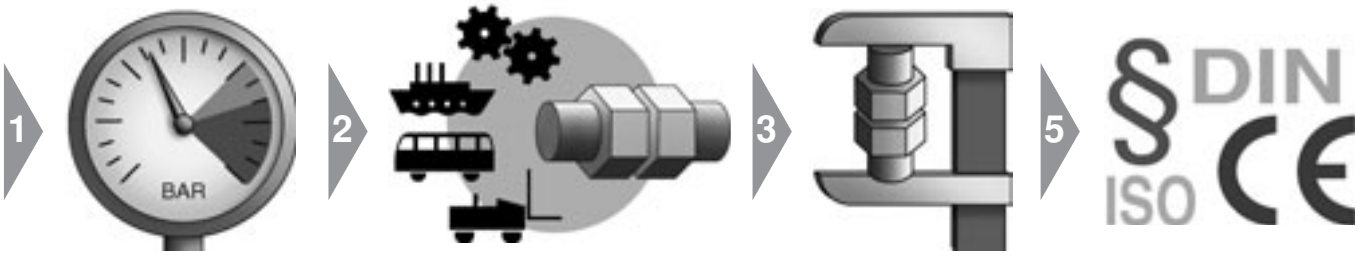
Specification
- **fitting type according to project specification**



Type	**EO SKA** Weld nipple	**O-Lok®** O-Ring Face Seal (ORFS)	**Triple-Lok®** 37° Flare
Sealing method	Elastomeric seal	Elastomeric seal	Metal seal
International Standard	ISO 8434-4	ISO 8434-3	ISO 8434-2
National Standards	DIN 2353 DIN 3865	SAE J1453/J516	SAE J514 / J516
Tube compatibility	Weldable steel and stainless steel	Metal tube (steel, stainless steel, copper, aluminium)	
Available sizes (Tube O.D.)	6L-42L 6S-38S	Tube O.D. 6 to 50 mm Tube O.D. 1/4″ to 2″	Tube O.D. 6 to 42 mm Tube O.D. 1/8″ to 2″
Performance seal reliability	Excellent	Excellent	Very good
Assembly Tube preparation Installation Field repair	 Difficult Excellent Difficult	 Good Excellent Use braze adapter	 Good Excellent Hand flaring
Space requirements	Very good	Good	Very good
Current use	Limited use in Northern Europe and Asia	Heavy duty *Dry Technology* alternative to Triple-Lok®	
		Most popular fitting for inch tube (metric tube on request)	
		USA, Europe, gaining acceptance in Asia.	Worldwide
Typical applications	Limeted use for special applications	General use in high pressure-hydraulic	General use in hydraulic, pneumatic, lubrication and coupling systems
	Heavy machinery Ship building power plants	Mobile equipment Injection Molding Hydraulic presses Heavy machinery Ship building	Agricultural equipment* Process engineering

Dry Technology

Flange type selection

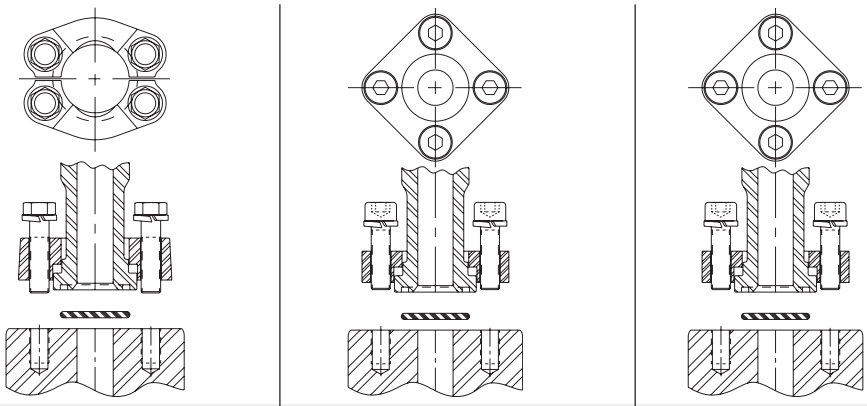


Pressure
- **select flange type connection with adequate pressure performance**

Application
- **select suitable flange type for specific application**

Space
- **select flange type according to available space**

Specification
- **select flange type according to project specification**



Flange type	**Four screw split flange**	**Four screw one piece square flange**	**Cetop flange**
Sealing method	Elastomeric seal	Elastomeric seal	Elastomeric seal
International standard	ISO 6162-1/-2	ISO 6164 (1994)	
National standard	SAE J518		Cetop
Tube compatibility	Combines weld and thread connections	Weld connection	Weld connection
Available sizes (Tube O.D.)	1/2″ up to 5″	3/8″ up to 4″	3/8″ up to 4″
Performance seal reliability	Excellent	Excellent	Excellent
Assembly Tube preparation Installation Field repair	 Good Excellent Good	 Difficult Excellent Difficult	 Difficult Excellent Difficult
Space requirements	Low	Low	Low
Used screws	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9) UNC screws according to ASA B 18.3	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9)	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9)
Current use	Widely used throughout the world	Mainly used in Germany	Mainly used in Europe
Typical applications	Agriculture Hydraulic Offshore Ship building Cranes	Agriculture Hydraulic Offshore Ship building Cranes	Agriculture Hydraulic Offshore Ship building Cranes

Port/Stud selection

1

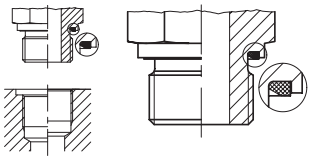


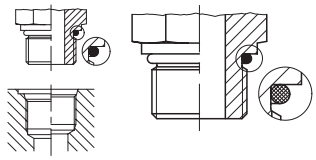
Pressure
- **select connection with adequate pressure performance**

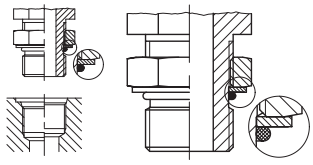
2



Temperature
- **Use elastomeric seal when suitable**







Port end selection:	**Male stud with EOLASTIC-seal**	**Male stud with O-Ring seal**	**Male stud adjustable with O-Ring seal**
Port description metric	**Male stud with EOLASTIC-sealing**	**Male stud with O-ring sealing**	**Male stud adjustable with O-ring sealing**
Thread	Metric	Metric	Metric
Example of order code EO =	GE12ZLMEDCF	GEO12ZLMCF	VEE12ZSMORCF
Example of order code Triple-Lok® =	8M16F82EDMXS	8M16F87OMXS;	8M18V87OMXS
Example of order code O-Lok® =	8M16F82EDMLOS	8M16F87OMLOS	8M18V87OMLOS
Thread standard (Example)	M 16 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 16 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 18 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7
Male stud standard	DIN 3852 T11, type E ISO 9974-2	ISO 6149-2/3 DIN 3852 T3, type F	ISO 6149-2/3
Port tapping standard	DIN 3852 T1, type X, Y ISO 9974-1	ISO 6149-1 DIN 3852 T3, type W	DIN 3852 T3, Form W ISO 6149-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	 Very high Excellent No	 Very high Excellent No	 High Very good No
Current use	Solid, soft sealing male studs. Known worldwide. Well suitable for using with gas and high pressure hydraulics.	New safe sealing system for all areas of application, especially suitable for high pressure hydraulics. Standard sealing for the future. Identifying marking for metric version is a groove at the collar.	New safe adjustable sealing system for all areas of application, especially suitable for high pressure hydraulics. Standard sealing for the future.
	Well suitable for soften for counter material (e.g. housing of Al-alloy).		
Port description inch	**Male stud with EOLASTIC-sealing**	**Male stud with O-ring sealing**	**Male stud adjustable with O-ring sealing**
Thread	BSP	UN/UNF threads	UN/UNF threads
Example of order code EO =	GE12ZLR1/4EDCF	GE12ZL3/4UNFCF	VEE12ZL3/4UNFCF
Example of order code Triple-Lok® =	8-4F42EDMXS	8F5OXS	8V5OMXS
Example of order code O-Lok® =	8-4F42EDMLOS	8F5OMLOS	8V5OMLOS
Thread standard (Example)	G1/4A DIN/ISO 228-T1 BS 2779 GB: 1/4 BSPP Japan: 1/4 PF	3/4-16 UNF ISO 725/ANSI B1.1-1974	3/4-16 UNF ISO 725/ANSI B1.1-1974
Male stud standard	DIN 3852 T11, type E ISO 1179-2	ISO 11926-2/3	ISO 11926-2/3
Port tapping standard	DIN 3852 T2 ,type X, Y ISO 1179-1	ISO 11926-1	ISO 11926-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	 Very high Excellent No	 Very high Excellent No	 High Very good No
Current use	Solid, soft sealing male studs. Known worldwide. Well suitable for soften counter material (e.g. housing of Al-alloy). Well suitable for using with gas and high pressure hydraulics.	Predecessor of metric sealing system. Often used in USA. Well suitable for soften counter material (e.g. housing of Al-alloy). Well suitable for using with gas.	Predecessor of metric adjustable sealingsystem. Often used in USA. Well suitable for soften counter material (e.g. housing of Al-alloy).

Port/Stud selection

3



Assembly

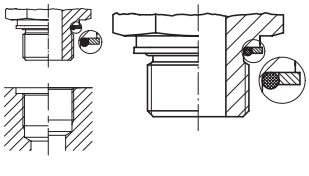
- prefer O-Ring/ ED-seal for easy assembly and economic service
- avoid tapered threads

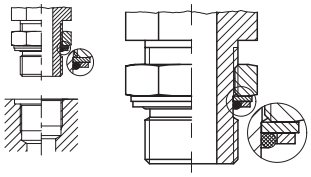
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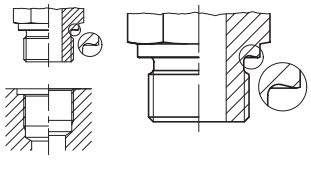


Application

- select standard connection for specific application







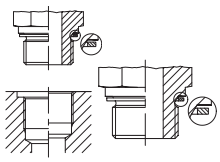
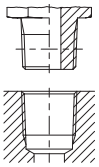
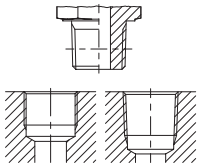
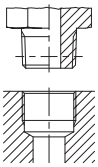
Port end selection:	Male stud O-ring retainer ring	Male stud adjustable with O-ring seal and Backup washer	Male stud with sealing by cutting face
Port description metric	**Male stud adjustable with O-ring sealing**	**Male stud adjustable with O-ring sealing**	**Male stud with sealing by cutting face**
Thread	Metric	Metric	Metric
Example of order code EO =	—	VEE12ZSMCF	GE12LMCF
Example of order code Triple-Lok® =	8M16F8OMXS	8M18V8OMXS	—
Example of order code O-Lok® =	—	8M18V8OMLOS	—
Thread standard (Example)	M 18 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 18 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 16 × 1.5 ISO 261; ISO 724; DIN 13-T5-T7
Male stud standard	—	—	DIN 3852 T3, type B ISO 9974-3
Port tapping standard	DIN 3852 T1, type X, Y ISO 9974-1	DIN 3852 T1, type X, Y ISO 9974-1	DIN 3852 T1, type X, Y ISO 9974-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	 Medium Good No	 Medium to high Good No	 High Medium to good No
Current use		New adjustable sealing system for all areas of application.	Suitable for aggressive media respectively for very low or high temperatures, where elastic sealing cannot be used.
	Used in Europe and Asia-Pacific areas.		
	Well suitable for soften counter material/e. g. housing of Al-alloy.		
Port description inch	**Male stud adjustable with O-ring sealing**	**Male stud adjustable with O-ring sealing and Backup washer**	**Male stud with sealing by cutting face**
Thread	BSP	BSP	BSP
Example of order code EO =	—	VEE12ZLRCF	GE12LR1/4CF
Example of order code Triple-Lok® =	8-F40MXS	8V40MXS	—
Example of order code O-Lok® =	—	8V4OMLOS	—
Thread standard (Example)	G3/8A DIN/ISO 228-T1	G3/8A DIN/ISO 228-T1	G1/4A DIN/ISO 228-T1, BS 2779
Further standards	GB: 1/4 BSPP, Japan 1/4 PF	GB: 1/4BSPP, Japan: 1/4PF	GB: 1/4BSPP, Japan: 1/4PF
Male stud standard	ISO 1179-3	ISO 1179-3	DIN 3852 T2, type B, ISO 1179-4
Port tapping standard	ISO 1179-1; DIN 3852 T2, type X, Y	ISO 1179-1; DIN 3852 T2, type X, Y	DIN 3852 T2, type X, Y, ISO 1179-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	 High Very good No	 Medium to high Good No	 High Medium to good No
Current use	Used in Europe and Asia-pacific areas.	Solid, soft sealing male studs. Known worldwide.	Suitable for aggressive media respectively for very low or high temperatures, where elastic sealing cannot be used.
	Well suitable for soften counter material (e.g. housing of Al-alloy).		

Port/Stud selection

5 § DIN ISO CE

Specification

- **select connection type according to project specification**
- **prefer international standards**
- **select ISO 6149 for new designs**

Port end selection:	**Male stud with sealing by metal sealing ring**	**Male stud with sealing by taper thread**	**Male stud with sealing by taper thread**	**Male stud with sealing by taper thread**
Port description metric	**Male stud with sealing by metal sealing ring**	**Male stud with sealing by taper thread**	**—**	**Male stud with sealing by taper thread**
Thread	Metric	NPT	—	Metric
Example of order code EO =	GE12LMACF	GE12L1/2NPTCF	—	GE08LLMCF
Example of order code Triple-Lok® =	—	8-8FMTXSS	—	—
Example of order code O-Lok® =	—	8-8FLOSS	—	—
Thread standard (Example)	M 16 × 1,5; ISO 261; ISO 724; DIN 13-T5-T7	1/2-14NPT ANSI B1.20.1-1983	—	M 10×1 keg DIN 158
Male stud standard	DIN 3852 T1, type A DIN 7603 (Sealing washer)	ANSI B1.20.1-1983	—	DIN 3852 T1, type C
Port tapping standard	DIN 3852 T1, type X, Y ISO 9974-1	ANSI B1.20.1-1983	—	DIN 3859 T1, type Z (parallel)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Low Medium No	Very high Medium Yes	—	Low Medium Yes
Current use	Partly used for pneumatics and gas applications.	Mainly used in North America. Some used in rest of the world. Male studs and port tapping are tapered. Sealing only achieved with fluid or plastic sealing material.	—	Only for low requirements due to parallel port. Leakfree performance is only achieved with fluid or plastic thread sealing material. Mainly used in Germany.
Port description inch	**Male stud with sealing by metal sealing ring**	**Male stud with sealing by taper thread**	**Male stud with sealing by taper thread**	**Male stud with sealing by taper thread**
Thread	BSPP	NPTF	BSPT	Shorter BSPT
Example of order code EO =	GE12LR1/4ACF	—	GE12LR1/2KLCF**)	GE12LR1/4KEGCF
Example of order code Triple-Lok® =	—	12FMTXS	8-8F3MXS	—
Example of order code O-Lok® =	—	12FLOS	—	—
Thread standard (Example)	G1/4A DIN/ISO 228-T1 BS 2779	3/4-14NPTF ANSI B1.20.3-1983	R1/2 ISO 7; DIN 2999-1 BS 21	R1/4 (short) DIN 3858
Further standards	GB: 1/4BSPP, Japan: 1/4PF		GB: 1/4 BSPT; Japen: 1/4 PT	—
Male stud standard	DIN 3852 T2, type A DIN 7603 (Sealing washer)	SAEJ 476a	ISO 7; DIN 2999-1	DIN 3852 T2, type C
Port tapping standard	DIN 3852 T2, type X, Y ISO 1179-1	SAEJ 476a ANSI B1.20.3	ISO 7/1-Rp/Rc; DIN 2999-Rc BS 21-Rp/Rc; Japan PT-Port	DIN 3852 T2, type Z (parallel)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Low Medium No	Very high Medium Recommended	Medium Medium Yes	Low Medium Yes
Current use	More and more unimportant. Partly used for pneumatics.	Mainly used in North America. Male studs and port tapping are tapered. The same as NPT except that closer tolerances are held to assure metal to metal contact (dryseal thread).	Mainly used in GB and Asia-Pacific areas. Male studs are tapered. Ports are mainly tapered, but can be parallel also. Leakfree performance is only achieved with fluid or plastic thread sealing material. ****)Male stud end not included in the catalogue!**	Only for low requirements due to parallel port. Leakfree performance is only achieved with fluid or plastic thread sealing material. Mainly used in Germany. **Not to be used for BSPT ports and PT ports (Japanese Standard) due to poor thread engagement!**

Orientable Fitting Selection

1



Pressure

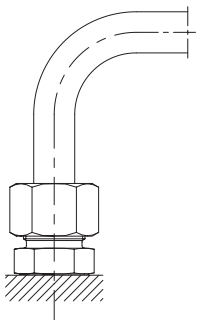
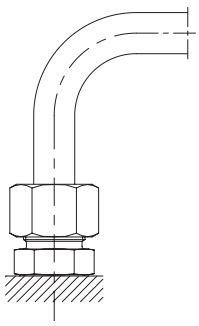
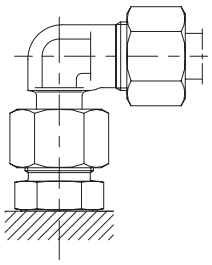
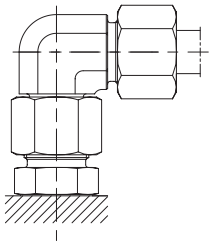
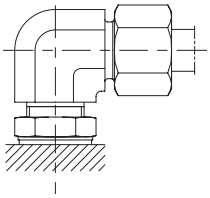
- **pre-select orientable fitting with sufficient pressure performance**
- **prefer elastomeric seal for most reliable sealing performance**

2



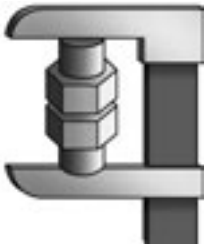
Flow Rate

- **select optimum solution for best flow rate and available space**

Type	90° tube bend and male stud		Swivel Elbow		Adjustable Elbow
					
EO:	GE12LMA3C	GE12ZLMEDCF	EVW	EW	WEE
Triple-Lok®:	FMTX, F3MX	F82EDMX	—	F82EDMX+C6MX	C8OMX
O-Lok®:	—	F82EDMLO	—	F82EDMLO+C6MLO	C8OMLO
Design	DPR/PSR Triple-Lok® Metal sealed port	EO-2 O-Lok® Elastomeric sealed port	Adjustable elbow with pre-ssembled EO-DPR/PSR	Adjustable elbow with swivel nut connection	Adjustable Elbow with adjustable male stud
Sealing method	Metal	Elastomeric	Metal	Elastomeric	Elastomeric
Performance pressure Seal reliability Flow characteristics Compactness	 Good Good Excellent Bulky	 Excellent Excellent Excellent Bulky	 Good Good Very good Good	 Excellent Excellent Very good Good	 Very good Good Very good Very good
Assembly/Installation Field repair	Very good Good	Excellent Excellent	Good Good	Excellent Excellent	Very good Difficult
Available sizes	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR Triple-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in
Available threads	Metric ISO 9974-3 BSPP ISO 1179-4 DIN 3852 Form B NPT/NPFT	Metric ISO 6149 Metric ISO 9974-2 BSPP ISO 1179-2 UN/UNF	Metric ISO 9974-3 BSPP ISO 1179-4 DIN 3852 Form B NPT/NPFT	Metric ISO 6149 Metric ISO 9974-2 BSPP UN/UNF	Metric ISO ISO 6149 Metric ISO 9974-2 BSPP ISO 1179-2 UN/UNF
Current use	preferred use is not critical when space		not for new design	general use	general use
Typical Applications	Agricultural Equipment process engineering	All hydraulic + pneumatic systems	Agricultural Equipment process engineering	All hydraulic + pneumatic systems	All hydraulic + pneumatic systems

Orientable Fitting Selection

3



Space

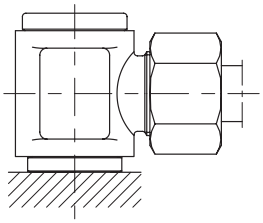
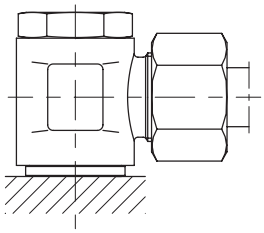
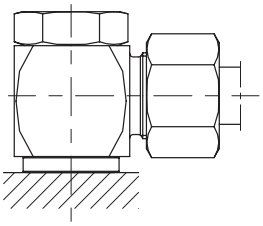
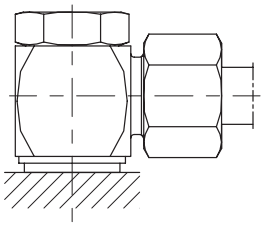
- **select optimum solution for available space and best flow**

4



Assembly

- **check, if assembly process is suitable**

Type	Banjo		High pressure banjo	
				
EO:	DSVW	SWVE	WH DKA	WH KDS
Triple-Lok®:	—	—	—	—
O-Lok®:	—	—	—	—
Design	Fitting body with hollow bolt and cap	Fitting body with hollow bolt	Fitting body with hollow bolt	Fitting body with hollow bolt
Sealing method	Metal	Metal	Metal	Elastomeric
Performance pressure Seal reliability FLow characteristics Compactness	 Low pressure Good Good Excellent	 Good Good Good Excellent	 Very good Good Good Excellent	 Very good Excellent Good Excellent
Assembly/Installation Field repair	Good Good	Very good Good	Very good Good	Excellent Excellent
Available sizes	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR/EO-2
Available threads	— Metric DIN 3852 BSPP —	— Metric BSPP —	— Metric BSPP —	— Metric BSPP —
Current use	Low pressure systems only, not for new designs	Low pressure systems only	Best solution for limited application space	
Typical Applications	Airbrake systems Return lines	Low to medium pressure systems	Space critical applications such as: forklift trucks Mobile hydraulics	

Standardisation

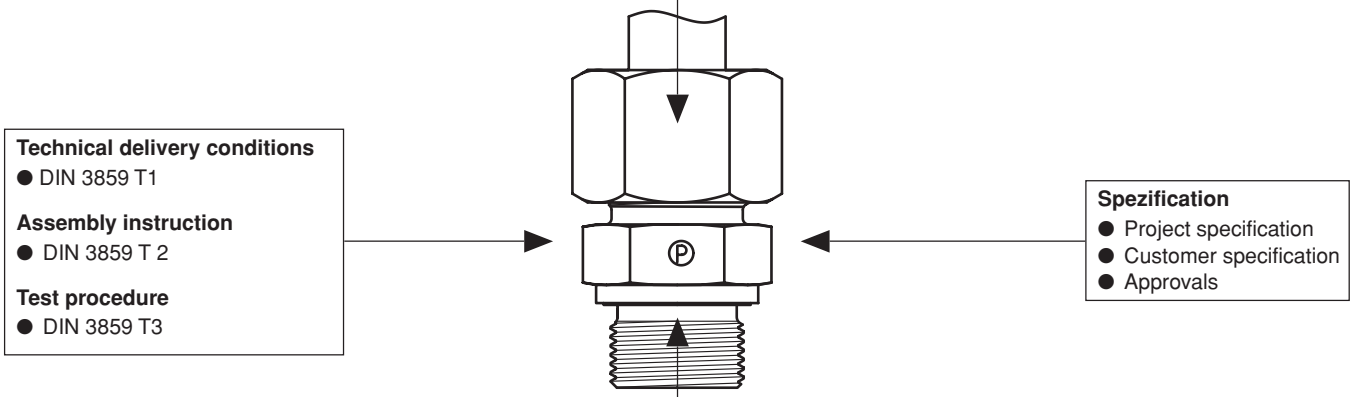
5

§ DIN ISO CE

Specification

- **select fittings according to international standardisation**
- **check specification of end-customer/end user**
- **consider project-specific guidelines**
- **avoid non-standard items**

ISO-fitting standards				National standards	
EO 24° fittings DIN EN ISO 8434-1/-4 (former: DIN 2353)	**Triple-Lok®** ISO 8434-2 ● 37° flared fittings	**O-Lok®** ISO 8434-3 ● O-ring face seal fittings	**K4 Adapter** ISO 8434-6 ● BSPP 60° cone adapter	**P4 Adapter** JIS B 8363 JIS BSPP 60° cone dapter	**NPSM-Adapter** SAE J 516 NPTF 30° cone



Stud ends Metric thread
- DIN ISO 6149
- DIN EN ISO 9974
- DIN 3852 T11
- DIN 3852 T1

Stud ends BSPP thread
- ISO 1179
- DIN 3852 T11
- DIN 3852 T2

Stud ends UN/UNF thread
- ISO 11926

Stud ends NPT thread NPTF thread
- SAE J476

Stud ends BSPT thread
- ISO 7

Approvals

Parker tube fittings are recognized by various acceptance organizations, among which are:

Germanischer Lloyd (GL)
Lloyds Register of Shipping (LR)
Det Norske Veritas (DNV)
American Bureau of Shipping (ABS)
Russian Maritime Register of Shipping (RMS)
China Classification Society (CCS)
Deutscher Verein des Gas- und Wasserfaches (DVGW)

For other applications, Parker tube fittings also approved by diverse national authorities.

Numerous original equipment manufacturers and end-users of various industries have approved Parker tube fittings.

Attention:

Type Approvals usually are limited to certain products, applications, working conditions, validity time or other restrictions. We gladly inform you on your individual application and send out the required documentation.

B

Tube Specifications

Tubes with metric outside diameters

Tube material Steel	Specification	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®	Note
St 37.4 (=St 35.4, 1.0255)	DIN 2391/ DIN 1630	Seamless cold drawn	NBK, DIN 2391-2	DIN 2391-1-C	phosphated, oiled or A3C (zinc plated and yellow chromated)	X	X	X	X	1)
E 235 (= 1.0308)	EN 10305-4		+N (= normal annealed)	EN 10305-4		X	X	X	X	
R37	ISO 3304		NBK (= normal annealed)	ISO 3304		X	X	X	X	2)
St 52.4 (= 1.0580)	DIN 2391		Code NBK, DIN 2391-2	DIN 2391-1		X	X	X	X	1)
E355 (= 1.0580)	EN 10305-4		+N (= normal annealed)	EN 10305-4		X	X	X	X	
R50	ISO 3304		NBK (= normal annealed)	ISO 3304		X	X	X	X	1)

Tube material Stainless steel	Specification	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®	Note
1.4571 (= TP 316 Ti)	DIN 2391	Seamless cold drawn	fully annealed, DIN 17458 "m"	DIN 2391-1	plain	X	X	X	(X)	5)
1.4541 (= TP 321)						X	X	X	(X)	6)
1.4404 (= TP 316L)	EN ISO 1127 or ASTM A269		fully annealed	D4/T3* (EN ISO 1127)		X	(X)	X	X	7)
1.4301 (= TP 304)						X	(X)	X	X	8)
1.4401 (= TP 316)						X	(X)	X	X	9)
1.4301 (= TP 304)	EN ISO 1127	Welded tube	DIN 17457-K2 for OD 6–12 mm, cold drawn welded (CDW) with smooth outer surface for OD 14–42 mm		plain, weld seam approx. invisible	X	(X)	(X)	(X)	10)
1.4541 (= TP 321)						X	(X)	(X)	(X)	

Tube material Copper	Specification	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®	Note
R 290	EN 1057	Seamless tube	EN 1057	EN 1057	clean, smooth plain	X	X	X	X	11)

1) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances for easy handling. Good bendability and weldability.
2) Tolerance on large tube OD's not as tight as EO tube.
3) Precision tubes for very high pressure hydraulic applications. Tight tolerances for easy handling. Good bendability and weldability.
4) Tolerance on large tube OD's not as tight as EO tube.
5) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances (same as steel tubes) for easy handling. Good weldability and corrosion resistance. ( ) = on request
6) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances (same as steel tubes) for easy handling. Good weldability. ( ) = on request
7) Common tube, OD. tolerance not as tight as EO tube. Good weldability and corrosion resistance. ( ) = Suitable up to OD. 20 mm
8) Common tube, OD. tolerance not as tight as EO tube. ( ) = Suitable up to OD. 20 mm
9) Common tube, OD. tolerance not as tight as EO tube. ( ) = Suitable up to OD. 20 mm
10) Used in Pneumatic (low pressure) applications. ( ) = Only for tube with smooth outer and inner surface.
11) R290 is recommended class (replaced F30 = hard)
* = For DPR/PSR/EO-2 systems: thin walled tubes which need a support sleeve require tighter tolerance class T4.

Tube Specifications

Tubes with imperial (inch) outside diameters

Tube material Steel	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable T- Lok®	Suitable O-Lok®	Note
Carbon steel C-1010[1)2)]	SAE J524 (AMS 5050 J, ASTM A179)	Seamless	Fully annealed	SAE J524 (AMS 5050 J, ASTM A179)	plain, oiled	X	X	1)
	SAE J525	Welded and drawn		SAE J525		X	X	2)

Tube material Steel	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable T- Lok®	Suitable O-Lok®	Note
1.4404 (= TP 316L)	ASTM A269, ASTM A213	Seamless	Fully annealed	ASTM A269, ASTM A213	plain	X	X	3)
1.4301 (= TP 304)						X	X	
1.4401 (= TP 316)						X	X	
1.4404 (= TP 316L)	ASTM A249, ASTM A269	Welded and drawn		ASTM A249, ASTM A269		X	X	4)
1.4301 (= TP 304)						X	X	
1.4401 (= TP 316)						X	X	

Tube material Copper	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable T- Lok®	Suitable O-Lok®	Note
Copper	SAE J528 (ASTM B-75)	Seamless	Soft annealed, Temper 0	SAE J528 (ASTM B-75)	plain	X	X	4)

1) Recommended EO tubes for Hydraulic/Pneumatic applications
2) Common tubes in North-America
3) Recommended tubes for Hydraulic/Pneumatic applications. Good weldability and corrosion resistance
4) Tubes in North-America
5) Common tubes in North-America

Fitting selection summary

Traditional bite-type fittings have been originally developed and designed for operating conditions of fluidpower systems completely different from todays and future market requirements.

New products and improved assembly technologies have been developed and introduced by Parker to fulfill todays and future requirements of the operators of fluidpower equipment. This new tube fitting generation and the according assembly methods are classified as Dry Technology. All qualifying products are explicitly Dry Technology-labelled throughout this catalogue.

For all new designs of

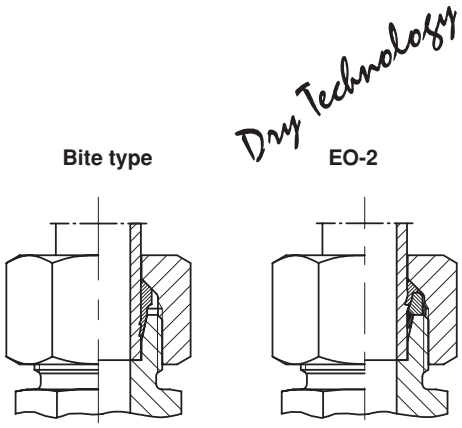
- hydraulic systems
- pneumatic systems,
- coolant systems,
- lubrication systems and
- sprinkler systems

only Dry Technology-classified components should be selected.

Dry technology versus traditional technology

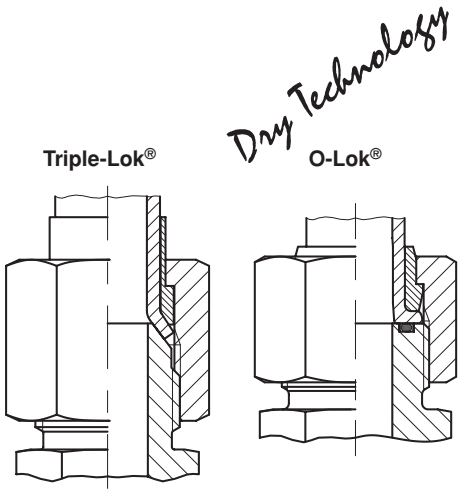
EO-2 versus bite type

+ Elastomeric seal
+ Sufficiant seal volume to compensate tube tolerance
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Clear hit-home-feel at assembly
+ Easy assembly check
+ Integrated preassembly tool
+ No stress of inner cone of fitting body
+ No wear of preassembly tools
+ Direct assembly of stainless steel tubes possible (EO-2)
+ No galling of stainless steel threads
+ Existing tools and EOMAT machines can be used for efficient assembly (EO-2)
+ All parts integrated in Functional Nut (EO-2)
+ No confusion of individual ferrules
+ Less handling effort
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ ISO-standardised (ISO 8434/DIN 2353)
+ Million times proven product since 1993 (EO-2)
+ Interchangeable with EO Progressive Ring (EO-2)
– Higher component cost than traditional bite-type fittings
+ Low total cost
+ Best value for end user
+ Mandatory specified from various industries, such as: automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
+ Globally gaining popularity



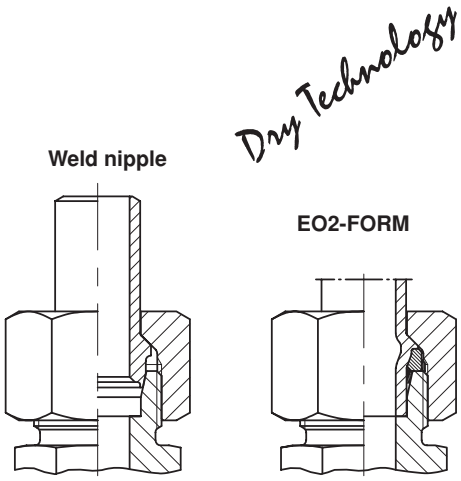
O-Lok® versus traditional Triple-Lok®

+ Higher pressure resistance than Triple-Lok®
+ Elastomeric seal
+ Sufficiant seal volume to compensate tube tolerance
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Clear hit-home-feel at assembly
+ Easy assembly check
+ Easy installation of flat-face components
+ Superior vibration resistance
+ Parflange® orbital flanging technology
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ ISO-standardised (ISO 8434)
+ Million times proven product
– Higher component cost than Triple-Lok®
– Parflange® machine required
+ braze sleeves can be used for field repair
+ Low total cost
+ Best value for end user
+ Mandatory specified from various industries, such as:
agricultural equipment, mobile construction machines, injection molding
+ Globally gaining popularity



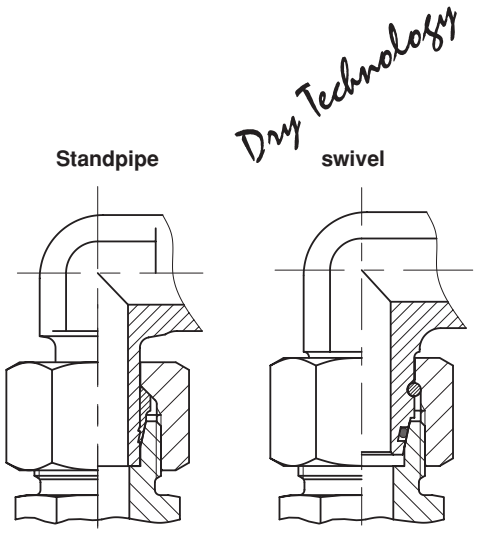
EO2-FORM versus traditional Weld nipple

+ Safe, form-fit connection
+ Easy assembly process
+ trouble-free with zinc-plated tube
+ Elastomeric seal
+ Sufficiant seal volume to compensate tube tolerance
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Clear hit-home-feel at assembly
+ Easy assembly check
+ Easy tube preparation
+ Easy quality inspection
+ No rework of welding
+ Use of existing EO-2 seals
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ ISO-standardised (ISO 8434)
+ Basic product EO-2 is million times proven
+ Interchangeable with EO Progressive Ring (EO-2)
+ No new or additional components required
– Higher component cost than traditional bite-type fittings
– EO2-FORM machine required
+ EO-2 can be used for field repair
+ Low total cost
+ Best value for end user
+ Approved for application in hydraulic presses, injection molding, lifts, waterlocks and shipbuilding
+ Globally gaining popularity



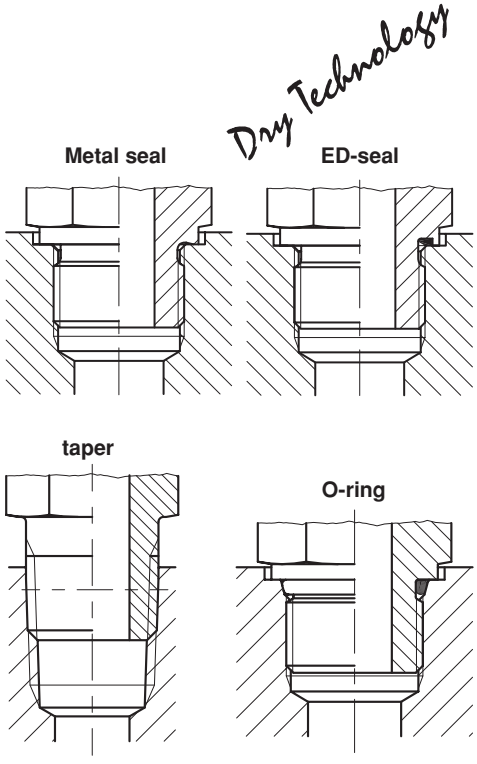
Swivel adjustable versus traditional standpipe

+ Elastomeric seal
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Superior pressure rating
+ High mechanical strength
+ No blow-out at incomplete assembly
+ Easy fitting installation
+ No stress of inner cone of fitting body
+ No wear of preassembly tools
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ ISO-standardised (ISO 8434/DIN 2353)
+ Millionfold proven product since 1970
+ Interchangeable with EO standpipe fittings
– Higher component cost than traditional standpipe fittings
+ Low total cost
+ Best value for end user
+ Mandatory specified from various industries, such as: automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
+ Most frequently used and still gaining popularity



Male stud with Eolastic or O-ring seal versus traditional Metal seal tapered thread

+ Elastomeric seal
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Superior pressure rating
+ Clear hit-home-feel at assembly
+ No damage to port surface
+ Assembly and performance almost independant of port material
+ Low assembly torques
+ No metal sealing edge which may be damaged at transport or handling
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ ISO-standardised (ISO 1179/ISO 6149/ISO 11926)
+ Million times proven product since 1964
+ Interchangeable with traditional fittings
+ Wider product range and better availability
– Higher component cost than traditional bite-type fittings
+ Low total cost
+ Best value for end user
+ Mandatory specified from various industries, such as: automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
+ Most frequently used and still gaining popularity



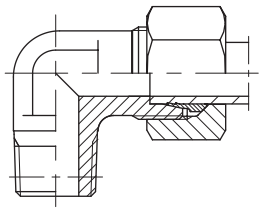
Systematic fitting selection

Locknut Adjustables versus tapered thread

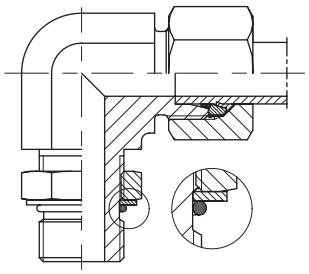
+ Elastomeric seal
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ Good flow characteristic
+ 360° orientable
+ More compact than swivel orientable combination
+ No additional sealant required
+ Clear hit-home-feel at assembly
+ No damage to port surface
+ Assembly and performance almost independant of port material
+ Low assembly torques
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ Interchangeable with traditional fittings
+ Available in 90°, 45° elbow, T- and Run-T-configuration
– Machined spot surface required
+ Lower price than Banjo fittings
+ Low total cost
+ Best value for end user
+ Globally gaining popularity

Dry Technology

taper



Locknut

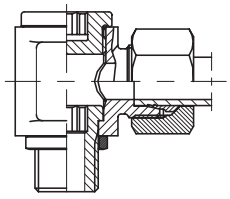


High pressure banjo versus traditional low pressure elbow

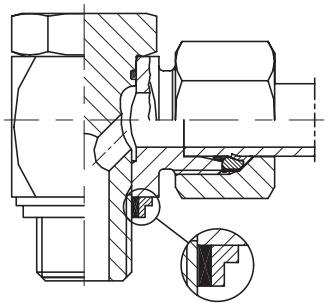
+ Elastomeric seal
+ High degree of fine sealing
+ Long-term reliability without retightening
+ No air ingress
+ 360° orientable
+ Compact design
+ Suitable for high pressure applications
+ Matching small spot surface
+ Clear hit-home-feel at assembly
+ No damage to port surface
+ Assembly and performance almost independant of port material
+ Seal does not fall off
+ Only one hollow bolt needs to be tightened
+ No hidden screw
+ Unlimited repeated assembly
+ Seal can be individually replaced
+ Million times proven product since 1980
+ Interchangeable with traditional fittings
+ Available in 90°elbow and T-configuration
– Slight flow restriction
+ Low total cost
+ Best value for end user
+ Globally gaining popularity

Dry Technology

Low pressure



High pressure



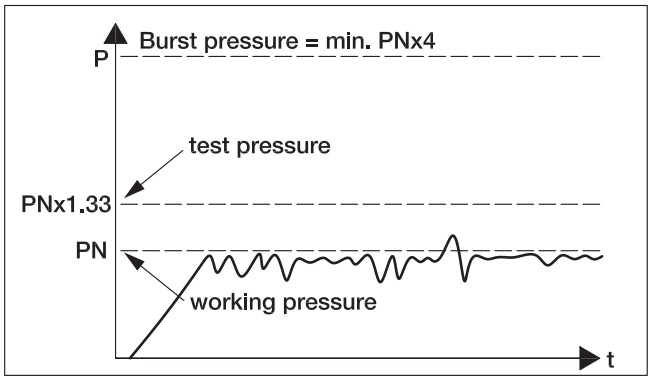
Ermeto Original
Performance data



Pressure rating

Nominal pressure PN

The Nominal pressure PN is a figure relating to the pressure rating of a fluid component for continuous dynamic applications. It is rounded to correspond to internationally standardised ratings. Logical series of fittings are grouped together, with the nominal pressure of the group being that of the "lowest common denominator" within the group.



Internationally, these nominal pressures are recognised and serve to match common sizes of components together. Parker tube fittings meet or exceed common standardised pressure ratings.
To prove the long term dynamic load resistance, components are tested under pressure impulse conditions of PNx1.33, at 1Hz **for 1 million cycles.** Static test burst pressures are at least 4 times the PN value.
Exception: for ball valves the static test burst pressures are at least 1.5 times the PN value according to DIN 3230 T5 and ISO 5108.

Conversion chart

Bar	Mpa	PSI
100	10.0	1450
160	16.0	2321
210	21.0	3045
315	31.5	4569
350	35.0	5075
400	40.0	5801

Pressure reductions and temperatures

Required pressure reductions (dependant on the material) with reference to the catalogue pressures for higher temperatures. Both metal fitting material and elastomeric sealing compound have to be selected according to the temperature range of the system.
Attention: Fluid Compatibility see page C5.

Fittings material	Pressure reduction of permissible operating temperatures TB in °C														
	–60	–50	–40	–35	–25	+20	+50	+100	+120	+150	+175	+200	+250	+300	+400
Steel, fittings			0 %							11 %	19 %		28%		
Steel, tubes			0 %								19 %		27%		
Stainless steel, fittings	0 %									11%		20 %		30 %	
Stainless steel, tubes	0 %						5.5 %	11.5%		21.5 %			29 %		34 %
Brass, fittings[1]	35 %														
Sealing material NBR (e.g. Perbunan)															
Sealing material FKM (e.g. Viton®)															
Sealing material EPDM[2]															

Permissible operating temperature
Ambient temperature of hydraulic and pneumatic applications
Temperature not permissible

Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont
[1] 35 % (if not extra shown in PN-Colum "MS" for Brass)
[2] EPDM is not compatible with oil (not normally held in Stock)

Calculation example:
PN fitting 16S/71 = 400 bar
Temperature = 200°C
Material = Stainless steel
Pressure reduction fittings = 20%
Pressure reduction tubes = 21,5%
PN tube 16 × 2.5/71, DIN 2413 III = 362 bar

Formula:

$$PN_{\text{fitting } 200°C} = \frac{400 \text{ bar}}{100\%} \times (100\% - 20\%) = 320 \text{ bar}$$

$$PN_{\text{tube } 200°C} = \frac{362 \text{ bar}}{100\%} \times (100\% - 21,5\%) = 284 \text{ bar}$$

C

Materials

Fittings	Raw material	Material				Fitting type									
						EO				O-Lok®			Triple-Lok®		
		Designation[2]	Material No.	Standard	US Designation[2]	Bodies	Nuts	Ferrules	Weld fittings	Bodies	Nuts	Sleeves	Bodies	Nuts	Sleeves
Steel	Barstock Free cutting steel	11SMnPb30	1.0718	DIN EN 10277-3	SAE 12L14	X				X		X	X		X
		11SMn30	1.0715	DIN EN 10277-3	SAE 1213	X									
		46S20	1.0727	DIN EN 10277-3	SAE 1146	X									
	Forgings Free cutting steel	15S10	1.0710	DIN 1651		X									
		11SMn30 modified	1.0715	DIN EN 10087	SAE 1213 modified					X			X		
		36SMn14	1.0764	DIN EN 10087		X									
		C45 modified	1.0503	DIN EN 10083	SAE 1045 modified		X				X			X	
	Extrusion steel	C10C	1.0214	DIN EN 10263	SAE C1010		X				X	X		X	X
	Weldable steel	C15	1.0401	DIN 10277-3					X						
	Other	Steel at the manufacturers discretion special heat treated						X							X
Stainless steel	Barstock	X6CrNiMoTi 17-12-2	1.4571	DIN EN 10088	ANSI 316TI	X	X		X						
		X2CrNiMo 17-13-2	1.4404	DIN EN 10088	ANSI 316L					X	X	X	X	X	X
	Forgings	X6CrNiMo Ti17-12-2	1.4571	DIN EN 10088	ANSI 316TI	X	X		X						
		X5CrNiMo 17-12-2	1.4401	DIN EN 10088	ANSI 316					X	X	X	X	X	X
	Other	Stainless steel at the manufacturers discretion special heat treated						X							
Brass	Barstock	CuZn35Ni2	2.0540	DIN 17660		X	X	X							
				ASTM B16/B453	CA360/345					X	X	X	X	X	X
	Forgings	CuZn35Ni2	2.0540	DIN 17660		X									
				ASTM B124	CA377					X			X		

1) Non standard fitting types like e.g. banjo fittings, rotary fittings, adjustable fittings with locknut and flanges might be made from different materials.
2) Equivalent materials may be used
Forging: 11 SMn 30+Bi (similar to 1.0715/DIN EN 10087)
Straight: 11 SMn Pb30 (1.0718/DIN EN 102773)

Sealings	NBR	e.g. N552-90, Perbunan (registered trademark of Bayer)
	FKM	e.g. V894-90, Viton® (registered trademark of DuPont)
	EPDM	e.g. E540-80
	PTFE	e.g. Teflon® (registered trademark of DuPont)
	POM	e.g. Delrin (registered trademark of DuPont)

Surface treatment

Parker tube fittings from steel are delivered worldwide with a high quality surface protection: galvanic zinc and yellow chromated (A3C according DIN/ISO 4042). New Generation fittings are delivered with even higher quality surface protection: galvanic zinc plated and bright passivated with special sealer (suffix CF).

Why zinc plated?

The requirements for corrosion resistance of tube fittings have been increasing in the past few years. Increasingly tube systems are not painted. Higher demands are requested also for an aesthetic point of view.

The traditional black-grey surface "phosphated and oiled" (Znphr5f – DIN 50942) used for tube connections in the past does not longer meet these demands. An galvanized deposit zinc layer offers the following advantages: The corrosion resistance increases significantly due to a plating of min. 8 µ and additional sealing by chromating process. In case of scratches or nicks – which are unavoidable during assembly – zinc develops a cathodical protection of the steel fitting body against localised corrosion and abrasion.

The corrosion resistance of the CF surface is 400% above standard zinc plated surfaces to meet highest requirements. The CF surface is also Chromium^6 free to avoid any contamination in the manufacturing process and meets future regulations e.g. European "End of Life Vehicles" directive.

The gold yellow or silver bright colour due to the chromating or passivation process offers an attractive appearance.

All major TFDE manufacturing locations are equipped with their own modern galvanic plants. The process control is specially orientated to the tube fitting product.

The users of Parker fittings benefit from:
– homogeneous thickness of plating (average 13 µm), measured on outside contour for good screwable threads
– high quality above-average concerning avoidance of nicks
– very good corrosion resistance

Continuous corrosion tests like salt spray tests according to ISO 9227/5% NaCl show an average resistance of: 100 hr in contrast to white rust and 350 hr in contrast to red rust for A3C surface and 500 hr in contrast to white rust and 700 hr in contrast to red rust for CF surfaces.

Particular fitting series or fitting components and valves are delivered with other or modified surfaces for functional reasons or for better differentiation.

			Surface protection / Surface								
Material	Fitting system	Fitting type	A3C Zinc plated, yellow chromated	A3C + Glide coating	CF Zinc plated bright passivated	CF + Glide coating	A3K Zinc plated bright passivated	Znphr5f black phosphated	Plain no coating	Plain + Glide coating	Plain + Inside silver
New Generation steel	EO2-Plus	Fitting bodies			X						
		Functional nuts				X					
	EO-Plus	Fitting body			X						
		Nuts				X					
		Progressive stop rings					X				
	EO2-FORM	Bodies and nuts from EO-plus are used									
Steel	EO-2	Fitting bodies	X								
		Functional nuts	X								
	EO	Fitting bodies	X								
		Nuts		X							
		Progressive stop rings					X				
		Weld fittings						X			
		Functional nuts		X							
	EO2-FORM	Bodies and nuts from EO are used									
	O-Lok®	Fitting bodies	X								
		Nuts	X								
		Parflange® sleeves	X								
		Brazing sleeves							X		
	Triple-Lok®	Fitting bodies	X								
		Nuts	X								
		Sleeves	X								

			Surface protection / Surface								
Material	Fitting system	Fitting type	A3C Zinc plated, yellow chromated	A3C + Glide coating	CF Zinc plated bright passivated	CF + Glide coating	A3K Zinc plated bright passivated	Znphr5f black phosphated	Plain no coating	Plain + Glide coating	Plain + Inside silver
Stainless steel	EO-2	Fitting bodies							X		
		Functional nuts up to 12-L/10-S								X	
		Functional nuts from 15-L/12-S									X
	EO	Fitting bodies							X		
		Nuts up to 12-L/10-S								X	
		Nuts from 15-L/12-S									X
		Progressive rings						X			
	EO2-FORM	Bodies and nuts from EO are used									
	O-Lok®	Fitting bodies							X		
		Nuts							X		
		Sleeves							X		
	Triple-Lok®	Fitting bodies							X		
		Nuts							X		
		Sleeves							X		
Brass	All systems	Fitting bodies							X		
		Nuts							X		
		Sleeves & ferrules							X		

A3C/Q3C/A3K according to DIN EN ISO 4042 / Znphr5f according to DIN EN ISO 3892 and DIN 50942

Fluid compatibility

Both metal fitting material and elastomeric seal compound have to be selected according to the fluid used.
Standard recommendations for static seals based on experience and sealing compound manufacturers specification. For use of sealing compounds that are used for dynamic seals like rotary fittings or non-return-valves, see note at end of table.

	Fitting material			Sealing material		
Fluid	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Acetone	2	1	1	3	3	1
Acetylene	2	1	3	3	3	2
Air (oil free)	1	1	1	1	1	1
Ammonia liquid	2	1	3	2	3	1
Ammonia gas, cold	1	1	3	1	3	1
Animal oils (Lard oil)	2	2	2	1	1	2
Aral, Vitam BAF	1	1	X	1	1	3
Argon	1	1	1	1	1	1
Aromatic fuel – 50%	X	X	X	2	1	3
Aromatic solvents	X	2	X	2	1	X
Asphalt	3	1	3	2	1	3
ASTM-Oil, no.1	1	1	1	1	1	3
ASTM-Oil, no.2	1	1	1	1	1	3
ASTM-Oil, no.3	1	1	1	1	1	3
ASTM-Oil, no.4	1	1	1	2	1	3
ATF oil	1	1	1	1	1	3
Automotive brake fluid	1	1	1	3	3	1
Benzene	1	1	1	3	1	3
Brine (sodium chloride)	X	1	X	1	1	1
Butane	1	1	3	1	1	3
Carbon bisulphide	1	1	3	3	1	X
Carbon dioxide	1	1	1	1	2	1
Carbon oxide	1	1	1	1	1	1
Castrol, Biotec HVX	1	1	X	1	1	3
Chlorine (dry)	3	1	3	3	1	X

Fluid	Fitting material			Sealing material		
	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Compressed air	1	1	1	1	1	1
Crude oil	2	1	3	2	1	3
Cutting oil	1	1	X	1	3	1
DEA, Econa E22	1	1	X	1	X	3
DEA, Econa E46	1	1	X	1	X	3
Diesel fuel	1	1	1	1	1	3
ECOOL	1	1	X	1	1	X
ESSO, Univis 13	1	1	X	1	1	3
ESSO, Univis 26	1	1	X	1	1	3
ESSO, Univis 32	1	1	X	1	1	3
ESSO, Univis 46	1	1	X	1	1	3
Ethanol (Ethylalkohol)	1	1	1	1	3	1
Ether	1	1	1	3	3	2
FINA, Biohydran RS 38	1	1	X	1	1	3
Flue gas	3	1	3	3	2	X
FRAGOL, Hydrolub 125	1	1	X	1	X	3
Freon 11	X	X	1	2	2	3
Freon 12	1	3	1	2	1	3
Freon 22	3	1	1	3	2	3
Fuel oil	1	1	1	1	1	3
Gasoline	2	1	1	2	1	3
Gas, liquid propane (LPG)	1	1	1	1	1	3
Gas, natural	2	1	2	1	1	3
Glycerine	2	1	2	1	1	1
Glycol (Ethylenglykol)	1	1	2	1	1	1
Heating fuel oil	1	1	1	1	1	3
Helium	1	1	1	1	1	1
Houghton Safe 1120	1	1	X	3	1	1
Hougthon Safe 620	1	1	X	1	2	1
Hydraulic oil – Petroleum base	1	1	1	1	1	3
Hydraulic oil – Water base	1	1	X	2	1	3
Hydrochloric acid	3	2	3	3	1	2
Hydrogen	3	1	X	3	3	3
Hydrogen peroxide	3	1	3	3	1	2
Hydrolube	1	1	1	1	1	1
Jet fuel	1	1	1	1	1	3
Jod	3	1	3	2	1	2
Kerosene	1	1	1	1	1	3
Lubricating oil SAE 10,20,30,40,50	1	1	1	1	1	3
Methane	1	1	1	1	1	3
Methanol	1	1	1	1	3	1
MIL-F-8192 (JP-9)	1	1	1	3	1	3
MIL-H-5606	1	1	1	1	1	3
MIL-H-6083	1	1	1	1	1	3
MIL-H-7083	1	1	1	1	2	1
MIL-H-8446 (MLO-8515)	1	1	2	2	1	3
MIL-L-2104 & 2104B	1	1	1	1	1	3
MIL-L-7808	2	1	3	2	1	3
Mineral oil	1	1	1	1	1	3
Natural gas	1	1	2	1	1	3
Natural gas , untreated	3	1	3	3	3	3
Natural mineral oil	1	1	3	2	1	3
Neon	3	1	1	1	1	1
Nitric acid	3	1	3	3	2	3
Nitrogen	1	1	1	1	1	1
Oil	1	1	3	1	1	3
Oxygen (gas, cold)	3	1	2	3	3	3
Ozone	1	1	3	3	1	1

Fluid	Fitting material			Sealing material		
	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Petrolatum	1	1	1	1	1	3
Petroleum oil	1	1	1	1	1	3
Phosphoric acid	3	3	1	3	1	2
Plantohyd 32 S	1	1	X	1	X	3
Plantohyd 40 N	1	1	X	1	1	3
Propane	1	1	1	1	1	3
R134A	1	1	1	3	3	1
Sea water	3	2	3	1	1	1
SHELL, Naturelle HF-E-46	1	1	X	1	1	3
SHELL, Tellus Oil DO 32	1	1	X	1	1	3
Silicone oil	1	1	X	1	1	1
Skydrol 500	1	1	3	3	3	1
Skydrol 7000	1	1	3	3	2	1
Soap solutions	3	1	3	1	1	1
Steam	2	1	2	3	3	1
Stoddard solvent	1	1	2	1	1	3
Sulphur dioxide	3	1	3	3	3	1
Sulphuric acid	3	2	3	3	1	3
Toluol	1	1	1	3	2	3
Transmission fluid	1	1	1	1	1	3
Trichlorethane	2	1	X	3	1	3
Turpentine	2	1	3	1	1	3
Water	2	1	1[1)]	1	2	1
Xylol	1	1	1	3	1	3

Applicability:
1 = satisfactory
2 = fair
3 = not recommended
X = unsufficiant data

NBR = e.g. Perbunan (registered trademark of Bayer)
FKM = e.g. Viton® (registered trademark of DuPont)

[1)] Brass is resistant against crack under normal circumstances. If overloaded (e.g. by overassembly) the resistance especially against ammoniac and nitric derivatives can be negatively influenced. This might cause the defect of the connection.

This fluid compatibility chart is only applicable on so called “static seals”, such as O-rings and profile sealing rings (e.g. ED-seal, DOZ-seal) in tube fitting and flange systems.
For fluid compatibility data of valves, rotary fittings or other multi-function components please review the relevant product pages.

Biodegradable oils

Due to environmental concerns and new legislation biodegradable oils are rapidly gaining importance for both mobile and stationary applications. Optimistic estimations say that the market share of biodegradable oils will reach 50 % by 2005 with some 80 % being synthetic ester types (HEES). The usage of non-inflammable fluids will remain limited to special applications like mining, steel mills and heavy machines.

Media

Biodegradable oils can be classified into 3 categories:

HEPG (Glycol based fluids)
+ Wide temperature range (–45°C … 100°C)
+ Very stable against ageing
+ NBR and FKM seals are compatible
+ Moderate viscosity change with temperature
+ Water soluble
– Not mixable with mineral oils or HEES, HETG types
– Careful flushing recommended when changing from mineral oil
– Paints can be dissolved
– Care required with material compatibility (eg. do not use any zinc containing materials)
– Density > 1,100 kg/m³ possible design changes
– Price?

HETG (Vegetable-based fluids)
+ Mixable with mineral oils
+ Normal sealing material are compatible (e.g. NBR or FKM)
+ Good lubricating properties
+ Paint resistant to fluid
+ Viscosity changes with temperature are moderate
– Limited temperature range (–25° C to +70° C)
– Max. temperature not to be exceeded
– Limited lifetime
– UV and ozone sensitive
– Beware of water take-up (cracking?)
– Price?

HEES (Synthetic ester based fluids)
+ Wide temperature range (–30° C … +90° C or over 100° C with some variants)
+ Good lifetime
+ Mixable with mineral oils
+ Normal sealing materials compatible (FKM and NBR recommended)
+ Machine paints resistant to fluid
+ Viscosity changes with temperature are moderate
+ Good lubricating properties
– Danger of hydrolysis with water take-up (filters, dryer, occlusion)
– Price?

Compatibility
Generally, TFDE steel fittings with standard NBR seals are suitable for most applications.

	–20° C …… 80° C	80°C …… 120°C
HEPG Polyalkylenglycol	NBR FKM	Not suitable for Oil
HETG Vegetable Oil	NBR FKM	– FKM
HEES Synthetic ester	NBR FKM	– FKM

Suitable sealing compounds
Experience shows that media compatibility is not a critical issue for static seals used on tube fittings. In doubt please contact TFDE application engineering.

Pragmatic approach
If there is doubt about switching over to softseal fitting systems (ISO6149/Eolastic/O-Lok®/EO-2), it might be a good idea to have a close look on the existing hydraulic system. If NBR seals perform well on hoses, cylinders, valves or filters there is nothing to worry about standard TFDE fittings. Usually the design engineers know when special seal compounds like FKM have to be used.

C

Flow characteristics

Hydraulic systems are in most cases only rated with a flow velocity defined on the basis of experience. The pressure losses in lines are not taken into account, or measured later on when testing the system. As the pressure losses increase proportionally greater than the flow resistance, it is important to achieve the best rating of the system, that they are already taken into account when planning the tube connections. Calculation is not as difficult as it is often thought, and this chapter is intended to provide a guideline. Besides, it provides information on how excessive pressure losses can be avoided, because pressure losses result in losses in performance and excessive heat. Noise occurs, and possibly cavitation in suction lines.

Medium
All indication given with regard to flow restrictions and to flow properties refer exclusively to liquids. For gaseous media, the variable density of the gas must additionally be taken into account.

Units

c = Flow velocity $\left[\frac{m}{s}\right]$

d = Pipe inside diameter [m]

L = Pipe length [m]

p = Pressure [Pa], 1 bar = 100000 Pa

$\dot{V}$ = Flow rate $\left[\frac{m^3}{s}\right]$, $1\ \frac{m^3}{s} = 60000\ \frac{l}{min}$

λ = Pipe friction factor

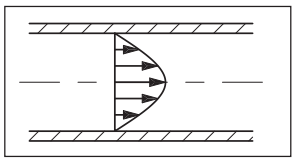
$\nu(T)$ = Kinematic viscosity of the medium depending on temperature $\left[\frac{m^2}{s}\right]$

$\rho(T)$ = Density of the medium depending on temperature $\left[\frac{kg}{m^3}\right]$

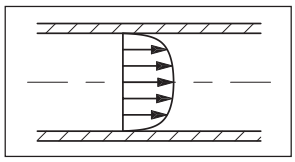
ζ = Individual pressure loss coefficient

Only base units have been used. This has the advantage that the formula do not contain correction factors and there is no danger of confusion, e.g. that values are used with the wrong unit. In case values are given in other units – the flow rate is e.g. often given in l/min – it is advisable to convert them into the base units before starting calculation.

Pressure losses in pipe lines
To calculate pressure losses in pipe lines, it must first be determined whether there is a laminar or a turbulent flow. Laminar flow is homogenous and without turbulence. In case of turbulent flow, the losses increase much more quickly.



Flow profile with laminar flow



Flow profile with turbulent flow

The kind of flow is defined by the Reynolds' number. With a Reynolds' number of more than 2320, the flow changes to turbulent. The Reynold number is calculated according to the formula:

$$Re = \frac{c \cdot d}{\upsilon(T)}$$

The Reynolds' number is a non-dimensional number. The critical fluid velocity at which the flow regime can change, is thus calculated from:

$$c_{cr} = 2320 \cdot \frac{\upsilon(T)}{d} \left[\frac{m}{s}\right]$$

With a given flow rate, the fluid velocity can be calculated according to the formula:

$$c = \frac{\dot{V} \cdot 4}{d^2 \cdot \pi} \left[\frac{m}{s}\right]$$

Subsequently, the pipe friction factor λ can be calculated. The pipe friction factor λ is a function of the Reynold number and also depends on the roughness of the pipe. As hydraulically smooth pipes can generally be assumed in hydraulic applications, the pipe friction factor λ is calculated according to the following formula:

$$\text{laminar flow, } (Re < 2320)\text{: } \lambda = \frac{64}{Re}$$

$$\textit{turbulent} \text{ flow, } (Re < 2320)\text{: } \lambda = \frac{0.3164}{\sqrt[4]{Re}}$$

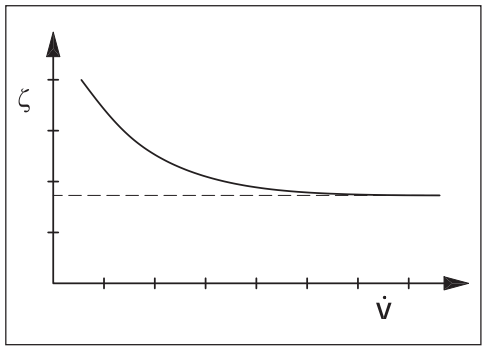
Finally, if all factors are known, the pressure loss in a certain pipe line can be calculated according to the formula:

$$\Delta p = \lambda \cdot \frac{L}{d} \cdot \frac{\rho(T) \cdot c^2}{2} \text{ [Pa]}$$

Calculation of individual losses
A hydraulic system does not only incorporate pipes, but also valves, fittings, pipe bends etc. that cause flow losses. These individual losses are often much higher than the pipe losses and are calculated according to the following formula:

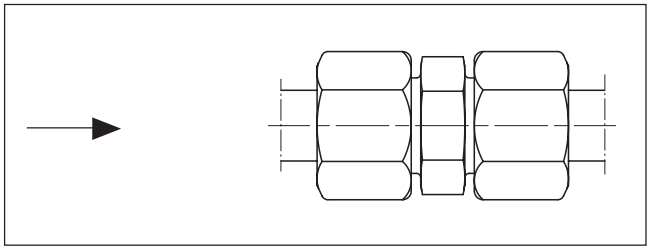
$$\Delta p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$

The pressure loss coefficient ζ relates to an individual hydraulic component. It covers circulation, impact and separation losses of the flow in a component. In most cases, valve or fitting manufacturers state the pressure loss coefficient of their products. The ζ values are not completely constant. The values increase in the case of very low fluid velocities. The following diagram shows the typical course of the ζ values for a component, depending on the fluid velocity, as it has been determined through a series of tests in the laboratory of the Parker Hannifin GmbH.



As only the flow resistances at nominal power, i.e. at higher fluid velocities, are generally calculated to rate a hydraulic plant, they may therefore be slight variations for individual sizes.

Straight fittings, e.g. G, GE, EGE, HMTX, F…MTX, F6…MX, HMLO, F…MLO, F6…MLO, …

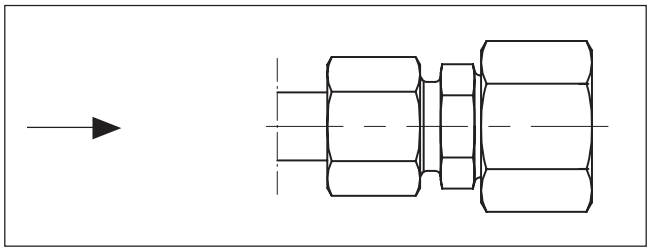


If there is a step change between the bore of the fitting and the inside diameter of the pipe, the conditions applicable to reducers (see below) are valid.
In a normal case, however, the pressure loss is very small, so that it cannot be measured by normal methods.
Literature gives a pressure loss coefficient of 0.01 to 0.05.

Reducers, e.g. RED, GR, TRMTX, TRMLO, …

With reducers, distinction must be made between a cross section increase or reduction. The fluid velocity taken as a basis to calculate the pressure loss is always the velocity at the outlet of the flow.

Extension of the cross section:

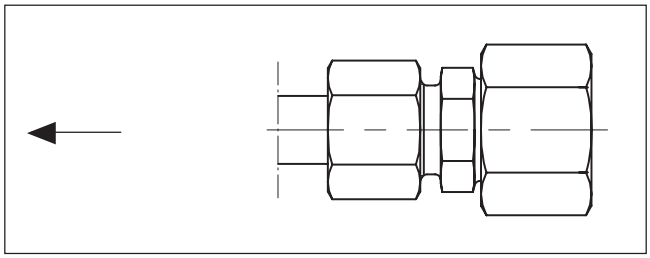


$$\zeta = \left(\frac{A_2}{A_1} - 1\right)^2$$

With A1 … Inlet cross section area
A2 … Outlet cross section area

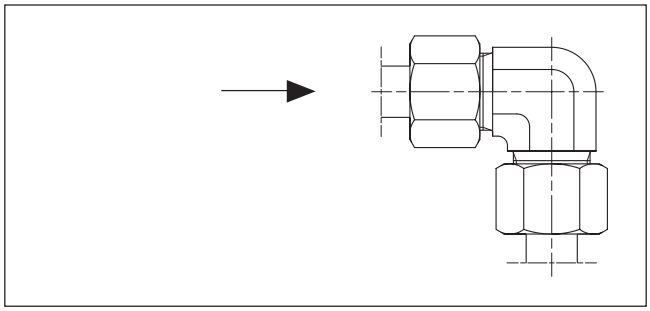
The formula stated is valid for a transition angle > 60°, and thus also for EO fittings.
It is difficult to state a figure, as the program of reducers is extensive.
With an RED style of fitting, the pressure loss coefficient ζ can vary between 1.5 and 5000, always referred to the flow velocity at the outlet.

Reduction of the cross section:



A_2/A_1	0.80	0.60	0.40	0.20
ζ	0.15	0.25	0.35	0.42

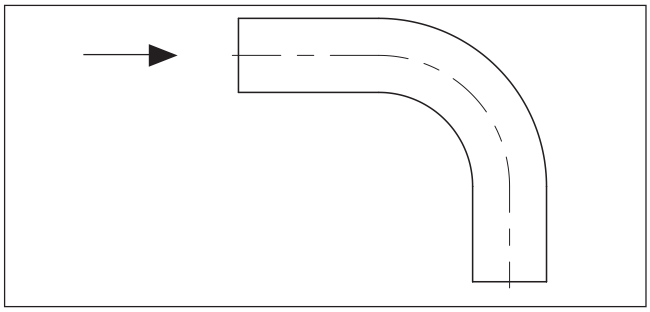
Elbow connectors, e.g. W, EW, EMTX, C…MTX, EMLO, C…MLO, …



Type	Pressure loss coefficient ζ
W, EMTX, EMLO	1
EW, C…MTX, C…MLO	1

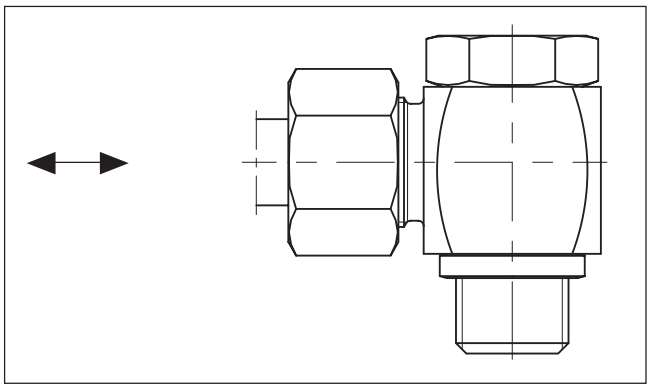
C

Tube bends
With pipe bends, the pressure loss coefficient results from the ratio of bend radius to inside diameter (R/d).



Bend radius/Inside diameter	Pressure loss coefficient ζ
2	0.21
4	0.14
6 and more	0.11

Banjo fittings

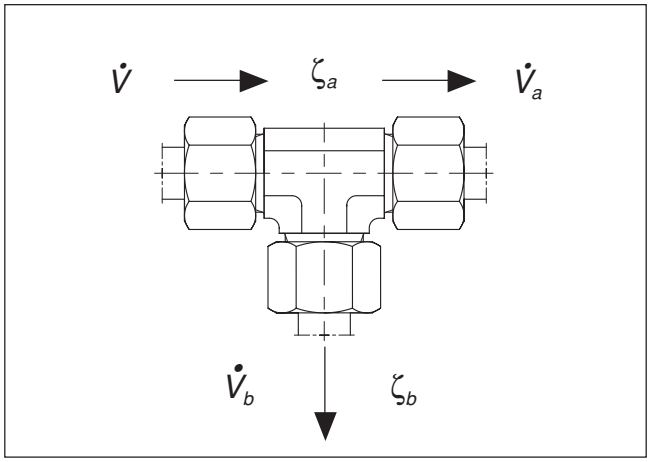


Type	Pressure loss coefficient ζ
WH	3 … 6
SWVE	6 … 9
DSVW	approx. 4

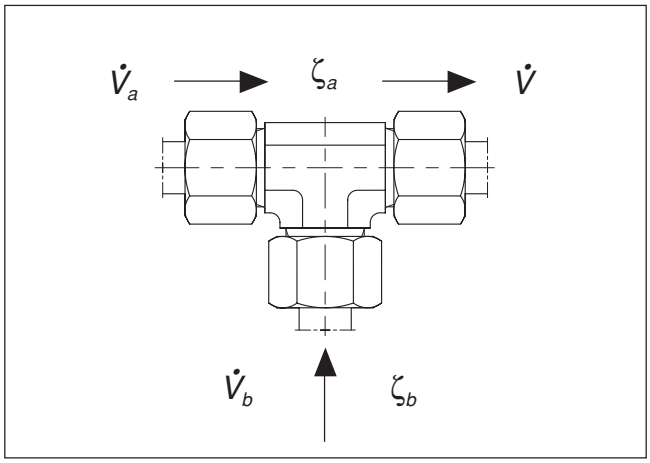
With WH and SWVE, the pressure loss depends on the position of the banjo bolt cross hole drilling to the tube connection aperture. The pressure loss coefficient is therefore given as a range.

Manifolds and Tee/Cross fittings
The pressure loss coefficient depends on whether the medium is divided or flows together, and in what ratio the medium is divided.
Index a: The medium flows straight through the manifold.
Index b: The medium flows through the cross branch of the manifold.

Flow division (to/from T branch)	Pressure loss coefficient ζ in case of pipe branching		Pressure loss coefficient ζ in case of pipe junction	
$\dot{V}_b / \dot{V}$	ζ_a	ζ_b	ζ_a	ζ_b
0.6	0.07	0.95	0.40	0.47
0.8	0.20	1.10	0.50	0.73
1.0	0.35	1.30	0.60	0.92

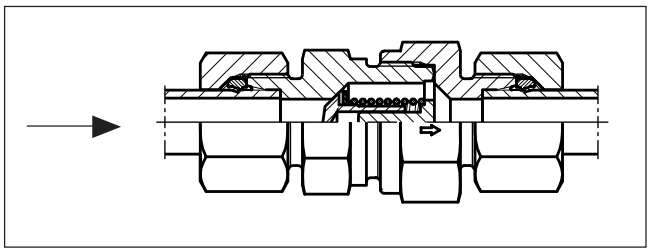


Pipe branching



Pipe junction

Valves, e.g. RHD, DV, VDHA, …



Type	Pressure loss coefficient ζ
RH …	5,0
DV	5.5
LD	4.0
VDHA	5.0
VDHB	5.5

The pressure loss coefficient stated is always valid for the fully opened valve.

Calculation of the pressure loss Δp – example a WH 16-SR/A3C (Banjo fitting).

The pressure loss Δp is calculated according to the following formula:

$$\Delta p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$

To calculate pressure loss at a flow rate of 20 l/min is to be calculated.

The following values are known:

Pipe inside diameter d = 12 mm = 0.012 m
Density of the medium ρ = 869; 4 kg/m^3
(Oil manufacturer's data sheet)
Pressure loss coefficient ζ = 4.5
(Average value for WH fittings)

$$\text{Flow rate } \dot{V} = \left[\frac{20}{60000}\right] = 0.000333 \left[\frac{m^3}{s}\right]$$

$$\text{Fluid velocity } c = \frac{\dot{V} \cdot 4}{d_2 \cdot \pi} = \frac{0.000333 \cdot 4}{0.012^2 \cdot \pi} = 2.95 \left[\frac{m}{s}\right]$$

The thus resulting flow loss is then:

$$\Delta p = 4.5 \cdot 869.4 \cdot \frac{2.95^2}{2} = 17000 \text{ [Pa]} = 0.17 \text{ [bar]}$$

Flow diameter and wall thickness

Determining tube size for hydraulic systems

Proper tube material, type and size for a given application and type of fitting is critical for efficient and trouble free operation of the fluid system. Selection of proper tubing involves choosing the right tube material, and determining the optimum tube size (O.D. and wall thickness).

Proper sizing of the tube for various parts of a hydraulic system results in an optimum combination of efficient and cost effective performance.

A tube that is too small causes high fluid velocity, which has many detrimental effects. In pressure lines, it causes high friction losses and turbulence, both resulting in high pressure drops and heat generation. High heat accelerates wear in moving parts and rapid aging of seals and hoses, all resulting in reduced component life. High heat generation also means wasted energy, and hence, low efficiency.

Too large tubes increase system cost. Thus, optimum tube sizing is very critical. The following is a simple procedure for sizing the tubes.

Determine required flow diameter

Use table to determine recommended flow diameter for the required flow rate and type of line.
The table is based on the following recommended flow velocities:

$$\text{Pressure lines} - 3 \rightarrow 5 \left[\frac{m}{s}\right]$$

$$\text{Return lines} - 2 \rightarrow 4 \left[\frac{m}{s}\right]$$

$$\text{Suction lines} - 1 \left[\frac{m}{s}\right]$$

Avoid flow rates > 8 m/s! The resulting forces are high and can destroy the tube lines.

If you desire to use different velocities than the above, use one of the following formula to determine the required flow diameter.

$$\text{Tube} - \text{I.D. [mm]} = 4.61 * \sqrt{\frac{\text{Flow}\left[\frac{\text{ltr.}}{\text{min}}\right]}{\text{Velocity}\left[\frac{m}{s}\right]}}$$

Determine required wall thickness

Use 2nd table to determine recommended wall thickness for the required working pressure and flow diameter of the line. Therefore choose an working pressure which is equal or higher than the required working pressure.

For other tubes and tube materials you have to calculate the wall thickness and working pressure acc. to the formula shown in the tube chapter.

Maximum flow l/min	Flow diameter in millimeters		
	5 m/s Pressure lines	3 m/s Return lines	1 m/s Suction lines
1	2.1	2.7	4.6
2	2.9	3.8	6.5
3	3.6	4.6	8.0
4	4.1	5.3	9.2
5	4.6	6.0	10.3
6	5.1	6.5	11.3
7	5.5	7.0	12.2
8	5.8	7.5	13.0
9	6.2	8.0	13.8
10	6.5	8.4	14.6
12	7.1	9.2	16.0
14	7.7	10.0	17.2
16	8.2	10.6	18.4
18	8.7	11.3	19.6
20	9.2	11.9	20.6
22	9.7	12.5	21.6
24	10.1	13.0	22.6
26	10.5	13.6	23.5
28	10.9	14.1	24.4
30	11.3	14.6	25.3
32	11.7	15.1	26.1
34	12.0	15.5	26.9
36	12.4	16.0	27.7
38	12.7	16.4	28.4
40	13.0	16.8	29.2
45	13.8	17.9	30.9
50	14.6	18.8	32.6
55	15.3	19.7	34.2
60	16.0	20.6	35.7
65	16.6	21.5	37.2
70	17.2	22.3	38.6
75	17.9	23.1	39.9
80	18.4	23.8	41.2
85	19.0	24.5	42.5
90	19.6	25.3	43.7
95	20.1	25.9	44.9
100	20.6	26.6	46.1
110	21.6	27.9	48.4
120	22.6	29.2	50.5
130	23.5	30.3	52.6
140	24.4	31.5	54.5
150	25.3	32.6	56.5
160	26.1	33.7	58.3
170	26.9	34.7	60.1
180	27.7	35.7	61.8
190	28.4	36.7	63.5
200	29.2	37.6	65.2
220	30.6	39.5	68.4
240	31.9	41.2	71.4
260	33.2	42.9	74.3
280	34.5	44.5	77.1
300	35.7	46.1	79.8
320	36.9	57.6	82.5
340	38.0	49.1	85.0
360	39.1	50.5	87.5
380	40.2	51.9	89.9
400	41.2	53.2	92.2
450	43.7	56.5	97.8
500	46.1	59.5	103.1

Tube wall thickness

Flow diameter [mm]	Max. working pressure [bar] for steel tubes St37.4 NBK calculated acc. to DIN 2413 III for dynamic load Tube wall thickness [mm]										
	0.5	1	1.5	2	2.5	3	3.5	4	5	6	8
1.0	551	692	757	794	818						
1.5	458	614	692	740	771	794					
2.0	391	551	638	692	730	757	778	794			
2.5	342	500	591	651	692	723	747	766	794		
3.0	303	458	551	614	659	692	719	740	771	794	
4.0	248	391	485	551	600	638	668	692	730	757	794
5.0	209	342	433	500	551	591	624	651	692	723	766
6.0	181	303	391	458	509	551	585	614	659	692	740
7.0	160	273	357	422	474	516	551	581	628	664	715
8.0	143	248	328	391	443	485	521	551	600	638	692
9.0	129	227	303	365	415	458	494	524	575	614	671
10.0	118	209	282	342	391	433	469	500	551	591	651
11.0	108	194	264	321	370	411	447	478	529	570	632
12.0	100	181	248	303	351	391	427	458	509	551	614
13.0	93	170	233	287	333	373	408	439	491	533	597
14.0	87	160	221	273	318	357	391	422	474	516	581
15.0	82	151	209	260	303	342	376	406	458	500	565
16.0	77	143	199	248	290	328	361	391	443	485	551
17.0	73	136	190	237	278	315	348	378	429	471	537
18.0	69	129	181	227	267	303	336	365	415	458	524
19.0	66	123	173	218	257	292	324	353	403	445	512
20.0	63	118	166	209	248	282	313	342	391	433	500
21.0	60	113	160	202	239	273	303	331	380	422	489
22.0	58	108	154	194	231	264	294	321	370	411	478
23.0	55	104	148	188	223	256	285	312	360	401	468
24.0	53	100	143	181	216	248	277	303	351	391	458
25.0	51	97	138	175	209	240	269	295	342	382	448
26.0	49	93	133	170	203	233	261	287	333	373	439
27.0	48	90	129	165	197	227	254	280	325	365	430
28.0	46	87	125	160	192	221	248	273	318	357	422
29.0	44	85	121	155	186	215	241	266	310	349	414
30.0	43	82	118	151	181	209	235	260	303	342	406
31.0	42	80	115	147	177	204	230	254	297	335	399
32.0	40	77	111	143	172	199	224	248	290	328	391
33.0	39	75	108	139	168	194	219	242	284	321	384
34.0	38	73	106	136	164	190	214	237	278	315	378
35.0	37	71	103	132	160	185	209	232	273	309	371
36.0	36	69	100	129	156	181	205	227	267	303	365
37.0	35	68	98	126	153	177	200	222	262	298	359
38.0	34	66	96	123	149	173	196	218	257	292	353
39.0	33	64	93	121	146	170	192	213	252	287	347
40.0	33	63	91	118	143	166	188	209	248	282	342
42.0	31	60	87	113	137	160	181	202	239	273	331
44.0	30	58	84	108	132	154	175	194	231	264	321
46.0	29	55	80	104	127	148	168	188	223	256	312
48.0	27	53	77	100	122	143	163	181	216	248	303
50.0	26	51	75	97	118	138	157	175	209	240	295
52.0	25	49	72	93	114	133	152	170	203	233	287
54.0	24	48	69	90	110	129	147	165	197	227	280
56.0	24	46	67	87	107	125	143	160	192	221	273
58.0	23	44	65	85	103	121	139	155	186	215	266
60.0	22	43	63	82	100	118	135	151	181	209	260
65.0	20	40	58	76	93	110	126	141	170	197	245
70.0	19	37	55	71	87	103	118	132	160	185	232
75.0	18	35	51	67	82	97	111	125	151	175	220
80.0	17	33	48	63	77	91	105	118	143	166	209

Dimensioning

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Not recommended D4

EO 24° cone end
(DIN 3861/ISO 8434-1)/dimension D4

EO 24°-DKO swivel connector
(DIN 3861/DIN EN ISO 8434-4)/dimensions D5

Overview O-Lok® connections D6–D7

O-Lok® end
(ISO 8434-3/SAE J1453)/dimensions D8

O-Lok® swivel connector
(ISO 8434-3/SAE J1453)/dimensions D9

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Triple-Lok® end
(ISO 8434-2/SAE J514)/dimensions D12

Triple-Lok® swivel connector
(ISO 8434-3/SAE J514)/dimensions D13

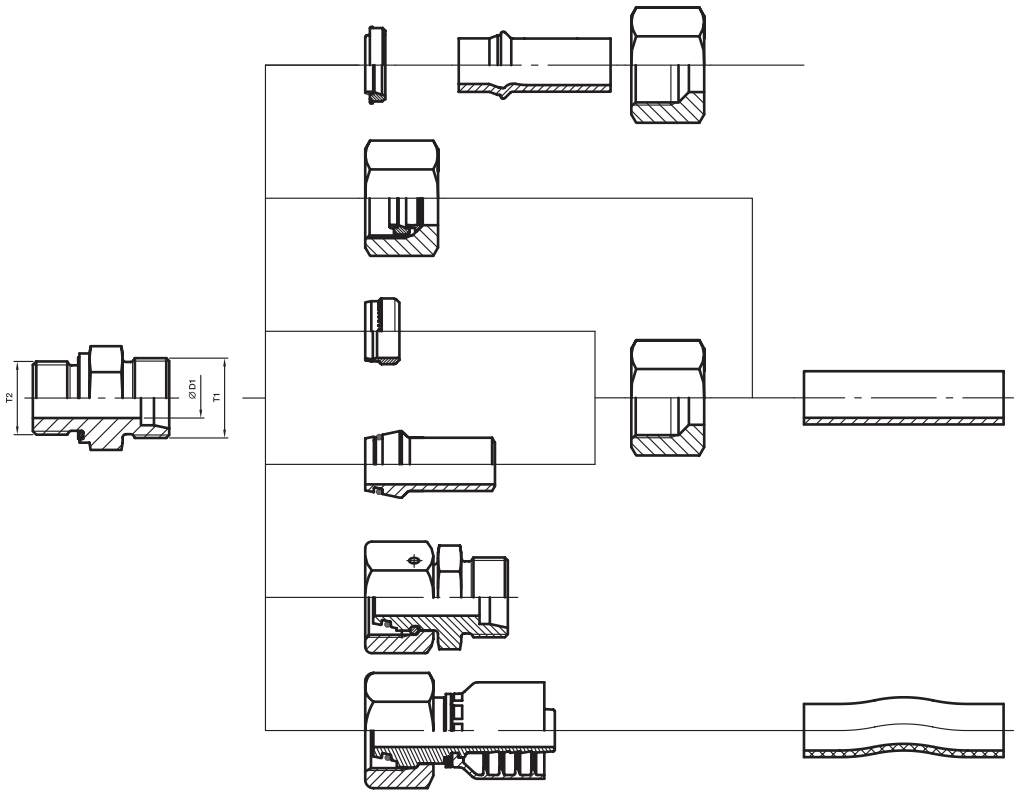
DIN 60° cone end (DIN 7631)/dimensions D14

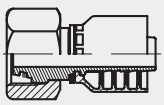
Adapter 60° cone end (ISO/DIS 8434-6)/dimensions D15

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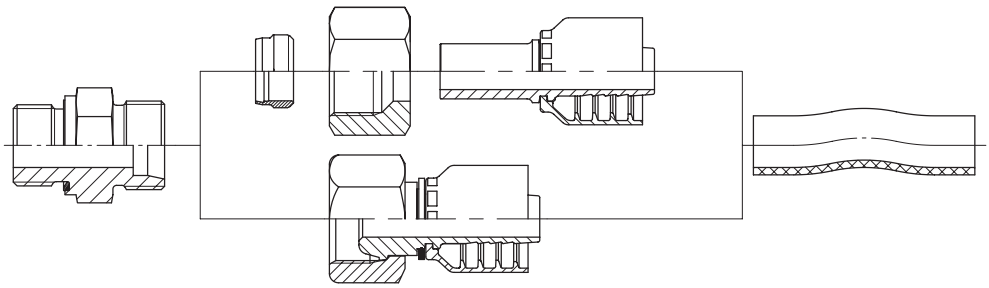
Overview EO 24° cone connections



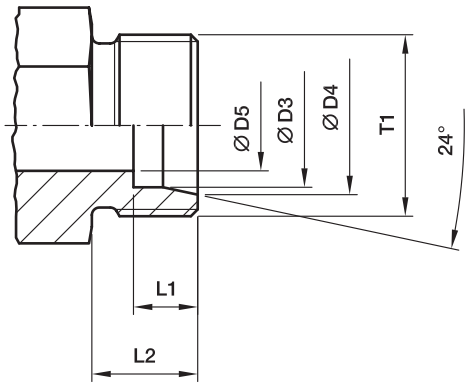
Size	D1 Tube O.D. mm	T1 Thread metric	Thread O.D. mm	T2 Port thread BSPP	metric	BSPT (short)	metric tapered	
LL	04	M 08×1	8.0	G 1/8 A	M 08×1	R 1/8 tap.	M 08×1 tap.	
	05	M 10×1	10.0	G 1/8 A	M 08×1			
	06	M 10×1	10.0	G 1/8 A	M 10×1	R 1/8 tap.	M 10×1 tap.	
	08	M 12×1	12.0	G 1/8 A	M 10×1	R 1/8 tap.	M 10×1 tap.	
	10	M 14×1	14.0	G 1/4 A		R 1/4 tap.		
	12	M 16×1	16.0	G 1/4 A		R 1/4 tap.		
L	06	M 12×1.5	12.0	G 1/8 A	M 10×1		M 10×1 tap.	1CAxx-6-yy
	08	M 14×1.5	14.0	G 1/4 A	M 12×1.5		M 12×1.5 tap.	1CAxx-8-yy
	10	M 16×1.5	16.0	G 1/4 A	M 14×1.5		M 14×1.5 tap.	1CAxx-10-yy
	12	M 18×1.5	18.0	G 3/8 A	M 16×1.5		M 16×1.5 tap.	1CAxx-12-yy
	15	M 22×1.5	22.0	G 1/2 A	M 18×1.5		M 18×1.5 tap.	1CAxx-15-yy
	18	M 26×1.5	26.0	G 1/2 A	M 22×1.5		M 22×1.5 tap.	1CAxx-18-yy
	22	M 30×2	30.0	G 3/4 A	M 26×1.5		M 26×1.5 tap.	1CAxx-22-yy
	28	M 36×2	36.0	G 1A	M 33×2			1CAxx-28-yy
	35	M 45×2	45.0	G 1 1/4 A	M 42×2			1CAxx-35-yy
	42	M 52×2	52.0	G 1 1/2 A	M 48×2			1CAxx-42-yy
S	06	M 14×1.5	14.0	G 1/4 A	M 12×1.5		M 12×1.5 tap.	1C9xx-6-yy
	08	M 16×1.5	16.0	G 1/4 A	M 14×1.5		M 14×1.5 tap.	1C9xx-8-yy
	10	M 18×1.5	18.0	G 3/8 A	M 16×1.5		M 16×1.5 tap.	1C9xx-10-yy
	12	M 20×1.5	20.0	G 3/8 A	M 18×1.5		M 18×1.5 tap.	1C9xx-12-yy
	14	M 22×1.5	22.0	G 1/2 A	M 20×1.5		M 20×1.5 tap.	1C9xx-14-yy
	16	M 24×1.5	24.0	G 1/2 A	M 22×1.5		M 22×1.5 tap.	1C9xx-16-yy
	20	M 30×2	30.0	G 3/4 A	M 27×2			1C9xx-20-yy
	25	M 36×2	36.0	G 1A	M 33×2			1C9xx-25-yy
	30	M 42×2	45.0	G 1 1/4 A	M 42×2			1C9xx-30-yy
	38	M 52×2	52.0	G 1 1/2 A	M 48×2			1C9xx-38-yy

xx - Fitting Series • yy - Hose Size
From Parker hose fitting (HPDE and PFDE)

Not recommended

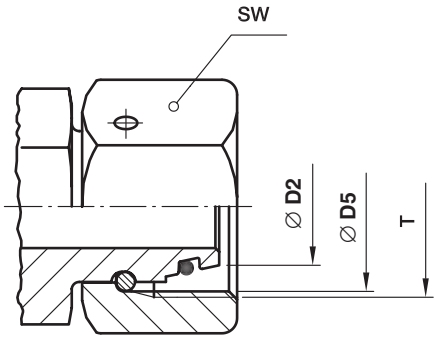
	Reason
	High risk of hose blow off. For ferrule assembly special hardened tools are required.
	With the use of the Universal-connection high risk of cracks in 24° cone area of stud ends sizes 6-L up to 18-L.

EO 24° cone end (DIN 3861/ISO 8434-1)/dimension



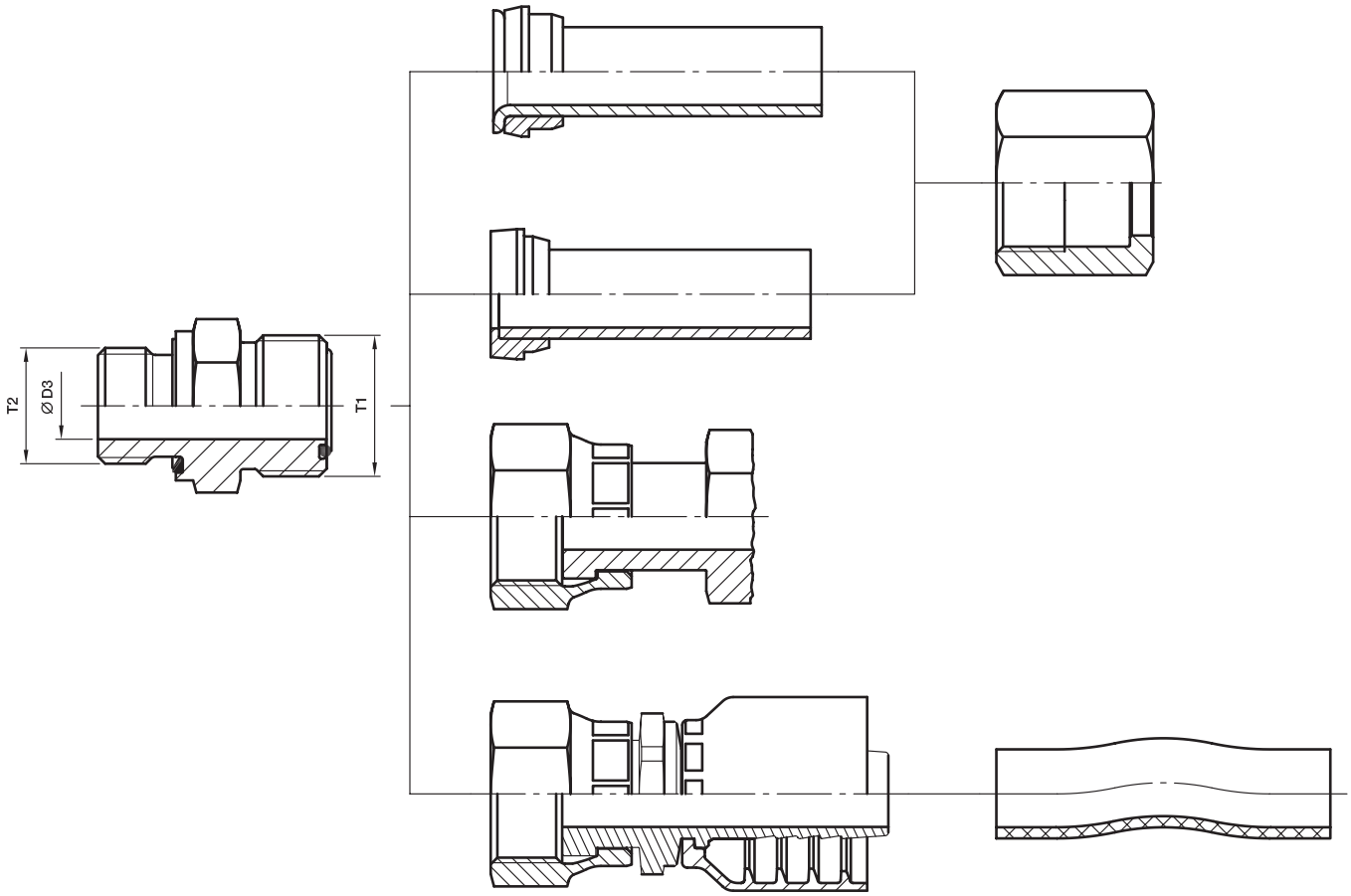
Tube O.D. Size	T1	∅ D3 mm	∅ D4 mm	∅ D5 mm	L1 mm	L2 mm
04-LL	M 8×1	04	5.0	3.0	4.1	8
06-LL	M 10×1	06	7.5	4.5	5.6	8
08-LL	M 12×1	08	9.5	6.0	5.6	9
10-LL	M 14×1	10	11.5	8.0	5.6	9
12-LL	M 16×1	12	13.5	10.0	6.1	9
06-L	M 12×1.5	06	8.1	4.0	7.1	10
08-L	M 14×1.5	08	10.1	6.0	7.1	10
10-L	M 16×1.5	10	12.3	8.0	7.1	11
12-L	M 18×1.5	12	14.3	10.0	7.1	11
15-L	M 22×1.5	15	17.3	12.0	7.1	12
18-L	M 26×1.5	18	20.3	15.0	7.6	12
22-L	M 30×2	22	24.3	19.0	7.6	14
28-L	M 36×2	28	30.3	24.0	7.6	14
35-L	M 45×2	35	38.0	30.0	10.6	16
42-L	M 52×2	42	45.0	36.0	11.1	16
06-S	M 14×1,5	06	8.1	4.0	7.1	12
08-S	M 16×1.5	08	10.1	5.0	7.1	12
10-S	M 18×1.5	10	12.3	7.0	7.6	12
12-S	M 20×1.5	12	14.3	8.0	7.6	12
14-S	M 22×1.5	14	16.3	10.0	8.1	14
16-S	M 24×1.5	16	18.3	12.0	8.6	14
20-S	M 30×2	20	22.9	16.0	10.6	16
25-S	M 36×2	25	27.9	20.0	12.1	18
30-S	M 42×2	30	33.0	25.0	13.6	20
38-S	M 52×2	38	41.0	32.0	16.1	22

EO 24°-DKO swivel connector (DIN 3865/DIN EN ISO 8434-4)/dimensions

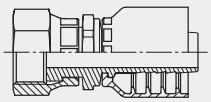


Tube O.D. Size	T	∅ D2 mm	∅ D5 mm Thread core diameter	SW mm
06-L	M 12×1.5	5.5	10.38	14
08-L	M 14×1.5	7.5	12.38	17
10-L	M 16×1.5	9.7	14.38	19
12-L	M 18×1.5	11.7	16.38	22
15-L	M 22×1.5	14.7	20.38	27
18-L	M 26×1.5	17.7	24.38	32
22-L	M 30×2	21.7	27.84	36
28-L	M 36×2	27.7	33.84	41
35-L	M 45×2	34.5	42.84	50
42-L	M 52×2	41.5	49.84	60
06-S	M 14×1.5	5.5	12.38	17
08-S	M 16×1.5	7.5	14.38	19
10-S	M 18×1.5	9.7	16.38	22
12-S	M 20×1.5	11.7	18.38	24
14-S	M 22×1.5	13.5	20.38	27
16-S	M 24×1.5	15.5	22.38	30
20-S	M 30×2	19.5	29.84	36
25-S	M 36×2	24.5	33.84	46
30-S	M 42×2	29.5	39.84	50
38-S	M 52×2	37.5	49.84	60

Overview O-Lok® connections



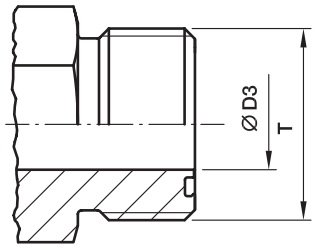
Overview O-Lok® connections

Size	Tube: Metric tube O.D. mm	Tube: Metric tube Wall thickness mm	Tube: Inch tube O.D. inch	Tube: Inch tube Wall thickness inch	T1 Thread UN/UNF	∅ D3 Bore diameter mm	T2 Port thread: BSPP	T2 Port thread: UN/UNF	T2 Port thread: NPTF	T2 Port thread: metric	
4	6	1.5	1/4	0.065		4.0	G 1/8 A	7/16-20	1/8	M 12×1.5	
4-4	6	1.5	1/4	0.065	9/16-18	4.5	G 1/4 A		1/4		1JCxx-4-yy
4-6	6	1.5	1/4	0.065		4.5	G 3/8 A	9/16-18	3/8		
4-8	6	1.5	1/4	0.065		4.5	G 1/2 A	3/4-16			
6	8	2.0	5/16	0.095	1 1/16-16	6.5	G 1/4 A	9/16-18	1/4	M 16×1.5	
6	10	2.0	5/16	0.095		6.5	G 1/4 A	9/16-18	1/4	M 16×1.5	
6-2	10	2.0	5/16	0.095		4.5	G 1/8 A				
6-4	10	2.0	5/16	0.095		4.5		7/16-20			1JCxx-6-yy
6-6	10	2.0	5/16	0.095	1 1/16-16	6.5	G 3/8 A		3/8		
6-8	10	2.0	5/16	0.095		6.5	G 1/2 A	3/4-16	1/2		
6-10	10	2.0	5/16	0.095		6.5		7/8-14			
6-12	10	2.0	5/16	0.095		6.5	G 3/4 A				
8	12	3.0	1/2	0.095		9.5	G 3/8 A	3/4-16	3/8	M 18×1.5	1JCxx-8-yy
8-4	12	3.0	1/2	0.095		7.5	G 1/4 A				
8-6	12	3.0	1/2	0.095		9.5		9/16-18			
8-8	12	3.0	1/2	0.095	1 3/16-16	9.5	G 1/2 A	1/2			
8-10	12	3.0	1/2	0.095		9.5		7/8-14			
8-12	12	3.0	1/2	0.095		9.5	G 3/4 A	1 1/16-12	3/4		
8-16	12	3.0	1/2	0.095		9.5		1 5/16-12			
10	14	2.0			1-14	12.5	G 1/2 A	7/8-14	1/2	M 22×1.5	
10	15	2.0			1-14	12.5	G 1/2 A	7/8-14	1/2	M 22×1.5	
10	16	3.0	5/8	0.120		12.5	G 1/2 A	7/8-14	1/2	M 22×1.5	
10-6	16	3.0	5/8	0.120		10.0	G 3/8 A				1JCxx-10-yy
10-8	16	3.0	5/8	0.120	1-14	9.5		3/4-16			
10-12	16	3.0	5/8	0.120		12.5	G 3/4 A	1 1/16-12	3/4		
10-16	16	3.0	5/8	0.120		12.5	G 1 A				
12	18	2.0			1 3/16-12	15.5	G 3/4 A	1 1/16-12	3/4	M 27×2	
12	20	3.5	3/4	0.156		15.5	G 3/4 A	1 1/16-12	3/4	M 27×2	
12-8	20	3.5	3/4	0.156		9.5	G 1/2 A	3/4-16	1/2		1JCxx-20-yy
12-10	20	3.5	3/4	0.156	1 3/16-12	12.5		7/8-14			
12-16	20	3.5	3/4	0.156		12.5	G 1 A	1 5/16-12	1		
12-20	20	3.5	3/4	0.156		12.5	G 1 1/4 A				
16	22	2.5			1 7/16-12	20.5	G 1 A	1 5/16-12	1	M 33×2	
16	25	4.0	1	0.188		20.5	G 1 A	1 5/16-12	1	M 33×2	
16-12	25	4.0	1	0.188	1 7/16-12	15.5	G 3/4 A	1 1/16-12	3/4		1JCxx-16-yy
16-20	25	4.0	1	0.188		20.5	G 1 1/4 A	1 5/8-12			
16-24	25	4.0	1	0.188		20.5	G 1 1/2 A				
20	28	3.0			1 11/16-12	26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42×2	
20	30	4.0			1 11/16-12	26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42×2	
20	32	4.0	1 1/4	0.188		26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42×2	1JCxx-20-yy
20-16	32	4.0	1 1/4	0.188	1 11/16-12	21.5	G 1 A	1 5/16-12			
20-24	32	4.0	1 1/4	0.188		26.0	G 1 1/2 A	1 7/8-12			
24	35	3.0			2-12	32.0	G 1 1/2 A	1 7/8-12	1 1/2	M 48×2	
24	38	5.0	1 1/2	0.220	2-12	32.0	G 1 1/2 A	1 7/8-12	1 1/2	M 48×2	1JCxx-24-yy
24-20	38	5.0	1 1/2	0.220		27.5	G 1 1/4 A	1 5/8-12			
32	50	3.0	2	0.120	2 1/2-12	45.0	G 2A	2 1/2-12		M 60×2	—

xx - Fitting Series • yy - Hose Size

From Parker hose fitting (HPDE and PFDE)

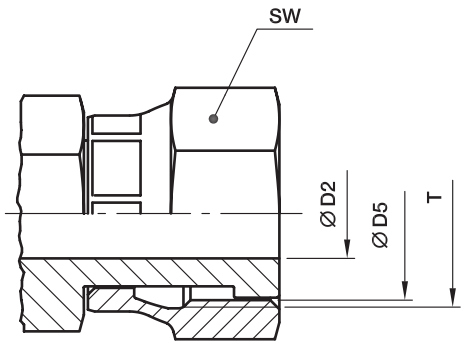
O-Lok® end (ISO 8434-3/SAE J1453)/dimensions



Size	Tube O.D. inch	Tube O.D. mm	T UN/UNF	T Major thread ∅ mm	∅ D3 mm
4	1/4	6	9/16-18	14.0	5.0
6	5/16. 3/8	8, 10	1 1/16-16	17.0	6.5
8	1/2	12	1 3/16-16	20.5	9.5
10	5/8	14, 15, 16	1-14	25.0	12.5
12	3/4	18, 20	1 3/16-12	30.0	15.5
16	7/8. 1	22, 25	1 7/16-12	36.0	20.5
20	1 1/4	28, 30. 32	1 11/16-12	42.5	26.0
24	1 1/2	35, 38	2-12	50.5	32.0
32	2	50	2 1/2-12	63.0	45.0

All dimensions shown are nominal for identification only.
Small deviations may be found between SAE J1453 or ISO 8484-3 on bore sizes.

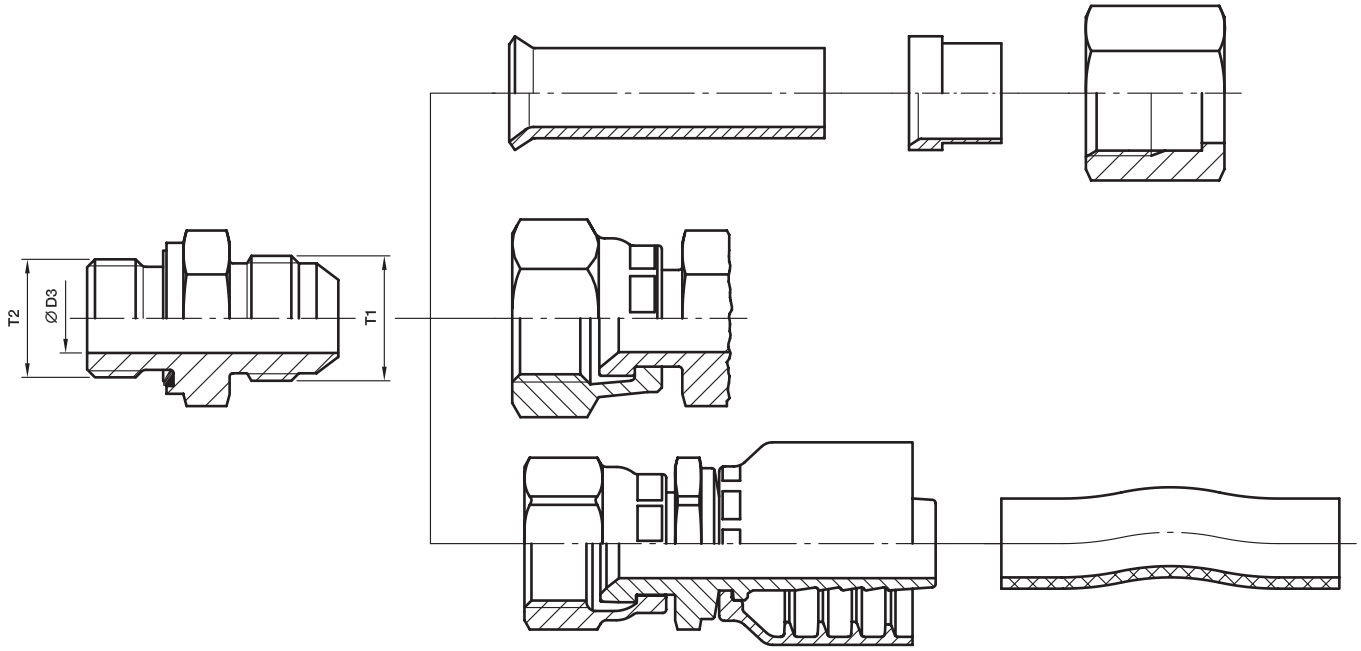
O-Lok® swivel connector (ISO 8434-3/SAE J1453)/dimensions



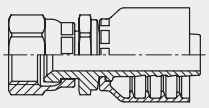
Size	Tube O.D. inch	Tube O.D. mm	T UN/UNF	∅ D5 Thread core diameter mm	SW mm	∅ D2 mm
4	1/4	6	9/16-18	12.5	17	4.0
6	5/16, 3/8	8, 10	1 1/16-16	16.0	22	6.5
8	1/2	12	1 3/16-16	19.0	24	9.0
10	5/8	14, 15, 16	1-14	23.0	30	11.5
12	3/4	18, 20	1 3/16-12	28.0	36	14.0
16	7/8, 1	22, 25	1 7/16-12	34.0	41	20.0
20	1 1/4	28, 30, 32	1 11/16-12	40.5	50	26.0
24	1 1/2	35, 38	2-12	48.0	60	32.0

All dimensions shown are nominal for identification only.
Small deviations may be found between SAE J1453 or ISO 8484-3 on bore sizes.

Overview Triple-Lok® connections



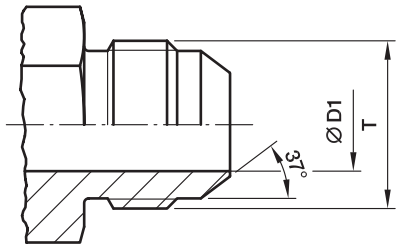
Overview Triple-Lok® connections

Size	Tube: Metric tube O.D. mm	Tube: Metric tube Wall thickness mm	Tube: Inch tube O.D. inch	Tube: Inch tube Wall thickness inch	T1 Thread UN/UNF	∅ D3 Bore diameter mm	T2 Port thread: BSPP (BSPT, NPTF)	T2 Port thread: UN/UNF	T2 Port thread: metric	
4	6	1.5	1/4	0.065		4.5	G 1/8 A	7/16-20	M 10×1.0	
4-4	6	1.5	1/4	0.065		4.5	G 1/4 A			
4-5	6	1.5	1/4	0.065	7/16-20	4.5		1/2-20		168xx-4-yy
4-6	6	1.5	1/4	0.065		4.5	G 3/8 A	9/16-18		
4-8	6	1.5	1/4	0.065		4.5	G 1/2 A			
5	8	1.5	5/16	0.065		6.0	G 1/8 A	1/2-20	M 12×1.5	
5-4	8	1.5	5/16	0.065	1/2-20	6.0	G 1/4 A			168xx-5-yy
5-6	8	1.5	5/16	0.065		6.0	G 3/8 A			
5-8	8	1.5	5/16	0.065		6.0	G 1/2 A			
6-2	10	1.5	3/8	0.065		7.5	G 1/8 A			
6	10	1.5	3/8	0.065	9/16-18	7.5	G 1/4 A	9/16-18	M 14×1.5	106xx-6-yy
6-6	10	1.5	3/8	0.065		7.5	G 3/8 A			
6-8	10	1.5	3/8	0.065		7.5	G 1/2 A	3/4-16		
8-4	12	2.0	1/2	0.083		10.0	G 1/4 A			
8	12	2.0	1/2	0.083		10.0	G 3/8 A	3/4-16	M 16×1.5	
8-8	12	2.0	1/2	0.083	3/4-16	10.0	G 1/2 A		M 18×1.5	168xx-8-yy
8-10	12	2.0	1/2	0.083		10.0		7/8-14		
8-12	12	2.0	1/2	0.083		10.0	G 3/4 A	1 1/16-12		
10-6	14, 15, 16	2.5	5/8	0.095		12.5	G 3/8 A			
10-8	14, 15, 16	2.5	5/8	0.095	7/8-14	12.5		3/4-16		168xx-10-yy
10	14, 15, 16	2.5	5/8	0.095		12.5	G 1/2 A	7/8-14	M 18×1.5	
10-12	14, 15, 16	2.5	5/8	0.095		12.5	G 3/4 A	1 1/16-12	M 22×1.5	
12-8	18, 20	3.0	3/4	0.109		15.5	G 1/2 A	3/4-16		
12-10	18, 20	3.0	3/4	0.109	1 1/16-12	15.5		7/8-14	M 22×1.5	106xx-12-yy
12	18, 20	3.0	3/4	0.109		15.5	G 3/4 A	1 1/16-12	M 27×2.0	
12-16	18, 20	3.0	3/4	0.109		15.5	G 1 A	1 5/16-12		
14	22	3.0	7/8	0.109	1 3/16-12	18.0	G 3/4 A	1 3/16-12	M 27×2.0	—
14-16	22	3.0	7/8	0.109		18.0	G 1 A	1 5/16-12		
16-12	25	3.0	1	0.120		21.5	G 3/4 A	1 1/16-12		
16	25	3.0	1	0.120	1 5/16-12	21.5	G 1 A	1 5/16-12	M 33×2.0	106xx-16-yy
16-20	25	3.0	1	0.120		21.5	G 1 1/4 A	1 5/8-12		
20-12	28, 30, 32	3.0	1 1/4	0.120		27.5	G 3/4 A			
20-16	28, 30, 32	3.0	1 1/4	0.120	1 5/8-12	27.5	G 1 A			106xx-20-yy
20	28, 30, 32	3.0	1 1/4	0.120		27.5	G 1 1/4 A	1 5/8-12	M 42×2.0	
24-20	35, 38	4.0	1 1/2	0.120	1 7/8-12	33.0	G 1 1/4 A			106xx-24-yy
24	35, 38	4.0	1 1/2	0.120		33.0	G 1 1/2 A	1 7/8-12	M 48×2.0	
28-24	42	3.0			2 1/4-12	39.0	G 1 1/2 A			—
32	50	3.5	2	0.134	2 1/2-12	45.0	G 2 A	2 1/2-12		106xx-32-yy

xx - Fitting Series • yy - Hose Size

From Parker hose fitting (HPDE and PFDE)

Triple-Lok® end (ISO 8434-2/SAE J514)/dimensions

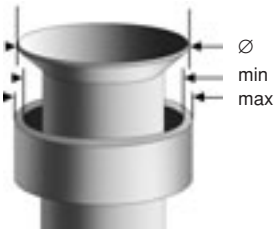


Size	Tube O.D. inch	Tube O.D. mm	T UN/UNF	T Major thread ∅ mm	∅ D1 mm
4	1/4	6	7/16-20	11.0	4.5
5	5/16	8	1/2-20	12.5	6.0
6	3/8	10	9/16-18	14.0	7.5
8	1/2	12	3/4-16	19.0	10.0
10	5/8	14, 15, 16	7/8-14	22.0	12.5
12	3/4	18, 20	1 1/16-12	27.0	15.5
14	7/8	22	1 3/16-12	30.0	18.0
16	1	25	1 5/16-12	33.0	21.5
20	1 1/4	28, 30, 32	1 5/8-12	41.0	27.5
24	1 1/2	35, 38	1 7/8-12	47.5	33.0
28*	1 3/4	42	2 1/4-12	57.0	39.0
32	2	—	2 1/2-12	63.5	45.0

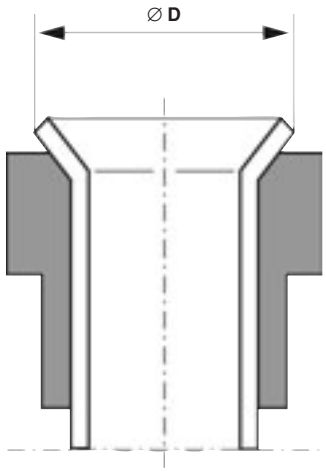
*Size 28 is not part of SAE J514 or ISO 8434-2.

All dimensions shown are nominal for identification only.
Small deviations may be found between SAE J514 or ISO 8484-2 on bore sizes.

Suitable Flare

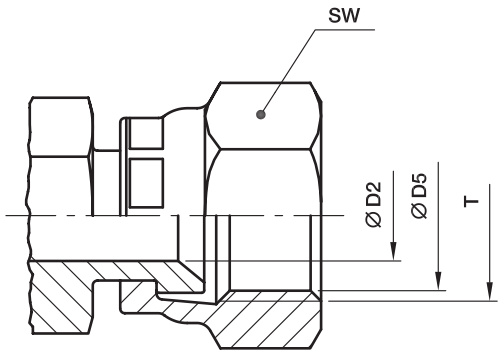


Tube O.D. mm	Tube O.D. inch	∅ D Min.	∅ D Max.
6	1/4″	8.0	9.7
8	5/16″	9.5	1.3
10	3/8″	11.2	12.7
12	1/2″	14.9	17.3
14		17.9	20.2
15		17.9	20.2
16	5/8″	17.9	20.2
18		22.3	24.7
20	3/4″	22.3	24.7
22	7/8″	25.5	27.8
25	1″	28.7	31.0
28		35.8	38.9
30		35.8	38.9
32	1.1/4″	35.8	38.9
35		41.4	45.3
38	1.1/2″	41.4	45.3
42		50.9	54.8
	2″	55.8	61.2



37°-Flare acc. ISO 8434-2 not compatible with Flare according DIN 3949.

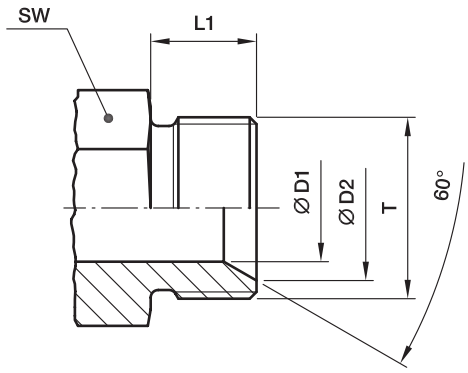
Triple-Lok® swivel connector (ISO 8434-2/SAE J514)/dimensions



Size	Tube O.D. Inch	Tube O.D. mm	T UN/UNF	SW mm	∅ D5 Thread core diameter mm	∅ D2 mm
4	1/4	6	7/16-20	17	10.0	4.4
5	5/16	8	1/2-20	17	11.5	6.0
6	3/8	10	9/16-18	19	13.0	7.5
8	1/2	12	3/4-16	22	17.5	9.9
10	5/8	14, 15, 16	7/8-14	27	20.5	12.3
12	3/4	18, 20	1 1/16-12	32	25.0	15.5
14	7/8	22	1 3/16-12	35	28.0	18.0
16	1	25	1 5/16-12	38	31.0	21.5
20	1 1/4	28, 30, 32	1 5/8-12	50	39.0	27.5
24	1 1/2	35. 38	1 7/8-12	60	45.5	33.0
32	2	—	2 1/2-12	75	61.5	45.0

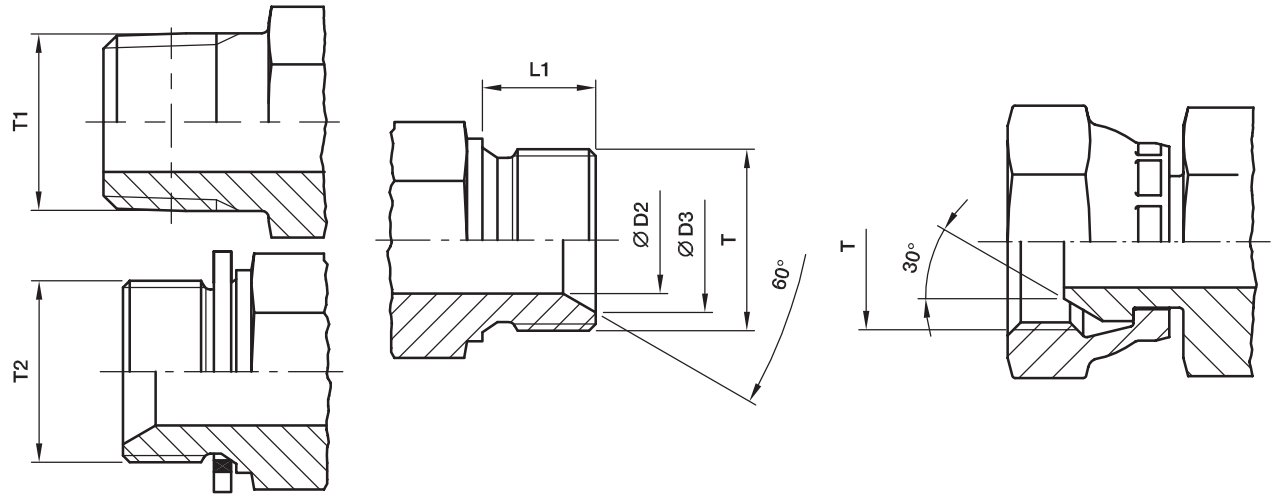
All dimensions shown are nominal for identification only.
Small deviations may be found between SAE J514 or ISO 8484-2 on bore sizes.

DIN 60° cone end (DIN 7631)/dimensions



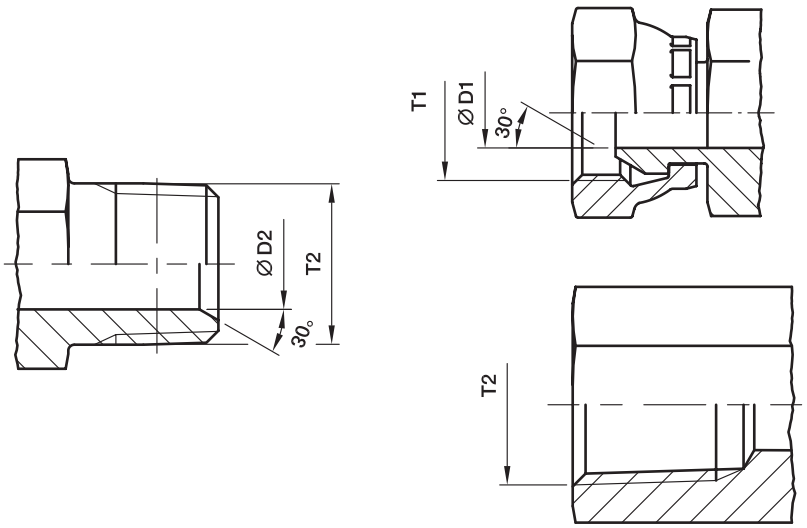
Tube O.D. mm	T	∅ D1 mm	∅ D2 mm	L1 mm	SW mm
4–5	M 10×1.5	3	8.0	8	11
06	M 12×1.5	4	9.0	10	12
08	M 14×1.5	6	11.0	10	14
10	M 16×1.5	8	13.0	11	17
12	M 18×1.5	10	15.0	11	19
15	M 22×1.5	12	19.0	12	24
18	M 26×1.5	15	22.0	12	27
22	M 30×1.5	19	26.0	14	32
28	M 38×1.5	25	33.0	14	41
35	M 45×1.5	32	40.0	16	46
42	M 52×1.5	39	47.0	16	55

Adapter 60° cone end (ISO/DIS 8434-6)/dimensions



Size	T BSPP	D2 mm	D3 mm	L1 mm	T1 BSPT	T1 NPT(F)	T2 BSPP
02	G 1/8 A	3.5	7.5	8	1/8 1/4	1/8 1/4	1/8
04	G 1/4 A	4.7	10.4	11	1/4 1/8 3/8	1/4 1/8 3/8	1/4 1/8
06	G 3/8 A	7.9	14.0	12	3/8 1/4 1/2	3/8 1/4 1/2	3/8 1/4
08	G 1/2 A	11.1	17.5	14	1/2 3/8	1/2 3/8 3/4	1/2 1/4 3/8
10	G 5/8 A	14.3	19.3	16	1/2 3/4		1/2 5/8
12	G 3/4 A	16.7	22.9	16	3/4 1/2 1	3/4 1/2 1	3/4 1/4 3/8 1/2 5/8
16	G 1 A	22.2	28.7	19	1 3/4	1 3/4	1 1/2 5/8 3/4
20	G 1 1/4 A	28.6	36.8	22	1 1/4		3/4 1 1 1/4
24	G 1 1/2 A	33.3	42.7	22	1 1/2		1 1 1/4 1 1/2
32	G 2 A	46.0	54.6	25			1 1/2 2

NPSM Swivel adapters (SAE J516)/dimensions



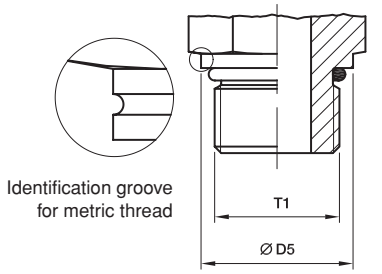
Size	T1 Thread NPSM	∅ D1 mm	∅ D2 mm	T2 Thread NPTF
2-2	1/8-27	4.0	5.0	1/8-27
2-4	1/4-18	5.6	7.0	1/8-27
4-4	1/4-18	5.6	7.0	1/4-18
4-6	3/8-18	8.8	10.0	1/4-18
4-8	1/2-14	12.0	13.5	1/4-18
6-4	1/4-18	5.6	7.0	3/8-18
6-6	3/8-18	8.8	10.0	3/8-18
6-8	1/2-14	12.0	13.5	3/8-18
8-4	1/4-18	5.6	7.0	3/4-16
8-6	3/8-18	8.8	10.0	1/2-14
8-8	1/2-14	12.0	13.5	1/2-14
8-12	3/4-14	16.3	18.0	1/2-14
10-6	3/8-18	8.8	10.0	7/8-14
10-8	1/2-14	12.0	13.5	7/8-14
10-12	3/4-14	16.3	18.0	7/8-14
12-6	3/8-18	8.8	10.0	3/4-14
12-8	1/2-14	12.0	13.5	3/4-14
12-12	3/4-14	16.3	18.0	3/4-14
12-16	1-11 1/2	21.4	28.9	
16-12	3/4-14	16.3	13.5	1-11 1/2
16-16	1-11 1/2	21.4	28.9	1-11 1/2
16-20	1 1/4-11 1/2	29.0	32.0	1-11 1/2
20-16	1-11 1/2	21.4	28.9	1 1/4-11 1/2
20-20	1 1/4-11 1/2	29.0	32.0	1 1/4-11 1/2
24-24	1 1/2-11 1/2	34.5	38.0	1 1/2-11 1/2
32-32	2-11 1/2	46.0	49.0	2-11 1/2

Male stud ends/Port end dimensions for tube fittings

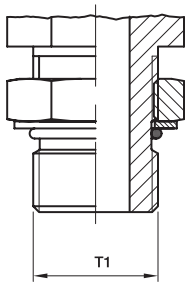
Preferred male stud ends for hydraulic applications

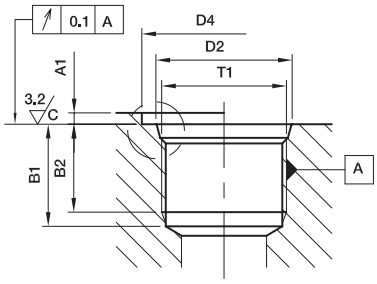
For new designs the metric version is recommended according to ISO 6149

Male stud non adjustable without retaining-ring
Sealing: O-ring
metric – ISO 6149-2/3
UNF – ISO 11926-2/3

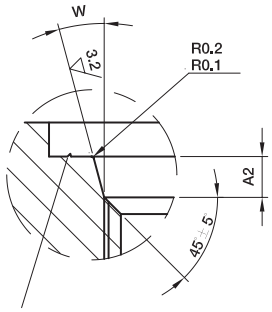


Male stud adjustable without retaining-ring
Sealing: O-ring
metric – ISO 6149-2/3
UNF – ISO 11926-2/3





Port
metric – ISO 6149-1
UNF – ISO 11926-1

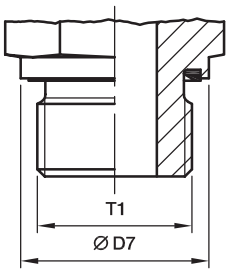


Identification for metric thread.
Optional
Marked with "M"

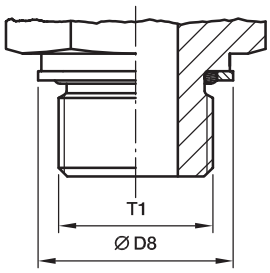
Thread T1	D5	D4 small min.	D4 wide min.	D2 0.1	A1 max.	A2 0.4	B1 min.	B2 min.	W ± 1°	Identification internal Thread major diameter	Identification internal Thread minor diameter
M 8×1	11.8	14	17	9.10	1.0	1.6	11.5	10.0	12°	8.00	6.92
M 10×1	13.8	16	20	11.10	1.0	1.6	11.5	10.0	12°	10.00	8.92
M 12×1.5	16.8	19	23	13.80	1.5	2.4	14.0	11.5	15°	12.00	10.38
M 14×1.5	18.8	21	25	15.80	1.5	2.4	14.0	11.5	15°	14.00	12.38
M 16×1.5	21.8	24	28	17.80	1.5	2.4	15.5	13.0	15°	16.00	14.38
M 18×1.5	23.8	26	30	19.80	2.0	2.4	17.0	14.5	15°	18.00	16.38
M 22×1.5	26.8	29	34	23.80	2.0	2.4	18.0	15.5	15°	22.00	20.38
M 27×2	31.8	34	40	29.40	2.0	3.1	22.0	19.0	15°	27.00	24.84
M 33×2	40.8	43	49	35.40	2.5	3.1	22.0	19.0	15°	33.00	30.84
M 42×2	49.8	52	60	44.40	2.5	3.1	22.5	19.5	15°	42.00	39.84
M 48×2	54.8	57	66	50.40	2.5	3.1	25.0	22.0	15°	48.00	45.84
7/16-20 UNF-2B	13.8	21	—	12.40	1.6	2.4	14.0	11.5	12°	11.11	9.74
1/2-20 UNF-2B	16.8	23	—	14.50	1.6	2.5	14.0	11.5	12°	12.70	11.30
9/16-18 UNF-2B	16.8	25	—	15.65	1.6	2.5	15.5	12.7	12°	14.29	12.76
3/4-16 UNF-2B	21.8	30	—	20.60	2.4	2.5	17.5	14.3	15°	19.05	17.33
7/8-14 UNF-2B	26.8	34	—	23.95	2.4	2.5	20.0	16.7	15°	22.23	20.26
1 1/16-12 UN-2B	31.8	41	—	29.15	2.4	3.3	23.0	19.0	15°	26.99	24.69
1 5/16-12 UN-2B	40.8	49	—	35.50	3.2	3.3	23.0	19.0	15°	33.34	31.04
1 5/8-12 UN-2B	49.8	58	—	43.50	3.2	3.3	23.0	19.0	15°	41.28	38.99
1 7/8-12 UN-2B	54.8	65	—	49.85	3.2	3.3	23.0	19.0	15°	47.63	45.33

Port end dimensions for tube fittings

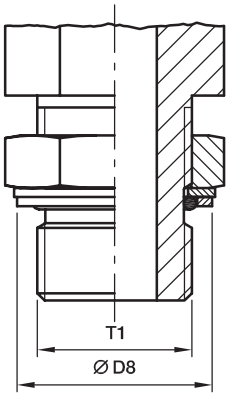
Male stud Type E
Sealing: Eolastic seal ED
metric: ISO 9974-2
BSPP: ISO 1179-2



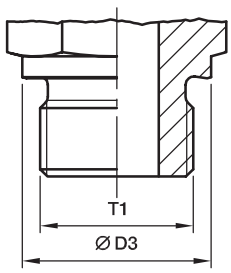
Male stud Type G (non-adjustable with retaining-ring)
Sealing: O-ring
metric: —
BSPP: ISO 1179-3



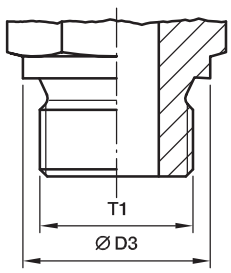
Male stud Type H (adjustable with retaining-ring)
Sealing: O-ring
metric: —
BSPP: ISO 1179-3

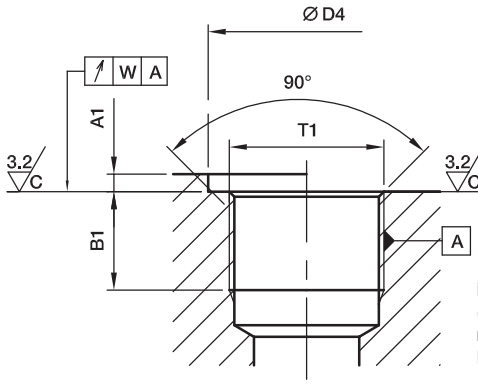


Male stud Type B
Sealing: Cutting face
metric: ISO 9974-3
BSPP: ISO 1179-4



Male stud Type A
Sealing: Sealing washer DIN 7603, e.g. copper
metric: DIN 3852-1
BSPP: DIN 3852-2



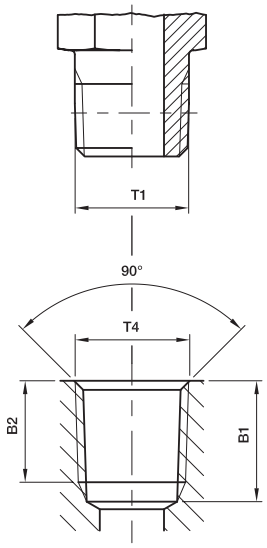


Port Type X
(parallel thread)
metric: ISO 9974-1
BSPP: ISO 1179-1

Thread T1	∅ D3 mm	∅ D7 mm	D8 small	D8 wide	D4 min. small	$D4^{+0.4}$ wide	A1 max.	B1 min.	W	Identification internal Thread major diameter	Identification internal Thread minor diameter
M 8×1			12.8	13.15					0.1	8.00	6.92
M 10×1	13.9	13.9	14.8	14.75	15	20	1.0	8	0.1	10.00	8.92
M 12×1.5	16.9	16.9	17.8	17.75	18	25	1.5	12	0.1	12.00	10.38
M 14×1.5	18.9	18.9	19.8	19.75	20	25	1.5	12	0.1	14.00	12.38
M 16×1.5	20.9	21.9	22.8	21.75	23	28	1.5	12	0.1	16.00	14.38
M 18×1.5	22.9	23.9	24.8	23.75	25	30	2.0	12	0.1	18.00	16.38
M 20×1.5	24.9	25.9	26.8	25.75	27	34	2.0	14	0.1	20.00	18.38
M 22×1.5	26.9	26.9	27.8	27.75	28	34	2.5	14	0.1	22.00	20.38
M 26×1.5	30.9	31.9	32.8	31.75	33	42	2.5	16	0.2	26.00	24.38
M 27×2	31.9	31.9	32.8	32.75	33	42	2.5	16	0.2	27.00	24.84
M 33×2	38.9	39.9	40.8	39.75	41	47	2.5	18	0.2	33.00	30.84
M 42×2	48.9	49.9	50.8	49.75	51	58	2.5	20	0.2	42.00	39.84
M 48×2	54.9	54.9	55.8	54.95	56	65	2.5	22	0.2	48.00	45.84
G 1/8 A	13.8	13.9	14.8	15.00	15	19	1.0	8	0.1	9.73	8.57
G 1/4 A	17.8	18.9	19.8	19.5	20	25	1.5	12	0.1	13.16	11.45
G 3/8 A	21.8	21.9	22.8	23.5	23	28	2.0	12	0.1	16.66	14.95
G 1/2 A	25.8	26.9	27.8	28.5	28	34	2.5	14	0.1	20.96	18.63
G 3/4 A	31.8	31.9	32.8	34.5	33	42	2.5	16	0.2	26.44	24.12
G 1 A	38.8	39.9	40.8	43.5	41	47	2.5	18	0.2	33.25	30.29
G 1 1/4 A	48.8	49.9	50.8	52.5	51	58	2.5	20	0.2	41.91	38.95
G 1 1/2 A	54.8	54.9	55.8	60.00	56	65	2.5	22	0.2	47.80	44.85

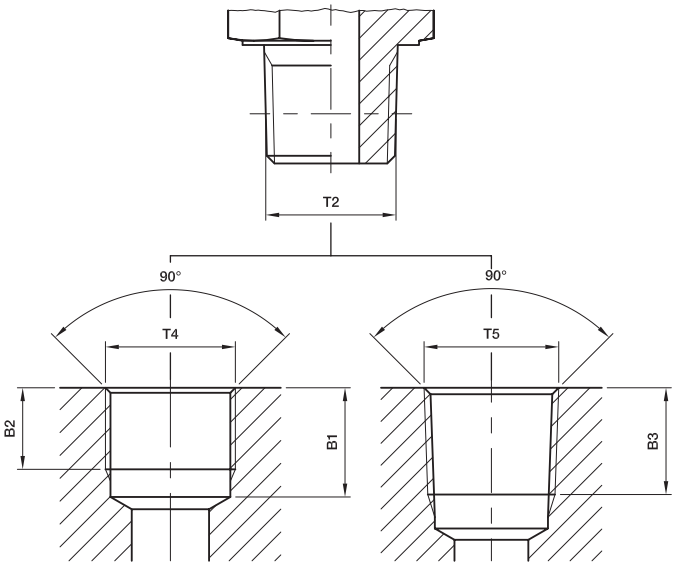
Port end dimensions for tube fittings

Male stud NPT/F
Sealing: Tapered thread[1])
NPT ANSI/ASME B 1.20.1-1983
NPTF ANSI/ASME B 1.20.3-1976



Port NPT/F (taper)
NPT ANSI/ASME B 1.20.1-1983
NPTF ANSI/ASME B 1.20.3-1976

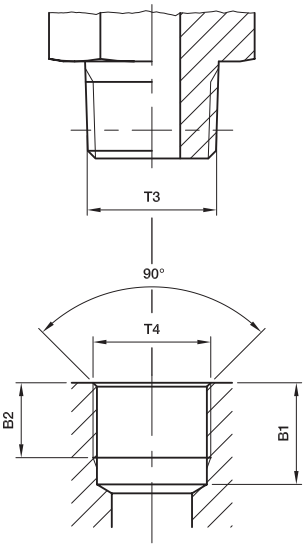
Male stud BSPT
Sealing: Tapered thread[1])
ISO 7/BS 21/DIN 2999-1



Port BSPP (parallel)
ISO 7/1-Rp
BS 21-Rp (ISO 1179-1)

Port BSPT (taper)
ISO 7/1-Rc/BS 21-Rc
DIN 2999-Rc (Japan: PT)

Male stud Type C
Sealing: Tapered thread short[1])
metric DIN 3852-1
Inch DIN 3852-2



Port (parallel)
metric DIN 3852-1
Inch DIN 3852-2

Thread T1	Thread T2	Thread T3	Thread T4	Thread T5	B1 min.	B2 min.	B3 min.
1/8-27 NPT/F*			1/8-27 NPT/F*		11.6	6.9	
1/4-18 NPT/F*			1/4-18 NPT/F*		16.4	10.0	
3/8-18 NPT/F*			3/8-18 NPT/F*		17.4	10.3	
1/2-14 NPT/F*			1/2-14 NPT/F*		22.6	13.6	
3/4-14 NPT/F*			3/4-14 NPT/F*		23.1	14.1	
1-11.5 NPT/F*			1-11.5 NPT/F*		27.8	16.8	
11/4-11.5 NPT/F*			11/4-11.5 NPT/F*		28.3	17.3	
11/2-11.5 NPT/F*			11/2-11.5 NPT/F*		28.3	17.3	
	R 1/8		Rp 1/8	Rc 1/8	9.7	7.9	7.4
	R 1/4		Rp 1/4	Rc 1/4	12.0	11.2	11.0
	R 3/8		Rp 3/8	Rc 3/8	13.5	12.0	11.4
	R 1/2		Rp 1/2	Rc 1/2	17.6	15.0	15.0
	R 3/4		Rp 3/4	Rc 3/4	19.1	16.0	16.3
	R 1		Rp 1	Rc 1	21.4	19.1	19.0
	R 1 1/4		Rp 1 1/4	Rc 1 1/4	21.4	19.9	21.4
	R 1 1/2		Rp 1 1/2	Rc 1 1/2	22.4	20.6	21.4
		M 8×1 tap.	M 8×1		10.0	5.5	
		M 10×1 tap.	M 10×1		10.0	5.5	
		M 12×1.5 tap.	M 12×1.5		13.5	8.5	
		M 14×1.5 tap.	M 14×1.5		13.5	8.5	
		M 16×1.5 tap.	M 16×1.5		13.5	8.5	
		M 18×1.5 tap.	M 18×1.5		13.5	8.5	
		M 20×1.5 tap.	M 20×1.5		15.5	10.5	
		M 22×1.5 tap.	M 22×1.5		15.5	10.5	
		R 1/8 tap.	Rp 1/8		8.5	5.5	
		R 1/4 tap.	Rp 1/4		12.5	8.5	
		R 3/8 tap.	Rp 3/8		12.5	8.5	
		R 1/2 tap.	Rp 1/2		16.5	10.5	

*In the **EO** fitting range only **NPT** thread is manufactured.
In the **Triple-Lok®, O-Lok® and adapters** fitting range for **steel NPTF** thread is manufactured and for **stainless steel NPT** thread is manufactured.
1)Tightness can only be achieved by liquid or plastic sealing aids.

Tube assembly



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EO2-FORM assembly instructions E18

Checking instructions for EO2-FORM tools E24

Weld fitting assembly E25

O-Lok® Plus assembly instructions E26

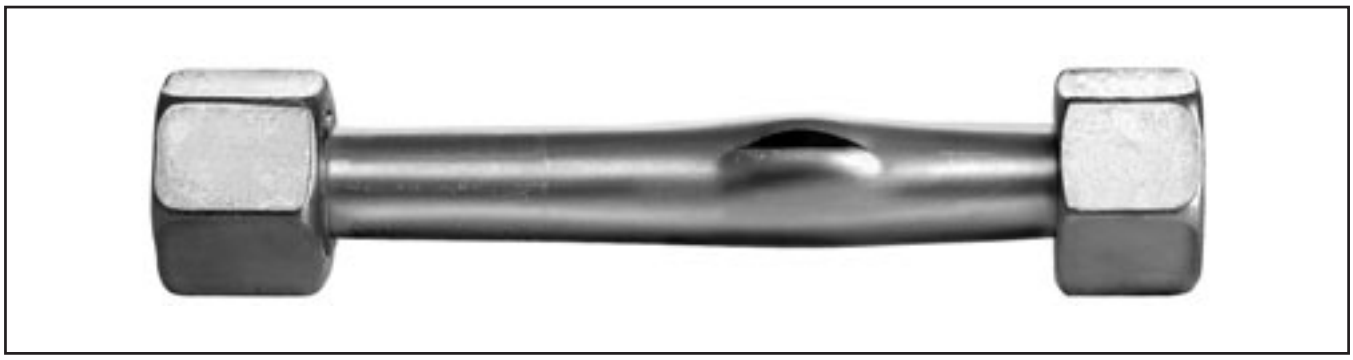
Triple-Lok® Plus assembly instructions E30

Checking instructions for O-Lok® Plus / Triple-Lok® Plus E34

Flange-Seal assembly instructions E35

Safety instructions

Tube fittings are safe high-pressure connections



A carefully assembled Parker tube fitting will provide a sealed joint even up to tube burst. Experience has shown that break-downs, re-tightening and leaks can be avoided by following these safety instructions. Please review your fitting procedures.

General safety instructions

- Uncomplete assembly will reduce the pressure and vibration capability of a fitting. It can reduce the life cycle time of a connection and leakage can occur. In extreme cases the connection can fail due to tube shear or tube crack.
- After opening a tube connection, the unit has to be retightened with the same force used during prior assembly. Undertightening can result in leakage and can reduce the vibration resistance. Overtightening can reduce the possibilities of repeated assembly. In extreme cases the components can be destroyed.
- Parker tube fittings are intended solely for connections for fluid applications.
- Observe tube recommendations. Non-standard materials or tolerances lead to incorrect assembly.
- Do not use ball bearings, fitting pins or tapered pins, coins or washers instead of the correct Parker blanking plug as blanking parts for 24° cones.
- Tube connection and fitting body once assembled, should remain together. Fitting body is to be used once only for pre-assembly.
- Air bleeding of tube fittings which are under pressure can be dangerous.
- Tube under tension can lead to vibration failure. Tube length and bend angles are to be adhered to precisely. Fix tube lines with tube clamps.
- Tubes are not to be clamped to one another but to suitable fixed points. Plate brackets, cable connections and fixing elements are not suitable. Tubes are not mountings on which to integrate other components e.g. filters, ventilators or shut-off valves.
- Prevent oscillation, pressure surges and inherent strain by using flexible hoses for example.
- Under and overtightening of fittings during assembly reduces the capacity for withstanding pressure and vibration loads and therefore reduces the life of the tube fitting. Leaks from the tube can occur under these circumstances.
- When dismantling/transporting and re-assembling, make sure that no dirt enters the system, that the connection elements (threads, sealing surfaces) are not damaged, seals are not lost and tubes are not bent or flattened. We recommend the use of suitable protective caps.
- Disassembled fittings are to be checked for accuracy and damage and replaced if necessary.
- Do not use hand cutters or tube cutters.
- Dirt and metal contamination can lead to damage to the system and leaks.
- The operating parameters given (e.g. pressure, temperature, medium compatibility) are to be adhered to.
- Avoid flow rates > 8 m/s. The resulting forces are high and can destroy the tube lines.
- Relevant guidelines (e.g. CE, ISO, BG, TÜV, DIN) are to be observed.
- Weld fittings are manufactured out of weldable materials. No other fittings are suitable for welding.
- EO-Niromont and Parflange 1040LUBSS are high-performance lubricants. The use of other lubricants generally leads to an increase in assembly force.
- The tools and lubricants recommended by Parker guarantee safe assembly.
- Components and tooling of different manufacturers are not necessarily compatible. For complete safety, use only Parker components.
- Fittings are to be handled with care.
- Tubelines need to be adapted tension free of the relevant connectors before assembly. An easy turning of the nut is required for the complete thread length. Otherwise leakage can occur. In extreme cases with additional vibrations tube cracks can occur.
- Vibrations have to be clamped by tube clamps. Independent vibrating units need to be separated with hoses. Otherwise tube cracks can occur.

Specific safety instructions for assembly

- During a progressive ring and EO-2 fitting assembly the tube has to bottom up in the stud or in the tool. Without tube bottoming the ring cannot bite sufficiently. Under load the connection can fail due to tube shear.
- Correctly flared tubes are essential for leak free performance of Triple-Lok® Plus fittings. Special care must be taken over the flare diameter and surface finish.
- Preset bite type fittings (Progressive ring) need a final assembly according to assembly instructions.
- Stainless steel progressive ring fittings have to be preassembled in hardened tools. Otherwise the connection may fail under load due to tube shear.
- Do not assemble progressive rings and functional nuts on self-made standpipe stud ends. There is a risk of false assembly with the result of connection shear under load.
- The use of steel cutting rings for stainless steel tubes or other unauthorised tool combinations leads to incorrect assembly.

In case of doubt please contact your Parker representative!

General

Assembly of Parker tube fittings always follows the same pattern:



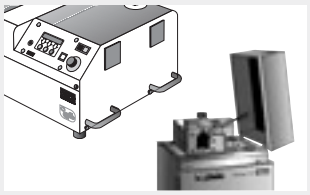
Material combinations

- Use recommended tube material
- Select suitable components according to tube material



Tube preparation

- Cut and deburr thoroughly
- Follow recommendations for minimum straight tube length
- Apply support sleeves when necessary



Machine assembly

- Preferred method
- Most efficient method
- Recommended for large EO progressive ring and EO2
- Parflange® recommended for 37° flaring



Manual assembly

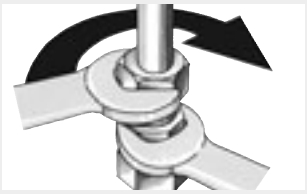
- Economical for assembly of small quantities
- Suitable for small O.D. tube
- For repair work
- Hand flaring does not provide reliable results
- Stainless steel progressive ring fittings need to be assembled with pre-assembly tools



Assembly check

- Check assembly tube preparation result

⚠ Incorrect assemblies must be corrected or scrapped

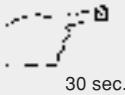
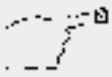
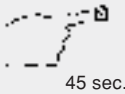
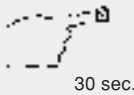


Final installation

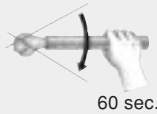
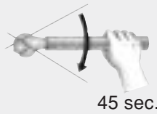
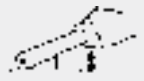
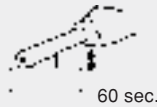
- Final fitting assembly according to instruction
- Do not assemble under tension
- Clamp onto rigid fixtures
- Tighten tube clamps after final fitting installation

Selection of assembly process for bite systems

Manual assembly for field repair

Process			Product	
Procedure	**Equipment**	**Process / Time***	**EO progressive ring PSR/DPR**	**EO2**
Pre-assembly using EOMAT II machine		 30 sec.	ideal for workshop assembly, not suitable for LL series	ideal for workshop assembly, not suitable for LL series
Pre-assembly using EOMAT III machine		 30 sec.	ideal for serial production	ideal for serial production
Tube forming using EO2-FORM F3 machine		 40 sec.	not applicable	not applicable
Tube flaring using Parflange® 1025 machine		 45 sec.	not applicable	not applicable
Tube flaring using Parflange® 1040 machine		 30 sec.	not applicable	not applicable

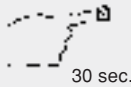
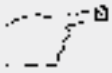
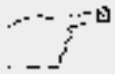
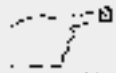
Workshop machines for industrial assembly

Process			Product	
Procedure	**Equipment**	**Process/Time***	**EO progressive ring PSR/DPR**	**EO2**
Direct in fitting		 60 sec.	field repair only, not for efficient production and tubes larger than 22mm OD, preferred method for PSR, not for stainless steel	field repair only, not for efficient production and tubes larger than 22mm OD
Pre-assembly in vice		 45 sec.	field repair only, not for efficient production	field repair only, not for efficient production
Flaring in vice		 120 sec.	not applicable	not applicable
Pre-assembly using HVM-B device		 30 sec.	final assembly in fitting must be 1/2 turn, not for tubes larger than 15mm OD, not for stainless steel	not applicable
Pre-assembly using EO-KARRYMAT		 60 sec.	ideal for repair jobs and small on-site installations, not suitable for volume production	ideal for repair jobs and small on-site installations, not suitable for volume production
Tube flaring using KarryFlare		 60 sec.	not applicable	not applicable

*Average for total assembly time of medium size fitting including assembly check and final tightening

Selection of assembly process for tube forming systems

Manual assembly for field repair

Process			Product		
Procedure	**Equipment**	**Process / Time***	**EO2-FORM**	**Triple-Lok® Plus**	**O-Lok® Plus**
Pre-assembly using EOMAT II machine		 30 sec.	not applicable	suitable for workshop assembly, preferred process is Parflange®	not applicable
Pre-assembly using EOMAT III machine		 30 sec.	not applicable	suitable for workshop assembly, preferred process is Parflange®	not applicable
Tube forming using EO2-FORM F3 machine		 40 sec.	ideal for workshop assembly and serial production	not applicable	not applicable
Tube flaring using Parflange® 1025 machine		 45 sec.	not applicable	ideal for workshop assembly, not recommended for mass production, not suitable for assembly of SS tubes over 25mm	ideal for workshop assembly, not recommended for mass production, not suitable for assembly of SS tubes over 25mm
Tube flaring using Parflange® 1040 machine		 30 sec.	not applicable	ideal for workshop assembly and serial production	ideal for workshop assembly and serial production, automatic sleeve feeder available for mass production

Workshop machines for industrial assembly

Process			Product		
Procedure	**Equipment**	**Process / Time***	**EO2-FORM**	**Triple-Lok® Plus**	**O-Lok® Plus**
Direct in fitting		 60 sec.	not possible, use EO2 for field repair	not possible, use 1015 device or hand flaring tools for field repair	not possible, use braze sleeves or hose lines for field repair
Pre-assembly in vice		 45 sec.	not possible, use EO2 for field repair	not possible, use 1015 device or hand flaring tools for field repair	not possible, use braze sleeves or hose lines for field repair
Flaring in vice		 120 sec.	not applicable	field repair only, not for efficient production, not for stainless steel tubes	not possible, use braze sleeves or hose lines for field repair
Pre-assembly using HVM-B device		 30 sec.	not applicable	not applicable	not applicable
Pre-assembly using EO-KARRYMAT		 60 sec.	not possible, use EO2 for field repair	not applicable	not applicable
Tube flaring using KarryFlare		 60 sec.	not possible, use EO2 for field repair	ideal for repair jobs and small on-site installations, not suitable for industrial production	not applicable

*Average for total assembly time of medium size fitting including assembly check and final tightening

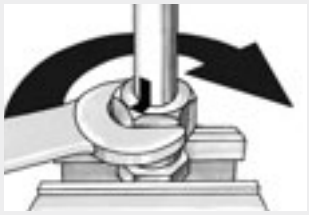
New EO assembly instructions for 30° final assembly

Traditional pre-assembly

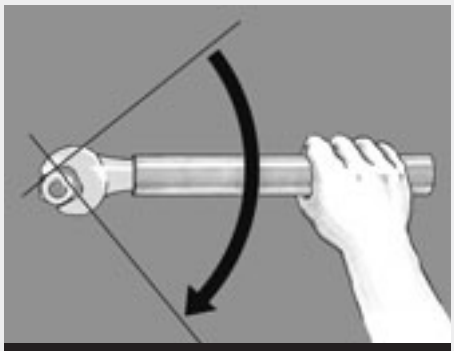
- According to DIN 3859 T2
- Can be used optional as usual
- Machine preset ≙ manual preset



- Machine presetting: Machine preset corresponding to $1^1/_4$ turn of nut



- Manual presetting: Tighten the nut by $1^1/_4$ turns

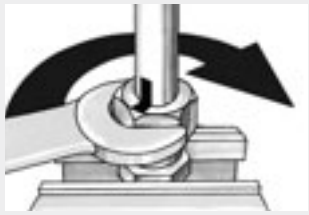


Optimized EO pre-assembly

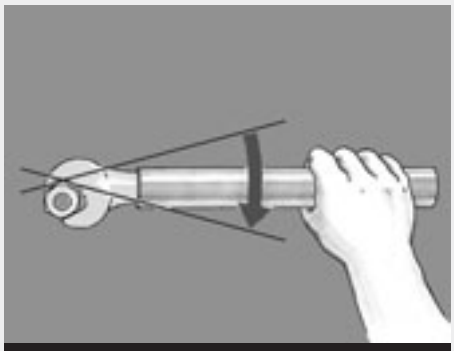
- Machine preset ≙ manual preset



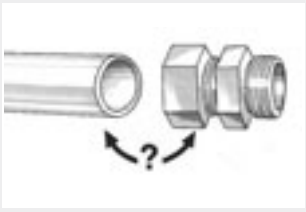
- Machine presetting: Machine preset corresponding to $1^1/_2$ turn of nut



- Manual presetting: Tighten the nut by $1^1/_2$ turns



EO progressive ring PSR/DPR



Material combinations

- Select suitable EO progressive ring fitting

Tube material	EO-Fitting body	assembly instructions
Steel	Steel (LL=D-Ring)	
Stainless Steel	Stainless Steel	Pre-assembly by machine or hardened tool required
Copper	Brass (D-Ring)	
Plastic e.g. Polyamide	Steel, Brass, Stainless Steel	Support sleeve E required Check assembly devices for suitability
Stainless Steel	Steel	Stainless Steel DPR must be used Pre-assembly by machine or hardened tool required

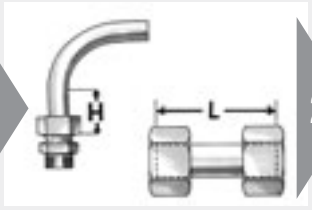
E

Tube preparation



- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures

1



- Minimum lengths of straight tube-ends, H=2× nut length
- Use swivel union “GZ” instead of short tubes

2



- Cut tube squarely
- max ±1°deviation
- ⚠ Do not use pipe cutters
- EO tube-cutting tool (AV) for manual cutting

3



- Remove internal and external burrs
- max. chamfer 0.3mm x 45°
- Recommendation: In-Ex Tube Deburring Tool 226

Support sleeves VH



- Support sleeve VH for thin wall or soft metal tubes (see chart)

1



- Insert support sleeve like shown

2



- Drive VH into tube-end

Tube insert E

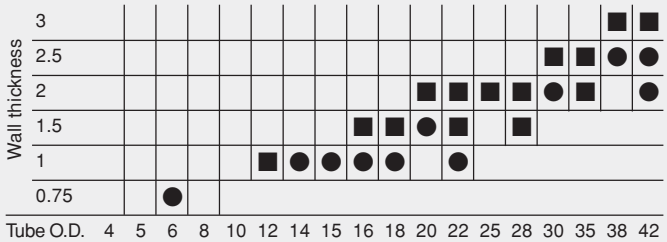


- Support sleeve E for plastic tubes

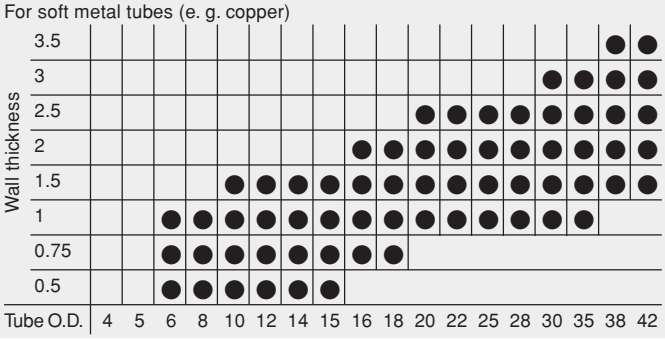
● Support sleeve required

■ Support sleeve required for heavily loaded lines (vibrations)

VH selection chart for EO Progressive Ring
For steel tubes material ST 37.4
and for stainless steel tubes material 1.4571 and 1.4541



For soft metal tubes (e. g. copper)



EO progressive ring PSR/DPR


EOMAT II


EOMAT III/A

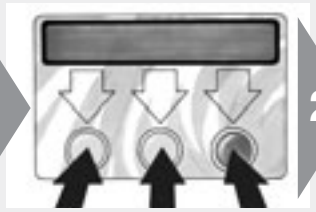

EO-KARRYMAT

100% Pre-assembly with EOMAT/ EO-KARRYMAT

- Preferred method
- Most efficient method

⚠ HVMB-device not suitable for 100% assembly of PSR fittings

1



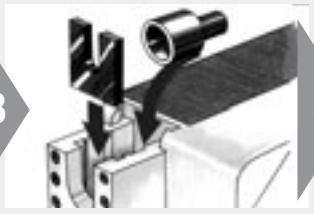
- EOMAT II and EO-KARRYMAT: Adjustment according to pressure chart on machine (PSR/DPR) Reduction of preset pressures for tube materials softer than steel and stainless steel required
- EOMAT III/A: Menu selection (PSR/DPR)
- Non-EOMAT-machines: Check suitability

2

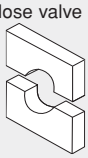


- Control (see checking instructions)
- Clean and lubricate assembly cone and thread regularly

3



- Insert proper tools
- Clean and lubricate assembly cones regularly
- EO-KARRYMAT: Close valve on handpump
- 2-piece backing plates for 35-L and 42-L

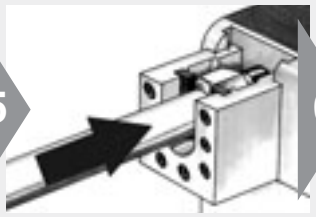


4



- Slide nut and progressive ring as shown onto the end of the tube

5



- Place tube with progressive ring and nut into the die
- Press tube-end firmly into the assembly cone

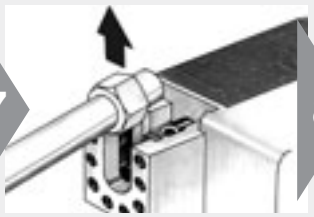


6



- Hold tube firmly
- EOMAT: Press and hold start button
- Use support and foot switch for long tubes
- EO-KARRYMAT: Operate handpump until assembly pressure is reached

7



- After completion of pre-assembly, remove the tube for assembly check
- EO-KARRYMAT: Open valve on handpump

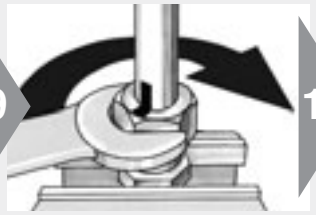
8



⚠ Check to make sure that a visible collar covers the front of the first cutting edge

- It does not matter if the ring can be rotated on the tube-end

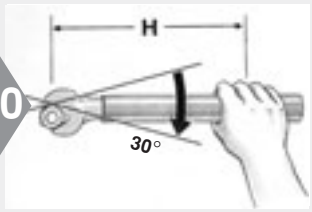
9



- Assemble fitting until wrench-tight (without spanner extension)

⚠ Mark position of nut

10

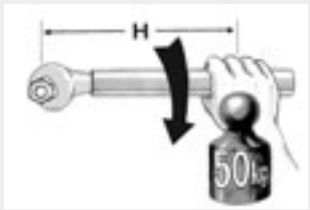


⚠ Then tighten fitting firmly by 30° (1/2 flat)

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

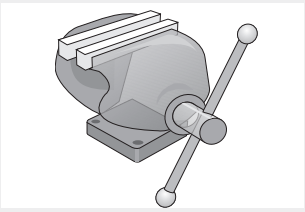
- Assembly torques are available on request

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

EO progressive ring PSR/DPR



Pre-assembly with hardened tool VOMO

- Reliable method for repair jobs
- Only economic for assembly of small quantities

⚠ Stainless steel EO progressive rings must be pre-assembled using a hardened tool (VOMO)

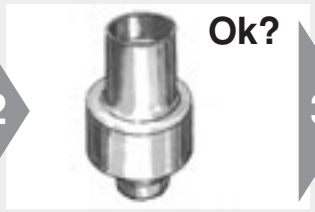
- For tubes over 25mm, EO-KARRYMAT / EOMAT is recommended

1



⚠ For stainless steel assembly threads must be lubricated
- Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

2



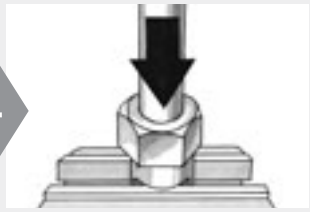
- Control (see checking instructions)
- Cones of pre-assembly bodies must be checked regularly (after 50 pre-assemblies) with cone gauges (KONU)
- Clean and lubricate assembly cone and thread regularly

3

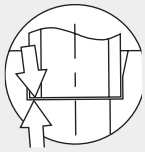


- Use pre-assembly tool VOMO
- Fitting body may be used <u>one</u> time only (not for stainless steel)
- Screw on nut until finger-tight

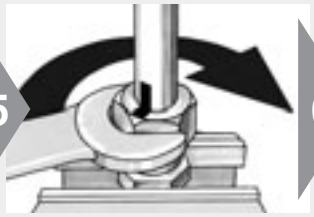
4



⚠ Press tube-end firmly into the assembly cone



5



⚠ Mark position of the nut
- Tighten the nut by $1^1/_2$ turns

⚠ Recommended to use spanner extension for sizes over 20 mm O.D.

6

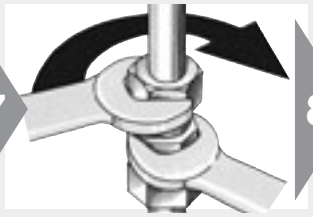


Assembly check:
- Loosen nut

⚠ Check to make sure that a visible collar covers the front of the first cutting edge

⚠ It does not matter if the ring can be rotated on the tube-end

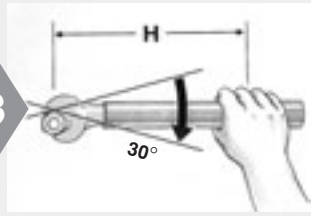
7



- Assemble fitting until wrench-tight (without spanner extension)

⚠ Mark position of nut

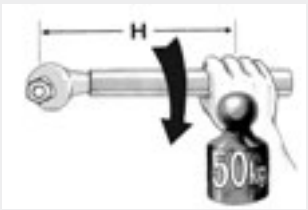
8



⚠ Then tighten fitting firmly by 30° ($^1/_2$ flat)

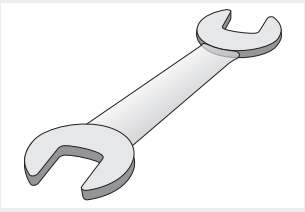
⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**
- Assembly torques are available on request

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

EO progressive ring PSR/DPR



Direct assembly

- Simple procedure for single assemblies of small dimensions
- Not economic for series assembly

⚠ Tubes ∅ 30, 35, 38 and 42 mm must be pre-assembled in vice

⚠ Stainless steel connections have to be assembled using pre-assembly tool (VOMO)

⚠ Properly cleaned studs (“BE”) have to be assembled with pre-assembly tools

1



⚠ Lubrication of threads will reduce wear and assembly forces

⚠ Threads on stainless steel fittings must be lubricated

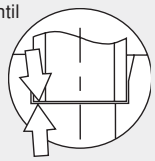
⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

2

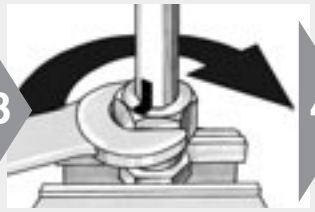


- Screw on nut until finger-tight

⚠ Press tube-end firmly into fitting body



3



- Mark position of the nut
- Tighten the nut by 1 1/2 turns

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

- Fitting body may be used one time only

4

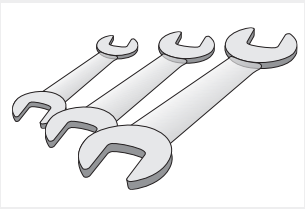


Assembly check:

- Loosen nut

⚠ Check to make sure that a visible collar covers the front of the first cutting edge

- It does not matter if the ring can be rotated on the tube-end



Repeated assembly

- Each time the tube-end has been disconnected, the fitting must be properly tightened again

⚠ EO progressive rings cannot be replaced, once assembled

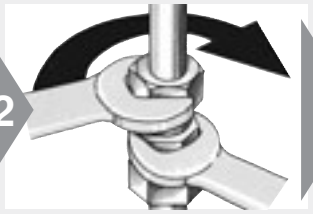
1



⚠ Threads on stainless steel fittings must be lubricated

⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

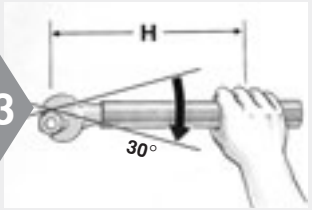
2



- Each time the fitting has been loosened, re-assembly must be performed with the same torque as initial assembly
- The body must be held rigid

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

3

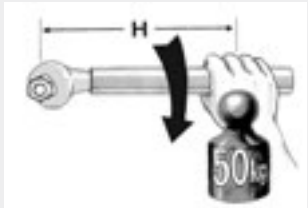


⚠ Then tighten fitting firmly by 30° (1/2 flat)

- Assembly torques are available on request

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

EO-2 assembly instructions

Detailed assembly-instructions are included in each EO-2 product box.
Details on Eomat setting and selection of support sleeves can be found there as well.

Tube preparation



- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures



- Cut tube squarely
- max ± 1° deviation
- ⚠ Do not use pipe cutters
- EO tube-cutting tool (AV)



- Remove internal and external burrs
- max. chamfer 0.3mm × 45°
- Seal can be damaged by large burrs

Material combinations



- Select suitable FM-type

	Steel tube	Stainless Steel tube	Plastic tube
Steel fitting	FM...A3C	FM...SSA	FM...A3C+E
Stainless Steel fitting	—	FM...71	FM...71+E

Tube insert E



- Tube insert E for plastic tubes

Support sleeves VH



- Support sleeve VH for thin wall or soft metal tubes



- Support-sleeve selection: see instruction shipped with product box



- Drive VH into tube-end

Use of support sleeves "VH" with EO-2 fittings

Tube O.D.	0.5	0.75	1	1.5	2	2.5	3	3.5	4
4									
6									
8									
10									
12									
14									
15			o						
16									
18									
20									
22									
25									
28									
30									
35									
38									
42					o				

- Functional test required for other materials or dimensions not specified.
- Support sleeve VH **not required** for EO-2 and steel tube.
- For stainless steel tube functional test required.
- Support sleeve VH **not required** for EO-2 and steel tube.
- Support sleeve VH **not required** for EO-2/71 or EO-2/SSA and stainless steel tube.
- o VH **required** for FM/71 and operating pressure above 100 bar.

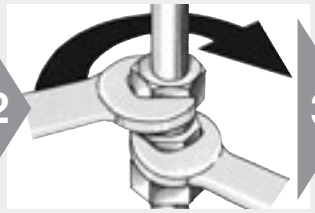
Replacement of sealing ring/Repeated assembly



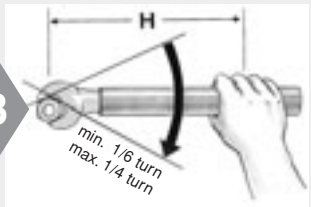
- Sealing ring DOZ can be changed separately



- After disassembly, sealing ring can be pulled of the tube-end
- Check for damage and replace if necessary
- Abrasion on outer rubber parts does not effect performance

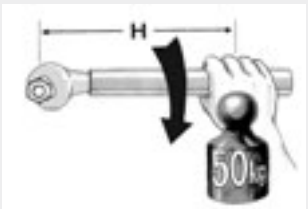


- Assemble fitting until wrench-tight (without spanner extension)



- ⚠ Then tighten fitting firmly by min $^1/_6$ (max $^1/_4$) turn (1 to $1^1/_2$ flats)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

EO-2 assembly instructions


EOMAT II

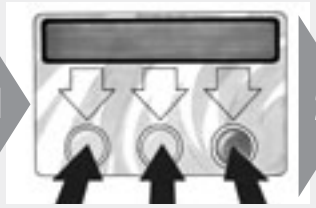

EOMAT III/A


EO-KARRYMAT

Assembly with EOMAT/ EO-KARRYMAT

- Preferred method
- Most efficient method
- HVM-B device is not suitable for EO-2

1



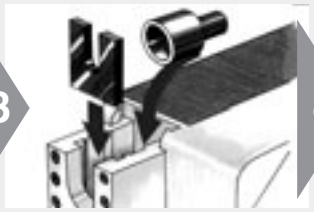
- EOMAT II: Adjustment according to pressure on machine (see instructions shipped with product box)
- EOMAT III/A: Menu selection
- EO-KARRYMAT: Refer to chart on machine
- Non-EOMAT-machines: check suitability

2



- Check according to MOK checking instructions
- Use special EO-2 MOK (silver) for Tube-OD 25 mm and larger. Advantages: easy and safe assembly

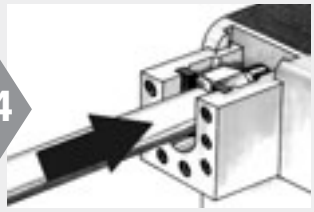
3



- Insert proper tools
- 2-piece tube backing plates for 35-L and 42-L
- EO-KARRYMAT: Close valve on handpump



4



- Place tube with functional nut into the die
- Press tube-end firmly into the assembly cone
- Hold back nut for easy tube insertion



5



- Hold tube firmly
- EOMAT: Press and hold start button
- Use support and foot switch for long tubes
- EO-KARRYMAT: Operate handpump until assembly pressure is reached. Then open valve on handpump

6



Assembly check:

- Gap between sealing ring and retaining ring must be closed
- A little relaxation (approx. 0.2 mm) is allowed

7



⚠ **Gap not closed:** Check all components, tube, machine, tools and pressure setting

⚠ Repeat assembly with increased pressure if necessary

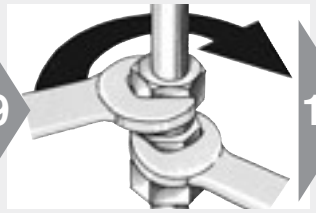
8



⚠ Threads of stainless steel fittings must be lubricated

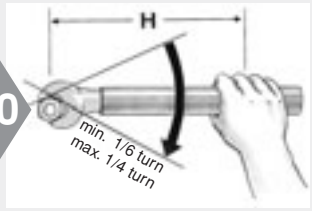
⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

9



- Assemble fitting until wrench-tight (without spanner extension)

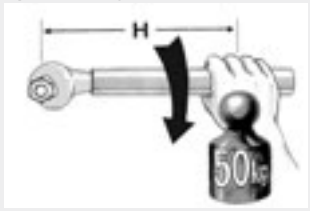
10



⚠ Then tighten fitting firmly by min $^1/_6$ (max. $^1/_4$) turn (1 to $1^1/_2$ flats)

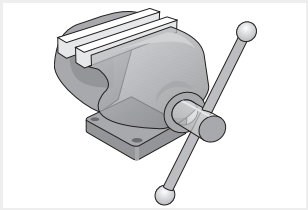
⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

Spanner length



Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

EO-2 assembly instructions



Assembly in vice

- Reliable method
- Only economic for assembly of small quantities

1



⚠ Threads on stainless steel fittings must be lubricated
⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

2



- Check according to VOMO checking instructions
- Use pre-assembly tool VOMO
- Fitting body may be used one time only and components must stay together

3



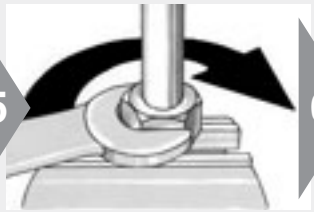
- Push functional nut onto tube-end
- Advantage: Easy tube insertion, particularely large dimensions

4



⚠ Press tube-end firmly into the assembly cone
- Screw on nut until finger-tight

5



- Tighten until sharp increase of resistance (approx. 1 to 1 $^{1}/_{2}$ turns)

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

6



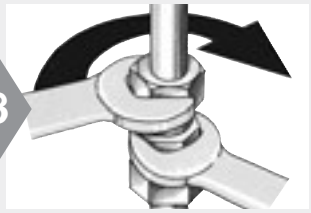
Assembly check:
- Gap between sealing ring and retaining ring must be closed
- A little relaxation (approx. 0.2 mm) is allowed

7



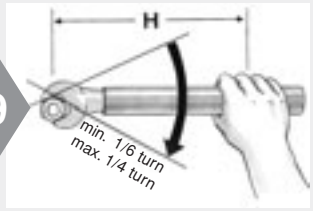
⚠ **Gap not closed:** Check all components including tube

8



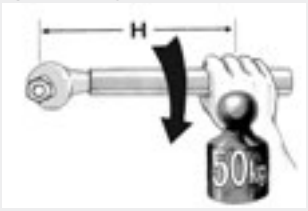
- Assemble fitting until wrench-tight (without spanner extension)

9



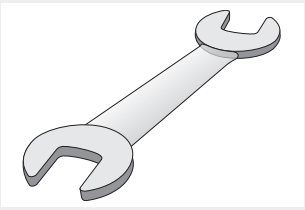
⚠ Then tighten fitting firmly by min $^{1}/_{6}$ (max. $^{1}/_{4}$) turn (1 to 1$^{1}/_{2}$ flats)
⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

Spanner length



Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

EO-2 assembly instructions



Direct assembly

- Simple procedure for single assemblies of small dimensions
- Not economic for series assemblies

⚠ Tubes Ø 30, 35, 38 and 42 mm must be pre-assembled in vice

1



⚠ Threads on stainless steel fittings must be lubricated

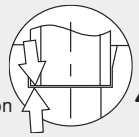
⚠ EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

2

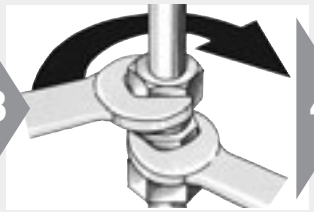


⚠ Press tube-end firmly into the assembly cone

- Turn back nut for easy tube insertion



3



- Tighten until sharp increase of resistance (approx. 1 to 1 $^1/_2$ turns)

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

4



Assembly check:

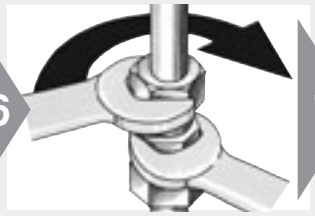
- Gap between sealing ring and retaining ring must be closed
- A little relaxation (approx. 0.2 mm) is allowed

5



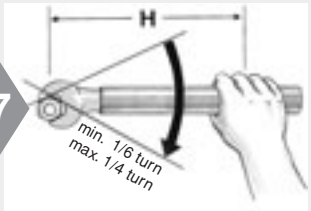
⚠ **Gap not closed:** Check all components including tube

6



- Assemble fitting until wrench-tight (without spanner extension)

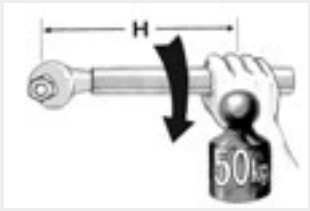
7



⚠ Then tighten fitting firmly by min $^1/_6$ (max $^1/_4$) turn (1 to 1$^1/_2$ flats)

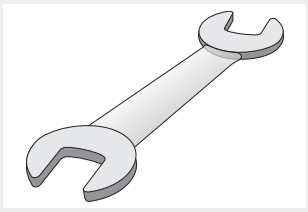
⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

Checking instructions for EO assembly tools



VOMO tools for manual pre-assembly in vice
MOK for use in EO assembly machines

⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure or machine damage
⚠ Tools must be checked regularly, at least after 50 assemblies
⚠ Worn tools must be replaced ⚠ Use only genuine Parker tools
⚠ Tools must be kept clean and lubricated

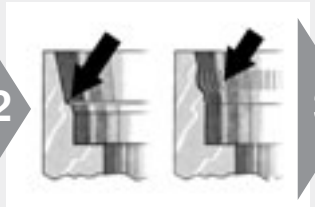
E

1



- Clean cone surface for checking

2



- Visual checks:
  Cone must be free of wear, damage or cracks

3

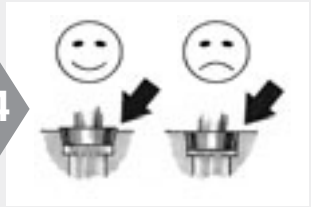


- Check for deformation of geometry

⚠ Special cone gauge KONU must be used

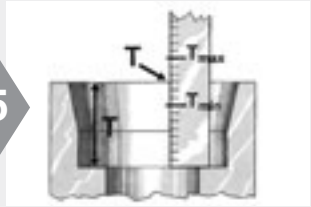
- KONU cone gauges are precision measuring devices and must be handled accordingly

4



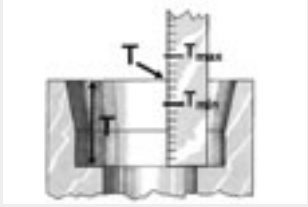
- Check contour:
  The rear of the gauge must protrude slightly above the top face of the cone or may be flush

5



- Check insertion depth

⚠ Deviations from the insertion depth can cause leakages



- Insertion depth T

Table: Tool for presetting tool (MOK and VOMO)

Type	T_{min}	T_{max}	Type	T_{min}	T_{max}
6-L	6.95	7.05	6-S	6.95	7.05
8-L	6.95	7.05	8-S	6.95	7.05
10-L	6.95	7.05	10-S	7.45	7.55
12-L	6.95	7.05	12-S	7.45	7.55
15-L	6.95	7.05	14-S	7.95	8.05
18-L	7.45	7.55	16-S	8.45	8.55
22-L	7.45	7.55	20-S	10.45	10.55
28-L	7.45	7.55	25-S	11.95	12.05
35-L	10.45	10.55	30-S	13.45	13.55
42-L	10.95	11.05	38-S	15.95	16.05

EO2-FORM assembly instructions



Material combinations

- Select suitable materials
- See catalogue for exact tube specifications

Material selection chart

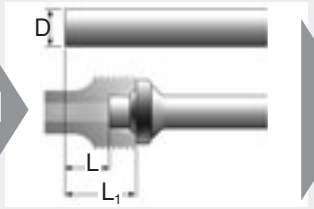
Tube material	Fitting and nut material	Sealing material
Steel	Steel	Steel/NBR or Steel/FKM
Stainless Steel	Stainless Steel	Stainless Steel/ FKM/NBR
Stainless Steel	Steel	Steel/NBR or Steel/FKM



Tube preparation

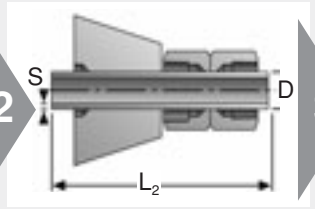
- Cut and deburr thoroughly
- Cut and bend tubes exactly

1



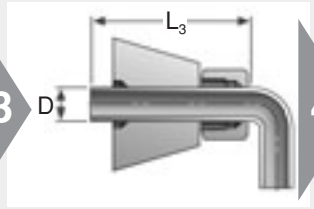
- Take extra length into account **(see tube preparation chart)**

2



- Minimum lengths L_2 of straight tubes **(see chart)**

3



- Minimum lengths L_3 of straight tube-ends before bend **(see chart)**

4



- Cut tube squarely
- max ± 1° deviation

⚠ Do not use pipe cutters

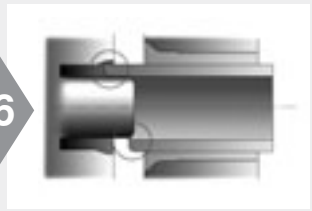
- EO tube-cutting tool (AV) for manual cutting

5



- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Clean tube thoroughly

6

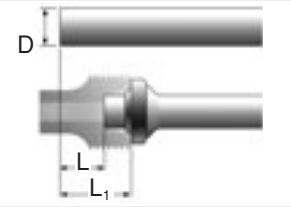


- Chips, dirt, internal or external burrs and paint prevent correct tube insertion

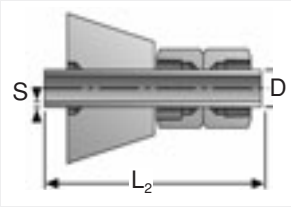
⚠ Dirty tubes result in worn-out or damaged tools

EO2-FORM assembly instructions

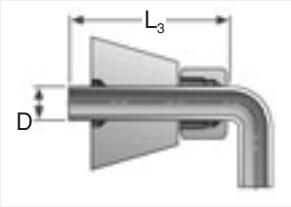
Tube preparation chart - Series L



● Extra length



● Minimum tube length



● Minimum straight length before bend

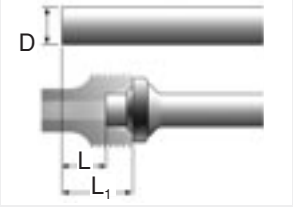


● Minimum clearance of U-shape bends

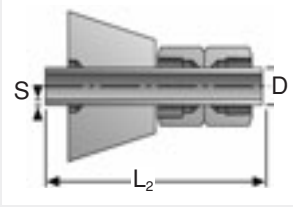
Tube-OD Series	S Wall thickness	L Steel ± 0.5	L Stainless Steel ± 0.5	L_1 Steel	L_1 Stainless Steel	L_2	L_3
6L	1	8.5	8.5	15.5	15.5	90	63
	1.5	6	6	13	13		
8L	1	8.5	9	15.5	16	92	65
	1.5	5.5	6	12.5	13		
	2	5		12			
10L	1	5.5	5.5	12.5	12.5	95	68
	1.5	5	6.5	12	13.5		
	2	5	6.5	12	13.5		
12L	1					95	70
	1.5	5	6	12	13		
	2	5	6	12	13		
15L	1.5	5.5	7	12.5	14	102	75
	2	5.5	7	12.5	14		
	2.5	5.5	7	12.5	14		
18L	1.5	5.5	7	13	14.5	110	80
	2	5.5	7	13	14.5		
	2.5	5.5		13			
	3	5.5		13			
22L	1.5	6	8	13.5	15.5	120	90
	2	6	8	13.5	15.5		
	2.5	6.5	8	14	15.5		
	3						
28L	1.5					140	98
	2	6.5	7.5	14	15		
	2.5	6.5	8	14	15.5		
	3						
35L	2	7	8.5	17.5	19	170	115
	3	8.5	10.5	19	21		
	4						
	5						
42L	2	7.5	9	18.5	20	190	125
	3	9	11.5	20	22.5		
	4	9		20			

EO2-FORM assembly instructions

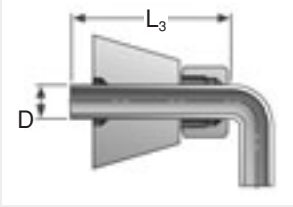
Tube preparation chart - Series S



● Extra length



● Minimum tube length



● Minimum straight length before bend



● Minimum clearance of U-shape bends

Tube-OD Series	S Wall thickness	L Steel ± 0.5	L Stainless Steel ± 0.5	L_1 Steel	L_1 Stainless Steel	L_2	L_3
6S	1	8.5	8.5	15.5	15.5	92	65
	1.5	6	6	13	13		
	2	5.5		12.5			
8S	1	8.5	9	15.5	16	95	68
	1.5	5.5	6	12.5	13		
	2	5		12			
10S	1.5	5	6.5	12.5	14	100	70
	2	5.5	6.5	13	14		
12S	1.5	5	6.5	12.5	14	100	72
	2	5	6.5	12.5	14		
16S	1.5	5.5	7	14	15.5	110	80
	2	5.5	7	14	15.5		
	2.5	5.5	7	14	15.5		
	3	5.5	7	14	15.5		
20S	2	7	8.5	17.5	19	135	98
	2.5	7	8.5	17.5	19		
	3	7	8.5	17.5	19		
	3.5	7		17.5			
25S	2	8.5	10.5	20.5	22.5	155	112
	2.5	8.5	10.5	20.5	22.5		
	3	8.5	10.5	20.5	22.5		
	4	8.5		20.5			
30S	3	8.5	10.5	22	24	165	122
	4	9.5	11	23	24.5		
	5	8.5		22			
38S	2.5		11		27	190	135
	3	11	11	27	27		
	3.5	11		27			
	4	11	12	27	28		
	5	11	13	27	29		
	6	11.5		27.5			
	7	11.5		27.5			

EO2-FORM assembly instructions



Tube forming with EO2-FORM F3

- Reliable forming method
- Reliable process

E

1



⚠ Change tool only when drive switched off (button OFF)

⚠ Obey safety instructions

2



- Open doors to access tools and handling devices
- Tool handling devices are stored in middle on top

3



- Select suitable forming pin according to tube material, outer diameter and wall thickness

4



- Check forming pin for dirt, wear and damage

5



- Use magnetic holder to insert forming pin
- Turn clockwise to lock bayonet fixture

6



- Tilt magneto holder to remove handle

7



- Select suitable clamping die set according to tube outer diameter

⚠ Keep stainless tube clamping dies seperate from other tube materials to prevent contact corrosion

8



- Check clamping dies for dirt, wear and damage

9



- Use pistol to handle clamping die set
- Pull and hold handle to grab die set

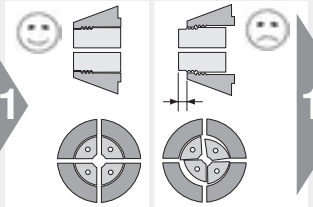
10



- Insert clamping die set until it bottoms up (twist pistol for easy insertion)
- Release handle to fix die set

⚠ Never operate machine while pistol is inserted

11



⚠ Front surfaces must be completely flat

⚠ Die segments must fit without gaps

12



- Switch on drive (button ON)
- Each time the drive is switched on, the reset button (RESET) must be pressed first
- The automatic tool recognition is initiated

⚠ Clamping dies will close, reset button (RESET) must be held until it lights up

- Lighten of reset button (RESET) indicates “ready to start”

EO2-FORM assembly instructions

13

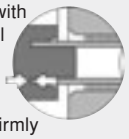


⚠ Make sure tube-end is free of burrs, chips and dirt
⚠ Lubricate inside and outside of tube-end
- Use EO-NIROMONT for best performance

14



- Insert tube-end with nut into open tool until it firmly touches the stop at the end



⚠ Press tube-end firmly into the tube stop
- Do not turn tube-end anti-clockwise

15



- Press and hold start button (⏻ START) until tube is clamped
- Instead of start-button (⏻ START), footswitch can be used

⚠ Hold tube firmly until clamping dies are closed
- Use support for long tubes

⚠ Do not reach into tool area while machine is working

16



- Tube can be taken out after the clamping dies are open
- Reset button (RESET) lights up and the machine is ready for the next operation
- Check tools regularly (approx. 50 assemblies) for dirt and wear
- Remove tools for cleaning
- Clean clamping dies with wire brush
- Clean forming die using compressed air
- Replace worn-out tooling

EO2-FORM assembly instructions



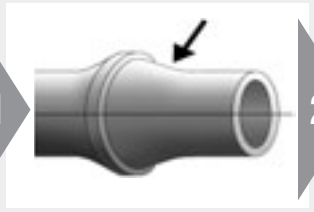
Assembly check

- Check assembly result

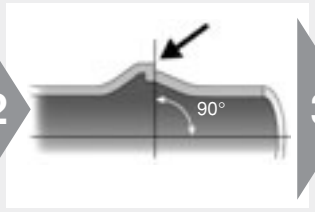
⚠ Incorrect assemblies must be scrapped

Tube OD check

Tube Ø-Series	min Ø [mm]	max Ø [mm]
6-L/S	9	10.2
8-L/S	11	12.2
10-L	13.2	14.2
12-L	15.2	16.2
15-L	18.5	20.2
18-L	21.5	24
22-L	26	27.7
28-L	32	33.7
35-L	39.5	42.5
42-L	46.5	49.5
10-S	13.5	15.5
12-S	15.5	17.5
16-S	19.5	21.5
20-S	24.5	27.5
25-S	30	34
30-S	35	39
38-S	43	47



- Sealing surface (arrow) must be free of scratches and damage

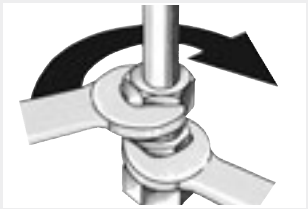


- Check contour: Contact surface for sealing ring (arrow) must be flat, at right angle to tube



- Check outer diameter ∅ … **(see chart)**

⚠ Incorrect tube-ends must be scrapped. Tools must be cleaned and checked



Installation

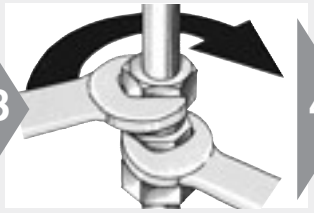
⚠ Tube must fit without tension



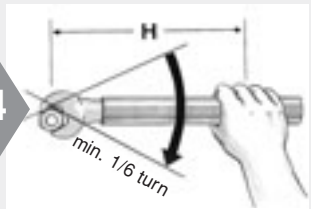
- Place sealing ring (DOZ) onto tube-end



- Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Tube must fit without tension
- Assemble fitting until wrench-tight (without spanner extension)

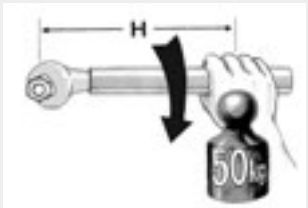


⚠ Then tighten fitting firmly by 1/6 turn (1 flat)

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**

⚠ Incorrect assembly reduces performance and reliability of the connection

Spanner length



Size		Spanner length H [mm]
22-L		400
28-L	20-S	500
35-L	25-S	800
42-L	30-S	1000
	38-S	1200

Checking instructions for EO2-FORM tools



Forming pin and clamping dies for EO2-FORM machine

- ⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure and damage of machine
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced
- ⚠ Use only genuine Parker tools
- ⚠ Tools must always be kept clean and lubricated

1



- Clean forming pin for checking
- Do not disassemble

2



- Visual check:
  Surface must be free of wear and damage
- Use air blowgun to remove chips and dirt

3



- Clean clamping pin for checking
- Do not disassemble
- Pins must not be loose or damaged

4



- Visual check:
  Grip surface must be clean and free of wear
- Use wire-brush to remove metal particles from grip surface

Weld fitting



Weld fitting assembly

- EO weld nipple and weld fitting

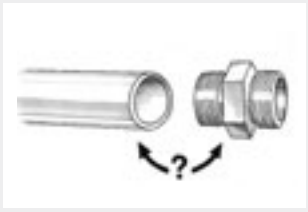
⚠ Use weldable material

⚠ Depending on application or project specification, special requirements may apply for: Tube preparation, welding process, operator qualification, inspection of welding connection and surface finish



Tube preparation

- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures



Material combinations

- Select suitable tube material

Fitting material	Tube specification
Steel	Weldable Steel
Stainless Steel	Weldable Stainless Steel

1

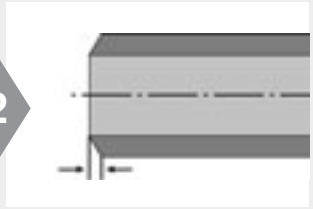


- Cut tube squarely
- max ±1° deviation

⚠ Do not use pipe cutters

- EO tube-cutting tool (AV) for manual cutting

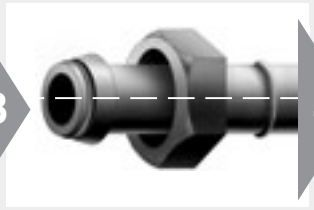
2



- Bevel tube-end similar to weld nipple bevel

Assembly

3



- Slide nut onto tube-end
- Weld fitting onto tube-end
- Fitting and tube must be aligned

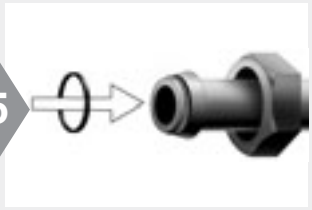
⚠ Remove all elastomeric seals before welding

4



- Clean weld
- Calibrate inner diameter
- Check welding quality
- Surface protection if necessary

5



- Assemble O-ring
- Lubricate O-ring for easy assembly
- Avoid damage or twisting of O-ring

6



⚠ Threads of stainless steel fittings must be lubricated

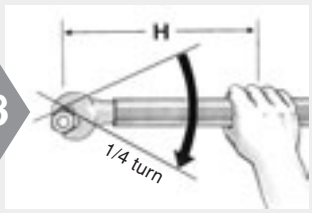
⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

7



- Screw on nut by hand until handtight

8



⚠ Then tighten fitting firmly by $^{1}/_{4}$ turn ($1^{1}/_{2}$ flats)

O-Lok® Plus assembly instructions



Tube selection

- Select suitable tube material

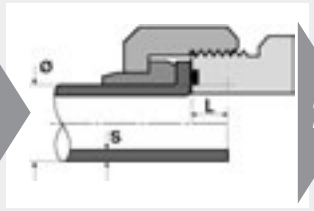
Steel tube		Stainless Steel tube	
Cold drawn seamless	Welded & redrawn	Cold drawn seamless	
NF A 49330	NF A 49341		
ISO 3304 R	DIN 2393	NF A 49341	
DIN 2391C pt 1	BS 3602/2	DIN 17458 DA/T3	
BS 3602 pt1	SAE J525	ASTM A 269	1.4571 on request
SAE J524			



Tube preparation

- Cut and deburr thoroughly

1



- Calculate tube length before cutting
- Add extra length "L"

2



- Minimum length of straight tube-ends **(see chart below)**

3



- Cut tube squarely
- max. ±1° deviation

⚠ Do not use pipe cutters

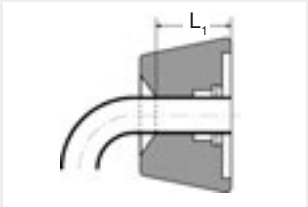
- Use tube-cutting tool AV for manual cutting

4



- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Recommendation: In-Ex Tube Deburring Tool 226

⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



Metric tube [mm]		Minimum straight length	Extra length ~ L [mm] for Tube Wall thickness										
Tube Ø	Wall thickness	to start to bend L1 [mm]	1	1.5	2	2.5	3	3.5	4	5			
6	1.0 - 1.5	40	4.5	5.5									
8	1.0 - 2.0	40	5.0	5.0									
10	1.0 - 2.0	40	2.5	4.0	3.5								
12	1.0 - 3.0	50	3.5	4.5	4.5	4.0	4.0						
14	1.5 - 2.0	50			5.0								
15	1,0 - 2.0	50		4.5	5.0								
16	1.5 - 3.0	50		3.0	3.0	3.0	2.5						
18	1.5 - 2.0	50		6.0	5.5								
20	2.0 - 3.5	50			3.5	4.0	4.0	3.5					
22	1.5 - 2.5	50			6.5	7.0							
25	2.0 - 4.0	50				4.0	4.5		4.0				
28	1.5 - 3.0	50			6.0	7.0							
30	2.0 - 4.0	50			5.0		5.0		5.0				
32	2.0 - 4.0	50					3.5		3.5				
35	2.0 - 3.0	50					7.0						
38	2.0 - 5.0	50					5.0		5.0	4.5			
50	3.0	50					4.0						

Inch tube [inch]		Minimum straight length	Extra length ~ L [inch] Tube Wall thickness									
Tube Ø	Wall thickness	to start to bend L1 [mm]	0.028"	0.035"	0.049"	0.065"	0.083"	0.095"	0.109"	0.120"	0.134"	0.156"	0.188"
1/4"	0.020 - 0.065	40	4.5	5.0	4.0								
3/8"	0.020 - 0.095	40		3.5	3.5	4.0	4.0	4.0					
1/2"	0.028 - 0.095	50		3.5	3.5	3.5	3.5	3.5					
5/8"	0.035 - 0.120	50			4.0	4.0	3.0	4.5	4.0	4.5			
3/4"	0.035 - 0.156	50			4.0	4.0	3.0	2.5	3.5	4.0	4.5		
1"	0.035 - 0.188	50				3.5	3.5	2.5	4.5	4.5	5.0		
1.1/4"	0.049 - 0.188	50					4.0	3.0	3.0	3.0	4.0	4.5	4.5
1.1/2"	0.049 - 0.220	50				4.5	4.5	5.0	5.0	5.0	5.0	6.0	5.5
2"	0.083 - 0.120	50					4.0	4.0		5.0			

O-Lok® Plus assembly instructions


Parflange® 1040


Parflange® 1025

O-Lok® Plus machine flanging and assembly

- Preferred method
- Most efficient method
- Parflange® recommended

1



Parflange® machines:
- Select flaring pin according to tube dimensions
- Use special “SS” pin for stainless steel tube
- Pin must be clean and free of wear, damage and metal particles
- Keep flaring pin clean and lubricate regularly

2



- Select flanging dies according to tube dimensions
- Use special “SS” dies for stainless steel tube to avoid contact corrosion
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flanging O-Lok® Plus

3



- Load pin into machine
- Ensure lubricating system is filled with oil (1040LUBSS)

4



- Place sleeve in lower die half
- Locate upper die half onto lower half

5



- Place the dies in the die housing

6



- Slide nut onto tube before flanging!
- Open threads towards machine

7



⚠ Press tube firmly into the die against the tube stop

8



- Pull down the handle to clamp the tube in the dies (1025)
- 1040 die clamping automatic in cycle
- Press button to start flanging cycle

⚠ Keep hands clear off the working area

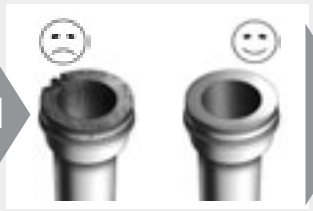
9



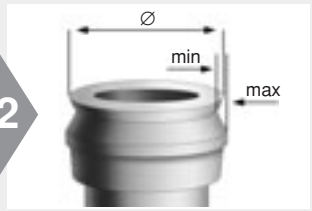
- Parflange® 1025: Unclamp the dies
- Remove tube from machine
- Use die separator to free tube
- Parflange® 1040: Die unclamping is automatic

O-Lok® Plus assembly instructions

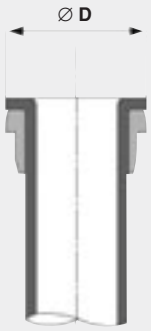
Checking of flange



- Clean flange for inspection
- ⚠ Check sealing surface for cracks, burrs, scratches and pitting



- Dimensional check of the flare
- Flare O.D. should not exceed outside sleeve diameter
- Flare O.D. should not be less than smaller diameter of front of sleeve
- When in doubt, measure



Tube O.D.		Ø D	
mm	In.	min. [mm]	max. [mm]
6	1/4″	12.10	12.75
8		14.85	15.75
10	3/8″	14.85	15.75
12	1/2″	18.00	18.90
14		22.20	23.45
15		22.20	23.45
16	5/8″	22.20	23.45
18		26.60	27.85
20	3/4″	26.60	27.85
22		32.95	34.20
25	1″	32.95	34.20
28		39.35	40.55
30		39.35	40.55
32	1.1/4″	39.35	40.55
35		47.25	48.50
38	1.1/2″	47.25	48.50
50	2″	58.90	60.60

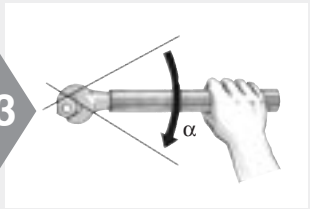
Installation in fitting



- Lubricate O-Ring
- ⚠ Steel fittings: No thread lubrication Stainless steel fittings: Lubrication required
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Thread nut onto body
- Tighten to full metal contact
- Mark body and nut as quality check



- Tighten to recommended torque level
- Recommended: Tighten with spanner the number of flats indicated α
- 1 flat = 60°

Tightening recommendation

Metric tube [mm]	Inch tube [inch]	SAE dash size	SAE thread	Assembly torque Nm -0% + 10%		α flats from wrench resistance method*	
				Steel	Stainless Steel	Tube	Swivel nut
6	1/4″	-4	9/16-18	25	32	1/4 - 1/2	1/2 - 3/4
8	5/16″	-6	1.1/16-16	40	50	1/4 - 1/2	1/2 - 3/4
10	3/8″	-6	1.1/16-16	40	50	1/4 - 1/2	1/2 - 3/4
12	1/2″	-8	1.3/16-16	65	70	1/4 - 1/2	1/2 - 3/4
14		-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
15		-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
16	5/8″	-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
18		-12	1.3/16-12	115	145	1/4 - 1/2	1/3 - 1/2
20	3/4″	-12	1.3/16-12	115	145	1/4 - 1/2	1/3 - 1/2
22		-16	1.7/16-12	150	190	1/4 - 1/2	1/3 - 1/2
25	1″	-16	1.7/16-12	150	190	1/4 - 1/2	1/3 - 1/2
28		-20	1.11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
30		-20	1.11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
32	1.1/4″	-20	1.11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
35		-24	2-12	245	305	1/4 - 1/2	1/3 - 1/2
38	1.1/2″	-24	2-12	245	305	1/4 - 1/2	1/3 - 1/2
50	2″	-32	2.1/2-12	-	490	-	-

* "Flats From Wrench Resistance" Method for steel and stainless steel

O-Lok® Plus assembly instructions

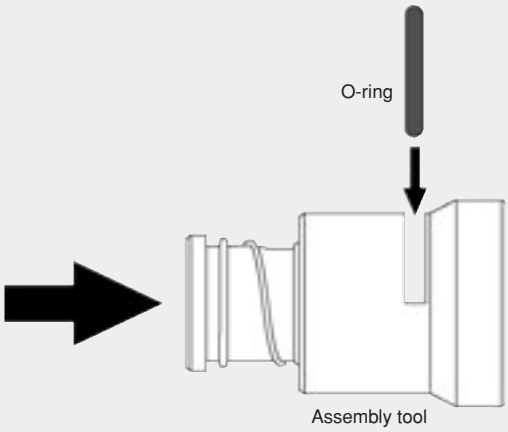


O-Lok® Plus: Replacement of O-Ring

- Parker CORG assembly tool should be used for O-Lok® Plus fitting with captive O-ring groove (O-Lok® Plus)



- Insert the O-ring into the slot located on the side of the tool
- Position the open end of the tool over the tube-end of the fitting
- Push the piston of the tool until the O-ring is released into the fitting groove



- Function of Parker CORG assembly tool

Triple-Lok® Plus assembly instructions



Tube selection

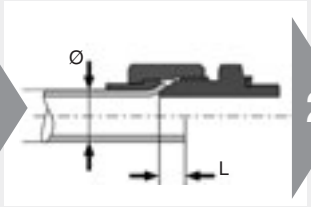
- Select suitable tube material

Steel tube		Stainless Steel tube
Cold drawn seamless	Welded & redrawn	Cold drawn seamless
NF A 49330	NF A 49341	
ISO 3304 R	DIN 2393	NF A 49341
DIN 2391C pt 1	BS 3602/2	DIN 17458 DA/T3
BS 3602 pt1	SAE J525	ASTM A 269
SAE J524		



Tube preparation

- Cut and deburr thoroughly



- Calculate tube length before cutting
- Add extra length "L"

- Minimum length L_1 of straight tube-ends **(see chart below)**

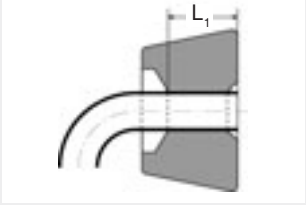
- Cut tube squarely
- max. ±1° deviation

⚠ Do not use pipe cutters

- Use tube cutting tool AV for manual cutting

- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Recommendation: In-Ex Tube Deburring Tool 226

⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



Tube preparation chart

Metric tube [mm]		Inch tube [inch]		Extra length	Minimum straight length
Tube ∅	Wall thickness	Tube ∅	Wall thickness	– L [mm]	to start to bend L1 [mm]
6	1.0 - 1.5	1/4″	0.020 - 0.065	2	40
8	1.0 - 1.5	5/16″	0.020 - 0.065	2	40
10	1.0 - 1.5	3/8″	0.020 - 0.065	2	42
12	1.0 - 2.5	1/2″	0.028 - 0.083	2.5	43
14	1.5 - 2.0			2.5	52
15	1.0 - 2.5			2.5	52
16	1.5 - 2.5	5/8″	0.035 - 0.095	2.5	52
18	1.5 - 3.0			3	56
20	2.0 - 3.0	3/4″	0.035 - 0.109	3	57
22	1.5 - 3.0			3	58
25	2.0 - 3.0	1″	0.035 - 0.120	3	58
28	1.5 - 3.0			4	65
30	2.0 - 3.0			4	65
32	2.0 - 3.0	1.1/4″	0.049 - 0.120	4	65
35	2.0 - 3.0			4	70
38	2.0 - 4.0	1.1/2″	0.049 - 0.120	4	70
42*	2.0 - 3.0			5	80

* Tube OD 42 mm:
- 1015: not suitable
- KarryFlare: special flaring pin KARRYFLARE/FPIN42 required

Triple-Lok® Plus assembly instructions

37° Flaring Parflange®-Process

- Preferred method
- Most efficient method
- Parflange® recommended


Parflange® 1040


Parflange® 1025

1



- Select flaring pin according to tube dimensions
- Use special “SS” pin for stainless steel tube
- Pin must be clean and free of wear and damage
- Load tooling into machine
- Keep flaring pin clean and lubricate regularly

2



- Select flaring dies according to tube dimensions
- Use special “SS“ dies for stainless steel tube
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flaring Triple-Lok® Plus

3



- Load tooling into machine
- Keep sliding surfaces clean and lubricated

4



- Slide nut and sleeve as shown onto the tube-end

5



⚠ Press tube firmly into the die against the tube stop
- Parflange® 1025: Operate clamping lever
- Parflange® 1040: Automatic tube clamping

6



- Hold tube firmly
- Press start button

⚠ Keep hands clear off the working area

7



- Parflange® 1025: Unclamp the dies
- Parflange® 1040: Die unclamping is automatic
- Remove tube from machine
- Use die separator to free tube

Triple-Lok® Plus assembly instructions

37° Flaring with EOMAT/KarryFlare

- Preferred method
- Most efficient method
- Parflange® recommended


EOMAT II


EOMAT III/A


KarryFlare

1



- Flaring pin is integrated in flaring block
- Pin must be clean and free of wear and damage
- Keep flaring pin clean
- KarryFlare: Flaring pin for 42 mm tube O.D. must be fitted with flat face on top

2



- Select flaring dies according to tube O.D.
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flaring Triple-Lok® Plus
- Keep sliding surfaces clean and lubricated

3



- Slide nut and sleeve as shown onto the tube-end

4



- Lubricate tube-end inside
- Lubricant 1040SS recommended

5



- ⚠ Press tube firmly into the die against the tube stop
- KarryFlare: Close valve on handpump
- KarryFlare: Keep lid closed

6



- EOMAT II: Adjustment according to pressure on machine
- EOMAT III/A: Menu selection (FLARE)
- KarryFlare: Refer to chart on machine
- Non-EOMAT-machines: check suitability

7



- Hold tube firmly
- EOMAT: Press and hold start button
- KarryFlare: Operate handpump until assembly pressure is reached
- ⚠ Keep hands clear off the working area
- ⚠ KarryFlare: Do not exceed max pressure 400 bar

8



- KarryFlare: Open valve on handpump
- Remove tube from machine
- Use die separator to free tube

Triple-Lok® Plus assembly instructions

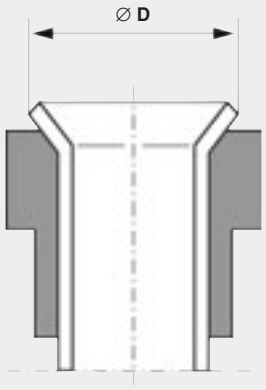
Checking the flare



- Clean flare for inspection
- ⚠ Check sealing surface for cracks, burrs, scratches and pitting



- Dimensional check of the flare
- Flare O.D. should not exceed outside sleeve diameter
- Flare O.D. should not be less than smaller diameter of front of sleeve
- When in doubt, measure



Tube O.D.		∅ D	
mm	inch	Min.	Max.
6	1/4″	8.6	9.7
8	5/16″	10.2	10.3
10	3/8″	11.7	12.7
12	1/2″	16.0	17.3
14		19.3	20.2
15		19.3	20.2
16	5/8″	19.3	20.2
18		23.4	24.7
20	3/4″	23.4	24.7
22	7/8″	26.5	27.8
25	1″	29.7	31.0
28		37.6	38.9
30		37.6	38.9
32	1.1/4″	37.6	38.9
35		43.2	45.3
38	1.1/2″	43.2	45.3
42		52.0	54.8

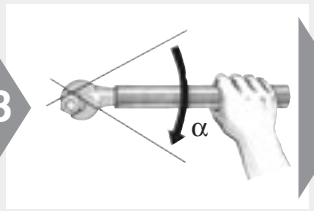
Installation



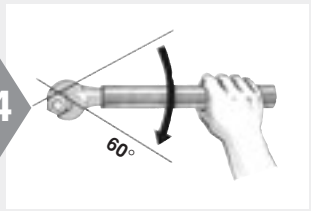
- Steel fittings: No lubrication
- ⚠ Stainless steel fittings: Lubrication required
- Use EO-NIROMONT special high-performance lubricant for stainless steel fittings



- Thread nut onto body
- Tighten to full metal contact (finger tight)
- Mark body and nut as quality check
- Tighten with spanner the number of flats indicated



- Use spanner extension for larger fittings (28 mm)



- 1 flat = 60°

Tightening recommendation

Metric tube [mm]	Inch tube [inch]	SAE thread	α flats from finger tight method*		Assembly torque Nm –0% + 10%	
			tube	Swivel nut	steel	stainless steel
6	1/4″	7/16-20	2″	2″	15	30
8	5/16″	1/2-20	2″	2″	20	40
10	3/8″	9/16-18	1.1/2″	1.1/4″	30	60
12	1/2″	3/4-16	1.1/2″	1″	60	115
14		7/8-14	1.1/2″	1″	75	145
15		7/8-14	1.1/2″	1″	75	145
16	5/8″	7/8-14	1.1/2″	1″	75	145
18		1.1/16-12	1.1/4″	1″	110	180
20	3/4″	1.1/16-12	1.1/4″	1″	110	180
22	7/8″	1.3/16-12	1″	1″	135	225
25	1″	1.5/16-12	1″	1″	175	255
28		1.5/8-12	1″		260	295
30		1.5/8-12	1″	1″	260	295
32	1.1/4″	1.5/8-12	1″	1″	260	295
35		1.7/8-12	1″		340	345
38	1.1/2″	1.7/8-12	1″	1″	340	345
42		2.1/4-12	1″	1″	380	400

* “Flats From Finger Tight” Method for steel and stainless steel

Checking instructions for O-Lok® Plus/Triple-Lok® Plus tools



Tools for Parflange® machines

- ⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure and damage of machine
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced
- ⚠ Use only genuine Parker tools
- ⚠ Tools must always be kept clean and lubricated

1



- Clean pin for checking

2



- Visual check:
  Surface must be free of wear and damage

3



- Clean die halves for checking
- ⚠ Do not disassemble
- Fixing pins must not be loose or damaged

4



- Visual check:
  Grip surface must be clean and free of wear
- Use wire-brush to remove metal particles from grip surface



Adjustment of Parflange® dies

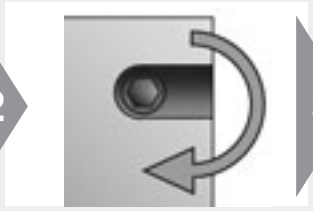
- Parflange® dies can be adjusted to correct deviations of flare diameter
- ⚠ Re-adjustment of dies will not help if general machine setting is incorrect or components are damaged (worn tube-stop, lose screw connections)

1



- To reduce the flare diameter, turn the screws anti-clockwise
- ⚠ Re-adjust both screws simultaneously

2



- To increase the flare diameter, turn the screws clockwise
- ⚠ Re-adjust both screws simultaneously

3



- Adjust the screws in small stages
- Then check flare diameter
- ⚠ Lock screws to prevent misadjustment

Flange-Seal assembly instructions



Tube selection

- Select suitable tube material

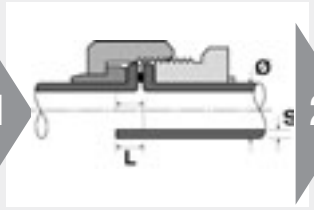
Steel tube	
Cold drawn seamless	Welded & redrawn
NF A 49330	NF A 49341
ISO 3304 R	DIN 2393
DIN 2391C pt 1	BS 3602/2
BS 3602 pt1	SAE J525
SAE J524	



Tube preparation

- Cut and deburr thoroughly

1



- Calculate tube length before cutting
- Add extra length "L" **(see chart below)**

2



- Minimum length of straight tube-ends **(see chart below)**

3



- Cut tube squarely
- max. ±1° deviation

⚠ Do not use pipe cutters

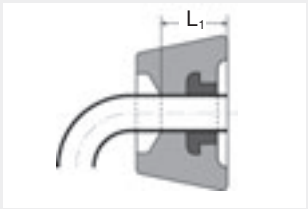
- Use tube-cutting tool AV for manual cutting

4



- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Recommendation: In-Ex Tube Deburring Tool 226

⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



Metric tube [mm]		Minimum straight length	Extra length – L [mm] for tube wall thickness							
Tube ∅	Wall thickness	to start to bend L1 [mm]	1	1.5	2	2.5	3	3.5	4	
6	1.0 - 1.5	50	4.5	5.5						
8	1.0 - 2.0	50	5.0	5.0						
10	1.0 - 2.0	50	2.5	4.0	3.5					
12	1.0 - 2.5	50	3.5	4.5	4.5	4.0				
16	1.5 - 3.0	50		3.0	3.0	3.0	2.5			
20	2.0 - 3.5	65			3.5	4.0	4.0	3.5		

Inch tube [inch]		Minimum straight length	Extra length – L [mm] for tube wall thickness [inch]									
Tube ∅	Wall thickness	to start to bend L1 [mm]	0.028″	0.035″	0.049″	0.065″	0.083″	0.095″	0.109″	0.120″	0.134″	0.156″	0.188″
1/4″	0.020 - 0.065	40	4.5	5.0	4.0								
3/8″	0.020 - 0.095	40		3.5	3.5	4.0	4.0	4.0					
1/2″	0.028 - 0.095	50		3.5	3.5	3.5	3.5	3.5					
5/8″	0.035 - 0.120	50			4.0	4.0	3.0	4.5	4.0	4.5			
3/4″	0.035 - 0.134	50			4.0	4.0	3.0	2.5	3.5	4.0	4.5		

Flange-Seal assembly instructions


Parflange® 1040


Parflange® 1025

Flange-Seal machine flanging and assembly

- Preferred method
- Most efficient method
- Parflange® recommended

1



Parflange® machines:
- Select flaring pin according to tube dimensions
- Use standard O-Lok® Plus pins
- Pin must be clean and free of wear, damage and metal particles
- Keep flaring pin clean and lubricate regularly

2



- Select flanging dies according to tube dimensions
- Use special Flange-Seal dies
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flanging

⚠ Note limitation on wall thickness for tube-tube connections

3



- Load pin into machine
- Ensure lubricating system is filled with oil (1040LUBSS)

4



- Place threaded sleeve (LHP) in lower die half
- Locate upper die half onto lower half

5



- Place the dies in the die housing

6



⚠ Press tube firmly into the die against the tube stop

7



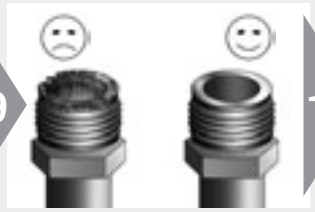
- Pull down the handle to clamp the tube in the dies (1025)
- 1040 die clamping automatic in cycle
- Press button to start flanging cycle

⚠ Keep hands clear off the working area

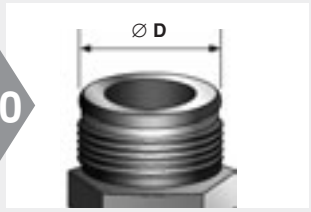
Flange-Seal assembly instructions



- Parflange® 1025: Unclamp the dies
- Remove tube from machine
- Use die separator to free tube
- Parflange® 1040: Die unclamping is automatic



- Clean flange for inspection
- ⚠ Check sealing surface for cracks, burrs, scratches and pitting



- Dimensional check of the flare

Tube O.D.		∅ D	
mm	In.	min. [mm]	max. [mm]
6	1/4″	12.10	12.75
8		14.85	15.75
10	3/8″	14.85	15.75
12	1/2″	18.00	18.90
16	5/8″	22.20	23.45
20	3/4″	26.60	27.85



- Place seal into loose tube nut
- Tighten to full metal contact
- Tighten to recommended torque level

Tightening recommendation

Metric tube [mm]	Inch tube [inch]	SAE dash size	SAE thread	Assembly torque Nm -0% + 10% Steel
6	1/4″	-4	9/16-18	25
8	5/16″	-6	1.1/16-16	40
10	3/8″	-6	1.1/16-16	40
12	1/2″	-8	1.3/16-16	65
16	5/8″	-10	1-14	80
20	3/4″	-12	1.3/16-12	115

System component guide - Flange-Seal system - Metric tubes

Tube O.D. (mm)	Con. dash size	Flange-Seal fitting	Seal element	Die tool*	Pin tool
6	4	LHMPS6	4PLS	M4018006XxxxMLHP	B3018006XxxxM
8	6	LHMPS8	6PLS	M4018008XxxxMLHP	B3018008XxxxM
10	6	LHMPS10	6PLS	M4018010XxxxMLHP	B3018010XxxxM
12	8	LHMPS12	8PLS	M4018012XxxxMLHP	B3018012XxxxM
16	10	LHMPS16	10PLS	M4018016XxxxMLHP	B3018016XxxxM
20	12	LHMPS20	12PLS	M4018020XxxxMLHP	B3018020XxxxM

*xxx: Insert tube wall thickness according to tooling list
*Example 1: Metric tube tooling for 8×1.5 mm
Die: M4018008x1.5MLHP
Pin: B3018008x1.5M

System component guide - Flange-Seal system - Inch tubes

Tube O.D. (inch)	Con. dash size	Flange-Seal fitting	Seal element	Die tool*	Pin tool
1/4″	4	4LHP-S	4PLS	M4004Xxxx180LHP	B4004Xxxx180
3/8″	6	6LHP-S	6PLS	M4006Xxxx180LHP	B4006Xxxx180
1/2″	8	8LHPS	8PLS	M4008Xxxx180LHP	B4008Xxxx180
5/8″	10	10LHP-S	10PLS	M4010Xxxx180LHP	B4010Xxxx180
3/4″	12	12LHP-S	12PLS	M4012Xxxx180LHP	B4012Xxxx180

*xxx: Insert tube wall thickness according to tooling list
*Example 2: Inch tube tooling for 1/2×0.083″
Die: M4008x083180LHP
Pin: B4008x083180

Fitting assembly

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Flanges F11

Replacement / DA F12

Tube bending F13

Tube line fabrication guide F14

Port connections



Assembly of metric straight port connections

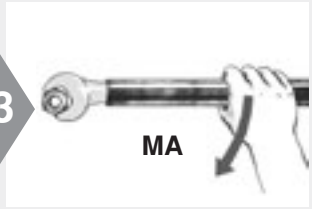
- Metric Thread
  DIN ISO 6149-2/3
  ISO 9974-2/3
  DIN 3852 T1/T2



⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Screw in until handtight



- Then tighten according to chart

Assembly torques for metric threads

Product Series	Tube O.D.	Thread size T mm	Straight male stud fittings with port tapping: Form A for sealing washer Nm	Form B with face Nm	Form E with ED-sealing Nm	Form F with O-ring-sealing Nm	O-ring with sealing and retaining-ring	Non-return valves: RHV/RHZ Form E with ED-sealing Nm	EO Banjo fittings: WH / TH Nm	SWVE Nm	Adjustable ends: O-ring and retaining-ring Nm	O-ring Nm	Blanking plugs: VSTI-ED Form E with ED-sealing Nm	VSTI-OR Form F with O-ring sealing Nm
	6	M10 × 1.0	9	18	18	15	18	18	18	18	18	15	12	20
	8	M12 × 1.5	20	30	25	25	35	25	45	35	35	25	25	
	10	M14 × 1.5	35	45	45	35	45	35	55	50	45	35	35	
EO L	12	M16 × 1.5	45	65	55	40	55	50	80	60	55	40	50	
Triple-	15	M18 × 1.5	55	80	70	45	70	70	100	80	70	45	65	
Lok® Plus	18	M22 × 1.5	65	140	125	60	160	125	140	120	180	60	90	
	22	M26 × 1.5	90	190	180	100*	250	145	320	130	180	100	135	
	28	M33 × 2.0	150	340	310	160	310	210	360		310	160	225	
	35	M42 × 2.0	240	500	450	210	450	360	540		450	210	360	
	42	M48 × 2.0	290	630	540	260	540	540	700		600	260	360	
	6	M12 × 1.5	20	35	35	35		35	45	35	35	35		35
	8	M14 × 1.5	35	55	55	45		45	55	50	60	45		45
	10	M16 × 1.5	45	70	70	55		55	80	60	95	55		55
	12	M18 × 1.5	55	110	90	70		70	100	80	120	90		70
EO S	14	M20 × 1.5	55	150	125	80		100	125	110			80	80
O-Lok® Plus	16	M22 × 1.5	65	170	135	100		125	135	120	190	100		100
	20	M27 × 2.0	90	270	180	170		135	320	135	190	170		170
	25	M33 × 2.0	150	410	310	310		210	360		500	310		310
	30	M42 × 2.0	240	540	450	330		360	540		600	330		330
	38	M48 × 2.0	290	700	540	420		540	700		600	420		420

Tolerance of tightening torques listed in above table: +10%
Note: Lubricate stud with hydraulic oil before screwing in! Tightening torques relate to counterpart made of steel.
*Thread M27x2

Port connections



Assembly of BSPP straight port connections

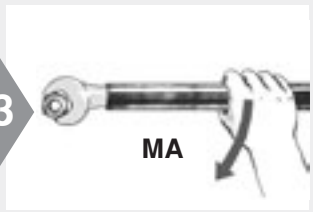
- BSPP Thread G
  ISO 1179-I
  DIN 3852 T2



⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Screw in until handtight



- Then tighten according to chart

Assembly torques for BSPP threads

Product	Tube O.D.	Thread size T	Straight male stud fittings with port tapping: Form A for sealing washer	Form B with cutting face	Form E with ED-sealing	with O-ring sealing and retaining-ring	Non-return valves: RHV / RHZ Form E with ED-sealing	EO Banjo fittings: WH / TH	SWVE	Adjustable ends: O-ring and retaining-ring	Blanking plugs: Form E with ED-sealing
Series		**inch**	**Nm**	**Nm**	**Nm**			**Nm**	**Nm**	**Nm**	**Nm**
	6	G 1/8A	9	18	18	18	18	18	18	18	13
	8	G 1/4A	35	35	35	35	35	45	40	35	30
	10	G 1/4A	35	35	35	35	35	45	40	35	
EO L	12	G 3/8A	45	70	70	70	50	70	65	70	60
Triple-Lok® Plus	15	G 1/2A	65	140	90	90	85	120	90	110	80
	18	G 1/2A	65	100	90	90	65	120	90	110	
	22	G 3/4A	90	180	180	180	140	230	125	180	140
	28	G 1A	150	330	310	310	190	320		310	200
	35	G 1 1/4A	240	540	450	450	360	540		450	400
	42	G 1 1/2A	290	630	540	540	540	700		540	450
	6	G 1/8A								25	
	6	G 1/4A	35	55	55		45	45	40	55	
	8	G 1/4A	35	55	55		45	45	40	55	
	10	G 3/8A	45	90	80		60	70	65	90	
	12	G 3/8A	45	90	80		60	70	65	90	
EO S	14	G 1/2A	65	150	115		145	120	90	110	
O-Lok® Plus	16	G 1/2A	65	130	115		100	120	90	110	
	20	G 3/4A	90	270	180		145	230	125	115	
	25	G 1A	150	340	310		260	320		420	
	30	G 1 1/4A	240	540	450		360	540		550	
	38	G 1 1/2A	290	700	540		540	700		600	

Tolerance of tightening torques listed in above table: +10%
Note: Lubricate stud with hydraulic oil before screwing in! Tightening torques relate to counterpart made of steel.

Port connections



Assembly of SAE straight port connections

- UN/UNF thread
  ISO 11926-2/3

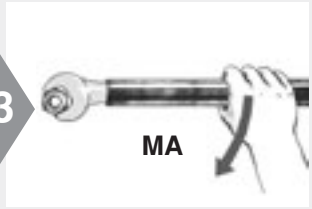


⚠ Threads of stainless steel fittings must be lubricated

- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Screw in until handtight



- Then tighten according to chart

Assembly torques for UNF threads

Product	Thread size T ISO 11296	Series EO / Triple-Lok® Plus and O-Lok® Plus	
		Assembly torque non-adjustable end	Assembly torque adjustable end
Series	inch	Nm	Nm
	7/16-20 UN(F)	23	18
	1/2-20 UN(F)	28	28
	9/16-18 UN(F)	34	34
EO L	3/4-16 UN(F)	60	55
Triple-Lok® Plus	7/8-14 UN(F)	115	80
	1.1/16-12 UN(F)	140	100
	1.5/16-12 UN(F)	210	150
	1.5/8-12 UN(F)	290	290
	1.7/8-12 UN(F)	325	325
	7/16-20 UN(F)	20	20
	1/2-20 UN(F)	40	40
	9/16-18 UN(F)	46	46
EO S	3/4-16 UN(F)	80	80
O-Lok® Plus	7/8-14 UN(F)	135	135
	1.1/16-12 UN(F)	185	185
	1.5/16-12 UN(F)	270	270
	1.5/8-12 UN(F)	340	340
	1.7/8-12 UN(F)	415	415

Tolerance of tightening torques listed in above table: + 10%
Note: Lubricate stud with hydraulic oil before screwing in!
Tightening torques relate to counterpart made of steel.

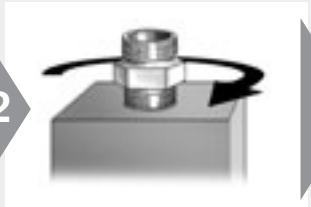
Port connections

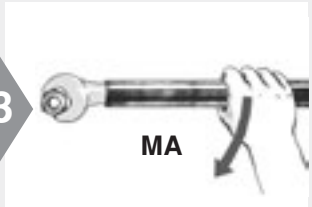


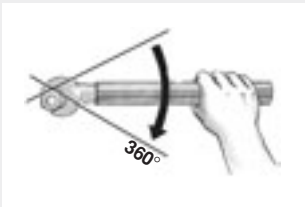
Assembly of tapered thread port connections

- NPT / NPTF thread
  ANSI / ASME B 1.20.1 - 1983









1

⚠ Threads of stainless steel fittings must be lubricated

- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

2

- Screw in until handtight

3

- Then tighten according to chart

- one flat = 60°

Tightening of NPT/NPTF thread

Size	Thread T NPT/F	Assembly TFFT Turns
4	1/8-27 NPT/F	2.0-3.0
6	1/4-18 NPT/F	2.0-3.0
8	3/8-18 NPT/F	2.0-3.0
10	1/2-14 NPT/F	2.0-3.0
12	3/4-14 NPT/F	2.0-3.0
16	1-11 1/2 NPT/F	1.5-2.5
20	1 1/4-11 1/2 NPT/F	1.5-2.5
24	1 1/2-11 1/2 NPT/F	1.5-2.5

In the EO fitting range only **NPT** threads are manufactured.
In the **Triple-Lok® Plus and O-Lok® Plus** fitting range for **steel** **NPTF** threads are used, and NPT for stainless steel components.

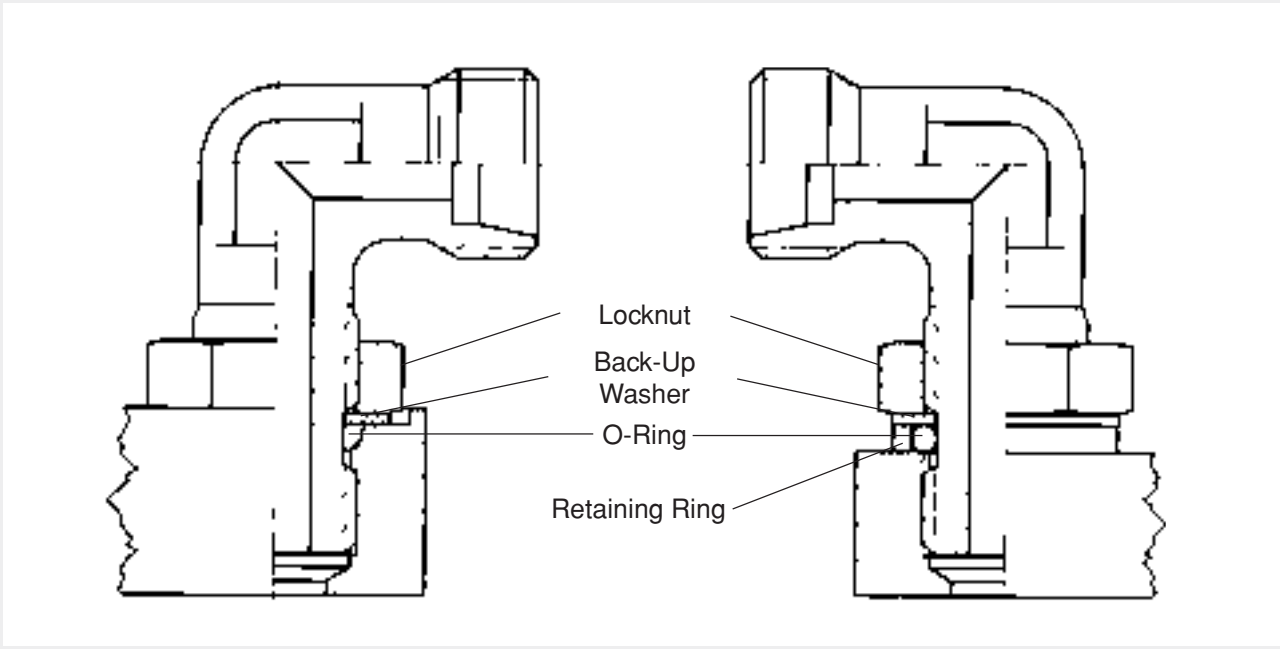
Adjustable fittings with locknut



Assembly of the orientable joint

(EO: e.g. WEE, VEE, TEE, LEE - Triple-Lok® Plus / O-Lok® Plus: C4, V4, S4, R4)

⚠ Assembly steps must be done in right order



- Fitting *without* Retaining Ring for ISO 6149 or UN/UNF ports
- Fitting *with* Retaining Ring for BSPP or Metric Parallel ports with wide or SMALL spot faces

1



- Screw back locknut as far as possible

⚠ O-ring and back-up washer in the non-threaded section should be placed nearest to the locknut



- Lubricate the O-ring
- With BSPP and metric parallel version slip retaining ring over the O-ring

2



- Screw the fitting in the port by hand until retaining ring or back-up washers bottom



3



- To adjust direction, turn back to a maximum of one full turn

4



- Screw locknut handtight
- Assemble locknut until wrenchtight
- Hold body in desired position and tighten locknut



EO swivels



Assembly of EO swivel nut fittings

(e.g. EW, ET, EL, EGE, RED, VKA, SKA)

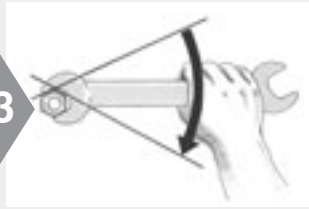
- Final assembly of swivel nut fittings must be made in appropriate fittings



⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Screw on nut by hand until handtight



⚠ Then tighten fitting firmly by $^1/_4$ turn ($1^1/_2$ flats)

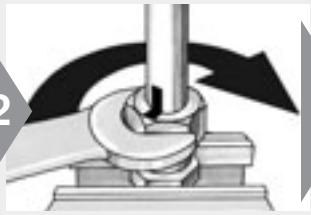


Final assembly of factory pre-assembled EO-standpipe fittings (e.g. EVW, EVT, EVL, EVGE, KOR)

- For all fittings delivered pre-assembled from the factory the final assembly is performed in the appropriate fitting body

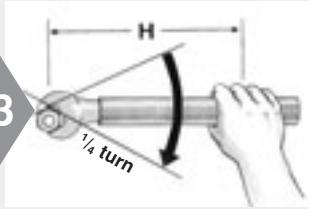


⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



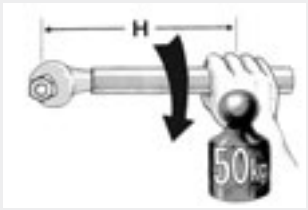
- Assemble fitting until wrench tight (without spanner extension)

⚠ Mark position of nut



⚠ Then tighten fitting firmly by $^1/_4$ turn ($1^1/_2$ flats)

⚠ Recommended to use spanner extension for sizes over 20 mm O.D. **(see chart)**



Size		Spanner length H [mm]
18-L	16-S	300
22-L		400
28-L	20-S	500
35-L	25-S	900
42-L	30-S	1200
	38-S	1500

F

Triple-Lok® Plus/O-Lok® Plus swivels



Assembly of Triple-Lok® Plus and O-Lok® Plus swivel nut fittings

e.g.: Triple-Lok® Plus: C6MX, V6MX, R6MX, S6MX, BBMTX
O-Lok® Plus: C6MLO, V6MLO, S6MLO, R6MLO, A0EL6

- Final assembly of swivel nut fittings must be made in appropriate fittings

1



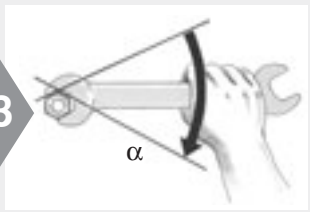
⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

2

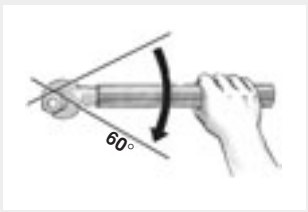


- Screw on nut by hand until handtight

3



- Then tighten according to chart



- one flat = 60°

Assembly torques for O-Lok® Plus and Triple-Lok® Plus swivel nut fittings

O-Lok® Plus

Size	Metric tube mm	Inch tube inch	Thread UN/UNF	Nm	FFWR
4	6	1/4″	9/16-18	25	1/2
6	8	5/16″	1.1/16-16	40	1/2
6	10	5/16″	1.1/16-16	55	1/2
8	12	1/2″	1.3/16-16	80	1/2
10	14, 15,16	5/8″	1-14	115	1/2
12	18, 20	3/4″	1.3/16-12	130	1/2
16	22, 25	1″	1.7/16-12	150	1/2
20	28, 30, 32	1.1/4″	1.11/16-12	190	1/2
24	35, 38	1.1/2″	2-12	245	1/2
32	50	2″	2.1/2-12	490	1/2

Triple-Lok® Plus

Size	Metric tube mm	Inch tube inch	Thread UN/UNF	Nm	FFFT
4	6	1/4″	7/17-20	15	2
5	8	5/16″	1/2-20	20	2
6	10	3/8″	9/16-18	45	1 1/4
8	12	1/2″	3/4-16	60	1
10	14, 15, **16**	5/8″	7/8-14	75	1
12	18, **20**	3/4″	1.1/16-12	100	1
16	22, **25**	7/8″	1.5/16-12	150	1
20	**30**, 32	1.1/4″	1.5/8-12	180	1
24	38	1.1/2″	1.7/8-12	200	1
28	42		2.1/4-12	220	1
32		2″	2.1/2-12	250	1

Assembly torques shown in chart are for **non-lubricated carbon steel zinc plated components.**
For stainless steel fittings, lubricate all mating surfaces and tighten to upper end of torque tolerance.
Recommended assembly torques are for connections consisting of all Parker manufactured components.

Flanges



Assembly of flanges

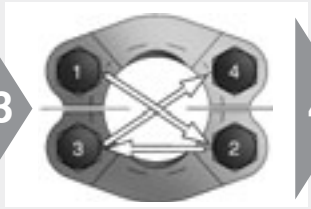
- SAE flange adapters
- SAE 4 bolt flanges
- Gear pump flanges
- CETOP square flanges



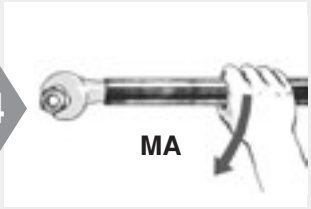
- Make sure sealing surfaces are free of burrs, nicks, scratches or any contamination
- Lubricate the O-ring with system fluid or compatible lubricant



- Position flange and clamp halves
- Place lock washers on bolts and bolt through clamp halves



- Hand tighten bolts
- Torque bolts in diagonal sequence in small increments to the appropriate torque level listed in chart



- Tighten bolts according to chart

3000 PSI Series (Code 61) Flange recommended screw torque

Dash **size**	Flange **size**	Inch screws **(J518)**	Torque **Nm[1])**	Metric screws **(ISO 6162)**	Torque **Nm[1])**
8	1/2″	5/16-18	17 ± 2	M8	25
12	3/4″	3/8-16	25 ± 4,5	M10	49
16	1″	3/8-16	31 ± 4,5	M10	49
20	1.1/4″	7/16-14	41 ± 5	M12*	85
24	1.1/2″	1/2-13	52 ± 6	M12	85
32	2″	1/2-13	60 ± 6	M12*	135
40	2.1/2″	1/2-13	85 ± 9	M12	95
48	3″	5/8-11	144 ± 15	M16	220
56	3.1/2″	5/8-11	125 ± 8	M16	220
64	4″	5/8-11	125 ± 8	M16	220
80	5″	5/8-11	125 ± 8	M16	220

*Does not meet ISO 6162 specification

6000 PSI Series (Code 62) Flange recommended screw torque

Dash **size**	Flange **size**	Inch screws **(J518)**	Torque **Nm1)**	Metric screws **(ISO 6162)**	Torque **Nm[1])**
8	1/2	5/16-18	17 ± 2	M8	25
12	3/4	3/8-16	30 ± 4.5	M10	49
16	1	7/16-14	46 ± 4.5	M12	85
20	1-1/4	1/2-13	69 ± 6	M14*	135
24	1-1/2	5/8-11	125 ± 8	M16	210
32	2	3/4-10	208 ± 20	M20	425

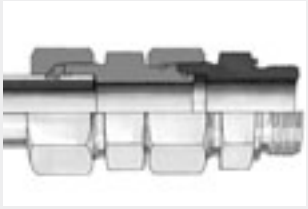
*Does not meet ISO 6162 specification

Hydraulic Flange recommended screw torque

Socket screw bolt circle **(LK)**	Socket head cap **screws**	Tightening torques **Nm[1])**
LK30	M6	10
LK35	M6	10
LK40	M6	10
LK51	M10	49
LK55	M8	25
LK56	M10	49
LK62	M10	49
LK72.5	M12	85

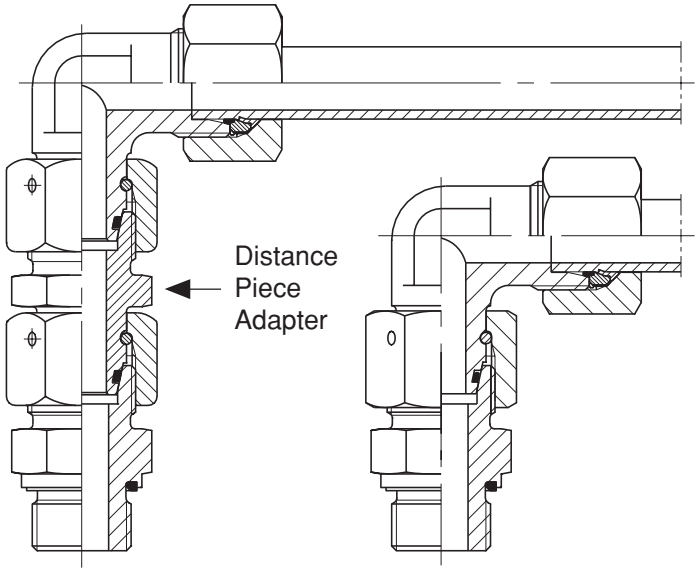
1) Tolerances: max. 10%
min. 0%

Replacement of an EO Bite type connection

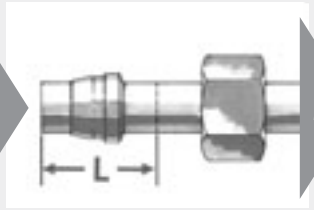


Distance piece adapter DA

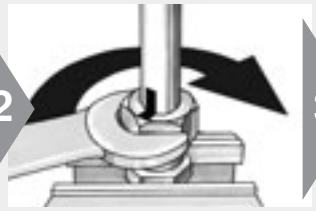
- EO distance piece adapters allow replacement of bite type connections on existing pipework easily or retrofitting using EO-2
- The existing tubes can be re-used



- Use as an extension for stacked assemblies



- Cut length L off tube-end (see “DA” chapter I)
- Scrap obsolete nut



- Assemble new EO-2 functional nut or EO PSR/DPR and nut



- Thread on
- Then tighten distance piece adapter onto tube-end

Tube bending

Instructions for EO hand bending equipment

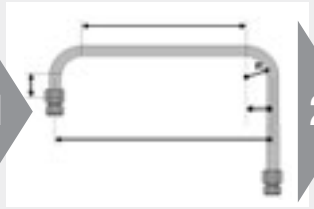
- For on-site piping jobs
- Not for mass production


BAV 6/12


BV 6/18


BV 20/25

1

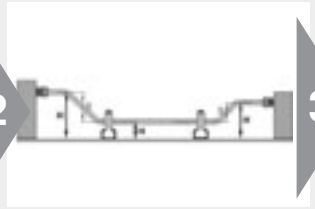


⚠ Think the whole process through and plan each individual step before starting

⚠ First bend and then cut ends to length

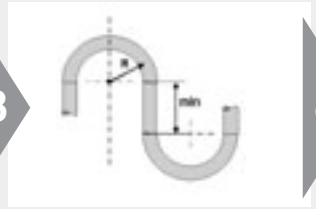
- Gather all dimensions like minimum straight lengths, extra length for flaring, bending radius, tube lengths for bows, etc.

2



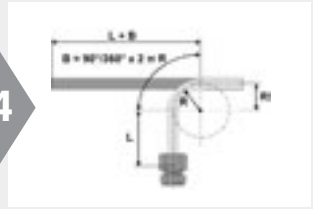
- Consider steps
- Plan for clamping

3



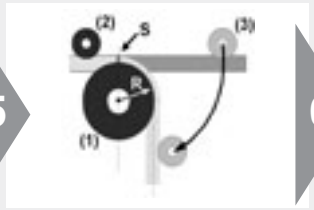
- Check bending equipment specifications for limitations

4



- Start with first elbow
- Leave tube-end longer if in doubt

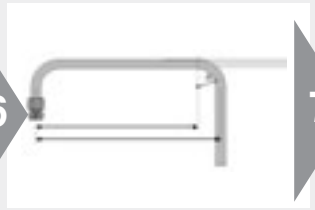
5



⚠ Mark start of bend on tube (S)

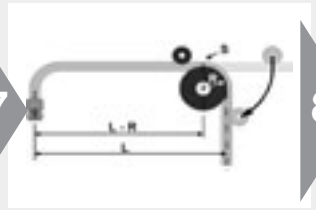
- Adjust tube between bending roll (1), clamping roll (2) and pressure roll (3)
- Bend tube by pulling lever

6



- Check bend angle
- Correct angle if necessary
- Gather all dimensions for next bending operation

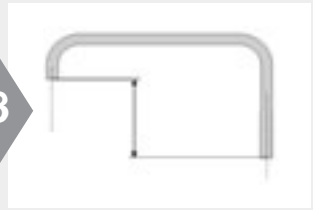
7



⚠ Mark start of bend on tube

- Continue bending
- Check and correct each result before starting next bend

8



- After the last bend, check tube for angles and dimensions
- Now cut both tube-ends to correct length
- Make sure that tube fits without tension

F

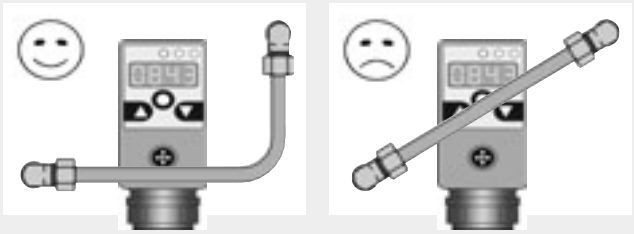
Tube line fabrication guide for leak free systems

Every hydraulic, pneumatic and lubrication system requires some form of tube fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance, and general appearance of any system.

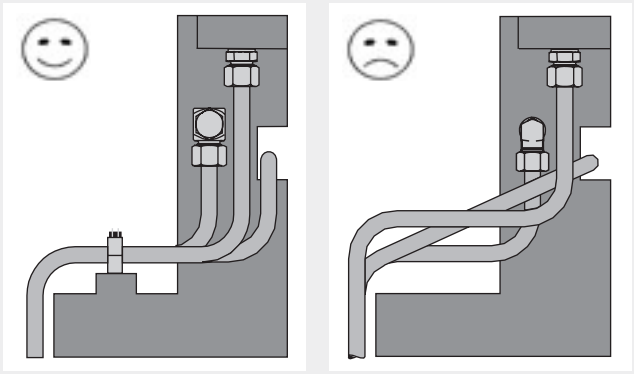
After sizing the tube lines and selecting the appropriate style of fitting, consider the following in the design of your system:

1. Accessibility of joints
2. Proper routing of lines
3. Adequate tube line supports
4. Available fabricating tools

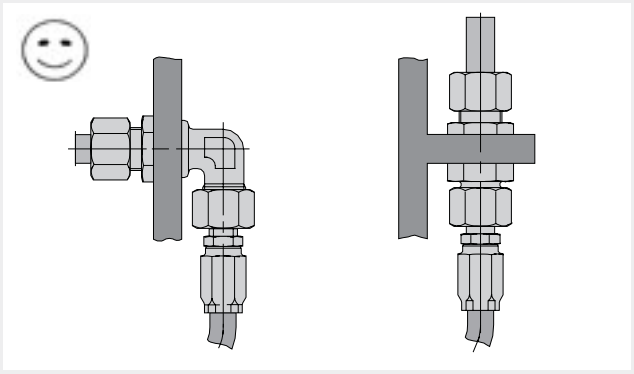
- Keep tube lines away from components that require regular maintenance:



- Right-angled – parallel – clear
- Have a neat appearance and allow for easy trouble-shooting, maintenance and repair:

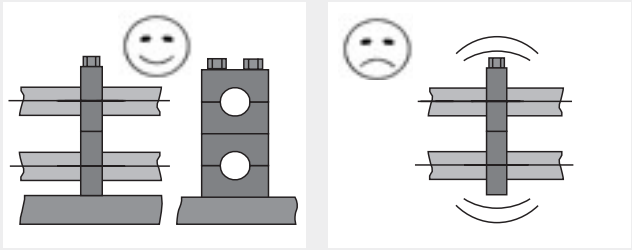


- Example for tube to hose connection:

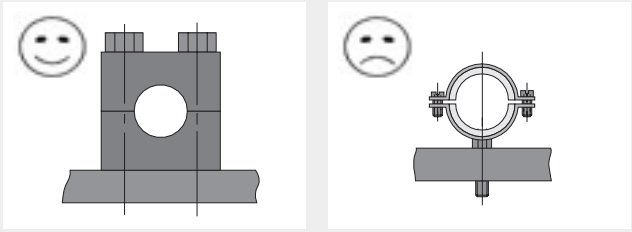


Tube line fabrication guide for leak free systems

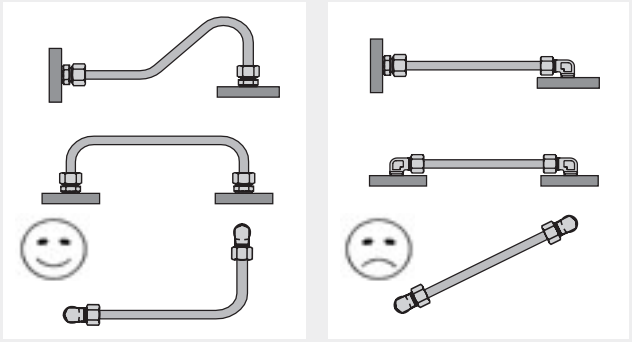
- Do not use tube lines to support other tubes
- Always fix tubes onto a rigid point with tube clamps
- Do not use cable channels to support tubes



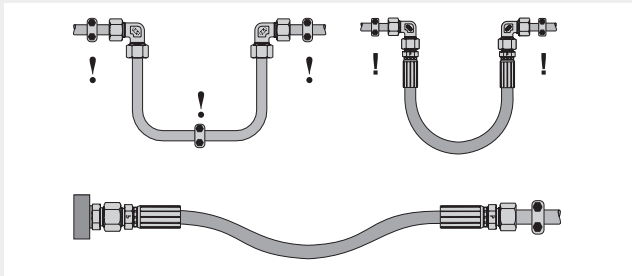
- Use appropriate tube clamps:



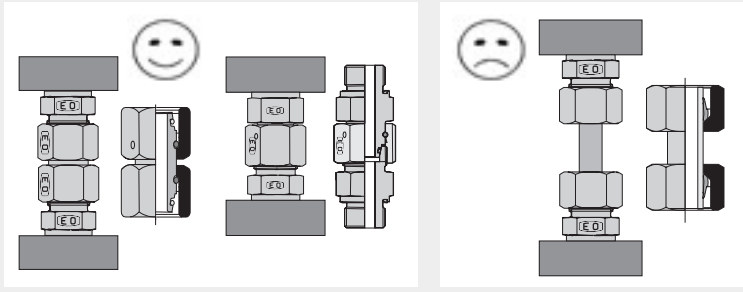
- Avoid excessive strain on joint:
  A strained joint will eventually leak



- Allow for expansion effects

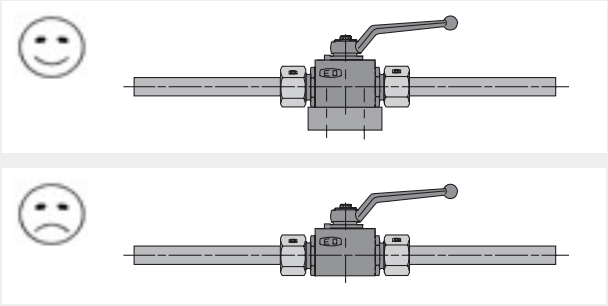


- Avoid short tube length:
- ⚠ Short tube lengths increase chance of fatigue fractures
- Use adapter GZR or swivel connector for swivel fittings instead of short tube lengths



Tube line fabrication guide for leak free systems

● Support against actuating forces:



Recommended tools for tube line fabrication:

Cutting:

EO Tube cutting tool AV

EO Combined tube bending and cutting tool BAV

Tube cutters:
Steel: Type Kloskut;
Stainless Steel: Type 635 B-EX,
Type 218 B-SS Tru-Kut Sawing Vice

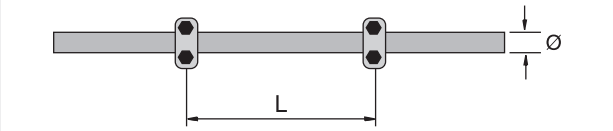
Deburring:

Parker deburring tool no. 226 DEBURR

Bending:

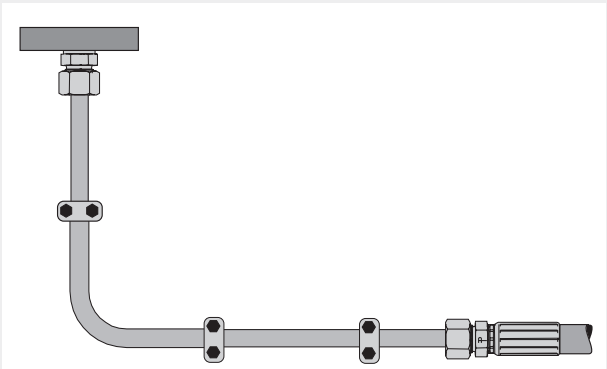
EO Combined tube bending and cutting tool BAV
EO Tube bending tool BV 6/18, BV 20/25
EO Tube bending tool BVP (programmable)

Tube lines have to be supported in certain distances:
Use sufficient tube clamps to support weight
Use sufficient tube clamps to protect joints from vibration

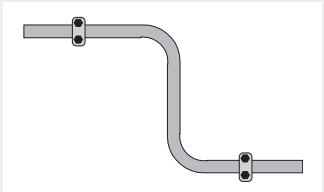


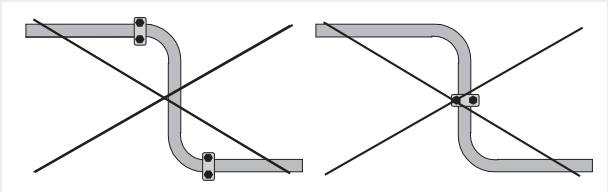
∅ [mm]	L [m]
6.0 – 12.7	1.0
12.7 – 22.0	1.2
22.0 – 32.0	1.5
32.0 – 38.0	2.0
38.0 – 57.0	2.7
57.0 – 75.0	3.0
75.0 – 76.1	3.5
76.1 – 88.9	3.7
88.9 – 102.0	4.0
102.0 – 114.0	4.5
114.0 – 168.0	5.0
168.0 – 219.0	6.0

Vibration has to be eliminated near by the connectors:



Allow expansion and contraction. Do not hamper expansion and contraction near by tube bends.





Trouble shooting guide

DPR/PSR Problem	Probable cause	Suggested solution
Leak	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns, direct assembly only for maintanance/repair
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings, use of recommended pre-assembly machines
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Use of pre-assembly machines e.g. EO-KARRYMAT, EOMAT II, EOMAT III/A
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Check visible collar
		Make sure tube is lubricated at assembly
	Damaged fitting	Check for damage, replace damaged parts
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak, from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
Tube fractured behind the nut	Fatigue failure of tube under vibration	Review final tightening process, undertightening reduces vibration resistance
		Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance
Crack	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar

DPR/PSR **Problem**	**Probable cause**	**Suggested solution**
Crack	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, …) do not exceed fitting performance
Tube blow out	Standpipe fitting, improper final assembly	Use swivel nut fitting
	Cold welded threads on stainless steel fittings	Use “EODUR” stainless steel fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Use of worn or unsuitable pre-assembly tools	Check tools regularly and replace worn tools
		Keep tooling clean and oiled plus check cone regularly with “KONU” cone gauges every 50 assemblies
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
	Severe working conditions	Check visible collar
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate, …) do not exceed fitting performance
		Check visible collar
	Ring installed in wrong direction	Install ring in proper orientation
		Use pre-assembled fitting or EO-2
		Always check assembly before final installation
	Steel ring used on stainless steel tube	Use stainless steel bite rings for stainless steel tube, **preassembly necessary**
	Stainless steel fitting not pre-assembled	Pre-assemble joint away from installation
		Use specified preassembly tools/machines
	Fitting body used as preassembly tool	Use specified preassembly tools, machine preset preferred
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ …)

EO-2 **Problem**	**Probable cause**	**Suggested solution**
Leak	Insufficiently tightened, shallow bite	Use of pre-assembly machines e. g. EO-KARRYMAT, EOMAT II, EOMAT III/A
	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO pre-assembly tools
		Check closed gap
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend

EO-2 Problem	Probable cause	Suggested solution
Leak	Tube not bottomed into fitting shoulder	Use hacksaw and guide not a plumbing – style tube cutter
		Use EO-2 MOK for big sizes
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage to fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance
Crack	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO preassembly tools
		Check closed gap
Tube blow out	Cold welded threads on stainless steel fittings	Use "EODUR" stainless fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Use EO-2 MOK for big sizes
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate …) do not exceed fitting performance
	Fitting undertightened	Tighten the nut until cap between retaining and sealing ring is closed
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings

EO-2 Problem	Probable cause	Suggested solution
Tube blow out	Fitting undertightened	Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Pre-assemble joints away from installation to assure proper bite
	FM … steel is used	Use exclusively FM stainless steel with stainless steel on stainless steel tube, for combination of steel fitting/ stainless steel tube use FM … SSA nut
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ …)

EO2-FORM Problem	Probable cause	Suggested solution
Leak	Insufficiently tightened, shallow bite	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage of fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation
	Incorrect tube forming	Check assembly before installation
		Use correct tool according to tube diameter, wall thick-ness and material
		Regularly check tools for wear and damage
		Replace damaged tooling
		Use specified lubricant 1040 LUBSS on forming process
	Misalignment	Stress free installation. Flanged tube end needs contact to stud ends before final tightening. Check length and bends of tubing to ensure this
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

O-Lok® Problem	Probable cause	Suggested solution
Leak	Damaged O-ring	Hold sealing surfaces together until nut is firmly tightened
	Missing O-ring	Use genuine Parker O-Lok® fittings with Captive O-ring groove (CORG)
	Extruded O-ring	Ensure proper alignment
		Tightened to proper torque
		Use genuine Parker O-Lok® fittings with Captive O-ring groove (CORG)
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Untertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
	Damaged fitting	Check for damage
		Handle all components carefully
	Poor surface quality of flange	Spiral marks can be avoided by proper deburring of tubes, particular the tube I.D.
		Clean tools, remove metal particles from pin
	Hidden crack	Check for cracks, replace if necessary
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

Triple-Lok® Problem	Probable cause	Suggested solution
Leak	Damaged fitting	Check for damage
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant

Triple-Lok® **Problem**	**Probable cause**	**Suggested solution**
Leak	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
	Scratches in Tube ID and flare area	Use Parflange process to improve surface quality
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

Weld nipples **Problem**	**Probable cause**	**Suggested solution**
Leak	Misalignment	Stress free installation
		Fix weld nipple to tube in application before finishing the welding
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don’t over use lubricant
	Untertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Damaged fitting	Check for damage
		Handle all components carefully
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

Flanges connection Problem	Probable cause	Suggested solution
Leak	Misalignment	Stress free installation
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
		Tightened bolts to recommended torque
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Unequal tightening	For flanges with more than 2 screws: see assembly instruction in what order the screws need to be tightened
	Damaged fitting	Check for damage
		Handle all components carefully
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

Leaks from ports Problem	Probable cause	Suggested solution
Leak	O-ring sealing is missing/damaged	Replace with new O-ring
	Fitting not tightened properly, Undertightening	Retighten to appropriate specification
	Undertightened at initial assembly	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
	Adjustable stud not assembled properly	Repeat with appropriate assembly torque
	O-ring pinched	Proper assembly procedure
	Fitting vibrates loose	Redesign system
		Clamping/Check the assembly torque
		Stressed joints
	Threads damaged	Replace fitting
	Use of tapered threads (NPT/BSPT/+++)	Use fittings with soft sealing O-ring/ED sealing

Leak from port Problem	Probable cause	Suggested solution
Leak	Port stud end **Form B**	Sealing edge Form B is damaged replace fitting
	Sealing surface is damaged	Rework sealing surface
Fitting vibrates loose	Undertightened at initial assembly	Tighten the nut according to correct torque
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Torsion forces on assembly	Use clamps or bulkhead fittings to isolate twisting hose
		Avoid stress at initial assembly
Fractured stud	Severe overtightening	Do not exceed specified tightening instructions
	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks …) do not exceed fitting performance

Triple-Lok® 1025/1040/1015/1020 Problem	Probable cause	Suggested solution
Tube slips in die during flanging or flaring	Tube undersized	Use tube within tolerance
	Die grip surface dirty	Clean with solvent
	Die grip surface worn	(do not use any wire brush) Replace Die
Flange/flare diameter to small	Tube slipped in die	See problem “Tube slips in die …”
	Incorrect pin	Use correct pin for tube size
	Die needs adjustment/incorrect die.	Contact Parker Rep./Use correct die
	Tube was not inserted to tube stop	Insert tube to tube stop
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against tube stop
	Die needs adjustment/incorrect die	Contact Parker Rep./Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
Flange/flare out of round	Tube not cut squarely	Cut tube squarely, within ± 1°
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Too hard tube	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/ flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr and remove filings
	Tube not properly cleaned	Clean to remove filings
	Pin not cleaned	Keep pin clean but lubricated
Tube slips in die during flanging or flaring	Tube undersized	Use tube within tolerance
	Die grip surface dirty	Clean with solvent
	Die grip surface worn	(do not use any wire brush) Replace Die

O-Lok® 1025/1040 Problem	Probable cause	Suggested solution
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against Tube stop
	Die needs adjustment/	Contact Parker
	Incorrect die	Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
	Sleeve not located properly in die	Locate sleeve in die cavity correctly
Flange/flare not round	Tube not cut squarely	Cut tube squarely, within ± 1°
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Tube too hard	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr tube and remove filings
	Tube not properly cleaned	Clean tube to remove filings
	Pin not cleaned	Keep pin clean and lubricated
Flange pin breaks during flanging	Incorrect pin and/or tube wall/ or wrong pin for tube material	Use correct pin for tube size/material

Assembly tooling











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Manual assembly tools
for EO/EO2



VOMO
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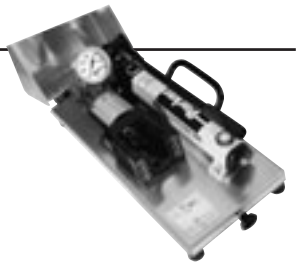


KONU
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Manual assembly devices



HVM-B
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EO-KARRYMAT
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Assembly machines
for EO/EO2, Triple-Lok®



EOMAT II
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EOMAT III/A
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Forming machine
for EO2-FORM



EO2-FORM F3
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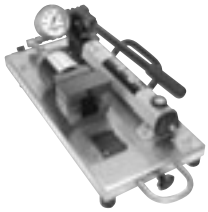
Manual flaring tools
for Triple-Lok®



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Impact flarer
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KarryFlare
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Parflange®-Machines
for O-Lok®/Triple-Lok®



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Lubricants

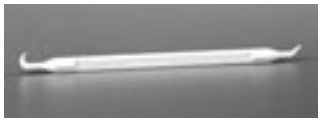
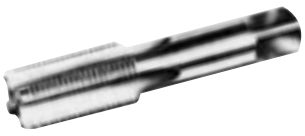
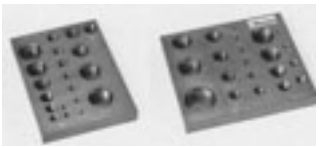


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Parker tube fabricating equipment

Equipment described in this section is designed to make strong, accurate tubing systems easier and more dependable. Every time you make up a tubing circuit, you want to be sure you get strong dependable joints, accurate kink-free bends and a neat system that will stand up to years of hard service. You want to fabricate the system with the least effort and risk of errors.
Parker tube fabricating equipment is designed to help you get all these benefits. Parker has been leading the way in use of tubing and in fittings design for over 60 years. All this experience has shown Parker engineers a host of ways to make tube fabricating equipment more efficient and trouble free. You'll find them all in the equipment featured here – from improvements that help you make accurate concentric flares, to bender designs that make kink-free bending easier. They'll all help you get better tubing systems with less work and less risk of mistakes in fabrication.

Machine selection

Parker offers a variety of assembly devices and machines for different products and different applications.
Refer to overview in chapter E for machine recommendation.

Service

Assembly machines and standard tooling for TFDE connectors are available from stock for immediate service.
Both purchasing and leasing are possible depending on machine type and volume of business. For limited projects, assembly equipment can be provided on a rental basis via our certified distributor network.
Special "demo"-equipment is available for sales presentations and fairs.

Technical support

TFDE machine service procedures ensure that reliable machine function and fitting performance is achieved when using genuine Parker assembly equipment.
All machines come with detailed operating manuals. Parker distributors and sales representatives are trained to give advice on operation and application. Experienced application engineers at TFDE are available when it comes to special application of TFDE assembly equipment.
In case of machine malfunction, spare machines can be provided on short notice so that production can continue. In the meantime, damaged machinery is checked and repaired at the TFDE machine repair facility. Well trained and experienced engineers take personal care that the machines return properly repaired and tested.

TFDE also offers a machine maintenance and calibration service. Standard spare parts like oil filters can be ordered from stock.

Repair procedure

Please contact your Parker Service Center for problem solving/repair. Your correspondent will organise the repair and arrange a spare machine if required. Please do not send in machines without notice to your sales correspondent. To assure optimum service, all machine shipments must include a documentation with information about: Machine type, serial number, purchase data, problem description, contact name, phone number and complete address for return.



Experienced engineers support proper operation of TFDE assembly machinery

Tool lifetime

Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Manual assembly tools for EO/EO-2

VOMO – Pre-assembly tools for EO/EO-2 tube connections

Simple but essential tool for the manual presetting of EO-fittings.

The use of a VOMO assures that the bite ring securely cuts into the tube without damage on the inner fitting cone.

Pre-assembly using VOMO or EOMAT must be done for all connections of:

– EO-2 with large tube dimensions (Tube OD 30 mm and above)

– EO-Progressive Stop Ring/Progressive Ring with stainless steel tube or standpipe fittings (E.g.: “BE”-type hose fitting).

For proper use, see EO assembly instructions. VOMO tools wear out and then may cause assembly failures. VOMO’s must be checked regularly with “KONU” cone gauges (max. after 50 assemblies) and replaced when damaged or worn out.

Specifications:

Material: hardened tool steel
Sizes: 4 LL – 12 LL,
6 L – 42 L,
6 S – 38 S

Pre-assembly of: EO-2 and Progressive Stop Ring PSR/EO progressive Ring DPR

Features, advantages and benefits of pre-assembly tools:

1. **Marking notch** – A special ridge engraves a circular mark onto the tube end to verify that it was properly bottomed at assembly. Failures caused by improper tube cutting or bottoming in VOMO can be recognised before final installation.
2. **Flexible** – A VOMO can be used anywhere to assure safe fitting assembly – even at assembly sites where EOMAT machines are not available.
3. **Safe** – Hazardous blowout of incorrect assembled standpipe hose fittings or stainless steel tube can be avoided by VOMO-assembly.



4. **Efficient** – There is no doubt that VOMO-presetting contributes to save time and effort in bite-type assembly. The small investment pays back immediately.
5. **Special** – VOMO tools are specifically designed and manufactured to match EO-fitting standards.
6. **Tool lifetime** – Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Series	Tube o.d. mm	Pre-assembly tools Order code	Cone gauges Order code
LL	4	VOMO04LLX	KONU04+06LLX
	6	VOMO06LLX	
	8	VOMO08LLX	KONU06+08LLX
	10	VOMO10LLX	
	12	VOMO12LLX	KONU10+12LLX
L	6	VOMO06LX	KONU06+08LX[1])
	8	VOMO08LX	
	10	VOMO10LX	KONU10+12LX[1])
	12	VOMO12LX	
	15	VOMO15LX	KONU15+18LX
	18	VOMO18LX	
	22	VOMO22LX	KONU22+28LX
	28	VOMO28LX	
	35	VOMO35LX	KONU35+42LX
	42	VOMO42LX	
S	6	VOMO06SX	KONU06+08LX[1])
	8	VOMO08SX	
	10	VOMO10SX	KONU10+12LX[1])
	12	VOMO12SX	
	14	VOMO14SX	KONU14+16SX
	16	VOMO16SX	
	20	VOMO20SX	KONU20+25SX
	25	VOMO25SX	
	30	VOMO30SX	KONU30+38SX
	38	VOMO38SX	

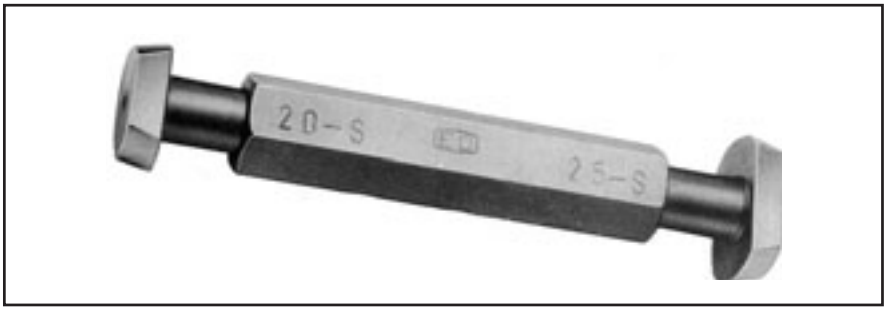
1) Cone gauges for tube o.d.6 to 12 mm are identical in series L and S.

KONU – Cone gauge for EO/EO-2 tube connections

Cone gauges are essential for monitoring wear on pre-assembly tools like VOMO, MOK or MOS.

KONU must be regularly used to prevent assembly failures caused by worn out or damaged tools (DIN 3859-2: max. each 50th assembly).

For proper use see EO assembly instructions.



Specifications:

Material: hardened tool steel
Sizes: 4 LL – 12 LL,
6 L – 42 L,
6 S – 38 S
(Sizes 6 L – 12 L
are identical to 6 S – 12 S)

Features, advantages and benefits of cone gauges:

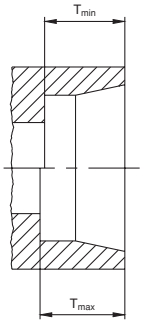
1. **Special** – KONU are high precision gauges specifically designed and manufactured to match EO standards.
2. **Practical** – For easy handling and less inventory, each KONU gauge is suitable for two sizes.
3. **ISO 9001** – Simple but effective method to assure ISO 9001 specification for monitoring tools.
4. **Maintenance tool** – A leaking fitting can be easily checked and replaced if worn-out.

Series	Tube o.d. mm	Cone gauges Order code
LL	4 6	KONU04+05LLX
	8 10	KONU06+08LLX
	12	KONU10+12LLX
L	6 8	KONU06+08LX[1])
	10 12	KONU10+12LX[1])
	15 18	KONU15+18LX
	22 28	KONU22+28LX
	35 42	KONU35+42LX
S	6 8	KONU06+08LX[1])
	10 12	KONU10+12LX[1])
	14 16	KONU14+16SX
	20 25	KONU20+25SX
	30 38	KONU30+38SX

[1]) Cone gauges for tube o.d. 6 to 12 are identical in series L and S.

Checklist “depth measurement” for pre-assembly tooling (MOK and VOMO)

Type	T_{min}	T_{max}	Type	T_{min}	T_{max}
6-L	6.95	7.05	6-S	6.95	7.05
8-L	6.95	7.05	8-S	6.95	7.05
10-L	6.95	7.05	10-S	7.45	7.55
12-L	6.95	7.05	12-S	7.45	7.55
15-L	6.95	7.05	14-S	7.95	8.05
18-L	7.45	7.55	16-S	8.45	8.55
22-L	7.45	7.55	20-S	10.45	10.55
28-L	7.45	7.55	25-S	11.95	12.05
35-L	10.45	10.55	30-S	13.45	13.55
42-L	10.95	11.05	38-S	15.95	16.05



Manual assembly devices for EO/EO-2 tube connections

Machine selection guide

Manual assembly devices are available to reduce assembly time and effort. High assembly quality and consistency assures reliable fitting performance. EO assembly devices are manually operated and do not need any external power supply.

Due to the low weight, easy handling and simple but reliable design, the EO assembly devices are the ideal tool for tube preparation of small quantities.

For efficient mass production, manual devices are not suitable, therefore EOMAT machines are recommended.

Features, advantages and benefits

1. **Flexible** – Manual assembly devices are portable and do not need any power supply. Therefore they are ideal for on-site tube assembly, repair and plant maintenance.
2. **Economic** – Manual assembly devices close the gap in between manual fitting pre-assembly in a vice and the Eomat technology. The devices contribute to save time and effort in bite type assembly. The little investment pays back immediately.
3. **Controlled assembly** – After preassembly, the tube joint can be easily inspected before final installation. Therefore, this mandatory step in fitting assembly is less likely to be forgotten.
4. **Special** – Each device has been especially developed for the efficient use in a certain application. The HVM-B is a handy tool for the quick pre-assembly of EO Progressive rings onto soft steel tube. The EO-KARRYMAT is a real problem solver when it comes to on-site assembly of medium to large EO-Progressive rings and EO-2 fittings onto steel and stainless steel tube.

H

How to select the ideal assembly device for your application:

	HVM-B 	**EO-KARRYMAT** 
Assembly method EO-2: PSR/DPR/D: Triple-Lok®:	 not suitable Stroke controlled not suitable	 Pressure controlled Pressure controlled not suitable
Tube specification Material: Outside diameter/mm: Wall thickness:	 Steel 4–15 mm no limitation	 Steel, Stainless Steel 6–42 mm no limitation
Tool specification	Special assembly cones MOSI and plates HL	Standard assembly cones MOK and plates GHP
Operation drive	Lever with eccentric cam	Handpump
Process control	Assembly stroke determined by tool geometry	Pressure control according to selection chart
Preassembly is equal to EO-2: PSR: D/DPR:	 – 1 turn 1 turn	 Gap closed $1^1/_2$ turn $1^1/_4$ turn
Performance Overall cycle time:	 10 secs.	 30–60 secs.
Application	Simple tool for quick pre-assembly of small dimension EO-Progressive rings onto steel tubes	Most efficient for one-site assembly of medium to large DPR- and EO-2 connections onto any suitable tube material

HVM-B Pre-assembly tool

This pre-installation tool is a simple tool for a quick and safe pre-assembly of EO-Progressive Stop Ring/Progressive ring. The tool is very handy and can be used at any site provided a vice is available. Suitable for LL, L and S series and tube sizes from 4 to 15 mm O.D.

Attention:

⚠ **Not suitable for EO-2 assembly.**

⚠ **Not suitable for stainless steel progressive ring assembly.**

⚠ **Final assembly of $^1/_2$ turn in fitting body required.**

Specifications:

For pre-assembly of: EO Progressive Stop Ring (PSR)/Progressive Ring (DPR)

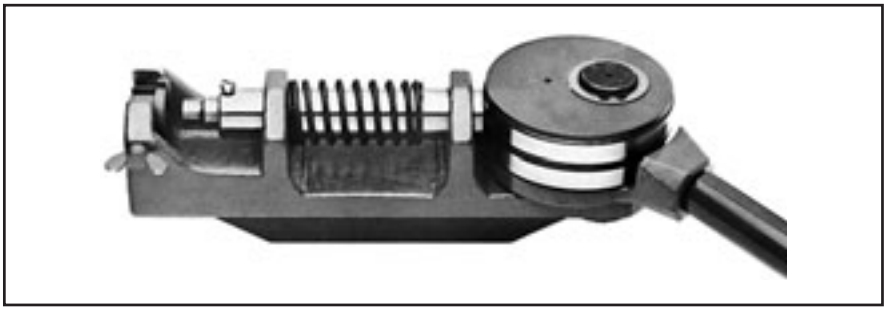
Pre-assembly equals: 1 turn of nut

For assembly check and fitting installation see assembly instructions chapter E.

Tube O.D.: 4 to 15 mm
Series: LL, L and S
Tube and fitting material: Steel
Weight: approx. 7.0 kg (without tools)

Features, advantages and benefits of pre-assembly tool:

1. **Special** – HVM-B is designed and manufactured to match EO-DPR standards.
2. **Vice mounted** – For easy workshop use, the HVM-B can be clamped into any vice.
3. **Flexible** – A HVM-B can be used anywhere to assure safe fitting assembly – even at assembly sites where EOMAT technology is not available.
4. **Efficient** – There is no doubt that HVM-B-presetting contributes to save time and effort in bite-type assembly. The small investment pays back immediately.



Type	Order code
HVM-B Pre-assembly tool device without tools	HVMBKPLX
Spare parts	
center bearing pin	HVMB02X
excenter roll	HVMB-03-1X

Series	Tube o.d. mm	Tube location plate Order code	Assembly cone Order code	Cone gauge Order code
LL	4	HL04X	MOSI04LLX	KONU04+05LLX
	6	HL06X	MOSI06LLX	KONU06+08LLX
	8	HL08X	MOSI08LLX	
	10	HL10X	MOSI10LLX	KONU10+12LLX
	12	HL12X	MOSI12LLX	
L	6	HL06X	MOSI06LX	KONU06+08L/X[1])
	8	HL08X	MOSI08LX	
	10	HL10X	MOSI10LX	KONU10+12L/X[1])
	12	HL12X	MOSI12LX	
	15	HL15X	MOSI15LX	KONU15+18L/X
S	6	HL06X	MOSI06SX	KONU06+08L/X[1])
	8	HL08X	MOSI08SX	
	10	HL10X	MOSI10SX	KONU10+12L/X[1])
	12	HL12X	MOSI12SX	
	14	HL14X	MOSI14SX	KONU14+16SX

1) Cone gauges for tube o.d. 6 to 12 are identical in series L and S.

HVM-B Pre-assembly tool

1



How to use

- Clamp HVM-B into vice.
- Select required assembly cone (MOS-I) and insert.
- The assembly cones are marked with tube O.D. and series (e.g. 10-L).

2



- Insert the tube location plate – HL – of corresponding size and fasten with screw.
- The tube location plates are marked with tube O.D. (e.g. “10”).

3



- Slip nut “M” and Progressive Stop Ring PSR/ Progressive ring “DPR” (or cutting ring “D”) over tube end and insert into pre-assembly tool.
- Nut position must be in front of tube location plate – HL – !

4



- Hold tube against stop in the assembly cone.

5



- Pull lever to turn the eccentric cam (Pre-assembly).

Attention

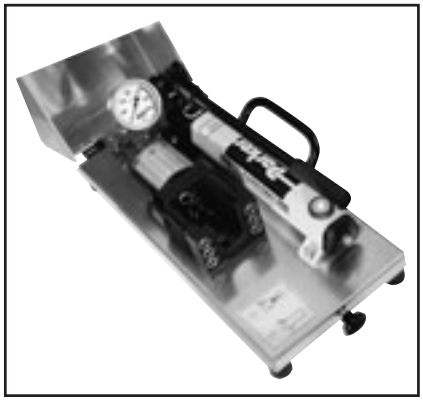
⚠ **For assembly check and final assembly see PSR/DPR instructions.**

Attention:

⚠ **At final assembly nut must be tightened by $^1/_2$ turn.**

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EO-KARRYMAT portable pre-assembly device for EO tube connections



Type	Order code
EO-KARRYMAT assembly device complete device including handpump and carrying case, including operation manual. Tools (assembly cone MOK and backing plate GHP) must be ordered separately.	EO-KARRYMAT
Promotion leaflet UK/DE	4044-DE/UK
Separate operating manual UK/DE/FR/IT	4044-T
Spare parts	
Handpump	82C-2HP
Pressure gauge	EO-KARRYMAT/MANO
Pressure chart sticker	EO-KARRYMAT/CHART
Cover hinge	EO-KARRYMAT/HINGE

The EO-KARRYMAT is a dependable device for safe and efficient bite-type presetting. It allows pre-assembly of even large dimension steel and stainless steel tube at assembly sites where EOMAT technology is not available.
The EO-KARRYMAT consists of a hydraulic drive and a handpump. The hydraulic assembly pressure can be read on a gauge. The EO-KARRYMAT comes as one unit with all components firmly attached to a practical carrying frame.

Specifications:

For pre-assembly of:	EO PSR/DPR and EO-2
Pre-assembly equals:	
EO Progressive Stop Ring (PSR):	$1^1/_2$ turns of nut
EO Progressive ring (DPR):	$1^1/_4$ turns of nut
EO-2	"Gap closed"

For assembly check and fitting installation see assembly instructions chapter E.

Tube O.D.:	6 to 42 mm
Series:	L and S
Tube and fitting material:	Steel and stainless steel
Weight:	approx. 28 kg
Oil:	HLP23–1.22 (filled before delivery)

Features, advantages and benefits of EO-KARRYMAT:

1. **Ideal** – Weighing 28 kg, the EO-KARRYMAT is portable and does not need any power supply. Therefore the EO-KARRYMAT is the ideal tool for on-site tube assembly, repair and plant maintenance.
2. **Economic** – The EO-KARRYMAT closes the gap in between manual fitting pre-assembly in a vice and the EOMAT technology. EO-KARRYMAT assembly is far less hard work as manual assembly but it achieves the dependent assembly result of the EOMAT assembly machine.
3. **"Must" for stainless steel** – As direct assembly of stainless steel tubes in bite type fittings results in failure, a special pre-assembly process is mandatory according to ISO 8483 / DIN 3859 and all manufacturers instructions. The EO-KARRYMAT fulfils this requirement.
4. **Dependable** – The use of the EO-KARRYMAT is far less demanding than manual fitting assembly using wrenches. It helps to prevent failures caused by insufficiant fitting assembly which is most critical on large dimension steel and stainless steel tube.
5. **Controlled assembly** – After pre-assembly, the tube joint can be easily inspected before final assembly. Therefore, this mandatory step in fitting assembly is less likely to be forgotten.
6. **Special** – The EO-KARRYMAT has been especially developed for the efficient on-site assembly of EO Progressive ring and EO-2 fittings. The tools are designed according to a new EO-patent which allows safe assembly of even large dimension steel and stainless steel tubes without excessive hard work.

The applications:

- Repair workshops
- Mobile repair service
- Plant maintenance in process engineering, paper production, power plants, offshore exploration, industrial production
- On-site assembly of tubing systems

Tube OD ∅ [mm]	EO-2 P [bar]	PSR/DPR P [bar]
6	60	40
8	70	50
10	80	60
12	90	70
14	110	85
15	110	85
16	120	95
18	120	110
20	170	140
22	140	130
25	230	170
28	170	150
30	310	220
35	260	190
38	350	290
42	310	240
 Installation		

Assembly machines for EO/EO-2 and Triple-Lok®

Machine selection guide

EOMAT assembly is much more cost efficient than manual assembly of EO-fittings. Assembly time and effort are greatly reduced. Proper and consistant pre-assembly support safe and leakfree fitting performance.

EOMAT machines are specifically designed to match EO-2, EO PSR/DPR rings and Triple Lok® standards. Assembly is achieved with high precision and repeatability.

EOMAT machines are available in several versions to serve individual applications. All machines are designed for reliable workshop use even under severe construction site working conditions. Tool handling and machine operation are simple.

How to select the ideal EOMAT machine for your application:

Features, advantage and benefits:

1. **Universal** – Assembly of EO-2, EO PSR/DPR rings and 37° flaring for Triple-Lok® can be done with just 1 machine.
2. **Efficient** – With a cycle time of some 15 seconds the EOMAT machine greatly saves assembly time and effort. The investment pays back quickly.
3. **Safe** – Proper pre-assembly greatly reduces the danger of leaking fittings or even hazardous tube blow out.
4. **Strong** – Even 37° flaring of larger sized stainless steel tube is done within few seconds.
5. **Flexible** – All tube dimensions from 6 to 42 mm can be used. All common tube materials are covered, even plastic tube (EO-2 and PSR/DPR only).
6. **Marking notch** – A special ridge makes a circular mark onto the tube end to verify that it was properly bottomed at assembly. Failures caused by improper tube cutting or bottoming in MOK can be recognised before final installation.
7. **Reliable** – For more than 20 years, hundreds of EOMAT machines have operated under heavy duty workshop conditions.

H

	EOMAT II 		**EOMAT III** 	
Assembly method:				
EO-2	Pressure controlled		Pressure controlled	
D/PSR/DPR	Pressure controlled		Stroke controlled	
Triple-Lok®	Conventional 37° flaring		Conventional 37° flaring	
Tube specification:				
Material	Steel, Stainless Steel		Steel, Stainless Steel, Aluminium, Copper, Monel or CuNiFe, plastic tube such as nylon polyurethane, PVC or PTFE (EO-2/DPR only)	
Outside diameter/mm	6–42 mm		4–42 mm	
Wall thickness:				
EO-2/PSR/DPR	No limitation		No limitation	
Triple Lok®	6×1 to 38×4 or 42×3 mm (Tube O.D. x wall thickness)		6×1 to 38×4 or 42×3 mm (Tube O.D. x wall thickness)	
Operation:				
Setting	Manual pressure adjustment according to selection chart Depending on: Assembly type; Tube dimension; Tube material		Menu selection of assembly type and tube dimension Automatic adjustment and control of process parameter	
Process control	Pressure gauge		Microprocessor Warning message for most typical assembly failures	
Memory function	No		Yes, 26 memory locations	
Oil level control	Visual control		Display warning when too low	
Oil temperature control	No		Display warning when too high	
Foot operating switch	Not available		Accessory	
Performance	3 Phase/400 V (380 V)	1 Phase/230 V (220 V)	3 Phase/400 V (380 V)	1 Phase/230 V (220 V)
Overall cycle time (sec.):				
EO-2 presetting	12	15	10	13
PSR/DPR presetting	15	18	12	15
37° flaring	15	18	12	15
Continuous operating:	80 %	80 %	100 %	100 %
Weight	approx. 62 kg	approx. 60 kg	approx. 100 kg	approx. 98 kg
Application	**Simple workshop tool for use on construction site**	**Only at assembly sites where 3 phase power supply is not available**	**Efficient production machine for low-cost and high quality assembly**	**Only at assembly sites where 3 phase power supply is not available**

EOMAT II assembly and flaring machine

General

The EOMAT II is an electro-hydraulic machine for the assembly of:

EO-2
EO PSR/DPR and
Triple-Lok® 37° flared tube fittings.

Compared to manual assembly it greatly reduces assembly time, effort and cost and also guarantees leakfree performance of constant high-quality fitting assemblies.

Common tube materials such as steel (ST 37.4 BK, ST 52.4 BK), stainless steel (1.4571/1.4541/316Ti or similar) and copper can be pre-assembled.

The tool range covers all metric tube sizes from 4 to 42 mm outer diameter. The required operating pressure is variable and set at the pressure gauge. The unit may therefore be used for a variety of different applications.The standard version is for 380 V supply, a 220 V version is also available on request. The tooling for either EO-2/ PSR/DPR pre-assembly or tube flaring may be manually replaced, without the use of tools.

Technical data

Oil:
Esso Nuto H 32 or equal, 3.3L
(Reference oil change, see label on unit)
Operating pressure:
Variable from 15 to 200 bar
Dimensions:
Width 540 mm, height 245 mm, depth 420 mm

400 (380) V version

Hydraulic pump:
1.8 kW – 4.3 l/min
Feedrate: 8.3 mm/sec.
Electrical connection:
380 V/ 3~ / 50 Hz / 4.3 A
Connection cable:
5 m – CEE 16 A
Weight: 62 kg

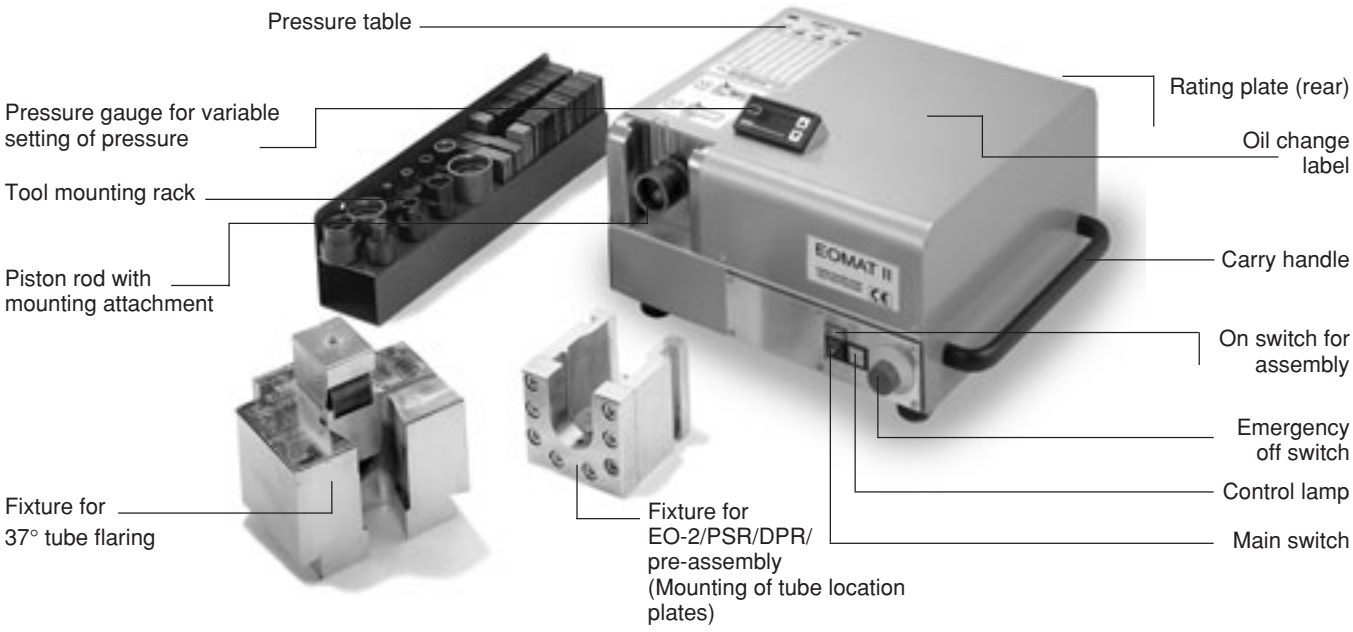
230 (220) V version

Hydraulic pump:
1.3 kW – 2.5 l/min
Feedrate: 4.8 mm/sec.
Electrical connection:
230 (220) V/ 1~ / 50 Hz / 8.3 A
Connection cable:
5 m – Earth plug
Weight: 60 kg

We reserve the right to make modifications in the course of further technical development.

Features, advantages and benefits:

1. **Universal** – Assembly of EO-2, EO-PSR/DPR and 37° flaring for Triple-Lok® can be done with just 1 machine.
2. **Efficient** – With a cycle time of some 15 seconds the EOMAT II greatly saves assembly time and effort. The investment pays back quickly.
3. **Safe** – Proper pre-assembly greatly reduces the danger of leaking fittings or even hazardous tube blow out.
4. **Strong** – Even 37° flaring of larger sized stainless steel tube is done within few seconds.
5. **Flexible** – All tube dimensions from 4 to 42 mm can be pre-assembled. All common tube materials are covered.
6. **Workshop tool** – At 80 kg, the EOMAT II can be brought to an assembly site.
7. **Marking ridge** – All MOK tools feature a special ridge in the bottom surface which is designed to make a circular groove into the tube-end at assembly. No mark indicates that the tube-end has not been properly bottomed at assembly.
8. **Reliable** – For more than 20 years, hundreds of machines are operated under heavy duty workshop conditions.

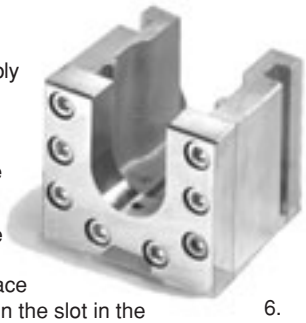


EOMAT II assembly and flaring machine

Basic operation for EO-2 Functional nuts

See EO-2 instructions for fitting assembly

1. Adjust EO-2 pressure according to chart (A)
2. Insert the pre-assembly fixture in the tool mounting weight approx. 5.5 kg).
3. Select the assembly cone (MOK) and backing plate (GHP) in accordance with the tube size and type.
4. Place and lock the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.



5. Slide the EO-2 functional nut onto the tube, which has been cut off square and deburred.
6. Place the tube with the EO-2 functional nut in the pre-assembly fixture between backing plate and assembly cone.
7. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button until the pre-assembly process is complete.
8. Take the assembled tube connection out of the location plate. See EO-2 assembly instruction (chapter E) for assembly check and installation instructions.
9. Check assembly result before final installation.

Basic operation for EO PSR/DPR ferrules

See PSR/DPR instructions for fitting assembly

1. Adjust PSR/DPR pressure according to chart (A)
2. Insert the pre-assembly fixture in the tool mounting (weight approx. 5.5 kg).
3. Select the assembly cone (MOK) and backing plate (GHP) in accordance with the tube size and type. Check the assembly cone using a cone gauge.
4. Place the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.
5. Oil the ring, nut and assembly cone.
6. Slide the nut and ring onto the tube, which has been cut off square and deburred.
7. Place the tube with nut and progressive ring or cutting ring in the pre-assembly fixture between backing plate and assembly cone.
8. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button until the pre-assembly process is completed.
9. Take the pre-assembled tube out of the backing plate. See EO PSR/DPR assembly instruction (chapter E) for assembly check and installation instructions.
10. Check assembly result before final installation.

Basic operation for 37° tube flaring

See Triple-Lok® instructions for fitting assembly

1. Adjust Triple-Lok® pressure according to chart (A)
2. Insert the tube flaring fixture in the toolmounting (weight approx. 19.5 kg).



3. Lubricate the flaring pin.
4. Insert the flaring die set corresponding to the tube size.
5. Push the nut and support sleeve onto the tube.
6. Push the tube through the flaring die hole to the stop plate. To prevent misalignment, longer tubes are to be supported during the flaring process.
7. Press the start button (or right-hand foot switch) and hold until the display reads “RELEASE START BUTTON”. The flaring procedure is completed.
8. Lift the tube with the flaring die upwards out of the fixture.
9. To release the tube, place the flaring die set in the opening provided in the fixture and tilt the tube to one side.
10. Check assembly result before final installation.

Important!

Only proceed with pre-assembly when a tube with nut and cutting ring has been placed in the fixture (failure to observe this can result in damage to the tools). Longer tubes are to be suitably supported during pre-assembly.The assembly cones are to be regularly checked for correct dimensions using the cone gauge and should be replaced when necessary.

Caution: do not reach into the working area of the pre-assembly fixture while it is operating!

Important!

Do not drive the flaring pin into the flaring die without a tube in position. The roughened surface of the flaring die must be absolutely free of oil and grease to prevent the tube from slipping.

Caution: do not reach into the working area of the flaring fixture while it is operating!

EOMAT II assembly and flaring machine

Pressure setting chart A

EOMAT II

Tube-OD	EO-2	PSR/DPR	Triple-Lok®
∅ (mm)	P (bar)	P (bar)	P (bar)
6	30	25	20
8	35	30	25
10	45	35	35
12	50	40	35
14	60	50	45
15	60	50	60
16	70	55	60
18	70	65	70
20	100	80	95
22	80	75	95
25	130	100	105
28	100	90	125
30	180	125	135
35	150	110	155
38	200	170	165
42	180	140	185
Installation	min. 60° max. 90°	~ 30°	min. 60° max. 90°

Steel (ST 37.4 BK, ST 52.4 BK, . . .)

Stainless Steel (ST 1.4571, 1.4541, 1.4301, 316 Ti, . . .)

The given values are a guide. The results of pre-assembly and/or tube flaring are therefore always to be checked.
For detailed instructions on tube preparation, tool selection, assembly check and final installation see chapter E.

EOMAT II assembly and flaring machine

Ordering

Type	Order code
EOMAT II Basic machine Ready to use, including operation manual Filled with hydraulic oil Without EO assembly fixture/Flaring fixture Without tools for EO-assembly/37˚ flaring Basic machine 400 V, 3 Phase, 50 Hz Basic machine 230 V, 1 Phase, 50 Hz	 EOMATII380VX EOMATII220VX
Fixture for PSR/DPR/EO-2 assembly	EOMATSCHNEIDRX
37˚ Flaring fixture for Triple-Lok®	EOMATBOERDELBX
EOMAT II promotion leaflet UK	4042/UK
EOMAT II promotion leaflet DE	4042/DE
EOMAT II operating manual UK/DE/FR/IT	4042-OM/UK/DE/FR/IT

Assembly fixtures, tools, cone gauges, and lubricant must be ordered separately

Assembly tools for PSR/DPR/EO2 see page H5.

37° flaring tools for Triple-Lok® see page H28.

Spare parts

Type	Order code
Fixing clip for MOK	EOMAT/CLIP
37° flaring pin	EOMAT/FLAREPIN
O-ring for flaring pin	EOMAT/0212500
Tube stop assembly for flaring block	EOMAT/0213800
Breath air filter for oil tank	EOMATII/240504205
Pressure chart sticker	EOMATII/CHART
Digital pressure adjustment display	SCE-025-01
Pressure switch for digital display	SCP-250-12-06
Pressure adjustment panel complete pressure switch and gauge for old version EOMATII	EOMATII/SWITCH-MECH

EOMAT III assembly and flaring machine with electronic control

General

The EOMAT III/A is an “electronically” controlled hydraulic drive unit for the assembly of:

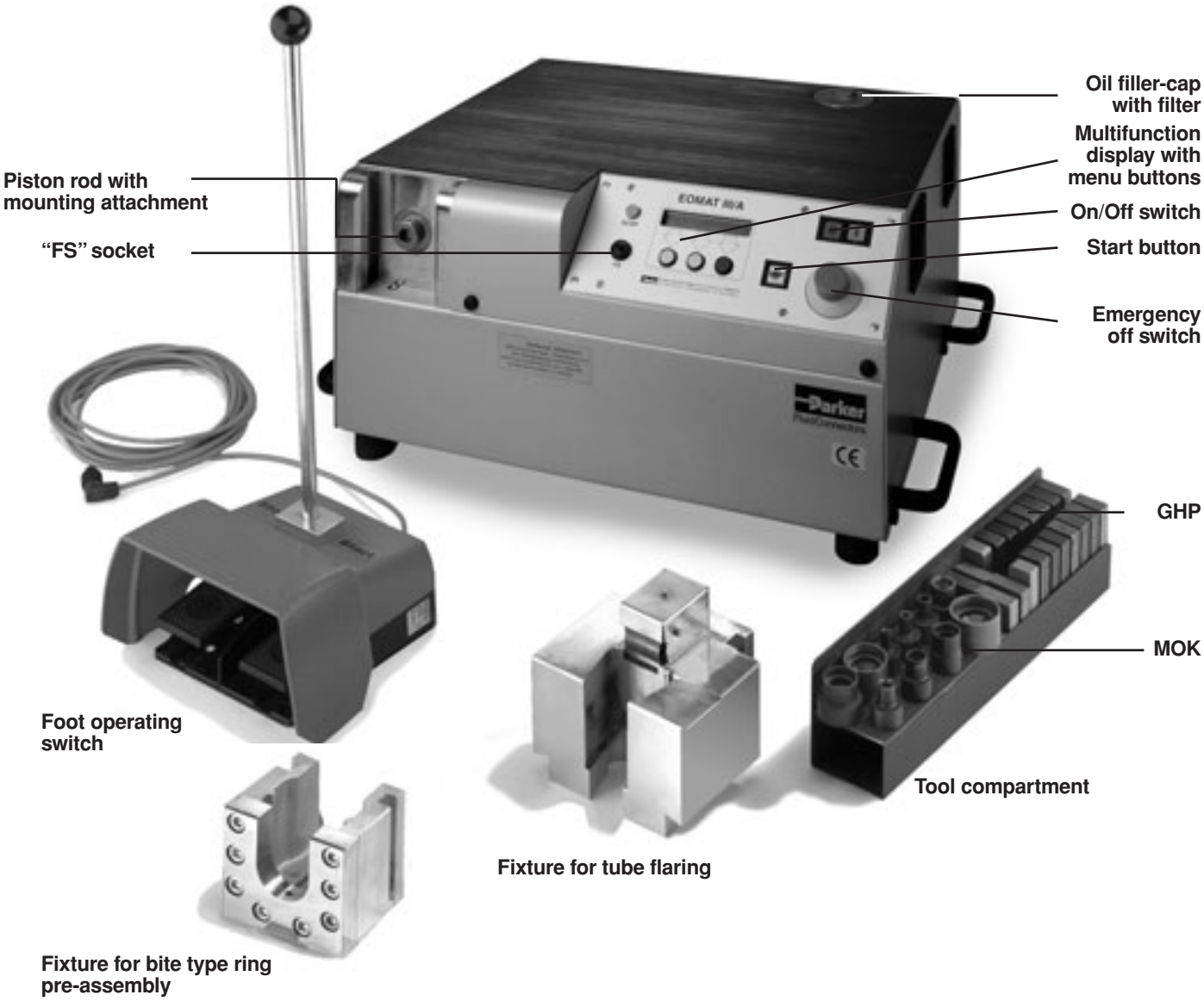
EO-2
EO PSR/DPR
Triple-Lok® 37° flared tube fittings.

Compared to manual assembly it greatly reduces assembly time, effort and cost and also guarantees leakfree performance of constant high-quality fitting assemblies.

Common tube materials such as steel, (ST 37.4 BK, ST 52.4 BK) stainless steel (1.4571/ 1.4541/ 316Ti), aluminum, copper and even plastic (EO-2/PSR/DPR only) can be machined. The tool range covers all metric tube sizes from 4 to 42 mm outer diameter.

The required operating pressure depends on the assembly type and the tube dimensions, and it is automatically selected by a microprocessor. A multifunction display provides information about the current operating data. Frequently used assembly data or special applications can be memorized; 26 memory locations are available for this purpose. These features allow for individual use of the unit.
The standard version is for 380 V power supply; other voltage types and frequencies are available at extra charge.

The tools are the same as those of the EOMAT II and III versions and the fixtures for either the pre-assembly of cutting rings or for flaring tubes may be changed manually without using tools.



EOMAT III assembly and flaring machine with electronic control

Features, advantages and benefits of EOMAT III/A:

1. **Universal** – Assembly of EO-2, EO PSR/DPR and 37° flaring for Triple-Lok® can be done with just 1 machine.
2. **Efficient** – With a cycle time of 10 seconds the EOMAT III/A greatly saves assembly time and effort. The investment quickly pays back.
3. **Industrial production** – sufficient hydraulic oil volume and intelligent energy management allow continuous 24-hour operation without overheating. The drive unit is designed to last millions of cycles.
4. **Menue selection** – Operation is as easy as selecting the intented assembly process (EO-2/PSR/DPR/ 37° flare) and tube dimension. No pressure charts are necessary.
5. **Bite control** – In PSR and DPR-mode, the axial movement of the Progressive ring is controlled with an accuracy of 0.01 mm (0.0004 inch). This assures reliable leakfree fitting performance independent of lubrication or dimensional and hardness tolerances.
6. **Error messages** – All process parameter are controlled by the built-in microprocessor. Clear messages for typical failures are shown on the multifunction display.
7. **Safe** – Proper pre-assembly greatly reduces the danger of leaking fittings or even hazardous tube blow out.
8. **Strong** – Even 37° flaring of large size stainless steel tube is done within few seconds.
9. **Flexible** – All tube dimensions from 4 to 42 mm can be made. All common tube materials are covered, even plastic tube (EO-2/PSR/DPR only).
10. **Marking ridge** – All MOK tools feature a special ridge in the bottom surface which is designed to engrave a circular groove into the tube-end at assembly. A missing of this mark indicates that the tube-end has not been properly bottomed at assembly.
11. **No tool wear** – When the machine is only used for pre-assembly of EO-2 fittings, the MOK tools do not wear. This prevents fitting failures caused by worn-out pre-assembly tools.
12. **Three languages display** – English/ German/French can be easily selected for the display.
13. **Memory locations** – 26 memory locations are available to store regularly used specific assembly data.
14. **Foot switch** – For easy handling of long tubes and time efficient series production a foot switch is available.
15. **Machine monitoring** – A warning will be shown on the display when hydraulic oil level is low or oil temperature is high to avoid machine damage.

Technical specifications

Oil
Esso Nuto H 32 or equivalent, capacity 15 l (oil change once per year or every 2000 hours. Oil drain screw on the underside of the unit).

Working pressure:
Electronically adjusted from 12 to 200 bar.

Dimensions:
Width 690 mm, height 530 mm, depth 320 mm.

Hydraulic pump:
1.1 kW – 5.4 l/min.

Feed speed:
19 mm/sec, working stroke 8.7 mm/sec, return speed 13.3 mm/sec.

Electrical connection:
400 (380) V/3 Phase /50 Hz /2.8 A (standard). Other specifications on request.

Power cable:
5 m – CEE 16 A, with phase inverter.

Weight: 100 kg.

Technical specifications of the electronic control

Display:
LCD display, 2 Lines with 24 characters each. Character height 5.5 mm.

"MENU" buttons:
Three buttons for entering the menu. The button functions appear in the lower line of the LCD display.

"FS" socket:
For connecting the foot operating switch, plug connection: DIN 41524, 3-pole.

Ambient conditions:
Ambient temperature: 0 … +50°C.
Storage temperature: –25 … +60°C.

General:
Lithium battery for data memory.
Service life min. 5 years.

Initial operation

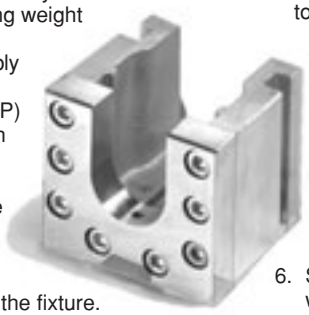
Phase polarity
Switch on the unit. Correct phase-polarity is checked by a trial run without tool and without fixtures. Press and hold down the start button (lit up). If the start button is not lit up, keep pressing the green menu button until the start button lights up. When phase-polarity is correct, the piston moves forward to the stop and then returns. The display shows the command "RELEASE START BUTTON". When phase-polarity is incorrect, the piston does not move. In this case, switch off the unit and switch over the phase inverter in the plug, using a screwdriver.

EOMAT III assembly and flaring machine with electronic control

Basic operation for EO-2 functional nuts

See EO-2 instructions for fitting assembly

1. Pressure is automatically adjusted by the menu selection button (see paragraph “operating the multi-function display”).
2. Insert the pre-assembly fixture in the tool mounting weight approx. 5.5 kg).
3. Select the assembly cone (MOK) and backing plate (GHP) in accordance with the tube size and type.
4. Place and lock the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.



5. Slide the EO-2 functional nut onto the tube, which has been cut off square and deburred.
6. Place the tube with the EO-2 functional nut in the pre-assembly fixture between backing plate and assembly cone.
7. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button (or right-hand foot switch) until the display gives the command “RELEASE START BUTTON”. The pre-assembly process is complete.
8. Take the assembled tube connection out of the location plate. Loosen nut and check that the gap between the sealing ring and retaining ring is closed.
9. Check assembly before final installation.

Basic operation for EO PSR/DPR rings

See PSR/DPR instructions for fitting assembly

1. Pressure is automatically adjusted by the menu selection button (see paragraph “operating the multi-function display”).
2. Insert the pre-assembly fixture in the tool mounting (weight approx. 5.5 kg).
3. Select the assembly cone (MOK)and backing plate (GHP) in accordance with the tube size and type. Check the assembly cone using a cone gauge.
4. Place the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.
5. Oil the ring, nut and assembly cone.
6. Slide the nut and ring onto the tube, which has been cut off square and deburred.
7. Place the tube with nut and ring or cutting ring in the pre-assembly fixture between backing plate and assembly cone.
8. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button (or right-hand foot switch) until the display gives the command “RELEASE START BUTTON”. The pre-assembly process is completed.
9. Take the pre-assembled tube out of the backing plate. The progressive ring or cutting ring has cut into the tube leaving a visible raised collar (check!).
10. Check assembly before final installation.

Basic operation for 37° tube flaring

See Triple-Lok® instructions for fitting assembly

1. Pressure is automatically adjusted by the menu selection button (see paragraph “operating the multi-function display”).
2. Insert the tube flaring fixture in the tool mounting (weight approx. 19.5 kg).



3. Lubricate the flaring pin.
4. Insert the flaring die set corresponding to the tube size.
5. Push the nut and support sleeve onto the tube.
6. Push the tube through the flaring die hole to the stop plate.To prevent misalignment, longer tubes are to be supported during the flaring process.
7. Press the start button (or right-hand foot switch) and hold until the display reads “RELEASE START BUTTON”. The flaring procedure is completed.
8. Lift the tube with the flaring die upwards out of the fixture.
9. To release the tube, place the flaring die set in the opening provided in the fixture and tilt the tube to one side.
10. Check assembly before final installation.

Important!

Only proceed with pre-assembly when a tube with nut and cutting ring has been placed in the fixture (failure to observe this can result in damage to the tools). Longer tubes are to be suitably supported during pre-assembly.The assembly cones are to be regularly checked for correct dimensions using the cone gauge and should be replaced when necessary.

Caution: do not reach into the working area of the pre-assembly fixture while it is operating!

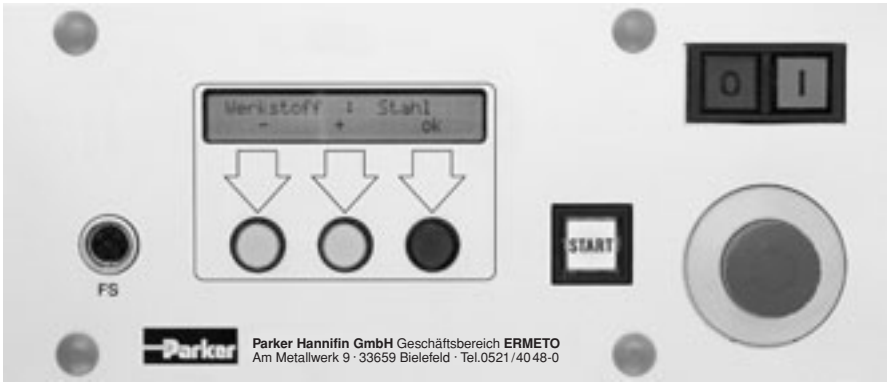
Important!

Do not drive the flaring pin into the flaring die without a tube in position. The roughened surface of the flaring die must be absolutely free of oil and grease to prevent the tube from slipping.

Caution: do not reach into the working area of the flaring fixture while it is operating!

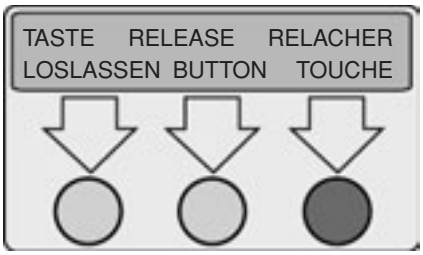
EOMAT III assembly and flaring machine with electronic control

Operation

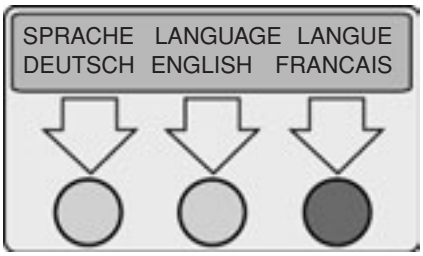


Choice of language (German/English/French)

1. To change the language, switch off the unit.
2. Switch the unit on again, holding down the green menu button.
3. The following image appears on the display after a few seconds:



4. After releasing the green menu button, the languages are indicated:



5. For German, press the left-hand yellow button; for English, press the right-hand yellow button; for French press the green button. All further information appears in the selected language, even after the unit has been switched off.

Entering a password

1. To change the password, switch off the unit.
2. Switch the unit on again, holding down the left-hand yellow menu button.
3. The following image appears on the display after a few seconds:

ENTER PASSWORD:	000
– +	OK

4. Using a yellow button (+ or –), enter the 1st number (flashes). Acknowledge with the green button. Enter the 2nd and the 3rd number in the same way. The following image appears on the display:

WRONG PASSWORD!

5a. This image disappears after a few seconds and the image of paragraph 3 appears.

5b. or the following image appears on the display:

PASSWORD CHANGE:	ON	OFF

With the left-hand yellow button "CHANGE", a new password can be entered with the same procedure as under paragraph 4. With the right-hand yellow button "ON" the password protection will be switched on. Whenever one of the three menu buttons is pressed (i.e. the assembly parameters are to be modified), the password must be entered. With the green button "OFF" the password protection is switched off. All assembly parameters can be altered now without entering the password.

6. The password is preset as "000" in the factory.
7. If a wrong password has been entered try again. This menu item can only be exited by switching off the unit.

Menu selection for standard range for steel and stainless steel

All settings are permanently programmed. Only assembly type, material and tube dimensions must be entered.

Example:

Pre-assembly with progressive ring, steel material, tube dimension 16 × 2 mm

1. The display shows the data of the last setting (random example):

EO-2	TUBE-O.D.: 12 MM
MEMORY CHANGE	SELECT

2. Press the green "SELECT" button. The start button is now not operating.

ASS. TYPE:	PSR/DPR
– +	OK

3. Using a yellow button (+ or –), select the assembly type until "DPR" appears. Acknowledge with the green "OK" button:

TUBE-O.D.:	16 MM
– +	OK

4. Using a yellow button (+ or –), select the tube outside diameter. Acknowledge with the green "OK" button. All required data have now been entered and the display shows the following:

PSR/DPR	TUBE-O.D.: 16 MM
MEMORY CHANGE	SELECT

5. The start button is now ready (lights up). The assembly procedure can now begin as described in machine operation manual or assembly instructions chapter E.

H

EOMAT III assembly and flaring machine with electronic control

Operation

Programming memory locations for special applications

For special applications, individual assembly pressures and retention times can be entered and memorised. These are normally not available and can only be determined by trial assemblies. If necessary, please consult our technical service team. 26 memory locations are available, identified by the letters A to Z.

Example:
Enter and memorise: preassembly of progressive ring, tube o.d. 16 mm.

1. Select assembly type and tube o.d. as in the standard range:

PSR/DPR		TUBE O.D.: 16 MM
MEMORY	CHANGE	SELECT

2. Press the right-hand yellow “CHANGE” button. The start button is now not operating.

ASS. PRESSURE:		36 BAR
–	+	OK

3. The assembly pressure for a special tube (19–200 bar) can now be individual entered using a yellow button (+ or –). Acknowledge with the green “OK” button.

RETENTION TIME:		1.0 SEC
–	+	OK

4. Using a yellow button (+ or –), adjust the retention time (0 to 9 sec). One second is normally sufficient. Acknowledge with the green “OK” button. The display now always shows the memory location “A”.

A:	35 BAR	0.5 SEC
–	+	OK

5. Using a yellow button (+ or –), another memory location (A–Z) can be selected. In our example, memory location “A” is to be overwritten. Acknowledge with the green “OK” button. The display now indicates the selected memory location, the assembly pressure and the retention time:

A:	45 BAR	1.0 SEC
MEMORY	CHANGE	SELECT

6. The memorising procedure is completed. The start button is now ready (lights up). The memorised assembly procedure can now begin as described from paragraph 2 in the section “Assembly of EO-2 functional nuts”, “Pre-assembly of PSR/DPR rings” or “flaring tubes”.

Retrieving memory locations:

e.g. Memory location “A”.

1. The display shows the data of the last setting (random example):

PSR/DPR		TUBE-O.D.: 10 MM
MEMORY	CHANGE	SELECT

2. Press left-hand yellow “MEMORY” button. The start button is now not operating. The display now always shows memory location “A”:

A:	45 BAR	1.0 SEC
–	+	OK

3. With a yellow button (+ or –), select the required memory location and acknowledge with the green “OK” button:

A:	45 BAR	1.0 SEC
MEMORY	CHANGE	SELECT

4. The start button is now ready (lights up). The assembly procedure can now begin as described from paragraph 2 in the sections “Assembly of EO-2 functional nuts”, “Pre-assembly of PSR/DPR rings” or “flaring tubes”.

Display during operation (Example):

LL		TUBE-O.D.: 10 MM
30° C	6 BAR	ABORT

or

A:	45 BAR	1.0 SEC
30° C	6 BAR	ABORT

Oil temperature and pressure are shown for control. The current assembly procedure can be interrupted at any time with the green “ABORT” button or with the left-hand foot operating switch.

Display alarms:

TO LITTLE ASS. TRAVEL	
INCOMPETE!	CONTINUE

Check the assembly. For example, if preassembly action was carried out without tool or without progressive ring and nut. Press green “CONTINUE” button.

TOO HIGH PRESSURE	
OVERTIGHTENED!	CONTINUE

This image only appears in case of displacement-controlled assembly types LL and DPR. For example, if an already assembled tube has been inserted. Press green “CONTINUE” button.

FLARE	TUBE-O.D.: 16 MM
WRONG FIXTURE!	

The inserted fixture does not fit to the selected assembly type. The check of the fixture is valid only for assemblies of the EO standard range. Insert the correct fixture. The “during operation” display will be shown. The start button is now ready (lights up).

INSUFFICIENT OIL LEVEL

Switch off the unit. Check for leaks. Refill with oil.

OIL TEMPERATURE TOO HIGH

Switch off the unit and leave to cool.

EOMAT III assembly and flaring machine with electronic control

Ordering

Type	Order code
EOMAT III Basic machine Ready to use, including operation manual Filled with hydraulic oil Without EO assembly fixture/Flaring fixture Without tools for EO-assembly/37˚ flaring Basic machine 400 V, 3 Phase, 50 Hz Basic machine 230 V, 1 Phase, 50 Hz	 EOMATIII/A380VX EOMATIII/A220VX
Fixture for PSR/DPR/EO-2 assembly	EOMATSCHNEIDRX
37˚ Flaring fixture for Triple-Lok® incl. Flaring pin	EOMATBOERDELBX
Foot switch for use with long tubes	EOMATIIIFUSSX
EOMAT III promotion leaflet UK	4043-1/UK
EOMAT III promotion leaflet DE	4043-1/DE
EOMAT III operating manual UK/DE/FR/IT	4043-OM/UK/DE/FR/IT

Assembly fixtures, tools, cone gauges, and lubricant must be ordered separately

Assembly tools for PSR/DPR/EO2 see page H5.

37° flaring tools for Triple-Lok® see page H28.

Spare parts

Type	Order code
Fixing clip for MOK	EOMAT/CLIP
37° flaring pin	EOMATIIIAUFWEITKEG. X
Tube stop assembly for flaring block	EOMAT/0213800
Oil filter	G01991
air breather filter for oil tank	EOMATIII/240101200
Emergency cut off switch	EOMATIIINOTAUSX
Control unit complete machine control assembly including front panel, display, pushbuttons	EOMAT3
Pressure/temperature sensor	SCPT-600-10-07

EO PSR/DPR and EO-2 assembly tools for EOMAT/EO-KARRYMAT



Assembly cone MOK



Tube locating plate GHP



Cone gauge KONU for MOK



Assembly fixture must be installed on EOMAT II/III

Size		Order code			
Series	Tube o.d.	Assembly cone for EO PSR/DPR	Assembly cone for EO2/MOK/EO-2[4])	Backing plates GHP	Cone gauges KONU
LL[3]	4	MOK04LLX	same as MOK for PSR/DPR	GHP04X	KONU04+05LLX
	6	MOK06LLX		GHP06X	
	8	MOK08LLX		GHP08X	KONU06+08LLX
	10	MOK10LLX		GHP10X	
	12	MOK12LLX		GHP12X	KONU10+12LLX
L	6	MOK06LX	same as MOK for PSR/DPR	GHP06X[1]	KONU06+08L/SX[1]
	8	MOK08LX		GHP08X[1]	
	10	MOK10LX		GHP10X[1]	KONU10+12L/SX[1]
	12	MOK12LX		GHP12X[1]	
	15	MOK15LX		GHP15X	KONU15+18LX
	18	MOK18LX		GHP18X	
	22	MOK22LX		GHP22X	KONU22+28LX
	28	MOK28LX	MOKEO228LX	GHP28X	
	35	MOK35LX	MOKEO235LX	GHP35X[2]	KONU35+42LX
	42	MOK42LX	MOKEO242LX	GHP42X[2]	
S	6	MOK06SX	same as MOK for PSR/DPR	GHP06X[1]	KONU06+08L/SX[1]
	8	MOK08SX		GHP08X[1]	
	10	MOK10SX		GHP10X[1]	KONU10+12L/SX[1]
	12	MOK12SX		GHP12X[1]	
	14	MOK14SX		GHP14X	KONU14+16SX
	16	MOK16SX		GHP16X	
	20	MOK20SX		GHP20X	KONU20+25SX
	25	MOK25SX	MOKEO225SX	GHP25X	
	30	MOK30SX	MOKEO230SX	GHP30X	KONU30+38SX
	38	MOK38SX	MOKEO238SX	GHP38X	

Flaring tools see 1015 machine

1. Backing plates, cone gauges and flaring die sets for series L and S for tube outer diameter 6, 8, 10 and 12 are the same.
2. **Note:** For the assembly of EO-2 functional nuts FM 35L and FM42L the two-part backing plates GHP 35 and 42 must be used.
3. Assembly tools for LL-series for EOMAT III only.
4. Special MOK for easy tube insertion.

Tool mounting rack

Practical rack for storing 10 pieces each assembly cone MOK and backing plate GHP.

Type	Order code
Tool mounting rack for GHP and MOK	EOMATWERKZEUGAUFN.X



Tool lifetime

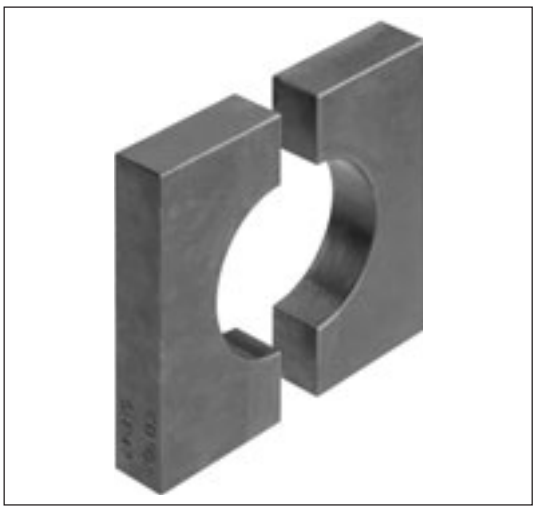
Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Ferulok assembly tools for EOMAT/EO-KARRYMAT



Assembly cone



Back-up plate

H

Size		Order code	
Dash size	Tube O.D. inch	Assembly cone	Back-up plate
4	1/4	975867-4	976521-4
6	3/8	975867-6	976521-6
8	1/2	975867-8	976521-8
10	5/8	975867-10	976521-10
12	3/4	975867-12	976521-12
14	7/8	975867-14	976521-14
16	1	975867-16	976521-16
20	11/4	975867-20	976521-20
24	11/2	975867-24	976521-24
32	2	975867-32	976521-32

Assembly tools for inch tube bite type FERULOK.
FERULOK fittings see TFD US-Catalogue 4300.
Machine setting according to correspondant size EO DPR.

EO2-FORM-F3 WorkCenter

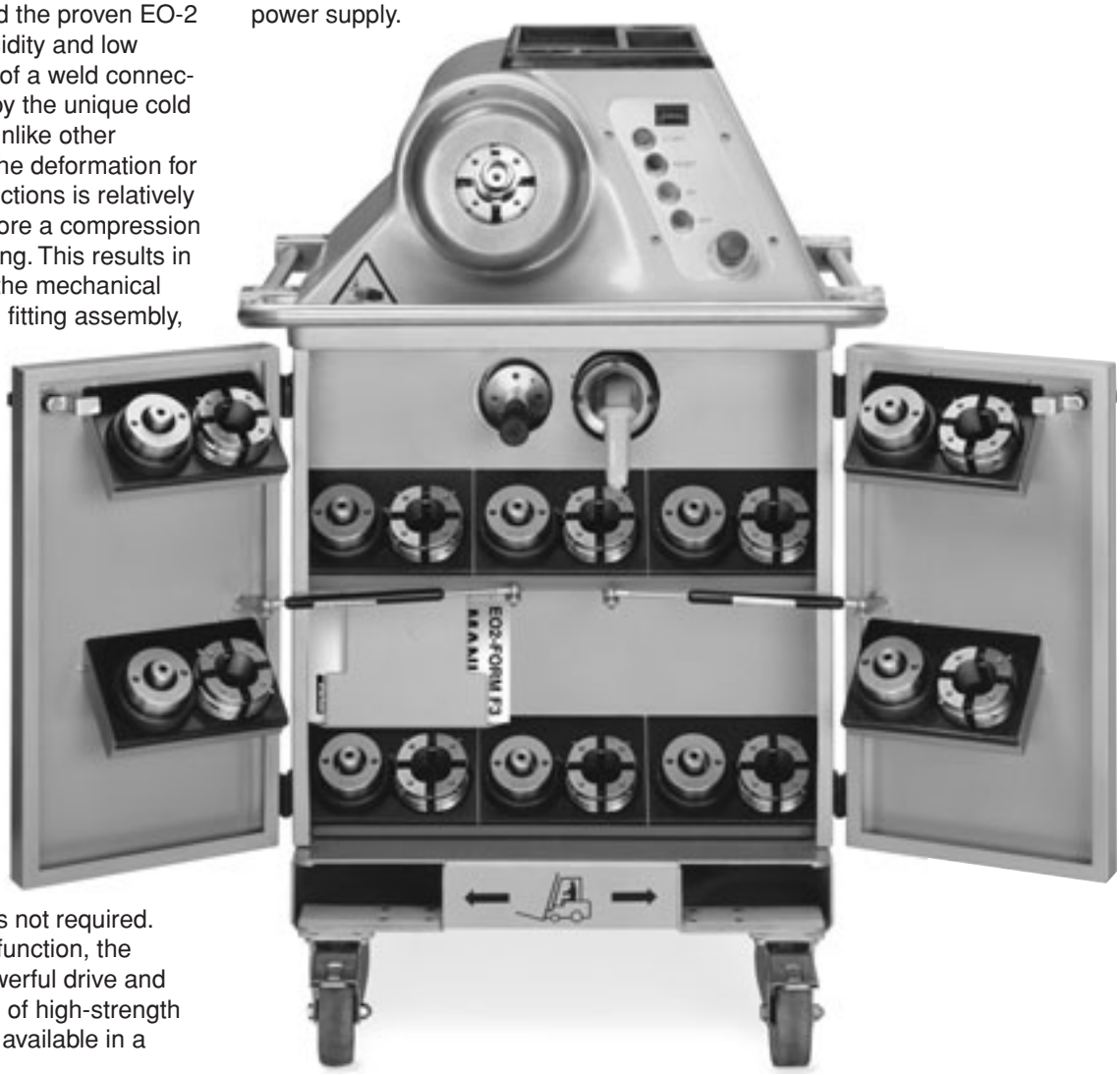
The EO2-FORM F3 machine is designed to cold-form hydraulic tube economically for EO2-FORM connections. During this process, the tube end is compressed in-between forming dies. This results in a special tube profile which matches the genuine EO-2 fitting components. The use of EO-2 seals provides leakfree performance and full interchangeability to the complete Ermeto Original product range according to DIN EN ISO 8434-1/ DIN 2353.

EO2-FORM is an attractive solution for high pressure tube connections that combines the advantages of welding, flaring and the proven EO-2 technology. The rigidity and low tightening torques of a weld connection are achieved by the unique cold forming process. Unlike other forming systems, the deformation for EO2-FORM connections is relatively small and much more a compression process than forming. This results in a high strength of the mechanical connection. During fitting assembly, standard EO-2 seals are fitted onto the tube end.

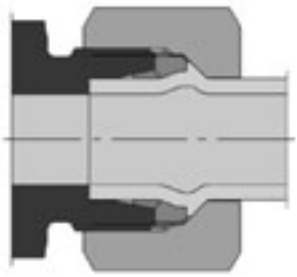
The EO-2 seal achieves leak-free performance even under severe working conditions. For easy operation and high efficiency, the EO2-FORM process is completely automated. Manual adjustment of tools or pressure settings is not required. To assure reliable function, the machine has a powerful drive and the tools are made of high-strength material. Tools are available in a wide range and the short clamping length allows compact tube bends. Special tube treatment, heat or chemicals are not required. Zinc-plated tube can be used.

The EO2-FORM F3 machine is suitable for almost any hydraulic tube material in metric dimensions from 6 mm to 38/42 mm tube OD. Depending on tube dimension and material, the deformation is done in around 10 seconds. Total cycle time is 15 seconds on average. All machine components, including the hydraulic power pack, are integrated into the machine housing. The only external connection is the electrical power supply.

The EO2-FORM F3 machine generation is perfectly designed for practical workshop use. It represents not just a machine but a complete tube forming workcenter. A practical tool compartment inside the machine housing allows orderly and clean tool storage. Additional work-benches or space to store tools are not required. Special handling devices allow quick and easy machine setup and tool change. To allow transportation, the machine is mounted on wheels and provided with special crane and forklift attachments.



EO2-FORM-F3 WorkCenter



Specifications

- Cold-forming of hydraulic tube-ends
- Elastomerically sealed high pressure tube connection using EO-2 seal element
- Suitable for EO tube fittings according to DIN EN ISO 8434-1
- Tube dimensions (tube OD x wall thickness mm)
  steel tube ST37.4: 6×1 to 38x7/42x4/Stainless steel tube 1.4571: 6×1 to 38×5/42×3
- Exotic tube materials, such as CuNiFe or Duplex on request
- Cycle time: 15 to 20 seconds
- Standard power supply: 400V 50Hz
- Dimensions: Width closed 650 mm, open 1200 mm, height 1200 mm, depth 750 mm
- Weight: approx. 300 kg

Features, advantages and benefits

1. **Process** / **Product concept** – The EO2-FORM technology is not a stand-alone machine or a new fitting system. It is a product extension of the EO-2 range which has existed since 1993. Exactly the same, proven seal elements are used.
2. **Workcenter concept** – All tools, handling devices, lubricants and the operator manual are well organised inside the machine. Once the doors are opened, the machine turns into a stand-alone workcenter for tube preparation. On the top shelf, there are practical compartments for rules, pens, lubricant and standard EO-boxes with nuts and sealing rings. No additional workbenches or shelves for tooling are required.
3. **Easy operation** – One single START-button is all that needs to be operated to run a forming cycle completely. No "zero position" or "reset" activities have to be performed in-between two forming cycles. For efficient mass production, a foot switch is available. A label on the machine head shows all operation steps in pictograms and all important dimensions in charts.
4. **Easy tool change** – An ergonomic, pistol-like device allows quick and easy change of the one-piece clamping die set without opening the forming head or even touching the tools. Another handle speeds up the setup process of the forming pin in the bayonet mechanism.
5. **Easy handling** – Standard tools and one set of EO2 sealing rings are suitable for all common hydraulic tube dimensions. No special sleeves are required for thin wall or small diameter tube.
6. **Well organised** – All tools and accessories are well organised in a practical compartment inside the machine housing. Nothing gets dirty, lost or confused.
7. **Easy transport** – The machine is equipped with heavy duty wheels so that it can be moved around by one person without hard work or additional equipment. Special attachments for crane and forklift truck transport are standard. A reeling serves as handle, protection and attachment for fixing belts when transported by truck. Tools and all accessories are safely and cleanly stored inside.
8. **Easy logistics** – EO2-FORM uses the same components as EO2. Special sets of nuts and sealing rings can be ordered with one part number (FORM …). This reduces ordering effort and contributes to achieve availability with optimum inventory.
9. **Stainless steel capabilities** – Forming pins for stainless steel tubes are specially designed for optimum forming results and surface coated for maximum lifetime. All forming pins for stainless steel tube are marked with a blue dot. Clamping dies can be used for both, steel and stainless steel tube.
10. **Approved functional system** – EO2-FORM has been on market for years. It is approved for use in shipbuilding, offshore industry, hydraulic water lock systems, press and crane manufacturing, heavy mobile equipment and general machine building. EO2-FORM is tested and approved from authorities like German Lloyd, DNV or from end-users like Daimler-Chrysler.
11. **Cost saving** – Compared to welding or brazing, EO2-FORM is much less time consuming. Special tube preparation and finishing are not necessary. Cold forming uses only a fraction of the energy needed for brazing or welding.
12. **Superior vibration resistance** – The patented EO2-FORM process achieves a smooth structural transformation of the tube wall. There are no sharp edges or notches to reduce the vibration resistance.
13. **Superior mechanical strength** – The working contact area of the EO2-FORM connection is the flat front surface of the metal support ring which is made of heat-treated, high-strength steel or stainless steel. This provides superior mechanical strength without settling, loosening or need for re-tightening.
14. **Universal** – The EO2-FORM machine can cold-form all common steel and stainless steel tube materials for hydraulic pipework. Even exotic materials such as Cu-NiFe or Duplex can be formed. EO2-FORM tools cover metric tube sizes from 6 to 42 mm OD.
15. **Short tube ends** – The compact clamping device and special dies are suitable for machining complex tube bends.
16. **Noise/energy loss reduction** – The EO2-FORM process results in a smooth inner contour of the tube. Minimum pressure drop, heat and noise is created. No hidden corners allow the accumulation of air, dirt or other sources of trouble.
17. **Clean** – The EO2-FORM process is environmental clean and safe. As no heat is used, hazards from fumes or heat do not occur.
18. **Zinc plated tubing** – The EO2-FORM process allows the use of zinc-plated tubing. The costs of cleaning or painting are saved.
19. **Quality** – Tube clamping and tool functions are fully automated. Proper joint geometry and seal dimensions are achieved by using standard EO-2 sealing rings. Therefore high and consistent quality is achieved without manual adjustment.
20. **Proven Technology** – Since 1993, millions of EO-2 fittings have operated worldwide under heavy duty conditions, providing leak-free hydraulic systems.
21. **No restrictions** – The process allows to use EO-2 elastomeric sealing technology even for applications where bite-type connectors are not permitted by safety standards, for example hydraulic presses, cranes, lifts or ship canal systems locks.

F3 Forming machine for EO2-FORM high pressure tube connections

Machine

Type	Bestellzeichen
Forming machine F3, ready to use, including tool changing devices and operation manual, without tooling Cold-forming of EO2-FORM connections In special transport container	
Power supply 400V / 50Hz / 3phases	EO2FORMF3400V
Power supply 230V / 50Hz / 3phases	EO2FORMF3230V
Foot switch	F3/FOOTSWITCH
Oil cooler kit	F3/COOLERKIT
EO2-FORM F3 promotion leaflet UK	4032/UK
EO2-FORM F3 promotion leaflet DE	4032/DE
Operation manual UK/DE/FR/IT	4033

EO2-FORM machines are shipped in a special container which should be kept for all transports to avoid damage.

Spare parts

Type	Bestellzeichen
Tool handling and clamping holder for forming pin	F3/PINHOLDER
Pistol holder for forming die set	F3/DIEHOLDER
Clamping segments for die set	F3/DIECLAMP
Clamping segment spring ∅ 8mm	F3/DIECLAMPSPRING8
Clamping segment spring ∅ 12mm	F3/DIECLAMPSPRING12

Machine housing	
Top machine cover	F3/TOPCOVER
Top tray	F3/TOPTRAY
Door lock for tool compartment	F3/DOORLOCK
Door hinge	F3/DOORHINGE
Shock absorber for doors	F3/DOORSPRING
Tool tray for inner tool compartment	F3/TOOLTRAYIN
Tool tray for tool compartment in doors	F3/TOOLTRAYDOOR
Die insert for tool tray (use screw M6)	F3/TOOLTRAYDIE
Insert with holder for handling devices	F3/HOLDERTRAY
Plastic guide for forklift (use screw M6)	F3/FORKGUIDE
Front wheel with lock	F3/FRONTWHEEL
Rear wheel	F3/BACKWHEEL
Oil filter	F3/OILFILTER
High pressure hose	F3/HOSE

Sticker	
EO2-FORM F3 door label	F3/STICKERPARKER
Short instructions on side	F3/STICKERINSTRUC
Lubrication on front	F3/STICKERLUB
Crane attachment (1 piece)	F3/STICKERCRANE
Forklift on front	F3/STICKERFORK
Blue dot sticker for stainless steel dies	F3/STICKERBLUEDOT

Operation panel	
Front panel counter	F3/FRONTCOUNTER
“Start” switch (black with symbol)	F3/STARTSWITCH
“Reset” switch (blue)	F3/RESETSWITCH
“ON” switch (green)	F3/ONSWITCH
“OFF” switch (red)	F3/OFFSWITCH
emergency stop switch (red)	F3/STOPSWITCH

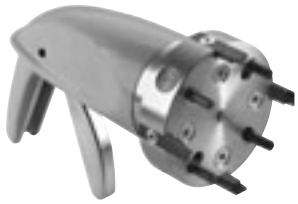
Tool components	
Bayonet bolt for forming pin	F3/PINBOLT
Fixing screw for bayonet bolt (M6×16)	F3/PINSCREW
Screw for clamping die segments	F3/DIESCREW
Spring for clamping die segments	F3/DIESPRING
Outer pin on die set	F3/DIEPIN



Foot switch



Holder for forming pin



Pistol holder for forming die set



Oil cooler kit



Pin for forming pin

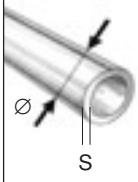


Pin for clamping die set

F2 Forming machine for EO2-FORM high pressure tube connections



Clamping die set MF3EO-2





Forming pin BF2EO-2

Tube O.D. ∅	Clamping dies for steel and stainless steel tubes Order code	∅ × s	Forming pin for steel tubes Order code	Forming pins for stainless steel tubes Order code[1) 2)]
06-L/S	MF3EO206	06 × 1 06 × 1.5 06 × 2	BF3EO206X1S BF3EO206X1.5S BF3EO206X2S	BF3EO206X1SS BF3EO206X1.5SS
08-L/S	MF3EO208	08 × 1 08 × 1.5 08 × 2 08 × 2.5	BF3EO208X1S BF3EO208X1.5S BF3EO208X2S BF3EO208X2.5S	BF3EO208X1SS BF3EO208X1.5SS
10-L	MF3EO210	10 × 1 10 × 1.5 10 × 2	BF3EO210LX1S BF3EO210LX1.5S BF3EO210LX2S	BF3EO210LX1SS BF3EO210LX1.5SS BF3EO210LX2SS
10-S	MF3EO210	10 × 1.5 10 × 2 10 × 3	BF3EO210SX1.5S BF3EO210SX2S BF3EO210SX3S	BF3EO210SX1.5SS BF3EO210SX2SS
12-L	MF3EO212	12 × 1.5 12 × 2	BF3EO212LX1.5S BF3EO212LX2S	BF3EO212LX1.5SS BF3EO212LX2SS
12-S	MF3EO212	12 × 1.5 12 × 2 12 × 3	BF3EO212SX1.5S BF3EO212SX2S BF3EO212SX3S	BF3EO212SX1.5SS BF3EO212SX2SS BF3EO212SX3SS
15-L	MF3EO215	15 × 1 15 × 1.5	BF3EO215X1S BF3EO215X1.5S	 BF3EO215X1.5SS
		15 × 2	BF3EO215X2S	BF3EO215X2SS
16-S	MF3EO216	16 × 2 16 × 2.5 16 × 3	BF3EO216X2S BF3EO216X2.5S BF3EO216X3S	BF3EO216X2SS BF3EO216X2.5SS BF3EO216X3SS
18-L	MF3EO218	18 × 1.5 18 × 2	BF3EO218X1.5S BF3EO218X2S	BF3EO218X1.5SS BF3EO218X2SS
20-S	MF3EO220	20 × 2 20 × 2.5 20 × 3 20 × 3.5	BF3EO220X2S BF3EO220X2.5S BF3EO220X3S BF3EO220X3.5S	BF3EO220X2SS BF3EO220X2.5SS BF3EO220X3SS
22-L	MF3EO222	22 × 1.5 22 × 2	BF3EO222X1.5S BF3EO222X2S	BF3EO222X1.5SS BF3EO222X2SS
25-S	MF3EO225	25 × 2 25 × 2.5 25 × 3 25 × 4	BF3EO225X2S BF3EO225X2.5S BF3EO225X3S BF3EO225X4S	BF3EO225XSS BF3EO225X2.5SS BF3EO225X3SS
28-L	MF3EO228	28 × 2	BF3EO228X2S	BF3EO228X2SS
30-S	MF3EO230	30 × 3 30 × 4 30 × 5	BF3EO230X3S BF3EO230X4S BF3EO230X5S	BF3EO230X3SS BF3EO230X4SS
35-L	MF3EO235	35 × 2 35 × 3	BF3EO235X2S BF3EO235X3S	BF3EO235X2SS BF3EO235X3SS
38-S	MF3EO238	38 × 3 38 × 4 38 × 5 38 × 6/7	BF3EO238X3S BF3EO238X4S BF3EO238X5S BF3EO238X6+7S	BF3EO238X3SS BF3EO238X4SS BF3EO238X5SS
42-L	MF3EO242	42 × 2 42 × 3	BF3EO242X2S BF3EO242X3S	BF3EO242X2SS BF3EO242X3SS

Please select clamping die and forming pin according to tube dimension and material.
1) All forming pins for stainless steel tubing are marked with a blue dot on front surface.
2) Stainless steel tools are TiN coated.
Clamping die sets which are only used for stainless steel tubes should be marked with the blue dot sticker to avoid use with steel tube.

Tool lifetime
Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Manual flaring tools for Triple-Lok® tubes

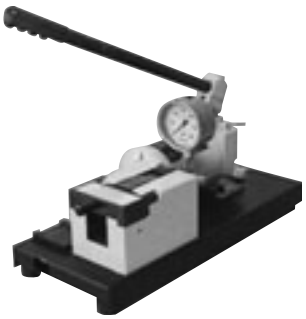
Flaring tool selection guide

Manual flaring devices are available for on-site assembly and field repair of Triple-Lok® tube connections.
Manual flaring tools range from simple impact flarers to handpump-operated workshop devices. Flaring result and fitting performance depends strongly on the skill and effort of operator. Hand flaring tools are not recommended for efficient industrial production.

Features, advantages and benefits of hand flaring tools

1. **Flexible –** Manual flaring tools are portable and do not need any power supply. Therefore they are ideal for on-site assembly and field repair.
2. **Special –** Each device has been especially developed to match Parker Triple-Lok® standards. The tube connections will fit properly without rework.

How to select the ideal flaring device for your application:

	Hand flaring tools 1004/210A	Impact flaring tool	Flaring device 1015
			
Assembly method			
Triple-Lok®	impact flaring	impact flaring	conventional flaring
O-Lok®	not suitable	not suitable	not suitable
Tube specification			
Material	copper, steel	copper, steel, stainless steel	steel, stainless steel
Dimension metric tube	6 to 16 mm (1004)	6 to 38 mm	6 to 38 mm
Dimension inch tube	1/8″ to 5/8″ (210A)	1/4″ to 1 1/2″	1/4″ to 1 1/2″
Limitations	see specification	see specification	see specification 1015
Tools			
Clamping dies	one device	vice block	Flaring die M15 … (same dies used EOMAT)
Flaring pin	integral part of device	pin plus hammer	integral part of device
Operation			
Flaring	hammer impact	hammer impact	handpump
Process control	manual	manual	pressure according to chart
Tube clamping	manual clamping	manual	automatic clamping
Specifications			
Design	flaring device for use in vice	Hand tools for use in vice	desktop
Weight	approx. 1.5 kg	–	approx. 40 kg
Dimension (W × L × H)	–	–	250 × 600 × 600 mm
Performance			
Overall cycle time	approx. 60 secs.	approx. 60 secs	approx. 60 secs
Quality	dependant on operator	dependant on operator	consistent result
Application	on-site repair jobs only; Limited to small dimensions. Limited to single assemblies, not for industrial production, emergency repairs until industrial flared tube is available for replacement.		Efficient for on-site flaring of small quantities not for mass production

Manual flaring tools for Triple-Lok® tubes

These 37° flaring tools are for use with copper, aluminum alloy, and thin wall steel or stainless steel tubes. A vice block is clamped together with the tube end into a vicener. Flaring pin is used with a hammer. Separate tooling sets for each tube size in metric and inch dimensions are available.

These hand tools are suitable for small on-site repair jobs. They are not suitable for thick-wall tubing and industrial production. A rigid vice must be available at the assembly site.

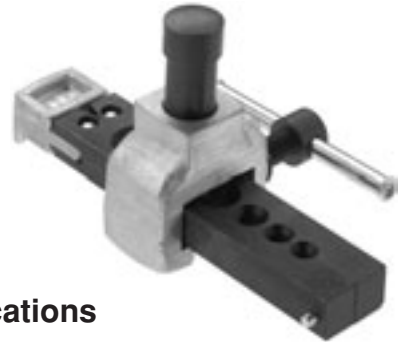
Features, advantages and benefits

1. **Light** – Hand flaring tools can be used at any assembly site where a proper workshop is not available
2. **Quick** – Hand flaring tools can be used for temporary repair until a proper spare tube has been made by machine

Applications

- Field repair of agricultural and construction vehicles
- Small, local repair workshops
- Mobile repair service

Combination impact flarer 1004 for small dimension metric tube



Specifications

Design:	**Hand flaring tool for small on-site repair jobs**
Operation:	**Flaring pin Impact**
37° Flaring:	Triple-Lok® connection – ISO 8434-2/ SAE J514
Tube material:	copper, aluminum and low carbon steel
Tube diameter:	6 to 16 mm metric tube
Wall thickness:	max 15% of tube O.D.
Requirements:	Rigid vice and hammer

Operation

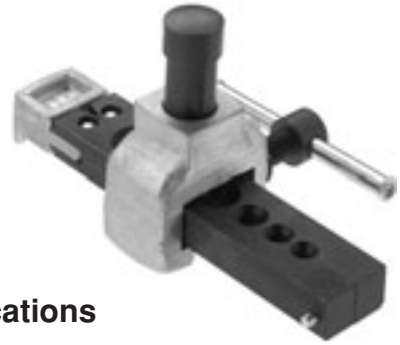
1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Use pre-flaring pin for tube O.D. 20 mm/3/4˝ and larger
5. Release vice and unclamp tube

See chapter E for detailed instructions on Triple-Lok® assembly

Ordering

Type	Order code
Combination impact flarer Complete device including Combination dies and pin	1004-74M
Tool lubricant 0.1L can	1040LUBCAN

Combination impact flarer 210A for small dimension inch tube



Specifications

Design:	**Hand flaring tools for small on-site repair jobs**
Operation:	**Flaring pin Impact**
37° Flaring:	Triple-Lok® connection – ISO 8434-2/ SAE J514
Tube material:	copper, aluminum and low carbon steel
Tube diameter:	1/8˝ to 5/8˝ inch
Wall thickness:	max 15 % of tube-O.D.
Requirements:	Rigid vice and hammer

Operation

1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Release vice and unclamp tube

See chapter E for detailed instructions on Triple-Lok® assembly

Ordering

Type	Order code
Combination impact flarer Complete device including Combination dies and pin	210A
Tool lubricant 0.1L can	1040LUBCAN

Impact flaring tools for metric and inch tube



Specifications

Design:	**Hand flaring tools for small on-site repair jobs**
Operation:	**Impact flaring pin**
37° Flaring:	Triple-Lok® connection – ISO 8434-2/ SAE J514
Tube material:	copper, aluminum, steel and stainless steel tube
Tube diameter:	6 to 38 mm/1/4″ to 1 1/2″
Wall thickness:	max 15% of tube-O.D., max 10% of tube O.D. for tubes larger 20 mm tube O.D.
Requirements:	Rigid vice and hammer

Operation

1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Use pre-flaring pin for tube O.D. 20 mm/3/4″ and larger
5. Release vice and unclamp tube

See chapter E for detailed instructions on Triple-Lok® assembly

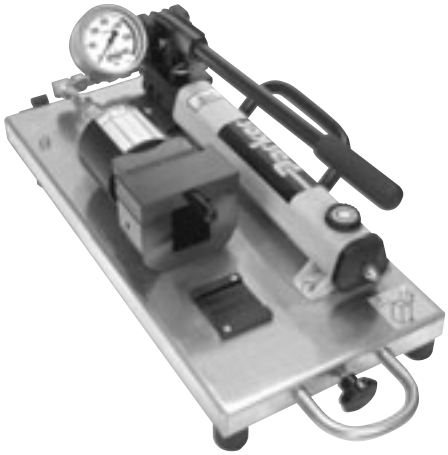
Tools for metric tube			
Tube-O.D. A.D. mm	Pre-flaring pin Order code	Flaring Order code	Vice block Order code
06		P17408	M27406
08		P17408	M05742
10		P17408	M27410
12		P17414	M27412
14		P17414	M27414
15		P17414	M27415
16		P17414	M27416
18		P17418	M27418
20	P1E	P17418	M27420
22	P1E	P17422	M14742
25	P1E	P17422	M27425
30	P1E	P17432	M27430
32	P1E	P17432	M27432
38	P1E	P17438	M24742

Tools for inch tube			
Tube-O.D. inch	Pre-flaring pin Order code	Flaring Order code	Vice block Order code
1/4″		P17408	M04742
5/16″		P17408	M05742
3/8″		P17408	M06742
1/2″		P17414	M08742
5/8″		P17414	M10742
3/4″	P1E	P17418	M12742
7/8″	P1E	P17422	M14742
1″	P1E	P17422	M16742
	P1E		
1.1/4″	P1E	P17432	M20742
1.1/2″	P1E	P17438	M24742

Type	Order code
Tool lubricant 0,1L can	1040LUBCAN

KarryFlare Portable flaring device for Triple-Lok® Plus

The KarryFlare is a portable device for easy and workmanlike 37° tube flaring. It allows the flaring of even large dimension steel and stainless steel hydraulic tube at assembly sites where Parflange® technology is not available.
The KarryFlare consists of a hydraulic flaring unit and a hand pump. The hydraulic assembly pressure can be read on a gauge which is ergonomically located. The KarryFlare is ideal for tube flaring of small quantities and on-site tube installation.
It is practical, simple to operate, reliable and easy to transport. The KarryFlare comes as one unit with all components firmly attached to a practical carrying frame.



Specifications

37° flaring according to ISO 8434-2/SAE J514
For Triple-Lok® Plus hydraulic connections
Tube outer diameter 6 to 38 mm/$^{1}/_{4}$″ to 1$^{1}/_{2}$″ max. capacity (tube-OD × wall thickness)
Steel and stainless steel tube:
38 × 4 mm/1$^{1}/_{2}$″ × 0.120″
Weight: approx. 29 kg
Dimensions:
approx. L 750 mm × W 360 mm × H 260 mm
For fitting assembly see Triple-Lok® Plus assembly instructions

Features, advantages and benefits

1. Flexible on-site tube flaring
2. Simple operation
3. KarryFlare is portable and does not require any power supply
4. Flaring quality is comparable to EOMAT
5. Saves time and effort compared to manual impact flaring
6. Safe and consistent result
7. All elements are ergonomically located
8. Robust, light metal transport box
9. Telescopic handle and wheels for convenient trolley transport
10. Uses “M15” flaring dies (EOMAT/1015)

Applications

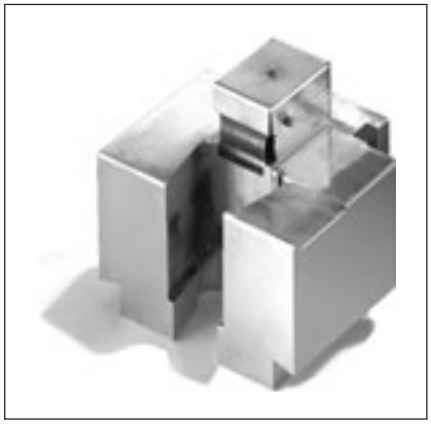
- Assembly of 37° flare fittings in small quantities
- On-site repair of agricultural vehicles and mobile construction equipment
- Repair workshops and plant maintenance
- Mobile repair service

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37° flaring tools for 1015 device and EOMAT II/III machine



Flaring die set M1574



Flaring fixture must be installed on EOMAT II/III

Flaring dies for metric tube	
Tube O.D. mm	Order code
6	M157406-1
8	M157408-1
10	M157410-1
12	M157412
14	M157414
15	M157415
16	M157416
18	M157418
20	M157420
22	M157422
25	M157425
28	M157428
30	M157430
32	M157432
35	M157435
38	M157438
42	M157442

Flaring dies for inch tube	
Tube O.D. inch	Order code
1/4″	M047415-1
5/16″	M157408-1
3/8″	M067415-1
1/2″	M087415
5/8″	M107415
3/4″	M127415
1″	M167415
1.1/4″	M207415
1.1/2″	M157438

Flaring diameters acc. to ISO 8434-2/SAE J514 for Triple-Lok®.
Flaring pins are integrated in 1015 device and flaring fixture for EOMAT II/III machine.
Flaring dies are **not** interchangeable with Parflange® tools for 1025/1040-machines.

Tool lifetime
Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Assembly machines for O-Lok® and Triple-Lok®

Parflange® machine selection guide

Parflange® 1025 and Parflange® 1040 are orbital flaring machines designed to cold-form high pressure tube connections. The unique feature of the patented Parflange® process is that the deformation of the tube end is achieved by rolling rather than by just pushing a tool into the tube end. The Parflange® machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end. O-Lok® sleeves are firmly fixed onto the tube end, resulting in a very rigid high-pressure tube connection.

Features, advantages and benefits

1. **Superior sealing performance –** The patented Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
2. **Superior vibration resistance –** Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.
3. **Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustments.
4. **Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.
5. **Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
6. **Zinc plated tubing.** The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning, post process plating or painting is saved.
7. **Process/Product concept** – Parflange® machines are especially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.
8. **Proven technology** – For more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

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How to select the ideal Parflange® Machine for your application:

Machine selection chart	**Parflange® 1025** 		**Parflange® 1040** 
Assembly method Triple-Lok® O-Lok®	Orbital flaring 37° Orbital flanging 180°		Orbital flaring 37° Orbital flanging 180°
Tube specification Material Dimension metric tube Dimension inch tube Limitations	Steel, Stainless Steel 6 × 1 to 38 × 4 mm/42 × 3 mm 1/4˝ × 0.028˝ to 1 1/2˝ × 0.120˝ not suitable for 1.4571 (316 Ti) tube see specification 1025		Steel, Stainless Steel 6 × 1 to 38 × 4 mm/42 × 3 mm 1/4 × 0.028 to 1 1/2˝ × 0.120˝ not suitable for 1.4571 (316 Ti) tube see specification 1040
Tools Clamping dies Flaring/flanging pin	special Parflange® tools M40 … (old: M30 …) B30 …		special Parflange® tools M40 … B30 …
Operation Setting Standard sleeve feeding Optional sleeve feeding Tube clamping Flanging/Flaring Process control	automatic adjustment manual loading not available manual clamping automatic drive semi automatic		automatic adjustment manual loading O-Lok® sleeve feeder hydraulic clamping automatic drive fully automatic
Specifications Design Weight Dimension (W × L × H)	desktop approx. 85 kg 390 × 670 × 460 mm		stand-alone approx. 300 kg 700 × 840 × 1035 mm
Performance Version Voltage Overall cycle time Design Weight	1.5 kW 400 V 3 Phase approx. 50 secs. approx. desktop 85 kg	1.1 kW 230 V 1 Phase approx. 60 secs. desktop 85 kg	4 kW 400 V 3 Phase approx. 15 secs. stand-alone 300 kg
Application	Ideal for projects and workshop use and maintenance High quality result No mass production	on-site repair jobs where 3phase power supply is not available	Efficient production machine for low-cost and high-quality assembly

Parflange® 1025 workshop machine for O-Lok® and Triple-Lok®



The Parflange® 1025 machine is designed to cold-form high pressure tube connections for O-Lok® and Triple-Lok® connection. It uses the patented Parflange® orbital flaring process. The Parflange® 1025 machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end. O-Lok® and SAE flange sleeves are firmly fixed onto the tube end, resulting in a very rigid high-pressure tube connection.

The 1025 is the smallest machine of the Parflange® machine programme. It is recommended for low-volume assembly jobs of small to medium tube dimensions. Maximum tube capacity is 38 x 4 mm/1 1/2″ (steel tube) and 25 x 2.5 mm/1″ stainless steel tube (3 Phase version). Its advantage is the quick and easy change of tooling and the simple operation without manual adjustments or programming. The machine is transportable so that it can be moved to any assembly site with electrical power supply.

The Parflange® 1025 comes ready to be used. Parflange® tools are purchased separately. For each tube dimension, special clamping dies and Parflange® pins are required.

Specifications

Purpose:	180° flanging for O-Lok® and 37° flaring for Triple-Lok®
Process:	Orbital flaring and flanging according to Parflange® process
Design:	Desktop machine for workshop use
Tube material:	steel and stainless steel tube
Tube diameter:	metric: 6 to 38 mm Inch: 1/4 to 1 1/2″
Maximum capacity:	Steel tube 42 × 3/1 1/2 × 0.120 (tube O.D. × wall thickness) Stainless steel tube 25 × 3/1 × 0.095
Tube specification:	fully annealed seamless cold drawn or welded precision tube
Limitations:	Not suitable for Titanium-Stabilised stainless steel tube material (316Ti, 1.4571)
Operation:	Manual clamping, automatic flanging/flaring
Cycle time:	approx. 15 to 20 secs.
Tools:	Flaring pin B30 … and clamping dies M40 …
Tool clamping:	Manual, by eccentric lever
Tool lubrication:	Automatic lubrication device
Lubricant:	1040LUBSS (filled when delivered)
Hydraulic oil:	HLP 23 0.5L (filled when delivered)
Installation:	rigid workbench and electrical power supply required
Dimensions:	390 × 670 × 460 mm
Weight:	60 kg

Features, advantages and benefits

1. **Superior sealing performance –** The patented Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
2. **Superior vibration resistance –** Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/ O-Lok® connections perform much better under reversed bending stress conditions.
3. **Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustments.
4. **Quality –** Machine setting, tool control and even lubrication are fully automated so that high and consistent quality results are achieved without manual adjustments.
5. **Small bending radii** – The compact clamping device and special dies are suitable for flanging short tube ends.
6. **Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.
7. **Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
8. **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning or painting can be saved.
9. **High tool lifetime** – The Parflange® 1025 machine is equipped with an automatic lubrication device. The tools will not wear rapidely if the operator does not lubricate regularly.
10. **Process/Product concept** – Parflange® machines are especially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.
11. **Proven technology** – Since more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

Applications

Workshop use, project work, plant maintenance, on-site assembly.
Not for efficient mass production

Ordering

Type	Order code
Parflange® 1025 Basic machine Ready to use, Including operating manual, Filled with hydraulic oil and lubricant Without Parflange® tools	
Basic machine 400 V, 3 Phase, 50 Hz	1025-380VTRI50
Basic machine 230 V, 1 Phase, 50 Hz	1025-220VNMONO50
1025 promotion leaflet UK	4390-P2-UK
1025 promotion leaflet DE	4390-P2-DE
1025 operating manual UK/DE/FR/IT	4395-B5

Parflange® machines are shipped in a special container which should be kept for all transports to avoid damage.

Spare parts

Type	Order code
Tool lubricant qty: 1L	1040/LUBSS
Hydraulic oil qty: 1L	1025/HYDROBT15
Drive belt	1025/028POLYV
Came guide and with screw	1025/0281031
Hydraulic tank seal kit	1025/0281042
Lubrication kit	1025/028-1200

Parflange® 1040 production machine for O-Lok® and Triple-Lok®



The Parflange® 1040 is an orbital flaring machine designed to cold-form high pressure tube connections. The unique feature of the patented Parflange® process is that the deformation of the tube end is achieved by rolling rather than by just pushing a tool into the tube end. The Parflange® machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end. O-Lok® and SAE flange sleeves are firmly fixed onto the tube end, resulting in a very rigid high-pressure tube connection.

The 1040 is the heavy-duty, mass production machine of the Parflange® machine programme. It is recommended for industrial production of all sizes Triple-Lok® and O-Lok® tube connections. Maximum tube capacity is 38 mm/1 1/2 tube O.D. The powerful drive, and the fast, automatic process allow short cycle times for efficient production. Its advantage is the quick and easy change of tooling and the simple operation without manual adjustments or programming. Tube clamping and tool lubrication are done automatically.

The Parflange® 1040 comes ready to be used. Parflange® tools have to be purchased separately. For each tube dimension, special clamping dies and Parflange® pins are required. The machine can be moved on wheels. Additionally to the electrical supply, an air pressure connection is required for the integrated lubrication device.

For industrial mass production of O-Lok® connections, a special sleeve feeder is available. This sleeve feeding device increases the productivity, particularly of high volume – single tube dimension jobs.

Specifications 1040

Purpose:	180° Flanging for O-Lok® and 37° Flaring for Triple-Lok®
Process:	Orbital flaring and flanging according to Parflange® process
Design:	Stand-alone machine for industrial production
Tube material:	steel and stainless steel tube
Tube diameter:	metric: 6 to 38 mm Inch: 1/4 to 1 1/2″
Maximum capacity:	Steel tube 38 × 5 mm/ 1 1/2″ × 0.188 (tube O.D. × wall thickness) Stainless steel tube 38 × 4 mm/1 1/2″ × 0.156
Tube specification:	fully annealed seamless cold drawn or welded precision tube
Limitations:	Not suitable with titanium stabilised stainless steel tube material (316Ti, 1.4571)
Operation:	Automatic clamping, automatic flanging/flaring Optional automatic sleeve feeder available
Cycle time:	approx. 15 to 20 secs.
Tools:	Flaring pin B30 … and clamping dies M40 …
Tool clamping:	automatic
Tool lubrication:	Automatic lubrication device
Lubricant:	1040LUBSS (filled when delivered)
Hydraulic oil:	HLP 23 XXL (filled when delivered)
Installation:	electrical power and compressed air (6 bar) supply required
Dimensions:	700 x 840 x 1035 mm
Weight:	306 kg

Applications

Industrial production of Triple-Lok® and O-Lok® connections, High quantity/large diameter assembly projects, Large diameter stainless steel assembly jobs

Features, advantages and benefits of the 1040

1. **Superior sealing performance** – The patented Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
2. **Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange/ O-Lok® connections perform much better under reversed bending stress conditions.
3. **Efficient** – The short cycle time and the automatic process allow efficient mass production.
4. **Quality** – Tube clamping, tool control and even lubrication is fully automated so that high and consistent quality results are achieved without manual adjustments.
5. **Low-cost mass production** – The machine can be equipped with an automated sleeve feeder. The Parflange® 1040 then is the perfect solution for low-cost mass production.
6. **Universal** – The Parflange® 1040 can do 37° flaring for Triple-Lok® connectors and flange tubes for both O-Lok® fittings (ORFS). Parflange® tools cover metric tube from 6 to 38 mm O.D. and inch tube from 1/4 to 1 1/2″ O.D.
7. **Heavy duty** – The rigid machine design allows use for mass production of even large stainless steel tube connections.
8. **Easy to use** – The clamping and flanging process is fully automated. Manual tool manipulation is not required.
9. **Cost saving** – Compared to welding or brazing, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.
10. **Clean** – The Parflange® process is environmentally clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
11. **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning post process plating, or painting can be saved.
12. **High tool lifetime** – The Parflange® 1040 machine is equipped with an automatic lubrication device. The operator does not have to lubricate the tools regularly to prevent rapid wear.
13. **Process/Product concept** – Parflange® machines are especially designed to match O-Lok®, Triple-Lok® and SAE-flange standards. Machine, tools and products are fine-tuned for reliable performance.
14. **Proven technology** – For more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

Ordering

Type	Order code
Parflange® 1040 Basic machine Ready to use, including operation manual, filled with hydraulic oil and lubricant Without Parflange® tools Basic machine 400 V, 3 Phase, 50 Hz	1040-EU400V
1040 promotion leaflet UK	4390-P1-UK
1040 promotion leaflet DE	4390-P1-DE
1040 operating manual UK/DE/FR/IT	4390-B11/ …

Feeder for O-Lok® sleeves (not suitable for Triple-Lok®)

Sleeve feeder	Order code
For attaching on Parflange® 1040 machine Complete kit including all connectors and installation/operating manual without sleeve feeding rails	1040-FEEDER
Sleeve feeding rails for 1040 sleeve feeder are ordered separately for each tube O.D.	
6 mm/1/4″	1040/025GS-04
8–10 mm/3/8″	1040/025GS-06
12 mm/1/2″	1040/025GS-08
14–15–16 mm/5/8″	1040/025GS-10
18–20 mm/3/4″	1040/025GS-12
22–25 mm/1″	1040/025GS-16
28–30–32 mm/1 1/4″	1040/025GS-20
35–35 mm/1 1/2″	1040/025GS-24

Spare parts

Type	Order code
Drive belt	1025/028BELT
Hydraulic oil filter cartridge	G01991
Tool lubricant qty: 1L	1040/LUBSS
Adjustable spray line	1040/LMC0102
Tube stop (lever only)	1040/0142205
Tube stop kit (complete assembly)	1040/0142228

Parflange® machines and feeders are shipped in special container which should be kept for all transports to avoid damage.

Tooling for Parflange® machines

Machine and tool selection



Parflange® 1025



Parflange® 1040

Parflange® 1025 machines flanging capacity for O-Lok®

Tube material	220 V 1.1 kW	380 V 1.5 kW
	Max. tube size mm (inch)	
Steel ST37	38 × 2 (1 1/2 × .083)	38 × 3 (1 1/2 × .120˝)
Stainless steel 304L/316L*	25 × 2 (1× .083)	25 × 2.5 (1× .095)
Steel ST52	25 × 2 (1× .083)	25 × 2.5 (1× .095)

Parflange® 1040 machines flanging capacity for O-Lok®

Tube material	Max. tube size mm (inch)
Steel ST37	38 × 5/50 × 3 (2 × .120)
Steel ST52	38 × 4 (1 1/2 × .156)
Stainless steel 304L/316L*	38 × 4 (1 1/2 × .156)

Parflange® 1025 machines flaring capacity for Triple-Lok®

Tube material	Elect. power of machine	
	220 V 1.1 kW Max. tube size mm (inch)	380 V 1.5 kW Max. tube size mm (inch)
Steel TU 37 B	38 × 4 (1 1/2 × .120)	38 × 4 (1 1/2 × .120)
Stainless steel 304L/316L* Steel TU 52 B	38 × 4 (1 1/2 × .120)	38 × 4 (1 1/2 × .120)
Stainless steel Duplex (or PW 400)	Not recommended	25 × 2.5 (1× .095)

Parflange® 1040 machines flaring capacity for Triple-Lok®

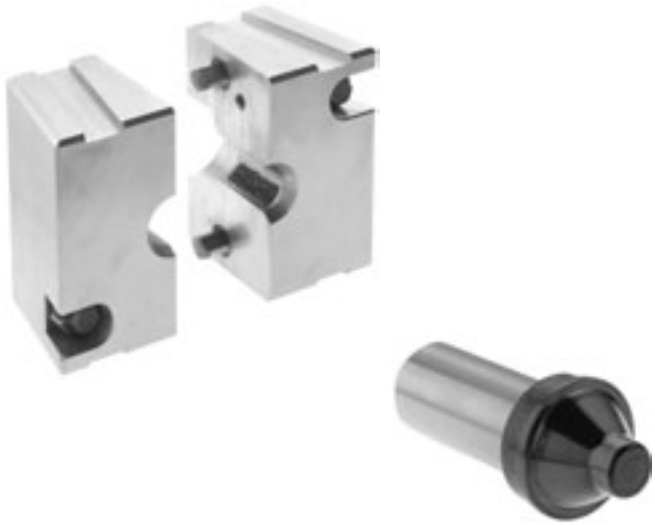
Tube material	Elect. power of machine
	220/380 V 4 kW Max. tube size mm (inch)
Steel TU 37 B	38 × 4/42 × 3 (1 1/2 × .120)
Steel TU 52 B	38 × 4/42 × 3 (1 1/2 × .120)
Stainless steel 304L/316L*	38 × 4/42 × 3 (1 1/2 × .120)
Stainless steel Duplex (or PW 400)	38 × 3.6

* Parflange® tools for stainless steel tubes have different dimensions and are specially coated. These tools are marked with suffix “SS”.

Parflange® tool identification



Parflange® tools for O-Lok®

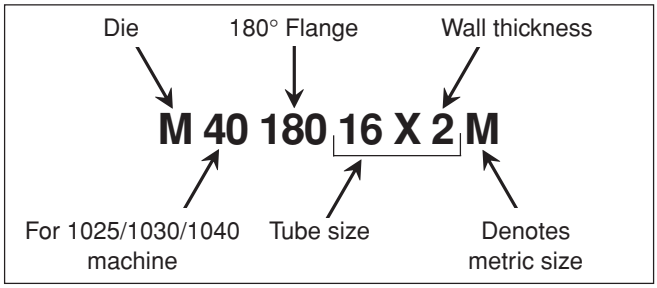


Parflange® tools for Triple-Lok®

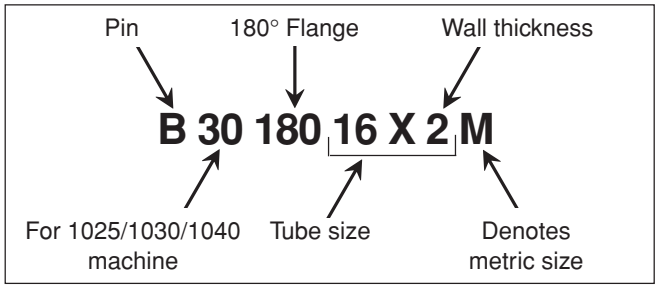
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Tooling for metric tubing

Metric die numbering system

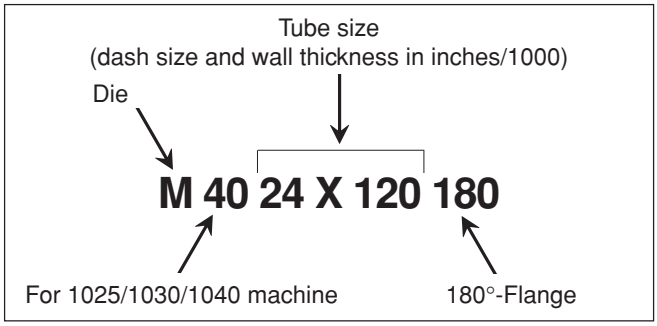


Metric pin numbering system

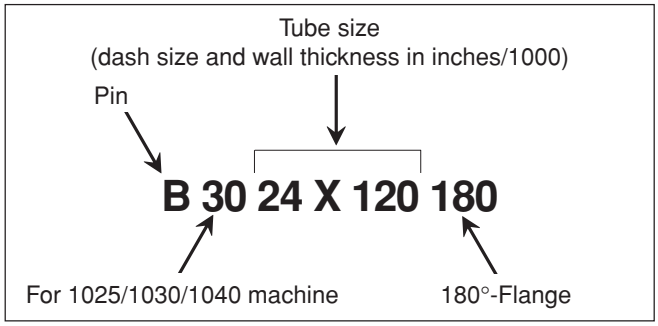


Tooling for inch tubing

Die numbering system



Pin numbering system



Tooling for Parflange® machines

- Pins B 30 … are common to all Parflange® machines
- Dies M 40 … can be used on Parflange® 1040, Parflange® 1025, or Parflange® 1030 (Nb: M 30 dies have been phased out).
- Dies M 30 … can be used only on Parflange® 1030 and 1025 machines
  See table following for the selection of the correct pins and dies

Tool lifetime

Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Parflange® tools for O-Lok®

Parflange® tooling – Order codes for Parflange® 1040, Parflange® 1025 and Parflange® 1030

Metric tube

Tube size (O.D. × wall thickness) mm	Flange pin Order code	1040 flange die Order code
6 × 1**	B3018006X1M	M4018006X1M
6 × 1.5	B3018006X1.5M	M4018006X1.5M
8 × 1**	B3018008X1M	M4018008X1M
8 × 1.5**	B3018008X1.5M	M4018008X1.5M
10 × 1**	B3018010X1M	M4018010X1M
10 × 1.5**	B3018010X1.5M	M4018010X1.5M
10 × 2	B3018010X2M	M4018010X2M
12 × 1**	B3018012X1M	M4018012X1M
12 × 1.5**	B3018012X1.5M	M4018012X1.5M
12 × 2**	B3018012X2M	M4018012X2M
15 × 1.5**	B3018015X1.5M	M4018015X1.5M
15 × 2	B3018015X2M	M4018015X2M
16 × 1	B3018016X1M	M4018016X1M
16 × 1.5**	B3018016X1.5M	M4018016X1.5M
16 × 2**	B3018016X2M	M4018016X2M
16 × 2.5	B3018016X2.5M	M4018016X2.5M
18 × 1	B3018018X1M	M4018018X1M
18 × 1.5**	B3018018X1.5M	M4018018X1.5M
18 × 2	B3018018X2M	M4018018X2M
20 × 2**	B3018020X2M	M4018020X2M
20 × 2.5**	B3018020X2.5M	M4018020X2.5M
20 × 3	B3018020X3M	M4018020X3M
22 × 1.5**	B3018022X1.5M	M4018022X1.5M
22 × 2	B3018022X2M	M4018022X2M
22 × 2.5	B3018022X2.5M	M4018022X2.5M
25 × 2**	B3018025X2M	M4018025X2M
25 × 2.5**	B3018025X2.5M	M4018025X2.5M
25 × 3	B3018025X3M	M4018025X3M
25 × 4	B3018025X4M	M4018025X4M
28 × 2	B3018028X2M	M4018028X2M
28 × 2.5	B3018028X2.5M	M4018028X2.5M
30 × 2	B3018030X2M	M4018030X2M
30 × 3**	B3018030X3M	M4018030X3M
30 × 4	B3018030X4M	M4018030X4M
32 × 3	B3018032X3M	M4018032X3M
32 × 4	B3018032X4M	M4018032X4M
35 × 3	B3018035X3M	M4018035X3M
38 × 3**	B3018038X3M	M4018038X3M
38 × 4**	B3018038X4M	M4018038X4M
38 × 5	B3018038X5M	M4018038X5M

Inch tube

Tube size (O.D. × wall thickness) inch	Flange pin Order code	1040 flange die Order code
1/4 × .028	B3004X028180	M4004X028180
1/4 × .035***	B3004X035180	M4004X035180
1/4 × .049***	B3004X049180	M4004X049180
3/8 × .035***	B3006X035180	M4006X035180
3/8 × .049***	B3006X049180	M4006X049180
3/8 × .065***	B3006X065180	M4006X065180
1/2 × .035***	B3008X035180	M4008X035180
1/2 × .049***	B3008X049180	M4008X049180
1/2 × .065***	B3008X065180	M4008X065180
1/2 × .083***	B3008X083180	M4008X083180
5/8 × .049***	B3010X049180	M4010X049180
5/8 × .065***	B3010X065180	M4010X065180
5/8 × .083***	B3010X083180	M4010X083180
5/8 × .095***	B3010X095180	M4010X095180
3/4 × .049***	B3012X049180	M4012X049180
3/4 × .065***	B3012X065180	M4012X065180
3/4 × .083***	B3012X083180	M4012X083180
3/4 × .095***	B3012X095180	M4012X095180
3/4 × .109***	B3012X109180	M4012X109180
3/4 × .120***	B3012X120180	M4012X120180
1 × .065***	B3016X065180	M4016X065180
1 × .083***	B3016X083180	M4016X083180
1 × .095***	B3016X095180	M4016X095180
1 × .109***	B3016X109180	M4016X109180
1 × .120***	B3016X120180	M4016X120180
1 × .134**	B3016X134180	M4016X134180
1.1/4 × .095***	B3020X095180	M4020X095180
1.1/4 × .109***	B3020X109180	M4020X109180
1.1/4 × .120***	B3020X120180	M4020X120180
1.1/4 × .134	B3020X134180	M4020X134180
1.1/4 × .148	B3020X148180	M4020X148180
1.1/4 × .156	B3020X156180	M4020X156180
1.1/4 × .188	B3020X188180	M4020X188180
1.1/2 × .065	B3024X065180	M4024X065180
1.1/2 × .083	B3024X083180	M4024X083180
1.1/2 × .095	B3024X095180	M4024X095180
1.1/2 × .109	B3024X109180	M4024X109180
1.1/2 × .120***	B3024X120180	M4024X120180
1.1/2 × .134	B3024X134180	M4024X134180
1.1/2 × .156	B3024X156180	M4024X156180
1.1/2 × .188	B3024X188180	M4024X188180
2 × .083	B3032X083180	M4032X083180
2 × .095	B3032X095180	M4032X095180
2 × .120	B3032X120180	M4032X120180

Notes:

**) These sizes are presently available for flanging stainless steel tubing (AISI 304 L and 316 L). Use the suffix “SS” after the steel order code (Eg. B3018012X1.5MSS).

***) These sizes available in Parker USA for flanging stainless steel tubing (AISI 304 L and 316 L).

Tool lifetime

Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Parflange® tools for Triple-Lok®

Metric tube

Tube size (O.D. × wall thickness) mm	Flare pin Order code	Flare die Order code
6×1**	B3007406X1M	M4007406M
6×1.5	B3007406X1.5M	M4007406M
8×1**	B3007408X1M	M4007408M
8×1.5	B3007408X1.5M	M4007408M
10×1**	B3007410X1M	M4007410M
10×1.5**	B3007410X1.5M	M4007410M
12×1.5**	B3007412X1.5M	M4007412M
12×2	B3007412X2M	M4007412M
15×1.5**	B3007415X1.5M	M4007415M
15×2	B3007415X2M	M4007415M
16×1.5**	B3007416X1.5M	M4007416M
16×2**	B3007416X2M	M4007416M
18×1.5**	B3007418X1.5M	M4007418M
18×2	B3007418X2M	M4007418M
20×2**	B3007420X2M	M4007420M
20×2.5**	B3007420X2.5M	M4007420M
22×2	B3007422X2M	M4007422M
25×2.5**	B3007425X2.5M	M4007425M
25×3	B3007425X3M	M4007425M
30×2.5	B3007430X2.5M	M4007430M
30×3**	B3007430X3M	M4007430M
32×3	B3007432X3M	M4007432M
38×4**	B3007438X4M	M4007438M
42×3	B3007442X3M	M4007442M

Inch tube

Tube size (O.D. × wall thickness) inch	Flare pin Order code	Flare die Order code
1/4×0.035	B3004X035074	M4004074
1/4×0.049	B3004X049074	M4004074
3/8×0.049	B3006X049074	M4006074
3/8×0.065	B3006X065074	M4006074
5/16×0.035	B3005X035074	M4007408M
5/16×0.049	B3005X049074	M4007408M
5/16×0.065	B3005X064074	M4007408M
1/2×0.065	B3008X065074	M4008074
1/2×0.083	B3008X083074	M4008074
5/8×0.083	B3010X083074	M4010074
5/8×0.095	B3010X095074	M4010074
3/4×0.095	B 3012X095074	M 4012074
3/4×0.109	B 3012X109074	M 4012074
1×0.083	B 3016X083074	M 4016074
1×0.095	B 3016X095074	M 4016074
1×0.109	B 3016X109074	M 4016074
1×0.120	B 3016X120074	M 4016074
1-1/4×0.095	B3020X095074	M4020074
1-1/4×0.120	B3020X120074	M4020074
1-1/2×0.120	B3024X120074	M4024074

Notes:
**These sizes are presently available for flaring stainless steel tubing (304 L and 316 L).
Use the suffix “SS” after the steel order code (e.g. B3007416X1.5MSS).

Tool lifetime

Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

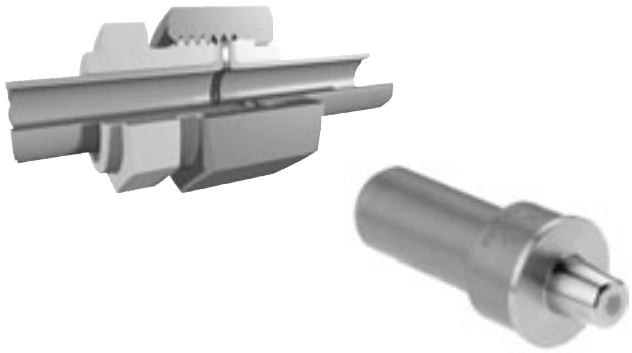
- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Parflange® tools for Flange Seal

Flange dies and Parflange® pins for machines 1025/1030/1040 steel tube



Clamping die set M ... 180



Parflange® pin B ... 180

Metric tube

Tube size (O.D. × wall thickness) mm	Flange pin Order code	Flange die Order code
6×1	B3018006X1M	M4018006X1MLHP
8×1 8×1.5	B3018008X1M B3018008X1.5M	M4018008X1MLHP M4018008X1.5MLHP
10×1 10×1.5 10×2	B3018010X1M B3018010X1.5M B3018010X2M	M4018010X1MLHP M4018010X1.5MLHP M4018010X2MLHP
12×1 12×1.5	B3018012X1M B3018012X1.5M	M4018012X1MLHP M4018012X1.5MLHP
16×2	B3018016X2M	M4018016X2MLHP
20×2.5	B3018020X2.5M	M4018020X2.5MLHP
25×2.5 25×3	B3018025X2.5M B3018025X3M	M4018025X2.5MLHP M4018025X3MLHP

Inch tube

Tube size (O.D. × wall thickness) Inch	Flange pin Order code	Flange die Order code
1/4×0.035 1/4×0.049	B4004X035180 B4004X049180	M4004X035180LHP M4004X049180LHP
3/8×0.049 3/8×0.065	B4006X049180 B4006X065180	M4006X049180LHP M4006X065180LHP
1/2×0.049 1/2×0.065 1/2×0.083	B4008X049180 B4008X065180 B400810X083180	M4008X049180LHP M4008X065180LHP M4008X083180LHP
5/8×0.065	B401010X065180	M4010X065180LHP
5/8×0.083	B401010X083180	M4010X083180LHP
3/4×0.065 3/4×0.083	B4012X065180 B4012X083180	M4012X065180LHP M4012X08380LHP
1×0.095	B4016X095180	M4016X095180LHP

Tool lifetime

Assembly tools are subject of wear and must be regularely (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

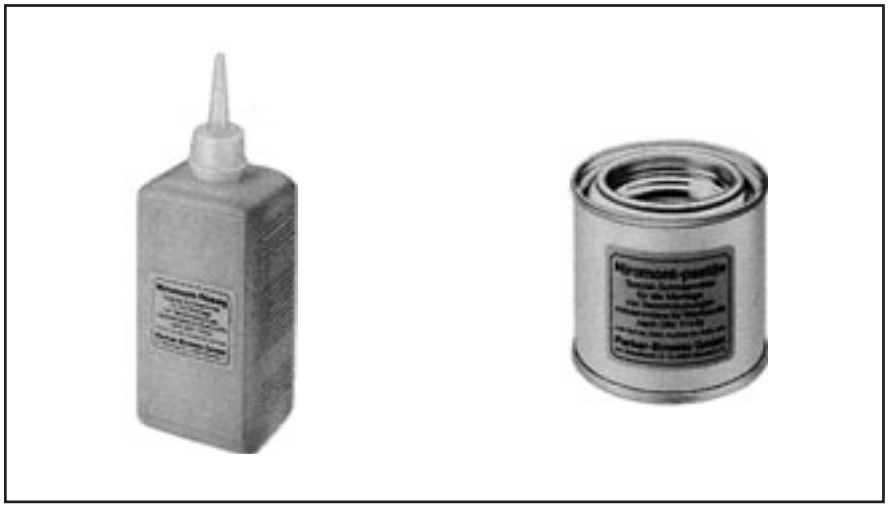
Lubricants

NIROMONT lubricant for fitting assembly

LUBSS/LUBCAN lubricant for flaring and forming tools

NIROMONT is a high-performance lubricant which has been especially developed for the assembly of bite-type fittings.
For best individual application, EO-Niromont is available in a small tin (paste) or plastic bottle (liquid).

LUBSS/LUBCAN is a special lubricant for flaring dies, Parflange® tools and EO2-FORM tooling. It allows high-quality tube forming without excessive tool wear.
1040 LUBSS is the standard Lubricant for the Parflange® machine automatic tool lubrication system.



NIROMONT



LUBSS



LUBCAN

Features, advantages and benefits of NIROMONT lubricant:

1. **Highly effective** – Niromont dramatically reduces assembly effort. This helps to prevent fitting failure resulting from insufficient assembly.
2. **Cost saving –** Tools in assembly machines will last much longer, resulting in high-quality tube forming with excellent sealing surface.
3. **No cold welding** – Cold welding of stainless steel threads is impossible when EO-Niromont is properly applied.
4. **Liquid** – Penetrates even small gaps.
5. **Paste** – Stays in place for a while. Ideal for application on pre-assembly tools.
6. **Compatible** – NIROMONT and LUBSS/LUBCAN do not effect fitting surfaces or seal materials.

Ordering

Type	Order code
NIROMONT Assembly lubricant paste (130 g)	EONIROMONTPASTX
NIROMONT Assembly lubricant liquid (250 cc)	EONIROMONTFLUESSX
Forming tool lubricant can (100 cc)	1040LUBCAN
Forming tool lubricant refill (1 L)	1040LUBSS

Cutting and bending tools

AV 6/42 – Tube saw square

Provides a neat and quick method of cutting tube at right angles. The exact cut is achieved by hardened guides. We recommend using deeper-section sawblades that cut in both directions for best results. The AV 6/42 can be used in a vice or just be clamped onto the tube for cutting.



Specifications:

Tube. O.D.: 6–42 mm
Weight: approx. 0.7 kg

Type	Order code
Tube cutting tool	AV06/42KPLX
Spare hardened guides	AV06/4208X

Features, advantages and benefits of tube saw square:

1. **Square cut** – Exact tube preparation greatly reduces leakage caused by assembly failures.
2. **Contour clamping** – Tube is not distorted by clamping.
3. **No vice required** – For workshop application AV 6/42 can simply be clamped onto the tube without using a vice or other attachment.
4. **Replaceable guides** – Worn out guides can easily be replaced to maintain neat cutting result.
5. **Light** – At only 0.7 kg, the AV 6/42 should be carried in the toolbox of every hydraulic tube fitter.

Cutting and bending tools

BAV 6/12 – Combined tube bending and cutting tool

The BAV 6/12 is a workshop device for neat tube cutting and simple but exact bending of small dimension EO-tube. Relatively small bending radii can be achieved.

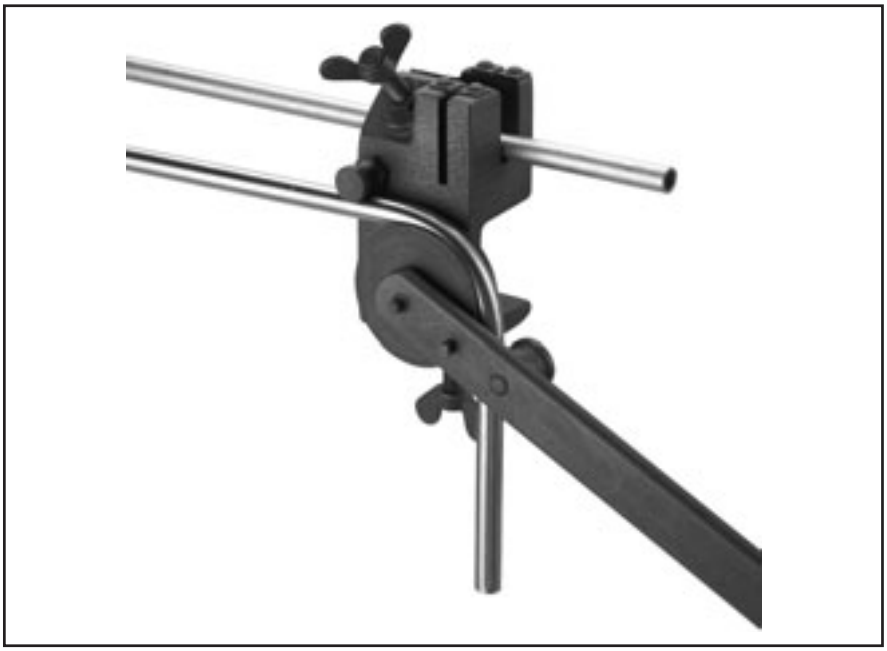
The exact cut is achieved with hardened guides and using sawblades which are notched on both sides. The BAV 6/12 can be used in a vice or just be clamped onto a workbench.

Specifications:

Tube. OD: 6–12 mm
Weight: approx. 2 kg

Type	Order code
Combined tube bending and cutting tool including 3 bending rolls for 6 to 12 mm tube and bending lever	BAV06/12KPLX
Spare Parts	
Spare hardened guide	BAV06/1206X
Bending roll 6/8 mm	BAV06/1209X
Bending roll 10 mm	BAV06/1210X
Bending roll 12 mm	BAV06/1211X
Bending pin	BAV06/1207X
lever complete	BAV06/1220X

Bending dimensions in mm			
Rolls for tube O.D.	6/8	10	12
Bending radius	19/20	25	26



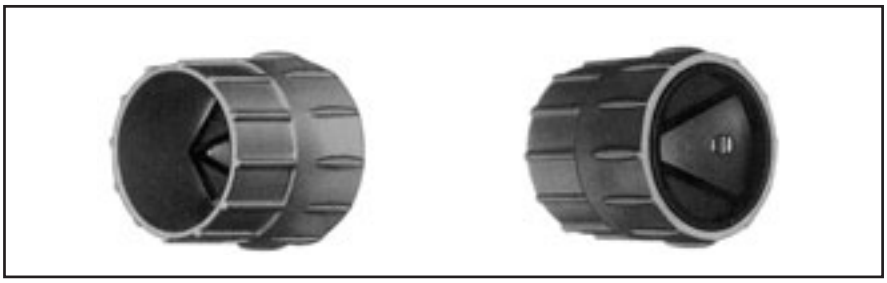
Features, advantages and benefits of combined tube bending and cutting tool:

1. **Bending and cutting** – The BAV 6/12 is a light multi-purpose tool for all small dimension tube assemblies.
2. **Square cut** – Exact tube preparation greatly reduces leakage caused by assembly failures.
3. **No vice required** – For workshop application BAV 6/12 can simply be clamped onto a workbench.
4. **Small bending radii** – Compact tube bends allow tight assemblies.
5. **Light** – At only 2 kg, the BAV 6/12 can be easily brought to the assembly site.
6. **Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.

In-Ex tube deburring tool 226

Material: Aluminum with hardened steel blades
Tube-O.D.: 4 to 42 mm
Weight: 0.12 kg

Type	Order code
Tube deburrer	226A
Replacement blades	226A blades



Features, advantages and benefits of In-Ex tube deburring tool 226:

1. **Proper deburring** – Exact tube preparation greatly reduces leakage caused by assembly failures.
2. **Replaceable blades** – Worn out blades can easily be replaced to maintain neat deburring result.
3. **Light** – At only 0.12 kg, the In-Ex tube deburring tool should be carried in the toolbox of every hydraulic tube fitter.

Cutting and bending tools

BV 6/18 – Tube bending tool

The BV/6/18 is a flexible bending device for simple but exact bending of EO-tube up to 18 mm tube O.D. The high quality bending results are achieved by 6 interchangeable bending rollers.

The fixing roller can be individually adjusted to produce a precise bend transition.



Specifications:
Tube-O.D.: 6–18 mm
Weight: approx. 4 kg

Type	Order code
Tube bending tool complete device including 6 bending rolls for 6 to 18 mm tube and bending lever	BV06/18KPLX
Spare Parts	
Bending roll 6/8 mm	BV06/1812X
Bending roll 10/12 mm	BV06/1803X
Bending roll 14 mm	BV06/1804X
Bending roll 15 mm	BV06/1805X
Bending roll 16 mm	BV06/1806X
Bending roll 18 mm	BV06/1807X
Fixing roll	BV06/1802X
Lever complete	BV06/1808KPLX

Bending dimensions in mm		
Rolls for tube O.D.	r	≈ X
6	33.0	35
8	34.0	35
10	35.5	35
12	36.5	35
14	36.5	35
15	44.0	38
16	44.0	38
18	51.5	42

Features, advantages and benefits of tube-bending tool:

1. **Vice mounted** – For easy workshop use, the BV can be clamped into a vice.
2. **Small bending radii** – Compact tube bends allow tight assemblies.
3. **Light** – At only 4 kg, the BV 6/18 can be easily brought to each assembly site.
4. **Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.

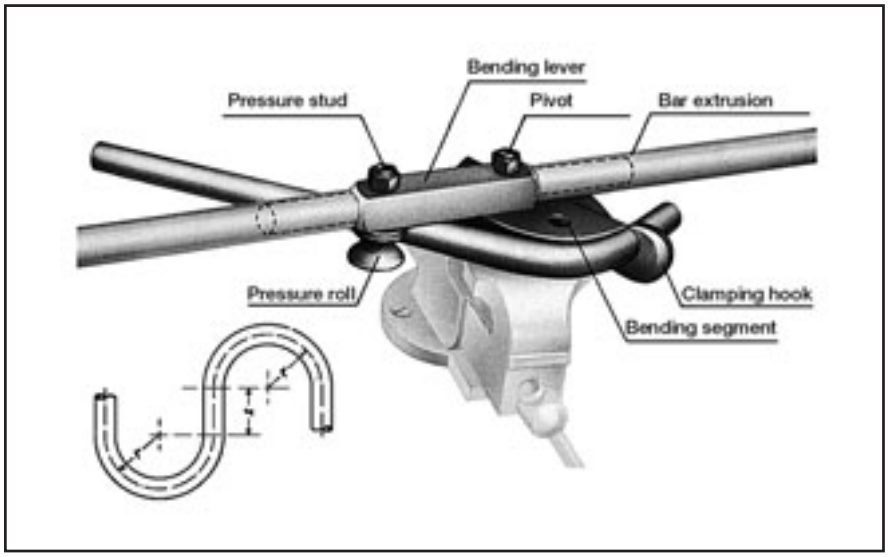
BV 20/25 – Tube bending tool

The BV 20/25 allows bending of medium size tube at the assembly site. The bending lever shows two universal studs. A bar extension can either be ordered or locally made.

Specifications:

Tube-O.D.: 20–25 mm
3 bending segments: 20, 22, 25 mm
Bending radius: r = 86,5 mm
x = 52 mm
Weight: approx. 15 kg (without bar extension)

Type	Order code
BV 20/25 Tube bending tool bending device including 3 bending segments for tube O.D. 20 to 25 mm including bending lever without bar extension tube	BV20/25KPLX
Spare Parts	
Bending segment 20 mm	BV20/2501X
Bending segment 22 mm	BV20/2502X
Bending segment 25 mm	BV20/2503X
Fixing arm	BV20/2505X
Lever complete	BV20/2506KPLX
Bar extension tube	BV20/2510X

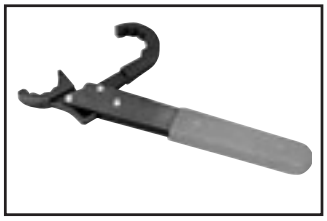


Features, advantages and benefits of tube-bending tool:

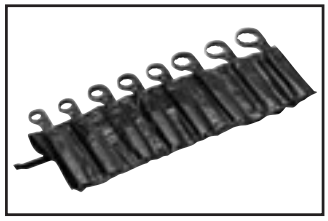
1. **Rigid design** – The solid design and the bar extension allow manual bending without heating the tube.
2. **Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.
3. **Shaped clamping** – Tube is not distorted by clamping.
4. **Small bending radii** – Compact tube bends allow for compact assemblies.
5. **Vice mounted** – For easy workshop use, the BV can be clamped into a vice.

Hand-tools

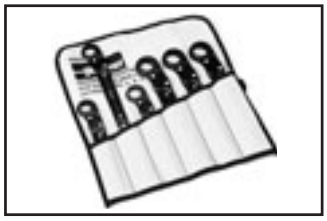
Par-Lok wrench



Par-Lok wrench



Par-Lok wrench kit



O-Lok® wrench kit



Triple-Lok® & Ferulok wrench kit

360° Snap-action ratchet wrench for hex sizes from 10 mm to 41 mm and inch sizes from $^{3}/_{8}$″ to $2^{1}/_{4}$″ accross flats. Inch sizes meet US government specifications and are listed as NSN-5120-00-474-7227.

Install tube fittings more quickly
Easy access ratchet wrench speeds fittings installation in tight locations. Rugged, snap-action jaws can be opened over tube lines, locked onto fitting hex and ratcheted within $^{1}/_{8}$ turn. Full six point contact prevents fitting distortion common with wrench slippage. Ideal for tube line installations where compact runs required multiple fittings make-up, disassembly and remakes.

Specifications
Par-Lok wrenches are available individually or in different kit combinations. Par-Lok jaws are constructed from drop-forged, high carbon steel material with a black conversion coat finish. Par-Lok handles are made from heavy gauge steel material, heat treated and with a corrosion resistant black finish. Solid stainless steel rivets and tempered jaw springs are designed into every wrench for maximum strength.

O-Lok® wrench kit
Six piece wrench set for use with O-Lok® body and nut sizes -4, -6, -8. Kit contains wrenches for hex sizes $^{5}/_{8}$″, $^{11}/_{16}$″, $^{3}/_{4}$″, $^{13}/_{16}$″, $^{7}/_{8}$″ and $^{15}/_{16}$″.

Triple-Lok® & Ferulok wrench kit
Five piece wrench set for use with Triple-Lok® and Ferulok body and nut sizes -4, -6, -8, -10, -12. Kit contains wrenches for hex sizes $^{9}/_{16}$″, $^{11}/_{16}$″, $^{7}/_{8}$″, and 1″ and $^{1}/_{4}$″.

Features, advantages and benefits of Par-Lok wrench:

1. **360**° – No slipping and hexagon damage.
2. **Snap-mechanism** – Ideal for tube fitting assembly.
3. **Light** – Par-Lok wrenches belong in the standard toolbox of each fitting engineer.

Inch Sizes				Metric Sizes	
Hex Size	Order code	Hex Size	Order code	Hex Size	Order code
3/8	860062-6	1 1/8	860062-18	10 mm	860063-10
7/16	860062-7	1 1/4	860062-20	11 mm	860063-11
1/2	860062-8	1 3/8	860062-22	12 mm	860063-12
9/16	860062-9	1 1/2	860062-24	13 mm	860063-13
5/8	860062-10	1 5/8	860062-26	14 mm	860063-14
11/16	860062-11	1 7/8	860062-30	16 mm	860063-16
3/4	860062-12	2	860062-32	17 mm	860063-17
13/16	860062-13	2 1/4	860062-36	19 mm	860063-19
7/8	860062-14	Full kit of all	860062-KIT2	21 mm	860063-21
15/16	860062-15	eight wrenches		22 mm	860063-22
1	860062-16	O-Lok® kit	860062-LKIT	24 mm	860063-24
Full kit	860062-KIT	(six wrenches)		27 mm	860063-27
of all eleven sizes		Triple-Lok®/Ferulok kit	860062-XUKIT	30 mm	860063-30
		(five wrenches)		32 mm	860063-32
				36 mm	860063-36
				41 mm	860063-41
				Full kit	860063-KIT
				of all ten sizes	
				10 to 22 mm	

WZK – Tool boxes

Tools which are regularly used for tube preparation and bending are available in organized tool boxes. Two sets are available:

Features, advantages and benefits:

1. **Well organised** – Nothing gets dirty, damaged, lost or forgotten.
2. **Practical** – In one box you take everything to the assembly site.
3. **Rigid** – The solid metal box is suitable for daily workshop use.



WZK1



WZK2

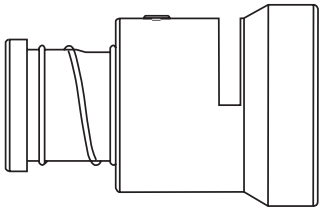
Type	Content	Order code
Toolbox WZK1	BV6/18 tube bending tool	WZK1KOMPLX
Toolbox WZK2	BV6/18 tube Bending tool, AV6/42 tube saw square, Hacksaw, Flat file, Deburring tool, fixture for assembly cones VOMO and cone gauge KONU	WZK2KOMPLX

H

O-ring assembly tools

CORG O-ring installation tool for O-Lok®





Parker's CORG Assembly Tools are designed to facilitate the installation of the O-ring into the half-dovetail groove of the O-ring face seal fitting. They are available in sizes –4 to –32 (6 mm to 50 mm/1/4″ to 2″ tube).

Ordering

CORG tool Order code	Fitting size	O-ring size
CORG-4	– 4	2-011
CORG-6	– 6	2-012
CORG-8	– 8	2-014
CORG-10	–10	2-016
CORG-12	–12	2-018
CORG-16	–16	2-021
CORG-20	–20	2-025
CORG-24	–24	2-029
CORG-32	–32	2-135

Operation
See chapter F "Fitting assembly" for detailed instructions

The CORG assembly tool is easy to use and can be operated in just a few steps:

1. Insert the O-ring into the slot located on the side of the tool.
2. Position the open end of the tool over the ORFS end of the fitting.
3. With the fitting end bottomed inside the tool, push the piston of the tool until the O-ring is released into the fitting groove.

O-ring pick for O-Lok®



O-ring pick

A plastic O-ring pick to allow easy removal of O-rings without causing damage to the fitting.

Ordering

Type	Order code
Plastic O-ring pick device	O-RINGPICK

Features, advantages and benefits of O-Ring installation tools

1. **Special** – O-ring installation tools are especially designed for O-Lok® fittings with CORG groove. O-rings are not torn or damaged at assembly.

2. **Cost saving** – O-ring installation tools are easy to use and save time and cost when O-rings need to be assembled.

Port cutting tools

Counterbore tools and thread taps for metric ports

For manufacturing metric ports to ISO 6149 (Details see chapter D).

These tools allow correct manufacturing of metric port connections. Counterbore tools and thread taps are made of high speed tool steel.

Ordering counterbore tools



ISO 6149 Port size	Order code	
	Large Spot face	Small Spot face
M08×1	R1449A	R1449B
M10×1	R1450A	R1450B
M12×1.5	R1451A	R1451B
M14×1.5	R1452A	R1452B
M16×1.5	R1453A	R1453B
M18×1.5	R1454A	R1454B
M22×1.5	R1455A	R1455B
M27×2	R1456A	R1456B
M33×2	R1457A	R1457B
M42×2	R1458A	R1458B
M48×2	R1459A	R1459B

1) with ID-groove
2) without ID-groove

Ordering thread taps



Part thread ISO	Order code
M08	M08×1-6H-TAP
M10	M10×1-6H-TAP
M12	M12×1.5-6H-TAP
M14	M14×1.5-6H-TAP
M16	M16×1.5-6H-TAP
M18	M18×1.5-6H-TAP
M22	M22×1.5-6H-TAP
M27	M27×2-6H-TAP
M33	M33×2-6H-TAP
M42	M42×2-6H-TAP
M48	M48×2-6H-TAP

Counterbore tools and thread taps for straight SAE thread ports

For manufacturing UNF ports to SAE J 1926-1 (details see chapter D)

These tools allow correct manufacturing of UNF port connections. Counterbore tools and thread taps are made of high speed tool steel.

counterbore tools



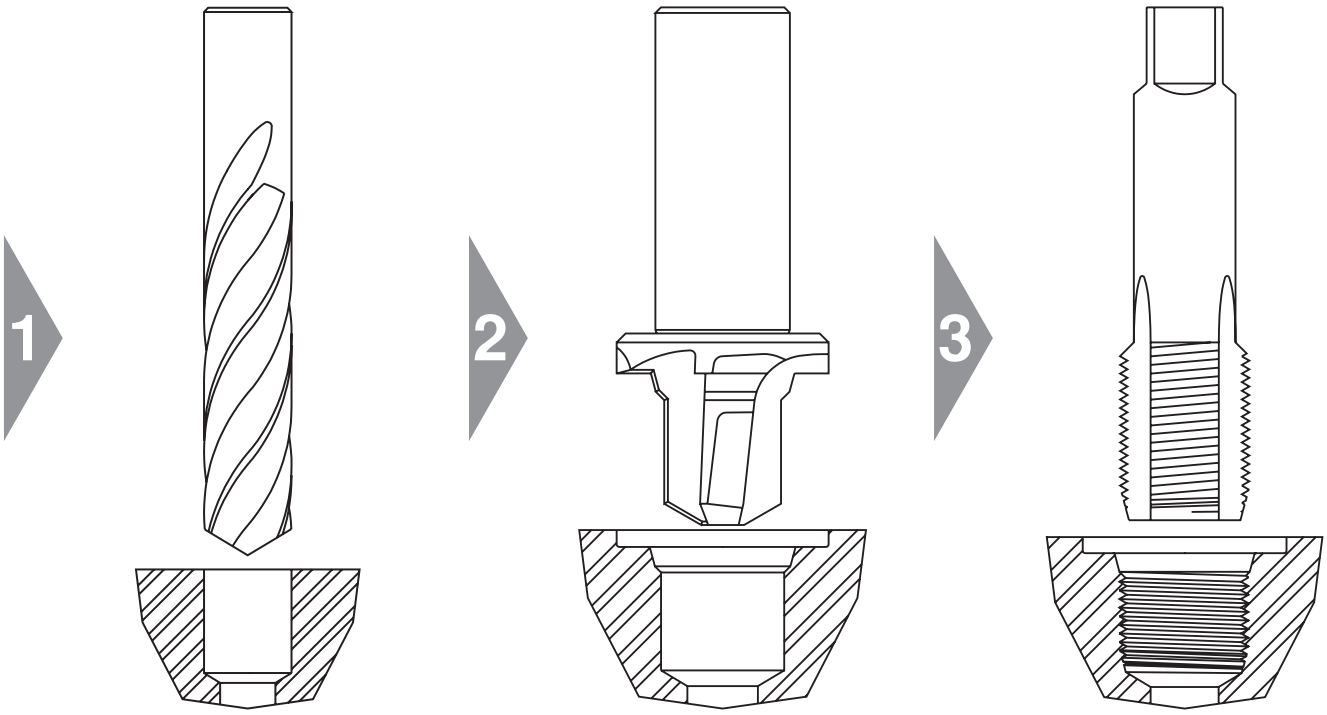
Use with UNF thread size	SAE dash size	Order code
5/16-24	2	Y-34730
3/8-24	3	Y-34731
7/16-20	4	Y-34732
1/2-20	5	Y-34733
9/16-18	6	Y-34734
3/4-16	8	Y-34735
7/8-14	10	Y-34736
1 1/16-12	12	Y-34737
1 3/16-12	14	Y-34738
1 5/16-12	16	Y-34739
1 5/8-12	29	Y-34740
1 7/8-12	24	Y-34741
2 1/2-12	32	Y-34743

thread taps



UNF thread size	SAE dash size	Order code
5/16-24	2	5/16X24 UNF-2B
3/8-24	3	3/8X24 UNF-2B
7/16-20	4	7/16X20 UNF-2B
1/2-20	5	1/2X20 UNF-2B
9/16-18	6	9/16X18 UNF-2B
3/4-16	8	3/4X16 UNF-2B
7/8-14	10	7/8X14 UNF-2B
1 1/16-12	12	1 1/16X12 UNF-2B
1 3/16-12	14	1 3/16X12 UNF-2B
1 5/16-12	16	1 5/16X12 UNF-2B
1 5/8-12	29	1 5/8X12 UNF-2B
1 7/8-12	24	1 7/8X12 UNF-2B
2 1/2-12	32	2 1/2X12 UNF-2B

Operation of port cutting tools



1. Pilot hole drilling **2. Port counterboring** **3. Thread tapping**

Note:
All dimensions must be according to relevant standards. See chapter D for details.
It is necessary to create a spotface surface which is flat and perpendicular to the port. Smooth finish to prevent leakage or O-ring extrusion.

Thread identification

Thread identification kit

The thread identification tools are beneficial in the assistance of the identification of international threads such as:

- European threads
  (Metric, BSPP, BSPT threads) and
- U.S. threads
  (NPT and SAE straight threads UNF)

The Thread Identification Kit is equipped with thread gauges, a set of callipers, thread profiles, and an instruction booklet.

The components of the thread ID Kit are no high precision gauges but simple instruments for workshop use.



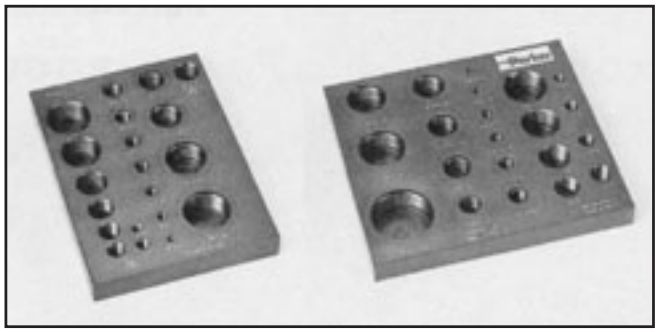
Ordering

Type	Order code
Thread identification kit	MIK-1

Portboard

Portboards are suitable for thread identification of male stud connectors. The two portboards are machined with female threads for quick and easy identification by simply screwing the appropriate male port end.

- European
  (Metric, BSPP/BSPT threads)
- U.S.
  (NPT and SAE straight threads UNF)



Ordering

Type	Order code
Portboard for NPT and SAE straight threads	Portboard A
Portboard for Metric and BSPP/BSPT threads	Portboard B

Training equipment

Sample case for assembly training

These practical cases are designed to support on-site assembly training. The rigid plastic boxes include sufficient nuts and rings or flare sleeves to do many hands-on assembly training. Properly cut and deburred tube-ends are also included so that functional fitting presentations, assembly machine demonstrations and proper in-depth assembly training are easy to conduct. An assortment of selected fitting bodies represent fittings like male stud ED-seal/O-Ring seal or adjustable elbows which need specific assembly procedures. For better overview and easy handling, the components are stored in individual plastic trays.

Two different sample cases are available for DIN (EO/EO2/EO2-FORM) and SAE (O-Lok®/Triple-Lok®) product training. Sample tube size is 16×2 mm, steel and stainless steel tube. These prepared tube pieces can be ordered separately for refill of the cases.



Specification

Case:	rigid plastic case with individual trays
Case dimension:	410 × 320 × 80 mm
Total weight:	approx. 10 kg
Tube size:	16 × 2 mm
Tube material:	steel and stainless steel

Ordering

Type		Order code
Sample case EO/EO2/EO2-FORM		DIN-CASE
Sample case O-Lok®/Triple-Lok®		SAE-CASE
Spare steel tube ends	10 pieces	R16X2X140VZ
Spare stainless steel tube ends	10 pieces	R16X2X14071

Please note:
Case content is continuously updated according to new product additions. Assembly tools are not included.

Case content

DIN CASE		SAE CASE	
Type	approx. qty	Type	approx. qty
Tube end components:		Tube end components:	
EO nuts/EO2 functional nuts FM	20	Triple-Lok®/O-Lok® nuts	20
PSR/DPR rings	50	Triple-Lok®/O-Lok® sleeves	50
EO2/EO2-FORM seal DOZ	50	Tube pieces (steel and stainless steel)	30
Tube pieces (steel and stainless steel)	30		
EO fitting bodies (steel):		Triple-Lok®/O-Lok® fitting bodies (steel):	
Tube to Tube unions	10	Tube to Tube unions	10
Male stud BSPP with ED-seal	5	Male stud BSPP with ED-seal	5
Male stud metric with O-ring	2	Male stud metric with O-ring	2
High pressure banjo	1	Male stud UNF with O-ring	2
Swivel nut elbow	1	Swivel nut elbow	2
Swivel union	1	Swivel union	2
Adjustable locknut elbow 90°/45°	1	Adjustable locknut elbow 90°/45°	2
Swivel reducer	1		
Distance piece adapter	1		

Features, advantages and benefits

1. **Practical –** The cases and the content have been selected from experienced trainers for use with TFDE products.
2. **Efficient –** The use of these case saves preparation time and effort.
3. **Impressive –** Customers on workshop level will be impressed on the simple but professional training equipment.
4. **Give-away samples –** Samples of the assemblies can stay at the customer. This will help to illustrate product function and demonstrate TFDE products.
5. **Dry Technology –** As both, traditional and *Dry Technology* products are included, this case is a powerful and convincing sales tool particularly on workshop level.

Sample case for product presentation

This representative case is designed to support product presentations. The sample case includes cut-off samples of all TFDE tube fitting systems. Essential components like nuts and rings are added as individual samples.

The case looks representative and is of rigid design. All components are assorted in a black foam tray. The inside of the cover shows drawings of each product.



Specification

Case:	rigid plastic case with foam tray
Case dimension:	325 × 275 × 54 mm
Total weight:	approx. 1,8 kg
Sample size:	16 × 2 mm
Sample material:	steel, stainless steel and brass

Ordering

Type	Order code
Showcase Tube fitting systems	SHOWCASESS

Case content

Cross sections (one piece each):	EO DPR/PSR, EO2, EO2-FORM, EO Weld Nipple, Triple-Lok®, O-Lok®

Please note:
Case content is continuously updated according to new product additions.

Features, advantages and benefits

1. **Essential sales tool –** The case is a powerful tool to illustrate the function and explain the components of each TFDE fitting system. It will contribute to visualize the features, advantages and benefits of the superior Parker products.
2. **Practical –** The cases is light and easily can be brought to any customer visit. It also can be used at a distributors sales desk.
3. **Efficient –** The use of these case saves preparation time and effort.
4. **Impressive –** Customers on workshop level will be impressed on the simple but professional training equipment.
5. **Durable –** As most components are made of stainless steel, the samples will stay bright and shiny even when they are used and touched regularly.
6. **Dry Technology –** As both, traditional and *Dry Technology* products are included, this case is a powerful and convincing sales tool particularly on non-technician level.

Training aids

The “Leak-free Hydraulic Connectors” pocket book

The 226th volume in the series “The Technology Library”, entitled “Leak-free Hydraulic Connectors”, has been published by “Verlag Moderne Industrie”. It represents the most comprehensive treatment of high pressure connection technology presently available in the english language. Organised according to the fitting system, not only the latest developments in connecting and assembly technology but also national and international standards as well as market trends are clearly described. Each chapter is rounded off with detailed advice on practical application.



Features, advantages and benefits

1. **Up-to-date knowledge** – This pocket book is ideal for those who are new to this field and who want to find their way quickly and easily into the subject. But also for users whose professional training goes back over many years, this pocket book makes for interesting reading, containing as it does information on and evaluation of the latest product solutions and assembly technology.
2. **Practical** – The publication is intended not only as a reference book but also as something that can be read when travelling. It is ideally suited as a gift.
3. **Competitor-neutral** – To a large extent the contents lean more towards international standards and less to manufacturer-specific products. This pocket book is therefore ideal for use in teaching and in-house training and further education.
4. **Problem solver** – Leakage problems occur frequently in hydraulic systems. The book helps to determine and eliminate the causes. For new projects, it can be consulted for the specification and planning of assembly work.

Specification

Title:	Leak-free Hydraulic Connectors
Contents:	Standards, operating principles and assembly for tube fittings
Author:	Bernd Schmehl, Parker Hannifin
Publisher:	Verlag Moderne Industrie, Landsberg/Lech 2002, Germany
This edition:	96 pages, 48 colour illustrations, hardback
ISBN-Nr:	ISBN 3-478-93267-X

Ordering

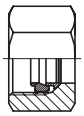
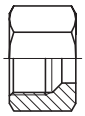
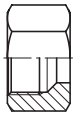
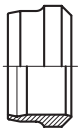
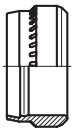
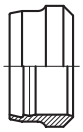
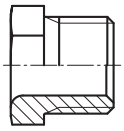
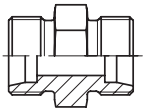
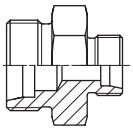
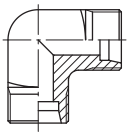
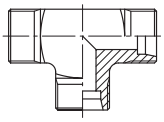
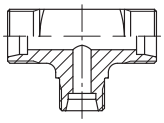
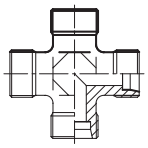
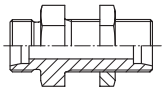
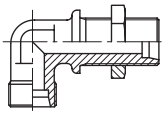
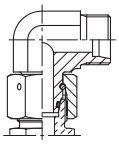
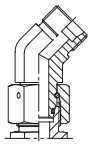
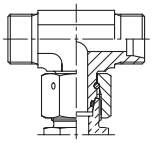
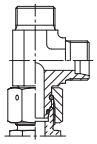
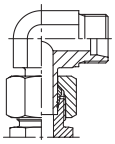
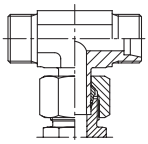
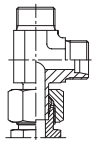
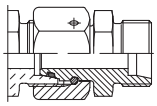
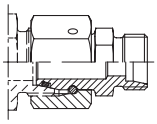
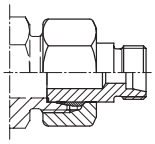
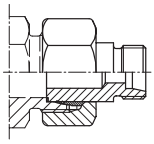
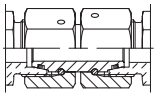
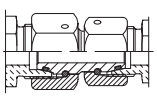
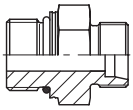
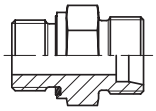
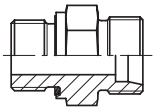
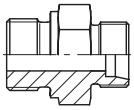
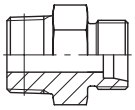
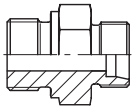
The shipment will be done by the EMDC (European Marketing Distribution Center). Concerning your order please ask your Certified Distributor or the Parker Trading Subsidary.

Parker

Ermeto Original
DIN fittings

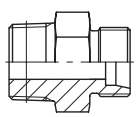


Visual index

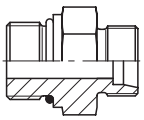
Fitting components	 **FM** p. I8		 **FORM** p. I10	 **M** p. I12	 **D** p. I13	 **PSR** p. I13	 **DPR** p. I13
	 **S** p. I14						
Tube to tube	 **G** p. I15	 **GR** p. I16	 **W** p. I17	 **T** p. I18	 **TR** p. I19	 **K** p. I21
	 **SV** p. I22	 **WSV** p. I23				
Tube to swivel	 **EW** p. I24	 **EV** p. I25	 **ET** p. I26	 **EL** p. I27	 **EVW** p. I28	 **EVT** p. I29
	 **EVL** p. I30	 **DA** p. I31	 **RED** p. I32	 **KOR** (Steel/Brass) p. I36	 **KOR** (Stainless steel) p. I40	
Swivel to swivel	 **GZ** p. I42	 **GZR** S.43				
Male stud connector	 **GEO** p. I45	 **GE-M-ED** p. I46	 **GE-R-ED** p. I47	 **GE-R** p. I49	 **GE-R(KEG)** p. I51	 **GE-M** p. I52

Visual index

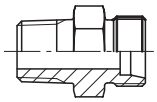
Male stud connector



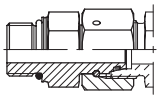
GE-M(KEG)
p. I53



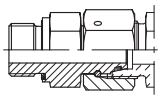
GE-UNF/UN
p. I54



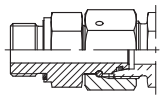
GE-NPT
p. I55



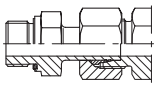
EGEO
p. I57



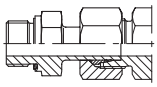
EGE-M-ED
p. I58



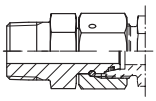
EGE-R-ED
p. I59



EVGE-M-ED
p. I60

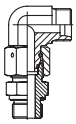


EVGE-R-ED
p. I61

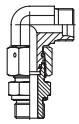


EGE-NPT
p. I62

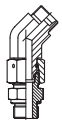
Swivel adjustable



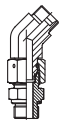
EW-M-ED
p. I63



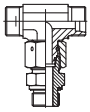
EW-R-ED
p. I64



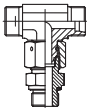
EV-M-ED
p. I65



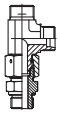
EV-R-ED
p. I66



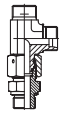
ET-M-ED
p. I67



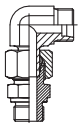
ET-R-ED
p. I68



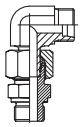
EL-M-ED
p. I69



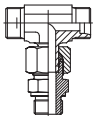
EL-R-ED
p. I70



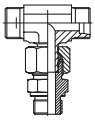
EVW-M
p. I71



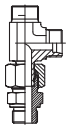
EVW-R
p. I72



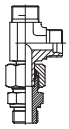
EVT-M
p. I73



EVT-R
p. I74

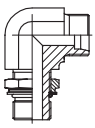


EVL-M
p. I75

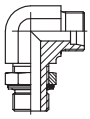


EVL-R
p. I76

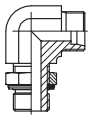
Locknut adjustable



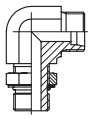
WEE-OR
p. I77



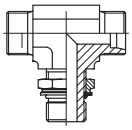
WEE-M
p. I78



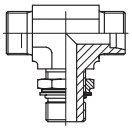
WEE-R
p. I79



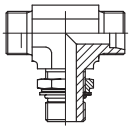
WEE-UNF
p. I80



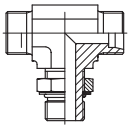
TEE-OR
p. I81



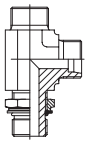
TEE-M
p. I82



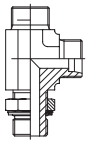
TEE-R
p. I83



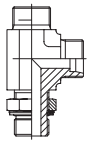
TEE-UNF
p. I84



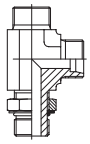
LEE-OR
p. I85



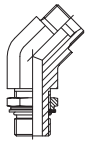
LEE-M
p. I86



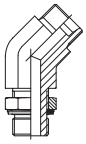
LEE-R
p. I87



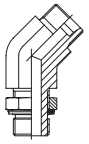
LEE-UNF
p. I88



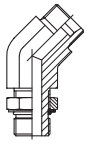
VEE-OR
p. I89



VEE-M
p. I90

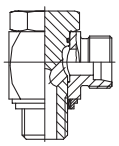
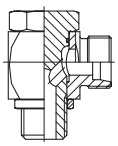
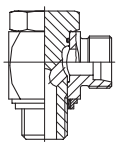
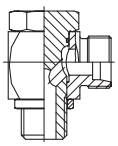
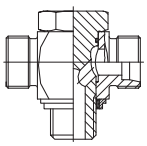
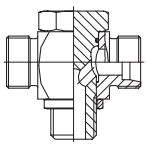
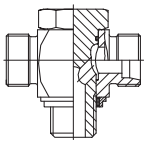
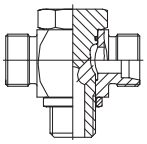
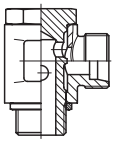
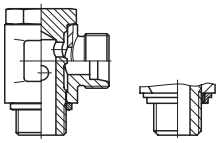
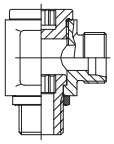
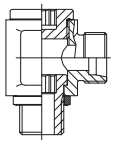
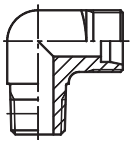
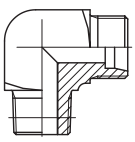
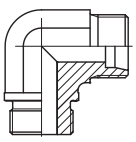
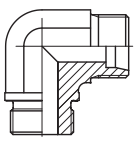
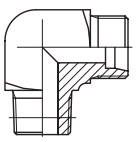
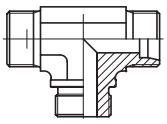
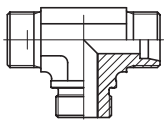
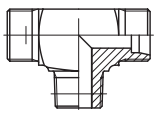
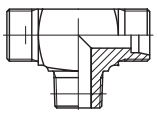
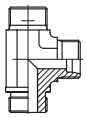
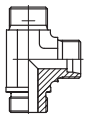
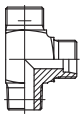
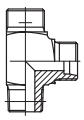
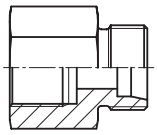
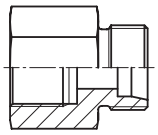
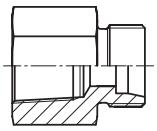
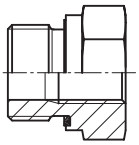
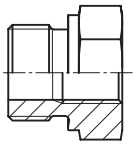
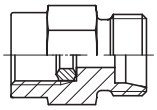
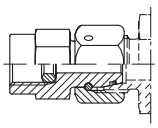


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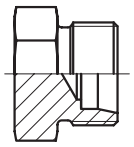
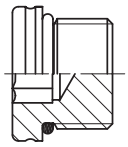
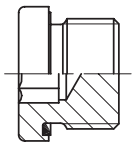
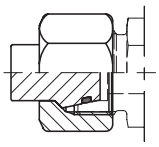
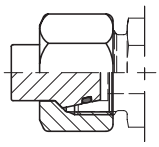
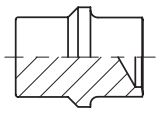
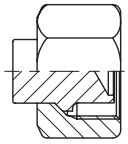
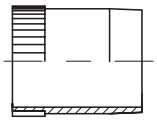
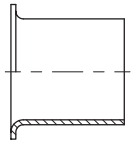
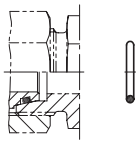
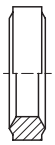


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	 **TH-R-KDS** p. I99	 **TH-R** p. I100	 **SWVE-M** p. I101	 **SWVE-R** p. I102	 **DSVW-M** p. I103	 **DSVW-R** p. I104
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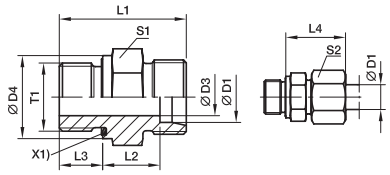
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	 **BUZM** p. I131					
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How to order

GE-R-ED Male stud connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
S[4]	06	G1/4A	4	19	32.0	13.0	12	28	19	17	35	**GE06SREDOMD**	800	630	630	400
	06	G1/8A	4	14	27.5	12.5	8	27	14	17	21	**GE06SR1/8EDOMD**	315	315	315	
	06	G3/8A	4	22	34.5	15.5	12	30	22	17	52	**GE06SR3/8EDOMD**	630	630	630	
	06	G1/2A	4	27	39.0	18.0	14	33	27	17	83	**GE06SR1/2EDOMD**	630	630	630	
	08	G1/4A	5	19	34.0	15.0	12	30	19	19	41	**GE08SREDOMD**	800	630	630	400
	08	G3/8A	5	22	34.5	15.5	12	30	22	19	57	**GE08SR3/8EDOMD**	800	630	630	
	08	G1/2A	5	27	39.0	18.0	14	33	27	19	89	**GE08SR1/2EDOMD**	630	400	400	
	10	G3/8A	7	22	34.5	15.0	12	31	22	22	55	**GE10SREDOMD**	800	630	630	400
	10	G1/4A	5	19	34.0	14.5	12	31	19	22	42	**GE10SR1/4EDOMD**	800	630	630	
	10	G1/2A	7	27	39.0	17.5	14	34	27	22	97	**GE10SR1/2EDOMD**	630	630	630	
	12	G3/8A	8	22	36.5	17.0	12	33	22	24	62	**GE12SREDOMD**	630	630	630	400
	12	G1/4A	5	19	36.0	16.5	12	33	22	24	61	**GE12SR1/4EDOMD**	630	630	630	
	12	G1/2A	8	27	39.0	17.5	14	34	27	24	99	**GE12SR1/2EDOMD**	630	630	630	
	14	G1/2A	10	27	41.0	19.0	14	37	27	27	96	**GE14SREDOMD**	630	630	630	400
	14	G3/8A	8	22	38.5	18.5	12	36	24	27	74	**GE14SR3/8EDOMD**	630	630	630	
	14	G3/4A	10	32	45.0	21.0	16	39	32	27	138	**GE14SR3/4EDOMD**	400	400	400	
	16	G1/2A	12	27	41.0	18.5	14	37	27	30	91	**GE16SREDOMD**	630	400	400	250
	16	G3/8A	8	22	38.5	18.0	12	36	27	30	83	**GE16SR3/8EDOMD**	630	400	400	
	16	G3/4A	12	32	45.0	20.5	16	39	32	30	152	**GE16SR3/4EDOMD**	420	400	400	
	20	G3/4A	16	32	47.0	20.5	16	42	32	36	149	**GE20SREDOMD**	420	400	400	250
	20	G1/2A	12	27	45.0	20.5	14	42	32	36	142	**GE20SR1/2EDOMD**	420	400	400	
	20	G1A	16	40	51.0	22.5	18	44	41	36	265	**GE20SR1EDOMD**	420	400	400	
	20	G11/4A	16	50	53.0	22.5	20	44	50	36	404	**GE20SR11/4EDOMD**	400	400	400	
	25	G1A	20	40	53.0	23.0	18	47	41	46	266	**GE25SREDOMD**	420	400	400	250
	25	G1/2A	12	27	49.0	23.0	14	47	41	46	228	**GE25SR1/2EDOMD**	420	400	400	
	25	G3/4A	16	32	51.0	23.0	16	47	41	46	255	**GE25SR3/4EDOMD**	420	400	400	
	25	G11/4A	20	50	55.0	23.0	20	47	50	46	411	**GE25SR11/4EDOMD**	400	400	400	
	25	G11/2A	20	55	60.0	26.0	22	50	55	46	549	**GE25SR11/2EDOMD**	315	315	315	
	30	G11/4A	25	50	57.0	23.5	20	50	50	50	418	**GE30SREDOMD**	420	400	400	250
	30	G1A	20	40	55.0	23.5	18	50	46	50	344	**GE30SR1EDOMD**	420	400	400	
	30	G11/2A	25	55	62.0	26.5	22	53	55	50	530	**GE30SR11/2EDOMD**	315	315	315	
	38	G11/2A	32	55	64.0	26.0	22	57	55	60	563	**GE38SREDOMD**	420	315	315	200
	38	G11/4A	25	50	62.0	26.0	20	57	55	60	575	**GE38SR11/4EDOMD**	420	315	315	

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{PN\ (bar)}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GE16SREDOMDCF	NBR
Stahl, zinc yellow plated	A3C	GE16SREDOMDA3C	NBR
Stainless Steel	71	GE16SREDOMD71	VIT
Brass	MS	GE16SREDOMDMS	NBR

The corresponding order variant is contained in the table printed at the bottom of every DIN chapter.

The right way to order made easy!

Step 1
Selecting order code

1.1 All fitting sizes available in our fitting program are clearly listed in the index at the front of this catalogue.

1.2 Open the catalogue at the corresponding page containing detailed information of the product of your choice.

1.3 Select the required fitting size! The basic order code is printed in bold type on the right-hand side of the table of dimensions.

Example: **GE16SREDOMD**

Step 2
Selecting material, surface and sealing-material

Now simply add the corresponding code for the surface and material variant of the product you require to the basic order code.
This code is contained in the table printed at the bottom of every page.

2.1 Alternative sealing material

Example: chromium[6]-free steel fitting with ED-seal in FKM material (e. g. Viton®).
GE16SRED+OMD+**VIT+CF**
= GE16SREDVITOMDCF

Example: Stainless steel fitting with ED-seal in NBR material (e. g. Perbunan).
GE16SRED**OMD+NBR+71**
= GE16SREDNBROMD71

Step 3
When ordering fittings complete with nuts and rings

3.1. Metal sealed cutting rings PSR/DPR/D: For these types please delete the 'OMD' or 'X' suffixes.
Example: **GE16SREDCF**

3.2. Soft sealed EO-2 functional nut: For these types please delete the 'OMD' or 'X' suffixes and add a **'Z'** before the series suffix (LL, L, S)
Example: **order with EO-2 functional nut**
GE16**(+Z)**SREDCF
= GE16ZSREDCF

Viton® = registered trademark of DuPont
Perbunan = registered trademark of Bayer

How to order EO-Fittings:

Nomenclature

Example: **GE16ZSR3/8EDCF**

Type
Code for shape or style see visual index

Tube-O.D. Dia in mm
Example:
16 16 mm Dia

PSR/DPR/EO-2 Version

(blank)	PSR/DPR/D Cutting Ring D for LL-Series and brass Progressivring DPR for stainless steel Progressive Stop Ring PSR for steel
Z	EO-2

Series

LL	Very Light
L	Light
S	Heavy

Thread type and size

Type

M…	Metric parallel
M…KEG	Metric tapered
R…	BSPP
R…KEG	BSPT
…UN/UNF	SAE straight
…NPT	Pipe thread

Size
No size: standard
Thread size

Example:
1/2 1/2″
(only shown on jump sizes)

Seal type

(blank)		Standard seal
	ISO 6149	O-ring
	M/R	Metal cutting edge
	M/R KEG	Tapered thread
	UN/UNF	O-ring
	NPT	Tapered thread
ED	M/R	Eolastic seal
KD	WH/TH	Plastic banjo seal
KDS	WH/TH	Elastomeric banjo seal

Fitting material/coating

CF	Chromium[6]-free
A3C	Steel, Zink-plated and yellow chromated
71	Stainless steel
MS	Brass
VZ	Zinc-plated (Tube only)
(blank)	Steel, black phosphated (Special)

Assembly

OMD	Without nut and ring, but including all other components such as seals
X	Body only Basic fitting body without any nut, ring, seal or other Ccomponent

Seal material

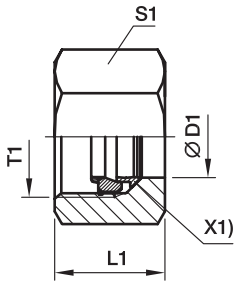
NBR	Nitrile Rubber (Omitted for steel and brass fittings)
VIT	Fluorocarbon FKM (Omitted for stainless steel fittings)

Examples

Order code	Description
GE12ZSR1/2EDCF	Straight male stud, EO-2, 20 mm tube O.D., heavy series, G 1/2 BSPP, Eolastic seal, complete with nut and ring, chromium[6]-free steel fitting, all seals NBR
GE12LR71X	Straight male stud, 12 mm tube O.D., light series, G 3/8 BSPP, metal seal type B, stainless steel fitting, body only
EVT08LOMDMS	Adjustable standpipe branch tee, 8 mm tube O.D., light series, brass fitting without nut and ring, standpipe preassembled with nut and ring.
EL38VITOMDA3C	Adjustable swivel nut run tee 38 mm tube O.D., heavy series, zinc-plated steel fitting without nut and ring. Swivel nut end with FKM seal
DOZ04LL	Spare seal for EO-2 joints, 4 mm O.D., very light series, steel with nitrile rubber seal

FM EO2-Functional nut

for steel tubes



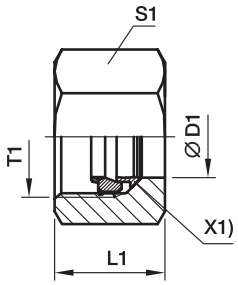
X1) Retaining ring

Series	D1	T1	L1	S1	Order code FM…CF Steel, zinc plated Cr6 free passiv. +Sealing Sealing NBR	PN (bar)	FM…VITCF Steel, zinc plated Cr6 free passiv. +Sealing Sealing FKM	PN (bar)	FM…A3C Steel, zinc yellow plated A3C Sealing NBR	PN (bar)	FM…VITA3C Steel, zinc yellow plated A3C Sealing FKM	PN (bar)	Weight g/1 piece
LL	04	M8×1	11.0	10	—	—	—	—	**FM04LLA3C**	100	—	—	5
	06	M10×1	11.5	12	—	—	—	—	**FM06LLA3C**	100	—	—	6
L	06	M12×1.5	14.5	14	**FM06LCF**	500	**FM06LVITCF**	500	**FM06LA3C**	315	**FM06LVITA3C**	315	12
	08	M14×1.5	14.5	17	**FM08LCF**	500	**FM08LVITCF**	500	**FM08LA3C**	315	**FM08LVITA3C**	315	17
	10	M16×1.5	15.5	19	**FM10LCF**	500	**FM10LVITCF**	500	**FM10LA3C**	315	**FM10LVITA3C**	315	22
	12	M18×1.5	15.5	22	**FM12LCF**	400	**FM12LVITCF**	400	**FM12LA3C**	315	**FM12LVITA3C**	315	30
	15	M22×1.5	17.0	27	**FM15LCF**	400	**FM15LVITCF**	400	**FM15LA3C**	315	**FM15LVITA3C**	315	48
	18	M26×1.5	18.0	32	**FM18LCF**	400	**FM18LVITCF**	400	**FM18LA3C**	315	**FM18LVITA3C**	315	70
	22	M30×2	20.0	36	**FM22LCF**	250	**FM22LVITCF**	250	**FM22LA3C**	160	**FM22LVITA3C**	160	94
	28	M36×2	21.0	41	**FM28LCF**	250	**FM28LVITCF**	250	**FM28LA3C**	160	**FM28LVITA3C**	160	106
	35	M45×2	24.0	50	**FM35LCF**	250	**FM35LVITCF**	250	**FM35LA3C**	160	**FM35LVITA3C**	160	160
	42	M52×2	24.0	60	**FM42LCF**	250	**FM42LVITCF**	250	**FM42LA3C**	160	**FM42LVITA3C**	160	244
S	06	M14×1.5	16.5	17	**FM06SCF**	800	**FM06SVITCF**	800	**FM06SA3C**	630	**FM06SVITA3C**	630	20
	08	M16×1.5	16.5	19	**FM08SCF**	800	**FM08SVITCF**	800	**FM08SA3C**	630	**FM08SVITA3C**	630	23
	10	M18×1.5	17.5	22	**FM10SCF**	800	**FM10SVITCF**	800	**FM10SA3C**	630	**FM10SVITA3C**	630	37
	12	M20×1.5	17.5	24	**FM12SCF**	630	**FM12SVITCF**	630	**FM12SA3C**	630	**FM12SVITA3C**	630	39
	14	M22×1.5	20.5	27	**FM14SCF**	630	**FM14SVITCF**	630	**FM14SA3C**	630	**FM14SVITA3C**	630	60
	16	M24×1.5	20.5	30	**FM16SCF**	630	**FM16SVITCF**	630	**FM16SA3C**	400	**FM16SVITA3C**	400	72
	20	M30×2	24.0	36	**FM20SCF**	420	**FM20SVITCF**	420	**FM20SA3C**	400	**FM20SVITA3C**	400	121
	25	M36×2	27.0	46	**FM25SCF**	420	**FM25SVITCF**	420	**FM25SA3C**	400	**FM25SVITA3C**	400	221
	30	M42×2	29.0	50	**FM30SCF**	420	**FM30SVITCF**	420	**FM30SA3C**	400	**FM30SVITA3C**	400	248
	38	M52×2	32.5	60	**FM38SCF**	420	**FM38SVITCF**	420	**FM38SA3C**	315	**FM38SVITA3C**	315	367

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

FM EO2-Functional nut

for stainless steel tubes



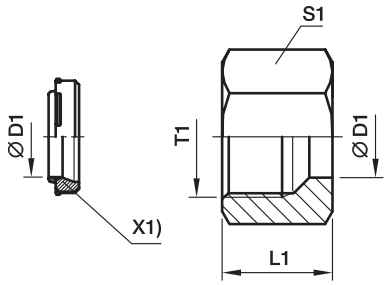
X1) Retaining ring

Series	D1	T1	L1	S1	Order code FM…71 Stainless Steel Sealing FKM	PN (bar)	FM…NBR71 Stainless Steel Sealing NBR	PN (bar)	FM…SSA Steel, zinc plated Cr6 free passiv. +Sealing, Retaining ring: Stainless Steel Sealing NBR	PN (bar)	FM…VITSSA Steel, zinc plated Cr6 free passiv. +Sealing, Retaining ring: Stainless Steel Sealing FKM	PN (bar)	Weight g/1 piece
LL	04	M8×1	11.0	10	—	—	—	—	**FM04LLASSA**	100	—	—	5
	06	M10×1	11.5	12	—	—	—	—	**FM06LLSSA**	100	—	—	6
L	06	M12×1.5	14.5	14	**FM06L71**	315	**FM06LNBR71**	315	**FM06LSSA**	315	**FM06LVITSSA**	315	12
	08	M14×1.5	14.5	17	**FM08L71**	315	**FM08LNBR71**	315	**FM08LSSA**	315	**FM08LVITSSA**	315	17
	10	M16×1.5	15.5	19	**FM10L71**	315	**FM10LNBR71**	315	**FM10LSSA**	315	**FM10LVITSSA**	315	22
	12	M18×1.5	15.5	22	**FM12L71**	315	**FM12LNBR71**	315	**FM12LSSA**	315	**FM12LVITSSA**	315	30
	15	M22×1.5	17.0	27	**FM15L71**	315	**FM15LNBR71**	315	**FM15LSSA**	315	**FM15LVITSSA**	315	48
	18	M26×1.5	18.0	32	**FM18L71**	315	**FM18LNBR71**	315	**FM18LSSA**	315	**FM18LVITSSA**	315	70
	22	M30×2	20.0	36	**FM22L71**	160	**FM22LNBR71**	160	**FM22LSSA**	160	**FM22LVITSSA**	160	94
	28	M36×2	21.0	41	**FM28L71**	160	**FM28LNBR71**	160	**FM28LSSA**	160	**FM28LVITSSA**	160	106
	35	M45×2	24.0	50	**FM35L71**	160	**FM35LNBR71**	160	**FM35LSSA**	160	**FM35LVITSSA**	160	160
	42	M52×2	24.0	60	**FM42L71**	160	**FM42LNBR71**	160	**FM42LSSA**	160	**FM42LVITSSA**	160	244
S	06	M14×1.5	16.5	17	**FM06S71**	630	**FM06SNBR71**	630	**FM06SSSA**	630	**FM06SVITSSA**	630	20
	08	M16×1.5	16.5	19	**FM08S71**	630	**FM08SNBR71**	630	**FM08SSSA**	630	**FM08SVITSSA**	630	23
	10	M18×1.5	17.5	22	**FM10S71**	630	**FM10SNBR71**	630	**FM10SSSA**	630	**FM10SVITSSA**	630	37
	12	M20×1.5	17.5	24	**FM12S71**	630	**FM12SNBR71**	630	**FM12SSSA**	630	**FM12SVITSSA**	630	39
	14	M22×1.5	20.5	27	**FM14S71**	630	**FM14SNBR71**	630	**FM14SSSA**	630	**FM14SVITSSA**	630	60
	16	M24×1.5	20.5	30	**FM16S71**	400	**FM16SNBR71**	400	**FM16SSSA**	400	**FM16SVITSSA**	400	72
	20	M30×2	24.0	36	**FM20S71**	400	**FM20SNBR71**	400	**FM20SSSA**	400	**FM20SVITSSA**	400	121
	25	M36×2	27.0	46	**FM25S71**	400	**FM25SNBR71**	400	**FM25SSSA**	400	**FM25SVITSSA**	400	221
	30	M42×2	29.0	50	**FM30S71**	400	**FM30SNBR71**	400	**FM30SSSA**	400	**FM30SVITSSA**	400	248
	38	M52×2	32.5	60	**FM38S71**	315	**FM38SNBR71**	315	**FM38SSSA**	315	**FM38SVITSSA**	315	367

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

EO2-FORM Set

for steel tubes

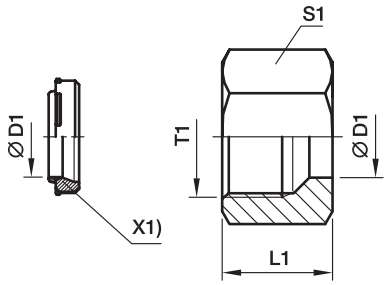


X1) Sealing (DOZ)

Series	D1	T1	L1	S1	Order code FORM…CF Steel, zinc plated Cr6 free +Seal NBR	FORM…VITCF Steel, zinc plated Cr6 free +Seal FKM	FORM…A3C Steel, zinc yellow plated A3C NBR	FORM…VITA3C Steel, zinc yellow plated A3C FKM	Weight g/1 piece
L	06	M12×1.5	14.5	14	**FORM06LCF**	**FORM06LVITCF**	**FORM06LA3C**	**FORM06LVITA3C**	11
	08	M14×1.5	14.5	17	**FORM08LCF**	**FORM08LVITCF**	**FORM08LA3C**	**FORM08LVITA3C**	16
	10	M16×1.5	15.5	19	**FORM10LCF**	**FORM10LVITCF**	**FORM10LA3C**	**FORM10LVITA3C**	20
	12	M18×1.5	15.5	22	**FORM12LCF**	**FORM12LVITCF**	**FORM12LA3C**	**FORM12LVITA3C**	27
	15	M22×1.5	17.0	27	**FORM15LCF**	**FORM15LVITCF**	**FORM15LA3C**	**FORM15LVITA3C**	45
	18	M26×1.5	18.0	32	**FORM18LCF**	**FORM18LVITCF**	**FORM18LA3C**	**FORM18LVITA3C**	67
	22	M30×2	20.0	36	**FORM22LCF**	**FORM22LVITCF**	**FORM22LA3C**	**FORM22LVITA3C**	88
	28	M36×2	21.0	41	**FORM28LCF**	**FORM28LVITCF**	**FORM28LA3C**	**FORM28LVITA3C**	99
	35	M45×2	24.0	50	**FORM35LCF**	**FORM35LVITCF**	**FORM35LA3C**	**FORM35LVITA3C**	162
	42	M52×2	24.0	60	**FORM42LCF**	**FORM42LVITCF**	**FORM42LA3C**	**FORM42LVITA3C**	233
S	06	M14×1.5	16.5	17	**FORM06SCF**	**FORM06SVITCF**	**FORM06SA3C**	**FORM06SVITA3C**	19
	08	M16×1.5	16.5	19	**FORM08SCF**	**FORM08SVITCF**	**FORM08SA3C**	**FORM08SVITA3C**	22
	10	M18×1.5	17.5	22	**FORM10SCF**	**FORM10SVITCF**	**FORM10SA3C**	**FORM10SVITA3C**	34
	12	M20×1.5	17.5	24	**FORM12SCF**	**FORM12SVITCF**	**FORM12SA3C**	**FORM12SVITA3C**	38
	14	M22×1.5	20.5	27	**FORM14SCF**	**FORM14SVITCF**	**FORM14SA3C**	**FORM14SVITA3C**	57
	16	M24×1.5	20.5	30	**FORM16SCF**	**FORM16SVITCF**	**FORM16SA3C**	**FORM16SVITA3C**	71
	20	M30×2	24.0	36	**FORM20SCF**	**FORM20SVITCF**	**FORM20SA3C**	**FORM20SVITA3C**	115
	25	M36×2	27.0	46	**FORM25SCF**	**FORM25SVITCF**	**FORM25SA3C**	**FORM25SVITA3C**	216
	30	M42×2	29.0	50	**FORM30SCF**	**FORM30SVITCF**	**FORM30SA3C**	**FORM30SVITA3C**	242
	38	M52×2	32.5	60	**FORM38SCF**	**FORM38SVITCF**	**FORM38SA3C**	**FORM38SVITA3C**	366

EO2-FORM Set

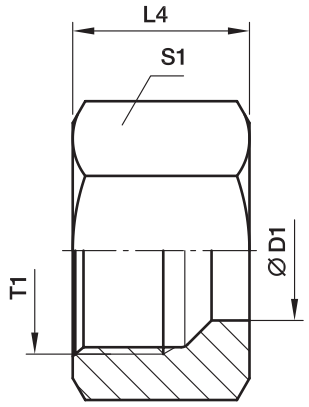
for stainless steel tubes



X1) Sealing (DOZ)

Series	D1	T1	L1	S1	Order code FORM…71 Stainless Steel Sealing FKM	FORM…NBR71 Stainless Steel Sealing NBR	FORM…CF Steel, zinc plated Cr6 free +Seal NBR	FORM…VITCF Steel, zinc Cr6 free +Seal FKM	Weight g/1 piece
L	06	M12×1.5	14.5	14	**FORM06L71**	**FORM06LNBR71**	**FORM06LCF**	**FORM06LVITCF**	11
	08	M14×1.5	14.5	17	**FORM08L71**	**FORM08LNBR71**	**FORM08LCF**	**FORM08LVITCF**	16
	10	M16×1.5	15.5	19	**FORM10L71**	**FORM10LNBR71**	**FORM10LCF**	**FORM10LVITCF**	21
	12	M18×1.5	15.5	22	**FORM12L71**	**FORM12LNBR71**	**FORM12LCF**	**FORM12LVITCF**	27
	15	M22×1.5	17.0	27	**FORM15L71**	**FORM15LNBR71**	**FORM15LCF**	**FORM15LVITCF**	46
	18	M26×1.5	18.0	32	**FORM18L71**	**FORM18LNBR71**	**FORM18LCF**	**FORM18LVITCF**	68
	22	M30×2	20.0	36	**FORM22L71**	**FORM22LNBR71**	**FORM22LCF**	**FORM22LVITCF**	89
	28	M36×2	21.0	41	**FORM28L71**	**FORM28LNBR71**	**FORM28LCF**	**FORM28LVITCF**	101
	35	M45×2	24.0	50	**FORM35L71**	**FORM35LNBR71**	**FORM35LCF**	**FORM35LVITCF**	165
	42	M52×2	24.0	60	**FORM42L71**	**FORM42LNBR71**	**FORM42LCF**	**FORM42LVITCF**	237
S	06	M14×1.5	16.5	17	**FORM06S71**	**FORM06SNBR71**	**FORM06SCF**	**FORM06SVITCF**	19
	08	M16×1.5	16.5	19	**FORM08S71**	**FORM08SNBR71**	**FORM08SCF**	**FORM08SVITCF**	22
	10	M18×1.5	17.5	22	**FORM10S71**	**FORM10SNBR71**	**FORM10SCF**	**FORM10SVITCF**	35
	12	M20×1.5	17.5	24	**FORM12S71**	**FORM12SNBR71**	**FORM12SCF**	**FORM12SVITCF**	39
	14	M22×1.5	20.5	27	**FORM14S71**	**FORM14SNBR71**	**FORM14SCF**	**FORM14SVITCF**	58
	16	M24×1.5	20.5	30	**FORM16S71**	**FORM16SNBR71**	**FORM16SCF**	**FORM16SVITCF**	71
	20	M30×2	24.0	36	**FORM20S71**	**FORM20SNBR71**	**FORM20SCF**	**FORM20SVITCF**	117
	25	M36×2	27.0	46	**FORM25S71**	**FORM25SNBR71**	**FORM25SCF**	**FORM25SVITCF**	219
	30	M42×2	29.0	50	**FORM30S71**	**FORM30SNBR71**	**FORM30SCF**	**FORM30SVITCF**	246
	38	M52×2	32.5	60	**FORM38S71**	**FORM38SNBR71**	**FORM38SCF**	**FORM38SVITCF**	372

M Nut · EO 24° Cone end



Nut: M

Series	D1	T1	L4	S1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	M8×1	11.0	10	4	**M04LL**	100	100	100	63
	06	M10×1	11.5	12	6	**M06LL**	100	100	100	63
	08	M12×1	12.0	14	7	**M08LL**	100	100	100	63
	10	M14×1	12.5	17	11	**M10LL**	100	100	100	63
	12	M16×1	13.0	19	13	**M12LL**	100	100	100	63
L[3])	06	M12×1.5	14.5	14	10	**M06L**	500	315	315	200
	08	M14×1.5	14.5	17	15	**M08L**	500	315	315	200
	10	M16×1.5	15.5	19	18	**M10L**	500	315	315	200
	12	M18×1.5	15.5	22	25	**M12L**	400	315	315	200
	15	M22×1.5	17.0	27	42	**M15L**	400	315	315	200
	18	M26×1.5	18.0	32	62	**M18L**	400	315	315	200
	22	M30×2	20.0	36	82	**M22L**	250	160	160	100
	28	M36×2	21.0	41	89	**M28L**	250	160	160	100
	35	M45×2	24.0	50	137	**M35L**	250	160	160	100
	42	M52×2	24.0	60	216	**M42L**	250	160	160	100
S[4])	06	M14×1.5	16.5	17	17	**M06S**	800	630	630	400
	08	M16×1.5	16.5	19	20	**M08S**	800	630	630	400
	10	M18×1.5	17.5	22	31	**M10S**	800	630	630	400
	12	M20×1.5	17.5	24	34	**M12S**	630	630	630	400
	14	M22×1.5	20.5	27	53	**M14S**	630	630	630	400
	16	M24×1.5	20.5	30	66	**M16S**	630	400	400	250
	20	M30×2	24.0	36	102	**M20S**	420	400	400	250
	25	M36×2	27.0	46	202	**M25S**	420	400	400	250
	30	M42×2	29.0	50	219	**M30S**	420	400	400	250
	38	M52×2	32.5	60	339	**M38S**	420	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

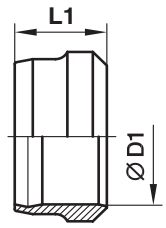
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

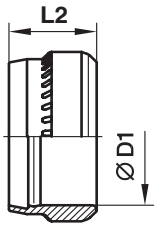
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	M16SCFX
Steel, zinc yellow plated	A3CX	M16SA3CX
Stainless Steel	EODURX	M16SEODURX
Brass	MSX	M16SMSX

PSR Progressive stop ring · DPR Progressive ring · D Cutting ring

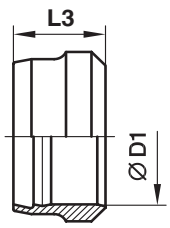
for EO 24° cone end



Cutting ring: D



Progressive stop ring: PSR



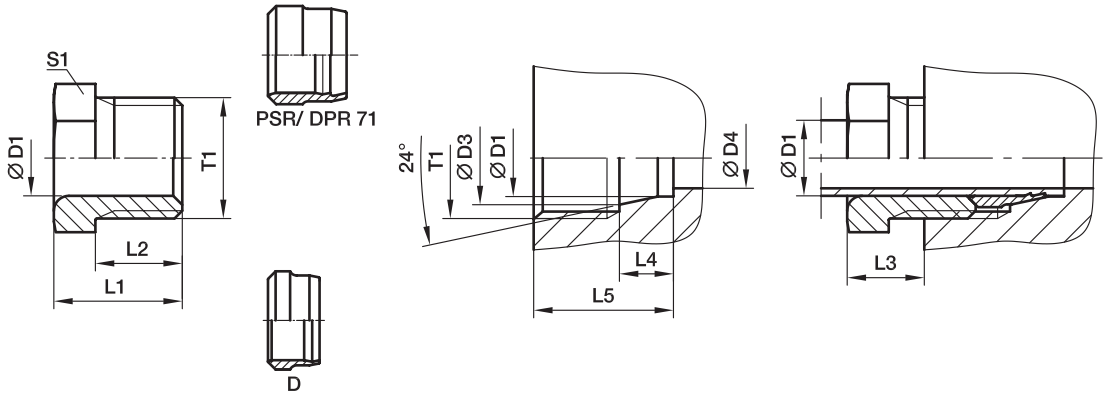
Progressive ring: DPR

		Cutting ring **D**							Progressive stop ring **PSR**			Progressive ring **DPR**			
			Order code* Steel, zinc plated Cr6 free		Stainless Steel		Brass			Order code Steel, zinc plated Cr6 free			Order code Stainless Steel		
Series	D1	L1		PN (bar)		PN (bar)		PN (bar)	L2		PN (bar)	L3		PN (bar)	Weight g/1 pc.
LL	04	6.0	**D04LLX**	100	**D04LL71X**	100	**D04LLMSX**	63	—	—	—	—	—	—	0.3
	06	7.0	**D06LLX**	100	**D06LL71X**	100	**D06LLMSX**	63	—	—	—	—	—	—	0.8
	08	7.0	**D08LLX**	100	**D08LL71X**	100	**D08LLMSX**	63	—	—	—	—	—	—	1.0
	10	7.0	**D10LLX**	100	**D10LL71X**	100	**D10LLMSX**	63	—	—	—	—	—	—	1.3
	12	7.5	**D12LLX**	100	**D12LL71X**	100	**D12LLMSX**	63	—	—	—	—	—	—	1.6
L	06	9.5	—	—	—	—	**D06LMSX**	200	9.5	**PSR06LX**	500	9.0	**DPR06L71X**	315	1.7
	08	9.0	—	—	—	—	**D08LMSX**	200	9.5	**PSR08LX**	500	9.0	**DPR08L71X**	315	2.2
	10	10.0	—	—	—	—	**D10LMSX**	200	10.0	**PSR10LX**	500	9.5	**DPR10L71X**	315	3.1
	12	10.0	—	—	—	—	**D12LMSX**	200	10.0	**PSR12LX**	400	9.8	**DPR12L71X**	315	3.5
	15	10.0	—	—	—	—	**D15LMSX**	200	10.0	**PSR15LX**	400	9.5	**DPR15L71X**	315	4.5
	18	10.0	—	—	—	—	**D18LMSX**	200	10.0	**PSR18LX**	400	9.5	**DPR18L71X**	315	5.5
	22	10.5	—	—	—	—	**D22LMSX**	100	10.5	**PSR22LX**	250	10.5	**DPR22L71X**	160	7.3
	28	10.5	—	—	—	—	**D28LMSX**	100	10.5	**PSR28LX**	250	11.0	**DPR28L71X**	160	9.4
	35	13.0	—	—	—	—	**D35LMSX**	100	13.0	**PSR35LX**	250	13.5	**DPR35L71X**	160	20.0
	42	13.5	—	—	—	—	**D42LMSX**	100	13.0	**PSR42LX**	250	13.5	**DPR42L71X**	160	23.0
S	06	9.5	—	—	—	—	**D06LMSX**	400	9.5	**PSR06LX**	800	9.0	**DPR06L71X**	630	1.7
	08	9.0	—	—	—	—	**D08LMSX**	400	9.5	**PSR08LX**	800	9.0	**DPR08L71X**	630	3.2
	10	10.0	—	—	—	—	**D10LMSX**	400	10.0	**PSR10LX**	800	9.5	**DPR10L71X**	630	3.1
	12	10.0	—	—	—	—	**D12LMSX**	400	10.0	**PSR12LX**	630	9.8	**DPR12L71X**	630	3.5
	14	10.0	—	—	—	—	**D14SMSX**	400	10.0	**PSR14SX**	630	9.5	**DPR14S71X**	630	3.9
	16	10.5	—	—	—	—	**D16SMSX**	250	10.0	**PSR16SX**	630	9.5	**DPR16S71X**	400	5.6
	20	12.5	—	—	—	—	**D20SMSX**	250	13.0	**PSR20SX**	420	12.5	**DPR20S71X**	400	11.4
	25	12.5	—	—	—	—	**D25SMSX**	250	13.0	**PSR25SX**	420	12.5	**DPR25S71X**	400	13.3
	30	13.0	—	—	—	—	**D30SMSX**	250	13.0	**PSR30SX**	420	12.5	**DPR30S71X**	400	19.3
	38	13.5	—	—	—	—	**D38SMSX**	200	13.0	**PSR38SX**	420	13.0	**DPR38S71X**	315	22.5

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

S Sleeve screw

for threaded ports according to DIN 3854



Series	D1	T1	D3	D4	L1	L2	L3	L4	L5	S1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
LL[2])	04	M8×1	5.0	3.0	12	8.0	6	4.0	12.5	8	3	**S04LL**	100	100	100
	06	M10×1	7.5	4.5	13	9.0	7	5.5	14.5	10	4	**S06LL**	100	100	100
	08	M12×1	9.5	6.0	14	9.5	7	5.5	14.5	12	6	**S08LL**	100	100	100
L[3])	06	M12×1.5	8.1	4.0	16	11.5	10	7.0	18.5	12	9	**S06L**	315	315	315
	08	M14×1.5	10.1	6.0	16	11.5	10	7.0	18.5	14	11	**S08L**	315	315	315
	10	M16×1.5	12.3	8.0	17	11.5	10	7.0	18.5	17	15	**S10L**	315	315	315
	12	M18×1.5	14.3	10.0	18	12.0	10	7.0	19.0	19	19	**S12L**	315	315	315

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series

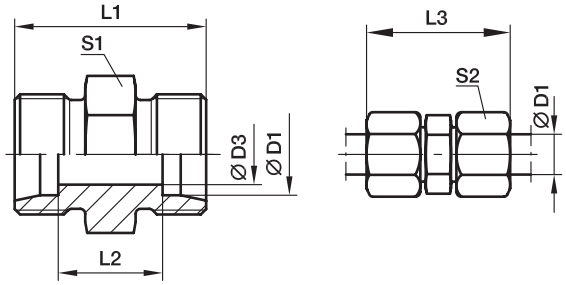
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	S10LCFX
Steel, zinc yellow plated	A3CX	S10LA3CX
Stainless Steel	71X	S10L71X

G Union

EO 24°cone end



Series	D1	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	3.0	20	12	31	9	10	5	**G04LL**	100	100	100	63
	06	4.5	20	9	32	11	12	7	**G06LL**	100	100	100	63
	08	6.0	23	12	35	12	14	10	**G08LL**	100	100	100	63
	10	8.0	23	12	35	14	17	13	**G10LL**	100	100	100	63
	12	10.0	23	11	35	17	19	16	**G12LL**	100	100	100	63
L[3])	06	4.0	24	10	39	12	14	12	**G06L**	500	315	315	200
	08	6.0	25	11	40	14	17	16	**G08L**	500	315	315	200
	10	8.0	27	13	42	17	19	23	**G10L**	500	315	315	200
	12	10.0	28	14	43	19	22	28	**G12L**	400	315	315	200
	15	12.0	30	16	46	24	27	51	**G15L**	400	315	315	200
	18	15.0	31	16	48	27	32	69	**G18L**	400	315	315	200
	22	19.0	35	20	52	32	36	90	**G22L**	250	160	160	100
	28	24.0	36	21	54	41	41	137	**G28L**	250	160	160	100
	35	30.0	41	20	63	46	50	214	**G35L**	250	160	160	100
	42	36.0	43	21	66	55	60	296	**G42L**	250	160	160	100
S[4])	06	4.0	30	16	45	14	17	26	**G06S**	800	630	630	400
	08	5.0	32	18	47	17	19	37	**G08S**	800	630	630	400
	10	7.0	32	17	49	19	22	44	**G10S**	800	630	630	400
	12	8.0	34	19	51	22	24	60	**G12S**	630	630	630	400
	14	10.0	38	22	57	24	27	77	**G14S**	630	630	630	400
	16	12.0	38	21	57	27	30	90	**G16S**	630	400	400	250
	20	16.0	44	23	66	32	36	143	**G20S**	420	400	400	250
	25	20.0	50	26	74	41	46	251	**G25S**	420	400	400	250
	30	25.0	54	27	80	46	50	330	**G30S**	420	400	400	250
	38	32.0	61	29	90	55	60	545	**G38S**	420	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

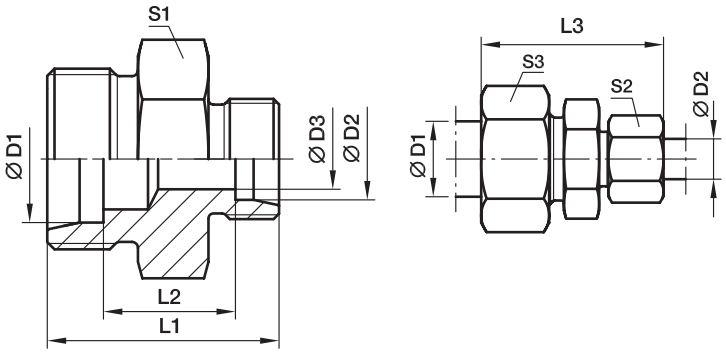
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	G16SCFX
Steel, zinc yellow plated	A3CX	G16SA3CX
Stainless Steel	71X	G16S71X
Brass	MSX	G16SMSX

*Please add the **suffixes** below according to the material/ surface required.

GR Straight reducer

EO 24° cone end



Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	06	04	3.0	20	10.5	32	11	10	12	7	**GR06/04LL**	100	100	100	63
	08	04	3.0	22	12.5	34	12	10	14	9	**GR08/04LL**	100	100	100	63
	08	06	4.5	22	11.0	34	12	12	14	11	**GR08/06LL**	100	100	100	63
L[3])	08	06	4.0	25	11.0	40	14	14	17	16	**GR08/06L**	500	315	315	200
	10	06	4.0	26	12.0	41	17	14	19	21	**GR10/06L**	500	315	315	200
	10	08	6.0	26	12.0	41	17	17	19	21	**GR10/08L**	500	315	315	200
	12	06	4.0	27	13.0	42	19	14	22	26	**GR12/06L**	400	315	315	200
	12	08	6.0	27	13.0	42	19	17	22	26	**GR12/08L**	400	315	315	200
	12	10	8.0	28	14.0	43	19	19	22	29	**GR12/10L**	400	315	315	200
	15	10	8.0	29	15.0	45	24	19	27	46	**GR15/10L**	400	315	315	200
	15	12	10.0	29	15.0	45	24	22	27	45	**GR15/12L**	400	315	315	200
	18	10	8.0	30	15.5	46	27	19	32	65	**GR18/10L**	400	315	315	200
	18	12	10.0	30	15.5	46	27	22	32	64	**GR18/12L**	400	315	315	200
	18	15	12.0	31	16.5	48	27	27	32	65	**GR18/15L**	400	315	315	200
	22	12	10.0	32	17.5	48	32	22	36	80	**GR22/12L**	250	160	160	100
	22	15	12.0	33	18.5	50	32	27	36	89	**GR22/15L**	250	160	160	100
	22	18	15.0	33	18.0	50	32	32	36	89	**GR22/18L**	250	160	160	100
	28	18	15.0	34	19.0	52	41	32	41	142	**GR28/18L**	250	160	160	100
	28	22	19.0	36	21.0	54	41	36	41	139	**GR28/22L**	250	160	160	100
	35	22	19.0	39	21.0	59	46	36	50	202	**GR35/22L**	250	160	160	100
	35	28	24.0	39	21.0	59	46	41	50	206	**GR35/28L**	250	160	160	100
	42	35	30.0	43	21.5	66	55	50	60	330	**GR42/35L**	250	160	160	100
S[4])	08	06	4.0	32	18.0	47	17	17	19	35	**GR08/06S**	800	630	630	400
	10	06	4.0	32	17.5	48	19	17	22	41	**GR10/06S**	800	630	630	400
	10	08	5.0	32	17.5	48	19	19	22	42	**GR10/08S**	800	630	630	400
	12	06	4.0	34	19.5	50	22	17	24	56	**GR12/06S**	630	630	630	400
	12	08	5.0	34	19.5	50	22	19	24	57	**GR12/08S**	630	630	630	400
	12	10	7.0	34	19.0	51	22	22	24	59	**GR12/10S**	630	630	630	400
	14	10	7.0	36	20.5	54	24	22	27	70	**GR14/10S**	630	630	630	400
	14	12	8.0	36	20.5	54	24	24	27	72	**GR14/12S**	630	630	630	400
	16	10	7.0	36	20.0	54	27	22	30	80	**GR16/10S**	630	400	400	250
	16	12	8.0	36	20.0	54	27	24	30	87	**GR16/12S**	630	400	400	250
	16	14	10.0	36	21.5	57	27	27	30	79	**GR16/14S**	630	400	400	250
	20	10	7.0	40	22.0	60	32	22	36	129	**GR20/10S**	420	400	400	250
	20	12	8.0	40	22.0	60	32	24	36	131	**GR20/12S**	420	400	400	250
	20	16	12.0	42	23.0	63	32	30	36	134	**GR20/16S**	420	400	400	250
	25	16	12.0	46	25.5	68	41	30	46	236	**GR25/16S**	420	400	400	250
	25	20	16.0	48	25.5	71	41	36	46	235	**GR25/20S**	420	400	400	250
	30	20	16.0	50	26.0	74	46	36	50	299	**GR30/20S**	420	400	400	250
	30	25	20.0	52	26.5	77	46	46	50	317	**GR30/25S**	420	400	400	250
	38	30	25	59	29.5	87	55	50	60	522	**GR38/30S**	420	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

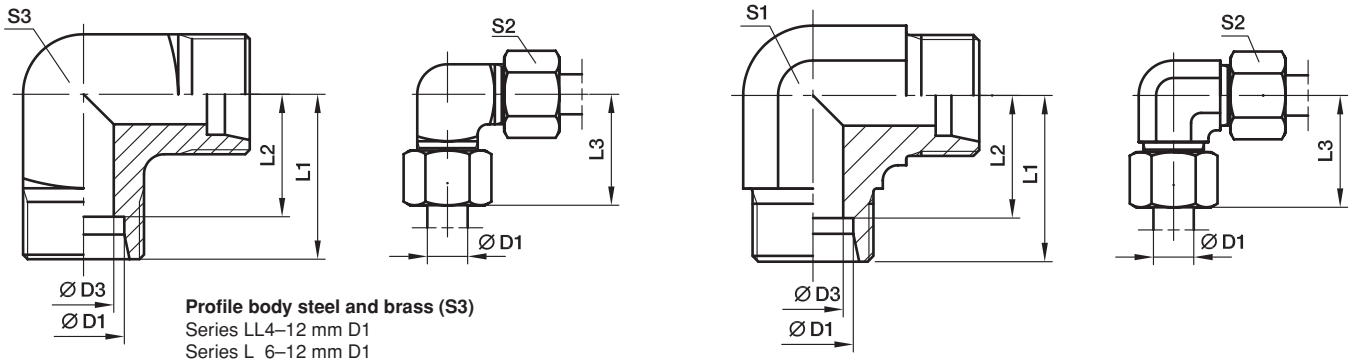
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GR16/12SCFX
Steel, zinc yellow plated	A3CX	GR16/12SA3CX
Stainless Steel	71X	GR16/12S71X
Brass	MSX	GR16/12SMSX

W Union elbow

EO 24° cone end



Profile body steel and brass (S3)
Series LL4–12 mm D1
Series L 6–12 mm D1
Series S 6–12 mm D1

Series	D1	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	3.0	15	11.0	21	9	10	9	13	**W04LL**	100	100	100	63
	06	4.5	15	9.5	21	9	12	11	15	**W06LL**	100	100	100	63
	08	6.0	17	11.5	23	12	14	12	23	**W08LL**	100	100	100	63
	10	8.0	18	12.5	24	12	17	14	32	**W10LL**	100	100	100	63
	12	10.0	19	13.0	25	14	19	17	41	**W12LL**	100	100	100	63
L[3])	06	4.0	19	12.0	27	12	14	12	29	**W06L**	500	315	315	200
	08	6.0	21	14.0	29	12	17	14	43	**W08L**	500	315	315	200
	10	8.0	22	15.0	30	14	19	17	54	**W10L**	500	315	315	200
	12	10.0	24	17.0	32	17	22	19	80	**W12L**	400	315	315	200
	15	12.0	28	21.0	36	19	27		81	**W15L**	400	315	315	200
	18	15.0	31	23.5	40	24	32		140	**W18L**	400	315	315	200
	22	19.0	35	27.5	44	27	36		178	**W22L**	250	160	160	100
	28	24.0	38	30.5	47	36	41		340	**W28L**	250	160	160	100
	35	30.0	45	34.5	56	41	50		458	**W35L**	250	160	160	100
	42	36.0	51	40.0	63	50	60		776	**W42L**	250	160	160	100
S[4])	06	4.0	23	16.0	31	12	17	14	52	**W06S**	800	630	630	400
	08	5.0	24	17.0	32	14	19	17	74	**W08S**	800	630	630	400
	10	7.0	25	17.5	34	17	22	19	97	**W10S**	800	630	630	400
	12	8.0	29	21.5	38	17	24	22	137	**W12S**	630	630	630	400
	14	10.0	30	22.0	40	19	27		145	**W14S**	630	630	630	400
	16	12.0	33	24.5	43	24	30		162	**W16S**	630	400	400	250
	20	16.0	37	26.5	48	27	36		221	**W20S**	420	400	400	250
	25	20.0	42	30.0	54	36	46		424	**W25S**	420	400	400	250
	30	25.0	49	35.5	62	41	50		603	**W30S**	420	400	400	250
	38	32.0	57	41.0	72	50	60		1010	**W38S**	420	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings see page I7.

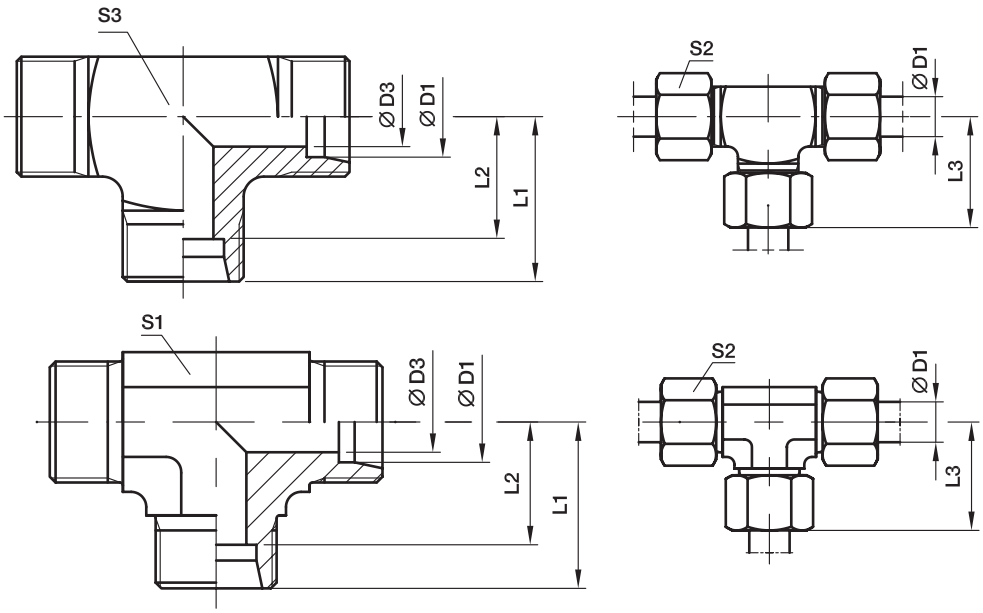
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	W16SCFX
Steel, zinc yellow plated	A3CX	W16SA3CX
Stainless Steel	71X	W16S71X
Brass	MSX	W16SMSX

*Please add the **suffixes** below according to the material/surface required.

T Union tee

EO 24° cone end

profile body steel and brass (S3)
Series LL4–10 mm D1
Series L 6+ 8 mm D1
Series S 6 mm D1



Series	D1	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	3.0	15	11.0	21	9	10	9	19	**T04LL**	100	100	100	63
	06	4.5	15	9.5	21	9	12	11	20	**T06LL**	100	100	100	63
	08	6.0	17	11.5	23	12	14	12	27	**T08LL**	100	100	100	63
	10	8.0	18	12.5	24	12	17	14	39	**T10LL**	100	100	100	63
	12	10.0	21	15.0	27	14	19		45	**T12LL**	100	100	100	63
L[3])	06	4.0	19	12.0	27	12	14	12	37	**T06L**	500	315	315	200
	08	6.0	21	14.0	29	12	17	14	53	**T08L**	500	315	315	200
	10	8.0	22	15.0	30	14	19		48	**T10L**	500	315	315	200
	12	10.0	24	17.0	32	17	22		65	**T12L**	400	315	315	200
	15	12.0	28	21.0	36	19	27		106	**T15L**	400	315	315	200
	18	15.0	31	23.5	40	24	32		179	**T18L**	400	315	315	200
	22	19.0	35	27.5	44	27	36		225	**T22L**	250	160	160	100
	28	24.0	38	30.5	47	36	41		396	**T28L**	250	160	160	100
	35	30.0	45	34.5	56	41	50		567	**T35L**	250	160	160	100
	42	36.0	51	40.0	63	50	60		905	**T42L**	250	160	160	100
S[4])	06	4.0	23	16.0	31	12	17	14	68	**T06S**	800	630	630	400
	08	5.0	24	17.0	32	14	19		70	**T08S**	800	630	630	400
	10	7.0	25	17.5	34	17	22		91	**T10S**	800	630	630	400
	12	8.0	29	21.5	38	17	24		117	**T12S**	630	630	630	400
	14	10.0	30	22.0	40	19	27		136	**T14S**	630	630	630	400
	16	12.0	33	24.5	43	24	30		202	**T16S**	630	400	400	250
	20	16.0	37	26.5	48	27	36		289	**T20S**	420	400	400	250
	25	20.0	42	30.0	54	36	46		545	**T25S**	420	400	400	250
	30	25.0	49	35.5	62	41	50		758	**T30S**	420	400	400	250
	38	32.0	57	41.0	72	50	60		1264	**T38S**	420	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings see page I7.

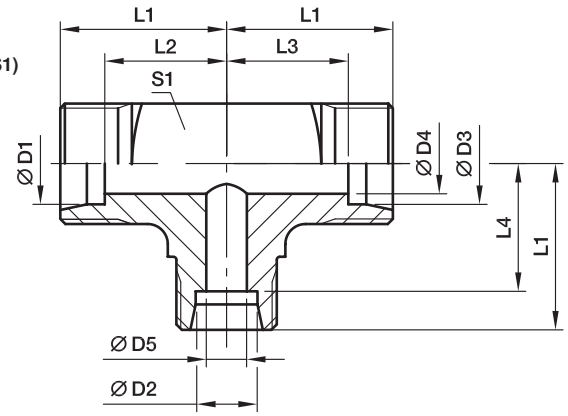
*Please add the **suffixes** below according to the material/surface required.

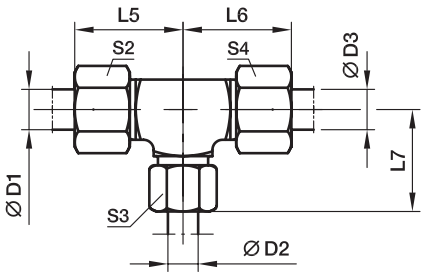
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	T16SCFX
Steel, zinc yellow plated	A3CX	T16SA3CX
Stainless Steel	71X	T16S71X
Brass	MSX	T16SMSX

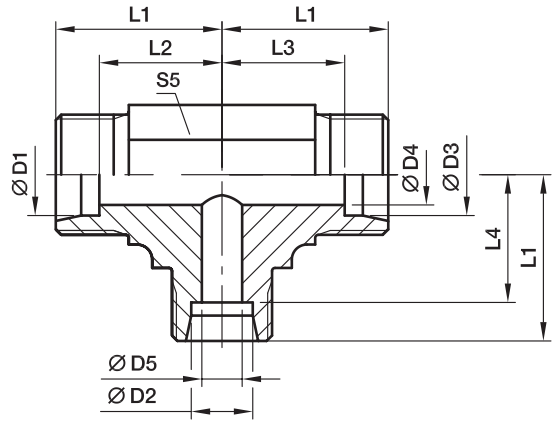
TR Tee Reducer

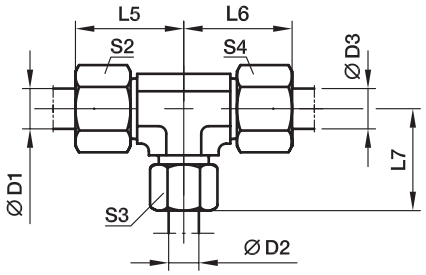
EO 24° cone end

Profile body steel and brass (S1)
Series LL 4–8 mm D1, D2, D3
Series L 6+8 mm D1, D2, D3









Series	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	S5	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	08	04	3.0	6	17	13.0	13.0	11.5	23	23	23	12	10	14	10	12	27	**TR04/08/04LL**	100	100	100	63
	06	04	06	4.5	3	15	9.5	9.5	11.0	21	21	21	11	12	10	12	9	18	**TR06/04/06LL**	100	100	100	63
L[3])	06	08	06	4.0	6	21	14.0	14.0	14.0	29	29	29	14	14	17	14	12	54	**TR06/08/06L**	500	315	315	200
	08	06	08	6.0	4	21	14.0	14.0	14.0	29	29	29	14	17	14	17	12	53	**TR08/06/08L**	500	315	315	200
	06	10	06	4.0	8	22	15.0	15.0	15.0	30	30	30		14	19	14	14	53	**TR06/10/06L**	500	315	315	200
	08	10	08	6.0	8	22	15.0	15.0	15.0	30	30	30		17	19	17	14	50	**TR08/10/08L**	500	315	315	200
	10	06	10	8.0	4	22	15.0	15.0	15.0	30	30	30		19	14	19	14	46	**TR10/06/10L**	500	315	315	200
	10	08	10	8.0	6	22	15.0	15.0	15.0	30	30	30		19	17	19	14	43	**TR10/08/10L**	500	315	315	200
	10	10	06	4.0	8	22	15.0	15.0	15.0	30	30	30		19	19	14	14	49	**TR10/10/06L**	500	315	315	200
	08	12	08	6.0	10	24	17.0	17.0	17.0	32	32	32		17	22	17	17	67	**TR08/12/08L**	400	315	315	200
	12	06	12	10.0	4	24	17.0	17.0	17.0	32	32	32		22	14	22	17	66	**TR12/06/12L**	400	315	315	200
	12	08	08	6.0	6	24	17.0	17.0	17.0	32	32	32		22	17	17	17	66	**TR12/08/08L**	400	315	315	200
	12	08	12	10.0	6	24	17.0	17.0	17.0	32	32	32		22	17	22	17	68	**TR12/08/12L**	400	315	315	200
	12	10	10	8.0	8	24	17.0	17.0	17.0	32	32	32		22	19	19	17	67	**TR12/10/10L**	400	315	315	200
	12	10	12	10.0	8	24	17.0	17.0	17.0	32	32	32		22	19	22	17	67	**TR12/10/12L**	400	315	315	200
	12	12	10	8.0	10	24	17.0	17.0	17.0	32	32	32		22	22	19	17	64	**TR12/12/10L**	400	315	315	200
	10	15	10	8.0	12	28	21.0	21.0	21.0	36	36	36		19	27	19	19	105	**TR10/15/10L**	400	315	315	200
	12	15	12	10.0	12	28	21.0	21.0	21.0	36	36	36		22	27	22	19	102	**TR12/15/12L**	400	315	315	200
	15	06	15	12.0	4	28	21.0	21.0	21.0	36	36	36		27	14	27	19	107	**TR15/06/15L**	400	315	315	200
	15	10	15	12.0	8	28	21.0	21.0	21.0	36	36	36		27	19	27	19	105	**TR15/10/15L**	400	315	315	200
	15	12	12	10.0	10	28	21.0	21.0	21.0	36	36	36		27	22	22	19	101	**TR15/12/12L**	400	315	315	200
	15	12	15	12.0	10	28	21.0	21.0	21.0	36	36	36		27	22	27	19	105	**TR15/12/15L**	400	315	315	200
	15	15	12	10.0	12	28	21.0	21.0	21.0	36	36	36		27	27	22	19	103	**TR15/15/12L**	400	315	315	200
	12	18	12	10.0	15	31	24.0	24.0	23.5	39	39	40		22	32	22	24	177	**TR12/18/12L**	400	315	315	200
	18	10	10	8.0	8	31	23.5	24.0	24.0	40	39	39		32	19	19	24	173	**TR18/10/10L**	400	315	315	200
	18	10	18	15.0	8	31	23.5	23.5	24.0	40	40	39		32	19	32	24	182	**TR18/10/18L**	400	315	315	200
	18	12	18	15.0	10	31	23.5	23.5	24.0	40	40	39		32	22	32	24	174	**TR18/12/18L**	400	315	315	200

TR Tee Reducer

EO 24° cone end

Series	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	S5	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	18	15	18	15.0	12	31	23.5	23.5	24.0	40	40	39		32	27	32	24	179	**TR18/15/18L**	400	315	315	200
	18	18	10	8.0	15	31	23.5	24.0	23.5	40	39	40		32	32	19	24	171	**TR18/18/10L**	400	315	315	200
	22	10	22	19.0	8	35	27.5	27.5	28.0	44	44	43		36	19	36	27	232	**TR22/10/22L**	250	160	160	100
	22	12	22	19.0	10	35	27.5	27.5	28.0	44	44	43		36	22	36	27	229	**TR22/12/22L**	250	160	160	100
	22	15	15	12.0	12	35	27.5	28.0	28.0	44	43	43		36	27	27	27	240	**TR22/15/15L**	250	160	160	100
	22	15	22	19.0	12	35	27.5	27.5	28.0	44	44	43		36	27	36	27	233	**TR22/15/22L**	250	160	160	100
	22	18	18	15.0	15	35	27.5	27.5	27.5	44	44	44		36	32	32	27	236	**TR22/18/18L**	250	160	160	100
	22	18	22	19.0	15	35	27.5	27.5	27.5	44	44	44		36	32	36	27	239	**TR22/18/22L**	250	160	160	100
	22	22	18	15.0	19	35	27.5	27.5	27.5	44	44	44		36	36	32	27	228	**TR22/22/18L**	250	160	160	100
	28	10	28	24.0	8	38	30.5	30.5	31.0	47	47	46		41	19	41	36	412	**TR28/10/28L**	250	160	160	100
	28	12	28	24.0	10	38	30.5	30.5	31.0	47	47	46		41	22	41	36	408	**TR28/12/28L**	250	160	160	100
	28	15	28	24.0	12	38	30.5	30.5	31.0	47	47	46		41	27	41	36	423	**TR28/15/28L**	250	160	160	100
	28	18	28	24.0	15	38	30.5	30.5	30.5	47	47	47		41	32	41	36	421	**TR28/18/28L**	250	160	160	100
	28	22	22	19.0	19	38	30.5	30.5	30.5	47	47	47		41	36	36	36	412	**TR28/22/22L**	250	160	160	100
	28	22	28	24.0	19	38	30.5	30.5	30.5	47	47	47		41	36	41	36	415	**TR28/22/28L**	250	160	160	100
S[4])	10	06	10	7.0	4	25	17.5	17.5	18.0	34	34	33		22	17	22	17	103	**TR10/06/10S**	800	630	630	400
	12	08	08	5.0	5	29	21.5	22.0	22.0	38	37	37		24	19	19	17	107	**TR12/08/08S**	630	630	630	400
	12	08	12	8.0	5	29	21.5	21.5	22.0	38	38	37		24	19	24	17	105	**TR12/08/12S**	630	630	630	400
	12	10	12	8.0	7	29	21.5	21.5	21.5	38	38	38		24	22	24	17	114	**TR12/10/12S**	630	630	630	400
	12	16	12	8.0	12	33	25.5	25.5	24.5	42	42	43		24	30	24	24	190	**TR12/16/12S**	630	400	400	250
	16	06	16	12.0	4	33	24.5	24.5	26.0	43	43	41		30	17	30	24	176	**TR16/06/16S**	630	400	400	250
	16	08	16	12.0	5	33	24.5	24.5	26.0	43	43	41		30	19	30	24	208	**TR16/08/16S**	630	400	400	250
	16	10	16	12.0	7	33	24.5	24.5	25.5	43	43	42		30	22	30	24	210	**TR16/10/16S**	630	400	400	250
	16	12	16	12.0	8	33	24.5	24.5	25.5	43	43	42		30	24	30	24	386	**TR16/12/16S**	630	400	400	250
	16	20	16	12.0	16	37	28.5	28.5	26.5	47	47	48		30	36	30	27	296	**TR16/20/16S**	420	400	400	250
	20	10	20	16.0	7	37	26.5	26.5	29.5	48	48	46		36	22	36	27	553	**TR20/10/20S**	420	400	400	250
	20	12	20	16.0	8	37	26.5	26.5	29.5	48	48	46		36	24	36	27	306	**TR20/12/20S**	420	400	400	250
	20	16	20	16.0	12	37	26.5	26.5	28.5	48	48	47		36	30	36	27	285	**TR20/16/20S**	420	400	400	250
	20	25	20	16.0	20	42	31.5	31.5	30.0	53	53	54		36	46	36	36	544	**TR20/25/20S**	420	400	400	250
	25	16	25	20.0	12	42	30.0	30.0	33.5	54	54	52		46	30	46	36	556	**TR25/16/25S**	420	400	400	250
	25	20	25	20.0	16	42	30.0	30.0	31.5	54	54	53		46	36	46	36	544	**TR25/20/25S**	420	400	400	250
	25	30	25	20.0	25	49	37.0	37.0	35.5	61	61	62		46	50	46	41	791	**TR25/30/25S**	420	400	400	250

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

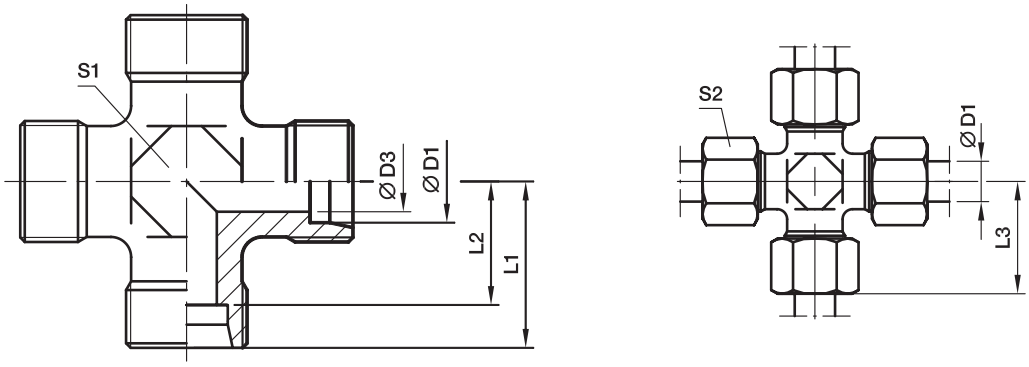
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	TR16/12/16SCFX
Steel, zinc yellow plated	A3CX	TR16/12/16SA3CX
Stainless Steel	71X	TR16/12/16S71X
Brass	MSX	TR16/12/16SMSX

*Please add the **suffixes** below according to the material/surface required.

K Union cross

EO 24° cone end



Series	D1	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	3.0	15	11.0	21	9	10	13	**K04LL**	100	100	100	63
	06	4.5	15	9.5	21	9	12	14	**K06LL**	100	100	100	63
	08	6.0	17	11.5	23	12	14	24	**K08LL**	100	100	100	63
L[3])	06	4.0	19	12.0	27	12	14	35	**K06L**	315	315	315	200
	08	6.0	21	14.0	29	12	17	40	**K08L**	315	315	315	200
	10	8.0	22	15.0	30	14	19	52	**K10L**	315	315	315	200
	12	10.0	24	17.0	32	17	22	69	**K12L**	315	315	315	200
	15	12.0	28	21.0	36	19	27	130	**K15L**	315	315	315	200
	18	15.0	31	23.5	40	24	32	188	**K18L**	315	315	315	200
	22	19.0	35	27.5	44	27	36	251	**K22L**	160	160	160	100
	28	24.0	38	30.5	47	36	41	392	**K28L**	160	160	160	100
	35	30.0	45	34.5	56	41	50	618	**K35L**	160	160	160	100
	42	36.0	51	40.0	63	50	60	905	**K42L**	160	160	160	100
S[4])	06	4.0	23	16.0	31	12	17	58	**K06S**	630	630	630	400
	08	5.0	24	17.0	32	14	19	82	**K08S**	630	630	630	400
	10	7.0	25	17.5	34	17	22	97	**K10S**	630	630	630	400
	12	8.0	29	21.5	38	17	24	146	**K12S**	630	630	630	400
	14	10.0	30	22.0	40	19	27	176	**K14S**	400	400	400	250
	16	12.0	33	24.5	43	24	30	220	**K16S**	400	400	400	250
	20	16.0	37	26.5	48	27	36	339	**K20S**	315	315	315	200
	25	20.0	42	30.0	54	36	46	576	**K25S**	315	315	315	200
	30	25.0	49	35.5	62	41	50	843	**K30S**	315	315	315	200
	38	32.0	57	41.0	72	50	60	1350	**K38S**	315	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

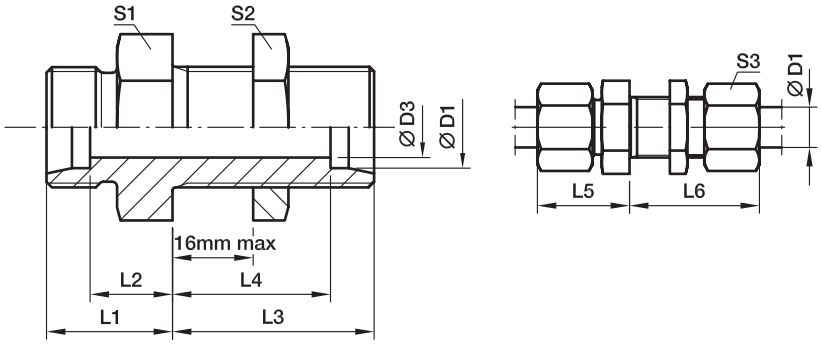
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	K16SCFX
Steel, zinc yellow plated	A3CX	K16SA3CX
Stainless Steel	71X	K16S71X
Brass	MSX	K16SMSX

SV Bulkhead union

EO 24° cone end



Series	D1	D3	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	4	14	7.0	34	27.0	22	42	17	17	14	39	**SV06LOMD**	500	315	315	200
	08	6	15	8.0	34	27.0	23	42	19	19	17	50	**SV08LOMD**	500	315	315	200
	10	8	17	10.0	35	28.0	25	43	22	22	19	67	**SV10LOMD**	500	315	315	200
	12	10	17	10.0	36	29.0	25	44	24	24	22	78	**SV12LOMD**	400	315	315	200
	15	12	19	12.0	38	31.0	27	46	27	30	27	128	**SV15LOMD**	400	315	315	200
	18	15	21	13.5	40	32.5	30	49	32	36	32	198	**SV18LOMD**	400	315	315	200
	22	19	24	16.5	42	34.5	33	51	36	41	36	254	**SV22LOMD**	250	160	160	100
	28	24	26	18.5	43	35.5	35	52	41	46	41	335	**SV28LOMD**	250	160	160	100
	35	30	29	18.5	47	36.5	40	58	50	55	50	546	**SV35LOMD**	250	160	160	
	42	36	30	19.0	47	36.0	42	59	60	65	60	758	**SV42LOMD**	250	160	160	
S[4])	06	4	19	12.0	36	29.0	27	44	19	19	17	65	**SV06SOMD**	800	630	630	400
	08	5	20	13.0	36	29.0	28	44	22	22	19	87	**SV08SOMD**	800	630	630	400
	10	7	22	14.5	37	29.5	31	46	24	24	22	112	**SV10SOMD**	800	630	630	400
	12	8	22	14.5	38	30.5	31	47	27	27	24	141	**SV12SOMD**	630	630	630	400
	14	10	25	17.0	40	32.0	35	50	30	30	27	180	**SV14SOMD**	630	630	630	
	16	12	25	16.5	40	31.5	35	50	32	32	30	201	**SV16SOMD**	630	400	400	250
	20	16	28	17.5	44	33.5	39	55	41	41	36	462	**SV20SOMD**	420	400	400	250
	25	20	32	20.0	47	35.0	44	59	46	46	46	492	**SV25SOMD**	420	400	400	250
	30	25	35	21.5	51	37.5	48	64	50	50	50	631	**SV30SOMD**	420	400	400	250
	38	32	38	22.0	53	37.0	53	68	65	65	60	1083	**SV38SOMD**	420	315	315	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

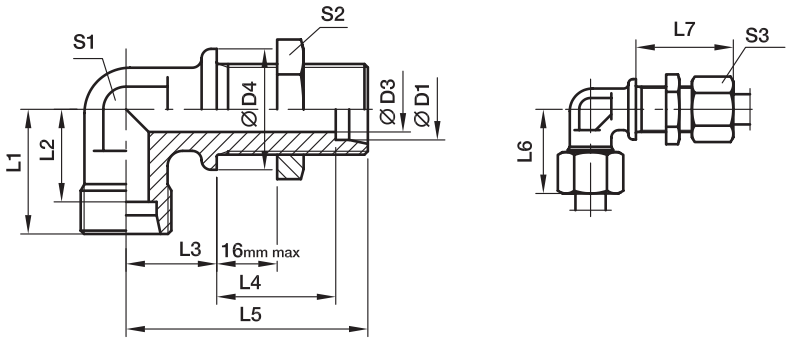
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	SV16SOMDCF
Steel, zinc yellow plated	A3C	SV16SOMDA3C
Stainless Steel	71	SV16SOMD71
Brass	MS	SV16SOMDMS

*Please add the **suffixes** below according to the material/surface required.

WSV Bulkhead elbow

EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	4	17	19	12.0	14	27.0	48	27	42	12	17	14	51	**WSV06LOMD**	315	315	315	200
	08	6	19	21	14.0	17	27.0	51	29	42	12	19	17	61	**WSV08LOMD**	315	315	315	200
	10	8	22	22	15.0	18	28.0	53	30	43	14	22	19	78	**WSV10LOMD**	315	315	315	200
	12	10	24	24	17.0	20	29.0	56	32	44	17	24	22	85	**WSV12LOMD**	315	315	315	200
	15	12	27	28	21.0	23	31.0	61	36	46	19	30	27	150	**WSV15LOMD**	315	315	315	200
	18	15	32	31	23.5	24	32.5	64	40	49	24	36	32	238	**WSV18LOMD**	315	315	315	200
	22	19	36	35	27.5	30	34.5	72	44	51	27	41	36	327	**WSV22LOMD**	160	160	160	
	28	24	42	38	30.5	34	35.5	77	47	52	36	46	41	482	**WSV28LOMD**	160	160	160	
	35	30	50	45	34.5	39	36.5	86	56	58	41	55	50	729	**WSV35LOMD**	160	160	160	
	42	36	60	51	40.0	43	36.0	90	63	59	50	65	60	1091	**WSV42LOMD**	160	160	160	
S[4])	06	4	19	23	16.0	17	29.0	53	31	44	12	19	17	72	**WSV06SOMD**	630	630	630	
	08	5	22	24	17.0	18	29.0	54	32	44	14	22	19	99	**WSV08SOMD**	630	630	630	
	10	7	24	25	17.5	20	29.5	57	34	46	17	24	22	128	**WSV10SOMD**	630	630	630	
	12	8	27	29	21.5	21	30.5	59	38	47	17	27	24	168	**WSV12SOMD**	630	630	630	
	14	10	27	30	22.0	23	32.0	63	40	50	19	30	27	194	**WSV14SOMD**	630	630	630	
	16	12	30	33	24.5	24	31.5	64	43	50	24	32	30	249	**WSV16SOMD**	400	400	400	
	20	16	36	37	26.5	30	33.5	74	48	55	27	41	36	390	**WSV20SOMD**	400	400	400	
	25	20	42	42	30.0	34	35.0	81	54	59	36	46	46	618	**WSV25SOMD**	400	400	400	
	30	25	50	49	35.5	39	37.5	90	62	64	41	50	50	889	**WSV30SOMD**	400	400	400	
	38	32	60	57	41.0	43	37.0	96	72	68	50	65	60	1337	**WSV38SOMD**	315	315	315	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

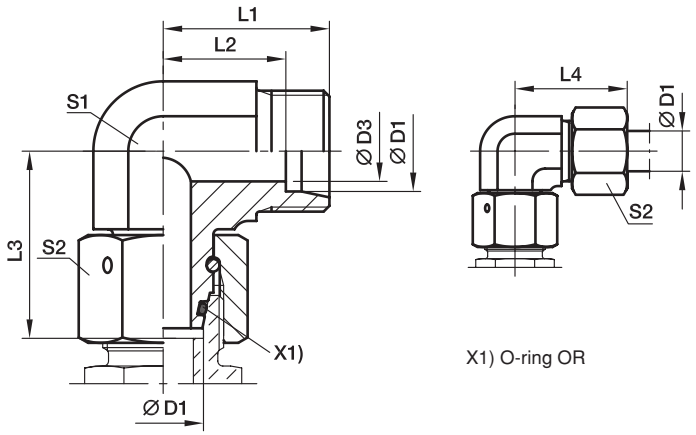
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	WSV16SOMDCF
Steel, zinc yellow plated	A3C	WSV16SOMDA3C
Stainless Steel	71	WSV16SOMD71
Brass	MS	WSV18LOMDMS

EW Swivel nut elbow

EO 24° cone end / EO 24° DKO swivel



X1) O-ring OR

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	4	19	12.0	26.0	27	12	14	34	**EW06LOMD**	500	315	315
	08	6	21	14.0	27.5	29	12	17	43	**EW08LOMD**	500	315	315
	10	8	22	15.0	29.0	30	14	19	58	**EW10LOMD**	500	315	315
	12	10	24	17.0	29.5	32	17	22	81	**EW12LOMD**	400	315	315
	15	12	28	21.0	32.5	36	19	27	128	**EW15LOMD**	400	315	315
	18	15	31	23.5	35.5	40	24	32	197	**EW18LOMD**	400	315	315
	22	19	35	27.5	38.5	44	27	36	258	**EW22LOMD**	250	160	160
	28	24	38	30.5	41.5	47	36	41	370	**EW28LOMD**	250	160	160
	35	30	45	34.5	51.0	56	41	50	593	**EW35LOMD**	250	160	160
	42	36	51	40.0	56.0	63	50	60	993	**EW42LOMD**	250	160	160
S[4])	06	4	23	16.0	27.0	31	12	17	48	**EW06SOMD**	800	630	630
	08	5	24	17.0	27.5	32	14	19	65	**EW08SOMD**	800	630	630
	10	6	25	17.5	30.0	34	17	22	92	**EW10SOMD**	800	630	630
	12	8	29	21.5	31.0	38	17	24	107	**EW12SOMD**	630	630	630
	14	9	30	22.0	35.0	40	19	27	146	**EW14SOMD**	630	630	630
	16	12	33	24.5	36.5	43	24	30	212	**EW16SOMD**	630	400	400
	20	16	37	26.5	44.5	48	27	36	309	**EW20SOMD**	420	400	400
	25	20	42	30.0	50.0	54	36	46	547	**EW25SOMD**	420	400	400
	30	25	49	35.5	55.0	62	41	50	744	**EW30SOMD**	420	400	400
	38	32	57	41.0	63.0	72	50	60	1222	**EW38SOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

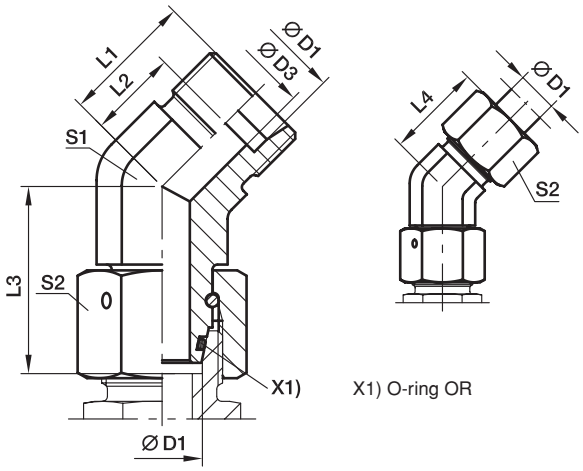
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EW16SOMDCF	NBR
Steel, zinc yellow plated	A3C	EW16SOMDA3C	NBR
Stainless Steel	71	EW16SOMD71	VIT

*Please add the **suffixes** below according to the material/surface required.

EV Swivel nut 45° elbow

EO 24° cone end / EO 24° DKO swivel



X1) O-ring OR

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	4	16.0	9.0	26.0	24	14	14	37	**EV06LOMD**	315	315	315
	08	6	19.0	12.0	27.5	27	14	17	49	**EV08LOMD**	315	315	315
	10	8	19.0	12.0	29.0	27	19	19	77	**EV10LOMD**	315	315	315
	12	10	21.0	14.0	29.5	29	19	22	86	**EV12LOMD**	315	315	315
	15	12	24.0	17.0	32.5	32	22	27	144	**EV15LOMD**	315	315	315
	18	15	24.0	16.5	35.5	33	27	32	210	**EV18LOMD**	315	315	315
	22	19	26.0	18.5	38.5	35	30	36	270	**EV22LOMD**	160	160	160
	28	24	30.5	23.0	41.5	40	36	41	385	**EV28LOMD**	160	160	160
	35	30	37.0	26.5	51.0	48	50	50	805	**EV35LOMD**	160	160	160
	42	36	37.0	26.0	56.0	49	50	60	887	**EV42LOMD**	160	160	160
S[4])	06	4	16.0	9.0	27.0	24	14	17	50	**EV06SOMD**	630	630	630
	08	5	19.0	12.0	27.5	27	19	19	80	**EV08SOMD**	630	630	630
	10	7	21.0	13.5	30.0	30	19	22	95	**EV10SOMD**	630	630	630
	12	8	24.0	16.5	31.0	33	22	24	137	**EV12SOMD**	630	630	630
	16	12	24.0	15.5	36.5	34	27	30	217	**EV16SOMD**	400	400	400
	20	16	26.5	16.0	44.5	38	30	36	313	**EV20SOMD**	400	400	400
	25	20	30.5	18.5	50.0	43	36	46	529	**EV25SOMD**	400	400	400
	30	25	37.0	23.5	55.0	50	50	50	940	**EV30SOMD**	400	400	400
	38	32	37.0	21.0	63.0	52	50	60	1055	**EV38SOMD**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

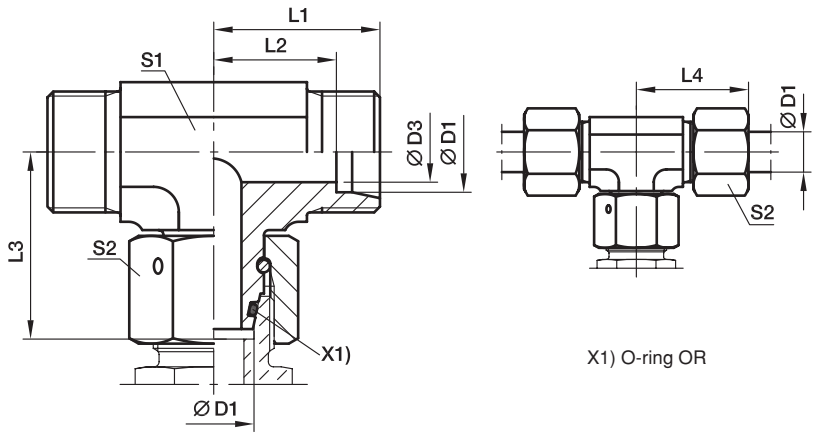
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EV16SOMDCF	NBR
Steel, zinc yellow plated	A3C	EV16SOMDA3C	NBR
Stainless Steel	71	EV16SOMD71	VIT

ET Swivel nut branch tee

EO 24° cone end / EO 24° DKO swivel



X1) O-ring OR

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	4	19	12.0	26.0	27	12	14	42	**ET06LOMD**	500	315	315
	08	6	21	14.0	27.5	29	12	17	53	**ET08LOMD**	500	315	315
	10	8	22	15.0	29.0	30	14	19	71	**ET10LOMD**	500	315	315
	12	10	24	17.0	29.5	32	17	22	97	**ET12LOMD**	400	315	315
	15	12	28	21.0	32.5	36	19	27	159	**ET15LOMD**	400	315	315
	18	15	31	23.5	35.5	40	24	32	239	**ET18LOMD**	400	315	315
	22	19	35	27.5	38.5	44	27	36	308	**ET22LOMD**	250	160	160
	28	24	38	30.5	41.5	47	36	41	449	**ET28LOMD**	250	160	160
	35	30	45	34.5	51.0	56	41	50	679	**ET35LOMD**	250	160	160
	42	36	51	40.0	56.0	63	50	60	1131	**ET42LOMD**	250	160	160
S[4])	06	4	23	16.0	27.0	31	12	17	63	**ET06SOMD**	800	630	630
	08	5	24	17.0	27.5	32	14	19	79	**ET08SOMD**	800	630	630
	10	6	25	17.5	30.0	34	17	22	113	**ET10SOMD**	800	630	630
	12	8	29	21.5	31.0	38	17	24	136	**ET12SOMD**	630	630	630
	14	9	30	22.0	35.0	40	19	27	173	**ET14SOMD**	630	630	630
	16	12	33	24.5	36.5	43	24	30	239	**ET16SOMD**	630	400	400
	20	16	37	26.5	44.5	48	27	36	388	**ET20SOMD**	420	400	400
	25	20	42	30.0	50.0	54	36	46	652	**ET25SOMD**	420	400	400
	30	25	49	35.5	55.0	62	41	50	905	**ET30SOMD**	420	400	400
	38	32	57	41.0	63.0	72	50	60	1462	**ET38SOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

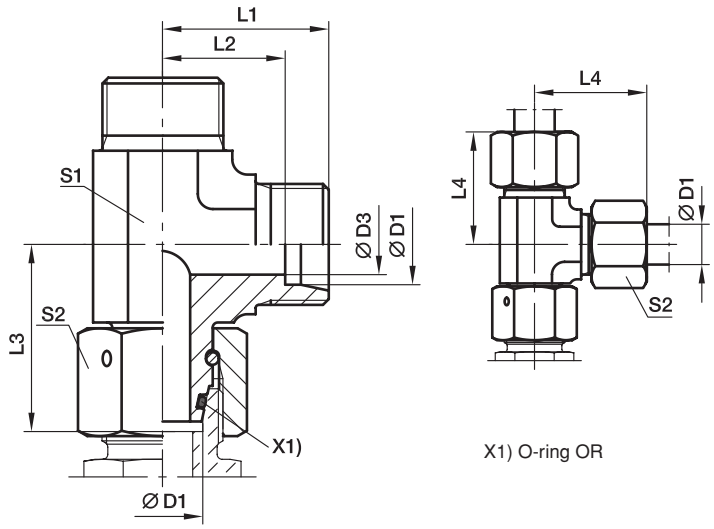
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	ET16SOMDCF	NBR
Steel, zinc yellow plated	A3C	ET16SOMDA3C	NBR
Stainless Steel	71	ET16SOMD71	VIT

*Please add the **suffixes** below according to the material/surface required.

EL Swivel nut run tee

EO 24° cone end / EO 24° DKO swivel



X1) O-ring OR

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	4	19	12.0	26.0	27	12	14	44	**EL06LOMD**	500	315	315
	08	6	21	14.0	27.5	29	12	17	53	**EL08LOMD**	500	315	315
	10	8	22	15.0	29.0	30	14	19	68	**EL10LOMD**	500	315	315
	12	10	24	17.0	29.5	32	17	22	95	**EL12LOMD**	400	315	315
	15	12	28	21.0	32.5	36	19	27	151	**EL15LOMD**	400	315	315
	18	15	31	23.5	35.5	40	24	32	233	**EL18LOMD**	400	315	315
	22	19	35	27.5	38.5	44	27	36	309	**EL22LOMD**	250	160	160
	28	24	38	30.5	41.5	47	36	41	436	**EL28LOMD**	250	160	160
	35	30	45	34.5	51.0	56	41	50	666	**EL35LOMD**	250	160	160
	42	36	51	40.0	56.0	63	50	60	1163	**EL42LOMD**	250	160	160
S[4])	06	4	23	16.0	27.0	31	12	17	65	**EL06SOMD**	800	630	630
	08	5	24	17.0	27.5	32	14	19	84	**EL08SOMD**	800	630	630
	10	6	25	17.5	30.0	34	17	22	118	**EL10SOMD**	800	630	630
	12	8	29	21.5	31.0	38	17	24	136	**EL12SOMD**	630	630	630
	14	9	30	22.0	35.0	40	19	27	173	**EL14SOMD**	630	630	630
	16	12	33	24.5	36.5	43	24	30	260	**EL16SOMD**	630	400	400
	20	16	37	26.5	44.5	48	27	36	375	**EL20SOMD**	420	400	400
	25	20	42	30.0	50.0	54	36	46	655	**EL25SOMD**	420	400	400
	30	25	49	35.5	55.0	62	41	50	906	**EL30SOMD**	420	400	400
	38	32	57	41.0	63.0	72	50	60	1472	**EL38SOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

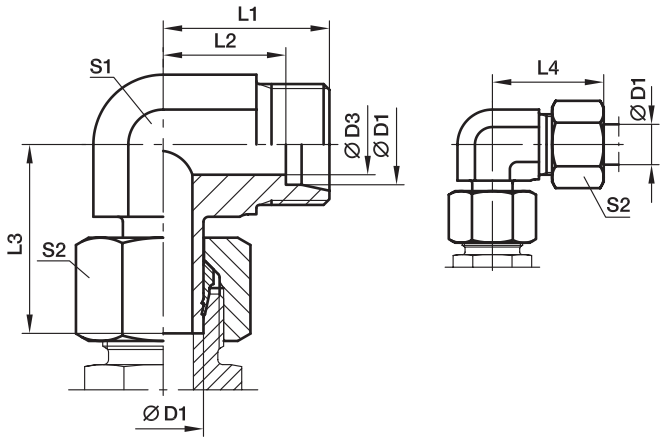
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EL16SOMDCF	NBR
Steel, zinc yellow plated	A3C	EL16SOMDA3C	NBR
Stainless Steel	71	EL16SOMD71	VIT

*Please add the **suffixes** below according to the material/surface required.

EVW Standpipe elbow

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection. Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	4	19	12.0	26.0	27	12	14	32	**EVW06LOMD**	315	315	315	200
	08	6	21	14.0	27.5	29	12	17	40	**EVW08LOMD**	315	315	315	200
	10	8	22	15.0	29.0	30	14	19	54	**EVW10LOMD**	315	315	315	200
	12	10	24	17.0	29.5	32	17	22	76	**EVW12LOMD**	315	315	315	200
	15	12	28	21.0	32.5	36	19	27	119	**EVW15LOMD**	315	315	315	200
	18	15	31	23.5	35.5	40	24	32	192	**EVW18LOMD**	315	315	315	200
	22	19	35	27.5	38.5	44	27	36	355	**EVW22LOMD**	160	160	160	100
	28	24	38	30.5	42.0	47	36	41	514	**EVW28LOMD**	160	160	160	100
	35	30	45	34.5	51.0	56	41	50	536	**EVW35LOMD**	160	160	160	100
	42	36	51	40.0	60.0	63	50	60	977	**EVW42LOMD**	160	160	160	100
S[4])	06	4	23	16.0	27.0	31	12	17	44	**EVW06SOMD**	630	630	630	400
	08	5	24	17.0	27.5	32	14	19	63	**EVW08SOMD**	630	630	630	400
	10	7	25	17.5	31.0	34	17	22	95	**EVW10SOMD**	630	630	630	400
	12	8	29	21.5	31.0	38	17	24	110	**EVW12SOMD**	630	630	630	400
	14	10	30	22.0	35.0	40	19	27	137	**EVW14SOMD**	400	400	400	250
	16	12	33	24.5	37.5	43	24	30	211	**EVW16SOMD**	400	400	400	250
	20	16	37	26.5	44.5	48	27	36	306	**EVW20SOMD**	400	400	400	250
	25	20	42	30.0	50.0	54	36	46	558	**EVW25SOMD**	400	400	400	250
	30	25	49	35.5	55.0	62	41	50	724	**EVW30SOMD**	400	400	400	250
	38	32	57	41.0	66.5	72	50	60	1307	**EVW38SOMD**	315	315	315	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

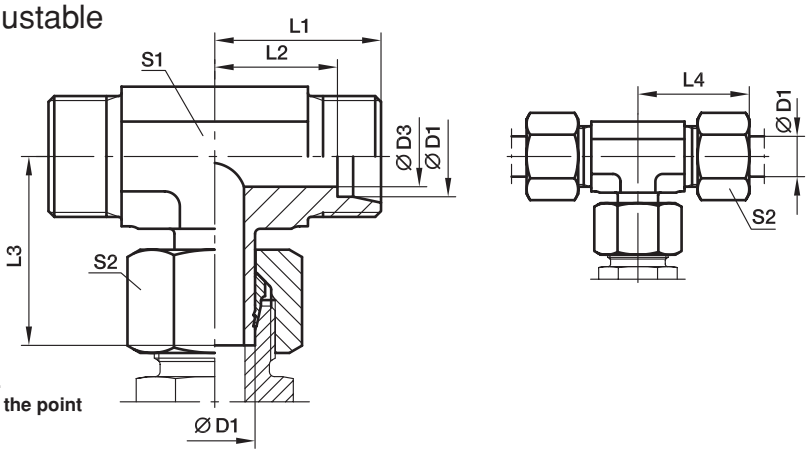
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVW16SOMDCF
Steel, zinc yellow plated	A3C	EVW16SOMDA3C
Stainless Steel	71	EVW16SOMD71
Brass	MS	EVW16SOMDMS

EVT Standpipe branch tee

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection. Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	4	19	12.0	26.0	27	12	14	37	**EVT06LOMD**	315	315	315	200
	08	6	21	14.0	27.5	29	12	17	49	**EVT08LOMD**	315	315	315	200
	10	8	22	15.0	29.0	30	14	19	66	**EVT10LOMD**	315	315	315	200
	12	10	24	17.0	30.5	32	17	22	93	**EVT12LOMD**	315	315	315	200
	15	12	28	21.0	32.5	36	19	27	146	**EVT15LOMD**	315	315	315	200
	18	15	31	23.5	35.5	40	24	32	201	**EVT18LOMD**	315	315	315	200
	22	19	35	27.5	38.5	44	27	36	274	**EVT22LOMD**	160	160	160	
	28	24	38	30.5	43.5	47	36	41	441	**EVT28LOMD**	160	160	160	
	35	30	45	34.5	54.5	56	41	50	633	**EVT35LOMD**	160	160	160	
	42	36	51	40.0	60.0	63	50	60	1129	**EVT42LOMD**	160	160	160	
S[4])	06	4	23	16.0	27.0	31	12	17	61	**EVT06SOMD**	630	630	630	
	08	5	24	17.0	29.0	32	14	19	44	**EVT08SOMD**	630	630	630	
	10	7	25	17.5	31.0	34	17	22	84	**EVT10SOMD**	630	630	630	
	12	8	29	21.5	33.0	38	17	24	131	**EVT12SOMD**	630	630	630	
	14	10	30	22.0	35.0	40	19	27	173	**EVT14SOMD**	400	400	400	
	16	12	33	24.5	37.5	43	24	30	240	**EVT16SOMD**	400	400	400	
	20	16	37	26.5	44.5	48	27	36	345	**EVT20SOMD**	400	400	400	
	25	20	42	30.0	50.5	54	36	46	647	**EVT25SOMD**	400	400	400	
	30	25	49	35.5	56.5	62	41	50	873	**EVT30SOMD**	400	400	400	
	38	32	57	41.0	66.5	72	50	60	1361	**EVT38SOMD**	315	315	315	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

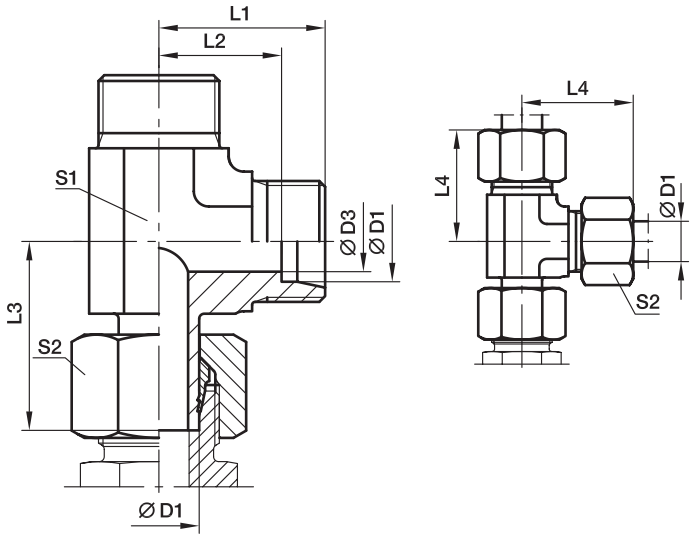
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVT16SOMDCF
Steel, zinc yellow plated	A3C	EVT16SOMDA3C
Stainless Steel	71	EVT16SOMD71
Brass	MS	EVT18LOMDMS

*Please add the **suffixes** below according to the material/surface required.

EVL standpipe run tee

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection. Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	4	19	12.0	26.0	27	12	14	40	**EVL06LOMD**	315	315	315	200
	08	6	21	14.0	27.5	29	12	17	50	**EVL08LOMD**	315	315	315	200
	10	8	22	15.0	29.0	30	14	19	64	**EVL10LOMD**	315	315	315	200
	12	10	24	17.0	30.5	32	17	22	93	**EVL12LOMD**	315	315	315	200
	15	12	28	21.0	32.5	36	19	27	147	**EVL15LOMD**	315	315	315	200
	18	15	31	23.5	35.5	40	24	32	229	**EVL18LOMD**	315	315	315	200
	22	19	35	27.5	39.0	44	27	36	296	**EVL22LOMD**	160	160	160	
	28	24	38	30.5	43.5	47	36	41	416	**EVL28LOMD**	160	160	160	
	35	30	45	34.5	54.5	56	41	50	661	**EVL35LOMD**	160	160	160	
	42	36	51	40.0	60.0	63	50	60	1105	**EVL42LOMD**	160	160	160	
S[4])	06	4	23	16.0	27.0	31	12	17	57	**EVL06SOMD**	630	630	630	
	08	5	24	17.0	29.0	32	14	19	84	**EVL08SOMD**	630	630	630	
	10	7	25	17.5	32.0	34	17	22	116	**EVL10SOMD**	630	630	630	
	12	8	29	21.5	33.0	38	17	24	137	**EVL12SOMD**	630	630	630	
	14	10	30	22.0	35.0	40	19	27	175	**EVL14SOMD**	400	400	400	
	16	12	33	24.5	37.5	43	24	30	259	**EVL16SOMD**	400	400	400	
	20	16	37	26.5	44.5	48	27	36	371	**EVL20SOMD**	400	400	400	
	25	20	42	30.0	50.5	54	36	46	647	**EVL25SOMD**	400	400	400	
	30	25	49	35.5	56.5	62	41	50	906	**EVL30SOMD**	400	400	400	
	38	32	57	41.0	66.5	72	50	60	1549	**EVL38SOMD**	315	315	315	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

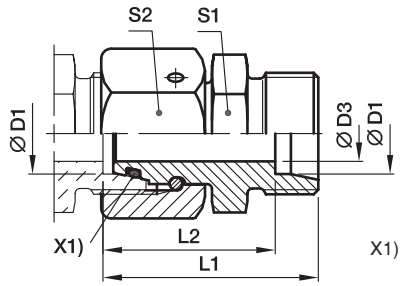
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVL16SOMDCF
Steel, zinc yellow plated	A3C	EVL16SOMDA3C
Stainless Steel	71	EVL16SOMD71
Brass	MS	EVL18LOMDMS

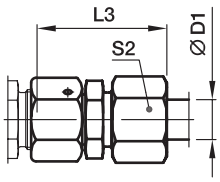
*Please add the **suffixes** below according to the material/surface required.

DA Distance piece adapter

EO 24° DKO swivel / EO 24° cone end



X1) O-ring OR



Series	D1	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	2,5	43.0	36	51	12	14	33	**DA06LOMD**	500	315	315	200
	08	4.0	43.0	36	51	14	17	46	**DA08LOMD**	500	315	315	200
	10	6.0	43.0	36	51	17	19	60	**DA10LOMD**	500	315	315	200
	12	8.0	43.0	36	51	19	22	75	**DA12LOMD**	400	315	315	200
	15	10.0	43.0	36	51	24	27	118	**DA15LOMD**	400	315	315	200
	18	13.0	43.5	36	52	27	32	153	**DA18LOMD**	400	315	315	200
	22	17.0	47.5	40	56	32	36	210	**DA22LOMD**	250	160	160	100
	28	22.0	47.5	40	57	41	41	279	**DA28LOMD**	250	160	160	100
	35	28.0	60.5	50	72	46	50	468	**DA35LOMD**	250	160	160	100
	42	34.0	71.0	60	83	55	60	802	**DA42LOMD**	250	160	160	100
S[4])	06	2.5	43.0	36	51	14	17	48	**DA06SOMD**	800	630	630	400
	08	4.0	43.0	36	51	17	19	64	**DA08SOMD**	800	630	630	400
	10	6.0	43.5	36	52	19	22	81	**DA10SOMD**	800	630	630	400
	12	8.0	43.5	36	52	22	24	97	**DA12SOMD**	630	630	630	400
	14	9.0	48.0	40	58	24	27	133	**DA14SOMD**	630	630	630	400
	16	11.0	48.5	40	58	27	30	166	**DA16SOMD**	630	400	400	250
	20	14.0	56.5	46	68	32	36	265	**DA20SOMD**	420	400	400	250
	25	18.0	62.0	50	74	41	46	466	**DA25SOMD**	420	400	400	250
	30	23.0	69.5	56	83	46	50	601	**DA30SOMD**	420	400	400	250
	38	30.0	76.0	60	91	55	60	871	**DA38SOMD**	420	315	315	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

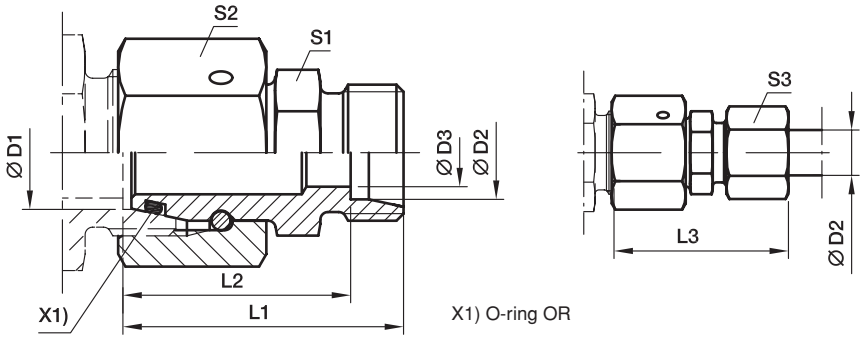
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	DA16SOMDCF	NBR
Stahl, zinc yellow plated	A3C	DA16SOMDA3C	NBR
Stainless Steel	71	DA16SOMD71	VIT
Brass	MS	DA16SOMDMS	NBR

*Please add the **suffixes** below according to the material/surface required.

RED Tube end reducer

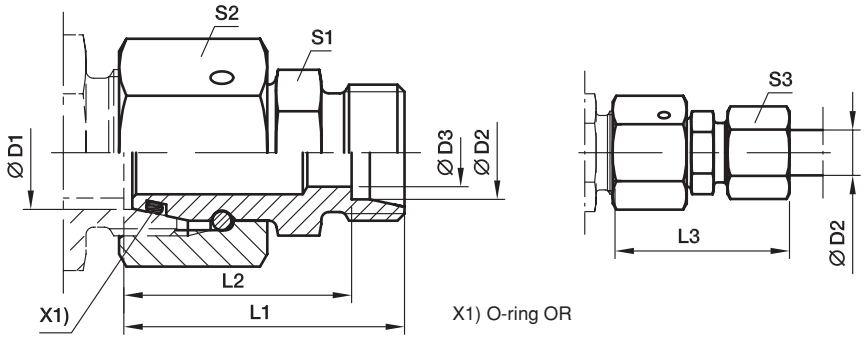
EO 24° DKO swivel / EO 24° cone end



Series [2) 3) 4)]	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1)] CF	A3C	71
L/LL	06	04	2.5	28.5	24.5	34.0	9	14	10	17	**RED06L/04LLOMD**	100	100	100
L	08	06	4.0	30.5	23.5	38.0	12	17	14	29	**RED08/06LOMD**	500	315	315
L	10	06	4.0	32.0	25.0	40.0	14	19	14	36	**RED10/06LOMD**	500	315	315
L	10	08	6.0	32.0	25.0	40.0	14	19	17	38	**RED10/08LOMD**	500	315	315
L	12	06	4.0	32.0	25.0	40.0	17	22	14	49	**RED12/06LOMD**	400	315	315
L	12	08	6.0	32.0	25.0	40.0	17	22	17	49	**RED12/08LOMD**	400	315	315
L	12	10	8.0	33.0	26.0	41.0	17	22	19	51	**RED12/10LOMD**	400	315	315
L	15	06	4.0	35.5	28.5	43.0	19	27	14	81	**RED15/06LOMD**	400	315	315
L	15	08	6.0	35.5	28.5	43.0	19	27	17	85	**RED15/08LOMD**	400	315	315
L	15	10	8.0	36.5	29.5	44.0	19	27	19	83	**RED15/10LOMD**	400	315	315
L	15	12	10.0	36.5	29.5	44.0	19	27	22	83	**RED15/12LOMD**	400	315	315
L	18	06	4.0	35.0	28.0	43.0	24	32	14	109	**RED18/06LOMD**	400	315	315
L	18	08	6.0	35.0	28.0	43.0	24	32	17	111	**RED18/08LOMD**	400	315	315
L	18	10	8.0	36.0	29.0	44.0	24	32	19	110	**RED18/10LOMD**	400	315	315
L	18	12	10.0	36.0	29.0	44.0	24	32	22	110	**RED18/12LOMD**	400	315	315
L	18	15	12.0	37.0	30.0	45.0	24	32	27	115	**RED18/15LOMD**	400	315	315
L/S	18	16	12.0	40.0	31.5	49.5	27	32	30	138	**RED18L/16SOMD**	400	315	315
L	22	06	4.0	39.0	32.0	47.0	27	36	14	158	**RED22/06LOMD**	250	160	160
L	22	08	6.0	39.0	32.0	47.0	27	36	17	158	**RED22/08LOMD**	250	160	160
L	22	10	8.0	40.0	33.0	48.0	27	36	19	159	**RED22/10LOMD**	250	160	160
L	22	12	10.0	40.0	33.0	48.0	27	36	22	157	**RED22/12LOMD**	250	160	160
L	22	15	12.0	41.0	34.0	49.0	27	36	27	164	**RED22/15LOMD**	250	160	160
L/S	22	16	12.0	43.0	34.5	52.5	27	36	30	173	**RED22L/16SOMD**	250	160	160
L	22	18	15.0	41.0	33.5	50.0	27	36	32	167	**RED22/18LOMD**	250	160	160
L/S	22	20	16.0	45.0	34.5	56.0	32	36	36	203	**RED22L/20SOMD**	250	160	160
L	28	06	4.0	41.0	34.0	49.0	32	41	14	219	**RED28/06LOMD**	250	160	160
L	28	08	6.0	41.0	34.0	49.0	32	41	17	221	**RED28/08LOMD**	250	160	160
L	28	10	8.0	42.0	35.0	50.0	32	41	19	213	**RED28/10LOMD**	250	160	160
L	28	12	10.0	42.0	35.0	50.0	32	41	22	213	**RED28/12LOMD**	250	160	160
L	28	15	12.0	43.0	36.0	51.0	32	41	27	218	**RED28/15LOMD**	250	160	160
L/S	28	16	12.0	45.0	36.5	54.5	32	41	30	227	**RED28L/16SOMD**	250	160	160
L	28	18	15.0	43.0	35.5	52.0	32	41	32	220	**RED28/18LOMD**	250	160	160
L	28	22	19.0	45.0	37.5	54.0	32	41	36	222	**RED28/22LOMD**	250	160	160
L/S	28	25	20.0	50.0	38.0	62.0	41	41	46	300	**RED28L/25SOMD**	250	160	160
L	35	06	4.0	44.0	37.0	52.0	41	50	14	318	**RED35/06LOMD**	250	160	160
L	35	08	6.0	44.0	37.0	52.0	41	50	17	318	**RED35/08LOMD**	250	160	160
L	35	10	8.0	45.0	38.0	53.0	41	50	19	318	**RED35/10LOMD**	250	160	160
L	35	12	10.0	45.0	38.0	53.0	41	50	22	324	**RED35/12LOMD**	250	160	160
L	35	15	12.0	46.0	39.0	54.0	41	50	27	328	**RED35/15LOMD**	250	160	160
L	35	18	15.0	46.0	38.5	55.0	41	50	32	328	**RED35/18LOMD**	250	160	160
L	35	22	19.0	48.0	40.5	57.0	41	50	36	331	**RED35/22LOMD**	250	160	160

RED Tube end reducer

EO 24° DKO swivel / EO 24° cone end



Series [2) 3) 4)]	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1)] CF	A3C	71
L/S	35	25	20.0	52.0	40.0	64.0	41	50	46	366	**RED35L/25SOMD**	250	160	160
L	35	28	24.0	48.0	40.5	57.0	41	50	41	327	**RED35/28LOMD**	250	160	160
L/S	35	30	25.0	55.0	41.5	68.0	46	50	50	435	**RED35L/30SOMD**	250	160	160
L	42	10	8.0	48.5	41.5	56.0	50	60	19	537	**RED42/10LOMD**	250	160	160
L	42	12	10.0	48.5	41.5	56.0	50	60	22	538	**RED42/12LOMD**	250	160	160
L	42	15	12.0	49.5	42.5	58.0	50	60	27	534	**RED42/15LOMD**	250	160	160
L	42	18	15.0	49.5	42.0	58.0	50	60	32	544	**RED42/18LOMD**	250	160	160
L	42	22	19.0	51.5	44.0	60.0	50	60	36	543	**RED42/22LOMD**	250	160	160
L	42	28	24.0	51.5	44.0	61.0	50	60	41	539	**RED42/28LOMD**	250	160	160
L/S	42	30	25.0	57.5	44.0	70.5	50	60	50	588	**RED42L/30SOMD**	250	160	160
L	42	35	30.0	53.5	43.0	65.0	50	60	50	541	**RED42/35LOMD**	250	160	160
L/S	42	38	32.0	61.5	45.5	76.0	55	60	60	701	**RED42L/38SOMD**	250	160	160

[1)] Pressure shown = item deliverable

[2)] LL = very light series; [3)] L = light series; [4)] S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

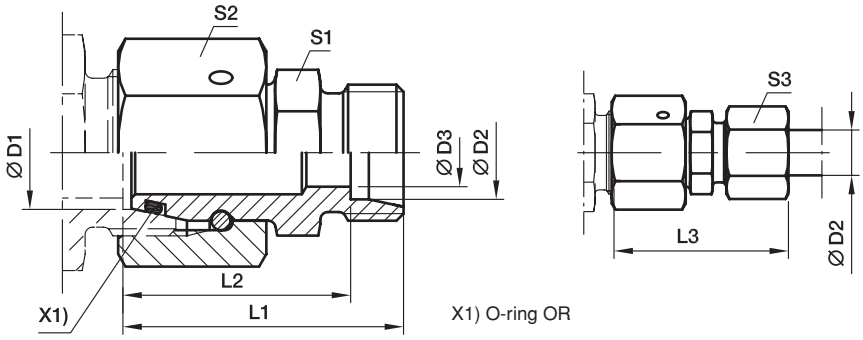
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	RED18/15LOMDCF	NBR
Steel, zinc yellow plated	A3C	RED18/15LOMDA3C	NBR
Stainless Steel	71	RED18/15LOMD71	VIT

RED Tube end reducer

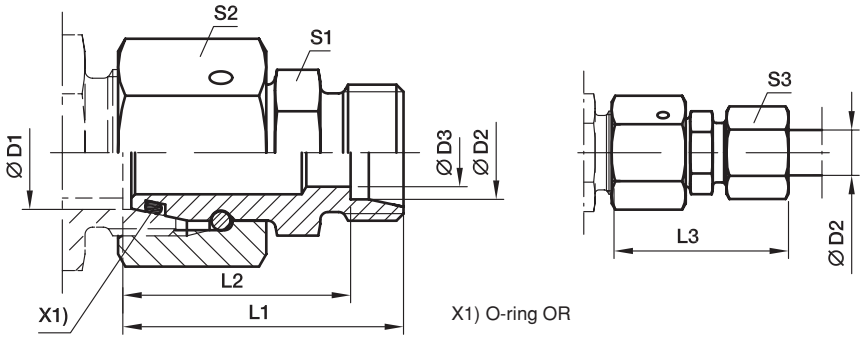
EO 24° DKO swivel / EO 24° cone end



Series [3) 4)]	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1)] CF	A3C	71
S	08	06	4	34.0	27.0	42	14	19	17	42	**RED08/06SOMD**	800	630	630
S	10	06	4	34.5	27.5	42	17	22	17	55	**RED10/06SOMD**	800	630	630
S	10	08	5	34.5	27.5	42	17	22	19	58	**RED10/08SOMD**	800	630	630
S	12	06	4	36.0	29.0	44	17	24	17	66	**RED12/06SOMD**	630	630	630
S	12	08	5	36.0	29.0	44	17	24	19	68	**RED12/08SOMD**	630	630	630
S	12	10	7	37.0	29.5	46	19	24	22	75	**RED12/10SOMD**	630	630	630
S	14	06	4	38.5	31.5	46	19	27	17	88	**RED14/06SOMD**	630	630	630
S	14	08	5	38.5	31.5	46	19	27	19	90	**RED14/08SOMD**	630	630	630
S	14	10	7	38.5	31.0	47	19	27	22	91	**RED14/10SOMD**	630	630	630
S	14	12	8	38.5	31.0	47	22	27	24	100	**RED14/12SOMD**	630	630	630
S	16	06	4	39.0	32.0	47	22	30	17	112	**RED16/06SOMD**	630	400	400
S	16	08	5	39.0	32.0	47	22	30	19	114	**RED16/08SOMD**	630	400	400
S	16	10	7	39.0	31.5	48	22	30	22	115	**RED16/10SOMD**	630	400	400
S	16	12	8	39.0	31.5	48	22	30	24	118	**RED16/12SOMD**	630	400	400
S	16	14	10	41.0	33.0	51	24	30	27	128	**RED16/14SOMD**	630	400	400
S/L	16	15	11	39.0	32.0	47	24	30	27	120	**RED16S/15LOMD**	400	315	315
S	20	06	4	43.0	36.0	51	27	36	17	172	**RED20/06SOMD**	420	400	400
S	20	08	5	43.0	36.0	51	27	36	19	174	**RED20/08SOMD**	420	400	400
S	20	10	7	43.0	35.5	52	27	36	22	174	**RED20/10SOMD**	420	400	400
S	20	12	8	43.0	35.5	52	27	36	24	177	**RED20/12SOMD**	420	400	400
S	20	14	10	45.0	37.0	55	27	36	27	182	**RED20/14SOMD**	420	400	400
S/L	20	15	12	43.0	36.0	51	27	36	27	173	**RED20S/15LOMD**	400	315	315
S	20	16	12	45.0	36.5	55	27	36	30	182	**RED20/16SOMD**	420	400	400
S/L	20	18	14	43.0	35.5	51	27	36	32	178	**RED20S/18LOMD**	400	315	315
S	25	06	4	45.5	38.5	53	32	46	17	294	**RED25/06SOMD**	420	400	400
S	25	08	5	45.5	38.5	53	32	46	19	295	**RED25/08SOMD**	420	400	400
S	25	10	7	45.5	38.0	54	32	46	22	296	**RED25/10SOMD**	420	400	400
S	25	12	8	45.5	38.0	54	32	46	24	299	**RED25/12SOMD**	420	400	400
S	25	14	10	47.5	39.5	57	32	46	27	303	**RED25/14SOMD**	420	400	400
S	25	16	12	47.5	39.0	57	32	46	30	304	**RED25/16SOMD**	420	400	400
S/L	25	18	15	45.5	38.0	54	32	46	32	299	**RED25S/18LOMD**	400	315	315
S	25	20	16	49.5	39.0	61	32	46	36	315	**RED25/20SOMD**	420	400	400
S/L	25	22	18	47.5	40.0	56	32	46	36	304	**RED25S/22LOMD**	250	160	160
S	30	06	4	51.0	44.0	59	41	50	17	412	**RED30/06SOMD**	420	400	400
S	30	08	5	51.0	44.0	59	41	50	19	404	**RED30/08SOMD**	420	400	400
S	30	10	7	51.0	43.5	60	41	50	22	405	**RED30/10SOMD**	420	400	400
S	30	12	8	51.0	43.5	60	41	50	24	405	**RED30/12SOMD**	420	400	400
S	30	14	10	53.0	45.0	63	41	50	27	408	**RED30/14SOMD**	420	400	400
S	30	16	12	53.0	44.5	63	41	50	30	412	**RED30/16SOMD**	420	400	400
S	30	20	16	55.0	44.5	66	41	50	36	421	**RED30/20SOMD**	420	400	400

RED Tube end reducer

EO 24° DKO swivel / EO 24° cone end



Series [3] [4]	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
S/L	30	22	19	53.0	45.5	61	41	50	36	406	**RED30S/22LOMD**	250	160	160
S	30	25	20	57.0	45.0	69	41	50	46	439	**RED30/25SOMD**	420	400	400
S/L	30	28	23	53.0	45.5	62	41	50	41	406	**RED30S/28LOMD**	250	160	160
S	38	06	4	54.5	47.5	62	50	60	17	556	**RED38/06SOMD**	420	315	315
S	38	08	5	54.5	47.5	62	50	60	19	581	**RED38/08SOMD**	420	315	315
S	38	10	7	54.5	47.0	63	50	60	22	579	**RED38/10SOMD**	420	315	315
S	38	12	8	54.5	47.0	63	50	60	24	577	**RED38/12SOMD**	420	315	315
S	38	14	10	56.5	48.5	66	50	60	27	579	**RED38/14SOMD**	420	315	315
S	38	16	12	56.5	48.0	66	50	60	30	580	**RED38/16SOMD**	420	315	315
S	38	20	16	58.5	48.0	70	50	60	36	601	**RED38/20SOMD**	420	315	315
S	38	25	20	60.5	48.5	73	50	60	46	615	**RED38/25SOMD**	420	315	315
S/L	38	28	24	56.5	49.0	65	50	60	41	573	**RED38S/28LOMD**	250	160	160
S	38	30	25	62.5	49.0	76	50	60	50	625	**RED38/30SOMD**	420	315	315
S/L	38	35	30	58.5	48.0	69	50	60	50	588	**RED38S/35LOMD**	250	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

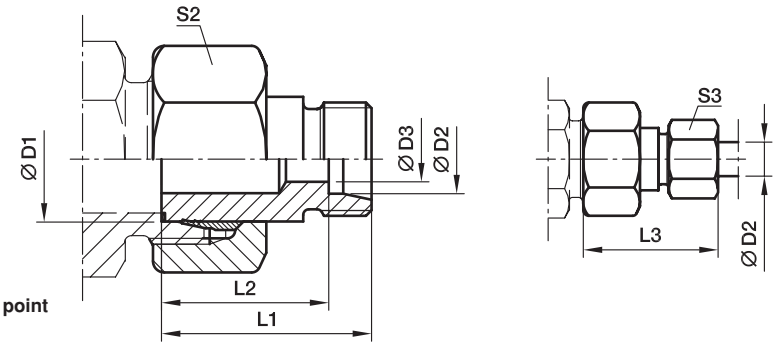
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	RED16/12SOMDCF	NBR
Steel, zinc yellow plated	A3C	RED16/12SOMDA3C	NBR
Stainless Steel	71	RED16/12SOMD71	VIT

KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end

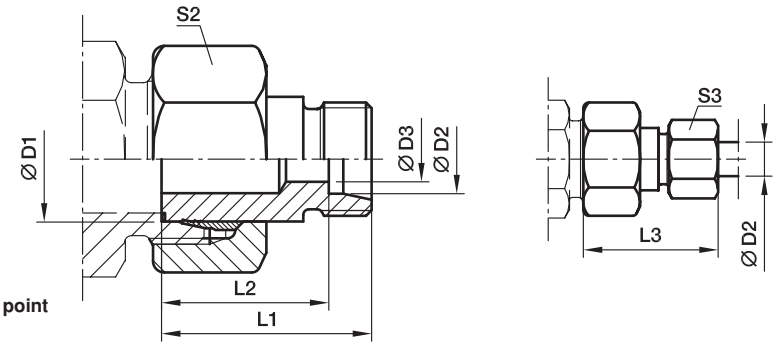


With pre-assembled nut and progressive ring for connection.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series [2] [3]	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	MS
LL	06	04	3.0	28.5	24.5	34	12	10	16	**KOR06/04LLOMD**	100	100	
LL	08	04	3.0	28.5	24.5	34	14	10	16	**KOR08/04LLOMD**	100	100	
LL	08	06	4.5	23.0	17.5	29	14	12	14	**KOR08/06LLOMD**	100	100	
L/LL	06	04	3.0	28.5	24.5	34	14	10	16	**KOR06L/04LLOMD**	100	100	
L/LL	08	04	3.0	28.5	24.5	34	17	10	16	**KOR08L/04LLOMD**	100	100	
L	08	06	4.0	30.5	23.5	38	17	14	27	**KOR08/06LOMD**	315	315	200
L/LL	10	04	3.0	28.5	24.5	34	19	10	32	**KOR10L/04LLOMD**	100	100	
L	10	06	4.0	30.5	23.5	38	19	14	34	**KOR10/06LOMD**	315	315	200
L	10	08	6.0	30.5	23.5	38	19	17	35	**KOR10/08LOMD**	315	315	200
L/LL	12	04	3.0	28.5	24.5	34	22	10	41	**KOR12L/04LLOMD**	100	100	
L	12	06	4.0	30.5	23.5	38	22	14	45	**KOR12/06LOMD**	315	315	200
L	12	08	6.0	30.5	23.5	38	22	17	45	**KOR12/08LOMD**	315	315	200
L	12	10	8.0	31.5	24.5	39	22	19	46	**KOR12/10LOMD**	315	315	200
L	15	06	4.0	30.5	23.5	38	27	14	68	**KOR15/06LOMD**	315	315	200
L	15	08	6.0	30.5	23.5	38	27	17	69	**KOR15/08LOMD**	315	315	200
L	15	10	8.0	31.5	24.5	39	27	19	70	**KOR15/10LOMD**	315	315	200
L	15	12	10.0	31.5	24.5	39	27	22	70	**KOR15/12LOMD**	315	315	200
L	18	06	4.0	31.5	24.5	39	32	14	100	**KOR18/06LOMD**	315	315	200
L	18	08	6.0	31.5	24.5	39	32	17	102	**KOR18/08LOMD**	315	315	200
L	18	10	8.0	32.5	25.5	40	32	19	102	**KOR18/10LOMD**	315	315	200
L	18	12	10.0	32.5	25.5	40	32	22	101	**KOR18/12LOMD**	315	315	200
L	18	15	12.0	33.5	26.5	42	32	27	106	**KOR18/15LOMD**	315	315	200
L	22	06	4.0	32.5	25.5	40	36	14	137	**KOR22/06LOMD**	160	160	100
L	22	08	6.0	32.5	25.5	40	36	17	136	**KOR22/08LOMD**	160	160	100
L	22	10	8.0	33.5	26.5	41	36	19	138	**KOR22/10LOMD**	160	160	100
L	22	12	10.0	33.5	26.5	41	36	22	138	**KOR22/12LOMD**	160	160	100
L	22	15	12.0	34.5	27.5	43	36	27	143	**KOR22/15LOMD**	160	160	100
L	22	18	15.0	34.5	27.0	43	36	32	143	**KOR22/18LOMD**	160	160	100
L	28	06	4.0	33.5	26.5	41	41	14	177	**KOR28/06LOMD**	160	160	100
L	28	08	6.0	33.5	26.5	41	41	17	179	**KOR28/08LOMD**	160	160	100
L	28	10	8.0	34.5	27.5	42	41	19	180	**KOR28/10LOMD**	160	160	100
L	28	12	10.0	34.5	27.5	42	41	22	180	**KOR28/12LOMD**	160	160	100
L	28	15	12.0	35.5	28.5	44	41	27	185	**KOR28/15LOMD**	160	160	100
L	28	18	15.0	35.5	28.0	44	41	32	184	**KOR28/18LOMD**	160	160	100
L	28	22	19.0	37.5	30.0	46	41	36	188	**KOR28/22LOMD**	160	160	100
L	35	06	4.0	38.5	31.5	46	50	14	302	**KOR35/06LOMD**	160	160	
L	35	08	6.0	38.5	31.5	46	50	17	306	**KOR35/08LOMD**	160	160	
L	35	10	8.0	39.5	32.5	47	50	19	305	**KOR35/10LOMD**	160	160	100
L	35	12	10.0	39.5	32.5	47	50	22	304	**KOR35/12LOMD**	160	160	100
L	35	15	12.0	40.5	33.5	49	50	27	308	**KOR35/15LOMD**	160	160	100
L	35	18	15.0	40.5	33.0	49	50	32	316	**KOR35/18LOMD**	160	160	100
L	35	22	19.0	42.5	35.0	51	50	36	310	**KOR35/22LOMD**	160	160	100
L	35	28	24.0	42.5	35.0	52	50	41	305	**KOR35/28LOMD**	160	160	100

KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection. Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series [2] [3]	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	MS
L	42	10	8.0	40.5	33.5	48	60	19	455	**KOR42/10LOMD**	160	160	
L	42	12	10.0	40.5	33.5	48	60	22	438	**KOR42/12LOMD**	160	160	
L	42	15	12.0	41.5	34.5	50	60	27	438	**KOR42/15LOMD**	160	160	100
L	42	18	15.0	41.5	34.0	50	60	32	449	**KOR42/18LOMD**	160	160	100
L	42	22	19.0	43.5	36.0	52	60	36	461	**KOR42/22LOMD**	160	160	100
L	42	28	24.0	43.5	36.0	53	60	41	443	**KOR42/28LOMD**	160	160	100
L	42	35	30.0	45.5	35.0	57	60	50	444	**KOR42/35LOMD**	160	160	100

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

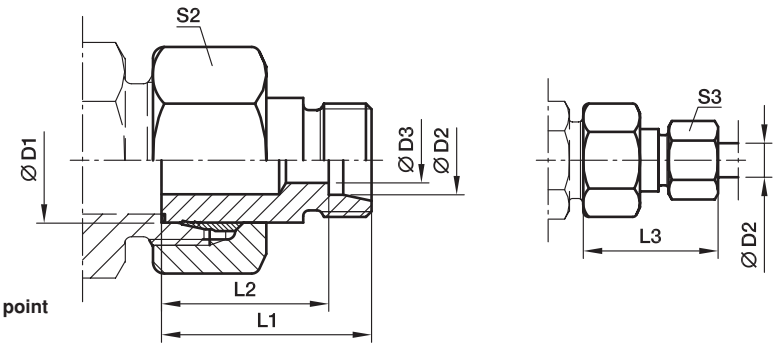
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	KOR18/15LOMDCF
Steel, zinc yellow plated	A3C	KOR18/15LOMDA3C
Brass	MS	KOR18/15LOMDMS

*Please add the **suffixes** below according to the material/surface required.

KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end

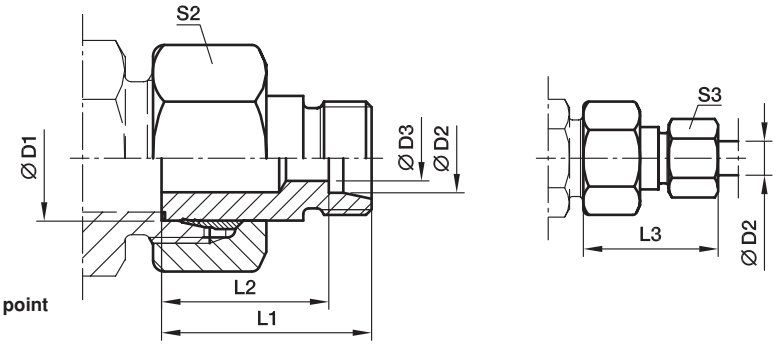


With pre-assembled nut and progressive ring for connection.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	MS
S[4])	08	06	4	32	25.0	40	19	17	37	**KOR08/06SOMD**	630	630	400
	10	06	4	33	26.0	41	22	17	53	**KOR10/06SOMD**	630	630	400
	10	08	5	33	26.0	41	22	19	55	**KOR10/08SOMD**	630	630	400
	12	06	4	34	27.0	42	24	17	61	**KOR12/06SOMD**	630	630	400
	12	08	5	34	27.0	42	24	19	63	**KOR12/08SOMD**	630	630	400
	12	10	7	34	26.5	43	24	22	64	**KOR12/10SOMD**	630	630	400
	14	06	4	36	29.0	44	27	17	88	**KOR14/06SOMD**	630	630	400
	14	08	5	36	29.0	44	27	19	89	**KOR14/08SOMD**	630	630	400
	14	10	7	36	28.5	45	27	22	91	**KOR14/10SOMD**	630	630	400
	14	12	8	36	28.5	45	27	24	92	**KOR14/12SOMD**	630	630	400
	16	06	4	36	29.0	44	30	17	106	**KOR16/06SOMD**	400	400	250
	16	08	5	36	29.0	44	30	19	108	**KOR16/08SOMD**	400	400	250
	16	10	7	36	28.5	45	30	22	114	**KOR16/10SOMD**	400	400	250
	16	12	8	36	28.5	45	30	24	115	**KOR16/12SOMD**	400	400	250
	16	14	10	38	30.0	48	30	27	116	**KOR16/14SOMD**	400	400	250
	20	06	4	41	34.0	49	36	17	175	**KOR20/06SOMD**	400	400	250
	20	08	5	41	34.0	49	36	19	177	**KOR20/08SOMD**	400	400	250
	20	10	7	41	33.5	50	36	22	178	**KOR20/10SOMD**	400	400	250
	20	12	8	41	33.5	50	36	24	180	**KOR20/12SOMD**	400	400	250
	20	14	10	41	33.0	51	36	27	180	**KOR20/14SOMD**	400	400	250
	20	16	12	43	34.5	53	36	30	182	**KOR20/16SOMD**	400	400	250
	25	06	4	44	37.0	52	46	17	306	**KOR25/06SOMD**	400	400	
	25	08	5	44	37.0	52	46	19	311	**KOR25/08SOMD**	400	400	250
	25	10	7	44	36.5	53	46	22	313	**KOR25/10SOMD**	400	400	250
	25	12	8	44	36.5	53	46	24	317	**KOR25/12SOMD**	400	400	250
	25	14	10	45	37.0	55	46	27	312	**KOR25/14SOMD**	400	400	250
	25	16	12	45	36.5	55	46	30	315	**KOR25/16SOMD**	400	400	250
	25	20	16	48	37.5	59	46	36	328	**KOR25/20SOMD**	400	400	250
	30	06	4	46	39.0	54	50	17	373	**KOR30/06SOMD**	400	400	
	30	08	5	46	39.0	54	50	19	376	**KOR30/08SOMD**	400	400	
	30	10	7	46	38.5	55	50	22	376	**KOR30/10SOMD**	400	400	250
	30	12	8	46	38.5	55	50	24	377	**KOR30/12SOMD**	400	400	250
	30	14	10	48	40.0	58	50	27	379	**KOR30/14SOMD**	400	400	250
	30	16	12	48	39.5	58	50	30	381	**KOR30/16SOMD**	400	400	250
	30	20	16	50	39.5	61	50	36	386	**KOR30/20SOMD**	400	400	250
	30	25	20	52	40.0	64	50	46	406	**KOR30/25SOMD**	400	400	250
	38	06	4	50	43.0	58	60	17	571	**KOR38/06SOMD**	315	315	
	38	08	5	50	43.0	58	60	19	567	**KOR38/08SOMD**	315	315	
	38	10	7	50	42.5	59	60	22	571	**KOR38/10SOMD**	315	315	200
	38	12	8	50	42.5	59	60	24	571	**KOR38/12SOMD**	315	315	200

KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection. Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	MS
S[4])	38	14	10	52	44.0	62	60	27	575	**KOR38/14SOMD**	315	315	200
	38	16	12	52	43.5	62	60	30	580	**KOR38/16SOMD**	315	315	200
	38	20	16	54	43.5	65	60	36	593	**KOR38/20SOMD**	315	315	200
	38	25	20	56	44.0	68	60	46	605	**KOR38/25SOMD**	315	315	200
	38	30	25	58	44.5	71	60	50	614	**KOR38/30SOMD**	315	315	200

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

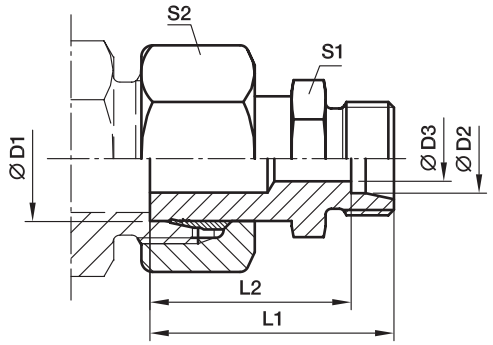
Delivery without nut and ring. Information on ordering complete fittings see page I7.

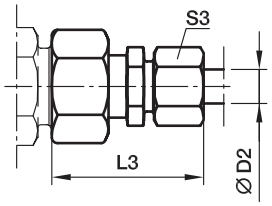
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	KOR16/10SOMDCF
Steel, zinc yellow plated	A3C	KOR16/10SOMDA3C
Brass	MS	KOR16/10SOMDMS

KOR Tube end reducer – Stainless steel

EO stand pipe adjustable / EO 24° cone end





With pre-assembled nut and progressive ring for connection.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code	PN (bar)[1] 71
L[3]	08	06	4	33.5	26.5	41	12	17	14	32	**KOR08/06LOMD71**	315
	10	06	4	34.5	27.5	42	12	19	14	39	**KOR10/06LOMD71**	315
	10	08	6	35.5	28.5	43	14	19	17	40	**KOR10/08LOMD71**	315
	12	06	4	36.5	29.5	44	14	22	14	49	**KOR12/06LOMD71**	315
	12	08	6	36.5	29.5	44	14	22	17	53	**KOR12/08LOMD71**	315
	12	10	8	37.5	30.5	45	17	22	19	55	**KOR12/10LOMD71**	315
	15	06	4	37.0	30.0	45	17	27	14	79	**KOR15/06LOMD71**	315
	15	08	6	37.0	30.0	45	17	27	17	78	**KOR15/08LOMD71**	315
	15	10	8	38.0	31.0	46	17	27	19	85	**KOR15/10LOMD71**	315
	15	12	10	39.0	32.0	47	19	27	22	84	**KOR15/12LOMD71**	315
	18	06	4	37.5	30.5	45	19	32	14	112	**KOR18/06LOMD71**	315
	18	08	6	37.5	30.5	45	19	32	17	113	**KOR18/08LOMD71**	315
	18	10	8	38.5	31.5	46	19	32	19	113	**KOR18/10LOMD71**	315
	18	12	10	38.5	31.5	46	19	32	22	122	**KOR18/12LOMD71**	315
	18	15	12	39.5	32.5	48	24	32	27	131	**KOR18/15LOMD71**	315
	22	06	4	38.5	31.5	46	24	36	14	154	**KOR22/06LOMD71**	160
	22	08	6	38.5	31.5	46	24	36	17	155	**KOR22/08LOMD71**	160
	22	10	8	39.5	32.5	47	24	36	19	156	**KOR22/10LOMD71**	160
	22	12	10	39.5	32.5	47	24	36	22	157	**KOR22/12LOMD71**	160
	22	15	12	40.5	33.5	49	24	36	27	160	**KOR22/15LOMD71**	160
	22	18	15	41.5	34.0	50	27	36	32	173	**KOR22/18LOMD71**	160
	28	06	4	41.0	34.0	49	30	41	14	220	**KOR28/06LOMD71**	160
	28	08	6	41.0	34.0	49	30	41	17	217	**KOR28/08LOMD71**	160
	28	10	8	42.0	35.0	50	30	41	19	211	**KOR28/10LOMD71**	160
	28	12	10	42.0	35.0	50	30	41	22	219	**KOR28/12LOMD71**	160
	28	15	12	43.0	36.0	51	30	41	27	188	**KOR28/15LOMD71**	160
	28	18	15	43.0	35.5	52	30	41	32	218	**KOR28/18LOMD71**	160
	28	22	19	45.0	37.5	54	32	41	36	228	**KOR28/22LOMD71**	160
	35	06	4	48.5	41.5	56	36	50	14	307	**KOR35/06LOMD71**	160
	35	08	6	48.5	41.5	56	36	50	17	313	**KOR35/08LOMD71**	160
	35	10	8	49.5	42.5	57	36	50	19	370	**KOR35/10LOMD71**	160
	35	12	10	49.5	42.5	57	36	50	22	371	**KOR35/12LOMD71**	160
	35	15	12	50.5	43.5	59	36	50	27	380	**KOR35/15LOMD71**	160
	35	18	15	50.5	43.0	59	36	50	32	382	**KOR35/18LOMD71**	160
	35	22	19	52.5	45.0	61	36	50	36	380	**KOR35/22LOMD71**	160
	35	28	24	52.5	45.0	62	41	50	41	400	**KOR35/28LOMD71**	160
	42	10	8	52.5	45.5	60	46	60	19	551	**KOR42/10LOMD71**	160
	42	12	10	52.5	45.5	60	46	60	22	551	**KOR42/12LOMD71**	160
	42	15	12	53.5	46.5	62	46	60	27	687	**KOR42/15LOMD71**	160
	42	18	15	53.5	46.0	62	46	60	32	555	**KOR42/18LOMD71**	160
	42	22	19	55.5	48.0	64	46	60	36	568	**KOR42/22LOMD71**	160
	42	28	24	55.5	48.0	65	46	60	41	559	**KOR42/28LOMD71**	160
	42	35	30	57.5	47.0	69	46	60	50	588	**KOR42/35LOMD71**	160

[1]) Pressure shown = item deliverable

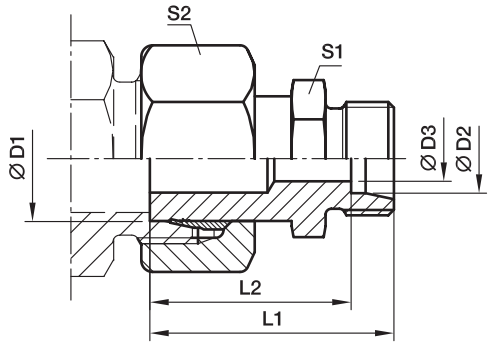
[3]) L = light series

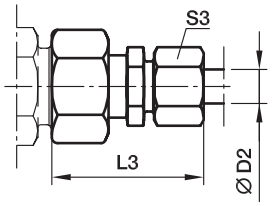
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings see page I7.

KOR Tube end reducer – Stainless steel

EO stand pipe adjustable / EO 24° cone end





With pre-assembled nut and progressive ring for connection.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code	PN (bar)[1] 71
S[4]	08	06	4	36.5	29.5	44	14	19	17	16	**KOR08/06SOMD71**	630
	10	06	4	38.5	31.5	46	14	22	17	16	**KOR10/06SOMD71**	630
	10	08	5	38.5	31.5	46	17	22	19	14	**KOR10/08SOMD71**	630
	12	06	4	38.5	31.5	46	14	24	17	16	**KOR12/06SOMD71**	630
	12	08	5	38.5	31.5	46	17	24	19	16	**KOR12/08SOMD71**	630
	12	10	7	39.5	32.0	48	19	24	22	27	**KOR12/10SOMD71**	630
	14	06	4	40.5	33.5	48	17	27	17	32	**KOR14/06SOMD71**	630
	14	08	5	40.5	33.5	48	17	27	19	34	**KOR14/08SOMD71**	630
	14	10	7	41.5	34.0	50	19	27	22	35	**KOR14/10SOMD71**	630
	14	12	8	41.5	34.0	50	22	27	24	41	**KOR14/10SOMD71**	630
	16	06	4	41.0	34.0	49	17	30	17	44	**KOR16/06SOMD71**	400
	16	08	5	41.0	34.0	49	17	30	19	45	**KOR16/08SOMD71**	400
	16	10	7	42.0	34.5	51	19	30	22	46	**KOR16/10SOMD71**	400
	16	12	8	42.0	34.5	51	22	30	24	68	**KOR16/12SOMD71**	400
	16	14	10	44.0	36.0	54	24	30	27	69	**KOR16/14SOMD71**	400
	20	06	4	46.0	39.0	54	22	36	17	70	**KOR20/06SOMD71**	400
	20	08	5	46.0	39.0	54	22	36	19	70	**KOR20/08SOMD71**	400
	20	10	7	46.0	38.5	55	22	36	22	100	**KOR20/10SOMD71**	400
	20	12	8	46.0	38.5	55	22	36	24	101	**KOR20/12SOMD71**	400
	20	14	10	48.0	40.0	58	24	36	27	101	**KOR20/14SOMD71**	400
	20	16	12	49.0	40.5	59	27	36	30	101	**KOR20/16SOMD71**	400
	25	06	4	50.5	43.5	58	27	46	17	106	**KOR25/06SOMD71**	400
	25	08	5	50.5	43.5	58	27	46	19	136	**KOR25/08SOMD71**	400
	25	10	7	50.5	43.0	59	27	46	22	136	**KOR25/10SOMD71**	400
	25	12	8	50.5	43.0	59	27	46	24	138	**KOR25/12SOMD71**	400
	25	14	10	52.5	44.5	62	27	46	27	138	**KOR25/14SOMD71**	400
	25	16	12	52.5	44.0	62	27	46	30	143	**KOR25/16SOMD71**	400
	25	20	16	54.5	44.0	66	32	46	36	143	**KOR25/20SOMD71**	400
	30	06	4	53.0	46.0	61	32	50	17	177	**KOR30/06SOMD71**	400
	30	08	5	53.0	46.0	61	32	50	19	179	**KOR30/08SOMD71**	400
	30	10	7	53.0	45.5	62	32	50	22	180	**KOR30/10SOMD71**	400
	30	12	8	53.0	45.5	62	32	50	24	180	**KOR30/12SOMD71**	400
	30	14	10	55.0	47.0	65	32	50	27	185	**KOR30/14SOMD71**	400
	30	16	12	55.0	46.5	65	32	50	30	184	**KOR30/16SOMD71**	400
	30	20	16	57.0	46.5	68	32	50	36	188	**KOR30/20SOMD71**	400
	30	25	20	60.0	48.0	72	41	50	46	302	**KOR30/25SOMD71**	400
	38	06	4	60.0	53.0	68	41	60	17	306	**KOR38/06SOMD71**	315
	38	08	5	60.0	53.0	68	41	60	19	305	**KOR38/08SOMD71**	315
	38	10	7	60.0	52.5	69	41	60	22	304	**KOR38/10SOMD71**	315
	38	12	8	60.0	52.5	69	41	60	24	308	**KOR38/12SOMD71**	315
	38	14	10	62.0	54.0	72	41	60	27	316	**KOR38/14SOMD71**	315
	38	16	12	62.0	53.5	72	41	60	30	310	**KOR38/16SOMD71**	315
	38	20	16	64.0	53.5	75	41	60	36	305	**KOR38/20SOMD71**	315
	38	25	20	66.0	54.0	78	41	60	46	455	**KOR38/25SOMD71**	315
	38	30	25	69.0	55.5	82	46	60	50	438	**KOR38/30SOMD71**	315

[1]) Pressure shown = item deliverable

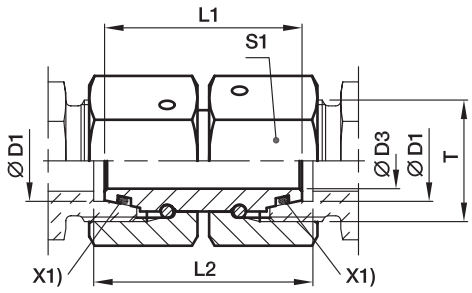
[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings see page I7.

GZ Swivel union

EO 24° DKO swivel



X1) O-ring OR

Series	D1	T	D3	L1	L2	S1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 14×1.5	2.5	32	33	14	28	**GZ06L**	500	315	315
	08	M 14×1.5	4.0	32	33	17	41	**GZ08L**	500	315	315
	10	M 16×1.5	6.0	33	34	19	53	**GZ10L**	500	315	315
	12	M 18×1.5	8.0	33	34	22	71	**GZ12L**	400	315	315
	15	M 22×1.5	10.0	38	39	27	129	**GZ15L**	400	315	315
	18	M 26×1.5	13.0	36	38	32	165	**GZ18L**	400	315	315
	22	M 30×2	17.0	42	44	36	243	**GZ22L**	250	160	160
	28	M 36×2	22.0	46	48	41	319	**GZ28L**	250	160	160
	35	M 45×2	28.0	48	52	50	449	**GZ35L**	250	160	160
	42	M 52×2	34.0	52	57	60	737	**GZ42L**	250	160	160
S[4])	06	M 14×1.5	2.5	32	33	17	41	**GZ06S**	800	630	630
	08	M 16×1.5	4.0	33	34	19	54	**GZ08S**	800	630	630
	10	M 18×1.5	6.0	33	35	22	74	**GZ10S**	800	630	630
	12	M 20×1.5	8.0	36	38	24	95	**GZ12S**	630	630	630
	14	M 22×1.5	9.0	39	41	27	131	**GZ14S**	630	630	630
	16	M 24×1.5	11.0	39	42	30	172	**GZ16S**	630	400	400
	20	M 30×2	14.0	44	48	36	261	**GZ20S**	420	400	400
	25	M 36×2	18.0	46	53	46	477	**GZ25S**	420	400	400
	30	M 42×2	23.0	52	62	50	605	**GZ30S**	420	400	400
	38	M 52×2	30.0	52	67	60	826	**GZ38S**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

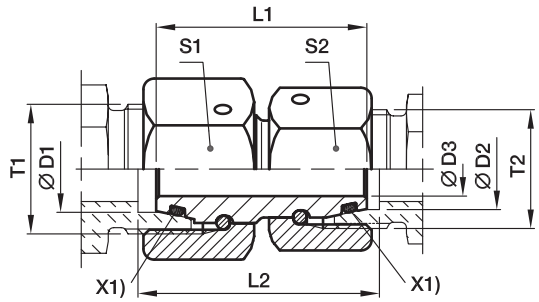
Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GZ16SCF	NBR
Steel, zinc yellow plated	A3C	GZ16SA3C	NBR
Stainless Steel	71	GZ16S71	VIT

GZR Swivel reducer

EO 24° DKO swivel

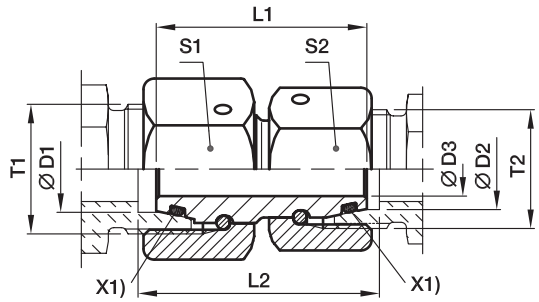


X1) O-ring OR

Series [3) 4)]	D1	D2	T1	T2	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1)] CF	PN (bar)[1)] A3C
L/S	06	06	M 14×1.5	M 12×1.5	2.5	32	33.0	17	14	34	**GZR06L/06S**	500	315
L	08	06	M 14×1.5	M 12×1.5	2.5	32	33.0	17	14	36	**GZR08/06L**	500	315
L/S	08	08	M 16×1.5	M 14×1.5	4.0	33	34.0	19	17	48	**GZR08L/08S**	500	315
L	10	06	M 16×1.5	M 12×1.5	2.5	33	34.0	19	14	44	**GZR10/06L**	500	315
L	10	08	M 16×1.5	M 14×1.5	4.0	33	34.0	19	17	50	**GZR10/08L**	500	315
L/S	10	10	M 18×1.5	M 16×1.5	6.0	33	34.5	22	19	63	**GZR10L/10S**	500	315
L	12	06	M 18×1.5	M 12×1.5	2.5	33	34.0	22	14	56	**GZR12/06L**	400	315
L	12	08	M 18×1.5	M 14×1.5	4.0	33	34.0	22	17	62	**GZR12/08L**	400	315
L	12	10	M 18×1.5	M 16×1.5	6.0	33	34.0	22	19	65	**GZR12/10L**	400	315
L/S	12	12	M 20×1.5	M 18×1.5	8.0	36	37.5	24	22	85	**GZR12L/12S**	400	315
L	15	08	M 22×1.5	M 14×1.5	4.0	38	39.0	27	17	98	**GZR15/08L**	400	315
L	15	10	M 22×1.5	M 16×1.5	6.0	38	39.0	27	19	101	**GZR15/10L**	400	315
L	15	12	M 22×1.5	M 18×1.5	8.0	38	39.0	27	22	108	**GZR15/12L**	400	315
L	18	10	M 26×1.5	M 16×1.5	6.0	36	37.5	32	19	125	**GZR18/10L**	400	315
L	18	12	M 26×1.5	M 18×1.5	8.0	36	37.5	32	22	132	**GZR18/12L**	400	315
L	18	15	M 26×1.5	M 22×1.5	10.0	38	39.5	32	27	155	**GZR18/15L**	400	315
L/S	18	16	M 26×1.5	M 24×1.5	11.0	39	41.5	32	30	177	**GZR18L/16S**	400	315
L	22	12	M 30×2	M 18×1.5	8.0	42	43.5	36	22	195	**GZR22/12L**	250	160
L	22	15	M 30x2	M 22×1.5	10.0	42	43.5	36	27	215	**GZR22/15L**	250	160
L	22	18	M 30×2	M 26×1.5	13.0	42	44.0	36	32	228	**GZR22/18L**	250	160
L/S	22	20	M 30×2	M 30×2	14.0	44	47.0	36	36	266	**GZR22L/20S**	250	160
L	28	15	M 36×2	M 22×1.5	10.0	46	47.5	41	27	143	**GZR28/15L**	250	160
L	28	18	M 36×2	M 26×1.5	13.0	46	48.0	41	32	311	**GZR28/18L**	250	160
L	28	22	M 36×2	M 30×2	17.0	46	46.0	41	36	309	**GZR28/22L**	250	160
L/S	28	25	M 36×2	M 36×2	18.0	46	50.5	41	46	419	**GZR28L/25S**	250	160
L	35	18	M 45×2	M 26×1.5	13.0	48	51.0	50	32	430	**GZR35/18L**	250	160
L	35	22	M 45×2	M 30×2	17.0	48	51.0	50	36	429	**GZR35/22L**	250	160
L	35	28	M 45×2	M 36×2	22.0	48	51.0	50	41	415	**GZR35/28L**	250	160
L/S	35	30	M 45×2	M 42×2	23.0	52	59.0	50	50	577	**GZR35L/30S**	250	160
L	42	22	M 52×2	M 30×2	17.0	52	55.5	60	36	653	**GZR42/22L**	250	160
L	42	28	M 52×2	M 36×2	22.0	52	55.5	60	41	648	**GZR42/28L**	250	160
L	42	35	M 52×2	M 45×2	28.0	52	56.5	60	50	662	**GZR42/35L**	250	160
L/S	42	38	M 52×2	M 52×2	30.0	52	62.0	60	60	822	**GZR42L/38S**	250	160
S	08	06	M 16×1.5	M 14×1.5	2.5	33	34.0	19	17	49	**GZR08/06S**	800	630
S	10	06	M 18×1.5	M 14×1.5	2.5	33	34.5	22	17	60	**GZR10/06S**	800	630
S	10	08	M 18×1.5	M 16×1.5	4.0	33	34.5	22	19	66	**GZR10/08S**	800	630
S	12	06	M 20×1.5	M 14×1.5	2.5	36	37.5	24	17	77	**GZR12/06S**	630	630
S	12	08	M 20×1.5	M 16×1.5	4.0	36	37.5	24	19	82	**GZR12/08S**	630	630
S	12	10	M 20×1.5	M 18×1.5	6.0	36	38.0	24	22	89	**GZR12/10S**	630	630
S	16	10	M 24×1.5	M 18×1.5	6.0	39	41.5	30	22	138	**GZR16/10S**	630	400
S	16	12	M 24×1.5	M 20×1.5	8.0	39	41.5	30	24	143	**GZR16/12S**	630	400
S/L	16	15	M 24×1.5	M 22×1.5	10.0	39	41.0	30	27	153	**GZR16S/15L**	400	315
S	20	12	M 30×2	M 20×1.5	8.0	44	47.0	36	24	204	**GZR20/12S**	420	400

GZR Swivel reducer

EO 24° DKO swivel



X1) O-ring OR

Series [3) 4)]	D1	D2	T1	T2	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1)] CF	PN (bar)[1)] A3C
S	20	16	M 30×2	M 24×1.5	11.0	44	47.5	36	30	232	**GZR20/16S**	420	400
S/L	20	18	M 30×2	M 26×1.5	13.0	44	47.0	36	32	224	**GZR20S/18L**	400	315
S	25	16	M 36×2	M 24×1.5	11.0	46	51.0	46	30	224	**GZR25/16S**	420	400
S	25	20	M 36×2	M 30×2	14.0	46	51.5	46	36	364	**GZR25/20S**	420	400
S/L	25	22	M 36×2	M 30×2	17.0	46	50.5	46	36	475	**GZR25S/22L**	250	160
S	30	16	M 42×2	M 24×1.5	11.0	52	58.5	50	30	475	**GZR30/16S**	420	400
S	30	20	M 42×2	M 30×2	14.0	52	59.0	50	36	500	**GZR30/20S**	420	400
S	30	25	M 42×2	M 36×2	18.0	52	60.5	50	46	589	**GZR30/25S**	420	400
S/L	30	28	M 42×2	M 36×2	22.0	52	58.0	50	41	476	**GZR30S/28L**	250	160
S	38	20	M 52×2	M 30×2	14.0	52	61.5	60	36	671	**GZR38/20S**	420	315
S	38	25	M 52×2	M 36×2	18.0	52	63.0	60	46	759	**GZR38/25S**	420	315
S	38	30	M 52×2	M 42×2	23.0	52	64.5	60	50	767	**GZR38/30S**	420	315
S/L	38	35	M 52×2	M 45×2	28.0	52	61.5	60	50	662	**GZR38S/35L**	250	160

[1)] Pressure shown = item deliverable

[3)] L = light series; [4)] S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

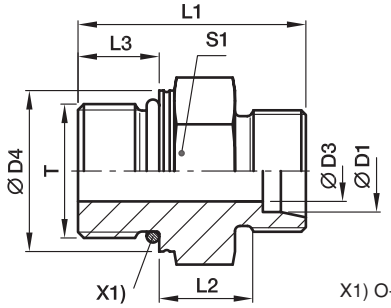
Information on ordering complete fittings or alternative sealing materials see page I7.

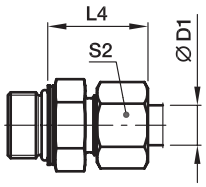
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome^{6}-free	CF	GZR16/12SCF	NBR
Steel, zinc yellow plated	A3C	GZR16/12SA3C	NBR

GEO Male stud connector

Male metric thread – O-ring (ISO 6149) / EO 24° cone end





X1) O-Ring OR

Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
LL[2])	04	M 08×1	3.0	10.8	20.0	9.5	6.5	19.0	11	10	8	**GEO04LLMOMD**	100	100	
	04	M 10×1	3.0	12.8	20.0	9.5	6.5	19.0	13	10	11	**GEO04LLM10X1OMD**	100	100	
	06	M 10×1	4.5	12.8	20.0	8.0	6.5	19.5	13	12	10	**GEO06LLMOMD**	100	100	
L[3])	06	M 10×1	4.5	14.0	24.0	8.5	8.5	23.0	14	14	15	**GEO06LMOMD**	500	315	315
	08	M 12×1.5	6.0	17.0	28.0	10.0	11.0	25.0	17	17	23	**GEO08LMOMD**	500	315	315
	10	M 14×1.5	7.5	19.0	29.0	11.0	11.0	26.0	19	19	28	**GEO10LMOMD**	500	315	315
	12	M 16×1.5	9.0	22.0	31.0	12.5	11.5	27.0	22	22	40	**GEO12LMOMD**	400	315	315
	15	M 18×1.5	11.0	24.0	33.0	13.5	12.5	29.0	24	27	56	**GEO15LMOMD**	400	315	315
	18	M 22×1.5	14.0	27.0	35.0	14.5	13.0	31.0	27	32	80	**GEO18LMOMD**	400	315	315
	22	M 27×2	18.0	32.0	40.0	16.5	16.0	33.0	32	36	104	**GEO22LM27X2OMD**	250	160	160
	28	M 33×2	23.0	41.0	41.0	17.5	16.0	34.0	41	41	171	**GEO28LMOMD**	250	160	160
	35	M 42×2	30.0	50.0	44.0	17.5	16.0	39.0	50	50	278	**GEO35LMOMD**	250	160	160
	42	M 48×2	36.0	55.0	47.5	19.0	17.5	42.0	55	60	340	**GEO42LMOMD**	250	160	160
S[4])	06	M 12×1.5	4.0	17.0	31.0	13.0	11.0	28.0	17	17	29	**GEO06SMOMD**	800	630	630
	08	M 14×1.5	6.0	19.0	33.0	15.0	11.0	30.0	19	19	41	**GEO08SMOMD**	800	630	630
	10	M 16×1.5	7.0	22.0	35.0	15.0	12.5	31.0	22	22	55	**GEO10SMOMD**	800	630	630
	12	M 18×1.5	9.0	24.0	38.5	17.0	14.0	33.0	24	24	73	**GEO12SMOMD**	630	630	630
	16	M 22×1.5	12.0	27.0	42.0	18.5	15.0	37.0	27	30	102	**GEO16SMOMD**	630	400	400
	20	M 27×2	15.0	32.0	49.5	20.5	18.5	42.0	32	36	169	**GEO20SMOMD**	420	400	400
	25	M 33×2	20.0	41.0	53.5	23.0	18.5	47.0	41	46	274	**GEO25SMOMD**	420	400	400
	30	M 42×2	26.0	50.0	56.0	23.5	19.0	50.0	50	50	412	**GEO30SMOMD**	420	400	400
	38	M 48×2	32.0	55.0	63.5	26.0	21.5	57.0	55	60	580	**GEO38SMOMD**	420	315	315

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

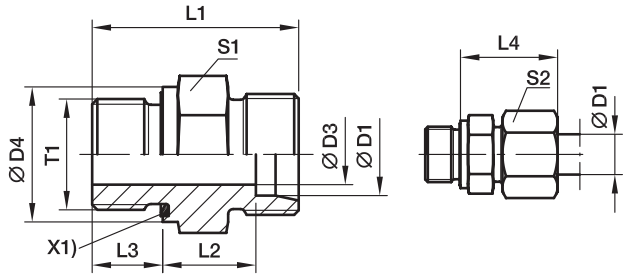
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GEO16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	GEO16SMOMDA3C	NBR
Stainless Steel	71	GEO16SMOMD71	VIT

GE-M-ED Male stud connector

Male metric thread – ED (ISO 9974) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	14	23.5	8.5	8	23	14	14	13	**GE06LMEDOMD**	500	315	315
	08	M12×1.5	6	17	29.0	10.0	12	25	17	17	22	**GE08LMEDOMD**	500	315	315
	10	M14×1.5	7	19	30.0	11.0	12	26	19	19	29	**GE10LMEDOMD**	500	315	315
	10	M12×1.5	6	17	30.0	11.0	12	26	17	19	23	**GE10LM12X1.5EDOMD**	315	315	315
	10	M16×1.5	8	22	31.5	12.5	12	24	22	19	40	**GE10LM16X1.5EDOMD**	400	315	315
	10	M18×1.5	8	24	31.5	12.5	12	27	24	19	50	**GE10LM18X1.5EDOMD**	400	315	315
	10	M22×1.5	8	27	35.0	14.0	14	29	27	19	80	**GE10LM22X1.5EDOMD**	400	315	315
	12	M16×1.5	9	22	31.5	12.5	12	27	22	22	40	**GE12LMEDOMD**	400	315	315
	12	M14×1.5	7	19	30.0	11.0	12	26	19	22	30	**GE12LM14X1.5EDOMD**	400	315	315
	12	M18×1.5	10	24	31.5	12.5	12	27	24	22	47	**GE12LM18X1.5EDOMD**	400	315	315
	12	M22×1.5	10	27	35.0	14.0	14	29	27	22	75	**GE12LM22X1.5EDOMD**	400	315	315
	15	M18×1.5	11	24	32.5	13.5	12	29	24	27	51	**GE15LMEDOMD**	400	315	315
	15	M16×1.5	9	22	32.0	13.0	12	28	24	27	64	**GE15LM16X1.5EDOMD**	400	315	315
	15	M22×1.5	12	27	36.0	15.0	14	30	27	27	77	**GE15LM22X1.5EDOMD**	400	315	315
	18	M22×1.5	14	27	36.0	14.5	14	31	27	32	74	**GE18LMEDOMD**	400	315	315
	18	M18×1.5	11	24	33.5	14.0	12	30	27	32	68	**GE18LM18X1.5EDOMD**	400	315	315
	22	M26×1.5	18	32	40.0	16.5	16	33	32	36	103	**GE22LMEDOMD**	250	160	160
	22	M22×1.5	14	32	38.0	16.5	14	33	32	36	97	**GE22LM22X1.5EDOMD**	250	160	160
	28	M33×2	23	40	43.0	17.5	18	34	41	41	168	**GE28LMEDOMD**	250	160	160
	35	M42×2	30	50	48.0	17.5	20	39	50	50	281	**GE35LMEDOMD**	250	160	160
	42	M48×2	36	55	52.0	19.0	22	42	55	60	356	**GE42LMEDOMD**	250	160	160
S[4])	06	M12×1.5	4	17	32.0	13.0	12	28	17	17	30	**GE06SMEDOMD**	800	630	630
	08	M14×1.5	5	19	34.0	15.0	12	30	19	19	42	**GE08SMEDOMD**	800	630	630
	10	M16×1.5	7	22	34.5	15.0	12	31	22	22	54	**GE10SMEDOMD**	800	630	630
	12	M18×1.5	8	24	36.5	17.0	12	33	24	24	71	**GE12SMEDOMD**	630	630	630
	12	M14×1.5	5	19	36.0	16.5	12	33	22	24	60	**GE12SM14X1.5EDOMD**	630	630	630
	12	M22×1.5	8	27	39.0	17.5	14	34	27	24	102	**GE12SM22X1.5EDOMD**	630	400	400
	14	M20×1.5	10	26	41.0	19.0	14	37	27	27	98	**GE14SMEDOMD**	630	630	630
	16	M22×1.5	12	27	41.0	18.5	14	37	27	30	95	**GE16SMEDOMD**	630	400	400
	16	M18×1.5	8	24	38.5	18.0	12	36	27	30	88	**GE16SM18X1.5EDOMD**	630	400	400
	20	M27×2	16	32	47.0	20.5	16	42	32	36	150	**GE20SMEDOMD**	420	400	400
	25	M33×2	20	40	53.0	23.0	18	47	41	46	264	**GE25SMEDOMD**	420	400	400
	30	M42×2	25	50	57.0	23.5	20	50	50	50	422	**GE30SMEDOMD**	420	400	400
	38	M48×2	32	55	64.0	26.0	22	57	55	60	569	**GE38SMEDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

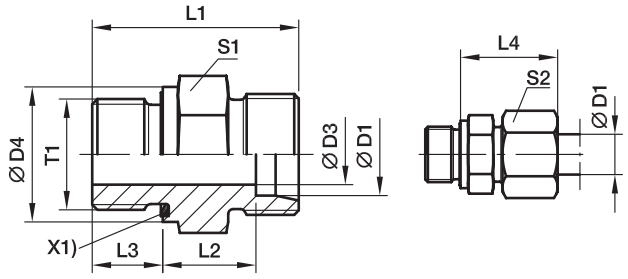
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GE16SMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	GE16SMEDOMDA3C	NBR
Stainless Steel	71	GE16SMEDOMD71	VIT

GE-R-ED Male stud connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	G1/8A	3	14	20.0	9.5	6.5	19	14	10	10	**GE04LLREDOMD**	100	100	100	63
	06	G1/8A	4	14	20.0	8.0	6.5	20	14	12	11	**GE06LLREDOMD**	100	100	100	63
L[3])	06	G1/8A	4	14	23.5	8.5	8.0	23	14	14	13	**GE06LREDOMD**	500	315	315	200
	06	G1/4A	4	19	29.0	10.0	12.0	25	19	14	28	**GE06LR1/4EDOMD**	500	315	315	200
	06	G3/8A	4	22	30.5	11.5	12.0	26	22	14	44	**GE06LR3/8EDOMD**	400	315	315	200
	06	G1/2A	4	27	33.0	12.0	14.0	27	27	14	61	**GE06LR1/2EDOMD**	400	315	315	200
	08	G1/4A	6	19	29.0	10.0	12.0	25	19	17	27	**GE08LREDOMD**	500	315	315	200
	08	G1/8A	4	14	24.5	9.5	8.0	24	14	17	16	**GE08LR1/8EDOMD**	500	315	315	200
	08	G3/8A	6	22	30.5	11.5	12.0	26	22	17	45	**GE08LR3/8EDOMD**	400	315	315	200
	08	G1/2A	6	27	33.0	12.0	14.0	27	27	17	74	**GE08LR1/2EDOMD**	400	315	315	200
	10	G1/4A	6	19	30.0	11.0	12.0	26	19	19	29	**GE10LREDOMD**	500	315	315	200
	10	G1/8A	4	14	25.5	10.5	8.0	25	17	19	21	**GE10LR1/8EDOMD**	500	315	315	200
	10	G3/8A	8	22	31.5	12.5	12.0	27	22	19	43	**GE10LR3/8EDOMD**	400	315	315	200
	10	G1/2A	8	27	34.0	13.0	14.0	28	27	19	71	**GE10LR1/2EDOMD**	400	315	315	200
	12	G3/8A	9	22	31.5	12.5	12.0	27	22	22	41	**GE12LREDOMD**	400	315	315	200
	12	G1/8A	4	14	26.5	11.5	8.0	26	19	22	26	**GE12LR1/8EDOMD**	315	315	315	200
	12	G1/4A	6	19	31.0	12.0	12.0	27	19	22	31	**GE12LR1/4EDOMD**	400	315	315	200
	12	G1/2A	10	27	34.0	13.0	14.0	28	27	22	67	**GE12LR1/2EDOMD**	400	315	315	200
	12	G3/4A	10	32	37.0	14.0	16.0	29	32	22	118	**GE12LR3/4EDOMD**	250	160	160	100
	15	G1/2A	11	27	35.0	14.0	14.0	29	27	27	72	**GE15LREDOMD**	400	315	315	200
	15	G3/8A	9	22	32.5	13.5	12.0	29	24	27	54	**GE15LR3/8EDOMD**	400	315	315	200
	15	G3/4A	12	32	38.0	15.0	16.0	30	32	27	116	**GE15LR3/4EDOMD**	250	160	160	100
	18	G1/2A	14	27	36.0	14.5	14.0	31	27	32	71	**GE18LREDOMD**	400	315	315	200
	18	G3/8A	9	22	33.5	14.0	12.0	30	27	32	66	**GE18LR3/8EDOMD**	400	315	315	200
	18	G3/4A	15	32	38.0	14.5	16.0	31	32	32	110	**GE18LR3/4EDOMD**	250	160	160	100
	22	G3/4A	18	32	40.0	16.5	16.0	33	32	36	102	**GE22LREDOMD**	250	160	160	100
	22	G1/2A	14	27	38.0	16.5	14.0	33	32	36	91	**GE22LR1/2EDOMD**	250	160	160	100
	22	G1A	19	40	43.0	17.5	18.0	34	41	36	189	**GE22LR1EDOMD**	250	160	160	100
	28	G1A	23	40	43.0	17.5	18.0	34	41	41	170	**GE28LREDOMD**	250	160	160	100
	28	G3/4A	18	32	41.0	17.5	16.0	34	41	41	159	**GE28LR3/4EDOMD**	250	160	160	100
	28	G11/4A	24	50	46.0	18.5	20.0	35	50	41	316	**GE28LR11/4EDOMD**	250	160	160	100
	35	G11/4A	30	50	48.0	17.5	20.0	39	50	50	272	**GE35LREDOMD**	250	160	160	100
	35	G1A	23	40	46.0	17.5	18.0	39	46	50	226	**GE35LR1EDOMD**	250	160	160	100
	35	G11/2A	30	55	52.0	19.5	22.0	41	55	50	423	**GE35LR11/2EDOMD**	250	160	160	100
	42	G11/2A	36	55	52.0	19.0	22.0	42	55	60	343	**GE42LREDOMD**	250	160	160	100
	42	G1A	23	40	48.0	19.0	18.0	42	55	60	324	**GE42LR1EDOMD**	250	160	160	100
	42	G11/4A	30	50	50.0	19.0	20.0	42	55	60	348	**GE42LR11/4EDOMD**	250	160	160	100

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

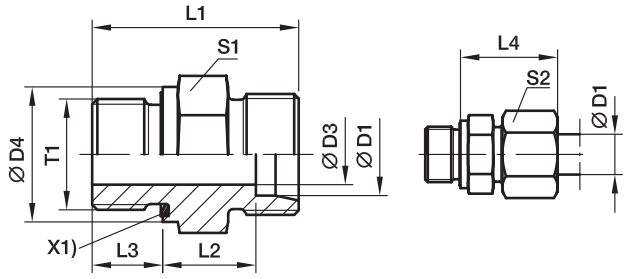
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GE18LREDOMDCF	NBR
Stahl, zinc yellow plated	A3C	GE18LREDOMDA3C	NBR
Stainless Steel	71	GE18LREDOMD71	VIT
Brass	MS	GE18LREDOMDMS	NBR

GE-R-ED Male stud connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
S[4])	06	G1/4A	4	19	32.0	13.0	12	28	19	17	35	**GE06SREDOMD**	800	630	630	400
	06	G1/8A	4	14	27.5	12.5	8	27	14	17	21	**GE06SR1/8EDOMD**	315	315	315	
	06	G3/8A	4	22	34.5	15.5	12	30	22	17	52	**GE06SR3/8EDOMD**	630	630	630	
	06	G1/2A	4	27	39.0	18.0	14	33	27	17	83	**GE06SR1/2EDOMD**	630	630	630	
	08	G1/4A	5	19	34.0	15.0	12	30	19	19	41	**GE08SREDOMD**	800	630	630	400
	08	G3/8A	5	22	34.5	15.5	12	30	22	19	57	**GE08SR3/8EDOMD**	800	630	630	
	08	G1/2A	5	27	39.0	18.0	14	33	27	19	89	**GE08SR1/2EDOMD**	630	400	400	
	10	G3/8A	7	22	34.5	15.0	12	31	22	22	55	**GE10SREDOMD**	800	630	630	400
	10	G1/4A	5	19	34.0	14.5	12	31	19	22	42	**GE10SR1/4EDOMD**	800	630	630	
	10	G1/2A	7	27	39.0	17.5	14	34	27	22	97	**GE10SR1/2EDOMD**	630	630	630	
	12	G3/8A	8	22	36.5	17.0	12	33	22	24	62	**GE12SREDOMD**	630	630	630	400
	12	G1/4A	5	19	36.0	16.5	12	33	22	24	61	**GE12SR1/4EDOMD**	630	630	630	
	12	G1/2A	8	27	39.0	17.5	14	34	27	24	99	**GE12SR1/2EDOMD**	630	630	630	
	14	G1/2A	10	27	41.0	19.0	14	37	27	27	96	**GE14SREDOMD**	630	630	630	400
	14	G3/8A	8	22	38.5	18.5	12	36	24	27	74	**GE14SR3/8EDOMD**	630	630	630	
	14	G3/4A	10	32	45.0	21.0	16	39	32	27	138	**GE14SR3/4EDOMD**	400	400	400	
	16	G1/2A	12	27	41.0	18.5	14	37	27	30	91	**GE16SREDOMD**	630	400	400	250
	16	G3/8A	8	22	38.5	18.0	12	36	27	30	83	**GE16SR3/8EDOMD**	630	400	400	
	16	G3/4A	12	32	45.0	20.5	16	39	32	30	152	**GE16SR3/4EDOMD**	420	400	400	
	20	G3/4A	16	32	47.0	20.5	16	42	32	36	149	**GE20SREDOMD**	420	400	400	250
	20	G1/2A	12	27	45.0	20.5	14	42	32	36	142	**GE20SR1/2EDOMD**	420	400	400	
	20	G1A	16	40	51.0	22.5	18	44	41	36	265	**GE20SR1EDOMD**	420	400	400	
	20	G11/4A	16	50	53.0	22.5	20	44	50	36	404	**GE20SR11/4EDOMD**	400	400	400	
	25	G1A	20	40	53.0	23.0	18	47	41	46	266	**GE25SREDOMD**	420	400	400	250
	25	G1/2A	12	27	49.0	23.0	14	47	41	46	228	**GE25SR1/2EDOMD**	420	400	400	
	25	G3/4A	16	32	51.0	23.0	16	47	41	46	255	**GE25SR3/4EDOMD**	420	400	400	
	25	G11/4A	20	50	55.0	23.0	20	47	50	46	411	**GE25SR11/4EDOMD**	400	400	400	
	25	G11/2A	20	55	60.0	26.0	22	50	55	46	549	**GE25SR11/2EDOMD**	315	315	315	
	30	G11/4A	25	50	57.0	23.5	20	50	50	50	418	**GE30SREDOMD**	420	400	400	250
	30	G1A	20	40	55.0	23.5	18	50	46	50	344	**GE30SR1EDOMD**	420	400	400	
	30	G11/2A	25	55	62.0	26.5	22	53	55	50	530	**GE30SR11/2EDOMD**	315	315	315	
	38	G11/2A	32	55	64.0	26.0	22	57	55	60	563	**GE38SREDOMD**	420	315	315	200
	38	G11/4A	25	50	62.0	26.0	20	57	55	60	575	**GE38SR11/4EDOMD**	420	315	315	

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

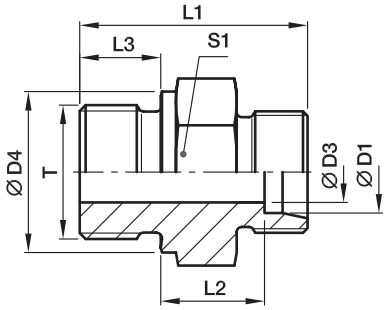
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

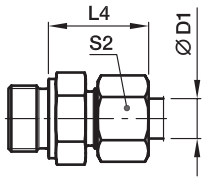
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GE16SREDOMDCF	NBR
Stahl, zinc yellow plated	A3C	GE16SREDOMDA3C	NBR
Stainless Steel	71	GE16SREDOMD71	VIT
Brass	MS	GE16SREDOMDMS	NBR

GE-R Male stud connector

Male BSPP thread – metal sealing edge (ISO 1179) / EO 24° cone end





Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	G1/8A	4	14	23.5	8.5	8	23.0	14	14	14	**GE06LR**	315	315	315	200
	06	G1/4A	4	18	29.0	10.0	12	25.0	19	14	60	**GE06LR1/4**	315	315	315	200
	06	G3/8A	4	22	30.5	11.5	12	26.0	22	14	45	**GE06LR3/8**	315	315	315	200
	06	G1/2A	4	26	33.0	12.0	14	27.0	27	14	60	**GE06LR1/2**	315	315	315	
	08	G1/4A	6	18	29.0	10.0	12	25.0	19	17	26	**GE08LR**	315	315	315	200
	08	G1/8A	4	14	24.5	8.5	8	23.0	14	17	16	**GE08LR1/8**	315	315	315	
	08	G3/8A	6	22	30.5	11.5	12	26.0	22	17	44	**GE08LR3/8**	315	315	315	200
	08	G1/2A	6	26	33.0	12.0	14	27.0	27	17	74	**GE08LR1/2**	315	315	315	200
	10	G1/4A	6	18	30.0	11.0	12	26.0	19	19	31	**GE10LR**	315	315	315	200
	10	G1/8A	4	14	25.5	10.5	8	25.0	17	19	21	**GE10LR1/8**	315	315	315	
	10	G3/8A	8	22	31.5	12.5	12	27.0	22	19	44	**GE10LR3/8**	315	315	315	200
	10	G1/2A	8	26	34.0	13.0	14	28.0	27	19	72	**GE10LR1/2**	315	315	315	200
	12	G3/8A	9	22	31.5	12.5	12	27.0	22	22	43	**GE12LR**	315	315	315	200
	12	G1/8A	4	14	26.5	11.5	8	26.0	19	22	27	**GE12LR1/8**	315	315	315	
	12	G1/4A	6	18	31.0	12.0	12	27.0	19	22	32	**GE12LR1/4**	315	315	315	200
	12	G1/2A	10	26	34.0	13.0	14	28.0	27	22	67	**GE12LR1/2**	315	315	315	200
	12	G3/4A	10	32	37.0	14.0	16	29.0	32	22	120	**GE12LR3/4**	315	315	315	
	15	G1/2A	11	26	35.0	14.0	14	29.0	27	27	72	**GE15LR**	250	250	250	160
	15	G3/8A	9	22	32.5	13.5	12	29.0	24	27	56	**GE15LR3/8**	250	250	250	160
	15	G3/4A	12	32	38.0	15.0	16	30.0	32	27	118	**GE15LR3/4**	250	250	250	
	18	G1/2A	14	26	36.0	14.5	14	31.0	27	32	72	**GE18LR**	250	250	250	160
	18	G3/8A	9	22	33.5	14.0	12	29.5	27	32	69	**GE18LR3/8**	250	250	250	
	18	G3/4A	15	32	38.0	14.5	16	30.0	32	32	112	**GE18LR3/4**	250	250	250	
	22	G3/4A	18	32	40.0	16.5	16	33.0	32	36	103	**GE22LR**	160	160	160	100
	22	G1/2A	14	26	38.0	16.5	14	33.0	32	36	91	**GE22LR1/2**	160	160	160	100
	22	G1A	19	39	43.0	17.5	18	33.5	41	36	184	**GE22LR1**	160	160	160	
	28	G1A	23	39	43.0	17.5	18	34.0	41	41	168	**GE28LR**	160	160	160	100
	28	G1/2A	14	26	39.0	17.5	14	34.0	41	41	141	**GE28LR1/2**	160	160	160	
	28	G3/4A	18	32	41.0	17.5	16	34.0	41	41	156	**GE28LR3/4**	160	160	16	
	28	G11/4A	24	50	46.0	18.3	20	35.0	50	41	314	**GE28LR11/4**	160	160	160	
	35	G11/4A	30	49	48.0	17.5	20	39.0	50	50	276	**GE35LR**	160	160	160	100
	35	G1/2A	14	26	42.0	17.5	14	39.0	46	50	194	**GE35LR1/2**	160	160	160	
	35	G3/4A	18	32	44.0	17.5	16	39.0	46	50	202	**GE35LR3/4**	160	160	160	
	35	G1A	23	39	46.0	17.5	18	39.0	46	50	234	**GE35LR**1	160	160	160	
	35	G11/2A	30	55	52.0	19.5	22	41.0	55	50	355	**GE35LR11/2**	160	160	160	
	42	G11/2A	36	55	52.0	19.0	22	42.0	55	60	349	**GE42LR**	160	160	160	100
	42	G1A	23	39	48.0	19.0	18	42.0	55	60	327	**GE42LR1**	160	160	160	
	42	G11/4A	30	49	50.0	19.0	20	42.0	55	60	336	**GE42LR11/4**	160	160	160	

[1]) Pressure shown = item deliverable

[3]) L = light series

$\frac{PN\ (bar)}{10}$ = PN (MPa)

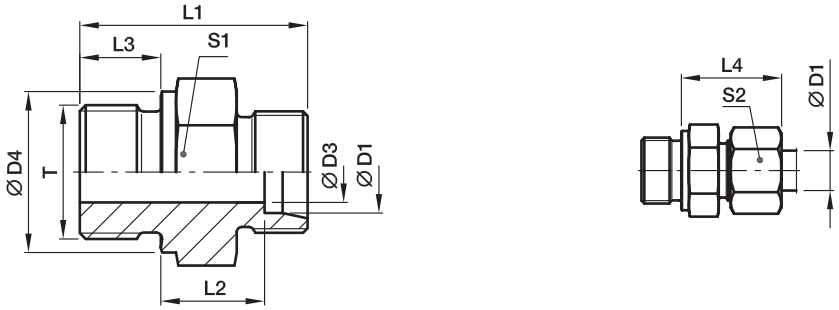
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE18LRCFX
Steel, zinc yellow plated	A3CX	GE18LRA3CX
Stainless Steel	71X	GE18LR71X
Brass	MSX	GE18LRMSX

GE-R Male stud connector

Male BSPP thread – metal sealing edge (ISO 1179) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
S[4])	06	G1/4A	4	18	32.0	13.0	12	28	19	17	35	**GE06SR**	400	400	400	250
	06	G1/8A	3	14	27.5	12.5	8	27	14	17	22	**GE06SR1/8**	400	400	400	
	06	G3/8A	4	22	34.5	15.5	12	30	22	17	57	**GE06SR3/8**	400	400	400	
	06	G1/2A	4	26	39.0	18.0	14	33	27	17	83	**GE06SR1/2**	400	400	400	
	08	G1/4A	5	18	34.0	15.0	12	30	19	19	41	**GE08SR**	400	400	400	250
	08	G3/8A	5	22	34.5	15.5	12	30	22	19	59	**GE08SR3/8**	400	400	400	
	08	G1/2A	5	26	39.0	18.0	14	33	27	19	100	**GE08SR1/2**	400	400	400	
	10	G3/8A	7	22	34.5	15.0	12	31	22	22	56	**GE10SR**	400	400	400	250
	10	G1/4A	5	18	34.0	14.5	12	31	19	22	43	**GE10SR1/4**	400	400	400	
	10	G1/2A	7	26	39.0	17.5	14	34	27	22	97	**GE10SR1/2**	400	400	400	
	12	G3/8A	8	22	36.5	17.0	12	33	22	24	62	**GE12SR**	400	400	400	250
	12	G1/4A	5	18	36.0	16.5	12	33	22	24	57	**GE12SR1/4**	400	400	400	
	12	G1/2A	8	26	39.0	17.5	14	34	27	24	57	**GE12SR1/2**	400	400	400	
	14	G1/2A	10	26	41.0	19.0	14	37	27	27	96	**GE14SR**	400	400	400	250
	14	G3/8A	8	22	38.5	18.5	12	36	24	27	74	**GE14SR3/8**	400	400	400	
	16	G1/2A	12	26	41.0	18.5	14	37	27	30	92	**GE16SR**	400	400	400	250
	16	G3/8A	8	22	38.5	18.0	12	36	27	30	83	**GE16SR3/8**	400	400	400	
	16	G3/4A	12	32	45.0	20.5	16	39	32	30	157	**GE16SR3/4**	400	400	400	
	20	G3/4A	16	32	47.0	20.5	16	42	32	36	151	**GE20SR**	400	400	400	250
	20	G1/2A	12	26	45.0	20.5	14	42	32	36	142	**GE20SR1/2**	400	400	400	
	20	G1A	16	39	51.0	22.5	18	44	41	36	273	**GE20SR1**	250	250	250	
	20	G11/4A	16	49	53.0	22.5	20	44	50	36	387	**GE20SR11/4**	160	160	160	
	25	G1A	20	39	53.0	23.0	18	47	41	46	267	**GE25SR**	250	250	250	160
	25	G3/4A	16	32	51.0	23.0	16	47	41	46	245	**GE25SR3/4**	250	250	250	
	25	G11/4A	20	49	55.0	23.0	20	47	50	46	422	**GE25SR11/4**	160	160	160	
	30	G11/4A	25	49	57.0	23.5	20	50	50	50	422	**GE30SR**	160	160	160	100
	30	G1A	20	39	55.0	23.5	18	50	46	50	337	**GE30SR1**	160	160	160	
	38	G11/2A	32	55	64.0	26.0	22	57	55	60	560	**GE38SR**	160	160	160	100
	38	G11/4A	25	49	62.0	26.0	20	57	55	60	578	**GE38SR11/4**	160	160	160	

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

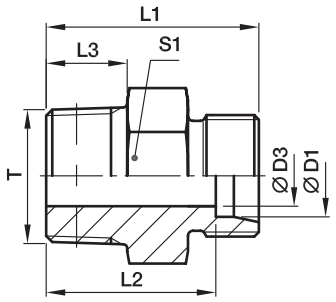
Delivery without nut and ring. Information on ordering complete fittings see page I7.

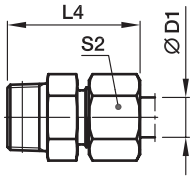
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE16SRCFX
Steel, zinc yellow plated	A3CX	GE16SRA3CX
Stainless Steel	71X	GE16SR71X
Brass	MSX	GE16SRMSX

*Please add the **suffixes** below according to the material/surface required.

GE-R(KEG) Male stud connector

Male short BSP taper thread (DIN 3852-2, type C) / EO 24° cone end





Series	D1	T	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	R1/8tap.	3.0	20	16.0	8	26	11	10	8	**GE04LLR**	100	100	100	63
	06	R1/8tap.	4.5	20	14.5	8	26	11	12	8	**GE06LLR**	100	100	100	63
	08	R1/8tap.	6.0	22	16.5	8	28	12	14	10	**GE08LLR**	100	100	100	63
	08	R1/4tap.	6.0	26	20.5	12	32	14	14	18	**GE08LLR1/4**	100	100	100	63
	10	R1/4tap.	8.0	26	20.5	12	32	14	17	15	**GE10LLR**	100	100		63
	12	R1/4tap.	8.0	26	20.0	12	32	17	19	18	**GE12LLR**	100	100		63
	12	R3/8tap.	10.0	26	20.0	12	32	17	19	23	**GE12LLR3/8**	100	100		63
L[3])	06	R1/8tap.	4.0	22	15.0	8	30	12	14	11	**GE06LR1/8KEG**	315	315	315	
	06	R1/4tap.	4.0	27	20.0	12	35	17	14	24	**GE06LR1/4KEG**	315	315	315	200
	08	R1/8tap.	4.0	23	16.0	8	31	17	17	15	**GE08LR1/8KEG**	315	315	315	200
	08	R1/4tap.	6.0	27	20.0	12	35	17	17	22	**GE08LR1/4KEG**	315	315	315	
	10	R1/4tap.	7.0	28	21.0	12	36	17	19	24	**GE10LR1/4KEG**	315	315	315	
	12	R1/4tap.	7.0	29	22.0	12	37	19	22	53	**GE12LR1/4KEG**	315	315	315	200
	12	R3/8tap.	9.0	29	22.0	12	37	19	22	33	**GE12LR3/8KEG**	315	315	315	
	12	R1/2tap.	10.0	31	24.0	14	39	24	22	53	**GE12LR1/2KEG**	315	315	315	200
	15	R3/8tap.	9.0	30	23.0	12	38	24	27	49	**GE15LR3/8KEG**	315	315	315	200
	15	R1/2tap.	11.0	32	25.0	14	40	24	27	59	**GE15LR1/2KEG**	315	315	315	
	18	R1/2tap.	14.0	33	25.5	14	42	27	32	64	**GE18LR1/2KEG**	315	315	315	
	22	R3/4tap.	17.0	37	29.5	16	46	32	36	99	**GE22LR3/4KEG**	160	160	160	
	28	R1tap.	23.0	40	32.5	18	49	41	41	154	**GE28LR1KEG**	160	160	160	
	35	R1 1/4tap.	30.0	45	34.5	20	56	46	50	238	**GE35LR11/4KEG**	160	160	160	
	42	R1 1/2tap.	36.0	49	38.0	22	61	55	60	335	**GE42LR11/2KEG**	160	160	160	

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

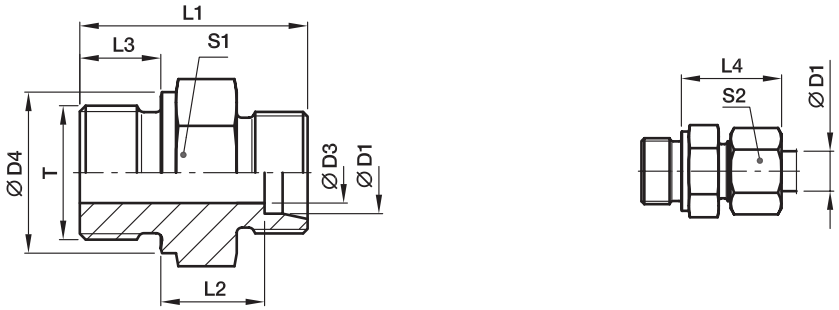
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE06LR1/4KEGCFX
Steel, zinc yellow plated	A3CX	GE06LR1/4KEGA3CX
Stainless Steel	71X	GE06LR1/4KEG71X
Brass	MSX	GE06LR1/4KEGMSX

GE-M Male stud connector

Male metric thread – metal sealing edge (ISO 9974) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	M10×1	4	14	23.5	8.5	8	23	14	14	13	**GE06LM**	315	315	315	200
	08	M12×1.5	6	17	29.0	10.0	12	25	17	17	22	**GE08LM**	315	315	315	200
	10	M14×1.5	7	19	30.0	11.0	12	26	19	19	31	**GE10LM**	315	315	315	200
	10	M10×1	4	14	25.5	10.5	8	25	17	19	20	**GE10LM10X1**	315	315	315	
	10	M12×1.5	6	17	30.0	11.0	12	26	17	19	25	**GE10LM12X1.5**	315	315	315	
	10	M16×1.5	8	21	31.5	12.0	12	27	22	19	41	**GE10LM16X1.5**	315	315	315	
	10	M18×1.5	8	23	31.5	12.5	12	27	24	19	50	**GE10LM18X1.5**	315	315	315	
	10	M22×1.5	8	27	35.0	14.0	14	29	27	19	72	**GE10LM22X1.5**	315	315	315	
	12	M14×1.5	7	19	30.0	11.0	12	26	19	22	30	**GE12LM14X1.5**	315	315	315	
	12	M16×1.5	9	21	31.5	12.5	12	27	22	22	40	**GE12LM**	315	315	315	
	12	M18×1.5	10	23	31.5	12.5	12	27	24	22	47	**GE12LM18X1.5**	315	315	315	
	12	M22×1.5	10	27	35.0	14.0	14	29	27	22	76	**GE12LM22X1.5**	315	315	315	
	15	M16×1.5	9	21	32.0	13.0	12	28	24	27	50	**GE15LM16X1.5**	250	250	250	
	15	M18×1.5	11	23	32.5	13.5	12	29	24	27	52	**GE15LM**	250	250	250	160
	15	M22×1.5	12	27	36.0	15.0	14	30	27	27	77	**GE15LM22X1.5**	250	250	250	
	18	M18×1.5	11	23	33.5	14.0	12	30	27	32	68	**GE18LM18X1.5**	250	250	250	
	18	M22×1.5	14	27	36.0	14.5	14	31	27	32	77	**GE18LM**	250	250	250	160
	22	M22×1.5	14	27	38.0	16.5	14	33	32	36	92	**GE22LM22X1.5**	160	160	160	
	22	M26×1.5	18	31	40.0	16.5	16	33	32	36	102	**GE22LM**	160	160	160	100
	28	M33×2	23	39	43.0	17.5	18	34	41	41	168	**GE28LM**	160	160	160	100
	35	M42×2	30	49	48.0	17.5	20	39	50	50	280	**GE35LM**	160	160	160	100
	42	M48×2	36	55	52.0	19.0	22	42	55	60	354	**GE42LM**	160	160	160	100
S[4])	06	M12×1.5	4	17	32.0	13.0	12	28	17	17	30	**GE06SM**	400	400	400	250
	06	M14×1.5	4	19	34.0	15.0	12	30	19	17	42	**GE06SM14X1.5**	400	400	400	
	08	M14×1.5	5	19	34.0	15.0	12	30	19	19	43	**GE08SM**	400	400	400	250
	10	M16×1.5	7	21	34.5	15.0	12	31	22	22	54	**GE10SM**	400	400	400	250
	12	M18×1.5	8	23	36.5	17.0	12	33	24	24	72	**GE12SM**	400	400	400	250
	12	M14×1.5	5	19	36.0	16.5	12	33	22	24	60	**GE12SM14X1.5**	400	400	400	
	12	M22×1.5	8	27	39.0	17.5	14	34	27	24	103	**GE12SM22X1.5**	400	400	400	
	14	M20×1.5	10	25	41.0	19.0	14	37	27	27	95	**GE14SM**	400	400	400	250
	16	M18×1.5	8	23	38.5	18.0	12	36	27	30	88	**GE16SM18X1.5**	400	400	400	
	16	M22×1.5	12	27	41.0	18.5	14	37	27	30	97	**GE16SM**	400	400	400	250
	20	M27×2	16	32	47.0	20.5	16	42	32	36	155	**GE20SM**	400	400	400	250
	25	M33×2	20	39	53.0	23.0	18	47	41	46	268	**GE25SM**	250	250	250	160
	30	M42×2	25	49	57.0	23.5	20	50	50	50	421	**GE30SM**	160	160	160	100
	38	M48×2	32	55	64.0	26.0	22	57	55	60	568	**GE38SM**	160	160	160	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

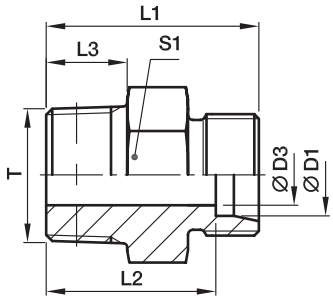
Delivery without nut and ring. Information on ordering complete fittings see page I7.

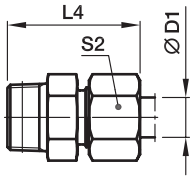
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE16SMCFX
Steel, zinc yellow plated	A3CX	GE16SMA3CX
Stainless Steel	71X	GE16SM71X
Brass	MSX	GE16SMMSX

GE-M(KEG) Male stud connector

Male short metric taper thread (DIN 3852-1, type C) / EO 24° cone end





Series	D1	T	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	M6×1tap.	2.0	20	16.0	8	26	9	10	5	**GE04LLM6X1KEG**	100	100		
	04	M8×1tap.	3.0	20	16.0	8	26	10	10	7	**GE04LLM**	100	100	100	63
	06	M10×1tap.	4.5	20	14.5	8	26	11	12	9	**GE06LLM**	100	100	100	63
	06	M8×1tap.	3.5	20	14.5	8	26	11	12	9	**GE06LLM8X1KEG**	100	100		
	08	M10×1tap.	6.0	22	16.5	8	28	12	14	10	**GE08LLM**	100	100	100	63

[1]) Pressure shown = item deliverable

[2]) LL = very light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

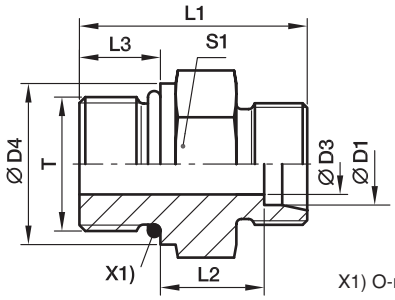
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

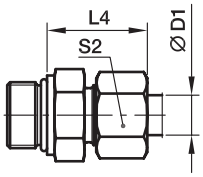
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE06LLMCFX
Steel, zinc yellow plated	A3CX	GE06LLMA3CX
Stainless Steel	71X	GE06LLM71X
Brass	MSX	GE06LLMMSX

GE-UNF/UN Male stud connector

Male UNF/UN thread – O-ring (ISO 11926) / EO 24° cone end



X1) O-ring OR



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	08	7/16-20UNF-2A	5.0	14.4	26	10.0	9.0	25	17	17	21	**GE08L7/16UNFOMD**	315	315	315
	10	7/16-20UNF-2A	5.0	14.4	27	11.0	10.0	26	17	19	23	**GE10L7/16UNFOMD**	315	315	315
	12	9/16-18UNF-2A	7.0	17.6	28	11.0	10.0	26	19	22	32	**GE12L9/16UNFOMD**	315	315	315
	12	3/4-16UNF-2A	10.0	22.3	31	13.0	11.0	28	24	22	52	**GE12L3/4UNFOMD**	315	315	315
	12	7/8-14UNF-2A	10.0	25.5	34	14.3	12.7	29	27	22	77	**GE12L7/8UNFOMD**	315	315	315
	15	3/4-16UNF-2A	11.0	22.3	32	14.0	11.0	29	24	27	57	**GE15L3/4UNFOMD**	315	315	315
	15	7/8-14UNF-2A	12.0	25.5	35	15.3	12.7	30	27	27	81	**GE15L7/8UNFOMD**	315	315	315
	18	3/4-16UNF-2A	11.0	22.3	33	14.5	11.0	31	27	32	68	**GE18L3/4UNFOMD**	315	315	315
	18	7/8-14UNF-2A	14.0	25.5	35	14.8	12.7	31	27	32	72	**GE18L7/8UNFOMD**	315	315	315
	22	7/8-14UNF-2A	14.0	25.5	37	16.8	12.7	33	32	36	94	**GE22L7/8UNFOMD**	160	160	160
	22	11/16-12UN-2A	18.0	31.9	39	16.5	15.0	33	32	36	103	**GE22L11/16UNOMD**	160	160	160
	22	15/16-12UN-2A	19.0	38.2	40	17.5	15.0	34	41	36	163	**GE22L15/16UNOMD**	160	160	160
	28	11/16-12UN-2A	18.0	31.9	40	17.5	15.0	34	41	41	152	**GE28L11/16UNOMD**	160	160	160
	28	15/16-12UN-2A	23.0	38.2	40	17.5	15.0	34	41	41	163	**GE28L15/16UNOMD**	160	160	160
	35	15/16-12UN-2A	23.0	38.2	43	17.5	15.0	39	46	50	222	**GE35L15/16UNOMD**	160	160	160
	35	15/8-12UN-2A	29.0	47.7	43	17.5	15.0	39	50	50	257	**GE35L15/8UNOMD**	160	160	160
	42	15/8-12UN-2A	29.0	47.7	45	19.0	15.0	42	55	60	339	**GE42L15/8UNOMD**	160	160	160
S[4])	08	7/16-20UNF-2A	4.0	16.0	31	15.0	9.0	30	17	19	33	**GE08S7/16UNFOMD**	630	630	630
	10	9/16-18UNF-2A	6.0	17.6	32	14.5	10.0	31	19	22	42	**GE10S9/16UNFOMD**	630	630	630
	12	9/16-18UNF-2A	6.0	17.6	32	14.5	10.0	31	22	24	50	**GE12S9/16UNFOMD**	630	630	630
	12	3/4-16UNF-2A	8.0	22.3	36	17.5	11.0	34	24	24	73	**GE12S3/4UNFOMD**	630	630	630
	16	3/4-16UNF-2A	10.5	22.3	35	15.5	11.0	34	24	30	90	**GE16S3/4UNFOMD**	400	400	400
	16	7/8-14UNF-2A	12.0	25.5	40	18.8	12.7	37	27	30	95	**GE16S7/8UNFOMD**	400	400	400
	20	3/4-16UNF-2A	10.0	22.3	42	20.5	11.0	42	32	36	132	**GE20S3/4UNFOMD**	400	400	400
	20	7/8-14UNF-2A	12.0	25.5	44	20.8	12.7	42	32	36	141	**GE20S7/8UNFOMD**	400	400	400
	20	11/16-12UN-2A	16.0	31.9	46	20.5	15.0	42	32	36	163	**GE20S11/16UNOMD**	400	400	400
	25	11/16-12UN-2A	16.0	31.9	50	23.0	15.0	47	36	46	206	**GE25S11/16UNOMD**	400	400	400
	25	15/16-12UN-2A	20.0	38.2	50	23.0	15.0	47	41	46	258	**GE25S15/16UNOMD**	400	400	400
	30	15/16-12UN-2A	20.0	38.2	52	23.5	15.0	50	46	50	327	**GE30S15/16UNOMD**	400	400	400
	30	15/8-12UN-2A	24.0	47.7	52	23.5	15.0	50	50	50	422	**GE30S15/8UNOMD**	400	400	400
	38	15/8-12UN-2A	24.0	47.7	57	26.0	15.0	57	55	60	554	**GE38S15/8UNOMD**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

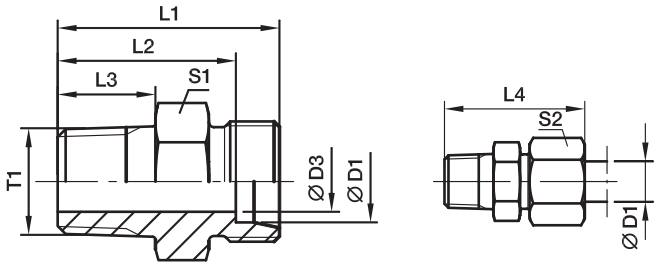
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GE16S3/4UNFOMDCF	NBR
Steel, zinc yellow plated	A3C	GE16S3/4UNFOMDA3C	NBR
Stainless Steel	71	GE16S3/4UNFOMD71	VIT

GE-NPT Male stud connector

Male NPT thread (SAE J476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	1/8-27 NPT	3.0	22.0	18.0	10.0	28	11	10	9	**GE04LL1/8NPT**	100	100	100	
	06	1/8-27 NPT	4.5	22.0	16.5	10.0	28	11	12	9	**GE06LL1/8NPT**	100	100	100	63
	08	1/8-27 NPT	5.0	24.0	18.5	10.0	30	12	14	11	**GE08LL1/8NPT**	100	100	100	63
L[3])	06	1/8-27 NPT	4.0	24.0	17.0	10.0	32	12	14	12	**GE06L1/8NPT**	315	315	315	200
	06	1/4-18 NPT	4.0	30.0	23.0	14.5	38	17	14	27	**GE06L1/4NPT**	315	315	315	200
	06	3/8-18 NPT	4.0	30.0	23.0	14.5	38	19	14	32	**GE06L3/8NPT**	315	315	315	
	06	1/2-14 NPT	4.0	36.0	29.0	19.5	44	22	14	53	**GE06L1/2NPT**	315	315	315	
	08	1/8-27 NPT	4.0	25.0	18.0	10.0	33	14	17	16	**GE08L1/8NPT**	315	315	315	
	08	1/4-18 NPT	6.0	30.0	23.0	14.5	38	17	17	25	**GE08L1/4NPT**	315	315	315	200
	08	3/8-18 NPT	6.0	30.0	23.0	14.5	38	19	17	34	**GE08L3/8NPT**	315	315	315	
	08	1/2-14 NPT	6.0	36.0	29.0	19.5	44	22	17	54	**GE08L1/2NPT**	315	315	315	
	10	1/8-27 NPT	4.0	25.0	18.0	10.0	33	17	19	19	**GE10L1/8NPT**	315	315	315	
	10	1/4-18 NPT	7.0	31.0	24.0	14.5	39	17	19	25	**GE10L1/4NPT**	315	315	315	200
	10	3/8-18 NPT	7.0	32.0	25.0	14.5	40	19	19	40	**GE10L3/8NPT**	315	315	315	
	10	1/2-14 NPT	8.0	37.0	30.0	19.5	45	22	19	54	**GE10L1/2NPT**	315	315	315	
	10	3/4-14 NPT	8.0	38.0	31.0	19.5	46	30	19	93	**GE10L3/4NPT**	315	315	315	
	12	1/8-27NPT	4.0	26.0	19.0	10.0	34	19	22	52	**GE12L1/8NPT**	315	315	315	
	12	1/4-18 NPT	7.0	32.0	25.0	14.5	40	19	22	31	**GE12L1/4NPT**	315	315	315	200
	12	3/8-18 NPT	8.0	32.0	25.0	14.5	40	19	22	37	**GE12L3/8NPT**	315	315	315	200
	12	1/2-14 NPT	10.0	37.0	30.0	19.5	45	22	22	62	**GE12L1/2NPT**	315	315	315	200
	15	3/8-18 NPT	8.0	33.0	26.0	14.5	41	24	27	53	**GE15L3/8NPT**	315	315	315	
	15	1/2-14 NPT	12.0	38.0	31.0	19.5	46	24	27	63	**GE15L1/2NPT**	315	315	315	200
	15	3/4-14 NPT	12.0	39.0	32.0	19.5	47	30	27	112	**GE15L3/4NPT**	315	315	315	
	15	1-11 1/2 NPT	12.0	45.0	38.0	24.5	53	36	27	158	**GE15L1NPT**	315	315	315	
	18	3/8-18 NPT	8.0	34.0	26.5	14.5	43	27	32	69	**GE18L3/8NPT**	315	315	315	
	18	1/2-14 NPT	12.0	39.0	31.5	19.5	48	27	32	79	**GE18L1/2NPT**	315	315	315	200
	18	3/4-14 NPT	15.0	39.0	31.5	19.5	48	30	32	104	**GE18L3/4NPT**	315	315	315	
	18	1-11 1/2 NPT	15.0	45.0	37.5	24.5	54	36	32	159	**GE18L1NPT**	315	315	315	
	22	3/8-18 NPT	8.0	36.5	29.0	14.5	45	32	36	91	**GE22L3/8NPT**	160	160	160	
	22	1/2-14 NPT	12.0	41.0	33.5	19.5	50	32	36	96	**GE22L1/2NPT**	160	160	160	
	22	3/4-14 NPT	16.0	41.0	33.5	19.5	50	32	36	108	**GE22L3/4NPT**	160	160	160	100
	22	1-11 1/2 NPT	19.0	47.0	39.5	24.5	56	36	36	174	**GE22L1NPT**	160	160	160	
	28	3/4-14 NPT	16.0	42.0	34.5	19.5	51	41	41	157	**GE28L3/4NPT**	160	160	160	
	28	1-11 1/2 NPT	21.0	47.0	39.5	24.5	56	41	41	197	**GE28L1NPT**	160	160	160	100
	28	11/4-1 11/2 NPT	24.0	49.0	41.5	25.0	58	46	41	266	**GE28L11/4NPT**	160	160	160	
	35	1-11 1/2NPT	22.0	50.0	39.5	24.5	61	46	50	280	**GE35L1NPT**	160	160	160	
	35	11/4-11 1/2 NPT	28.0	51.0	40.5	25.0	62	46	50	285	**GE35L11/4NPT**	160	160	160	
	42	11/4- 11 1/2 NPT	28.0	53.0	42.0	25.0	65	55	60	382	**GE42L11/4NPT**	160	160	160	
	42	11/2-11 1/2 NPT	36.0	53.0	42.0	26.0	65	55	60	377	**GE42L11/2NPT**	160	160	160	

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

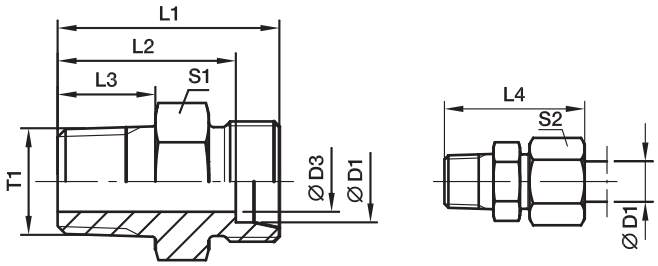
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE18L1/2NPTCFX
Steel, zinc yellow plated	A3CX	GE18L1/2NPTA3CX
Stainless Steel	71X	GE18L1/2NPT71X
Brass	MSX	GE18L1/2NPTMSX

GE-NPT Male stud connector

Male NPT thread (SAE J476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
S[4])	06	1/8-27 NPT	4	28	21.0	10.0	36	14	17	21	**GE06S1/8NPT**	630	630	630	
	06	1/4-18 NPT	4	35	28.0	14.5	43	17	17	37	**GE06S1/4NPT**	630	630	630	400
	06	3/8-18 NPT	4	33	26.0	14.5	41	19	17	40	**GE06S3/8NPT**	630	630	630	
	06	1/2-14 NPT	4	42	35.0	19.5	50	22	17	71	**GE06S1/2NPT**	630	630	630	
	08	1/4-18 NPT	5	35	28.0	14.5	43	17	19	38	**GE08S1/4NPT**	630	630	630	400
	08	3/8-18 NPT	5	35	28.0	14.5	43	19	19	46	**GE08S3/8NPT**	630	630	630	
	08	1/2-14 NPT	5	42	35.0	19.5	50	22	19	73	**GE08S1/2NPT**	630	630	630	400
	10	1/4-18 NPT	5	35	27.5	14.5	44	19	22	45	**GE10S1/4NPT**	630	630	630	
	10	3/8-18 NPT	7	35	27.5	14.5	44	19	22	49	**GE10S3/8NPT**	630	630	630	400
	10	1/2-14 NPT	7	42	34.5	19.5	51	22	22	73	**GE10S1/2NPT**	630	630	630	400
	10	3/4-14 NPT	7	44	36.5	19.5	53	30	22	125	**GE10S3/4NPT**	630	630	630	
	12	1/4-18 NPT	5	37	29.5	14.5	46	22	24	57	**GE12S1/4NPT**	630	630	630	
	12	3/8-18 NPT	8	37	29.5	14.5	46	22	24	62	**GE12S3/8NPT**	630	630	630	400
	12	1/2-14 NPT	8	42	34.5	19.5	51	22	24	83	**GE12S1/2NPT**	630	630	630	400
	12	3/4-14 NPT	8	44	36.5	19.5	53	30	24	126	**GE12S3/4NPT**	630	630	630	
	14	3/8-18 NPT	8	39	31.0	14.5	49	24	27	77	**GE14S3/8NPT**	630	630	630	
	14	1/2-14 NPT	10	44	36.0	19.5	54	24	27	89	**GE14S1/2NPT**	630	630	630	400
	14	3/4-14 NPT	10	46	38.0	19.5	56	30	27	130	**GE14S3/4NPT**	630	630	630	
	14	1-11 1/2 NPT	10	51	43.0	24.5	61	36	27	180	**GE14S1NPT**	630	630	630	
	16	3/8-18 NPT	8	39	30.5	14.5	49	27	30	84	**GE16S3/8NPT**	400	400	400	
	16	1/2-14 NPT	12	48	39.5	19.5	58	32	30	97	**GE16S1/2NPT**	400	400	400	250
	16	3/4-14 NPT	12	46	37.5	19.5	56	30	30	130	**GE16S3/4NPT**	400	400	400	
	16	1-11 1/2 NPT	12	51	42.5	24.5	61	36	30	178	**GE16S1NPT**	400	400	400	
	20	1/2-14 NPT	12	48	37.5	19.5	59	32	36	144	**GE20S1/2NPT**	400	400	400	
	20	3/4-14 NPT	16	48	37.5	19.5	59	32	36	149	**GE20S3/4NPT**	400	400	400	250
	20	1-11 1/2 NPT	16	55	44.5	24.5	66	36	36	243	**GE20S1NPT**	400	400	400	
	25	3/4-14 NPT	16	52	40.0	19.5	64	41	46	240	**GE25S3/4NPT**	400	400	400	
	25	1-11 1/2 NPT	20	57	45.0	24.5	69	41	46	278	**GE25S1NPT**	400	400	400	
	25	11/4-11 1/2 NPT	20	58	46.0	25.0	70	46	46	396	**GE25S11/4NPT**	400	400	400	
	25	11/2-11 1/2 NPT	20	61	49.0	26.0	73	50	46	469	**GE25S11/2NPT**	400	400	400	
	30	3/4-14 NPT	16	54	40.5	19.5	67	46	50	307	**GE30S3/4NPT**	400	400	400	
	30	1-11 1/2 NPT	20	59	45.5	24.5	72	46	50	343	**GE30S1NPT**	400	400	400	
	30	11/4-11 1/2 NPT	25	60	46.5	25.0	73	46	50	397	**GE30S11/4NPT**	400	400	400	
	30	11/2-11 1/2NPT	25	60	46.5	26.0	73	50	50	440	**GE30S11/2NPT**	400	400	400	
	38	1-11 1/2 NPT	22	64	48.0	24.5	79	55	60	510	**GE38S1NPT**	315	315	315	
	38	11/4-11 1/2 NPT	25	65	49.0	25.0	80	55	60	535	**GE38S11/4NPT**	315	315	315	
	38	11/2-11 1/2 NPT	32	65	49.0	26.0	80	55	60	571	**GE38S11/2NPT**	315	315	315	

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

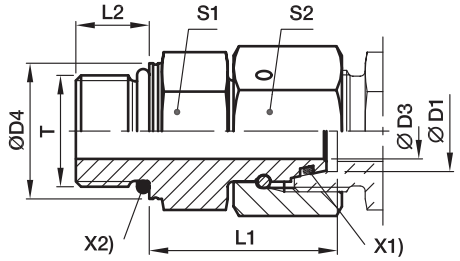
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GE16S1/2NPTCFX
Steel, zinc yellow plated	A3CX	GE16S1/2NPTA3CX
Stainless Steel	71X	GE16S1/2NPT71X
Brass	MSX	GE16S1/2NPTMSX

EGEO Swivel connector

Male metric thread – O-ring (ISO 6149) / EO 24° DKO swivel



X2) O-ring OR X1) O-ring OR

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
L[3])	06	M 10×1	2.5	13.8	24.5	8.5	14	14	29	**EGEO06LM**	500	315
	08	M 12×1.5	4.0	16.8	26.5	11.0	17	17	43	**EGEO08LM**	500	315
	10	M 14×1.5	6.0	18.8	27.5	11.0	19	19	57	**EGEO10LM**	500	315
	12	M 16×1.5	8.0	21.8	30.5	11.5	22	22	85	**EGEO12LM**	400	315
	15	M 18×1.5	10.0	23.8	31.5	12.5	24	27	115	**EGEO15LM**	400	315
	18	M 22×1.5	13.0	26.8	31.5	13.0	27	32	152	**EGEO18LM**	400	315
	22	M 27×2	17.0	31.8	32.5	16.0	32	36	207	**EGEO22LM27X2**	250	160
	28	M 33×2	22.0	40.8	35.0	16.0	41	41	294	**EGEO28LM**	250	160
	35	M 42×2	28.0	49.8	42.5	16.0	50	50	516	**EGEO35LM**	250	160
	42	M 48×2	34.0	54.8	46.5	17.5	55	60	718	**EGEO42LM**	250	160
S[4])	06	M 12×1.5	2.5	16.8	27.0	11.0	17	17	49	**EGEO06SM**	800	630
	08	M 14×1.5	4.0	18.8	29.5	11.0	19	19	69	**EGEO08SM**	800	630
	10	M 16×1.5	6.0	21.8	32.0	12.5	22	22	96	**EGEO10SM**	800	630
	12	M 18×1.5	8.0	23.8	34.0	14.0	24	24	116	**EGEO12SM**	630	630
	16	M 22×1.5	11.0	26.8	37.0	15.0	27	30	179	**EGEO16SM**	630	400
	20	M 27×2	14.0	31.8	43.0	18.5	32	36	280	**EGEO20SM**	420	400
	25	M 33×2	18.0	40.8	48.0	18.5	41	46	502	**EGEO25SM**	420	400
	30	M 42×2	23.0	49.8	51.0	19.0	50	50	697	**EGEO30SM**	420	400
	38	M 48×2	30.0	54.8	60.0	21.5	55	60	965	**EGEO38SM**	420	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

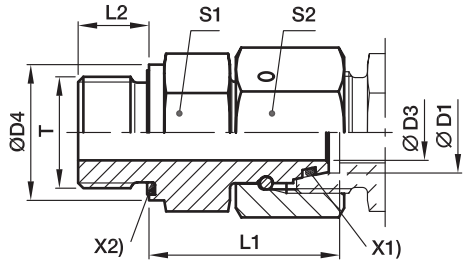
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EGEO16SMCF	NBR
Steel, zinc yellow plated	A3C	EGEO16SMA3C	NBR

EGE-M-ED Swivel connector

Male metric thread – ED-seal (ISO 9974) / EO 24° DKO swivel



X2) Eolastic-sealing ED X1) O-ring OR

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
L[3])	06	M 10 × 1	2.5	14	24.5	8	14	14	27	**EGE06LMED**	500	315	315
	08	M 12 × 1.5	4.0	17	26.5	12	17	17	45	**EGE08LMED**	500	315	315
	10	M 14 ×1.5	6.0	19	27.5	12	19	19	57	**EGE10LMED**	500	315	315
	12	M 16 ×1.5	8.0	22	30.5	12	22	22	82	**EGE12LMED**	400	315	315
	12	M 22 × 1.5	8.0	27	27.0	14	27	22	92	**EGE12LM22X1.5ED**	400	315	315
	15	M 18 × 1.5	10.0	24	31.5	12	24	27	113	**EGE15LMED**	400	315	315
	15	M 22 ×1.5	10.0	27	32.0	14	27	27	142	**EGE15LM22X1.5ED**	400	315	315
	18	M 22 × 1.5	13.0	27	31.5	14	27	32	148	**EGE18LMED**	400	315	315
	22	M 26 × 1.5	17.0	32	32.5	16	32	36	203	**EGE22LMED**	250	160	160
	28	M 33 × 2	22.0	40	35.0	18	41	41	289	**EGE28LMED**	250	160	160
	35	M 42 × 2	28.0	50	42.5	20	50	50	511	**EGE35LMED**	250	160	160
	42	M 48 × 2	34.0	55	46.5	22	55	60	711	**EGE42LMED**	250	160	160
S[4])	06	M 12 × 1.5	2.5	17	27.0	12	17	17	47	**EGE06SMED**	800	630	630
	08	M 14 × 1.5	4.0	19	29.5	12	19	19	65	**EGE08SMED**	800	630	630
	10	M 16 × 1.5	6.0	22	32.0	12	22	22	91	**EGE10SMED**	800	630	630
	12	M 18 × 1.5	8.0	24	34.0	12	24	24	112	**EGE12SMED**	630	630	630
	14	M 20 × 1.5	9.0	26	36.5	14	27	27	153	**EGE14SMED**	630	630	630
	16	M 22 × 1.5	11.0	27	37.0	14	27	30	174	**EGE16SMED**	630	400	400
	20	M 27 × 2	14.0	32	43.0	16	32	36	274	**EGE20SMED**	420	400	400
	25	M 33 × 2	18.0	40	48.0	18	41	46	497	**EGE25SMED**	420	400	400
	30	M 42 × 2	23.0	50	51.0	20	50	50	691	**EGE30SMED**	420	400	400
	38	M 48 × 2	30.0	55	60.0	22	55	60	957	**EGE38SMED**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

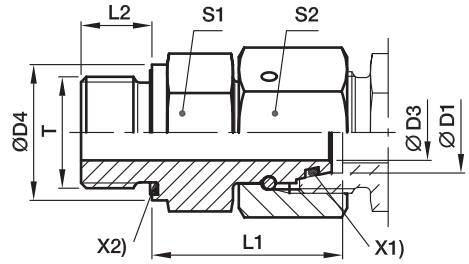
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EGE16SMEDCF	NBR
Steel, zinc yellow plated	A3C	EGE16SMEDA3C	NBR
Stainless Steel	71	EGE16SMED71	VIT

EGE-R-ED Swivel connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° DKO swivel



X2) Eolastic-sealing ED X1) O-ring OR

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	2.5	14	24.5	8	14	14	27	**EGE06LRED**	500	315	315
	08	G 1/4 A	4.0	19	29.5	12	19	17	28	**EGE08LRED**	500	315	315
	10	G 1/4 A	6.0	19	27.5	12	19	19	54	**EGE10LRED**	500	315	315
	10	G 3/8 A	6.0	22	29.0	12	22	19	70	**EGE10LR3/8ED**	400	315	
	12	G 3/8 A	8.0	22	34.0	12	22	22	95	**EGE12LRED**	400	315	315
	12	G 1/4 A	6.0	19	27.5	12	19	22	65	**EGE12LR1/4ED**	400	315	
	12	G 1/2 A	8.0	27	29.5	14	27	22	114	**EGE12LR1/2ED**	400	315	
	15	G 1/2 A	10.0	27	32.0	14	27	27	137	**EGE15LRED**	400	315	315
	18	G 1/2 A	13.0	27	31.5	14	27	32	143	**EGE18LRED**	400	315	315
	18	G 3/4 A	13.0	32	29.5	16	32	32	182	**EGE18LR3/4ED**	250	160	
	22	G 3/4 A	17.0	32	32.5	16	32	36	200	**EGE22LRED**	250	160	160
	28	G 1 A	22.0	40	35.0	18	41	41	289	**EGE28LRED**	250	160	160
	35	G 1 1/4 A	28.0	50	42.5	20	50	50	500	**EGE35LRED**	250	160	160
	42	G 1 1/2 A	34.0	55	46.5	22	55	60	718	**EGE42LRED**	250	160	160
S[4])	06	G 1/4 A	2.5	19	27.0	12	19	17	53	**EGE06SRED**	800	630	630
	08	G 1/4 A	4.0	19	29.5	12	19	19	64	**EGE08SRED**	800	630	630
	10	G 3/8 A	6.0	22	32.0	12	22	22	93	**EGE10SRED**	800	630	630
	12	G 3/8 A	8.0	22	34.0	12	22	24	100	**EGE12SRED**	630	630	630
	12	G 1/4 A	5.0	19	31.5	12	19	24	140	**EGE12SR1/4ED**	630	630	
	12	G 1/2 A	8.0	27	35.0	14	27	24	140	**EGE12SR1/2ED**	630	630	630
	14	G 1/2 A	9.0	27	36.5	14	27	27	157	**EGE14SRED**	630	630	630
	16	G 1/2 A	11.0	27	37.0	14	27	30	170	**EGE16SRED**	630	400	400
	20	G 3/4 A	14.0	32	43.0	16	32	36	273	**EGE20SRED**	420	400	400
	25	G 1 A	18.0	40	48.0	18	41	46	493	**EGE25SRED**	420	400	400
	30	G 1 1/4 A	23.0	50	51.0	20	50	50	691	**EGE30SRED**	420	400	
	38	G 1 1/2 A	30.0	55	60.0	22	55	60	934	**EGE38SRED**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

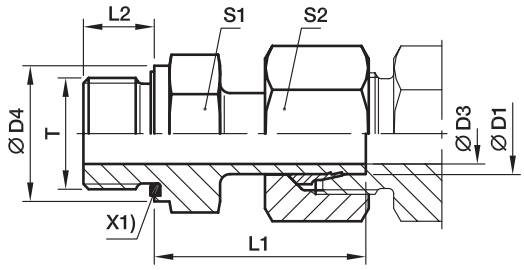
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EGE16SREDCF	NBR
Steel, zinc yellow plated	A3C	EGE16SREDA3C	NBR
Stainless Steel	71	EGE16SRED71	VIT

EVGE-M-ED Standpipe connector

Male metric thread – ED (ISO 9974) / EO standpipe adjustable



Pre-assembled nut and ring.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

X1) Eolastic-sealing ED

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
L[3])	06	M 10×1	3.5	14	24.5	8	14	14	24	**EVGE06LMED**	315	315	315
	08	M 12×1.5	5.5	17	26.5	12	17	17	38	**EVGE08LMED**	315	315	315
	10	M 14×1.5	7.0	19	27.5	12	19	19	49	**EVGE10LMED**	315	315	315
	12	M 16×1.5	9.0	22	30.0	12	22	22	67	**EVGE12LMED**	315	315	315
	15	M 18×1.5	11.0	24	30.5	12	24	27	95	**EVGE15LMED**	315	315	315
	18	M 22×1.5	14.0	27	31.5	14	27	32	137	**EVGE18LMED**	315	315	315
	22	M 26×1.5	18.0	32	32.5	16	32	36	183	**EVGE22LMED**	160	160	160
	28	M 33×2	23.0	40	35.0	18	41	41	264	**EVGE28LMED**	160	160	160
	35	M 42x2	29.5	50	42.5	20	50	50	444	**EVGE35LMED**	160	160	160
	42	M 48×2	35.5	55	46.5	22	55	60	614	**EVGE42LMED**	160	160	160
S[4])	06	M 12×1.5	3.5	17	27.0	12	17	17	43	**EVGE06SMED**	630	630	630
	08	M 14x1.5	4.5	19	29.5	12	19	19	59	**EVGE08SMED**	630	630	630
	10	M 16×1.5	6.5	22	32.0	12	22	22	82	**EVGE10SMED**	630	630	630
	12	M 18×1.5	7.5	24	34.0	12	24	24	104	**EVGE12SMED**	630	630	630
	14	M 20×1.5	9.5	26	36.5	14	27	27	144	**EVGE14SMED**	630	630	630
	16	M 22×1.5	11.5	27	37.0	14	27	30	162	**EVGE16SMED**	400	400	400
	20	M 27×2	15.5	32	43.0	16	32	36	254	**EVGE20SMED**	400	400	400
	25	M 33×2	18.0	40	48.0	18	41	46	493	**EVGE25SMED**	400	400	400
	30	M 42×2	23.5	50	51.0	20	50	50	654	**EVGE30SMED**	400	400	400
	38	M 48×2	29.0	55	60.0	22	55	60	962	**EVGE38SMED**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

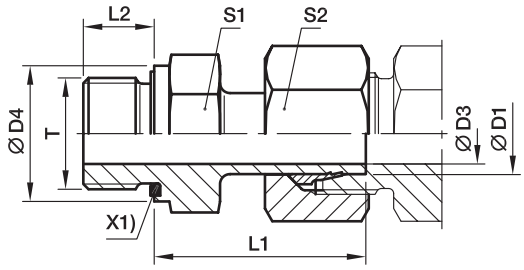
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EGE16SMEDCF	NBR
Steel, zinc yellow plated	A3C	EGE16SMEDA3C	NBR
Stainless Steel	71	EGE16SMED71	VIT

EVGE-R-ED Standpipe connector

Male BSPP thread – ED-seal (ISO 1179) / EO standpipe adjustable



Pre-assembled nut and ring.
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

X1) Eolastic-sealing ED

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	G 1/8 A	3.5	14	24.5	8	14	14	24	**EVGE06LRED**	315	315	315	200
	08	G 1/4 A	4.5	19	29.5	12	19	17	52	**EVGE08LRED**	315	315	315	200
	10	G 1/4 A	7.0	19	27.5	12	19	19	47	**EVGE10LRED**	315	315	315	200
	12	G 3/8 A	7.5	22	34.0	12	22	22	87	**EVGE12LRED**	315	315	315	200
	12	G 1/4 A	7.0	19	28.5	12	19	22	61	**EVGE12LR1/4ED**	315	315		
	12	G 1/2 A	7.5	27	34.5	14	27	22	121	**EVGE12LR1/2ED**	315	315	315	
	15	G 1/2 A	11.0	27	31.0	14	27	27	114	**EVGE15LRED**	315	315	315	200
	18	G 1/2 A	14.0	27	31.5	14	27	32	132	**EVGE18LRED**	315	315	315	200
	22	G 3/4 A	18.0	32	32.5	16	32	36	183	**EVGE22LRED**	160	160	160	100
	28	G 1 A	23.0	40	35.0	18	41	41	262	**EVGE28LRED**	160	160	160	
	35	G 1 1/4 A	29.5	50	42.5	20	50	50	436	**EVGE35LRED**	160	160	160	
	42	G 1 1/2 A	35.5	55	46.5	22	55	60	615	**EVGE42LRED**	160	160	160	
S[4])	06	G 1/4 A	3.5	19	27.0	12	19	17	48	**EVGE06SRED**	630	630	630	
	08	G 1/4 A	4.5	19	29.5	12	19	19	57	**EVGE08SRED**	630	630	630	
	10	G 3/8 A	6.5	22	32.0	12	22	22	84	**EVGE10SRED**	630	630	630	
	12	G 3/8 A	7.5	22	34.0	12	22	24	95	**EVGE12SRED**	630	630	630	
	12	G 1/2 A	7.5	27	34.5	14	27	24	130	**EVGE12SR1/2ED**	630	630	630	
	14	G 1/2 A	9.5	27	36.5	14	27	27	149	**EVGE14SRED**	630	630	630	
	16	G 1/2 A	11.5	27	37.0	14	27	30	158	**EVGE16SRED**	400	400	400	
	16	G 3/4 A	11.5	32	39.0	16	32	30	222	**EVGE16SR3/4ED**	400	400		
	20	G 3/4 A	15.5	32	43.0	16	32	36	254	**EVGE20SRED**	400	400	400	
	25	G 1 A	18.0	40	48.0	18	41	46	485	**EVGE25SRED**	400	400	400	
	30	G 1 1/4 A	23.5	50	51.0	20	50	50	661	**EVGE30SRED**	400	400	400	
	38	G 1 1/2 A	29.0	55	60.0	22	55	60	962	**EVGE38SRED**	315	315	315	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{PN\ (bar)}{10}$ = PN (MPa)

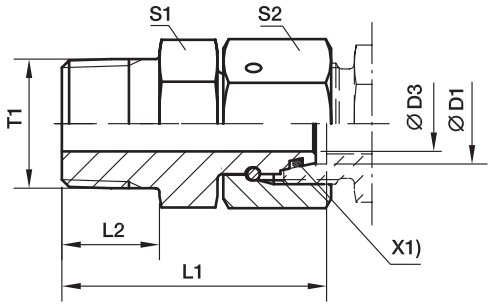
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EVGE16SREDCF	NBR
Steel, zinc yellow plated	A3C	EVGE16SREDA3C	NBR
Stainless Steel	71	EVGE16SRED71	VIT
Brass	MS	EVGE16SREDMS	NBR

EGE-NPT Swivel connector

Male NPT thread (SAE J476) / EO 24° DKO swivel



X1) O-ring OR

Series	D1	T1	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	1/8-27NPT	2.5	31.5	10.0	11	14	23	**EGE06L1/8NPT**	315	315
	08	1/4-18NPT	4.0	37.5	14.5	14	17	41	**EGE08L1/4NPT**	315	315
	10	1/4-18NPT	6.0	38.0	14.5	14	19	44	**EGE10L1/4NPT**	315	315
	12	3/8-18NPT	8.0	40.0	14.5	19	22	69	**EGE12L3/8NPT**	315	315
	15	1/2-14NPT	10.0	49.5	19.5	22	27	127	**EGE15L1/2NPT**	315	315
	18	1/2-14NPT	12.0	49.0	19.5	24	32	142	**EGE18L1/2NPT**	315	315
	22	3/4-14NPT	16.0	52.0	19.5	27	36	200	**EGE22L3/4NPT**	160	160
	28	1-11 1/2NPT	22.0	61.0	24.5	36	41	306	**EGE28L1NPT**	160	160
	35	11/4-11 1/2NPT	28.0	65.5	25.0	46	50	486	**EGE35L11/4NPT**	160	160
	42	11/2-11 1/2NPT	34.0	68.5	26.0	50	60	662	**EGE42L11/2NPT**	160	160
S[4])	06	1/4-18NPT	2.5	37.5	14.5	14	17	42	**EGE06S1/4NPT**	630	630
	08	1/4-18NPT	4.0	38.0	14.5	14	19	47	**EGE08S1/4NPT**	630	630
	10	3/8-18NPT	6.0	40.5	14.5	19	22	75	**EGE10S3/8NPT**	630	630
	12	3/8-18NPT	8.0	42.0	14.5	19	24	81	**EGE12S3/8NPT**	630	630
	14	1/2-14NPT	9.0	50.5	19.5	22	27	131	**EGE14S1/2NPT**	630	630
	16	1/2-14NPT	11.0	51.0	19.5	22	30	145	**EGE16S1/2NPT**	400	400
	20	3/4-14NPT	14.0	54.0	19.5	27	36	221	**EGE20S3/4NPT**	400	400
	25	1-11 1/2NPT	18.0	63.5	24.5	36	46	422	**EGE25S1NPT**	400	400
	30	11/4-11 1/2NPT	23.0	70.5	25.0	46	50	628	**EGE30S11/4NPT**	400	400
	38	11/2-11 1/2NPT	30.0	73.5	26.0	50	60	770	**EGE38S11/2NPT**	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

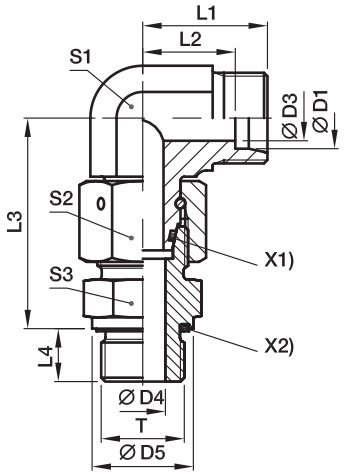
Information on ordering alternative sealing materials see page I7.

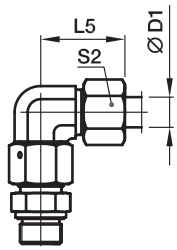
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EGE16S1/2NPTCF	NBR
Steel, zinc yellow plated	A3C	EGE16S1/2NPTA3C	NBR

EW-M-ED Assembled adjustable swivel elbow

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	27	12	14	14	47	**EW06LMEDOMD**	500	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	69	**EW08LMEDOMD**	500	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	87	**EW10LMEDOMD**	500	315	315
	12	M 16×1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	111	**EW12LMEDOMD**	400	315	315
	15	M 18×1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	179	**EW15LMEDOMD**	400	315	315
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	272	**EW18LMEDOMD**	400	315	315
	22	M 26×1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	360	**EW22LMEDOMD**	250	160	160
	28	M 33×2	24	23	40	38	30.5	59.0	18	47	36	41	41	538	**EW28LMEDOMD**	250	160	160
	35	M 42×2	30	30	50	45	34.5	68.5	20	56	41	50	50	843	**EW35LMEDOMD**	250	160	160
	42	M 48×2	36	36	55	51	40.0	75.0	22	63	50	60	55	1353	**EW42LMEDOMD**	250	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	77	**EW06SMEDOMD**	800	630	630
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	107	**EW08SMEDOMD**	800	630	630
	10	M 16×1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	146	**EW10SMEDOMD**	800	630	630
	12	M 18×1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	178	**EW12SMEDOMD**	630	630	630
	14	M 20×1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	203	**EW14SMEDOMD**	630	630	630
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	307	**EW16SMEDOMD**	630	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	48	27	36	32	459	**EW20SMEDOMD**	420	400	400
	25	M 33×2	20	20	40	42	30.0	73.0	18	54	36	46	41	812	**EW25SMEDOMD**	420	400	400
	30	M 42×2	25	25	50	49	35.5	78.5	20	62	41	50	50	1167	**EW30SMEDOMD**	420	400	400
	38	M 48×2	32	32	55	57	41.0	89.0	22	72	50	60	55	1790	**EW38SMEDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

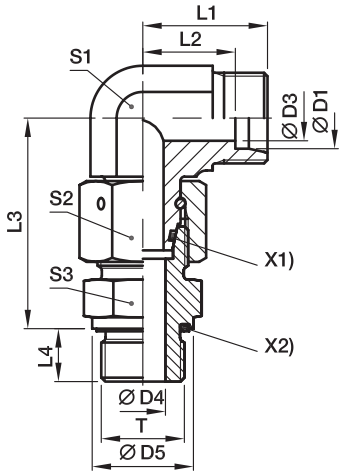
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

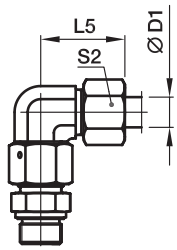
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EW16SMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	EW16SMEDOMDA3C	NBR
Stainless Steel	71	EW16SMEDOMD71	VIT

EW-R-ED Assembled adjustable swivel elbow

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	47	**EW06LREDOMD**	500	315	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	69	**EW08LREDOMD**	500	315	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	87	**EW10LREDOMD**	500	315	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	122	**EW12LREDOMD**	400	315	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	199	**EW15LREDOMD**	400	315	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	268	**EW18LREDOMD**	400	315	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	360	**EW22LREDOMD**	250	160	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	539	**EW28LREDOMD**	250	160	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	834	**EW35LREDOMD**	250	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1341	**EW42LREDOMD**	250	160	160
S[4])	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	83	**EW06SREDOMD**	800	630	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	106	**EW08SREDOMD**	800	630	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	148	**EW10SREDOMD**	800	630	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	170	**EW12SREDOMD**	630	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	242	**EW14SREDOMD**	630	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	303	**EW16SREDOMD**	630	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	458	**EW20SREDOMD**	420	400	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	813	**EW25SREDOMD**	420	400	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1163	**EW30SREDOMD**	420	400	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	1784	**EW38SREDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

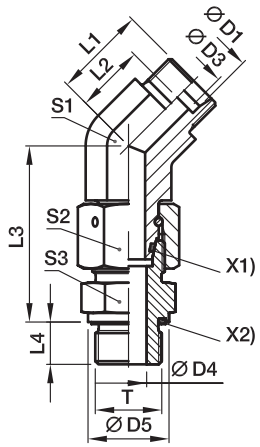
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

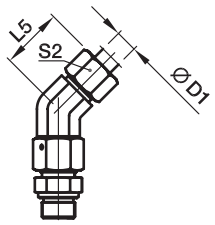
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EW16SREDOMDCF	NBR
Steel, zinc yellow plated	A3C	EW16SREDOMDA3C	NBR
Stainless Steel	71	EW16SREDOMD71	VIT

EV-M-ED Assembled adjustable swivel 45° elbow

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1.0	4	4	14	16.0	9.0	34.5	8	24	14	14	14	44	**EV06LMEDOMD**	315	315	315
	08	M 12×1.5	6	6	17	19.0	12.0	37.5	12	27	14	17	17	62	**EV08LMEDOMD**	315	315	315
	10	M 14×1.5	8	7	19	19.0	12.0	40.0	12	27	19	19	19	80	**EV10LMEDOMD**	315	315	315
	12	M 16×1.5	10	9	22	21.0	14.0	42.0	12	29	19	22	22	110	**EV12LMEDOMD**	315	315	315
	15	M 18×1.5	12	11	24	24.0	17.0	46.0	12	32	22	27	24	171	**EV15LMEDOMD**	315	315	315
	18	M 22×1.5	15	14	27	24.0	16.5	50.0	14	33	27	32	27	245	**EV18LMEDOMD**	315	315	315
	22	M 26×1.5	19	18	32	26.0	18.5	55.0	16	35	30	36	32	339	**EV22LMEDOMD**	160	160	160
	28	M 33×2.0	24	23	40	30.5	23.0	59.0	18	40	36	41	41	517	**EV28LMEDOMD**	160	160	160
	35	M 42×2.0	30	30	50	37.0	26.5	68.5	20	48	50	50	50	810	**EV35LMEDOMD**	160	160	160
	42	M 48×2.0	36	36	55	37.0	26.0	75.0	22	49	50	60	55	1193	**EV42LMEDOMD**	160	160	160
S[4])	06	M 12×1.5	4	4	17	16.0	9.0	40.0	12	24	14	17	17	72	**EV06SMEDOMD**	630	630	630
	08	M 14×1.5	5	5	19	19.0	12.0	42.5	12	27	19	19	19	102	**EV08SMEDOMD**	630	630	630
	10	M 16×1.5	7	7	22	21.0	13.5	45.0	12	30	19	22	22	132	**EV10SMEDOMD**	630	630	630
	12	M 18×1.5	8	8	24	24.0	16.5	48.0	12	33	22	24	24	173	**EV12SMEDOMD**	630	630	630
	16	M 22×1.5	12	12	27	24.0	15.5	55.0	14	34	27	30	27	284	**EV16SMEDOMD**	400	400	400
	20	M 27×2.0	16	16	32	26.5	16.0	65.0	16	38	30	36	32	435	**EV20SMEDOMD**	400	400	400
	25	M 33×2.0	20	20	40	30.5	18.5	73.0	18	43	36	46	41	790	**EV25SMEDOMD**	400	400	400
	30	M 42×2.0	25	25	50	37.0	23.5	78.5	20	50	50	50	50	1132	**EV30SMEDOMD**	400	400	400
	38	M 48×2.0	32	32	55	37.0	21.0	89.0	22	52	50	60	55	1631	**EV38SMEDOMD**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

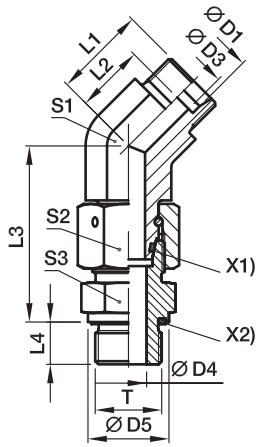
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

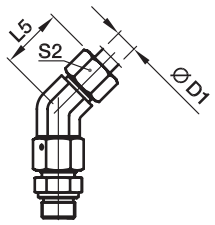
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EV16SMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	EV16SMEDOMDA3C	NBR
Stainless Steel	71	EV16SMEDOMD71	VIT

EV-R-ED Assembled adjustable swivel 45° elbow

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	16.0	9.0	34.5	8	24	14	14	14	44	**EV06LREDOMD**	315	315	315
	08	G 1/4 A	6	6	19	19.0	12.0	37.5	12	27	14	17	19	67	**EV08LREDOMD**	315	315	315
	10	G 1/4 A	8	6	19	19.0	12.0	40.0	12	27	19	19	19	78	**EV10LREDOMD**	315	315	315
	12	G 3/8 A	10	9	22	21.0	14.0	42.0	12	29	19	22	22	112	**EV12LREDOMD**	315	315	315
	15	G 1/2 A	12	11	27	24.0	17.0	46.5	14	32	22	27	27	192	**EV15LREDOMD**	315	315	315
	18	G 1/2 A	15	14	27	24.0	16.5	50.0	14	33	27	32	27	242	**EV18LREDOMD**	315	315	315
	22	G 3/4 A	19	18	32	26.0	18.5	55.0	16	35	30	36	32	338	**EV22LREDOMD**	160	160	160
	28	G 1 A	24	23	40	30.5	23.0	59.0	18	40	36	41	41	518	**EV28LREDOMD**	160	160	160
	35	G 1 1/4 A	30	30	50	37.0	26.5	68.5	20	48	50	50	50	801	**EV35LREDOMD**	160	160	160
	42	G 1 1/2 A	36	36	55	37.0	26.0	75.0	22	49	50	60	55	1181	**EV42LREDOMD**	160	160	160
S[4])	06	G 1/4 A	4	4	19	16.0	9.0	40.0	12	24	14	17	19	78	**EV06SREDOMD**	630	630	630
	08	G 1/4 A	5	5	19	19.0	12.0	42.5	12	27	19	19	19	101	**EV08SREDOMD**	630	630	630
	10	G 3/8 A	7	7	22	21.0	13.5	45.0	12	30	19	22	22	134	**EV10SREDOMD**	630	630	630
	12	G 3/8 A	8	8	22	24.0	16.5	48.0	12	33	22	24	22	165	**EV12SREDOMD**	630	630	630
	16	G 1/2 A	12	12	27	24.0	15.5	55.0	14	34	27	30	27	280	**EV16SREDOMD**	400	400	400
	20	G 3/4 A	16	16	32	26.5	16.0	65.0	16	38	30	36	32	434	**EV20SREDOMD**	400	400	400
	25	G 1 A	20	20	40	30.5	18.5	73.0	18	43	36	46	41	792	**EV25SREDOMD**	400	400	400
	30	G 1 1/4 A	25	25	50	37.0	23.5	78.5	20	50	50	50	50	1128	**EV30SREDOMD**	400	400	400
	38	G 1 1/2 A	32	32	55	37.0	21.0	89.0	22	52	50	60	55	1625	**EV38SREDOMD**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

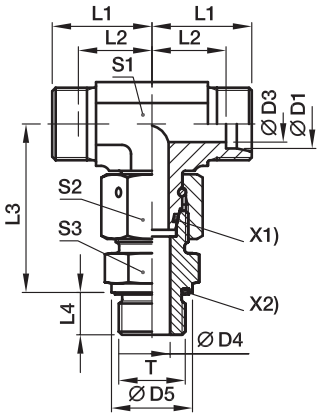
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

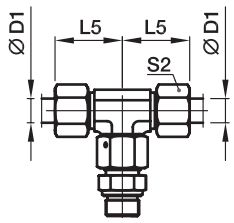
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EV16SREDOMDCF	NBR
Steel, zinc yellow plated	A3C	EV16SREDOMDA3C	NBR
Stainless Steel	71	EV16SREDOMD71	VIT

*Please add the **suffixes** below according to the material/surface required.

ET-M-ED Assembled adjustable swivel branch tee

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	27	12	14	14	55	**ET06LMEDOMD**	500	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	75	**ET08LMEDOMD**	500	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	98	**ET10LMEDOMD**	500	315	315
	12	M 16×1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	135	**ET12LMEDOMD**	400	315	315
	15	M 18×1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	203	**ET15LMEDOMD**	400	315	315
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	310	**ET18LMEDOMD**	400	315	315
	22	M 26×1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	377	**ET22LMEDOMD**	250	160	160
	28	M 33×2	24	23	40	38	30.5	59.0	18	47	36	41	41	607	**ET28LMEDOMD**	250	160	160
	35	M 42×2	30	30	50	45	34.5	68.5	20	56	41	50	50	929	**ET35LMEDOMD**	250	160	160
	42	M 48×2	36	36	55	51	40.0	75.0	22	63	50	60	55	1478	**ET42LMEDOMD**	250	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	92	**ET06SMEDOMD**	800	630	630
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	126	**ET08SMEDOMD**	800	630	630
	10	M 16×1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	167	**ET10SMEDOMD**	800	630	630
	12	M 18×1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	207	**ET12SMEDOMD**	630	630	630
	14	M 20×1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	287	**ET14SMEDOMD**	630	630	630
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	352	**ET16SMEDOMD**	630	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	48	27	36	32	498	**ET20SMEDOMD**	420	400	400
	25	M 33×2	20	20	40	42	30.0	73.0	18	54	36	46	41	916	**ET25SMEDOMD**	420	400	400
	30	M 42×2	25	25	50	49	35.5	78.5	20	62	41	50	50	1328	**ET30SMEDOMD**	420	400	400
	38	M 48×2	32	32	55	57	41.0	89.0	22	72	50	60	55	2031	**ET38SMEDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

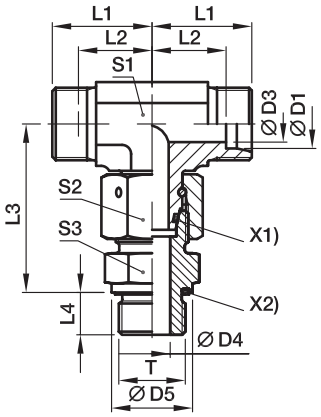
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

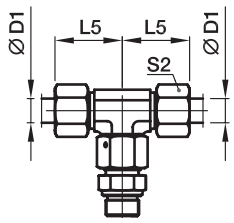
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	ET16SMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	ET16SMEDOMDA3C	NBR
Stainless Steel	71	ET16SMEDOMD71	VIT

ET-R-ED Assembled adjustable swivel branch tee

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	55	**ET06LREDOMD**	500	315	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	80	**ET08LREDOMD**	500	315	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	98	**ET10LREDOMD**	500	315	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	136	**ET12LREDOMD**	400	315	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	224	**ET15LREDOMD**	400	315	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	306	**ET18LREDOMD**	400	315	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	423	**ET22LREDOMD**	250	160	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	608	**ET28LREDOMD**	250	160	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	920	**ET35LREDOMD**	250	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1466	**ET42LREDOMD**	250	160	160
S[4])	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	98	**ET06SREDOMD**	800	630	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	125	**ET08SREDOMD**	800	630	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	169	**ET10SREDOMD**	800	630	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	198	**ET12SREDOMD**	630	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	287	**ET14SREDOMD**	630	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	348	**ET16SREDOMD**	630	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	498	**ET20SREDOMD**	420	400	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	918	**ET25SREDOMD**	420	400	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1324	**ET30SREDOMD**	420	400	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	2025	**ET38SREDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

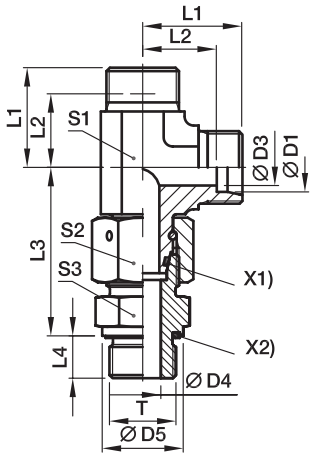
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

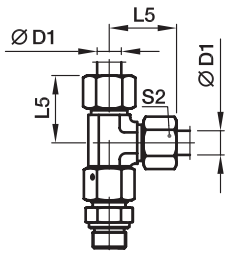
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	ET16SREDOMDCF	NBR
Steel, zinc yellow plated	A3C	ET16SREDOMDA3C	NBR
Stainless Steel	71	ET16SREDOMD71	VIT

EL-M-ED Assembled adjustable swivel run tee

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	27	12	14	14	55	**EL06LMEDOMD**	500	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	75	**EL08LMEDOMD**	500	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	97	**EL10LMEDOMD**	500	315	315
	12	M 16×1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	135	**EL12LMEDOMD**	400	315	315
	15	M 18×1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	201	**EL15LMEDOMD**	400	315	315
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	308	**EL18LMEDOMD**	400	315	315
	22	M 26×1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	404	**EL22LMEDOMD**	250	160	160
	28	M 33×2	24	23	40	38	30.5	59.0	18	47	36	41	41	605	**EL28LMEDOMD**	250	160	160
	35	M 42×2	30	30	50	45	34.5	68.5	20	56	41	50	50	947	**EL35LMEDOMD**	250	160	160
	42	M 48×2	36	36	55	51	40.0	75.0	22	63	50	60	55	1497	**EL42LMEDOMD**	250	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	91	**EL06SMEDOMD**	800	630	630
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	126	**EL08SMEDOMD**	800	630	630
	10	M 16×1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	169	**EL10SMEDOMD**	800	630	630
	12	M 18×1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	206	**EL12SMEDOMD**	630	630	630
	14	M 20×1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	275	**EL14SMEDOMD**	630	630	630
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	354	**EL16SMEDOMD**	630	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	48	27	36	32	526	**EL20SMEDOMD**	420	400	400
	25	M 33×2	20	20	40	42	30.0	73.0	18	54	36	46	41	919	**EL25SMEDOMD**	420	400	400
	30	M 42×2	25	25	50	49	35.5	78.5	20	62	41	50	50	1328	**EL30SMEDOMD**	420	400	400
	38	M 48×2	32	32	55	57	41.0	89.0	22	72	50	60	55	2039	**EL38SMEDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

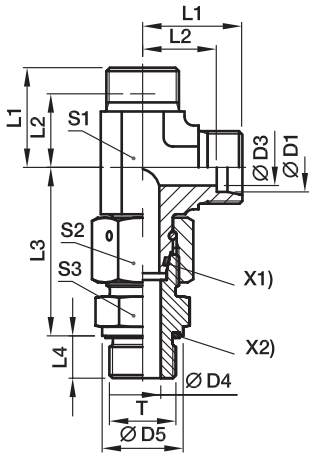
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

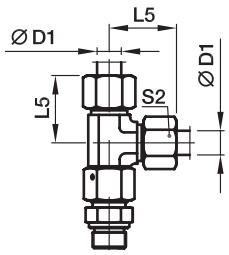
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EL16SMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	EL16SMEDOMDA3C	NBR
Stainless Steel	71	EL16SMEDOMD71	VIT

EL-R-ED Assembled adjustable swivel run tee

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)





X1) O-ring OR
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	55	**EL06LREDOMD**	500	315	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	80	**EL08LREDOMD**	500	315	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	97	**EL10LREDOMD**	500	315	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	137	**EL12LREDOMD**	400	315	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	222	**EL15LREDOMD**	400	315	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	304	**EL18LREDOMD**	400	315	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	404	**EL22LREDOMD**	250	160	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	606	**EL28LREDOMD**	250	160	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	938	**EL35LREDOMD**	250	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1485	**EL42LREDOMD**	250	160	160
S[4])	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	97	**EL06SREDOMD**	800	630	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	125	**EL08SREDOMD**	800	630	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	171	**EL10SREDOMD**	800	630	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	198	**EL12SREDOMD**	630	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	269	**EL14SREDOMD**	630	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	350	**EL16SREDOMD**	630	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	524	**EL20SREDOMD**	420	400	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	921	**EL25SREDOMD**	420	400	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1324	**EL30SREDOMD**	420	400	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	2033	**EL38SREDOMD**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

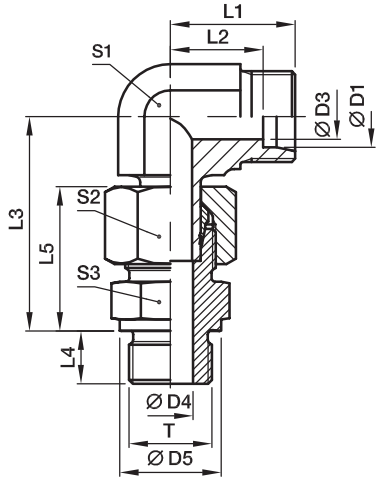
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

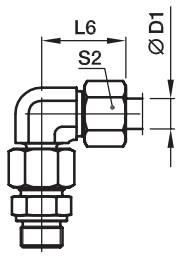
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EL16SREDOMDCF	NBR
Steel, zinc yellow plated	A3C	EL16SREDOMDA3C	NBR
Stainless Steel	71	EL16SREDOMD71	VIT

EVW-M Assembled adjustable standpipe elbow

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Pre-assembled, complete with straight male stud connector (with cutting face DIN 3852, type B). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	23	27	12	14	14	41	**EVW06LMOMD**	315	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	63	**EVW08LMOMD**	315	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	83	**EVW10LMOMD**	315	315	315
	12	M 16×1.5	10	9	21	24	17.0	42.0	12	27	32	17	22	22	107	**EVW12LMOMD**	315	315	315
	15	M 18×1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	170	**EVW15LMOMD**	250	250	250
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	265	**EVW18LMOMD**	250	250	250
	22	M 26×1.5	19	18	31	35	27.5	55.0	16	33	44	27	36	32	355	**EVW22LMOMD**	160	160	160
	28	M 33×2	24	23	39	38	30.5	59.5	18	34	47	36	41	41	514	**EVW28LMOMD**	160	160	160
	35	M 42×2	30	30	49	45	34.5	68.5	20	39	56	41	50	50	791	**EVW35LMOMD**	160	160	160
	42	M 48×2	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1153	**EVW42LMOMD**	160	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	73	**EVW06SMOMD**	400	400	400
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	30	32	14	19	19	100	**EVW08SMOMD**	400	400	400
	10	M 16×1.5	7	7	21	25	17.5	46.0	12	31	34	17	22	22	133	**EVW10SMOMD**	400	400	400
	12	M 18×1.5	8	8	23	29	21.5	48.0	12	33	38	17	24	24	174	**EVW12SMOMD**	400	400	400
	14	M 20×1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	229	**EVW14SMOMD**	400	400	400
	16	M 22×1.5	12	12	27	33	24.5	56.0	14	37	43	24	30	27	309	**EVW16SMOMD**	400	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	42	48	27	36	32	429	**EVW20SMOMD**	400	400	400
	25	M 33×2	20	20	39	42	30.0	73.0	18	47	54	36	46	41	826	**EVW25SMOMD**	250	250	250
	30	M 42×2	25	25	49	49	35.5	78.5	20	50	62	41	50	50	1132	**EVW30SMOMD**	160	160	160
	38	M 48×2	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1874	**EVW38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

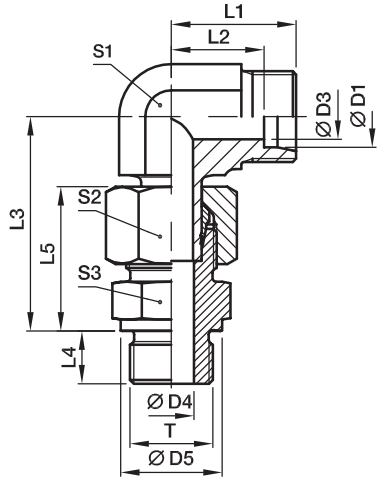
Delivery without nut and ring. Information on ordering complete fittings see page I7.

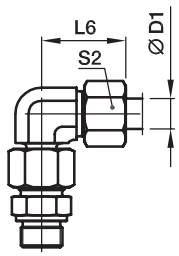
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVW16SMOMDCF
Steel, zinc yellow plated	A3C	EVW16SMOMDA3C
Stainless Steel	71	EVW16SMOMD71

*Please add the **suffixes** below according to the material/surface required.

EVW-R Assembled adjustable standpipe elbow

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Pre-assembled, complete with straight male stud connector (with cutting face DIN 3852, type B). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	47	**EVW06LROMD**	315	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	68	**EVW08LROMD**	315	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	84	**EVW10LROMD**	315	315	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	27	32	17	22	22	118	**EVW12LROMD**	315	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	191	**EVW15LROMD**	250	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	260	**EVW18LROMD**	250	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	33	44	27	36	32	355	**EVW22LROMD**	160	160	160
	28	G 1 A	24	23	39	38	30.5	59.5	18	34	47	36	41	41	542	**EVW28LROMD**	160	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	68.5	20	39	56	41	50	50	832	**EVW35LROMD**	160	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1303	**EVW42LROMD**	160	160	160
S[4])	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	79	**EVW06SROMD**	400	400	400
	08	G 1/4 A	5	5	18	24	17.0	42.5	12	30	32	14	19	19	98	**EVW08SROMD**	400	400	400
	10	G 3/8 A	7	7	22	25	17.5	46.0	12	31	34	17	22	22	148	**EVW10SROMD**	400	400	400
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	33	38	17	24	22	169	**EVW12SROMD**	400	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	230	**EVW14SROMD**	400	400	400
	16	G 1/2 A	12	12	26	33	24.5	56.0	14	37	43	24	30	27	304	**EVW16SROMD**	400	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	428	**EVW20SROMD**	400	400	400
	25	G 1 A	20	20	39	42	30.0	73.0	18	47	54	36	46	41	825	**EVW25SROMD**	250	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	78.5	20	50	62	41	50	50	1134	**EVW30SROMD**	160	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1713	**EVW38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

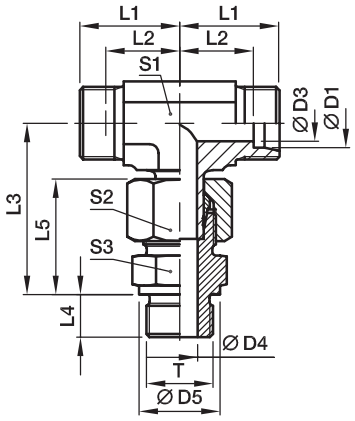
Delivery without nut and ring. Information on ordering complete fittings see page I7.

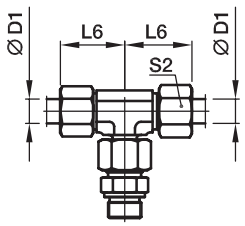
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVW16SROMDCF
Steel, zinc yellow plated	A3C	EVW16SROMDA3C
Stainless Steel	71	EVW16SROMD71

*Please add the **suffixes** below according to the material/surface required.

EVT-M Assembled adjustable standpipe branch tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	**EVT06LMOMD**	315	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	68	**EVT08LMOMD**	315	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	88	**EVT10LMOMD**	315	315	315
	12	M 16×1.5	10	9	21	24	17.0	43.0	12	27	32	17	22	22	116	**EVT12LMOMD**	315	315	315
	15	M 18×1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	185	**EVT15LMOMD**	250	250	250
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	272	**EVT18LMOMD**	250	250	250
	22	M 26×1.5	19	18	31	35	27.5	55.5	16	33	44	27	36	32	367	**EVT22LMOMD**	160	160	160
	28	M 33×2	24	23	39	38	30.5	61.0	18	34	47	36	41	41	565	**EVT28LMOMD**	160	160	160
	35	M 42×2	30	30	49	45	34.5	72.0	20	39	56	41	50	50	905	**EVT35LMOMD**	160	160	160
	42	M 48×2	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1282	**EVT42LMOMD**	160	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	85	**EVT06SMOMD**	400	400	400
	08	M 14×1.5	5	5	19	24	17.0	44.0	12	30	32	14	19	19	118	**EVT08SMOMD**	400	400	400
	10	M 16×1.5	7	7	21	25	17.5	47.0	12	31	34	17	22	22	149	**EVT10SMOMD**	400	400	400
	12	M 18×1.5	8	8	23	29	21.5	50.0	12	33	38	17	24	24	200	**EVT12SMOMD**	400	400	400
	14	M 20×1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	264	**EVT14SMOMD**	400	400	400
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	37	43	24	30	27	327	**EVT16SMOMD**	400	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	42	48	27	36	32	482	**EVT20SMOMD**	400	400	400
	25	M 33×2	20	20	39	42	30.0	73.5	18	47	54	36	46	41	906	**EVT25SMOMD**	250	250	250
	30	M 42×2	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1274	**EVT30SMOMD**	160	160	160
	38	M 48×2	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1928	**EVT38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

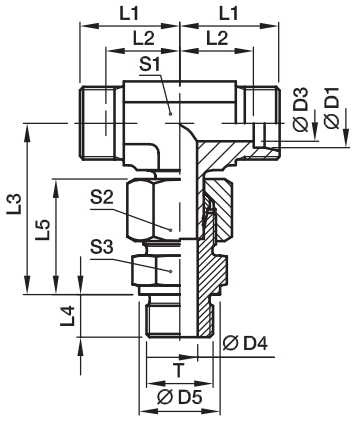
Delivery without nut and ring. Information on ordering complete fittings see page I7.

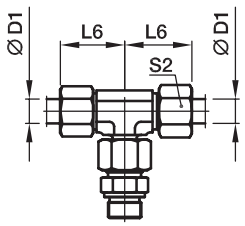
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVT16SMOMDCF
Steel, zinc yellow plated	A3C	EVT16SMOMDA3C
Stainless Steel	71	EVT16SMOMD71

*Please add the **suffixes** below according to the material/surface required.

EVT-R Assembled adjustable standpipe branch tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	**EVT06LROMD**	315	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	73	**EVT08LROMD**	315	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	85	**EVT10LROMD**	315	315	315
	12	G 3/8 A	10	9	22	24	17.0	43.0	12	27	32	17	22	22	118	**EVT12LROMD**	315	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	206	**EVT15LROMD**	250	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	267	**EVT18LROMD**	250	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.5	16	33	44	27	36	32	367	**EVT22LROMD**	160	160	160
	28	G 1 A	24	23	39	38	30.5	61.0	18	34	47	36	41	41	565	**EVT28LROMD**	160	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	72.0	20	39	56	41	50	50	901	**EVT35LROMD**	160	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1277	**EVT42LROMD**	160	160	160
S[4])	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	90	**EVT06SROMD**	400	400	400
	08	G 1/4 A	5	5	18	24	17.0	44.0	12	30	32	14	19	19	116	**EVT08SROMD**	400	400	400
	10	G 3/8 A	7	7	22	25	17.5	47.0	12	31	34	17	22	22	151	**EVT10SROMD**	400	400	400
	12	G 3/8 A	8	8	22	29	21.5	50.0	12	33	38	17	24	22	190	**EVT12SROMD**	400	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	265	**EVT14SROMD**	400	400	400
	16	G 1/2 A	12	12	26	33	24.5	55.0	14	37	43	24	30	27	322	**EVT16SROMD**	400	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	500	**EVT20SROMD**	400	400	400
	25	G 1 A	20	20	39	42	30.0	73.5	18	47	54	36	46	41	905	**EVT25SROMD**	250	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1275	**EVT30SROMD**	160	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1920	**EVT38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

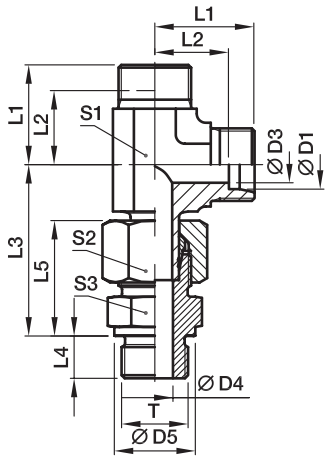
Delivery without nut and ring. Information on ordering complete fittings see page I7.

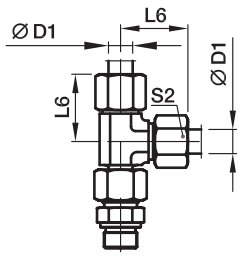
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVT16SROMDCF
Steel, zinc yellow plated	A3C	EVT16SROMDA3C
Stainless Steel	71	EVT16SROMD71

*Please add the **suffixes** below according to the material/surface required.

EVL-M Assembled adjustable standpipe run tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	**EVL06LMOMD**	315	315	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	73	**EVL08LMOMD**	315	315	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	89	**EVL10LMOMD**	315	315	315
	12	M 16×1.5	10	9	21	24	17.0	43.0	12	27	32	17	22	22	118	**EVL12LMOMD**	315	315	315
	15	M 18×1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	186	**EVL15LMOMD**	250	250	250
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	269	**EVL18LMOMD**	250	250	250
	22	M 26×1.5	19	18	31	35	27.5	55.5	16	33	44	27	36	32	364	**EVL22LMOMD**	160	160	160
	28	M 33×2	24	23	39	38	30.5	61.0	18	34	47	36	41	41	556	**EVL28LMOMD**	160	160	160
	35	M 42×2	30	30	49	45	34.5	72.0	20	39	56	41	50	50	900	**EVL35LMOMD**	160	160	160
	42	M 48×2	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1323	**EVL42LMOMD**	160	160	160
S[4])	06	M 12×1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	85	**EVL06SMOMD**	400	400	400
	08	M 14×1.5	5	5	19	24	17.0	44.0	12	30	32	14	19	19	119	**EVL08SMOMD**	400	400	400
	10	M 16×1.5	7	7	21	25	17.5	47.0	12	31	34	17	22	22	151	**EVL10SMOMD**	400	400	400
	12	M 18×1.5	8	8	23	29	21.5	50.0	12	33	38	17	24	24	202	**EVL12SMOMD**	400	400	400
	14	M 20×1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	264	**EVL14SMOMD**	400	400	400
	16	M 22×1.5	12	12	27	33	24.5	56.0	14	37	43	24	30	27	326	**EVL16SMOMD**	400	400	400
	20	M 27×2	16	16	32	37	26.5	65.0	16	42	48	27	36	32	481	**EVL20SMOMD**	400	400	400
	25	M 33×2	20	20	39	42	30.0	73.5	18	47	54	36	46	41	904	**EVL25SMOMD**	250	250	250
	30	M 42×2	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1263	**EVL30SMOMD**	160	160	160
	38	M 48×2	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1936	**EVL38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

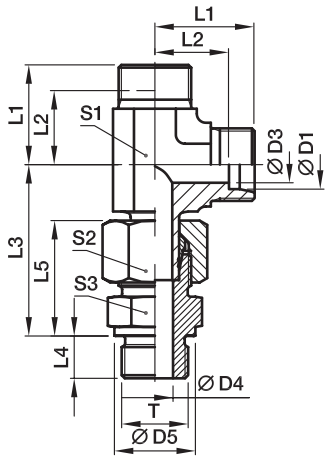
Delivery without nut and ring. Information on ordering complete fittings see page I7.

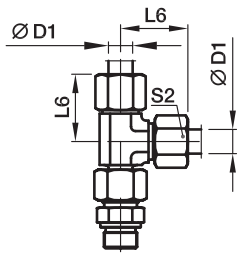
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVL16SMOMDCF
Steel, zinc yellow plated	A3C	EVL16SMOMDA3C
Stainless Steel	71	EVL16SMOMD71

*Please add the **suffixes** below according to the material/surface required.

EVL-R Assembled adjustable standpipe run tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	**EVL06LROMD**	315	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	73	**EVL08LROMD**	315	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	87	**EVL10LROMD**	315	315	315
	12	G 3/8 A	10	9	22	24	17.0	43.0	12	27	32	17	22	22	120	**EVL12LROMD**	315	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	207	**EVL15LROMD**	250	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	264	**EVL18LROMD**	250	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.5	16	33	44	27	36	32	365	**EVL22LROMD**	160	160	160
	28	G 1 A	24	23	39	38	30.5	61.0	18	34	47	36	41	41	556	**EVL28LROMD**	160	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	72.0	20	39	56	41	50	50	895	**EVL35LROMD**	160	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1318	**EVL42LROMD**	160	160	160
S[4])	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	90	**EVL06SROMD**	400	400	400
	08	G 1/4 A	5	5	18	24	17.0	44.0	12	30	32	14	19	19	117	**EVL08SROMD**	400	400	400
	10	G 3/8 A	7	7	22	25	17.5	47.0	12	31	34	17	22	22	153	**EVL10SROMD**	400	400	400
	12	G 3/8 A	8	8	22	29	21.5	50.0	12	33	38	17	24	22	192	**EVL12SROMD**	400	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	266	**EVL14SROMD**	400	400	400
	16	G 1/2 A	12	12	26	33	24.5	56.0	14	37	43	24	30	27	321	**EVL16SROMD**	400	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	480	**EVL20SROMD**	400	400	400
	25	G 1 A	20	20	39	42	30.0	73.5	18	47	54	36	46	41	903	**EVL25SROMD**	250	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1265	**EVL30SROMD**	160	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1928	**EVL38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

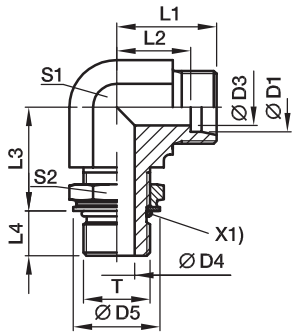
Delivery without nut and ring. Information on ordering complete fittings see page I7.

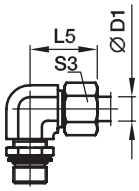
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	EVL16SROMDCF
Steel, zinc yellow plated	A3C	EVL16SROMDA3C
Stainless Steel	71	EVL16SROMD71

*Please add the **suffixes** below according to the material/surface required.

WEE-OR Adjustable locknut elbow

EO 24° cone end / Adjustable metric thread – O-ring (ISO 6149)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
LL[2])	04	M8×1	3.0	4.5	13.3	15	11.3	19.8	7.1	21	12	12	10	24	**WEE04LLMOROMD**	100	100
	04	M10×1	3.0	6.0	15.3	15	11.3	19.8	7.1	21	11	14	10	29	**WEE04LLM10X1OROMD**	100	100
	06	M10×1	4.5	6.0	15.3	15	9.8	19.8	7.1	22	14	14	12	22	**WEE06LLMOROMD**	100	100
	06	M12×1.5	4.5	7.0	18.6	18	12.8	23.2	9.6	25	14	17	12	42	**WEE06LLM12X1.5OROMD**	100	100
L[3])	06	M10×1	4.0	4.5	15.0	21	14.0	20.0	7.0	29	14	14	14	40	**WEE06LMOROMD**	315	315
	08	M12×1.5	6.0	6.0	18.0	23	16.0	22.0	10.0	31	14	17	17	48	**WEE08LMOROMD**	315	315
	10	M14×1.5	8.0	7.5	20.0	24	17.0	25.0	10.0	32	19	19	19	84	**WEE10LMOROMD**	315	315
	12	M16×1.5	10.0	9.0	23.0	26	19.0	26.0	10.0	34	19	22	22	92	**WEE12LMOROMD**	315	315
	15	M18×1.5	12.0	11.0	25.0	28	21.0	30.0	11.0	36	22	24	27	128	**WEE15LMOROMD**	315	315
	18	M22×1.5	15.0	14.0	28.0	31	24.0	33.0	12.0	40	27	27	32	204	**WEE18LMOROMD**	315	315
	22	M27×2	19.0	18.0	33.0	35	28.0	35.0	14.0	44	30	32	36	269	**WEE22LM27X2OROMD**	160	160
	28	M33×2	24.0	23.0	41.0	38	31.0	38.0	14.0	47	36	41	41	420	**WEE28LMOROMD**	160	160
	35	M42×2	30.0	30.0	51.0	48	38.0	48.0	14.0	59	50	50	50	958	**WEE35LMOROMD**	160	160
	42	M48×2	36.0	36.0	56.0	49	38.0	49.0	16.0	61	50	55	60	844	**WEE42LMOROMD**	160	160
S[4])	06	M12×1.5	4.0	4.0	18.0	22	15.0	22.0	10.0	30	14	17	17	55	**WEE06SMOROMD**	400	400
	08	M14×1.5	5.0	6.0	20.0	24	17.0	26.0	10.0	32	19	19	19	90	**WEE08SMOROMD**	400	400
	10	M16×1.5	7.0	7.0	23.0	25	18.0	27.0	11.0	34	19	22	22	108	**WEE10SMOROMD**	400	400
	12	M18×1.5	8.0	9.0	25.0	29	22.0	31.0	12.0	38	22	24	24	154	**WEE12SMOROMD**	400	400
	16	M22×1.5	12.0	12.0	28.0	33	25.0	35.0	14.0	43	27	27	30	242	**WEE16SMOROMD**	400	400
	20	M27×2	16.0	15.0	33.0	38	28.0	39.0	16.0	49	30	32	36	354	**WEE20SMOROMD**	400	400
	25	M33×2	20.0	20.0	41.0	42	30.0	44.0	16.0	54	36	41	46	552	**WEE25SMOROMD**	315	315
	30	M42×2	25.0	26.0	51.0	49	36.0	51.0	17.0	62	50	50	50	1129	**WEE30SMOROMD**	250	250
	38	M48×2	32.0	32.0	56.0	50	34.0	54.0	19.0	65	50	55	60	1123	**WEE38SMOROMD**	200	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

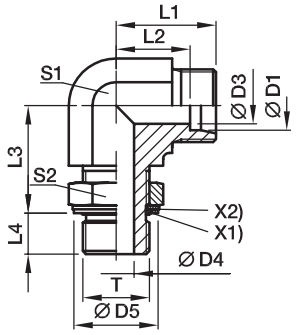
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

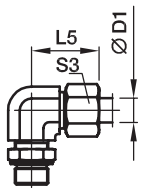
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WEE16SMOROMDCF	NBR
Steel, zinc yellow plated	A3C	WEE16SMOROMDA3C	NBR

WEE-M Adjustable locknut elbow

EO 24° cone end / Adjustable metric thread – O-ring + retaining ring





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	15	21	14	20	7	29	14	13	14	39	**WEE06LMOMD**	315	315	315
	08	M12×1.5	6	6.0	18	23	16	22	10	31	14	17	17	55	**WEE08LMOMD**	315	315	315
	10	M14×1.5	8	7.5	20	24	17	24	10	32	19	17	19	81	**WEE10LMOMD**	315	315	315
	12	M16×1.5	10	9.0	23	26	19	25	10	34	19	19	22	92	**WEE12LMOMD**	315	315	315
	15	M18×1.5	12	11.0	25	28	21	31	11	36	22	22	27	127	**WEE15LMOMD**	315	315	315
	18	M22×1.5	15	14.0	28	31	24	33	12	40	27	27	32	207	**WEE18LMOMD**	250	250	250
	22	M27×2	19	18.0	33	35	28	36	14	44	30	32	36	273	**WEE22LM27X2OMD**	160	160	160
	28	M33×2	24	23.0	41	38	31	39	14	47	36	38	41	415	**WEE28LMOMD**	160	160	160
	35	M42×2	30	30.0	51	48	38	49	14	59	50	50	50	971	**WEE35LMOMD**	160	160	160
	42	M48×2	36	36.0	56	49	38	50	16	61	50	55	60	914	**WEE42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	4.0	18	22	15	22	10	30	14	17	17	55	**WEE06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	20	24	17	26	10	32	19	17	19	87	**WEE08SMOMD**	315	315	315
	10	M16×1.5	7	7.0	23	25	18	27	11	34	19	19	22	102	**WEE10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	25	29	22	31	12	38	22	22	24	146	**WEE12SMOMD**	315	315	315
	16	M22×1.5	12	12.0	28	33	25	36	14	43	27	27	30	238	**WEE16SMOMD**	250	250	250
	20	M27×2	16	15.0	33	38	28	39	16	49	30	32	36	348	**WEE20SMOMD**	250	250	250
	25	M33×2	20	20.0	41	42	30	44	16	54	36	38	46	529	**WEE25SMOMD**	160	160	160
	30	M42×2	25	26.0	51	49	36	51	17	62	50	50	50	1118	**WEE30SMOMD**	160	160	160
	38	M48×2	32	32.0	56	50	34	54	19	65	50	55	60	1098	**WEE38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

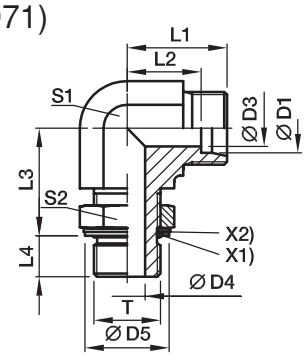
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

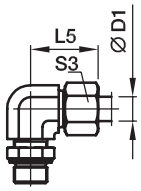
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WEE16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	WEE16SMOMDA3C	NBR
Stainless Steel	71	WEE16SMOMD71	VIT

WEE-R Adjustable locknut elbow

EO 24° cone end / Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)
for ports with small or wide spot face;
differences in D5 in Stainless Steel are only for ports with wide spot face
(e.g. WEE16SRBOMD71)





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5[5])	D5[6])	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
LL[2])	04	G 1/8A	3.0	4.5	15		15	11.3	20	7.1	21	11	14	10	27	**WEE04LLROMD**	250	250	
	06	G 1/8A	4.5	4.5	15		15	11.3	20	7.1	21	11	14	12	27	**WEE06LLROMD**	250	250	
L[3])	06	G 1/8A	4.0	4.5	15	15.0	21	14.0	19	7.0	29	14	14	14	40	**WEE06LROMD**	315	315	315
	08	G 1/4A	6.0	7.5	20	20.0	23	16.0	23	9.0	31	14	19	17	59	**WEE08LROMD**	315	315	315
	10	G 1/4A	8.0	7.5	20	20.0	24	17.0	25	9.0	32	19	19	19	82	**WEE10LROMD**	315	315	315
	12	G 3/8A	10.0	10.0	23	23.5	26	19.0	28	9.0	34	19	22	22	96	**WEE12LROMD**	250	250	250
	15	G 1/2A	12.0	12.5	28	28.5	28	21.0	30	13.0	36	22	27	27	149	**WEE15LROMD**	250	250	250
	18	G 1/2A	15.0	12.5	28	28.5	31	24.0	36	13.0	40	27	27	32	221	**WEE18LROMD**	250	250	250
	22	G 3/4A	19.0	15.5	33	34.5	35	28.0	36	13.0	44	30	36	36	310	**WEE22LROMD**	160	160	160
	28	G 1A	24.0	21.5	41	43.5	38	31.0	44	15.0	47	36	41	41	455	**WEE28LROMD**	160	160	160
	35	G 1 1/4A	30.0	27.5	51	52.5	48	38.0	50	15.0	59	50	50	50	1043	**WEE35LROMD**	160	160	160
	42	G 1 1/2A	36.0	33.0	56	60.0	49	38.0	52	15.0	61	50	55	60	994	**WEE42LROMD**	160	160	160
S[4])	06	G 1/4A	4.0	7.5	20	20.0	22	15.0	23	9.0	30	14	19	17	56	**WEE06SROMD**	315	315	315
	08	G 1/4A	5.0	7.5	20	20.0	24	17.0	27	9.0	32	19	19	19	88	**WEE08SROMD**	315	315	315
	10	G 3/8A	7.0	10.0	23	23.5	25	18.0	29	9.0	34	19	22	22	98	**WEE10SROMD**	250	250	250
	12	G 3/8A	8.0	10.0	23	23.5	29	22.0	29	9.0	38	22	22	24	128	**WEE12SROMD**	250	250	250
	16	G 1/2A	12.0	12.5	28	28.5	33	25.0	36	13.0	43	27	27	30	234	**WEE16SROMD**	250	250	250
	20	G 3/4A	16.0	15.5	33	34.5	38	28.0	39	12.0	49	30	36	36	344	**WEE20SROMD**	250	250	250
	25	G 1A	20.0	21.5	41	43.5	42	30.0	44	14.0	54	36	41	46	533	**WEE25SROMD**	250	250	250
	30	G 1 1/4A	25.0	27.5	51	52.5	49	36.0	49	15.0	62	50	50	50	1085	**WEE30SROMD**	160	160	160
	38	G 1 1/2A	32.0	33.0	56	60.0	50	34.0	55	15.0	65	50	55	60	1116	**WEE38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

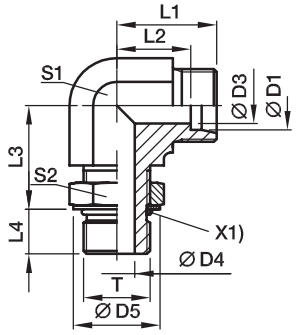
[5]) Steel; [6]) Stainless Steel

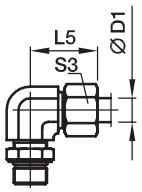
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WEE16SROMDCF	NBR
Steel, zinc yellow plated	A3C	WEE16SROMDA3C	NBR
Stainless Steel	71	WEE16SRBOMD71	VIT

WEE-UNF Adjustable locknut elbow

EO 24° cone end / Adjustable UN/UNF thread – O-ring (ISO 11926)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
L[3])	06	7/16-20 UNF-2A	4	4.5	16.5	21	14	19	10	29	14	14	14	42	**WEE06L7/16UNFOMD**	315	315
	08	7/16-20 UNF-2A	6	4.5	18.3	23	16	19	10	31	14	14	17	45	**WEE08L7/16UNFOMD**	315	315
	10	9/16-18 UNF-2A	8	7.5	20.2	24	17	24	10	32	19	17	19	79	**WEE10L9/16UNFOMD**	315	315
	12	9/16-18 UNF-2A	10	7.5	25.7	26	19	25	11	34	19	17	22	84	**WEE12L9/16UNFOMD**	315	315
	12	3/4-16 UNF-2A	10	10.0	25.7	26	19	25	13	34	19	22	22	102	**WEE12L3/4UNFOMD**	315	315
	15	3/4-16 UNF-2A	12	10.0	25.7	28	21	28	13	36	22	22	27	131	**WEE15L3/4UNFOMD**	315	315
	15	7/8-14 UNF-2A	12	12.5	29.3	28	21	28	15	36	22	27	27	151	**WEE15L7/8UNFOMD**	315	315
	18	7/8-14 UNF-2A	15	12.5	29.3	31	24	32	15	40	27	27	32	223	**WEE18L7/8UNFOMD**	315	315
	18	1 1/16-12 UN-2A	15	15.5	29.3	31	24	32	17	40	30	32	32	287	**WEE18L11/16UNOMD**	315	315
	22	1 1/16-12 UN-2A	19	15.5	36.7	35	28	35	17	44	30	32	36	307	**WEE22L11/16UNOMD**	160	160
	28	1 5/16-12 UN-2A	24	21.5	44.0	38	31	42	17	47	36	41	41	446	**WEE28L15/16UNOMD**	160	160
	35	1 5/8-12 UN-2A	30	27.5	55.0	48	38	46	17	59	50	50	50	1043	**WEE35L15/8UNOMD**	160	160
	42	1 7/8-12 UN-2A	36	33.5	55.0	49	38	47	17	61	50	55	60	937	**WEE42L17/8UNOMD**	160	160
S[4])	06	7/16-20 UNF-2A	4	4.5	16.5	22	15	20	12	30	14	14	17	52	**WEE06S7/16UNFOMD**	400	400
	08	9/16-18 UNF-2A	5	7.5	18.3	24	17	25	12	32	19	17	19	92	**WEE08S9/16UNFOMD**	400	400
	10	9/16-18 UNF-2A	7	7.5	20.2	25	18	26	12	34	19	17	22	95	**WEE10S9/16UNFOMD**	400	400
	12	3/4-16 UNF-2A	8	10.0	25.7	29	22	30	14	38	22	22	24	152	**WEE12S3/4UNFOMD**	400	400
	16	7/8-14 UNF-2A	12	12.5	29.3	33	25	34	16	43	27	27	30	243	**WEE16S7/8UNFOMD**	400	400
	20	1 1/16-12 UN-2A	16	15.5	36.7	38	28	37	19	49	30	32	36	370	**WEE20S11/16UNOMD**	400	400
	25	1 1/16-12 UN-2A	20	15.5	44.0	42	30	50	19	54	36	32	46	505	**WEE25S11/16UNOMD**	400	400
	30	1 5/8-12 UN-2A	25	27.5	55.0	49	36	50	19	62	50	50	50	1105	**WEE30S15/8UNOMD**	250	250
	38	1 7/8-12 UN-2A	32	33.5	55.0	50	34	51	19	65	50	55	60	1106	**WEE38S17/8UNOMD**	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

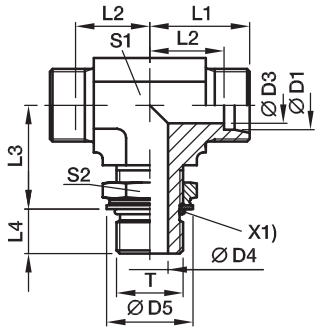
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

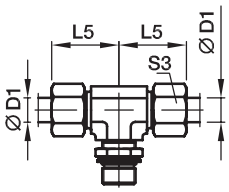
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WEE16S7/8UNFOMDCF	NBR
Steel, zinc yellow plated	A3C	WEE16S7/8UNFOMDA3C	NBR

*Please add the **suffixes** below according to the material/surface required.

TEE-OR Adjustable locknut branch tee

EO 24° cone end / Adjustable metric thread – O-ring (ISO 6149)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	M10×1	4	4.5	15	21	14	20	7	29	14	14	14	53	**TEE06LMOROMD**	315	315
	08	M12×1.5	6	6.0	18	23	16	22	10	31	14	17	17	63	**TEE08LMOROMD**	315	315
	10	M14×1.5	8	7.5	20	24	17	25	10	32	19	19	19	111	**TEE10LMOROMD**	315	315
	12	M16×1.5	10	9.0	23	26	19	26	10	34	19	22	22	110	**TEE12LMOROMD**	315	315
	15	M18×1.5	12	11.0	25	28	21	30	11	36	22	24	27	163	**TEE15LMOROMD**	315	315
	18	M22×1.5	15	14.0	28	31	24	33	12	40	27	27	32	272	**TEE18LMOROMD**	315	315
	22	M27×2	19	18.0	33	35	28	35	14	44	30	32	36	315	**TEE22LM27X2OROMD**	160	160
	28	M33×2	24	23.0	41	38	31	38	14	47	36	41	41	477	**TEE28LMOROMD**	160	160
	35	M42×2	30	30.0	51	48	38	48	14	59	50	50	50	477	**TEE35LMOROMD**	160	160
	42	M48×2	36	36.0	56	49	38	49	16	61	50	55	60	950	**TEE42LMOROMD**	160	160
S[4])	06	M12×1.5	4	4.0	18	22	15	22	10	30	14	17	17	72	**TEE06SMOROMD**	400	400
	08	M14×1.5	5	6.0	20	24	17	26	10	32	19	19	19	118	**TEE08SMOROMD**	400	400
	10	M16×1.5	7	7.0	23	25	18	27	11	34	19	22	22	131	**TEE10SMOROMD**	400	400
	12	M18×1.5	8	9.0	25	29	22	31	12	38	22	24	24	192	**TEE12SMOROMD**	400	400
	16	M22×1.5	12	12.0	28	33	25	35	14	43	27	27	30	295	**TEE16SMOROMD**	400	400
	20	M27×2	16	15.0	33	38	28	39	16	49	30	32	36	423	**TEE20SMOROMD**	400	400
	25	M33×2	20	20.0	41	42	30	44	16	54	36	41	46	665	**TEE25SMOROMD**	315	315
	30	M42×2	25	26.0	51	49	36	51	17	62	50	50	50	1347	**TEE30SMOROMD**	250	250
	38	M48×2	32	32.0	56	50	34	54	19	65	50	55	60	1324	**TEE38SMOROMD**	200	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

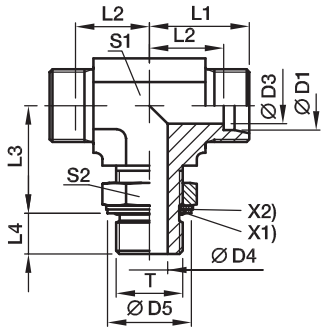
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

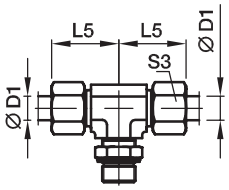
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TEE16SMOROMDCF	NBR
Steel, zinc yellow plated	A3C	TEE16SMOROMDA3C	NBR

TEE-M Adjustable locknut branch tee

EO 24° cone end / Adjustable metric thread – O-ring + retaining ring





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	15	21	14	20	7	29	14	13	14	52	**TEE06LMOMD**	315	315	315
	08	M12×1.5	6	6.0	18	23	16	22	10	31	14	17	17	63	**TEE08LMOMD**	315	315	315
	10	M14×1.5	8	7.5	20	24	17	25	9	32	19	17	19	99	**TEE10LMOMD**	315	315	315
	12	M16×1.5	10	9.0	23	26	19	26	9	34	19	19	22	106	**TEE12LMOMD**	315	315	315
	15	M18×1.5	12	11.0	25	28	21	30	11	36	22	22	27	162	**TEE15LMOMD**	315	315	315
	18	M22×1.5	15	14.0	28	31	24	33	11	40	27	27	32	248	**TEE18LMOMD**	250	250	250
	22	M27×2	19	18.0	33	35	28	35	14	44	30	32	36	319	**TEE22LM27X2OMD**	160	160	160
	28	M33×2	24	23.0	41	38	31	38	14	47	36	38	41	472	**TEE28LMOMD**	160	160	160
	35	M42×2	30	30.0	51	48	38	48	14	59	50	50	50	1147	**TEE35LMOMD**	160	160	160
	42	M48×2	36	36.0	56	49	38	49	16	61	50	55	60	1020	**TEE42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	4.0	18	22	15	22	10	30	14	17	17	73	**TEE06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	20	24	17	26	10	32	19	17	19	124	**TEE08SMOMD**	315	315	315
	10	M16×1.5	7	7.0	23	25	18	27	11	34	19	19	22	125	**TEE10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	25	29	22	31	12	38	22	22	24	184	**TEE12SMOMD**	315	315	315
	16	M22×1.5	12	12.0	28	33	25	35	14	43	27	27	30	291	**TEE16SMOMD**	250	250	250
	20	M27×2	16	15.0	33	38	28	39	16	49	30	32	36	418	**TEE20SMOMD**	250	250	250
	25	M33×2	20	20.0	41	42	30	44	16	54	36	38	46	642	**TEE25SMOMD**	160	160	160
	30	M42×2	25	26.0	51	49	36	51	17	62	50	50	50	1335	**TEE30SMOMD**	160	160	160
	38	M48×2	32	32.0	56	50	34	54	19	65	50	55	60	1300	**TEE38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

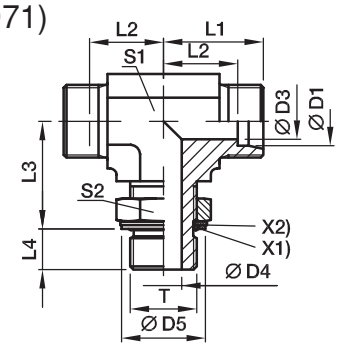
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

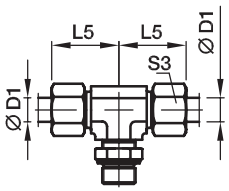
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TEE16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	TEE16SMOMDA3C	NBR
Stainless Steel	71	TEE16SMOMD71	VIT

TEE-R Adjustable locknut branch tee

EO 24° cone end / Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)
for ports with small or wide spot face;
differences in D5 in Stainless Steel are only for ports with wide spot face
(e. g. TEE16SRBOMD71)





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5[5])	D5[6])	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
L[3])	06	G 1/8A	4	4.5	15	15.0	21	14	19	7	29	14	14	14	52	**TEE06LROMD**	315	315	315
	08	G 1/4A	6	7.5	20	20.0	23	16	23	9	31	14	19	17	75	**TEE08LROMD**	315	315	315
	10	G 1/4A	8	7.5	20	20.0	24	17	25	9	32	19	19	19	107	**TEE10LROMD**	315	315	315
	12	G 3/8A	10	10.0	23	23.5	26	19	28	9	34	19	22	22	114	**TEE12LROMD**	250	250	250
	15	G 1/2A	12	12.5	28	28.5	28	21	30	13	36	22	27	27	183	**TEE15LROMD**	250	250	250
	18	G 1/2A	15	12.5	28	28.5	31	24	36	13	40	27	27	32	271	**TEE18LROMD**	250	250	250
	22	G 3/4A	19	15.5	33	34.5	35	28	36	13	44	30	36	36	357	**TEE22LROMD**	160	160	160
	28	G 1A	24	21.5	41	43.5	38	31	44	15	47	36	41	41	545	**TEE28LROMD**	160	160	160
	35	G 1 1/4A	30	27.5	51	52.5	48	38	50	15	59	50	50	50	1188	**TEE35LROMD**	160	160	160
	42	G 1 1/2A	36	33.0	56	60.0	49	38	52	15	61	50	50	60	1122	**TEE42LROMD**	160	160	160
S[4])	06	G 1/4A	4	7.5	20	20.0	22	15	23	9	30	14	19	17	73	**TEE06SROMD**	315	315	315
	08	G 1/4A	5	7.5	20	20.0	24	17	27	9	32	19	19	19	115	**TEE08SROMD**	315	315	315
	10	G 3/8A	7	10.0	23	23.5	25	18	29	9	34	19	22	22	126	**TEE10SROMD**	250	250	250
	12	G 3/8A	8	10.0	23	23.5	29	22	29	9	38	22	22	24	171	**TEE12SROMD**	250	250	250
	16	G 1/2A	12	12.5	28	28.5	33	25	36	13	43	27	27	30	292	**TEE16SROMD**	250	250	250
	20	G 3/4A	16	15.5	33	34.5	38	28	39	12	49	30	36	36	416	**TEE20SROMD**	250	250	250
	25	G 1A	20	21.5	41	43.5	42	30	44	14	54	36	41	46	644	**TEE25SROMD**	250	250	250
	30	G 1 1/4A	25	27.5	51	52.5	49	36	49	15	62	50	50	50	1285	**TEE30SROMD**	160	160	160
	38	G 1 1/2A	32	33.0	56	60.0	50	34	55	15	65	50	55	60	1272	**TEE38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

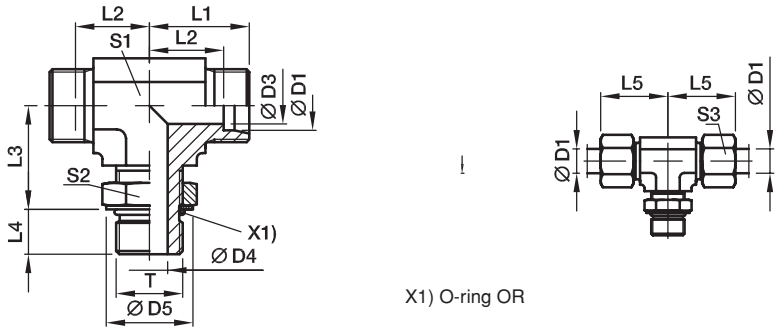
[5]) Steel; [6]) Stainless Steel

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TEE16SROMDCF	NBR
Steel, zinc yellow plated	A3C	TEE16SROMDA3C	NBR
Stainless Steel	71	TEE16SRBOMD71	VIT

TEE-UNF Adjustable locknut branch tee

EO 24° cone end / Adjustable UN/UNF thread – O-ring (ISO 11926)



X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	7/16-20 UNF-2A	4	4.5	16.5	21	14	19	10	29	14	14	14	58	**TEE06L7/16UNFOMD**	315	315
	08	7/16-20 UNF-2A	6	4.5	18.3	23	16	19	10	31	14	14	17	60	**TEE08L7/16UNFOMD**	315	315
	10	9/16-18 UNF-2A	8	7.5	20.2	24	17	24	10	32	19	17	19	102	**TEE10L9/16UNFOMD**	315	315
	12	9/16-18 UNF-2A	10	7.5	25.7	26	19	25	11	34	19	17	22	103	**TEE12L9/16UNFOMD**	315	315
	12	3/4-16 UNF-2A	10	10.0	25.7	26	19	25	13	34	19	22	22	118	**TEE12L3/4UNFOMD**	315	315
	15	3/4-16 UNF-2A	12	10.0	25.7	28	21	28	13	36	22	22	27	164	**TEE15L3/4UNFOMD**	315	315
	15	7/8-14 UNF-2A	12	12.5	29.3	28	21	28	15	36	22	27	27	182	**TEE15L7/8UNFOMD**	315	315
	18	7/8-14 UNF-2A	15	12.5	29.3	31	24	32	15	40	27	27	32	265	**TEE18L7/8UNFOMD**	315	315
	18	1 1/16-12 UN-2A	15	15.5	29.3	31	24	32	17	40	30	32	32	348	**TEE18L11/16UNOMD**	315	315
	22	1 1/16-12 UN-2A	19	15.5	36.7	35	28	35	17	44	30	32	36	354	**TEE22L11/16UNOMD**	160	160
	28	1 5/16-12 UN-2A	24	21.5	44.0	38	31	42	17	47	36	41	41	625	**TEE28L15/16UNOMD**	160	160
	35	1 5/8-12 UN-2A	30	27.5	55.0	48	38	46	17	59	50	50	50	1245	**TEE35L15/8UNOMD**	160	160
	42	1 7/8-12 UN-2A	36	33.5	55.0	49	38	47	17	61	50	55	60	1538	**TEE42L17/8UNOMD**	160	160
S[4])	06	7/16-20 UNF-2A	4	4.5	16.5	22	15	20	12	30	14	14	17	69	**TEE06S7/16UNFOMD**	400	400
	08	9/16-18 UNF-2A	5	7.5	18.3	24	17	25	12	32	19	17	19	116	**TEE08S9/16UNFOMD**	400	400
	10	9/16-18 UNF-2A	7	7.5	20.2	25	18	26	12	34	19	17	22	120	**TEE10S9/16UNFOMD**	400	400
	12	3/4-16 UNF-2A	8	10.0	25.7	29	22	30	14	38	22	22	24	195	**TEE12S3/4UNFOMD**	400	400
	16	7/8-14 UNF-2A	12	12.5	29.3	33	25	34	16	43	27	27	30	294	**TEE16S7/8UNFOMD**	400	400
	20	1 1/16-12 UN-2A	16	15.5	36.7	38	28	37	19	49	30	32	36	441	**TEE20S11/16UNOMD**	400	400
	25	1 1/16-12 UN-2A	20	15.5	44.0	42	30	50	19	54	36	32	46	628	**TEE25S11/16UNOMD**	400	400
	30	1 5/8-12 UN-2A	25	27.5	55.0	49	36	50	19	62	50	50	50	1276	**TEE30S15/8UNOMD**	250	250
	38	1 7/8-12 UN-2A	32	33.5	55.0	50	34	51	19	65	50	55	60	1256	**TEE38S17/8UNOMD**	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

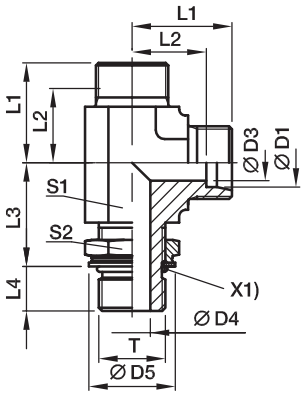
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

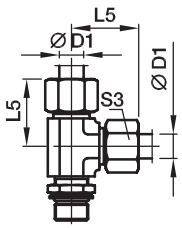
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TEE16S7/8UNFOMDCF	NBR
Steel, zinc yellow plated	A3C	TEE16S7/8UNFOMDA3C	NBR

*Please add the **suffixes** below according to the material/surface required.

LEE-OR Adjustable locknut run tee

EO 24° cone end / Adjustable metric thread – O-ring (ISO 6149)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
L[3])	06	M10×1	4	4.5	15	21	14	20	7	29	14	14	14	52	**LEE06LMOROMD**	315	315
	08	M12×1.5	6	6.0	18	23	16	22	10	31	14	17	17	64	**LEE08LMOROMD**	315	315
	10	M14×1.5	8	7.5	20	24	17	25	10	32	19	19	19	100	**LEE10LMOROMD**	315	315
	12	M16×1.5	10	9.0	23	26	19	26	10	34	19	22	22	111	**LEE12LMOROMD**	315	315
	15	M18×1.5	12	11.0	25	28	21	30	11	36	22	24	27	166	**LEE15LMOROMD**	315	315
	18	M22×1.5	15	14.0	28	31	24	33	12	40	27	27	32	251	**LEE18LMOROMD**	315	315
	22	M27×2	19	18.0	33	35	28	35	14	44	30	32	36	334	**LEE22LM27X2OROMD**	160	160
	28	M33×2	24	23.0	41	38	31	38	14	47	36	41	41	458	**LEE28LMOROMD**	160	160
	35	M42×2	30	30.0	51	48	38	48	14	59	50	50	50	1127	**LEE35LMOROMD**	160	160
	42	M48×2	36	36.0	56	49	38	49	16	61	50	55	60	941	**LEE42LMOROMD**	160	160
S[4])	06	M12×1.5	4	4.0	18	22	15	22	10	30	14	17	17	72	**LEE06SMOROMD**	400	400
	08	M14×1.5	5	6.0	20	24	17	26	10	32	19	19	19	117	**LEE08SMOROMD**	400	400
	10	M16×1.5	7	7.0	23	25	18	27	11	34	19	22	22	128	**LEE10SMOROMD**	400	400
	12	M18×1.5	8	9.0	25	29	22	31	12	38	22	24	24	184	**LEE12SMOROMD**	400	400
	16	M22×1.5	12	12.0	28	33	25	35	14	43	27	27	30	300	**LEE16SMOROMD**	400	400
	20	M27×2	16	15.0	33	38	28	35	16	49	30	32	36	433	**LEE20SMOROMD**	400	400
	25	M33×2	20	20.0	41	42	30	44	16	54	36	41	46	644	**LEE25SMOROMD**	315	315
	30	M42×2	25	26.0	51	49	36	51	17	62	50	50	50	1347	**LEE30SMOROMD**	250	250
	38	M48×2	32	32.0	56	50	34	54	19	65	50	55	60	1317	**LEE38SMOROMD**	200	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

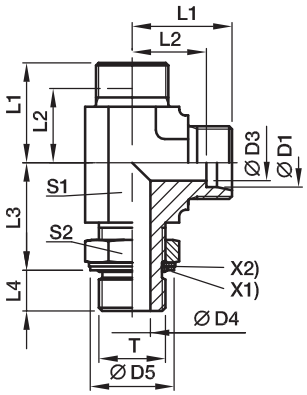
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

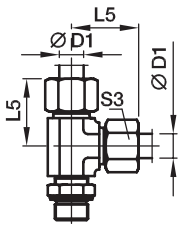
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	LEE16SMOROMDCF	NBR
Steel, zinc yellow plated	A3C	LEE16SMOROMDA3C	NBR

LEE-M Adjustable locknut run tee

EO 24° cone end / Adjustable metric thread – O-ring + retaining ring





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	15	21	14	20	7	29	14	13	14	52	**LEE06LMOMD**	315	315	315
	08	M12×1.5	6	6.0	18	23	16	22	10	31	14	17	17	65	**LEE08LMOMD**	315	315	315
	10	M14×1.5	8	7.5	20	24	17	25	9	32	19	17	19	98	**LEE10LMOMD**	315	315	315
	12	M16×1.5	10	9.0	23	26	19	26	9	34	19	19	22	107	**LEE12LMOMD**	315	315	315
	15	M18×1.5	12	11.0	25	28	21	30	11	36	22	22	27	165	**LEE15LMOMD**	315	315	315
	18	M22×1.5	15	14.0	28	31	24	33	11	40	27	27	32	254	**LEE18LMOMD**	250	250	250
	22	M27×2	19	18.0	33	35	28	35	14	44	30	32	36	338	**LEE22LM27X2OMD**	160	160	160
	28	M33×2	24	23.0	41	38	31	38	14	47	36	38	41	454	**LEE28LMOMD**	160	160	160
	35	M42×2	30	30.0	51	48	38	48	14	59	50	50	50	1139	**LEE35LMOMD**	160	160	160
	42	M48×2	36	36.0	56	49	38	49	16	61	50	55	60	1011	**LEE42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	4.0	18	22	15	22	10	30	14	17	17	72	**LEE06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	20	24	17	26	10	32	19	17	19	114	**LEE08SMOMD**	315	315	315
	10	M16×1.5	7	7.0	23	25	18	27	11	34	19	19	22	122	**LEE10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	25	29	22	31	12	38	22	22	24	176	**LEE12SMOMD**	315	315	315
	16	M22×1.5	12	12.0	28	33	25	35	14	43	27	27	30	297	**LEE16SMOMD**	250	250	250
	20	M27×2	16	15.0	33	38	28	39	16	49	30	32	36	428	**LEE20SMOMD**	250	250	250
	25	M33×2	20	20.0	41	42	30	44	16	54	36	38	46	621	**LEE25SMOMD**	160	160	160
	30	M42×2	25	26.0	51	49	36	51	17	62	50	50	50	1335	**LEE30SMOMD**	160	160	160
	38	M48×2	32	32.0	56	50	34	54	19	65	50	55	60	1293	**LEE38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

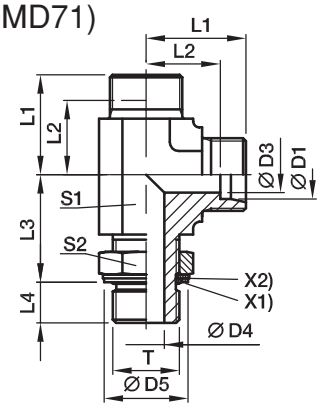
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

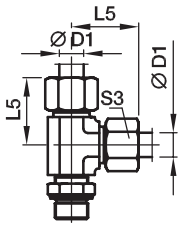
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	LEE16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	LEE16SMOMDA3C	NBR
Stainless Steel	71	LEE16SMOMD71	VIT

LEE-R Adjustable locknut run tee

EO 24° cone end / Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)
for ports with small or wide spot face;
differences in D5 in Stainless Steel are only for ports with wide spot face
(e. g. LEE16SRBOMD71)





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5[5])	D5[6])	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
L[3])	06	G 1/8A	4	4.5	15	15.0	21	14	19	7	29	14	14	14	53	**LEE06LROMD**	315	315	315
	08	G 1/4A	6	7.5	20	20.0	23	16	23	9	31	14	19	17	68	**LEE08LROMD**	315	315	315
	10	G 1/4A	8	7.5	20	20.0	24	17	25	9	32	19	19	19	98	**LEE10LROMD**	315	315	315
	12	G 3/8A	10	10.0	23	23.5	26	19	28	9	34	19	22	22	114	**LEE12LROMD**	250	250	250
	15	G 1/2A	12	12.5	28	28.5	28	21	30	13	36	22	27	27	183	**LEE15LROMD**	250	250	250
	18	G 1/2A	15	12.5	28	28.5	31	24	36	13	40	27	27	32	271	**LEE18LROMD**	250	250	250
	22	G 3/4A	19	15.5	33	34.5	35	28	36	13	44	30	36	36	367	**LEE22LROMD**	160	160	160
	28	G 1A	24	21.5	41	43.5	38	31	44	15	47	36	41	41	525	**LEE28LROMD**	160	160	160
	35	G 1 1/4A	30	27.5	51	52.5	48	38	50	15	59	50	50	50	1194	**LEE35LROMD**	160	160	160
	42	G 1 1/2A	36	33.0	56	60.0	49	38	52	15	61	50	55	60	1090	**LEE42LROMD**	160	160	160
S[4])	06	G 1/4A	4	7.5	20	20.0	22	15	23	9	30	14	19	17	71	**LEE06SROMD**	315	315	315
	08	G 1/4A	5	7.5	20	20.0	24	17	27	9	32	19	19	19	113	**LEE08SROMD**	315	315	315
	10	G 3/8A	7	10.0	23	23.5	25	18	29	9	34	19	22	22	124	**LEE10SROMD**	250	250	250
	12	G 3/8A	8	10.0	23	23.5	29	22	29	9	38	22	22	24	167	**LEE12SROMD**	250	250	250
	16	G 1/2A	12	12.5	28	28.5	33	25	36	13	43	27	27	30	295	**LEE16SROMD**	250	250	250
	20	G 3/4A	16	15.5	33	34.5	38	28	39	12	49	30	36	36	440	**LEE20SROMD**	250	250	250
	25	G 1A	20	21.5	41	43.5	42	30	44	14	54	36	41	46	629	**LEE25SROMD**	250	250	250
	30	G 1 1/4A	25	27.5	51	52.5	49	36	49	15	62	50	50	50	1285	**LEE30SROMD**	160	160	160
	38	G 1 1/2A	32	33.0	56	60.0	50	34	55	15	65	50	55	60	1272	**LEE38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

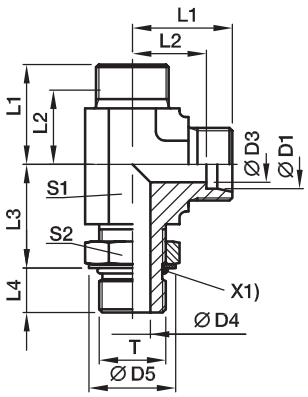
[5]) Steel; [6]) Stainless Steel

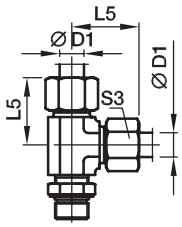
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	LEE16SROMDCF	NBR
Steel, zinc yellow plated	A3C	LEE16SROMDA3C	NBR
Stainless Steel	71	LEE16SRBOMD71	VIT

LEE-UNF Adjustable locknut run tee

EO 24° cone end / Adjustable UN/UNF thread – O-Ring (ISO 11926)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
L[3])	06	7/16-20 UNF-2A	4	4.5	16.5	21	14	19	10	29	14	14	14	57	**LEE06L7/16UNFOMD**	315	315
	08	7/16-20 UNF-2A	6	4.5	18.3	23	16	19	10	31	14	14	17	61	**LEE08L7/16UNFOMD**	315	315
	10	9/16-18 UNF-2A	8	7.5	20.2	24	17	24	10	32	19	17	19	101	**LEE10L9/16UNFOMD**	315	315
	12	9/16-18 UNF-2A	10	7.5	25.7	26	19	25	11	34	19	17	22	106	**LEE12L9/16UNFOMD**	315	315
	12	3/4-16 UNF-2A	10	10.0	25.7	26	19	25	13	34	19	22	22	122	**LEE12L3/4UNFOMD**	315	315
	15	3/4-16 UNF-2A	12	10.0	25.7	28	21	28	13	36	22	22	27	166	**LEE15L3/4UNFOMD**	315	315
	15	7/8-14 UNF-2A	12	12.5	29.3	28	21	28	15	36	22	27	27	183	**LEE15L7/8UNFOMD**	315	315
	18	7/8-14 UNF-2A	15	12.5	29.3	31	24	32	15	40	27	27	32	263	**LEE18L7/8UNFOMD**	315	315
	18	1 1/16-12 UN-2A	15	15.5	29.3	31	24	32	17	40	30	32	32	335	**LEE18L11/16UNOMD**	315	315
	22	1 1/16-12 UN-2A	19	15.5	36.7	35	28	35	17	44	30	32	36	355	**LEE22L11/16UNOMD**	160	160
	28	1 5/16-12 UN-2A	24	21.5	44.0	38	31	42	17	47	36	41	41	625	**LEE28L15/16UNOMD**	160	160
	35	1 5/8-12 UN-2A	30	27.5	55.0	48	38	46	17	59	50	50	50	1245	**LEE35L15/8UNOMD**	160	160
	42	1 7/8-12 UN-2A	36	33.5	55.0	49	38	47	17	61	50	55	60	1538	**LEE42L17/8UNOMD**	160	160
S[4])	06	7/16-20 UNF-2A	4	4.5	16.5	22	15	20	12	30	14	14	17	66	**LEE06S7/16UNFOMD**	400	400
	08	9/16-18 UNF-2A	5	7.5	18.3	24	17	25	12	32	19	17	19	114	**LEE08S9/16UNFOMD**	400	400
	10	9/16-18 UNF-2A	7	7.5	20.2	25	18	26	12	34	19	17	22	118	**LEE10S9/16UNFOMD**	400	400
	12	3/4-16 UNF-2A	8	10.0	25.7	29	22	30	14	38	22	22	24	185	**LEE12S3/4UNFOMD**	400	400
	16	7/8-14 UNF-2A	12	12.5	29.3	33	25	34	16	43	27	27	30	291	**LEE16S7/8UNFOMD**	400	400
	20	1 1/16-12 UN-2A	16	15.5	36.7	38	28	37	19	49	30	32	36	453	**LEE20S11/16UNOMD**	400	400
	25	1 1/16-12 UN-2A	20	15.5	44.0	42	30	50	19	54	36	32	46	589	**LEE25S11/16UNOMD**	400	400
	30	1 5/8-12 UN-2A	25	27.5	55.0	49	36	50	19	62	50	50	50	1276	**LEE30S15/8UNOMD**	250	250
	38	1 7/8-12 UN-2A	32	33.5	55.0	50	34	51	19	65	50	55	60	1256	**LEE38S17/8 UNOMD**	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

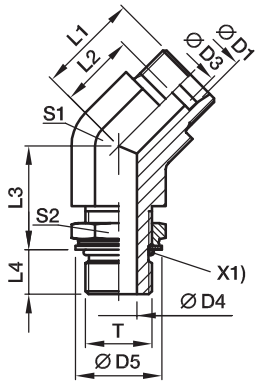
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

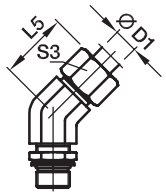
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	LEE16S7/8UNFOMDCF	NBR
Steel, zinc yellow plated	A3C	LEE16S7/8UNFOMDA3C	NBR

*Please add the **suffixes** below according to the material/surface required.

VEE-OR Adjustable locknut 45° elbow

EO 24° cone end / Adjustable metric thread – O-ring (ISO 6149)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	M10×1	4	4.5	15	16	9	20	8	24	14	14	14	45	**VEE06LMOROMD**	315	315
	08	M12×1.5	6	6.0	18	19	12	18	11	27	14	17	17	42	**VEE08LMOROMD**	315	315
	10	M14×1.5	8	7.5	20	19	12	22	11	27	19	19	19	73	**VEE10LMOROMD**	315	315
	12	M16×1.5	10	9.0	23	21	14	23	11	28	19	22	22	81	**VEE12LMOROMD**	315	315
	15	M18×1.5	12	11.0	25	24	17	23	12	32	22	24	27	122	**VEE15LMOROMD**	315	315
	18	M22×1.5	15	14.0	28	24	17	30	12	33	27	27	32	178	**VEE18LMOROMD**	315	315
	22	M27×2	19	18.0	33	26	19	30	15	35	30	32	36	217	**VEE22LM27X2OROMD**	160	160
	28	M33×2	24	23.0	41	31	23	34	15	40	36	41	41	364	**VEE28LMOROMD**	160	160
	35	M42×2	30	30.0	51	37	27	36	15	48	50	50	50	728	**VEE35LMOROMD**	160	160
	42	M48×2	36	36.0	56	37	26	36	17	49	50	55	60	690	**VEE42LMOROMD**	160	160
S[4])	06	M12×1.5	4	4.0	18	16	9	18	11	24	14	17	17	44	**VEE06SMOROMD**	400	400
	08	M14×1.5	5	6.0	20	19	12	18	11	27	19	19	19	72	**VEE08SMOROMD**	400	400
	10	M16×1.5	7	7.0	23	21	13	22	12	29	19	22	22	93	**VEE10SMOROMD**	400	400
	12	M18×1.5	8	9.0	25	24	17	23	14	33	22	24	24	130	**VEE12SMOROMD**	400	400
	16	M22×1.5	12	12.0	28	24	16	20	14	34	27	27	30	196	**VEE16SMOROMD**	400	400
	20	M27×2	16	15.0	33	27	16	33	18	38	30	32	36	290	**VEE20SMOROMD**	400	400
	25	M33×2	20	20.0	41	31	19	35	18	43	36	41	46	446	**VEE25SMOROMD**	315	315
	30	M42×2	25	26.0	51	37	24	36	18	50	50	50	50	811	**VEE30SMOROMD**	250	250
	38	M48×2	32	32.0	56	37	21	36	21	52	50	55	60	850	**VEE38SMOROMD**	200	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

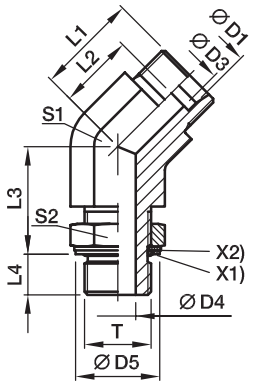
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

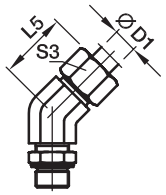
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VEE16SMOROMDCF	NBR
Steel, zinc yellow plated	A3C	VEE16SMOROMDA3C	NBR

VEE-M Adjustable locknut 45° elbow

EO 24° cone end / Adjustable metric thread – O-ring + retaining ring





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	15	16	9	20	8	24	14	13	14	39	**VEE06LMOMD**	315	315	315
	08	M12×1.5	6	6.0	18	19	12	18	11	27	14	17	17	49	**VEE08LMOMD**	315	315	315
	10	M14×1.5	8	7.5	20	19	12	22	11	27	19	17	19	71	**VEE10LMOMD**	315	315	315
	12	M16×1.5	10	9.0	23	21	14	23	11	28	19	19	22	78	**VEE12LMOMD**	315	315	315
	15	M18×1.5	12	11.0	25	24	17	23	12	32	22	22	27	121	**VEE15LMOMD**	315	315	315
	18	M22×1.5	15	14.0	28	24	17	30	12	33	27	27	32	180	**VEE18LMOMD**	250	250	250
	22	M27×2	19	18.0	33	26	19	30	15	35	30	32	36	221	**VEE22LM27X2OMD**	160	160	160
	28	M33×2	24	23.0	41	31	23	34	15	40	36	38	41	360	**VEE28LMOMD**	160	160	160
	35	M42×2	30	30.0	51	37	27	36	15	48	50	50	50	741	**VEE35LMOMD**	160	160	160
	42	M48×2	36	36.0	56	37	26	36	17	49	50	55	60	688	**VEE42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	4.0	18	16	9	18	11	24	14	17	17	44	**VEE06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	20	19	12	18	11	27	19	17	19	69	**VEE08SMOMD**	315	315	315
	10	M16×1.5	7	7.0	23	21	13	22	12	29	19	19	22	86	**VEE10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	25	24	17	23	14	33	22	22	24	123	**VEE12SMOMD**	315	315	315
	16	M22×1.5	12	12.0	28	24	16	30	14	34	27	27	30	192	**VEE16SMOMD**	250	250	250
	20	M27×2	16	15.0	33	27	16	33	18	38	30	32	36	285	**VEE20SMOMD**	250	250	250
	25	M33×2	20	20.0	41	31	19	35	18	43	36	38	46	425	**VEE25SMOMD**	160	160	160
	30	M42×2	25	26.0	51	37	24	36	18	50	50	50	50	799	**VEE30SMOMD**	160	160	160
	38	M48×2	32	32.0	56	37	21	36	21	52	50	55	60	825	**VEE38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

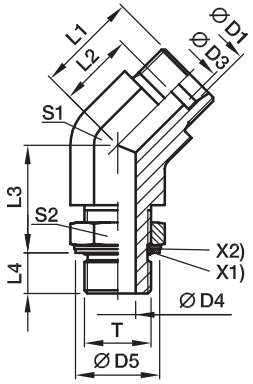
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

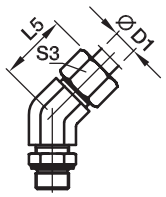
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VEE16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	VEE16SMOMDA3C	NBR
Stainless Steel	71	VEE16SMOMD71	VIT

VEE-R Adjustable locknut 45° elbow

EO 24° cone end / Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)
for ports with small or wide spot face;
differences in D5 in Stainless Steel are only for ports with wide spot face
(e. g. VEE16SRBOMD71)





X1) O-ring OR
X2) retaining ring

Series	D1	T	D3	D4	D5[5])	D5[6])	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	A3C	71
L[3])	06	G 1/8A	4	4.5	15	15.0	16	9	21	7	24	14	14	14	39	**VEE06LROMD**	315	315	315
	08	G 1/4A	6	7.5	20	20.0	19	12	20	9	27	14	19	17	46	**VEE08LROMD**	315	315	315
	10	G 1/4A	8	7.5	20	20.0	19	12	25	9	27	19	19	19	74	**VEE10LROMD**	315	315	315
	12	G 3/8A	10	10.0	23	23.5	21	14	28	9	28	19	22	22	85	**VEE12LROMD**	250	250	250
	15	G 1/2A	12	12.5	28	28.5	24	17	26	13	32	22	27	27	134	**VEE15LROMD**	250	250	250
	18	G 1/2A	15	12.5	28	28.5	24	17	32	13	33	27	27	32	189	**VEE18LROMD**	250	250	250
	22	G 3/4A	19	15.5	33	34.5	26	19	37	13	35	30	36	36	283	**VEE22LROMD**	160	160	160
	28	G 1A	24	21.5	41	43.5	31	23	37	15	40	36	41	41	410	**VEE28LROMD**	160	160	160
	35	G 1 1/4A	30	27.5	51	52.5	37	27	39	15	48	50	50	50	807	**VEE35LROMD**	160	160	160
	42	G 1 1/2A	36	33.0	56	60.0	37	26	39	15	49	50	55	60	762	**VEE42LROMD**	160	160	160
S[4])	06	G 1/4A	4	7.5	20	20.0	16	9	19	9	24	14	19	17	45	**VEE06SROMD**	315	315	315
	08	G 1/4A	5	7.5	20	20.0	19	12	23	9	27	19	19	19	76	**VEE08SROMD**	315	315	315
	10	G 3/8A	7	10.0	23	23.5	21	13	25	9	29	19	22	22	86	**VEE10SROMD**	250	250	250
	12	G 3/8A	8	10.0	23	23.5	24	17	25	9	33	22	22	24	115	**VEE12SROMD**	250	250	250
	16	G 1/2A	12	12.5	28	28.5	24	16	31	13	34	27	27	30	186	**VEE16SROMD**	250	250	250
	20	G 3/4A	16	15.5	33	34.5	27	16	34	12	38	30	36	36	286	**VEE20SROMD**	250	250	250
	25	G 1A	20	21.5	41	43.5	31	19	37	14	43	36	41	46	425	**VEE25SROMD**	250	250	250
	30	G 1 1/4A	25	27.5	51	52.5	37	24	38	15	50	50	50	50	793	**VEE30SROMD**	160	160	160
	38	G 1 1/2A	32	33.0	56	60.0	37	21	38	15	52	50	55	60	791	**VEE38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

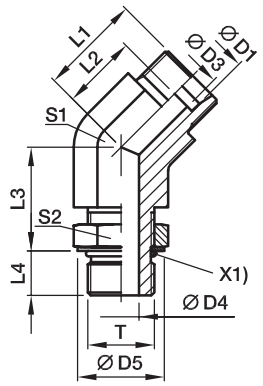
[5]) Steel; [6]) Stainless Steel

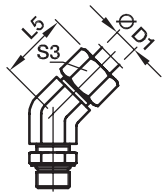
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VEE16SROMDCF	NBR
Steel, zinc yellow plated	A3C	VEE16SROMDA3C	NBR
Stainless Steel	71	VEE16SRBOMD71	VIT

VEE-UNF Adjustable Locknut 45° elbow

EO 24° cone end / Adjustable UN/UNF thread – O-ring (ISO 11926)





X1) O-ring OR

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
L[3])	06	7/16-20 UNF-2A	4	4.5	16.5	16	9	19	10	24	14	14	14	36	**VEE06L7/16UNFOMD**	315	315
	08	7/16-20 UNF-2A	6	4.5	18.3	19	12	19	10	27	14	14	17	39	**VEE08L7/16UNFOMD**	315	315
	10	9/16-18 UNF-2A	8	7.5	20.2	19	12	24	10	27	19	17	19	58	**VEE10L7/16UNFOMD**	315	315
	12	9/16-18 UNF-2A	10	7.5	25.7	21	14	24	11	28	19	17	22	73	**VEE12L9/16UNFOMD**	315	315
	12	3/4-16 UNF-2A	10	10.0	25.7	21	14	24	13	28	19	22	22	91	**VEE12L3/4UNFOMD**	315	315
	15	3/4-16 UNF-2A	12	10.0	25.7	24	17	24	13	32	22	22	27	120	**VEE15L3/4UNFOMD**	315	315
	15	7/8-14 UNF-2A	12	12.5	29.3	24	17	24	15	32	22	27	27	140	**VEE15L7/8UNFOMD**	315	315
	18	7/8-14 UNF-2A	15	12.5	29.3	24	17	30	15	33	27	27	32	190	**VEE18L7/8UNFOMD**	315	315
	18	1 1/16-12 UN-2A	15	15.5	29.3	24	17	30	17	33	30	32	32	205	**VEE18L11/16UNOMD**	315	315
	22	1 1/16-12 UN-2A	19	15.5	36.7	26	19	33	17	35	30	32	36	274	**VEE22L11/16UNOMD**	160	160
	28	1 5/16-12 UN-2A	24	21.5	44.0	31	23	35	17	39	36	41	41	402	**VEE28L15/16UNOMD**	160	160
	35	1 5/8-12 UN-2A	30	27.5	55.0	37	27	37	17	48	50	50	50	794	**VEE35L15/8UNOMD**	160	160
	42	1 7/8-12 UN-2A	36	33.5	55.0	37	26	37	17	49	50	55	60	751	**VEE42L17/8UNOMD**	160	160
S[4])	06	7/16-20 UNF-2A	4	4.5	16.5	16	9	18	12	24	14	14	17	38	**VEE06S7/16UNFOMD**	400	400
	08	9/16-18 UNF-2A	5	7.5	18.3	19	12	21	12	27	19	17	19	78	**VEE08S9/16UNFOMD**	400	400
	10	9/16-18 UNF-2A	7	7.5	20.2	21	13	21	12	29	19	17	22	70	**VEE10S9/16UNFOMD**	400	400
	12	3/4-16 UNF-2A	8	10.0	25.7	24	17	22	14	33	22	22	24	124	**VEE12S3/4UNFOMD**	400	400
	16	7/8-14 UNF-2A	12	12.5	29.3	24	16	29	16	34	27	27	30	198	**VEE16S7/8UNFOMD**	400	400
	20	1 1/16-12 UN-2A	16	15.5	36.7	27	16	31	19	38	30	32	36	315	**VEE20S11/16UNOMD**	400	400
	25	11/16-12 UN-2A	20	15.5	44.0	31	30	33	19	54	36	32	46	385	**VEE25S11/16UNOMD**	400	400
	30	1 5/8-12 UN-2A	25	27.5	55.0	37	24	35	19	50	50	50	50	815	**VEE30S15/8UNOMD**	250	250
	38	1 7/8-12 UN-2A	32	33.5	55.0	37	21	35	19	52	50	55	60	819	**VEE38S17/8UNOMD**	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

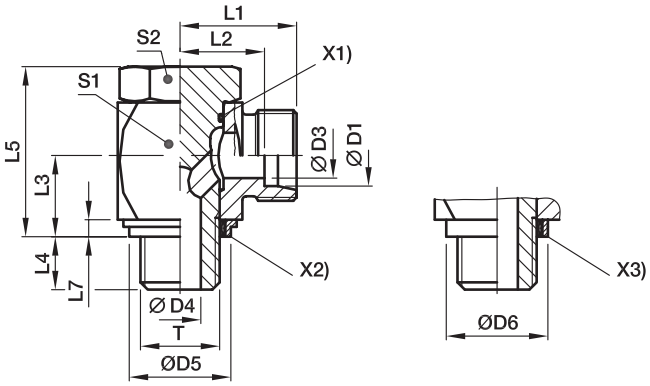
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

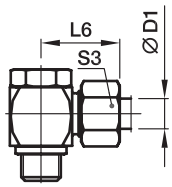
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VEE16S7/8UNFOMDCF	NBR
Steel, zinc yellow plated	A3C	VEE16S7/8UNFOMDA3C	NBR

*Please add the **suffixes** below according to the material/surface required.

WH-M-KDS High pressure banjo elbow

EO 24° cone end / Male metric thread with soft seal ring





X1) O-ring OR
X2) Sealing ring KDS (for ports with small spot face, ISO 9974)
X3) Sealing ring KD (for ports with wide spot face, ISO 9974)

Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	14.9	17.0	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	54	**WH06LMKDSOMD**	315	315	315
	08	M12×1.5	6	6.0	17.0	22.0	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	97	**WH08LMKDSOMD**	315	315	315
	10	M14×1.5	8	6.0	18.9	22.5	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	104	**WH10LMKDSOMD**	315	315	315
	12	M16×1.5	10	7.5	21.9	27.0	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	180	**WH12LMKDSOMD**	315	315	315
	15	M18×1.5	11	9.0	23.9	29.0	27.5	21.5	18.5	12	39.5	37	3.0	30	30	27	244	**WH15LMKDSOMD**	315	315	315
	18	M22×1.5	15	12.0	26.9	32.0	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	327	**WH18LMKDSOMD**	315	315	315
	22	M26×1.5	19	17.0	31.9	41.0	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	573	**WH22LMKDSOMD**	160	160	160
	28	M33×2	24	21.0	39.9	46.0	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1017	**WH28LMKDSOMD**	160	160	160
	35	M42×2	30	27.0	49.9	57.0	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1512	**WH35LMKDSOMD**	160	160	160
	42	M48×2	36	34.0	55.9	64.0	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2217	**WH42LMKDSOMD**	160	160	160
S[4])	06	M12×1.5	4	6.0	17.0	22.0	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	104	**WH06SMKDSOMD**	400	400	400
	08	M14×1.5	5	6.0	18.9	22.5	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	110	**WH08SMKDSOMD**	400	400	400
	10	M16×1.5	7	7.5	21.9	27.0	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	186	**WH10SMKDSOMD**	400	400	400
	12	M18×1.5	8	9.0	23.9	29.0	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	246	**WH12SMKDSOMD**	400	400	400
	14	M20×1.5	10	10.0		32.0	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	322	**WH14SMKDOMD**			400
	16	M22×1.5	12	12.0	26.9	32.0	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	327	**WH16SMKDSOMD**	315	315	315
	20	M27×2	16	16.0	32.9	41.0	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	598	**WH20SMKDSOMD**	315	315	315
	25	M33×2	20	21.0	39.9	46.0	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1055	**WH25SMKDSOMD**	250	250	250
	30	M42×2	25	27.0	49.9	57.0	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1572	**WH30SMKDSOMD**	160	160	160
	38	M48×2	32	34.0	55.9	64.0	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2317	**WH38SMKDSOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

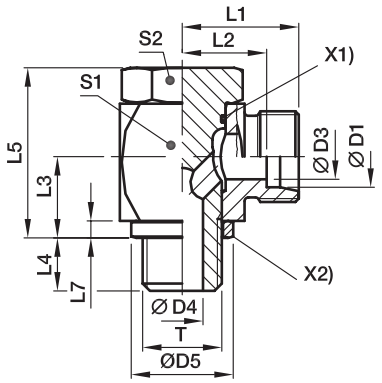
*Please add the **suffixes** below according to the material/surface required.

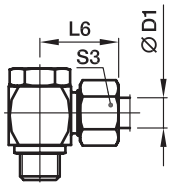
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WH16SMKDSOMDCF	NBR
Steel, zinc yellow plated	A3C	WH16SMKDSOMDA3C	NBR
Stainless Steel	71	WH16SMKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!
Replace KDS by KD in the order code.

WH-M High pressure banjo elbow

EO 24° cone end / Male metric thread with metal sealing ring





X1) O-ring OR
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	14	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	54	**WH06LMOMD**	250	250	250
	08	M12×1.5	6	6.0	17	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	97	**WH08LMOMD**	250	250	250
	10	M14×1.5	8	6.0	19	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	104	**WH10LMOMD**	250	250	250
	12	M16×1.5	10	7.5	21	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	180	**WH12LMOMD**	250	250	250
	15	M18×1.5	11	9.0	23	27.5	21.5	18.5	12	39.5	37	3.0	30	30	27	243	**WH15LMOMD**	250	250	250
	18	M22×1.5	15	12.0	27	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	326	**WH18LMOMD**	250	250	250
	22	M26×1.5	19	17.0	31	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	574	**WH22LMOMD**	160	160	160
	28	M33×2	24	21.0	39	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1016	**WH28LMOMD**	160	160	160
	35	M42×2	30	27.0	49	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1512	**WH35LMOMD**	160	160	160
	42	M48×2	36	34.0	55	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2216	**WH42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	6.0	17	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	104	**WH06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	19	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	111	**WH08SMOMD**	315	315	315
	10	M16×1.5	7	7.5	21	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	186	**WH10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	23	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	246	**WH12SMOMD**	315	315	315
	14	M20×1.5	10	10.0	25	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	320	**WH14SMOMD**	315	315	315
	16	M22×1.5	12	12.0	27	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	326	**WH16SMOMD**	315	315	315
	20	M27×2	16	16.0	32	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	596	**WH20SMOMD**	160	160	160
	25	M33×2	20	21.0	39	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1055	**WH25SMOMD**	160	160	160
	30	M42×2	25	27.0	49	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1572	**WH30SMOMD**	160	160	160
	38	M48×2	32	34.0	55	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2316	**WH38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

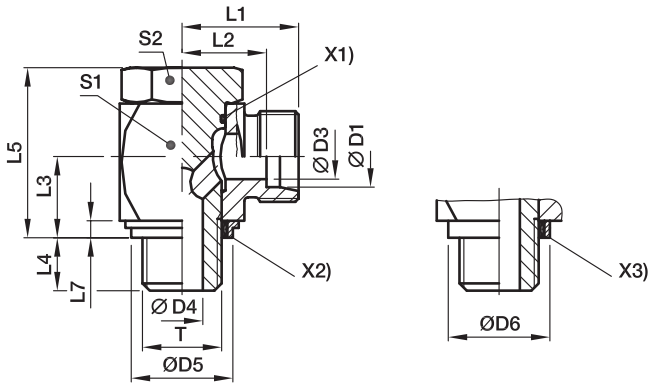
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

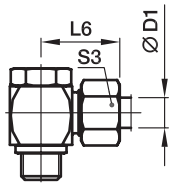
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WH16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	WH16SMOMDA3C	NBR
Stainless Steel	71	WH16SMOMD71	VIT

WH-R-KDS High pressure banjo elbow

EO 24° cone end / Male BSPP thread with soft seal ring





X1) O-ring OR
X2) Sealing ring KDS (for ports with small spot face, ISO 1179)
X3) Sealing ring KD (for ports with wide spot face, ISO 1179)

Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4.5	14.9	17	19.0	12.0	10.5	8	24	27	2.5	17	17	14	53	**WH06LRKDSOMD**	315	315	315
	08	G 1/4 A	6	6.0	18.9	22	21.5	14.5	14.0	12	30	29	3.0	22	19	17	101	**WH08LRKDSOMD**	315	315	315
	10	G 1/4 A	8	6.0	18.9	22	22.5	15.5	14.0	12	30	30	3.0	22	19	19	102	**WH10LRKDSOMD**	315	315	315
	12	G 3/8 A	10	7.5	21.9	27	25.0	18.0	16.5	12	36	33	3.0	27	24	22	181	**WH12LRKDSOMD**	315	315	315
	15	G 1/2 A	12	11.0	26.9	32	28.5	21.5	21.5	14	45	37	4.5	32	30	27	312	**WH15LRKDSOMD**	315	315	315
	18	G 1/2 A	15	11.0	26.9	32	28.5	21.0	21.5	14	45	37	4.5	32	30	32	319	**WH18LRKDSOMD**	315	315	315
	22	G 3/4 A	19	17.0	32.9	41	35.0	27.5	24.0	16	53	44	3.5	41	36	36	578	**WH22LRKDSOMD**	160	160	160
	28	G 1 A	24	21.0	39.9	46	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1035	**WH28LRKDSOMD**	160	160	160
	35	G 1 1/4 A	30	27.0	49.9	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1499	**WH35LRKDSOMD**	160	160	160
	42	G 1 1/2 A	36	34.0	55.9	64	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2196	**WH42LRKDSOMD**	160	160	160
S[4])	06	G 1/4 A	4	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	17	107	**WH06SRKDSOMD**	400	400	400
	08	G 1/4 A	5	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	19	107	**WH08SRKDSOMD**	400	400	400
	10	G 3/8 A	7	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	22	188	**WH10SRKDSOMD**	400	400	400
	12	G 3/8 A	8	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	24	190	**WH12SRKDSOMD**	400	400	400
	14	G 1/2 A	10	11.0	26.9	32	30.5	22.5	21.5	15	45	40	4.5	32	30	27	320	**WH14SRKDSOMD**	400	400	400
	16	G 1/2 A	12	11.0	26.9	32	30.5	22.0	21.5	14	45	40	4.5	32	30	30	324	**WH16SRKDSOMD**	315	315	315
	20	G 3/4 A	16	17.0	32.9	41	37.0	26.5	24.0	16	53	48	3.5	41	36	36	588	**WH20SRKDSOMD**	315	315	315
	25	G 1 A	20	21.0	39.9	46	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1073	**WH25SRKDSOMD**	250	250	250
	30	G 1 1/4 A	25	27.0	49.9	57	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1559	**WH30SRKDSOMD**	160	160	160
	38	G 1 1/2 A	32	34.0	55.9	64	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2296	**WH38SRKDSOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

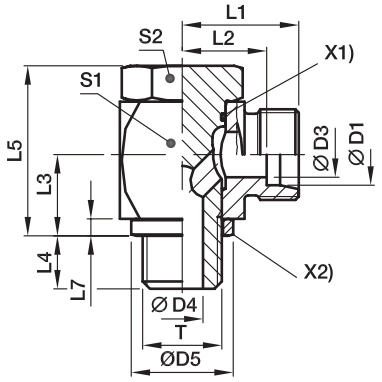
*Please add the **suffixes** below according to the material/surface required.

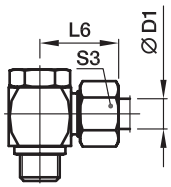
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WH16SRKDSOMDCF	NBR
Steel, zinc yellow plated	A3C	WH16SRKDSOMDA3C	NBR
Stainless Steel	71	WH16SRKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!
Replace KDS by KD in the order code.

WH-R High pressure banjo elbow

EO 24° cone end / Male BSPP thread with metal sealing ring





X1) O-ring OR
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	G 1/8 A	4	4.5	14	19.0	12.0	10.5	8	24	27	2.5	17	17	14	53	**WH06LROMD**	250	250	250	160
	08	G 1/4 A	6	6.0	18	21.5	14.5	14.0	12	30	29	3.0	22	19	17	101	**WH08LROMD**	250	250	250	160
	10	G 1/4 A	8	6.0	18	22.5	15.5	14.0	12	30	30	3.0	22	19	19	102	**WH10LROMD**	250	250	250	160
	12	G 3/8 A	10	7.5	22	25.0	18.0	16.5	12	36	33	3.0	27	24	22	181	**WH12LROMD**	250	250	250	160
	15	G 1/2 A	12	11.0	26	28.5	21.5	21.5	14	45	37	4.5	32	30	27	311	**WH15LROMD**	250	250	250	160
	18	G 1/2 A	15	11.0	26	28.5	21.0	21.5	14	45	37	4.5	32	30	32	319	**WH18LROMD**	250	250	250	160
	22	G 3/4 A	19	17.0	32	35.0	27.5	24.0	16	53	44	3.5	41	36	36	577	**WH22LROMD**	160	160	160	
	28	G 1 A	24	21.0	39	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1034	**WH28LROMD**	160	160	160	
	35	G 1 1/4 A	30	27.0	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1500	**WH35LROMD**	160	160	160	
	42	G 1 1/2 A	36	34.0	55	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2195	**WH42LROMD**	160	160	160	
S[4])	06	G 1/4 A	4	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	17	107	**WH06SROMD**	315	315	315	200
	08	G 1/4 A	5	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	19	107	**WH08SROMD**	315	315	315	200
	10	G 3/8 A	7	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	22	188	**WH10SROMD**	315	315	315	200
	12	G 3/8 A	8	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	24	190	**WH12SROMD**	315	315	315	200
	14	G 1/2 A	10	11.0	26	30.5	22.5	21.5	14	45	40	4.5	32	30	27	320	**WH14SROMD**	315	315	315	
	16	G 1/2 A	12	11.0	26	30.5	22.0	21.5	14	45	40	4.5	32	30	30	317	**WH16SROMD**	315	315	315	
	20	G 3/4 A	16	17.0	32	37.0	26.5	24.0	16	53	48	3.5	41	36	36	587	**WH20SROMD**	160	160	160	
	25	G 1 A	20	21.0	39	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1072	**WH25SROMD**	160	160	160	
	30	G 1 1/4 A	25	27.0	49	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1560	**WH30SROMD**	160	160	160	
	38	G 1 1/2 A	32	34.0	55	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2295	**WH38SROMD**	160	160	160	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

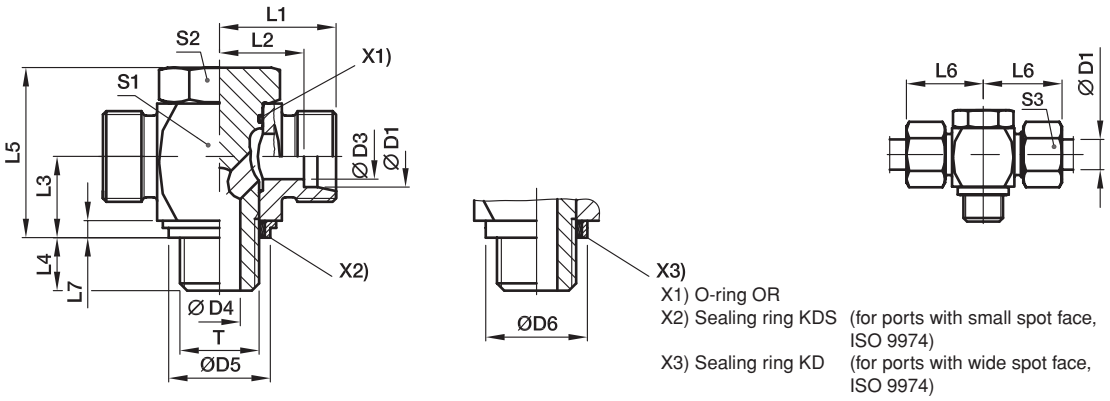
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WH16SROMDCF	NBR
Steel, zinc yellow plated	A3C	WH16SROMDA3C	NBR
Stainless Steel	71	WH16SROMD71	VIT
Brass	MS	WH18LROMDMS	NBR

TH-M-KDS High pressure banjo tee

EO 24° cone end / Male metric thread with soft seal ring



X1) O-ring OR
X2) Sealing ring KDS (for ports with small spot face, ISO 9974)
X3) Sealing ring KD (for ports with wide spot face, ISO 9974)

Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	14.9	17.0	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	59	**TH06LMKDSOMD**	315	315	315
	08	M12×1.5	6	6.0	17.0	22.0	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	104	**TH08LMKDSOMD**	315	315	315
	10	M14×1.5	8	6.0	18.9	22.5	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	112	**TH10LMKDSOMD**	315	315	315
	12	M16×1.5	10	7.5	21.9	27.0	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	192	**TH12LMKDSOMD**	315	315	315
	15	M18×1.5	11	9.0	23.9	29.0	27.5	21.5	18.5	12	39.5	37	3.0	30	30	27	258	**TH15LMKDSOMD**	315	315	315
	18	M22×1.5	15	12.0	26.9	32.0	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	337	**TH18LMKDSOMD**	315	315	315
	22	M26×1.5	19	17.0	31.9	41.0	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	589	**TH22LMKDSOMD**	160	160	160
	28	M33×2	24	21.0	39.9	46.0	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1072	**TH28LMKDSOMD**	160	160	160
	35	M42×2	30	27.0	49.9	57.0	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1778	**TH35LMKDSOMD**	160	160	160
	42	M48×2	36	34.0	55.9	64.0	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2566	**TH42LMKDSOMD**	160	160	160
S[4])	06	M12×1.5	4	6.0	17.0	22.0	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	112	**TH06SMKDSOMD**	400	400	400
	08	M14×1.5	5	6.0	18.9	22.5	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	123	**TH08SMKDSOMD**	400	400	400
	10	M16×1.5	7	7.5	21.9	27.0	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	200	**TH10SMKDSOMD**	400	400	400
	12	M18×1.5	8	9.0	23.9	29.0	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	261	**TH12SMKDSOMD**	400	400	400
	14	M20×1.5	10	10.0		32.0	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	334	**TH14SMKDOMD**			400
	16	M22×1.5	12	12.0	26.9	32.0	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	351	**TH16SMKDSOMD**	315	315	315
	20	M27×2	16	16.0	32.9	41.0	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	629	**TH20SMKDSOMD**	315	315	315
	25	M33×2	20	21.0	39.9	46.0	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1106	**TH25SMKDSOMD**	250	250	250
	30	M42×2	25	27.0	49.9	57.0	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1843	**TH30SMKDSOMD**	160	160	160
	38	M48×2	32	34.0	55.9	64.0	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2744	**TH38SMKDSOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

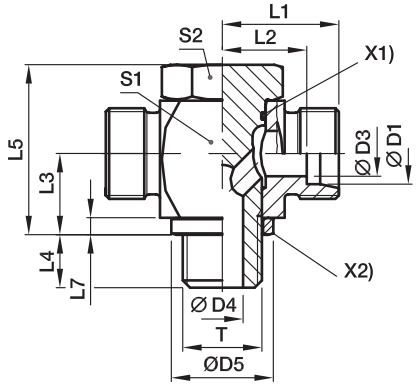
*Please add the **suffixes** below according to the material/surface required.

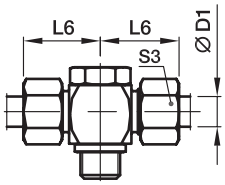
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TH16SMKDSOMDCF	NBR
Steel, zinc yellow plated	A3C	TH16SMKDSOMDA3C	NBR
Stainless Steel	71	TH16SMKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!
Replace KDS by KD in the order code.

TH-M High pressure banjo tee

EO 24° cone end / Male metric thread with metal sealing ring





X1) O-ring OR
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	4.5	14	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	58	**TH06LMOMD**	250	250	250
	08	M12×1.5	6	6.0	17	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	104	**TH08LMOMD**	250	250	250
	10	M14×1.5	8	6.0	19	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	112	**TH10LMOMD**	250	250	250
	12	M16×1.5	10	7.5	21	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	191	**TH12LMOMD**	250	250	250
	15	M18×1.5	11	9.0	23	27.5	21.5	18.5	12	39.5	37	3.0	30	30	27	258	**TH15LMOMD**	250	250	250
	18	M22×1.5	15	12.0	27	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	337	**TH18LMOMD**	250	250	250
	22	M26×1.5	19	17.0	31	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	590	**TH22LMOMD**	160	160	160
	28	M33×2	24	21.0	39	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1072	**TH28LMOMD**	160	160	160
	35	M42×2	30	27.0	49	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1778	**TH35LMOMD**	160	160	160
	42	M48×2	36	34.0	55	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2565	**TH42LMOMD**	160	160	160
S[4])	06	M12×1.5	4	6.0	17	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	112	**TH06SMOMD**	315	315	315
	08	M14×1.5	5	6.0	19	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	124	**TH08SMOMD**	315	315	315
	10	M16×1.5	7	7.5	21	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	200	**TH10SMOMD**	315	315	315
	12	M18×1.5	8	9.0	23	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	261	**TH12SMOMD**	315	315	315
	14	M20×1.5	10	10.0	25	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	334	**TH14SMOMD**	315	315	315
	16	M22×1.5	12	12.0	27	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	350	**TH16SMOMD**	315	315	315
	20	M27×2	16	16.0	32	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	628	**TH20SMOMD**	160	160	160
	25	M33×2	20	21.0	39	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1106	**TH25SMOMD**	160	160	
	30	M42×2	25	27.0	49	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1843	**TH30SMOMD**	160	160	160
	38	M48×2	32	34.0	55	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2741	**TH38SMOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

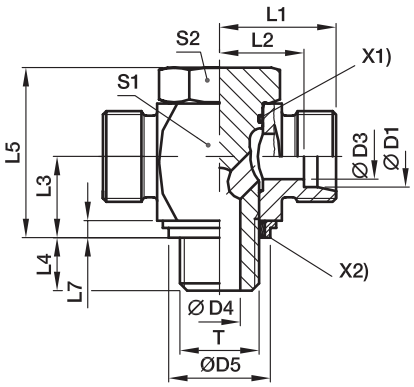
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

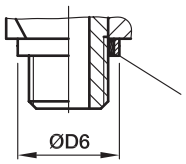
*Please add the **suffixes** below according to the material/surface required.

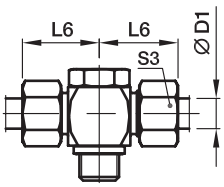
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TH16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	TH16SMOMDA3C	NBR
Stainless Steel	71	TH16SMOMD71	VIT

TH-R-KDS High pressure banjo tee

EO 24° cone end / Male BSPP thread with soft seal ring







X1) O-ring OR
X2) Sealing ring KDS (for ports with small spot face, ISO 1179)
X3) Sealing ring KD (for ports with wide spot face, ISO 1179)

Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4.5	14.9	17	19.0	12.0	10.5	8	24	27	2.5	17	17	14	58	**TH06LRKDSOMD**	315	315	315
	08	G 1/4 A	6	6.0	18.9	22	21.5	14.5	14.0	12	30	29	3.0	22	19	17	108	**TH08LRKDSOMD**	315	315	315
	10	G 1/4 A	8	6.0	18.9	22	22.5	15.5	14.0	12	30	30	3.0	22	19	19	110	**TH10LRKDSOMD**	315	315	315
	12	G 3/8 A	10	7.5	21.9	27	25.0	18.0	16.5	12	36	33	3.0	27	24	22	193	**TH12LRKDSOMD**	315	315	315
	15	G 1/2 A	12	11.0	26.9	32	28.5	21.5	21.5	14	45	37	4.5	32	30	27	321	**TH15LRKDSOMD**	315	315	315
	18	G 1/2 A	15	11.0	26.9	32	28.5	21.0	21.5	14	45	37	4.5	32	30	32	329	**TH18LRKDSOMD**	315	315	315
	22	G 3/4 A	19	17.0	32.9	41	35.0	27.5	24.0	16	53	44	3.5	41	36	36	585	**TH22LRKDSOMD**	160	160	160
	28	G 1 A	24	21.0	39.9	46	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1090	**TH28LRKDSOMD**	160	160	160
	35	G 1 1/4 A	30	27.0	49.9	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1765	**TH35LRKDSOMD**	160	160	160
	42	G 1 1/2 A	36	34.0	55.9	64	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2545	**TH42LRKDSOMD**	160	160	160
S[4])	06	G 1/4 A	4	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	17	116	**TH06SRKDSOMD**	400	400	400
	08	G 1/4 A	5	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	19	121	**TH08SRKDSOMD**	400	400	400
	10	G 3/8 A	7	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	22	201	**TH10SRKDSOMD**	400	400	400
	12	G 3/8 A	8	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	24	207	**TH12SRKDSOMD**	400	400	400
	14	G 1/2 A	10	11.0	26.9	32	30.5	22.5	21.5	15	45	40	4.5	32	30	27	338	**TH14SRKDSOMD**	400	400	400
	16	G 1/2 A	12	11.0	26.9	32	30.5	22.0	21.5	14	45	40	4.5	32	30	30	350	**TH16SRKDSOMD**	315	315	315
	20	G 3/4 A	16	17.0	32.9	41	37.0	26.5	24.0	16	53	48	3.5	41	36	36	620	**TH20SRKDSOMD**	315	315	315
	25	G 1 A	20	21.0	39.9	46	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1124	**TH25SRKDSOMD**	250	250	250
	30	G 1 1/4 A	25	27.0	49.9	57	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1830	**TH30SRKDSOMD**	160	160	160
	38	G 1 1/2 A	32	34.0	55.9	64	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2721	**TH38SRKDSOMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

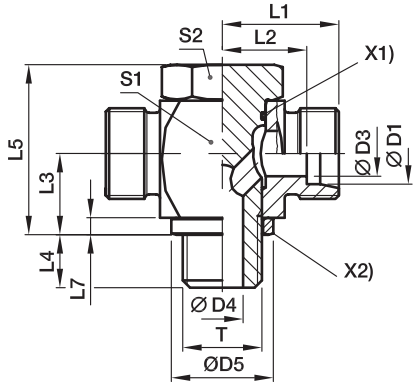
*Please add the **suffixes** below according to the material/surface required.

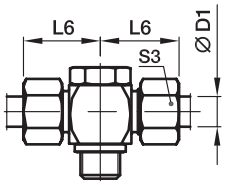
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TH16SRKDSOMDCF	NBR
Steel, zinc yellow plated	A3C	TH16SRKDSOMDA3C	NBR
Stainless Steel	71	TH16SRKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!
Replace KDS by KD in the order code.

TH-R High pressure banjo tee

EO 24° cone end / Male BSPP thread with metal sealing ring





X1) O-ring OR
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	4	4.5	14	19.0	12.0	10.5	8	24	27	2.5	17	17	14	58	**TH06LROMD**	250	250	250
	08	G 1/4 A	6	6.0	18	21.5	14.5	14.0	12	30	29	3.0	22	19	17	108	**TH08LROMD**	250	250	250
	10	G 1/4 A	8	6.0	18	22.5	15.5	14.0	12	30	30	3.0	22	19	19	110	**TH10LROMD**	250	250	250
	12	G 3/8 A	10	7.5	22	25.0	18.0	16.5	12	36	33	3.0	27	24	22	193	**TH12LROMD**	250	250	250
	15	G 1/2 A	12	11.0	26	28.5	21.5	21.5	14	45	37	4.5	32	30	27	321	**TH15LROMD**	250	250	250
	18	G 1/2 A	15	11.0	26	28.5	21.0	21.5	14	45	37	4.5	32	30	32	329	**TH18LROMD**	250	250	250
	22	G 3/4 A	19	17.0	32	35.0	27.5	24.0	16	53	44	3.5	41	36	36	584	**TH22LROMD**	160	160	160
	28	G 1 A	24	21.0	39	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1090	**TH28LROMD**	160	160	160
	35	G 1 1/4 A	30	27.0	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1766	**TH35LROMD**	160	160	160
	42	G 1 1/2 A	36	34.0	55	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2544	**TH42LROMD**	160	160	160
S[4])	06	G 1/4 A	4	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	17	116	**TH06SROMD**	315	315	315
	08	G 1/4 A	5	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	19	121	**TH08SROMD**	315	315	315
	10	G 3/8 A	7	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	22	201	**TH10SROMD**	315	315	315
	12	G 3/8 A	8	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	24	207	**TH12SROMD**	315	315	315
	14	G 1/2 A	10	11.0	26	30.5	22.5	21.5	14	45	40	4.5	32	30	27	343	**TH14SROMD**	315	315	315
	16	G 1/2 A	12	11.0	26	30.5	22.0	21.5	14	45	40	4.5	32	30	30	350	**TH16SROMD**	315	315	315
	20	G 3/4 A	16	17.0	32	37.0	26.5	24.0	16	53	48	3.5	41	36	36	618	**TH20SROMD**	160	160	160
	25	G 1 A	20	21.0	39	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1124	**TH25SROMD**	160	160	160
	30	G 1 1/4 A	25	27.0	49	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1831	**TH30SROMD**	160	160	160
	38	G 1 1/2 A	32	34.0	55	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2720	**TH38SROMD**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

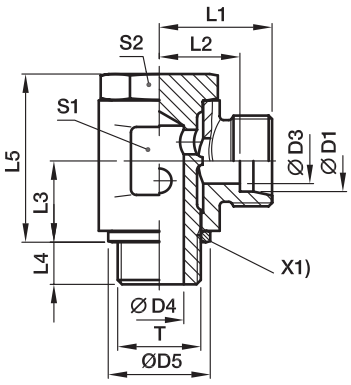
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

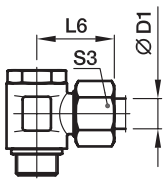
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	TH16SROMDCF	NBR
Steel, zinc yellow plated	A3C	TH16SROMDA3C	NBR
Stainless Steel	71	TH16SROMD71	VIT

SWVE-M Banjo elbow

EO 24° cone end / Male metric thread





X1) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
LL[2])	04	M08×1	3.0	3.0	12.5	14.5	10.5	8.0	6	17.0	20	12	12	10	18	**SWVE04LLMOMD**	63	63
	06	M10×1	4.5	5.0	14.0	15.5	10.0	10.0	6	21.0	22	14	14	12	29	**SWVE06LLMOMD**	63	63
	08	M10×1	6.0	5.0	14.0	16.5	11.0	10.0	6	21.0	23	14	14	14	31	**SWVE08LLMOMD**	63	63
L[3])	06	M10×1	4.5	5.0	14.0	15.5	10.5	10.0	6	21.5	25	14	14	14	31	**SWVE06LMOMD**	160	160
	08	M12×1.5	6.0	6.0	17.0	19.0	12.0	12.0	9	25.0	27	17	17	17	51	**SWVE08LMOMD**	160	160
	10	M14×1.5	8.0	6.5	19.0	21.0	14.0	13.0	9	27.0	29	19	19	19	68	**SWVE10LMOMD**	160	160
	12	M16×1.5	10.0	8.5	21.0	22.5	15.5	15.0	9	32.0	30	22	21	22	100	**SWVE12LMOMD**	100	100
	15	M18×1.5	12.0	11.0	23.0	24.5	17.5	18.0	9	37.5	33	24	24	27	138	**SWVE15LMOMD**	100	100
	18	M22×1.5	15.0	13.0	27.0	28.0	20.5	21.5	11	44.0	37	30	27	32	241	**SWVE18LMOMD**	100	100
	22	M26×1.5	19.0	18.0	31.0	33.0	25.5	24.0	13	49.0	42	36	32	36	351	**SWVE22LMOMD**	100	100
S[4])	06	M12×1.5	4.0	6.0	17.0	21.0	14.0	12.0	9	25.0	29	17	17	17	55	**SWVE06SMOMD**	160	160
	08	M14×1.5	5.0	6.5	19.0	22.0	15.0	13.0	9	27.0	30	19	19	19	75	**SWVE08SMOMD**	160	160
	10	M16×1.5	7.0	8.5	21.0	23.5	16.0	15.0	9	32.0	32	22	22	22	106	**SWVE10SMOMD**	100	100
	12	M18×1.5	8.0	11.0	23.0	24.5	17.0	18.0	9	37.0	33	24	24	24	134	**SWVE12SMOMD**	100	100
	14	M20×1.5	10.0	10.0	25.0	28.0	20.0	18.0	11	37.0	38	27	27	27	179	**SWVE14SMOMD**	100	100
	16	M22×1.5	12.0	13.0	27.0	30.0	21.5	21.5	11	44.0	40	30	27	30	252	**SWVE16SMOMD**	100	100
	20	M27×2	16.0	18.0	32.0	35.0	24.5	24.0	13	49.0	46	36	32	36	363	**SWVE20SMOMD**	100	100

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

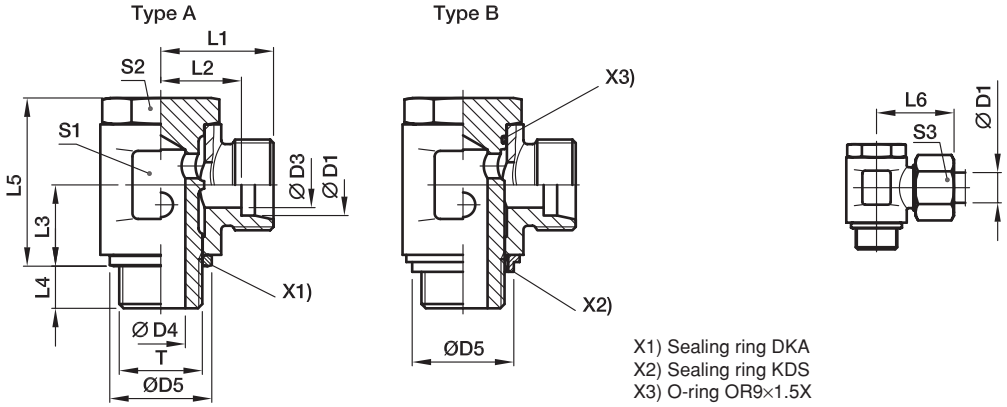
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	SWVE16SMOMDCF	NBR
Steel, zinc yellow plated	A3C	SWVE16SMOMDA3C	NBR

SWVE-R Banjo elbow

EO 24° cone end / Male BSPP thread



X1) Sealing ring DKA
X2) Sealing ring KDS
X3) O-ring OR9×1.5X

Series	D1	Type	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
LL[2])	04	B	G 1/8A	3.0	5.0	15	15.5	11.5	10.0	6	21.5	21	14	14	10	29	**SWVE04LLRKDSOMD**	250	250
	06	B	G 1/8A	4.5	5.0	15	15.5	10.0	10.0	6	21.5	22	14	14	12	30	**SWVE06LLRKDSOMD**	250	250
LL[2])	04	A	G 1/8A	3.0	5.0	14	15.5	11.5	10.0	6	21.0	21	14	14	10	28	**SWVE04LLROMD**	63	63
	06	A	G 1/8A	4.5	5.0	14	15.5	10.0	10.0	6	21.5	22	14	14	12	28	**SWVE06LLROMD**	63	63
	08	A	G 1/8A	6.0	5.0	14	16.5	11.0	10.0	6	21.0	23	14	14	14	30	**SWVE08LLROMD**	63	63
L[3])	06	A	G 1/8A	4.0	5.0	14	17.5	10.5	10.0	6	21.0	25	14	14	14	31	**SWVE06LROMD**	160	160
	08	A	G 1/4A	6.0	6.5	18	20.0	13.0	13.0	9	27.0	28	19	19	17	65	**SWVE08LROMD**	160	160
	10	A	G 1/4A	8.0	6.5	18	21.0	14.0	13.0	9	27.0	29	19	19	19	66	**SWVE10LROMD**	160	160
	12	A	G 3/8A	10.0	8.5	22	22.5	15.5	15.0	9	32.0	30	22	22	22	102	**SWVE12LROMD**	100	100
	15	A	G 1/2A	12.0	11.0	26	26.0	19.0	18.0	11	37.5	34	27	27	27	171	**SWVE15LROMD**	100	100
	18	A	G 1/2A	15.0	12.0	26	28.0	20.5	21.5	11	44.0	37	30	27	32	249	**SWVE18LROMD**	100	100
	22	A	G 3/4A	19.0	18.0	32	33.0	25.5	24.0	13	49.0	42	36	32	36	349	**SWVE22LROMD**	100	100
S[4])	06	A	G 1/4A	4.0	6.5	18	22.0	15.0	13.0	9	27.0	30	19	19	17	69	**SWVE06SROMD**	160	160
	08	A	G 1/4A	5.0	6.5	18	22.0	15.0	13.0	9	27.0	30	19	19	19	73	**SWVE08SROMD**	160	160
	10	A	G 3/8A	7.0	8.5	22	23.5	16.0	15.0	9	32.0	32	22	22	22	108	**SWVE10SROMD**	100	100
	12	A	G 3/8A	8.0	8.0	22	24.5	17.0	18.0	9	37.0	33	24	24	24	147	**SWVE12SROMD**	100	100
	14	A	G 1/2A	10.0	11.0	26	28.0	20.0	18.0	11	37.0	38	27	27	27	177	**SWVE14SROMD**	100	100
	16	A	G 1/2A	12.0	12.0	26	30.0	21.5	21.5	11	44.0	40	30	27	30	249	**SWVE16SROMD**	100	100
	20	A	G 3/4A	16.0	18.0	32	35.0	24.5	24.0	13	49.0	46	36	32	36	359	**SWVE20SROMD**	100	100

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

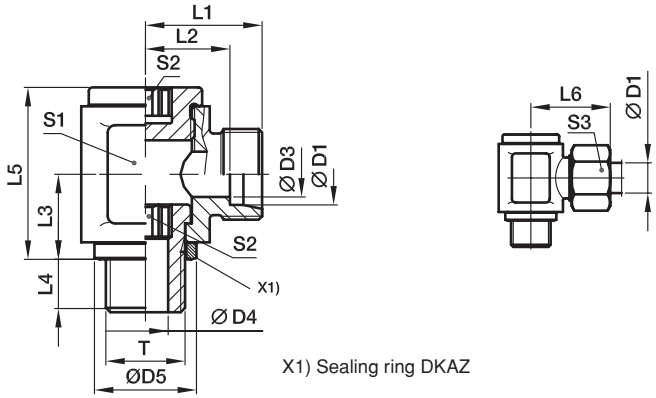
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	SWVE16SROMDCF	
Steel, zinc yellow plated	A3C	SWVE16SROMDA3C	
Steel, zinc plated, chrome[6]-free	CF	SWVE06LLRKDSOMDCF	NBR
Steel, zinc yellow plated	A3C	SWVE06LLRKDSOMDA3C	NBR

*Please add the **suffixes** below according to the material/surface required.

DSVW-M Low pressure banjo elbow

EO 24° cone end / Male metric thread



X1) Sealing ring DKAZ

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	M 10×1	4	4.0	14	19.5	12.5	12	8	24	27	18	6	14	51	**DSVW06LMOMD**	160	160
	08	M 12×1.5	6	5.5	17	21.5	14.5	15	12	30	29	22	6	17	86	**DSVW08LMOMD**	160	160
	10	M 14×1.5	8	7.0	19	22.5	15.5	16	12	30	30	22	8	19	87	**DSVW10LMOMD**	100	100
	12	M 16×1.5	10	8.0	21	25.0	18.0	18	12	37	33	27	10	22	145	**DSVW12LMOMD**	100	100
	15	M 18×1.5	12	10.0	23	28.0	21.0	20	12	40	36	30	12	27	197	**DSVW15LMOMD**	100	100
	18	M 22×1,5	15	14.0	27	29.0	21.5	23	14	46	38	36	14	32	264	**DSVW18LMOMD**	100	100
	22	M 26×1.5	19	17.5	31	33.5	26.0	25	16	51	42	41	17	36	379	**DSVW22LMOMD**	100	100
	28	M 33×2	24	22.0	39	39.0	31.5	32	18	64	48	50	22	41	682	**DSVW28LMOMD**	100	100
	35	M 42×2	30	27.5	49	46.0	35.5	37	20	76	57	60	27	50	1146	**DSVW35LMOMD**	63	63
	42	M 48×2	36	32.5	55	51.0	40.0	42	22	85	63	70	32	60	1706	**DSVW42LMOMD**	63	63
S[4])	06	M 12×1,5	4	5.5	17	23.5	16.5	15	12	30	31	22	6	17	90	**DSVW06SMOMD**	160	160
	08	M 14×1.5	5	7.0	19	23.5	16.5	16	12	30	31	22	8	19	90	**DSVW08SMOMD**	160	160
	10	M 16×1.5	7	8.0	21	26.0	18.5	18	12	37	35	27	10	22	154	**DSVW10SMOMD**	100	100
	12	M 18×1.5	8	10.0	23	28.0	20.5	20	12	41	37	30	12	24	199	**DSVW12SMOMD**	100	100
	14	M 20×1.5	10	12.0	25	31.0	23.0	21	14	42	41	32	12	27	239	**DSVW14SMOMD**	100	100
	16	M 22×1.5	12	14.0	27	31.0	22.5	23	14	46	41	36	14	30	268	**DSVW16SMOMD**	100	100
	20	M 27×2	16	17.5	32	38.0	27.5	28	16	58	49	46	17	36	532	**DSVW20SMOMD**	100	100
	25	M 33×2	20	22.0	39	43.0	31.0	32	18	64	55	50	22	46	728	**DSVW25SMOMD**	100	100
	30	M 42×2	25	27.5	49	50.0	36.5	37	20	76	63	60	27	50	1222	**DSVW30SMOMD**	63	63
	38	M 48×2	32	32.5	55	56.0	41.0	42	22	85	72	70	32	60	1820	**DSVW38SMOMD**	63	63

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

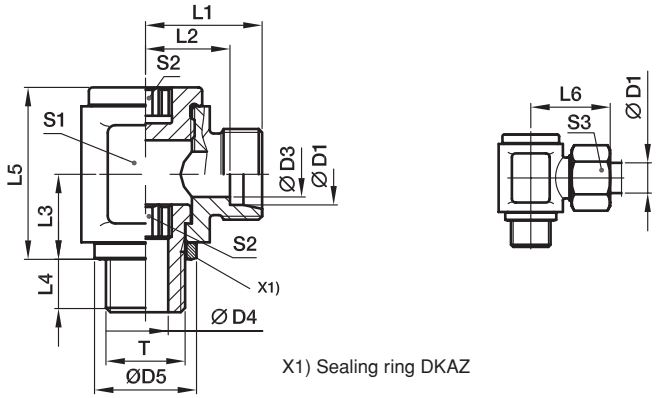
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	DSVW16SMOMDCF
Steel, zinc yellow plated	A3C	DSVW16SMOMDA3C

DSVW-R Low pressure banjo elbow

EO 24° cone end / Male BSPP thread



X1) Sealing ring DKAZ

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	06	G 1/8 A	4	4.0	14	19.5	12.5	12	8	24	27	18	6	14	51	**DSVW06LROMD**	160	160
	08	G 1/4 A	6	6.0	18	21.5	14.5	16	12	30	29	22	8	17	85	**DSVW08LROMD**	160	160
	10	G 1/4 A	8	6.0	18	22.5	15.5	16	12	30	30	22	8	19	88	**DSVW10LROMD**	100	100
	12	G 3/8 A	10	8.5	22	25.0	18.0	18	12	37	33	27	10	22	147	**DSVW12LROMD**	100	100
	15	G 1/2 A	12	12.0	26	29.0	22.0	21	14	42	37	32	12	27	228	**DSVW15LROMD**	100	100
	18	G 1/2 A	15	12.0	26	29.0	21.5	23	14	46	38	36	12	32	276	**DSVW18LROMD**	100	100
	22	G 3/4 A	19	17.5	32	36.0	28.5	28	16	58	45	46	17	36	516	**DSVW22LROMD**	100	100
	28	G 1 A	24	22.0	39	39.0	31.5	32	18	64	48	50	22	41	688	**DSVW28LROMD**	100	100
	35	G 11/4 A	30	27.5	49	46.0	35.5	37	20	76	57	60	27	50	1147	**DSVW35LROMD**	63	63
	42	G 11/2 A	36	32.5	55	51.5	40.0	42	22	85	63	70	32	60	1696	**DSVW42LROMD**	63	63
S[4])	06	G 1/4 A	4	6.0	18	23.5	16.5	16	12	30	31	22	8	17	89	**DSVW06SROMD**	160	160
	08	G 1/4 A	5	6.0	18	23.5	16.5	16	12	30	31	22	8	19	92	**DSVW08SROMD**	160	160
	10	G 3/8 A	7	8.5	22	26.0	18.5	18	12	37	35	27	10	22	150	**DSVW10SROMD**	100	100
	12	G 3/8 A	8	8.5	22	26.0	18.5	18	12	37	35	27	10	24	156	**DSVW12SROMD**	100	100
	14	G 1/2 A	10	12.0	26	31.0	23.0	21	14	42	41	32	12	27	235	**DSVW14SROMD**	100	100
	16	G 1/2 A	12	12.0	26	31.0	22.5	23	14	46	41	36	12	30	275	**DSVW16SROMD**	100	100
	20	G 3/4 A	16	17.5	32	38.0	27.5	28	16	58	49	46	17	36	530	**DSVW20SROMD**	100	100
	25	G 1 A	20	22.0	39	43.0	31.0	32	18	64	55	50	22	46	734	**DSVW25SROMD**	100	100
	30	G 11/4 A	25	27.5	49	50.0	36.5	37	20	76	63	60	27	50	1224	**DSVW30SROMD**	63	63
	38	G 11/2 A	32	32.5	55	57.5	41.0	42	22	85	72	70	32	60	1810	**DSVW38SROMD**	63	63

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

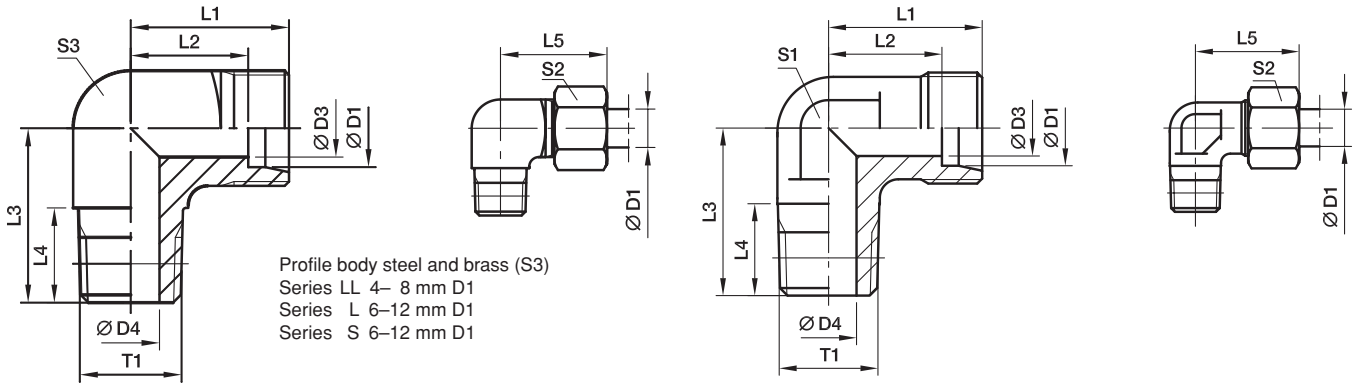
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	DSVW16SROMDCF
Steel, zinc yellow plated	A3C	DSVW16SROMDA3C

WE-NPT Male stud elbow

EO 24° cone end / Male NPT thread (SAE J476)



Profile body steel and brass (S3)
Series LL 4– 8 mm D1
Series L 6–12 mm D1
Series S 6–12 mm D1

Series	D1	T1	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	1/8-27NPT	3.0	4.0	15	11.0	17	10.0	21	9	10	11	18	**WE04LL1/8NPT**	100	100		
	06	1/8-27NPT	4.5	4.5	15	9.5	17	10.0	21	9	12	11	17	**WE06LL1/8NPT**	100	100		
	08	1/8-27NPT	6.0	5.0	17	11.5	20	10.0	23	12	14	12	25	**WE08LL1/8NPT**	100	100		
L[3])	06	1/8-27NPT	4.0	4.0	19	12.0	20	10.0	27	12	14	12	29	**WE06L1/8NPT**	315	315	315	200
	06	1/4-18NPT	4.0	7.0	21	14.0	26	14.5	29	12	14	14	44	**WE06L1/4NPT**	315	315	315	200
	06	3/8-18NPT	4.0	8.0	25	18.0	28	14.5	33	17	14	19	55	**WE06L3/8NPT**	315	315	315	200
	08	1/8-27NPT	6.0	4.0	21	14.0	26	10.0	29	12	17	14	48	**WE08L1/8NPT**	315	315	315	200
	08	1/4-18NPT	6.0	6.0	21	14.0	26	14.5	29	12	17	14	47	**WE08L1/4NPT**	315	315	315	200
	10	1/4-18NPT	8.0	7.0	22	15.0	27	14.5	30	14	19	17	61	**WE10L1/4NPT**	315	315	315	200
	10	3/8-18NPT	8.0	8.0	24	17.0	28	14.5	32	17	19	19	92	**WE10L3/8NPT**	315	315	315	200
	12	1/4-18NPT	10.0	7.0	24	17.0	28	14.5	32	17	22	19	82	**WE12L1/4NPT**	315	315	315	200
	12	3/8-18NPT	10.0	8.0	24	17.0	28	14.5	32	17	22	19	92	**WE12L3/8NPT**	315	315	315	200
	12	1/2-14NPT	10.0	11.0	28	21.0	34	19.5	36	19	22		90	**WE12L1/2NPT**	315	315	315	200
	15	1/2-14NPT	12.0	11.0	28	21.0	34	19.5	36	19	27		89	**WE15L1/2NPT**	315	315	315	200
	18	1/2-14NPT	15.0	12.0	31	23.5	36	19.5	40	24	32		150	**WE18L1/2NPT**	315	315	315	200
	22	3/4-14NPT	19.0	16.0	35	27.5	42	19.5	44	27	36		176	**WE22L3/4NPT**	160	160	160	100
	28	1-11 1/2NPT	24.0	21.0	38	30.5	48	24.5	47	36	41		314	**WE28L1NPT**	160	160	160	100
	35	11/4-11 1/2NPT	30.0	28.0	45	34.5	54	25.0	56	41	50		465	**WE35L11/4NPT**	160	160	160	100
	42	11/2-11 1/2NPT	36.0	34.0	51	40.0	61	26.0	63	50	60		849	**WE42L11/2NPT**	160	160	160	100
S[4])	06	1/4-18NPT	4.0	4.0	23	16.0	26	14.5	31	12	17	14	56	**WE06S1/4NPT**	630	630	630	400
	08	1/4-18NPT	5.0	5.0	24	17.0	27	14.5	32	14	19	17	73	**WE08S1/4NPT**	630	630	630	400
	08	3/8-18NPT	5.0	8.0	25	18.0	28	14.5	33	17	19	19	77	**WE08S3/8NPT**	630	630	630	400
	08	1/2-14NPT	5.0	10.0	30	23.0	34	19.5	38	19	19		75	**WE08S1/2NPT**	630	630	630	400
	10	1/4-18NPT	7.0	5.0	25	17.5	28	14.5	34	17	22	19	96	**WE10S1/4NPT**	630	630	630	400
	10	3/8-18NPT	7.0	7.0	25	17.5	28	14.5	34	17	22	19	98	**WE10S3/8NPT**	630	630	630	400
	12	1/4-18NPT	8.0	5.0	29	21.5	29	14.5	38	17	24	22	73	**WE12S1/4NPT**	630	630	630	400
	12	3/8-18NPT	8.0	8.0	29	22.5	28	14.5	38	17	24	22	123	**WE12S3/8NPT**	630	630	630	400
	12	1/2-14NPT	8.0	10.0	30	22.5	34	19.5	39	19	24		107	**WE12S1/2NPT**	630	630	630	400
	14	1/2-14NPT	10.0	10.0	30	22.0	34	19.5	40	19	27		103	**WE14S1/2NPT**	630	630	630	400
	16	1/2-14NPT	12.0	12.0	33	24.5	36	19.5	43	24	30		157	**WE16S1/2NPT**	400	400	400	250
	20	3/4-14NPT	16.0	16.0	37	26.5	42	19.5	48	27	36		205	**WE20S3/4NPT**	400	400	400	250
	25	1-11 1/2NPT	20.0	20.0	42	30.0	48	24.5	54	36	46		381	**WE25S1NPT**	400	400	400	250
	30	11/4-11 1/2NPT	25.0	25.0	49	35.5	54	25.0	62	41	50		598	**WE30S11/4NPT**	400	400	400	250
	38	11/2-11 1/2NPT	32.0	32.0	57	41.0	61	26.0	72	50	60		1029	**WE38S11/2NPT**	315	315	315	200

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

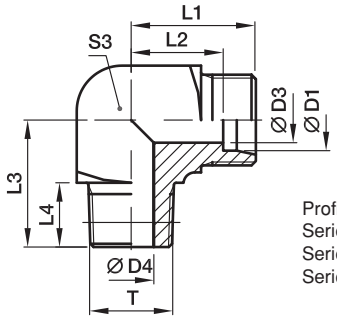
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

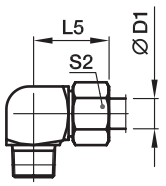
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	WE16S1/2NPTCFX
Steel, zinc yellow plated	A3CX	WE16S1/2NPTA3CX
Stainless Steel	71X	WE16S1/2NPT71X
Brass	MSX	WE16S1/2NPTMSX

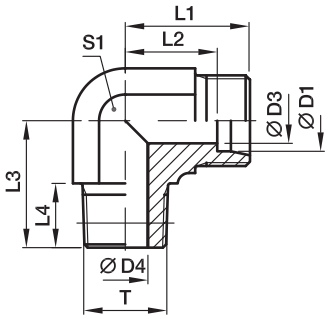
WE-M(KEG) Male stud elbow

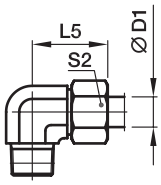
EO 24° cone end / Male short metric taper thread (DIN 3852-1, type C)



Profile body steel and brass (S3)
Series LL 4– 8 mm D1
Series L 6–12 mm D1
Series S 6–12 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	M8×1tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	14	**WE04LLM**	100	100	100	63
	06	M10×1tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	17	**WE06LLM**	100	100	100	63
	08	M10×1tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	25	**WE08LLM**	100	100	100	63
L[3])	06	M10×1tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	29	**WE06LM**	315	315	315	200
	08	M12×1.5tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	46	**WE08LM**	315	315	315	200
	10	M14×1.5tap.	8.0	7.0	22	15.0	27	12	30	14	19	17	62	**WE10LM**	315	315	315	200
	12	M16×1.5tap.	10.0	9.0	24	17.0	28	12	32	17	22	19	89	**WE12LM**	315	315	315	200
	15	M18×1.5tap.	12.0	11.0	28	21.0	32	12	36	19	27		78	**WE15LM**	315	315	315	200
	18	M22×1.5tap.	15.0	14.0	31	23.0	36	14	40	24	32		148	**WE18LM**	315	315	315	200
S[4])	06	M12×1.5tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	53	**WE06SM**	400	400	400	250
	08	M14×1.5tap.	5.0	5.0	24	17.0	27	12	32	14	19	17	78	**WE08SM**	400	400	400	250
	10	M16×1.5tap.	7.0	7.0	25	17.5	28	12	34	17	22	19	102	**WE10SM**	400	400	400	250
	12	M18×1.5tap.	8.0	8.0	29	21.5	28	12	38	17	24	22	134	**WE12SM**	400	400	400	250
	14	M20×1.5tap.	10.0	10.0	30	22.0	32	14	40	19	27		99	**WE14SM**	400	400	400	
	16	M22×1.5tap.	12.0	12.0	33	24.5	32	14	43	24	30		161	**WE16SM**	400	400	400	250

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

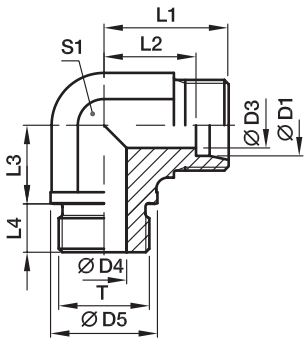
Delivery without nut and ring. Information on ordering complete fittings see page I7.

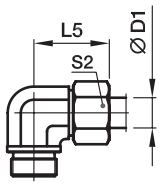
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	WE16SMCFX
Steel, zinc yellow plated	A3CX	WE16SMA3CX
Stainless Steel	71X	WE16SM71X
Brass	MSX	WE16SMMSX

*Please add the **suffixes** below according to the material/surface required.

WE-M Male stud elbow

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	22	M26×1.5	19	18	31	35	27.5	26	16	44	27	36	173	**WE22LM**	160	160	160
	28	M33×2	24	23	39	38	30.5	30	18	47	36	41	303	**WE28LM**	160	160	160
	35	M42×2	30	30	49	45	34.5	34	20	56	41	50	469	**WE35LM**	160	160	160
	42	M48×2	36	36	55	51	40.0	39	22	63	50	60	661	**WE42LM**	160	160	160
S[4])	20	M27×2	16	16	32	37	26.5	26	16	48	27	36	208	**WE20SM**	400	400	400
	25	M33×2	20	20	39	42	30.0	30	18	54	36	46	396	**WE25SM**	250	250	250
	30	M42×2	25	25	49	49	35.5	34	20	62	41	50	632	**WE30SM**	160	160	160
	38	M48×2	32	32	55	57	41.0	39	22	72	50	60	907	**WE38SM**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

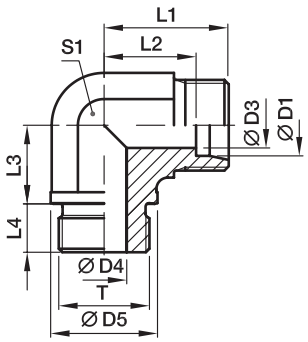
Delivery without nut and ring. Information on ordering complete fittings see page I7.

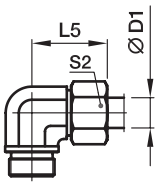
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	WE20SMCFX
Steel, zinc yellow plated	A3CX	WE20SMA3CX
Stainless Steel	71X	WE20SM71X

*Please add the **suffixes** below according to the material/surface required.

WE-R Male stud elbow

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	22	G3/4A	19	18	32	35	27.5	26	16	44	27	36	168	**WE22LR**	160	160	160	100
	28	G1A	24	23	39	38	30.5	30	18	47	36	41	305	**WE28LR**	160	160	160	100
	35	G11/4A	30	30	49	45	34.5	34	20	56	41	50	465	**WE35LR**	160	160	160	100
	42	G11/2A	36	36	55	51	40.0	39	22	63	50	60	706	**WE42LR**	160	160	160	100
S[4])	20	G3/4A	16	16	32	37	26.5	26	16	48	27	36	210	**WE20SR**	400	400	400	250
	25	G1A	20	20	39	42	30.0	30	18	54	36	46	388	**WE25SR**	250	250	250	160
	30	G11/4A	25	25	49	49	35.5	34	20	62	41	50	630	**WE30SR**	160	160	160	100
	38	G11/2A	32	32	55	57	41.0	39	22	72	50	60	888	**WE38SR**	160	160	160	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

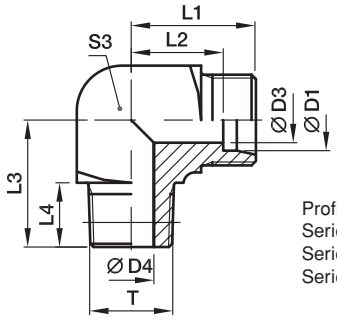
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	WE20SRCFX
Steel, zinc yellow plated	A3CX	WE20SRA3CX
Stainless Steel	71X	WE20SR71X
Brass	MSX	WE20SRMSX

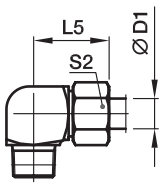
*Please add the **suffixes** below according to the material/surface required.

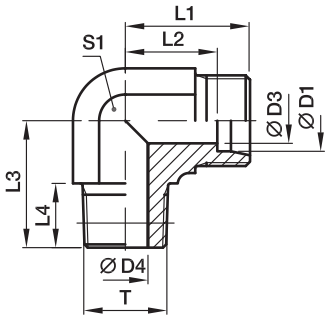
WE-R (KEG) Male stud elbow

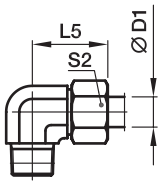
EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Profile body steel and brass (S3)
Series LL 4– 8 mm D1
Series L 6–12 mm D1
Series S 6–12 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	R1/8tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	17	**WE04LLR**	100	100	100	63
	06	R1/8tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	17	**WE06LLR**	100	100	100	63
	08	R1/8tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	24	**WE08LLR**	100	100	100	63
	10	R1/4tap.	8.0	7.0	18	12.5	23	12	24	12	17	14	36	**WE10LLR**	100	100		
	12	R1/4tap.	10	7.0	19	13.0	23	12	25	14	19	17	46	**WE12LLR**	100	100		
L[3])	06	R1/8tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	30	**WE06LR**	315	315	315	200
	06	R1/4tap.	4.0	6.0	21	14.0	26	12	29	12	14	14	47	**WE06LR1/4**	315	315	315	
	08	R1/4tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	46	**WE08LR**	315	315	315	200
	08	R1/8tap.	6.0	4.0	21	14.0	26	8	29	12	17	14	49	**WE08LR1/8**	315	315	315	
	08	R3/8tap.	6.0	9.0	24	17.0	28	12	32	17	17	19	94	**WE08LR3/8**	315	315	315	
	10	R1/4tap.	8.0	7.0	22	15.0	27	12	30	14	19	17	61	**WE10LR**	315	315	315	200
	10	R3/8tap.	8.0	9.0	24	17.0	28	12	32	17	19	19	87	**WE10LR3/8**	315	315	315	
	12	R3/8tap.	10.0	9.0	24	17.0	28	12	32	17	22	19	88	**WE12LR**	315	315	315	200
	12	R1/4tap.	10.0	7.0	24	17.0	27	12	32	17	22	19	80	**WE12LR1/4**	315	315	315	
	12	R1/2tap.	10.0	11.0	28	21.0	34	14	36	19	22		89	**WE12LR1/2**	315	315	315	
	15	R1/2tap.	12.0	11.0	28	21.0	34	14	36	19	27		94	**WE15LR**	315	315	315	200
	18	R1/2tap.	15.0	14.0	31	23.5	36	14	40	24	32		141	**WE18LR**	315	315	315	200
S[4])	06	R1/4tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	56	**WE06SR**	400	400	400	250
	06	R3/8tap.	4.0	7.0	25	18.0	28	12	33	17	17	19	61	**WE06SR3/8**	400	400	400	
	08	R1/4tap.	5.0	5.0	24	17.0	27	12	32	14	19	17	73	**WE08SR**	400	400	400	250
	08	R3/8tap.	5.0	7.0	25	18.0	28	12	33	17	19	19	63	**WE08SR3/8**	400	400	400	
	10	R3/8tap.	7.0	7.0	25	17.5	28	12	34	17	22	19	104	**WE10SR**	400	400	400	250
	10	R1/4tap.	7.0	5.0	25	17.5	28	12	34	17	22	19	59	**WE10SR1/4**	400	400	400	
	10	R1/2tap.	7.0	10.0	30	22.5	32	14	39	19	22		98	**WE10SR1/2**	400	400	400	
	12	R3/8tap.	8.0	8.0	29	21.5	28	12	38	17	24	22	126	**WE12SR**	400	400	400	250
	12	R1/2tap.	8.0	11.0	30	22.5	32	14	39	19	24		97	**WE12SR1/2**	400	400	400	
	14	R1/2tap.	10.0	10.0	30	22.0	32	14	40	19	27		101	**WE14SR**	400	400	400	250
	16	R1/2tap.	12.0	12.0	33	24.5	32	14	43	24	30		150	**WE16SR**	400	400	400	250

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

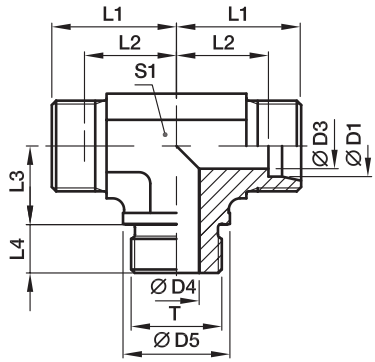
Delivery without nut and ring. Information on ordering complete fittings see page I7.

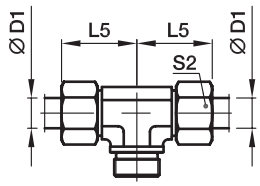
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	WE16SRCFX
Steel, zinc yellow plated	A3CX	WE16SRA3CX
Stainless Steel	71X	WE16SR71X
Brass	MSX	WE16SRMSX

TE-M Male stud branch tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	22	M26×1.5	19	18	31	35	27.5	26	16	44	27	36	208	**TE22LM**	160	160	160
	28	M33×2	24	23	39	38	30.5	30	18	47	36	41	352	**TE28LM**	160	160	160
	35	M42×2	30	30	49	45	34.5	34	20	56	41	50	554	**TE35LM**	160	160	160
	42	M48×2	36	36	55	51	40.0	39	22	63	50	60	847	**TE42LM**	160	160	160
S[4])	20	M27×2	16	16	32	37	26.5	26	16	48	27	36	265	**TE20SM**	400	400	400
	25	M33×2	20	20	39	42	30.0	30	18	54	36	46	482	**TE25SM**	250	250	250
	30	M42×2	25	25	49	49	35.5	34	20	62	41	50	772	**TE30SM**	160	160	160
	38	M48×2	32	32	55	57	41.0	39	22	72	50	60	1121	**TE38SM**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

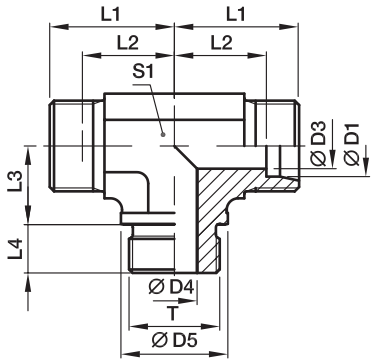
Delivery without nut and ring. Information on ordering complete fittings see page I7.

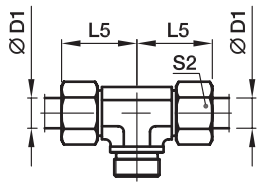
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	TE20SMCFX
Steel, zinc yellow plated	A3CX	TE20SMA3CX
Stainless Steel	71X	TE20SM71X

TE-R Male stud branch tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	22	G3/4A	19	18	32	35	27.5	26	16	44	27	36	208	**TE22LR**	160	160	160	100
	28	G1A	24	23	39	38	30.5	30	18	47	36	41	378	**TE28LR**	160	160	160	100
	35	G11/4A	30	30	49	45	34.5	34	20	56	41	50	554	**TE35LR**	160	160	160	100
	42	G11/2A	36	36	55	51	40.0	39	22	63	50	60	847	**TE42LR**	160	160	160	100
S[4])	20	G3/4 A	16	16	32	37	26.5	26	16	48	27	36	267	**TE20SR**	400	400	400	250
	25	G1A	20	20	39	42	30.0	30	18	54	36	46	485	**TE25SR**	250	250	250	
	30	G1 1/4 A	25	25	49	49	35.5	34	20	62	41	50	762	**TE30SR**	160	160	160	
	38	G1 1/2 A	32	32	55	57	41.0	39	22	72	50	60	1121	**TE38SR**	160	160	160	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

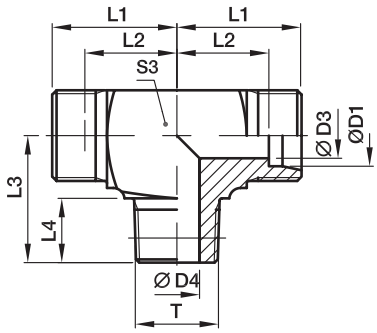
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	TE20SRCFX
Steel, zinc yellow plated	A3CX	TE20SRA3CX
Stainless Steel	71X	TE20SR71X
Brass	MSX	TE20SRMSX

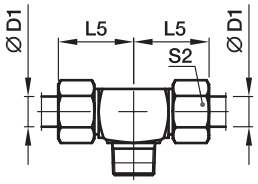
*Please add the **suffixes** below according to the material/surface required.

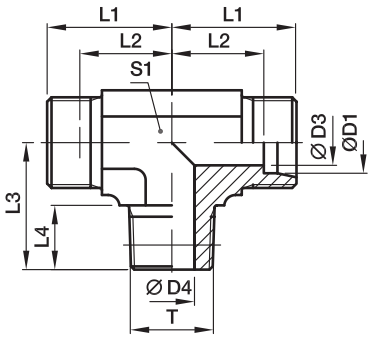
TE-R (KEG) Male stud branch tee

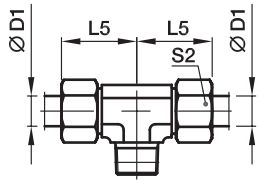
EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Profile body steel and brass (S3)
Series LL 4–8 mm D1
Series L 6+8 mm D1
Series S 6 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	R1/8tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	21	**TE04LLR**	100	100	100	63
	06	R1/8tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	**TE06LLR**	100	100	100	63
	08	R1/8tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	**TE08LLR**	100	100	100	63
L[3])	06	R1/8tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	**TE06LR**	315	315	315	200
	08	R1/4tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	58	**TE08LR**	315	315	315	200
	10	R1/4tap.	8.0	7.0	22	15.0	27	12	30	14	19		43	**TE10LR**	315	315	315	200
	12	R3/8tap.	10.0	9.0	24	17.0	28	12	32	17	22		61	**TE12LR**	315	315	315	200
	15	R1/2tap.	12.0	11.0	28	21.0	34	14	36	19	27		113	**TE15LR**	315	315	315	200
	18	R1/2tap.	15.0	14.0	31	23.5	36	14	40	24	32		149	**TE18LR**	315	315	315	200
S[4])	06	R1/4tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	73	**TE06SR**	400	400	400	250
	08	R1/4tap.	5.0	5.0	24	17.0	27	12	32	14	19		61	**TE08SR**	400	400	400	250
	10	R3/8tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	**TE10SR**	400	400	400	250
	12	R3/8tap.	8.0	8.0	29	21.5	28	12	38	17	24		105	**TE12SR**	400	400	400	250
	14	R1/2tap.	10.0	10.0	30	22.0	32	14	40	19	27		134	**TE14SR**	400	400	400	250
	16	R1/2tap.	12.0	12.0	33	24.5	32	14	43	24	30		175	**TE16SR**	400	400	400	250

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

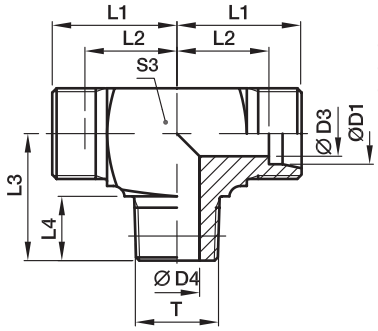
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	TE16SRCFX
Steel, zinc yellow plated	A3CX	TE16SRA3CX
Stainless Steel	71X	TE16SR71X
Brass	MSX	TE16SRMSX

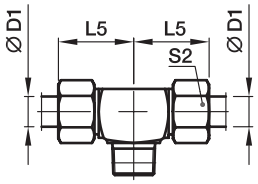
*Please add the **suffixes** below according to the material/surface required.

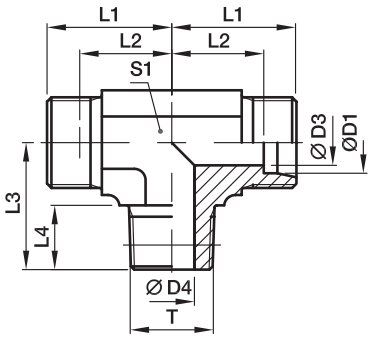
TE-M(KEG) Male stud branch tee

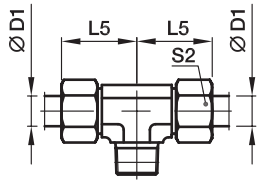
EO 24° cone end / Male short metric taper thread (DIN 3852-1, type C)



Profile body steel and brass (S3)
Series LL 4–8 mm D1
Series L 6+8 mm D1
Series S 6 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
LL[2])	04	M8×1tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	17	**TE04LLM**	100	100	100
	06	M10×1tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	20	**TE06LLM**	100	100	100
	08	M10×1tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	**TE08LLM**	100	100	100
L[3])	06	M10×1tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	**TE06LM**	315	315	315
	08	M12×1.5tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	54	**TE08LM**	315	315	315
	10	M14×1.5tap.	8.0	7.0	22	15.0	27	12	30	14	19		45	**TE10LM**	315	315	315
	12	M16×1.5tap.	10.0	9.0	24	17.0	28	12	32	17	22		60	**TE12LM**	315	315	315
	15	M18×1.5tap.	12.0	11.0	28	21.0	32	12	36	19	27		100	**TE15LM**	315	315	315
	18	M22×1.5tap.	15.0	14.0	31	23.5	36	14	40	24	32		149	**TE18LM**	315	315	315
S[4])	06	M12×1.5tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	69	**TE06SM**	400	400	400
	08	M14×1.5tap.	5.0	5.0	24	17.0	27	12	32	14	19		98	**TE08SM**	400	400	400
	10	M16×1.5tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	**TE10SM**	400	400	400
	12	M18×1.5tap.	8.0	8.0	29	21.5	28	12	38	17	24		106	**TE12SM**	400	400	400
	14	M20×1.5tap.	10.0	10.0	30	22.0	32	14	40	19	27		126	**TE14SM**	400	400	400
	16	M22×1.5tap.	12.0	12.0	33	24.5	32	14	43	24	30		177	**TE16SM**	400	400	400

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

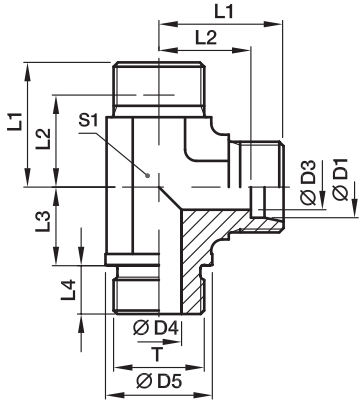
Delivery without nut and ring. Information on ordering complete fittings see page I7.

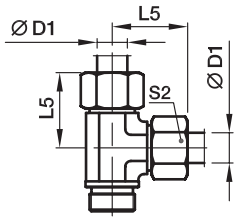
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	TE16SMCFX
Steel, zinc yellow plated	A3CX	TE16SMA3CX
Stainless Steel	71X	TE16SM71X

*Please add the **suffixes** below according to the material/surface required.

LE-M Male stud run tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	22	M26×1.5	19	18	31	35	27.5	26	16	44	27	36	225	**LE22LM**	160	160	160
	28	M33×2	24	23	39	38	30.5	30	18	47	36	41	382	**LE28LM**	160	160	160
	35	M42×2	30	30	49	45	34.5	34	20	56	41	50	583	**LE35LM**	160	160	160
	42	M48×2	36	36	55	51	40.0	39	22	63	50	60	821	**LE42LM**	160	160	160
S[4])	20	M27×2	16	16	32	37	26.5	26	16	48	27	36	264	**LE20SM**	400	400	400
	25	M33×2	20	20	39	42	30.0	30	18	54	36	46	497	**LE25SM**	250	250	250
	30	M42×2	25	25	49	49	35.5	34	20	62	41	50	744	**LE30SM**	160	160	160
	38	M48×2	32	32	55	57	41.0	39	22	72	50	60	1111	**LE38SM**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

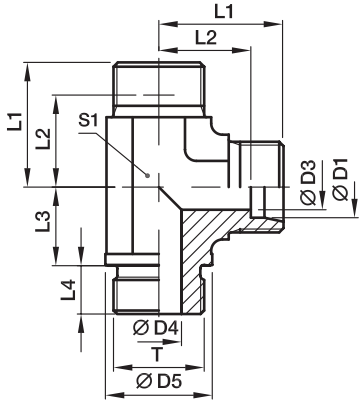
Delivery without nut and ring. Information on ordering complete fittings see page I7.

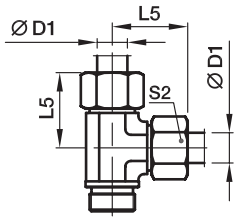
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	LE20SMCFX
Steel, zinc yellow plated	A3CX	LE20SMA3CX
Stainless Steel	71X	LE20SM71X

LE-R Male stud run tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)





Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	22	G3/4A	19	18	32	35	27.5	26	16	44	27	36	225	**LE22LR**	160	160	160
	28	G1A	24	23	39	38	30.5	30	18	47	36	41	358	**LE28LR**	160	160	160
	35	G1 1/4A	30	30	49	45	34.5	34	20	56	41	50	583	**LE35LR**	160	160	160
	42	G1 1/2A	36	36	55	51	40.0	39	22	63	50	60	821	**LE42LR**	160	160	160
S[4])	20	G3/4A	16	16	32	37	26.5	26	16	48	27	36	259	**LE20SR**	400	400	400
	25	G1A	20	20	39	42	30.0	30	18	54	36	46	495	**LE25SR**	250	250	250
	30	G1 1/4A	25	25	49	49	35.5	34	20	62	41	50	744	**LE30SR**	160	160	160
	38	G1 1/2A	32	32	55	57	41.0	39	22	72	50	60	1111	**LE38SR**	160	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

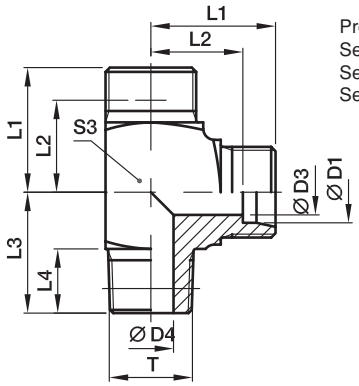
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

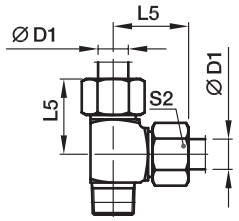
Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	LE20SRCFX
Steel, zinc yellow plated	A3CX	LE20SRA3CX
Stainless Steel	71X	LE20SR71X

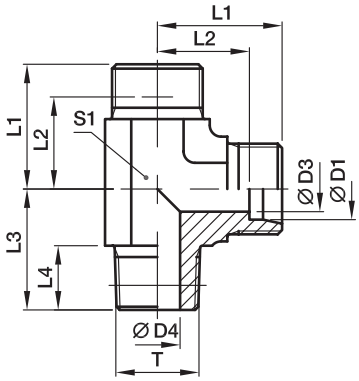
LE-R (KEG) Male stud run tee

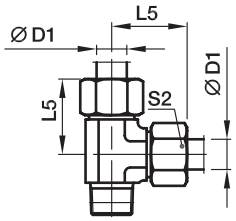
EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Profile body steel (S3)
Series LL 4–8 mm D1
Series L 6+8 mm D1
Series S 6 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
LL[2])	04	R1/8tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	20	**LE04LLR**	100	100	100
	06	R1/8tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	**LE06LLR**	100	100	100
	08	R1/8tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	28	**LE08LLR**	100	100	100
L[3])	06	R1/8tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	40	**LE06LR**	315	315	315
	08	R1/4tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	57	**LE08LR**	315	315	315
	10	R1/4tap.	8.0	7.0	22	15.0	27	12	30	14	19		50	**LE10LR**	315	315	315
	12	R3/8tap.	10.0	9.0	24	17.0	28	12	32	17	22		60	**LE12LR**	315	315	315
	15	R1/2tap.	12.0	11.0	28	21.0	34	14	36	19	27		115	**LE15LR**	315	315	315
	18	R1/2tap.	15.0	14.0	31	23.5	36	14	40	24	32		145	**LE18LR**	315	315	315
S[4])	06	R1/4tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	71	**LE06SR**	400	400	400
	08	R1/4tap.	5.0	5.0	24	17.0	27	12	32	14	19		62	**LE08SR**	400	400	400
	10	R3/8tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	**LE10SR**	400	400	400
	12	R3/8tap.	8.0	8.0	29	21.5	28	12	38	17	24		102	**LE12SR**	400	400	400
	14	R1/2tap.	10.0	10.0	30	22.0	32	14	40	19	27		130	**LE14SR**	400	400	400
	16	R1/2tap.	12.0	12.0	33	24.5	32	14	43	24	30		193	**LE16SR**	400	400	400

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

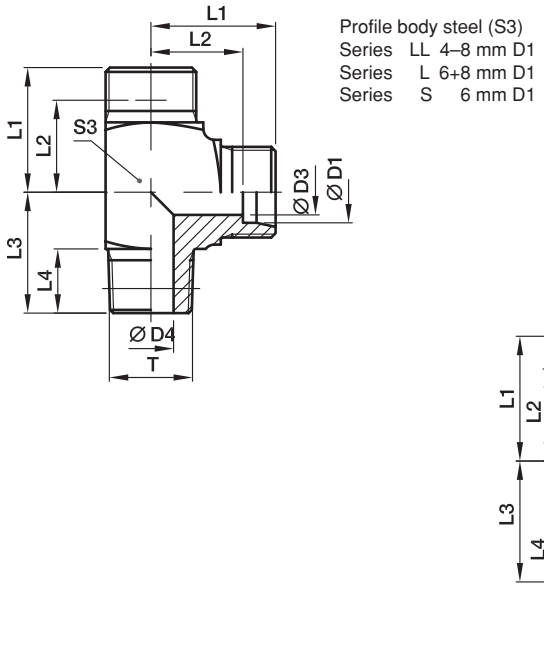
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	LE16SRCFX
Steel, zinc yellow plated	A3CX	LE16SRA3CX
Stainless Steel	71X	LE16SR71X

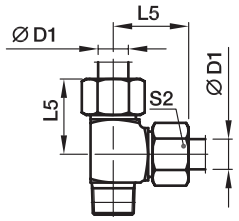
*Please add the **suffixes** below according to the material/surface required.

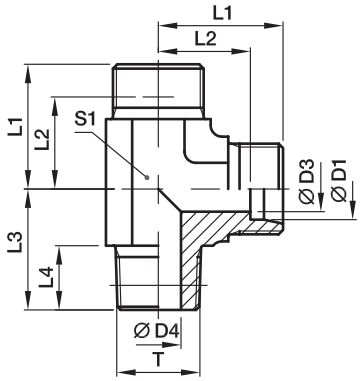
LE-M(KEG) Male stud run tee

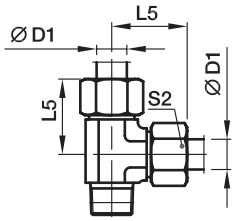
EO 24° cone end / Male short metric taper thread (DIN 3852-1, Form C)



Profile body steel (S3)
Series LL 4–8 mm D1
Series L 6+8 mm D1
Series S 6 mm D1







Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
LL[2])	04	M8×1tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	17	**LE04LLM**	100	100	100
	06	M10×1tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	**LE06LLM**	100	100	100
	08	M10×1tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	**LE08LLM**	100	100	100
L[3])	06	M10×1tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	**LE06LM**	315	315	315
	08	M12×1.5tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	56	**LE08LM**	315	315	315
	10	M14×1.5tap.	8.0	7.0	22	15.0	27	12	30	14	19		47	**LE10LM**	315	315	315
	12	M16×1.5tap.	10.0	9.0	24	17.0	28	12	32	17	22		58	**LE12LM**	315	315	315
	15	M18×1.5tap.	12.0	11.0	28	21.0	32	12	36	19	27		98	**LE15LM**	315	315	315
	18	M22×1.5tap.	15.0	14.0	31	23.5	36	14	40	24	32		156	**LE18LM**	315	315	315
S[4])	06	M12×1.5tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	70	**LE06SM**	400	400	400
	08	M14×1.5tap.	5.0	5.0	24	17.0	27	12	32	14	19		66	**LE08SM**	400	400	400
	10	M16×1.5tap.	7.0	7.0	25	17.5	28	12	34	17	22		123	**LE10SM**	400	400	400
	12	M18×1.5tap.	8.0	8.0	29	21.5	28	12	38	17	24		169	**LE12SM**	400	400	400
	14	M20×1.5tap.	10.0	10.0	30	22.0	32	14	40	19	27		174	**LE14SM**	400	400	400
	16	M22×1.5tap.	12.0	12.0	33	24.5	32	14	43	24	30		178	**LE16SM**	400	400	400

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

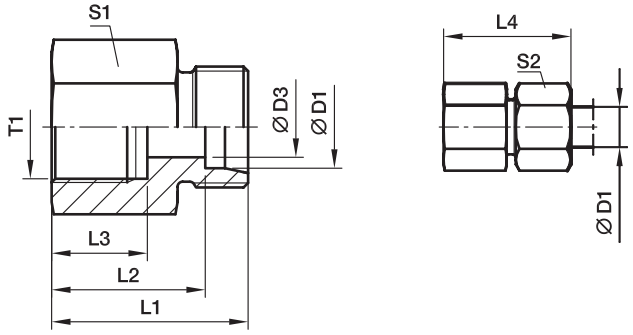
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	LE16SMCFX
Steel, zinc yellow plated	A3CX	LE16SMA3CX
Stainless Steel	71X	LE16SM71X

*Please add the **suffixes** below according to the material/surface required.

GAI-M Female connector

Female metric thread (ISO 9974-1) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M10×1	4	26.5	19.5	12.5	34	14	14	18	**GAI06LM**	315	315	315
	08	M12×1.5	6	31.0	24.0	17.0	39	17	17	32	**GAI08LM**	315	315	315
	10	M14×1.5	8	32.0	25.0	17.0	40	19	19	39	**GAI10LM**	315	315	315
	12	M16×1.5	10	33.0	26.0	17.0	41	22	22	52	**GAI12LM**	315	315	315
	15	M18×1.5	12	35.0	28.0	17.0	43	24	27	68	**GAI15LM**	315	315	315
	18	M22×1.5	15	37.0	29.5	19.0	46	30	32	111	**GAI18LM**	315	315	315
	22	M26×1.5	19	42.0	34.5	21.0	51	32	36	123	**GAI22LM**	160	160	160
	28	M33×2	24	45.0	37.5	24.0	54	41	41	211	**GAI28LM**	160	160	160
	35	M42×2	30	51.0	40.5	26.0	62	55	50	459	**GAI35LM**	160	160	160
	42	M48×2	36	53.0	42.0	28.0	65	60	60	522	**GAI42LM**	160	160	160
S[4])	06	M12×1.5	4	33.0	26.0	17.0	41	17	17	35	**GAI06SM**	400	400	400
	08	M14×1.5	5	33.0	26.0	17.0	41	17	19	42	**GAI08SM**	400	400	400
	10	M16×1.5	7	34.0	26.5	17.0	43	22	22	58	**GAI10SM**	400	400	400
	12	M18×1.5	8	35.0	27.5	17.0	44	24	24	70	**GAI12SM**	400	400	400
	14	M20×1.5	10	39.0	31.0	19.0	49	27	27	95	**GAI14SM**	400	400	400
	16	M22×1.5	12	39.0	30.5	19.0	49	30	30	114	**GAI16SM**	400	400	400
	20	M27×2	16	45.0	34.5	22.0	56	36	36	189	**GAI20SM**	315	315	315
	25	M33×2	20	49.0	37.0	24.0	61	41	46	235	**GAI25SM**	315	315	315
	30	M42×2	25	55.0	41.5	26.0	68	55	50	490	**GAI30SM**	315	315	315
	38	M48×2	32	59.0	43.0	28.0	74	60	60	597	**GAI38SM**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

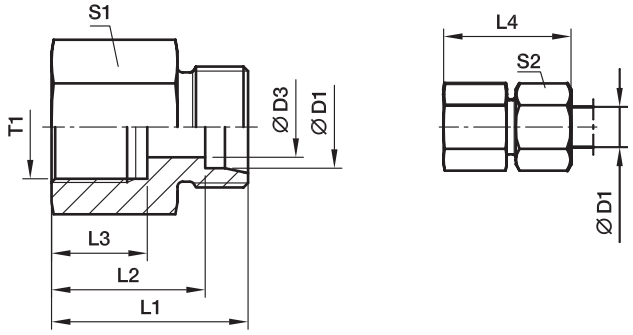
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GAI16SMCFX
Steel, zinc yellow plated	A3CX	GAI16SMA3CX
Stainless Steel	71X	GAI16SM71X

GAI-R Female connector

Female BSPP thread (ISO 1179-1) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	G1/8	4	26.0	19.0	12.0	34	14	14	18	**GAI06LR**	315	315	315	200
	06	G1/4	4	31.0	24.0	17.0	39	19	14	39	**GAI06LR1/4**	315	315	315	200
	08	G1/4	6	31.0	24.0	17.0	39	19	17	39	**GAI08LR**	315	315	315	200
	08	G3/8	6	32.0	25.0	17.0	40	24	17	61	**GAI08LR3/8**	315	315	315	200
	08	G1/2	6	36.0	29.0	20.0	44	27	17	80	**GAI08LR1/2**	315	315	315	200
	10	G1/4	8	32.0	25.0	17.0	40	19	19	40	**GAI10LR**	315	315	315	200
	10	G3/8	8	33.0	26.0	17.0	41	24	19	63	**GAI10LR3/8**	315	315	315	200
	10	G1/2	8	37.0	30.0	20.0	45	27	19	81	**GAI10LR1/2**	315	315	315	200
	12	G3/8	10	33.0	26.0	17.0	41	24	22	64	**GAI12LR**	315	315	315	200
	12	G1/2	10	37.0	30.0	20.0	45	27	22	83	**GAI12LR1/2**	315	315	315	200
	15	G1/2	12	38.0	31.0	20.0	46	27	27	87	**GAI15LR**	315	315	315	200
	18	G1/2	15	38.0	30.5	20.0	47	27	32	89	**GAI18LR**	315	315	315	200
	18	G3/8	15	34.0	26.5	17.0	43	27	32	95	**GAI18LR3/8**	315	315	315	200
	22	G3/4	19	43.0	35.5	22.0	52	36	36	173	**GAI22LR**	160	160	160	100
	28	G1	24	45.5	38.0	24.5	55	41	41	211	**GAI28LR**	160	160	160	100
	35	G11/4	30	51.5	41.0	26.5	63	55	50	469	**GAI35LR**	160	160	160	100
	42	G11/2	36	53.5	42.5	28.5	65	60	60	540	**GAI42LR**	160	160	160	100
S[4])	06	G1/4	4	33.0	26.0	17.0	41	19	17	43	**GAI06SR**	400	400	400	
	08	G1/4	5	33.0	26.0	17.0	41	19	19	47	**GAI08SR**	400	400	400	
	10	G3/8	7	34.0	26.5	17.0	43	24	22	68	**GAI10SR**	400	400	400	
	12	G3/8	8	34.0	26.5	17.0	43	24	24	71	**GAI12SR**	400	400	400	
	12	G1/2	8	38.0	30.5	20.0	47	30	24	121	**GAI12SR1/2**	400	400	400	
	14	G1/2	10	40.0	32.0	20.0	50	30	27	125	**GAI14SR**	400	400	400	
	16	G1/2	12	40.0	31.5	20.0	50	30	30	126	**GAI16SR**	400	400	400	
	20	G3/4	16	45.0	34.5	22.0	56	36	36	196	**GAI20SR**	315	315	315	
	25	G1	20	49.5	37.5	24.5	62	41	46	246	**GAI25SR**	315	315	315	
	30	G11/4	25	55.5	42.0	26.5	69	55	50	537	**GAI30SR**	315	315	315	
	38	G11/2	32	59.5	43.5	28.5	74	60	60	649	**GAI38SR**	250	250	250	

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

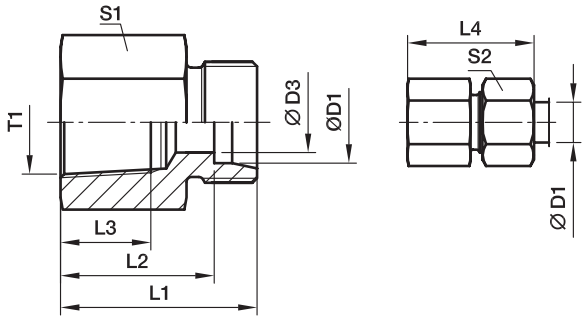
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GAI16SRCFX
Steel, zinc yellow plated	A3CX	GAI16SRA3CX
Stainless Steel	71X	GAI16SR71X
Brass	MSX	GAI16SRMSX

GAI-NPT Female connector

Female NPT thread (SAE 476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	1/8-27NPT	4	26.0	19.0	11.6	34	14	14	19	**GAI06L1/8NPT**	315	315	315
	06	1/4-18NPT	4	30.5	23.5	16.4	38	19	14	38	**GAI06L1/4NPT**	315	315	315
	08	1/4-18NPT	6	30.5	23.5	16.4	38	19	17	39	**GAI08L1/4NPT**	315	315	315
	10	1/4-18NPT	8	31.0	24.0	16.4	39	19	19	40	**GAI10L1/4NPT**	315	315	315
	12	3/8-18NPT	10	34.0	27.0	17.4	42	24	22	69	**GAI12L3/8NPT**	315	315	315
	12	1/2-14NPT	10	39.0	32.0	22.6	47	27	22	91	**GAI12L1/2NPT**	315	315	315
	15	1/2-14NPT	12	40.0	33.0	22.6	48	27	27	96	**GAI15L1/2NPT**	315	315	315
	18	1/2-14NPT	15	40.0	32.5	22.6	49	27	32	99	**GAI18L1/2NPT**	315	315	315
	22	3/4-14NPT	19	43.0	35.5	23.1	52	36	36	184	**GAI22L3/4NPT**	160	160	160
	28	1-11 1/2NPT	24	48.0	40.5	27.8	57	41	41	238	**GAI28L1NPT**	160	160	160
	35	11/4-11 1/2NPT	30	51.0	40.5	28.3	62	55	50	424	**GAI35L11/4NPT**	160	160	160
	42	11/2-11 1/2NPT	36	53.0	42.0	28.3	65	60	60	547	**GAI42L11/2NPT**	160	160	160
S[4])	06	1/8-27NPT	4	29.0	22.0	11.6	36	14	17	25	**GAI06S1/8NPT**	400	400	400
	06	1/4-18NPT	4	33.0	26.0	16.4	41	19	17	41	**GAI06S1/4NPT**	400	400	400
	08	1/4-18NPT	5	33.0	26.0	16.4	41	19	19	42	**GAI08S1/4NPT**	400	400	400
	10	3/8-18NPT	7	35.0	27.0	17.4	44	24	22	74	**GAI10S3/8NPT**	400	400	400
	12	1/4-18NPT	8	32.5	25.0	16.4	41	22	24	81	**GAI12S1/4NPT**	400	400	400
	12	3/8-18NPT	8	35.0	27.5	17.4	44	24	24	76	**GAI12S3/8NPT**	400	400	400
	12	1/2-14NPT	8	41.0	33.5	22.6	50	27	24	101	**GAI12S1/2NPT**	400	400	400
	14	1/2-14NPT	10	43.0	35.0	22.6	53	27	27	108	**GAI14S1/2NPT**	400	400	400
	16	1/2-14NPT	12	43.0	34.5	22.6	50	27	30	111	**GAI16S1/2NPT**	400	400	400
	20	1/2-14NPT	16	44.0	33.5	22.6	55	32	36	129	**GAI20S1/2NPT**	315	315	315
	20	3/4-14NPT	16	46.0	35.5	23.1	57	36	36	214	**GAI20S3/4NPT**	315	315	315
	25	1-11 1/2NPT	20	53.0	41.0	27.8	65	41	46	288	**GAI25S1NPT**	315	315	315
	30	11/4-11 1/2NPT	25	57.0	43.5	28.3	70	55	50	559	**GAI30S11/4NPT**	315	315	315
	38	11/2-11 1/2NPT	32	59.0	43.0	28.3	74	60	60	632	**GAI38S11/2NPT**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

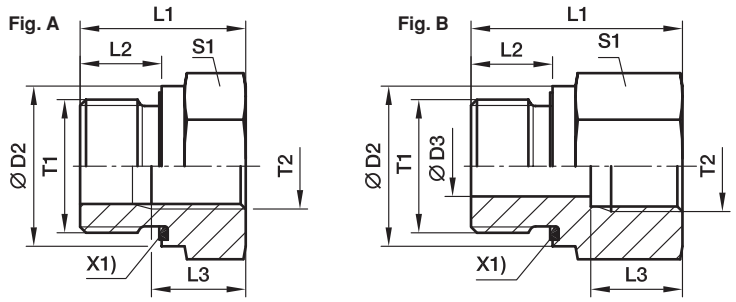
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	GAI16S1/2NPTCFX
Steel, zinc yellow plated	A3CX	GAI16S1/2NPTA3CX
Stainless Steel	71X	GAI16S1/2NPT71X

*Please add the **suffixes** below according to the material/surface required.

RI-ED Thread reducer/expander

Male BSPP thread – ED-seal (ISO 1179) / Female BSPP thread (ISO 1179-1)



X1) Eolastic-sealing ED

Male Stud T1	Female Stud T2	D2	D3	L1	L2	L3	S1	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
G 1/8 A	G 1/4	14	4	31.0	8	17.0	19	B	41	**RI1/8EDX1/4**	400	400	400
G 1/8 A	G 3/8	14	4	32.0	8	17.0	24	B	63	**RI1/8EDX3/8**	400	400	400
G 1/4 A	G 1/8	19	5	29.0	12	12.0	19	B	41	**RI1/4EDX1/8**	400	400	400
G 1/4 A	G 3/8	19	5	36.0	12	17.0	24	B	69	**RI1/4EDX3/8**	400	400	400
G 1/4 A	G 1/2	19	5	40.0	12	20.0	30	B	120	**RI1/4EDX1/2**	400	400	400
G 1/4 A	G 3/4	19	5	43.0	12	22.0	36	B	171	**RI1/4EDX3/4**	400	400	400
G 3/8 A	G 1/8	22		22.5	12	8.0	22	A	38	**RI3/8EDX1/8**	400	400	400
G 3/8 A	G 1/4	22	8	36.0	12	17.0	22	B	68	**RI3/8EDX1/4**	400	400	400
G 3/8 A	G 1/2	22	8	41.0	12	20.0	30	B	124	**RI3/8EDX1/2**	400	400	400
G 3/8 A	G 3/4	22	8	44.0	12	22.0	36	B	182	**RI3/8EDX3/4**	315	315	315
G 1/2 A	G 1/8	27		24.0	14	8.0	27	A	65	**RI1/2EDX1/8**	400	400	400
G 1/2 A	G 1/4	27		24.0	14	12.0	27	A	56	**RI1/2EDX1/4**	400	400	400
G 1/2 A	G 3/8	27	12	37.0	14	17.0	27	B	95	**RI1/2EDX3/8**	400	400	400
G 1/2 A	G 3/4	27	12	46.0	14	22.0	36	B	183	**RI1/2EDX3/4**	315	315	315
G 1/2 A	G 1	27	12	49.0	14	24.5	41	B	232	**RI1/2EDX1**	315	315	315
G 1/2 A	G 1 1/4	27	10	53.0	14	26.5	55	B	481	**RI1/2EDX11/4**	315	315	315
G 3/4 A	G 1/4	32		26.0	16	12.0	32	A	103	**RI3/4EDX1/4**	315	315	315
G 3/4 A	G 3/8	32		26.0	16	12.0	32	A	86	**RI3/4EDX3/8**	315	315	315
G 3/4 A	G 1/2	32	16	43.0	16	20.0	32	B	156	**RI3/4EDX1/2**	315	315	315
G 3/4 A	G 1	32	16	51.0	16	24.5	41	B	237	**RI3/4EDX1**	315	315	315
G 3/4 A	G 1 1/4	32	16	55.0	16	26.5	55	B	486	**RI3/4EDX11/4**	315	315	315
G 3/4 A	G 1 1/2	32	16	57.0	16	28.5	60	B	561	**RI3/4EDX11/2**	250	250	250
G 1 A	G 1/4	40		29.0	18	12.0	41	A	197	**RI1EDX1/4**	315	315	315
G 1 A	G 3/8	40		29.0	18	12.0	41	A	179	**RI1EDX3/8**	315	315	315
G 1 A	G 1/2	40		29.0	18	14.0	41	A	153	**RI1EDX1/2**	315	315	315
G 1 A	G 3/4	40	20	49.0	18	22.0	41	B	290	**RI1EDX3/4**	315	315	315
G 1 A	G 1 1/4	40	20	57.0	18	26.5	55	B	503	**RI1EDX11/4**	315	315	315
G 1 A	G 1 1/2	40	20	59.0	18	28.5	60	B	585	**RI1EDX11/2**	250	250	250
G 1 1/4 A	G 1/2	50		32.0	20	14.0	50	A	313	**RI11/4EDX1/2**	315	315	315
G 1 1/4 A	G 3/4	50		32.0	20	16.0	50	A	393	**RI11/4EDX3/4**	315	315	315
G 1 1/4 A	G 1	50	25	5.0	20	24.5	50	B	469	**RI11/4EDX1**	315	315	315
G 1 1/4 A	G 1 1/2	50	25	60.0	20	28.5	60	B	624	**RI11/4EDX11/2**	250	250	250
G 1 1/2 A	G 1/2	55		36.0	22	14.0	55	A	470	**RI11/2EDX1/2**	250	250	250
G 1 1/2 A	G 3/4	55		36.0	22	16.0	55	A	415	**RI11/2EDX3/4**	250	250	250
G 1 1/2 A	G 1	55		36.0	22	18.0	55	A	338	**RI11/2EDX1**	250	250	250
G 1 1/2 A	G 1 1/4	55	32	58.0	22	26.5	55	B	542	**RI11/2EDX11/4**	250	250	250
G 2 A	G 1 1/2	75	40	65.0	24	28.5	75	B	1309	**RI2EDX11/2**	160	160	

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

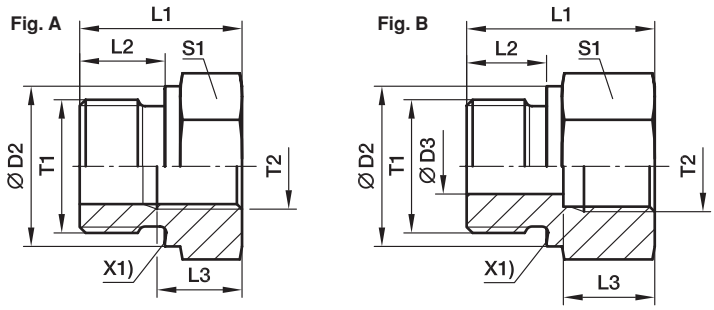
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome^6-free	CF	RI1EDX1/2CF	NBR
Steel, zinc yellow plated	A3C	RI1EDX1/2A3C	NBR
Stainless Steel	71	RI1EDX1/271	VIT

RI Thread reducer/expander

Male BSPP thread – metal sealing edge (ISO 1179) / Female BSPP thread (ISO 1179-1)



X1) metal sealing edge

Male Stud T1	Male Stud T2	D2	D3	L1	L2	L3	S1	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
G 1/8 A	G 1/4	14	4	31.0	8	17.0	19	B	42	**RI1/8X1/4**	400	400	400	250
G 1/8 A	G 3/8	14	4	32.0	8	17.0	24	B	63	**RI1/8X3/8**	400	400	400	250
G 1/4 A	G 1/8	18	5	28.0	12	12.0	19	B	38	**RI1/4X1/8**	400	400	400	250
G 1/4 A	G 3/8	18	5	36.0	12	17.0	24	B	69	**RI1/4X3/8**	400	400	400	250
G 1/4A	G 1/2	18	5	40.0	12	20.0	30	B	116	**RI1/4X1/2**	400	400	400	250
G 1/4 A	G 3/4	18	5	43.0	12	22.0	36	B	170	**RI1/4X3/4**	315	315	315	200
G 3/8 A	G 1/8	22		22.5	12	8.0	22	A	39	**RI3/8X1/8**	400	400	400	250
G 3/8 A	G 1/4	22	8	36.0	12	17.0	22	B	68	**RI3/8X1/4**	400	400	400	250
G 3/8 A	G 1/2	22	8	41.0	12	20.0	30	B	125	**RI3/8X1/2**	400	400	400	250
G 3/8 A	G 3/4	22	8	44.0	12	22.0	36	B	183	**RI3/8X3/4**	315	315	315	200
G 1/2 A	G 1/8	26		24.0	14	8.0	27	A	66	**RI1/2X1/8**	400	400	400	250
G 1/2 A	G 1/4	26		24.0	14	12.0	27	A	56	**RI1/2X1/4**	315	315	315	200
G 1/2 A	G 3/8	26	12	36.0	14	17.0	27	B	94	**RI1/2X3/8**	315	315	315	200
G 1/2 A	G 3/4	26	12	46.0	14	22.0	36	B	182	**RI1/2X3/4**	315	315	315	200
G 1/2 A	G 1	26	12	49.0	14	24.5	41	B	221	**RI1/2X1**	315	315	315	200
G 1/2 A	G 1 1/4	26	10	53.0	14	26.5	55	B	482	**RI1/2X11/4**	160	160	160	
G 3/4 A	G 1/4	32		26.0	16	12.0	32	A	103	**RI3/4X1/4**	315	315	315	200
G 3/4 A	G 3/8	32		26.0	16	12.0	32	A	87	**RI3/4X3/8**	315	315	315	200
G 3/4 A	G 1/2	32	16	41.0	16	20.0	32	B	143	**RI3/4X1/2**	315	315	315	200
G 3/4 A	G 1	32	16	51.0	16	24.5	41	B	235	**RI3/4X1**	315	315	315	200
G 3/4 A	G 1 1/4	32	16	55.0	16	26.5	55	B	481	**RI3/4X11/4**	160	160	160	
G 3/4 A	G 1 1/2	32	16	57.0	16	28.5	60	B	560	**RI3/4X11/2**	160	160	160	
G 1 A	G 1/4	39		29.0	18	12.0	41	A	195	**RI1X1/4**	315	315	315	
G 1 A	G 3/8	39		29.0	18	12.0	41	A	179	**RI1X3/8**	315	315	315	200
G 1 A	G 1/2	39		29.0	18	14.0	41	A	157	**RI1X1/2**	315	315	315	200
G 1 A	G 3/4	39	20	47.0	18	22.0	41	B	278	**RI1X3/4**	315	315	315	200
G 1 A	G 1 1/4	39	20	57.0	18	26.5	55	B	530	**RI1X11/4**	160	160	160	100
G 1 A	G 1 1/2	39	20	59.0	18	28.5	60	B	585	**RI1X11/2**	160	160	160	100
G 1 1/4 A	G 1/2	49		32.0	20	14.0	50	A	308	**RI11/4X1/2**	160	160	160	100
G 1 1/4 A	G 3/4	49		32.0	20	16.0	50	A	267	**RI11/4X3/4**	160	160	160	100
G 1 1/4 A	G 1	49	25	52.0	20	24.5	50	B	458	**RI11/4X1**	160	160	160	100
G 1 1/4 A	G 1 1/2	49	25	60.0	20	28.5	60	B	616	**RI11/4X11/2**	160	160	160	100
G 1 1/2 A	G 1/2	55		36.0	22	14.0	55	A	477	**RI11/2X1/2**	160	160	160	100
G 1 1/2 A	G 3/4	55		36.0	22	16.0	55	A	402	**RI11/2X3/4**	160	160	160	100
G 1 1/2 A	G 1	55		36.0	22	18.0	55	A	337	**RI11/2X1**	160	160	160	100
G 1 1/2 A	G 1 1/4	55	32	58.0	22	26.5	55	B	542	**RI11/2X11/4**	160	160	160	100
G 2 A	G 1 1/2	68	40	62.0	24	28.5	70	B	990	**RI2X11/2**	160	160		

[1]) Pressure shown = item deliverable

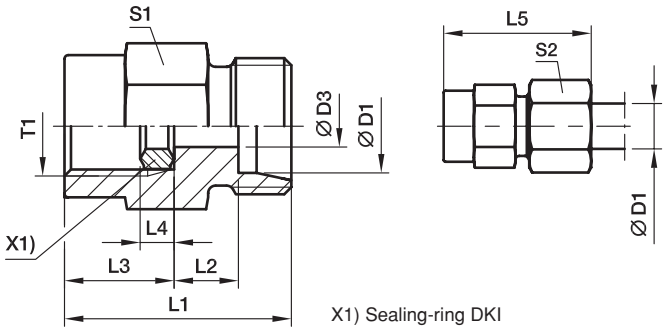
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	RI1X1/2CFX
Steel, zinc yellow plated	A3CX	RI1X1/2A3CX
Stainless Steel	71X	RI1X1/271X
Brass	MSX	RI1X1/2MSX

MAV Pressure gauge connector

Female BSPP thread / EO 24° cone end



X1) Sealing-ring DKI

Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
LL[2])	04	G1/4	2.5	27	8.5	14.5	4.5	33	19	10	33	**MAV04LLROMD**	100	100		
L[3])	06	G1/4	2.5	29	7.5	14.5	4.5	37	19	14	37	**MAV06LROMD**	315	315	315	200
	08	G1/4	5.5	29	7.5	14.5	4.5	37	19	17	38	**MAV08LROMD**	315	315	315	200
	10	G1/4	5.5	30	8.5	14.5	4.5	38	19	19	41	**MAV10LROMD**	315	315	315	200
	12	G1/4	5.5	30	8.5	14.5	4.5	38	19	22	43	**MAV12LROMD**	315	315	315	200
S[4])	06	G1/2	3.5	38	11.0	20.0	5.0	46	27	17	86	**MAV06SROMD**	630	630	630	400
	08	G1/2	3.5	38	11.0	20.0	5.0	46	27	19	86	**MAV08SROMD**	630	630	630	400
	10	G1/2	7.5	38	10.5	20.0	5.0	47	27	22	88	**MAV10SROMD**	630	630	630	400
	12	G1/2	7.5	38	10.5	20.0	5.0	47	27	24	93	**MAV12SROMD**	630	630	630	400

[1]) Pressure shown = item deliverable

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

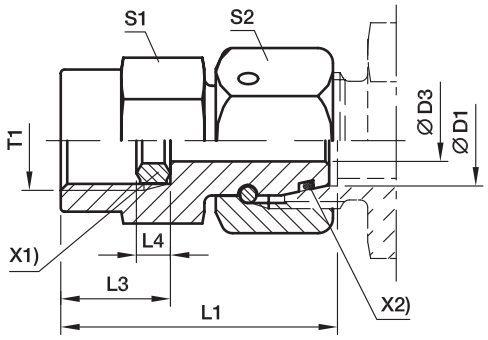
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	MAV10SROMDCF
Steel, zinc yellow plated	A3C	MAV10SROMDA3C
Stainless Steel	71	MAV10SROMD71
Brass	MS	MAV10SROMDMS

*Please add the **suffixes** below according to the material/surface required.

MAVE Pressure gauge swivel connector

Female BSPP thread / EO 24° DKO swivel



X1) Sealing-ring DKI
X2) O-ring OR

Series	D1	T1	D3	L1	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G1/4	2.5	35.5	14.5	4.5	19	14	46	**MAVE06LR**	315	315	315
	08	G1/4	4.0	35.5	14.5	4.5	19	17	52	**MAVE08LR**	315	315	315
	10	G1/4	5.5	36.0	14.5	4.5	19	19	59	**MAVE10LR**	315	315	315
	12	G1/4	5.5	36.0	14.5	4.5	19	22	70	**MAVE12LR**	315	315	315
S[4])	06	G1/2	2.5	42.5	20.0	5.0	27	17	95	**MAVE06SR**	630	630	630
	06	G1/4	2.5	35.5	14.5	4.5	19	17	52	**MAVE06SR1/4**	630	630	630
	08	G1/2	4.0	43.0	20.0	5.0	27	19	100	**MAVE08SR**	630	630	630
	08	G1/4	4.0	35.5	14.5	4.5	19	19	58	**MAVE08SR1/4**	630	630	630
	10	G1/2	6.0	43.5	20.0	5.0	27	22	109	**MAVE10SR**	630	630	630
	10	G1/4	7.0	39.0	14.5	4.5	19	22	67	**MAVE10SR1/4**	630	630	630
	12	G1/2	7.0	45.0	20.0	5.0	27	24	125	**MAVE12SR**	630	630	630
	12	G1/4	7.0	39.0	14.5	4.5	19	24	83	**MAVE12SR1/4**	630	630	630

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

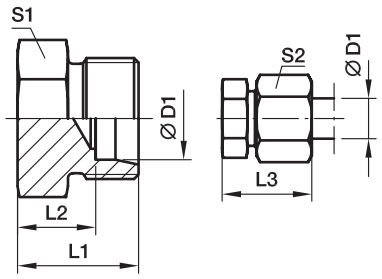
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	MAVE10SRCF	NBR
Steel, zinc yellow plated	A3C	MAVE10SRA3C	NBR
Stainless Steel	71	MAVE10SR71	VIT

ROV Blanking plug for tube ends

EO 24°cone end



Series	D1	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	14	7.0	22	12	14	8	**ROV06L**	315	315	315
	08	15	8.0	23	14	17	13	**ROV08L**	315	315	315
	10	16	9.0	24	17	19	17	**ROV10L**	315	315	315
	12	17	10.0	25	19	22	24	**ROV12L**	315	315	315
	15	18	11.0	26	24	27	41	**ROV15L**	315	315	315
	18	19	11.5	28	27	32	56	**ROV18L**	315	315	315
	22	21	13.5	30	32	36	84	**ROV22L**	160	160	160
	28	22	14.5	31	41	41	138	**ROV28L**	160	160	160
	35	25	14.5	36	46	50	203	**ROV35L**	160	160	160
	42	27	16.0	39	55	60	318	**ROV42L**	160	160	160
S[4])	06	18	11.0	26	14	17	17	**ROV06S**	630	630	630
	08	20	13.0	28	17	19	28	**ROV08S**	630	630	630
	10	20	12.5	29	19	22	33	**ROV10S**	630	630	630
	12	22	14.5	31	22	24	50	**ROV12S**	630	630	630
	14	24	16.0	34	24	27	62	**ROV14S**	630	630	630
	16	24	15.5	34	27	30	75	**ROV16S**	400	400	400
	20	28	17.5	39	32	36	125	**ROV20S**	400	400	400
	25	32	20.0	44	41	46	229	**ROV25S**	400	400	400
	30	34	20.5	47	46	50	310	**ROV30S**	400	400	400
	38	39	23.0	54	55	60	508	**ROV38S**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

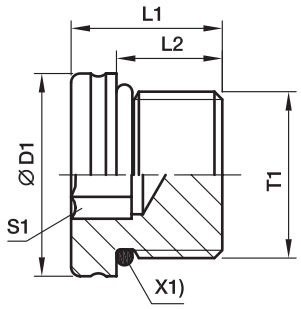
Delivery without nut and ring. Information on ordering complete fittings see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	ROV16SCFX
Steel, zinc yellow plated	A3CX	ROV16SA3CX
Stainless Steel	71X	ROV16S71X

VSTI M-OR Blanking plug for ports

Male metric thread – O-ring (ISO 6149)



X1) O-ring OR

T1	D1	L1	L2	S1	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
M8×1	12	13.0	9.5	4	6	**VSTI8X1OR**	630	630
M10×1	13	13.5	9.5	5	8	**VSTI10X1OR**	630	630
M12×1.5	17	16.0	11.0	6	14	**VSTI12X1.5OR**	630	630
M14×1.5	19	16.0	11.0	6	20	**VSTI14X1.5OR**	630	630
M16×1.5	21	17.5	12.5	8	26	**VSTI16X1.5OR**	630	630
M18×1.5	23	19.0	14.0	8	37	**VSTI18X1.5OR**	630	630
M22×1.5	27	20.0	15.0	10	58	**VSTI22X1.5OR**	630	630
M26×1.5	31	21.0	16.0	12	77	**VSTI26X1.5OR**	400	400
M27×2	32	23.5	18.5	12	95	**VSTI27X2OR**	400	400
M33×2	38	25.0	18.5	14	148	**VSTI33X2OR**	400	400
M42×2	48	25.5	19.0	22	233	**VSTI42X2OR**	400	400
M48×2	55	28.0	21.5	24	336	**VSTI48X2OR**	400	400

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

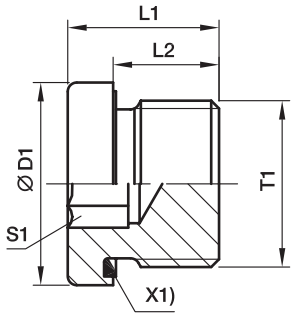
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome^6-free	CF	VSTI18X1.5ORCF	NBR
Steel, zinc yellow plated	A3C	VSTI18X1.5ORA3C	NBR

VSTI M/R-ED Blanking plug for ports

Male metric thread – ED-seal (ISO 9974)
Male BSPP thread – ED-seal (ISO 1179)



X1) Eolastic-sealing ED

Male metric parallel thread T1	Male stud BSP thread T1	D1	L1	L2	S1	Weight g/1 piece	Order code*	Order code*	PN (bar)[1] CF	A3C	71
M 10×1	G 1/8 A	14.0	12.0	8	5	8	**VSTI10X1ED**	**VSTI1/8ED**	400	400	400
M 12×1.5		17.0	17.0	12	6	14	**VSTI12X1.5ED**		400	400	400
M 14×1.5	G 1/4 A	19.0	17.0	12	6	20	**VSTI14X1.5ED**	**VSTI1/4ED**	400	400	400
M 16×1.5	G 3/8 A	22.0	17.0	12	8	25	**VSTI16X1.5ED**	**VSTI3/8ED**	400	400	400
M 18×1.5		23.9	17.0	12	8	32	**VSTI18X1.5ED**		400	400	400
M 20×1.5		25.9	19.0	14	10	42	**VSTI20X1.5ED**		400	400	400
M 22×1.5	G 1/2 A	27.0	19.0	14	10	51	**VSTI22X1.5ED**	**VSTI1/2ED**	400	400	400
M 26×1.5		31.9	21.0	16	12	78	**VSTI26X1.5ED**		400	400	400
M 27×2	G 3/4 A	32.0	21.0	16	12	79	**VSTI27X2ED**	**VSTI3/4ED**	400	400	400
M 33×2	G 1 A	39.9	22.5	16	17	130	**VSTI33X2ED**	**VSTI1ED**	400	400	400
M 42×2	G 11/4 A	49.9	22.5	16	22	198	**VSTI42X2ED**	**VSTI11/4ED**	315	315	315
M 48×2	G 11/2 A	55.0	22.5	16	24	263	**VSTI48X2ED**	**VSTI11/2ED**	315	315	315

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

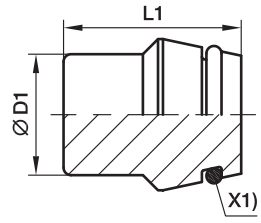
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VSTI1/2EDCF	NBR
Steel, zinc yellow plated	A3C	VSTI1/2EDA3C	NBR
Stainless Steel	71	VSTI1/2ED71	VIT

VKA Blanking plug for cones

EO 24° DKO swivel



X1) O-ring OR

Series	D1	L1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	18.5	6	**VKA06**	500	315	315	200
	08	18.5	9	**VKA08**	500	315	315	200
	10	20.0	15	**VKA10**	500	315	315	200
	12	20.5	21	**VKA12**	400	315	315	200
	15	20.5	32	**VKA15**	400	315	315	200
	18	22.5	49	**VKA18**	400	315	315	200
	22	25.0	80	**VKA22**	250	160	160	100
	28	25.5	131	**VKA28**	250	160	160	100
	35	30.0	240	**VKA35**	250	160	160	100
	42	30.0	343	**VKA42**	250	160	160	100
S[4])	06	18.5	6	**VKA06**	800	630	630	400
	08	18.5	9	**VKA08**	800	630	630	400
	10	20.0	15	**VKA10**	800	630	630	400
	12	20.5	21	**VKA12**	630	630	630	400
	14	22.5	30	**VKA14**	630	630	630	400
	16	23.5	40	**VKA16**	630	400	400	250
	20	28.5	78	**VKA20**	420	400	400	250
	25	29.0	120	**VKA25**	420	400	400	250
	30	30.5	180	**VKA30**	420	400	400	250
	38	33.0	309	**VKA38**	420	315	315	200

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

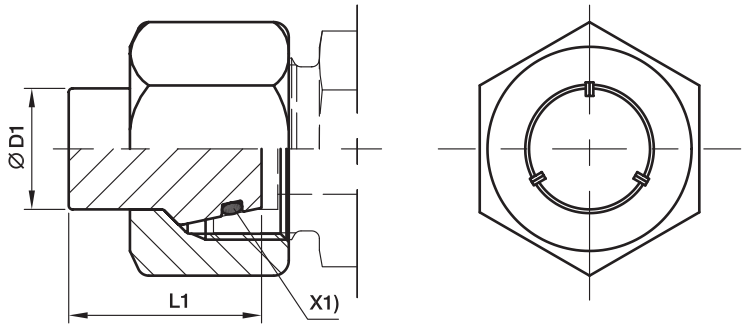
Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VKA16CF	NBR
Steel, zinc yellow plated	A3C	VKA16A3C	NBR
Stainless Steel	71	VKA1671	VIT
Brass	MS	VKA16MS	NBR

VKAM Blanking plug with nut for cone

EO 24° DKO swivel



X1) O-ring OR

Series	D1	L1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	18.5	15	**VKAM06L**	500	315	315
	08	18.5	24	**VKAM08L**	500	315	315
	10	20.0	33	**VKAM10L**	500	315	315
	12	20.5	46	**VKAM12L**	400	315	315
	15	20.5	73	**VKAM15L**	400	315	315
	18	22.5	111	**VKAM18L**	400	315	315
	22	25.0	162	**VKAM22L**	250	160	160
	28	25.5	220	**VKAM28L**	250	160	160
	35	30.0	376	**VKAM35L**	250	160	160
	42	30.0	558	**VKAM42L**	250	160	160
S[4])	06	18.5	23	**VKAM06S**	800	630	630
	08	18.5	29	**VKAM08S**	800	630	630
	10	20.0	46	**VKAM10S**	800	630	630
	12	20.5	55	**VKAM12S**	630	630	630
	14	22.5	83	**VKAM14S**	630	630	630
	16	23.5	106	**VKAM16S**	630	400	400
	20	28.5	180	**VKAM20S**	420	400	400
	25	29.0	322	**VKAM25S**	420	400	400
	30	30.5	398	**VKAM30S**	420	400	400
	38	33.0	647	**VKAM38S**	420	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

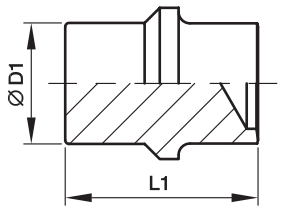
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Information on ordering alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VKAM16SCF	NBR
Steel, zinc yellow plated	A3C	VKAM16SA3C	NBR
Stainless Steel	71	VKAM16S71	VIT

BUZ Blanking plug for cones



Series	D1	L1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71	MS
L[3])	06	19.5	5	**BUZ06L**	315	315	315	200
	08	19.5	8	**BUZ08L**	315	315	315	200
	10	21.0	13	**BUZ10L**	315	315	315	200
	12	21.8	20	**BUZ12L**	315	315	315	200
	15	22.0	30	**BUZ15L**	315	315	315	200
	18	24.0	45	**BUZ18L**	315	315	315	200
	22	26.0	74	**BUZ22L**	160	160	160	100
	28	26.5	117	**BUZ28L**	160	160	160	100
	35	32.0	217	**BUZ35L**	160	160	160	100
	42	32.5	308	**BUZ42L**	160	160	160	100
S[4])	06	19.5	5	**BUZ06L**	630	630	630	400
	08	19.5	8	**BUZ08L**	630	630	630	400
	10	21.0	13	**BUZ10L**	630	630	630	400
	12	21.8	20	**BUZ12L**	630	630	630	400
	14	23.5	28	**BUZ14S**	630	630	630	400
	16	25.5	39	**BUZ16S**	400	400	400	250
	20	30.5	73	**BUZ20S**	400	400	400	250
	25	32.5	119	**BUZ25S**	400	400	400	250
	30	35.5	181	**BUZ30S**	400	400	400	250
	38	40.0	325	**BUZ38S**	315	315	315	200

[1]) Pressure shown = item deliverable

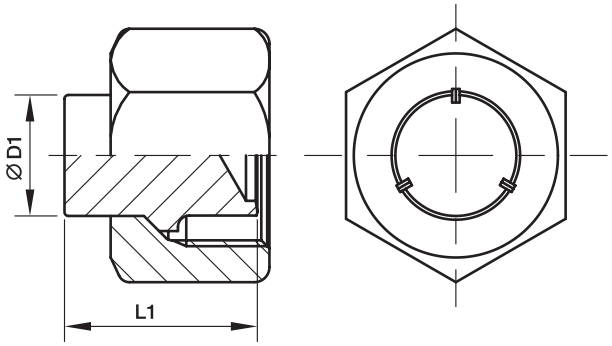
[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CFX	BUZ16SCFX
Steel, zinc yellow plated	A3CX	BUZ16SA3CX
Stainless Steel	71X	BUZ16S71X
Brass	MSX	BUZ16SMSX

BUZM Blanking plug with nut for cones



Series	D1	L1	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	19.5	15	**BUZM06L**	315	315	315
	08	19.5	23	**BUZM08L**	315	315	315
	10	21.0	31	**BUZM10L**	315	315	315
	12	21.8	45	**BUZM12L**	315	315	315
	15	22.0	71	**BUZM15L**	315	315	315
	18	24.0	107	**BUZM18L**	315	315	315
	22	26.0	156	**BUZM22L**	160	160	160
	28	26.5	206	**BUZM28L**	160	160	160
	35	32.0	354	**BUZM35L**	160	160	160
	42	32.5	524	**BUZM42L**	160	160	160
S[4])	06	19.5	23	**BUZM06S**	630	630	630
	08	19.5	28	**BUZM08S**	630	630	630
	10	21.0	44	**BUZM10S**	630	630	630
	12	21.8	54	**BUZM12S**	630	630	630
	14	23.5	81	**BUZM14S**	630	630	630
	16	25.5	105	**BUZM16S**	400	400	400
	20	30.5	176	**BUZM20S**	400	400	400
	25	32.5	321	**BUZM25S**	400	400	400
	30	35.5	399	**BUZM30S**	400	400	400
	38	40.0	664	**BUZM38S**	315	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

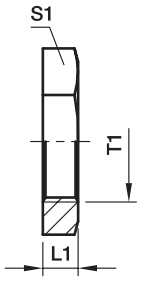
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, chrome[6]-free	CF	BUZM16SCF
Steel, zinc yellow plated	A3C	BUZM16SA3C
Stainless Steel	71	BUZM16S71

GM Locknut for bulk heads

For bulkhead SV and WSV

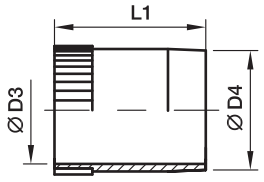


Series	Tube O.D.	T1	L1	S1	Weight g/1 piece	Order code Steel CF	Steel A3C	Stainless Steel 71	Brass MS
L[3])	06	M 12×1.5	6	17	7	**GM06LCFX**	**GM06LA3CX**	**GM06L71X**	**GM06LMSX**
	08	M 14×1.5	6	19	8	**GM08LCFX**	**GM08LA3CX**	**GM08L71X**	**GM08LMSX**
	10	M 16×1.5	6	22	11	**GM10LCFX**	**GM10LA3CX**	**GM10L71X**	**GM10LMSX**
	12	M 18×1.5	6	24	12	**GM12LCFX**	**GM12LA3CX**	**GM12L71X**	**GM12LMSX**
	15	M 22×1.5	7	30	23	**GM15LCFX**	**GM15LA3CX**	**GM15L71X**	**GM15LMSX**
	18	M 26×1.5	8	36	37	**GM18LCFX**	**GM18LA3CX**	**GM18L71X**	**GM18LMSX**
	22	M 30×2	8	41	46	**GM22LCFX**	**GM22LA3CX**	**GM22L71X**	**GM22LMSX**
	28	M 36×2	9	46	58	**GM28LCFX**	**GM28LA3CX**	**GM28L71X**	**GM28LMSX**
	35	M 45×2	9	55	71	**GM35LCFX**	**GM35LA3CX**	**GM35L71X**	**GM35LMSX**
	42	M 52×2	10	65	123	**GM42LCFX**	**GM42LA3CX**	**GM42L71X**	**GM42LMSX**
S[4])	06	M 14×1.5	6	19	8	**GM08LCFX**	**GM08LA3CX**	**GM08L71X**	**GM06LMSX**
	08	M 16×1.5	6	22	11	**GM10LCFX**	**GM10LA3CX**	**GM10L71X**	**GM10LMSX**
	10	M 18×1.5	6	24	12	**GM12LCFX**	**GM12LA3CX**	**GM12L71X**	**GM12LMSX**
	12	M 20×1.5	6	27	15	**GM12SCFX**	**GM12SA3CX**	**GM12S71X**	**GM12SMSX**
	14	M 22×1.5	7	30	23	**GM15LCFX**	**GM15LA3CX**	**GM15L71X**	**GM15LMSX**
	16	M 24×1.5	7	32	24	**GM16SCFX**	**GM16SA3CX**	**GM16S71X**	**GM16SMSX**
	20	M 30×2	8	41	46	**GM22LCFX**	**GM22LA3CX**	**GM22L71X**	**GM22LMSX**
	25	M 36×2	9	46	58	**GM28LCFX**	**GM28LA3CX**	**GM28L71X**	**GM28LMSX**
	30	M 42×2	9	50	58	**GM30SCFX**	**GM30SA3CX**	**GM30S71X**	**GM30SMSX**
	38	M 52×2	10	65	123	**GM42LCFX**	**GM42LA3CX**	**GM42L71X**	**GM42LMSX**

[3]) L = light series; [4]) S = heavy series

VH Support sleeve

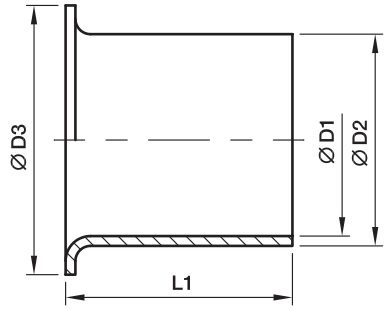
for thin-walled metal tubing



Tube I.D.	D3	D4	L1	Weight g/1 piece	Order code Steel CF	Stainless Steel 71	Brass MS
4.0	2.6	3.8	14.0	0.7	**VH04CFX**	**VH0471X**	**VH04MSX**
4.5	3.1	4.3	14.0	0.8	**VH04.5CFX**	**VH04.571X**	**VH04.5MSX**
5.0	3.6	4.8	14.0	0.8	**VH05CFX**	**VH0571X**	**VH05MSX**
6.0	4.6	5.8	14.0	1.0	**VH06CFX**	**VH0671X**	**VH06MSX**
6.5	5.1	6.3	14.0	1.0	**VH06.5CFX**	**VH06.571X**	**VH06.5MSX**
7.0	5.6	6.8	15.5	1.3	**VH07CFX**	**VH0771X**	**VH07MSX**
8.0	6.6	7.8	15.5	1.6	**VH08CFX**	**VH0871X**	**VH08MSX**
9.0	7.6	8.8	15.5	1.8	**VH09CFX**	**VH0971X**	**VH09MSX**
10.0	8.6	9.8	15.5	2.1	**VH10CFX**	**VH1071X**	**VH10MSX**
10.5	9.1	10.3	15.5	2.3	**VH10.5CFX**	**VH10.571X**	**VH10.5MSX**
11.0	9.6	10.8	15.5	2.6	**VH11CFX**	**VH1171X**	**VH11MSX**
12.0	10.2	11.8	17.0	3.7	**VH12CFX**	**VH1271X**	**VH12MSX**
13.0	11.2	12.8	17.0	3.9	**VH13CFX**	**VH1371X**	**VH13MSX**
14.0	12.2	13.8	17.0	4.3	**VH14CFX**	**VH1471X**	**VH14MSX**
15.0	13.2	14.8	20.0	5.7	**VH15CFX**	**VH1571X**	**VH15MSX**
16.0	14.2	15.8	20.0	5.8	**VH16CFX**	**VH1671X**	**VH16MSX**
17.0	15.2	16.8	20.0	6.3	**VH17CFX**	**VH1771X**	**VH17MSX**
18.0	16.2	17.8	20.0	6.3	**VH18CFX**	**VH1871X**	**VH18MSX**
19.0	17.2	18.8	16.0	5.8	**VH19CFX**	**VH1971X**	**VH19MSX**
20.0	18.2	19.8	21.5	7.9	**VH20CFX**	**VH2071X**	**VH20MSX**
21.0	19.2	20.8	21.5	8.0	**VH21CFX**	**VH2171X**	**VH21MSX**
22.0	20.2	21.8	23.5	9.7	**VH22CFX**	**VH2271X**	**VH22MSX**
23.0	21.2	22.8	23.5	10.6	**VH23CFX**	**VH2371X**	**VH23MSX**
24.0	22.2	23.8	23.5	11.1	**VH24CFX**	**VH2471CX**	**VH24MSX**
25.0	23.2	24.8	23.5	10.8	**VH25CFX**	**VH2571X**	**VH25MSX**
26.0	24.2	25.8	23.5	12.7	**VH26CFX**	**VH2671X**	**VH26MSX**
27.0	25.2	26.8	23.5	12.2	**VH27CFX**	**VH2771X**	**VH27MSX**
30.0	27.8	29.8	26.5	18.7	**VH30CFX**	**VH3071X**	**VH30MSX**
31.0	28.8	30.8	26.5	20.7	**VH31CFX**	**VH3171X**	**VH31MSX**
32.0	29.8	31.8	26.5	19.2	**VH32CFX**	**VH3271X**	**VH32MSX**
33.0	30.8	32.8	26.5	19.9	**VH33CFX**	**VH3371X**	**VH33MSX**
34.0	31.8	33.8	26.5	26.5	**VH34CFX**	**VH3471X**	**VH34MSX**
38.0	35.8	37.8	21.0	19.7	**VH38CFX**	**VH3871X**	**VH38MSX**
39.0	36.8	38.8	21.0	19.5	**VH39CFX**	**VH3971X**	**VH39MSX**

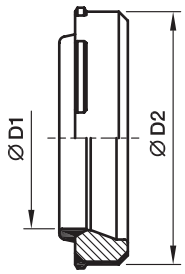
E Tube/hose insert

for plastic tubing



Tube O.D.	Tube I.D.	D1	D2	D3	L1	Weight g/1 piece	Order code Brass
04	2.0	1.3	2.0	3.5	8	1	**E04/02X**
04	2.5	1.7	2.5	4.0	8	1	**E04/2.5X**
05	3.0	2.2	3.0	5.0	14	1	**E0506/03X**
06	3.0	2.2	3.0	5.0	14	1	**E0506/03X**
05	4.0	3.2	4.0	5.0	14	1	**E0506/04X**
06	4.0	3.2	4.0	5.0	14	1	**E0506/04X**
08	4.0	3.2	4.0	6.6	14	1	**E08/04X**
06	5.0	4.0	5.0	6.0	14	1	**E06/05X**
08	5.0	4.0	5.0	6.0	14	1	**E08/05X**
10	6.0	5.0	6.0	8.0	15	1	**E0810/06X**
08	6.0	5.0	6.0	8.0	15	1	**E0810/06X**
10	8.0	6.7	8.0	10.0	15	1	**E10/08X**
12	8.0	6.7	8.0	12.0	15	2	**E12/08X**
12	9.0	7.7	9.0	12.0	15	2	**E12/09X**
12	10.0	8.7	10.0	12.0	15	2	**E1215/10X**
15	12.0	10.7	12.0	14.8	15	3	**E15/12X**
15	12.5	11.2	12.5	14.8	15	3	**E1516/12.5X**
16	12.5	11.2	12.5	14.8	15	3	**E1516/12.5X**
18	14.0	12.7	14.0	17.8	15	4	**E18/14X**
18	16.0	14.7	16.0	17.8	20	4	**E1820/16X**
20	16.0	14.7	16.0	17.8	20	4	**E1820/16X**
22	18.0	16.7	18.0	21.8	16	5	**E22/18X**

DOZ EO-2 Soft sealing ring



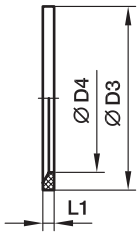
Assembl direction:
Sealing lip shows to the tube end

Series	D1	D2	Weight g/1 piece	Order code Steel NBR	Steel FKM	Stainless Steel FKM	Stainless Steel NBR
LL[2])	04	6.8	1	**DOZ04LL**	—	—	—
	06	8.8	1	**DOZ06LL**	—	—	—
L[3])	06	10.3	1	**DOZ06L**	**DOZ06LVIT**	**DOZ06L71**	**DOZ06LNBR71**
	08	12.3	1	**DOZ08L**	**DOZ08LVIT**	**DOZ08L71**	**DOZ08LNBR71**
	10	14.3	2	**DOZ10L**	**DOZ10LVIT**	**DOZ10L71**	**DOZ10LNBR71**
	12	16.3	2	**DOZ12L**	**DOZ12LVIT**	**DOZ12L71**	**DOZ12LNBR71**
	15	20.3	3	**DOZ15L**	**DOZ15LVIT**	**DOZ15L71**	**DOZ15LNBR71**
	18	24.3	5	**DOZ18L**	**DOZ18LVIT**	**DOZ18L71**	**DOZ18LNBR71**
	22	27.7	6	**DOZ22L**	**DOZ22LVIT**	**DOZ22L71**	**DOZ22LNBR71**
	28	33.7	7	**DOZ28L**	**DOZ28LVIT**	**DOZ28L71**	**DOZ28LNBR71**
	35	42.7	14	**DOZ35L**	**DOZ35LVIT**	**DOZ35L71**	**DOZ35LNBR71**
	42	49.7	17	**DOZ42L**	**DOZ42LVIT**	**DOZ42L71**	**DOZ42LNBR71**
S[4])	06	12.3	2	**DOZ06S**	**DOZ06SVIT**	**DOZ06S71**	**DOZ06SNBR71**
	08	14.3	2	**DOZ08S**	**DOZ08SVIT**	**DOZ08S71**	**DOZ08SNBR71**
	10	16.3	3	**DOZ10S**	**DOZ10SVIT**	**DOZ10S71**	**DOZ10SNBR71**
	12	18.3	4	**DOZ12S**	**DOZ12SVIT**	**DOZ12S71**	**DOZ12SNBR71**
	14	20.3	4	**DOZ14S**	**DOZ14SVIT**	**DOZ14S71**	**DOZ14SNBR71**
	16	22.3	5	**DOZ16S**	**DOZ16SVIT**	**DOZ16S71**	**DOZ16SNBR71**
	20	27.7	9	**DOZ20S**	**DOZ20SVIT**	**DOZ20S71**	**DOZ20SNBR71**
	25	33.7	13	**DOZ25S**	**DOZ25SVIT**	**DOZ25S71**	**DOZ25SNBR71**
	30	39.7	18	**DOZ30S**	**DOZ30SVIT**	**DOZ30S71**	**DOZ30SNBR71**
	38	49.7	27	**DOZ38S**	**DOZ38SVIT**	**DOZ38S71**	**DOZ38SNBR71**

[2]) LL = very light series; [3]) L = light series; [4]) S = heavy series

ED Eolastic soft seal (for BSPP and metric parallel threads)

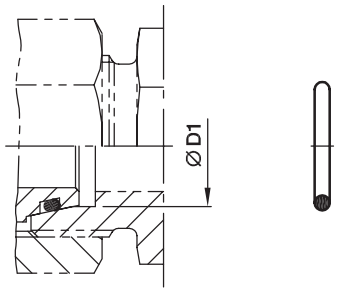
For Type: GE…ED, EGE…ED, EVGE…ED, EW…ED, EV…ED, ET…ED, EL…ED, VSTI…ED,RI…ED



Male stud metric thread T1	Male stud BSP thread T1	D3	D4	L1	Weight g/1 piece	Order code NBR	Order code FKM
M 8×1		9.9	6.5	1.0	0.1	**ED8X1X**	**ED8X1VITX**
M 10×1	G 1/8 A	11.9	8.4	1.0	0.1	**ED10X1X**	**ED10X1VITX**
M 12×1.5		14.4	9.8	1.5	0.2	**ED12X1.5X**	**ED12X1.5VITX**
M 14×1.5	G 1/4 A	16.5	11.6	1.5	0.2	**ED14X1.5X**	**ED14X1.5VITX**
M 16×1.5		18.9	13.8	1.5	0.1	**ED16X1.5X**	**ED16X1.5VITX**
	G 3/8 A	18.9	14.7	1.5	0.2	**ED3/8X**	**ED3/8VITX**
M 18×1.5		20.9	15.7	1.5	0.1	**ED18X1.5X**	**ED18X1.5VITX**
M 20×1.5		22.9	17.8	1.5	0.2	**ED20X1.5X**	**ED20X1.5VITX**
	G 1/2 A	23.9	18.5	1.5	0.3	**ED1/2X**	**ED1/2VITX**
M 22×1.5		24.3	19.6	1.5	0.2	**ED22X1.5X**	**ED22X1.5VITX**
M 26×1.5	G 3/4 A	29.2	23.9	1.5	0.4	**ED26X1.5X**	**ED26X1.5VITX**
M 27×2	G 3/4 A	29.2	23.9	1.5	0.4	**ED26X1.5X**	**ED26X1.5VITX**
M 33×2	G 1 A	35.7	29.7	2.0	0.7	**ED33X2X**	**ED33X2VITX**
M 42×2	G 1 1/4 A	45.8	38.8	2.0	0.9	**ED42X2X**	**ED42X2VITX**
M 48×2	G 1 1/2 A	50.7	44.7	2.0	1.0	**ED48X2X**	**ED48X2VITX**

OR O-Ring for fittings with EO 24° DKO swivel

For Type:
DA, EGE, EGEO, MAVE, EW, EV, ET, EL, RED, GZ, GZR, VKA, VKAM

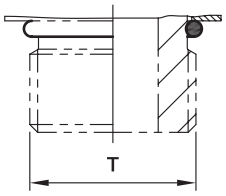


Series	D1	O-ring NBR Shore-hardness approx. 90	O-ring FKM Shore-hardness approx. 90
L[3])	6	**OR4.5X1.5X**	**OR4.5X1.5VITX**
	8	**OR6.5X1.5X**	**OR6.5X1.5VITX**
	10	**OR8.5X1.5X**	**OR8X1.5VITX**
	12	**OR10.5X1.5X**	**OR10X1.5VITX**
	15	**OR12.5X2X**	**OR12X2VITX**
	18	**OR16X2X**	**OR15X2VITX**
	22	**OR20X2X**	**OR20X2VITX**
	28	**OR26X2X**	**OR26X2VITX**
	35	**OR32X2.5X**	**OR32X2.5VITX**
	42	**OR39X2.5X**	**OR38X2.5VITX**
S[4])	6	**OR4.5X1.5X**	**OR4.5X1.5VITX**
	8	**OR6.5X1.5X**	**OR6.5X1.5VITX**
	10	**OR8.5X1.5X**	**OR8X1.5VITX**
	12	**OR10.5X1.5X**	**OR10X1.5VITX**
	14	**OR12X2X**	**OR11X2VITX**
	16	**OR14X2X**	**OR13X2VITX**
	20	**OR17X2.5X**	**OR16.3X2.4VITX**
	25	**OR22X2.5X**	**OR20.3X2.4VITX**
	30	**OR27X2.5X**	**OR25.3X2.4VITX**
	38	**OR35X2.5X**	**OR33.3X2.4VITX**

[3]) L = light series; [4]) S = heavy series

OR O-rings for male stud ends

Male metric thread – O-ring (ISO 6149)
Male UN/UNF thread – O-ring (ISO 11926)





Types with metric thread: WEE-OR, TEE-OR, LEE-OR, VEE-OR, VSTI-OR, GEO, EGEO

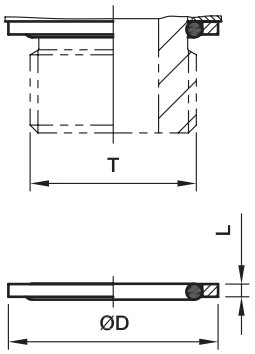
Thread T	O-ring NBR	O-ring FKM
M8 × 1	**OR6.1X1.6**	**OR6,1X1.6VITX**
M10 × 1	**OR8.1X1.6**	**OR8.1X1.6VITX**
M12 × 1.5	**OR9.3X2.2**	**OR9.3X2.2VITX**
M14 × 1.5	**OR11.3X2.2**	**OR11.3X2.2VITX**
M16 × 1.5	**OR13.3X2.2**	**OR13.3X2.2VITX**
M18 × 1.5	**OR15.3X2.2**	**OR15.3X2.2VITX**
M22 × 1.5	**OR19.3X2.2**	**OR19.3X2.2VITX**
M27 × 2	**OR23.6X2.9**	**OR23.6X2.9VITX**
M33 × 2	**OR29.6X2.9**	**OR29.6X2.9VITX**
M42 × 2	**OR38.6X2.9**	**OR38.6X2.9VITX**
M48 × 2	**OR44.6X2.9**	**OR44.6X2.9VITX**

Types with UN/UNF thread:
WEE-UNF, TEE-UNF, LEE-UNF, VEE-UNF, GE-UNF

Thread T	O-ring NBR	O-ring FKM
7/16-20 UNF	**OR8.92X1.83**	**OR8.92X1.83VITX**
9/16-18 UNF	**OR11.89X1.98**	**OR11.89X1.98VITX**
3/4-16 UNF	**OR16.36X2.21**	**OR16.36X2.21VITX**
7/8-14 UNF	**OR19.18X2.46**	**OR19.18X2.46VITX**
1 1/16-12 UN	**OR23.47X2.95**	**OR23.47X2.95VITX**
1 5/16-12 UN	**OR29.74X2.95**	**OR29.74X2.95VITX**
1 5/8-12 UN	**OR37.46X3**	**OR37.46X3VITX**
1 7/8-12 UN	**OR43.69X3**	**OR43.69X3VITX**

OR O-rings and retaining rings for steel male stud ends

Adjustable metric thread – O-ring + retaining ring
Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)



Types with metric thread: WEE-M, TEE-M, LEE-M, VEE-M

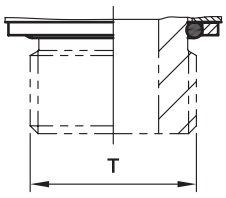
Thread T	O-ring NBR	O-ring FKM	D	L	Order code Retaining ring CF	Order code Retaining ring A3C
M10 × 1	**OR8X1.88X**	**OR8X1.88VITX**	14.8	1.4	**RRSM10CF**	**RRSM10A3C**
M12 × 1.5	**OR9.3X2.2X**	**OR9.3X2.2VITX**	17.8	1.6	**RRSM12CF**	**RRSM12A3C**
M14 × 1.5	**OR11.3X2.2X**	**OR11.3X2.2VITX**	19.8	1.6	**RRSM14CF**	**RRSM14A3C**
M16 × 1.5	**OR13.3X2.2X**	**OR13.3X2.2VITX**	22.8	1.6	**RRSM16CF**	**RRSM16A3C**
M18 × 1.5	**OR15.54X2.62X**	**OR15.54X2.62VITX**	24.8	2.1	**RRSM18CF**	**RRSM18A3C**
M22 × 1.5	**OR19.3X2.2X**	**OR19.3X2.2VITX**	27.8	1.8	**RRSM22CF**	**RRSM22A3C**
M27 × 2	**OR23X3X**	**OR23X3VITX**	32.8	2.3	**RRSM27CF**	**RRSM27A3C**
M33 × 2	**OR29.2X3X**	**OR29.2X3VITX**	40.8	2.5	**RRSM33CF**	**RRSM33A3C**
M42 × 2	**OR37.69X3.53X**	**OR37.69X3.53VITX**	50.8	2.6	**RRSM42CF**	**RRSM42A3C**
M48 × 2	**OR43.69X3X**	**OR43.69X3VITX**	55.8	2.3	**RRSM48CF**	**RRSM48A3C**

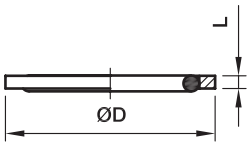
Types with BSPP thread: WEE-R, TEE-R, LEE-R, VEE-R

Thread T	O-ring NBR	O-ring FKM	D	L	Order code Retaining ring CF	Order code Retaining ring A3C
G 1/8 A	**OR8X1.88X**	**OR8X1.88VITX**	14.8	1.4	**RRS1/8CF**	**RRS1/8A3C**
G 1/4 A	**OR10.77X2.62X**	**OR10.77X2.62VITX**	19.8	1.9	**RRS1/4CF**	**RRS1/4A3C**
G 3/8 A	**OR13.94X2.62X**	**OR13.94X2.62VITX**	22.8	2.0	**RRS3/8CF**	**RRS3/8A3C**
G 1/2 A	**OR18X3.15X**	**OR18X3.15VITX**	27.8	2.6	**RRS1/2CF**	**RRS1/2A3C**
G 3/4 A	**OR23X3X**	**OR23X3VITX**	32.8	2.5	**RRS3/4CF**	**RRS3/4A3C**
G 1 A	**OR29.74X3.53X**	**OR29.74X3.53VITX**	40.8	2.5	**RRS1CF**	**RRS1A3C**
G 1 1/4 A	**OR37.69X3.53X**	**OR37.69X3.53VITX**	50.8	2.6	**RRS1 1/4CF**	**RRS1 1/4A3C**
G 1 1/2 A	**OR44.04X3.53X**	**OR44.04X3.53VITX**	55.8	2.6	**RRS1 1/2CF**	**RRS1 1/2A3C**

OR O-rings and retaining rings for stainless steel male stud ends

Adjustable metric thread – O-ring + retaining ring
Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)





Types with metric thread: WEE-M, TEE-M, LEE-M, VEE-M

Thread T	O-ring FKM	O-ring NBR	D	L	Order code Retaining ring Stainless Steel
M10 × 1	**OR8X1.5VITX**	**OR8X1.5X**	14.8	1.0	**RRM10X1SS**
M12 × 1.5	**OR9.25X1.78VITX**	**OR9.25X1.78X**	17.8	1.3	**RRM12X1.5SS**
M14 × 1.5	**OR11X2VITX**	**OR11X2X**	19.8	1.3	**RRM14X1.5SS**
M16 × 1.5	**OR13.4X2.1VITX**	**OR13.4X2.1X**	21.8	1.5	**RRM16X1.5SS**
M18 × 1.5	**OR15.54X2.62VITX**	**OR15.54X2.62X**	23.8	2.0	**RRM18X1.5SS**
M22 × 1.5	**OR18.77X1.78VITX**	**OR18.77X1.78X**	27.8	1.3	**RRM22X1.5SS**
M27 × 2	**OR23.47X2.62VITX**	**OR23.47X2.62X**	32.8	2.0	**RRM27X2SS**
M33 × 2	**OR29.7X2.8VITX**	**OR29.7X2.8X**	39.8	2.0	**RRM33X2SS**
M42 × 2	**OR37.7X2.62VITX**	**OR37.7X2.62X**	49.8	2.0	**RRM42X2SS**
M48 × 2	**OR44.12X2.62VITX**	**OR44.12X2.62X**	55.0	2.0	**RRM48X2SS**

Types with parallel thread: WEE-R, TEE-R, LEE-R, VEE-R

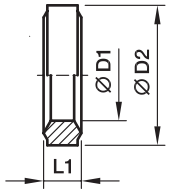
Thread T	O-ring FKM	O-ring NBR	D	L	Order code Retaining ring Stainless Steel
G 1/8 A	**OR8X1.88VITX**	**OR8X1.88X**	15.0	1.4	**8207SS1/8**
G 1/4 A	**OR10.77X2.62VITX**	**OR10.77X2.62X**	19.5	1.9	**8207SS1/4A**
G 3/8 A	**OR13.94X2.62VITX**	**OR13.94X2.62X**	23.5	1.9	**8207SS3/8A**
G 1/2 A	**OR17.96X2.62VITX**	**OR17.96X2.62X**	28.5	1.9	**8207SS1/2**
G 3/4 A	**OR23.47X2.62VITX**	**OR23.47X2.62X**	34.5	1.9	**8207SS3/4**
G 1 A	**OR29.74X3.53VITX**	**OR29.74X3.53X**	43.5	2.6	**8207SS1A**
G 1 1/4 A	**OR37.69X3.53VITX**	**OR37.69X3.53X**	52.5	2.6	**8207SS1 1/4**
G 1 1/2 A	**OR44.04X3.53VITX**	**OR44.04X3.53X**	60.0	2.6	**8207SS1 1/2**

OR O-Rings for banjo fittings WH/TH

For WH / TH	For WH / TH	O-ring NBR	O-ring FKM
06LM/LR		**OR9.3X1.5X**	**OR9.3X1.5VITX**
08LM/LR	06SM/SR	**OR12.5X1.5X**	**OR12.5X1.5VITX**
10LM/LR	08SM/SR	**OR12.5X1.5X**	**OR12.5X1.5VITX**
12LM/LR	10SM/SR	**OR16X1.5X**	**OR16X1.5VITX**
	12SR	**OR16X1.5X**	**OR16X1.5VITX**
15LM	12SM	**OR18X1.5X**	**OR18X1.5VITX**
15LR	14SM/SR	**OR20X1.5X**	**OR20X1.5VITX**
18LM/LR	16SM/SR	**OR20X1.5X**	**OR20X1.5VITX**
22LM/LR	20SM/SR	**OR25X2X**	**OR25X2VITX**
28LM/LR	25SM/SR	**OR33X2.5X**	**OR33X2.5VITX**
35LM/LR	30SM/SR	**OR41X2.5X**	**OR41X2.5VITX**
42LM/LR	38SM/SR	**OR46X3X**	**OR46X3VITX**

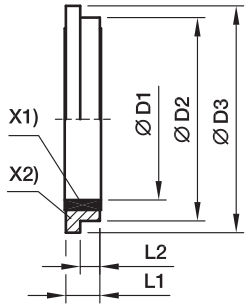
DKI Sealing ring for pressure gauge connectors

Female thread	D1	D2	L1	Weight g/1 piece	Order code Steel CF	Order code Stainless Steel 71
G 1/4 A	6	11.3	4.5	2.5	**DKI1/4CFX**	**DKI1/471X**
G 1/2 A	12	18.5	5.0	5.0	**DKI1/2CFX**	**DKI1/271X**



KDS Soft sealing ring for banjo fittings WH/TH from steel

for small and wide spot faces of ports

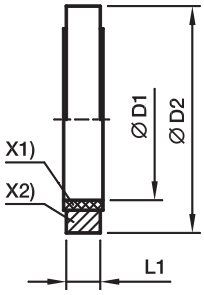


X1) NBR sealing
X2) Supporting-ring (Steel)

For WH and TH	For thread		D1	D2	D3	L1	L2	Weight g/1 piece	Order code Steel/NBR	Order code Steel/FKM
06LM/LRKDS	M10×1	G 1/8 A	10.3	14.9	16.0	2.5	1.1	2	**KDS10A3CX**	**KDS10VITA3CX**
06SM/08LMKDS	M12×1.5		12.3	17.0	18.0	3.0	1.6	2	**KDS12A3CX**	**KDS12VITA3CX**
06SRKDS	M14×1.5	G 1/4 A	14.3	18.9	20.0	3.0	1.6	2	**KDS14A3CX**	**KDS14VITA3CX**
08LR/SM/SRKDS	M14×1.5	G 1/4 A	14.3	18.9	20.0	3.0	1.6	2	**KDS14A3CX**	**KDS14VITA3CX**
10LM/LRKDS	M14×1.5	G 1/4 A	14.3	18.9	20.0	3.0	1.6	2	**KDS14A3CX**	**KDS14VITA3CX**
10SM/SRKDS	M16×1.5	G 3/8 A	17.0	21.9	24.0	3.0	2.1	3	**KDS16A3CX**	**KDS16VITA3CX**
12LM/LR/SRKDS	M16×1.5	G 3/8 A	17.0	21.9	24.0	3.0	2.1	3	**KDS16A3CX**	**KDS16VITA3CX**
12SM/15LMKDS	M18×1.5		18.3	23.9	23.9	3.0		4	**KDS18A3CX**	**KDS18VITA3CX**
15LRKDS	M22×1.5	G 1/2 A	22.3	26.9	30.0	4.5	2.6	7	**KDS22A3CX**	**KDS22VITA3CX**
16SM/SRKDS	M22×1.5	G 1/2 A	22.3	26.9	30.0	4.5	2.6	7	**KDS22A3CX**	**KDS22VITA3CX**
18LM/LRKDS	M22×1.5	G 1/2 A	22.3	26.9	30.0	4.5	2.6	7	**KDS22A3CX**	**KDS22VITA3CX**
22LMKDS	M26×1.5		26.3	31.9	35.0	3.5	2.6	7	**KDS26A3CX**	**KDS26VITA3CX**
20SM/SRKDS	M27×2	G 3/4 A	27.3	32.9	38.0	3.5	2.6	8	**KDS27A3CX**	**KDS27VITA3CX**
22LRKDS	M27×2	G 3/4 A	27.3	32.9	38.0	3.5	2.6	8	**KDS27A3CX**	**KDS27VITA3CX**
25SM/SRKDS	M33×2	G 1 A	33.6	39.9	42.0	3.5	2.6	10	**KDS33A3CX**	**KDS33VITA3CX**
28LM/LRKDS	M33×2	G 1 A	33.6	39.9	42.0	3.5	2.6	10	**KDS33A3CX**	**KDS33VITA3CX**
30SM/SRKDS	M42×2	G 1 1/4 A	42.4	49.9	49.9	3.5		12	**KDS42A3CX**	**KDS42VITA3CX**
35LM/LRKDS	M42×2	G 1 1/4 A	42.4	49.9	49.9	3.5		12	**KDS42A3CX**	**KDS42VITA3CX**
38SM/SRKDS	M48×2	G 1 1/2 A	48.4	55.9	60.0	3.5	2.6	16	**KDS48A3CX**	**KDS48VITA3CX**
42LM/LRKDS	M48×2	G 1 1/2 A	48.4	55.9	60.0	3.5	2.6	16	**KDS48A3CX**	**KDS48VITA3CX**

KD Soft sealing ring for banjo fittings WH/TH from stainless steel

for wide spot faces of ports

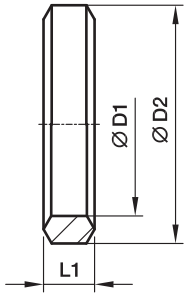


X1) PTFE sealing
X2) Supporting-ring (Stainless Steel)

For WH and TH	For thread	D1	D2	L1	Weight g/1 piece	Order code
06LRKD71	G 1/8 A	10.0	17.0	2.5	2	**KD1/871**
08LR/06SRKD71	G 1/4 A	13.5	22.0	3.0	4	**KD1/471**
10LR/08SRKD71	G 1/4 A	13.5	22.0	3.0	4	**KD1/471**
12LR/10SRKD71	G 3/8 S	17.1	27.0	3.0	6	**KD3/871**
12SRKD71	G 3/8 A	17.1	27.0	3.0	6	**KD3/871**
15LR/14SRKD71	G 1/2 A	21.4	32.0	4.5	12	**KD1/271**
18LR/16SRKD71	G 1/2 A	21.4	32.0	4.5	12	**KD1/271**
22LR/20SRKD71	G 3/4 A	26.8	41.0	3.5	17	**KD3/471**
28LR/25SRKD71	G 1 A	33.5	46.0	3.5	17	**KD171**
35LR/30SRKD71	G 1 1/4 A	42.4	57.0	3.5	26	**KD11/471**
42LR/38SRKD71	G 1 1/2 A	48.4	64.0	3.5	35	**KD11/271**
06LMKD71	M 10×1	10.3	17.0	2.5	2	**KD1071**
08LM/06SMKD71	M 12×1.5	12.3	22.0	3.0	5	**KD1271**
10LM/08SMKD71	M 14×1.5	14.3	22.5	3.0	5	**KD1471**
12LM/10SMKD71	M 16×1.5	16.4	27.0	3.0	9	**KD1671**
15LM/12SMKD71	M 18×1.5	18.4	29.0	3.0	9	**KD1871**
14SMKD71	M 20×1.5	20.4	32.0	3.0	9	**KD2071**
18LM/16SMKD71	M 22×1.5	22.4	32.0	4.5	12	**KD2271**
22LMKD71	M 26×1.5	26.4	41.0	3.5	18	**KD2671**
20SMKD71	M 27×2	27.4	41.0	3.5	18	**KD2771**
28LM/25SMKD71	M 33×2	33.5	46.0	3.5	17	**KD171**
35LM/30SMKD71	M 42×2	42.4	57.0	3.5	26	**KD11/471**
42LM/38SMKD71	M 48×2	48.4	64.0	3.5	35	**KD11/271**

DKAZ Sealing ring

for low pressure banjos DSVW

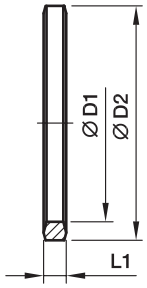


For DSVW		Metric thread parallel	D1	D2	L1	Weight g/1 piece	Order code Steel CF	Order code Steel A3C
06LM		M10×1	10.1	14	3.2	2	**DKAZ10CFX**	**DKAZ10A3CX**
08LM	06SM	M12×1.5	12.1	17	4.2	3	**DKAZ12CFX**	**DKAZ12A3CX**
10LM	08SM	M14×1.5	14.1	19	4.5	4	**DKAZ14CFX**	**DKAZ14A3CX**
12LM	10SM	M16×1.5	16.1	21	4.5	4	**DKAZ16CFX**	**DKAZ16A3CX**
15LM	12SM	M18×1.5	18.1	23	4.5	5	**DKAZ18CFX**	**DKAZ18A3CX**
	14SM	M20×1.5	20.1	25	4.5	5	**DKAZ20CFX**	**DKAZ20A3CX**
18LM	16SM	M22×1.5	22.1	27	4.5	6	**DKAZ22CFX**	**DKAZ22A3CX**
22LM		M26×1.5	26.1	31	4.5	7	**DKAZ26CFX**	**DKAZ26A3CX**
	20SM	M27×2	27.1	32	5.0	8	**DKAZ27CFX**	**DKAZ27A3CX**
28LM	25SM	M33×2	33.1	39	6.0	15	**DKAZ33CFX**	**DKAZ33A3CX**
35LM	30SM	M42×2	42.1	49	6.5	22	**DKAZ11/4CFX**	**DKAZ11/4A3CX**
42LM	38SM	M48×2	48.1	55	6.5	25	**DKAZ11/2CFX**	**DKAZ11/2A3CX**

For DSVW		BSPP thread parallel	D1	D2	L1	Weight g/1 piece	Order code Steel CF	Order code Steel A3C
06LR		G1/8A	9.8	14	3.2	2	**DKAZ1/8CFX**	**DKAZ1/8A3CX**
08LR/10LR	06SR/08SR	G1/4A	13.3	18	4.5	4	**DKAZ1/4CFX**	**DKAZ1/4A3CX**
12LR	10SR/12SR	G3/8A	16.8	22	4.5	5	**DKAZ3/8CFX**	**DKAZ3/8A3CX**
15LR/18LR	14SR/16SR	G1/2A	21.1	26	5.0	6	**DKAZ1/2CFX**	**DKAZ1/2A3CX**
22LR	20SR	G3/4A	26.6	32	5.0	11	**DKAZ3/4CFX**	**DKAZ3/4A3CX**
28LR	25SR	G1A	33.4	39	6.0	14	**DKAZ1CFX**	**DKAZ1A3CX**
35LR	30SR	G11/4A	42.1	49	6.5	22	**DKAZ11/4CFX**	**DKAZ11/4A3CX**
42LR	38SR	G11/2A	48.1	55	6.5	25	**DKAZ11/2CFX**	**DKAZ11/2A3CX**

DKA Sealing ring

for banjo fittings WH/TH and SWVE



For: WH/TH		SWVE		BSPP thread	D1	D2	L1	Weight g/1 piece	Order code Steel CF	Steel A3C	Stainless Steel 71
06LR		04/06/08-LLR	06LR	G 1/8 A	9.8	14	2.5	1	**DKA1/8CFX**	**DKA1/8A3CX**	**DKA1/871X**
08LR	06SR	08LR	06SR	G 1/4 A	13.3	18	3.0	3	**DKA1/4CFX**	**DKA1/4A3CX**	**DKA1/471X**
10LR	08SR	10LR	08SR	G 1/4 A	13.3	18	3.0	3	**DKA1/4CFX**	**DKA1/4A3CX**	**DKA1/471X**
12LR	10SR	12LR	10SR	G 3/8 A	16.8	22	3.0	3	**DKA3/8CFX**	**DKA3/8A3CX**	**DKA3/871X**
	12SR		12SR	G 3/8 A	16.8	22	3.0	3	**DKA3/8CFX**	**DKA3/8A3CX**	**DKA3/871X**
		15/18LR	14/16SR	G 1/2 A	21.1	26	3.0	4	**DKA1/2CFX**	**DKA1/2A3CX**	
15LR	14SR			G 1/2 A	21.1	26	4.5	6	**DKA1/2X4.5CFX**	**DKA1/2X4.5A3CX**	**DKA1/2X4.571X**
18LR	16SR			G 1/2 A	21.1	26	4.5	6	**DKA1/2X4.5CFX**	**DKA1/2X4.5A3CX**	**DKA1/2X4.571X**
22LR	20SR	22LR	20SR	G 3/4 A	26.6	32	3.5	6	**DKA3/4CFX**	**DKA3/4A3CX**	**DKA3/471X**
28LR	25SR			G 1 A	33.4	39	3.5	8	**DKA1CFX**	**DKA1A3CX**	**DKA171X**
35LR	30SR			G 1 1/4 A	42.1	49	3.5	12	**DKA11/4CFX**	**DKA11/4A3CX**	**DKA11/471X**
42LR	38SR			G 1 1/2 A	48.1	55	3.5	15	**DKA11/2CFX**	**DKA11/2A3CX**	**DKA11/271X**

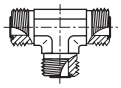
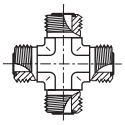
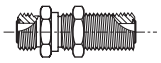
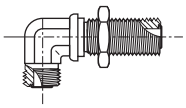
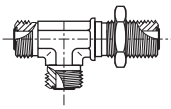
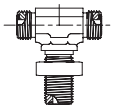
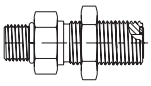
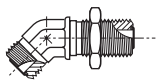
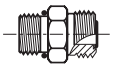
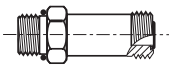
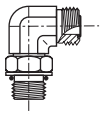
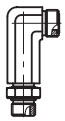
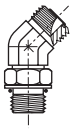
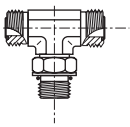
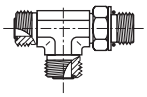
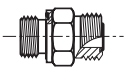
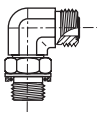
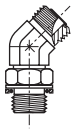
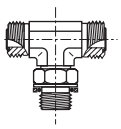
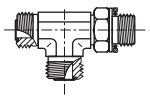
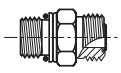
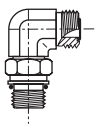
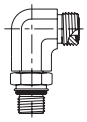
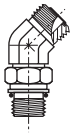
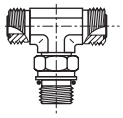
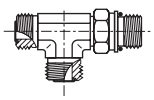
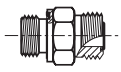
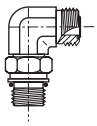
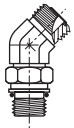
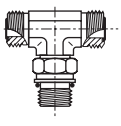
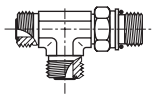
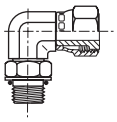
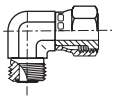
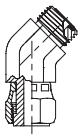
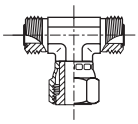
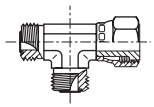
For: WH/TH		SWVE		Male stud metric thread	D1	D2	L1	Weight g/1 piece	Order code Steel CF	Steel A3C	Stainless Steel 71
		04LLM		M 8×1	8.1	12	2.5	1	**DKA08CFX**	**DKA08A3CX**	
06LM		06/08LLM	06LM	M 10 ×1	10.1	14	3.0	1	**DKA10CFX**	**DKA10A3CX**	**DKA1071X**
08LM	06SM	08LM	06SM	M 12×1.5	12.1	17	3.0	2	**DKA12CFX**	**DKA12A3CX**	**DKA1271X**
10LM	08SM	10LM	08SM	M 14×1.5	14.1	19	3.0	3	**DKA14CFX**	**DKA14A3CX**	**DKA1471X**
12LM	10SM	12LM	10SM	M 16×1.5	16.1	21	3.0	3	**DKA16CFX**	**DKA16A3CX**	**DKA1671X**
15LM	12SM	15LM	12SM	M 18×1.5	18.1	23	3.0	3	**DKA18CFX**	**DKA18A3CX**	**DKA1871X**
	14SM		14-SM	M 20×1.5	20.1	25	3.0	4	**DKA20CFX**	**DKA20A3CX**	**DKA2071X**
		18LM	16SM	M 22×1.5	22.1	27	3.0	4	**DKA22CFX**	**DKA22A3CX**	
18LM	16SM			M 22×1.5	22.1	27	4.5	6	**DKA22X4.5CFX**	**DKA22X4.5A3CX**	**DKA22X4.571X**
			22LM	M 26×1.5	26.1	31	3.0	6	**DKA26CFX**	**DKA26A3CX**	
22LM				M 26×1.5	26.1	31	3.5	6	**DKA26X3.5CFX**	**DKA26X3.5A3CX**	**DKA26X3.571X**
		20SM	20SM	M 27×2	27.1	32	3.5	6	**DKA27CFX**	**DKA27A3CX**	**DKA2771X**
28LM	25SM			M 33×2	33.1	39	3.5	8	**DKA33CFX**	**DKA33A3CX**	**DKA3371X**
35LM	30SM			M 42×2	42.1	49	3.5	12	**DKA11/4CFX**	**DKA11/4A3CX**	**DKA11/471X**
42LM	38SM			M 48×2	48.1	55	3.5	15	**DKA11/2CFX**	**DKA11/2A3CX**	**DKA11/271X**

O-Lok®

O-Ring face seal tube fittings

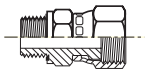


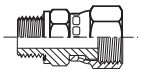
Visual index

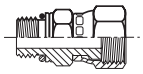
Tube-Tube unions	 **HML0** p. J9	 **EML0** p. 10	 **JML0** p. J11	 **KL0** p. J12			
Bulkhead unions	 **WML0** p. J13	 **WEML0** p. J14	 **WJJL0** p. J17	 **WJL0** p. J16	 **WF50L0** p. J29	 **WNL0** p. J15	 **WLNML** p. J72
Tube to UNF thread	 **F50ML0** p. J27	 **FF50ML0** p. J28	 **C50ML0** p. J39	 **CC50L0** p. J40	 **V50ML0** p. J45	 **S50ML0** p. J49	 **R50ML0** p. J53
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Tube to metric ISO 6149-2 thread	 **F87OML0** p. J26	 **C87OML0** p. J37	 **CC87OML0** p. J38	 **V87OML0** p. J44	 **S87OML0** p. J48	 **R87OML0** p. J52	
Tube to metric DIN 3852 thread	 **F82EDML0** p. J31	 **C80ML0** p. J42	 **V80ML0** p. J47	 **S80ML0** p. J51	 **R80ML0** p. J55		
Swivel fittings	 **AOEL6** p. J18	 **C6ML0** p. J19	 **V6L0** p. J20	 **S6ML0** p. J21	 **R6ML0** p. J22		

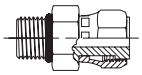
Visual index

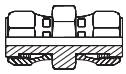
Swivel nut to straight thread


F642EDMLO
p. J35

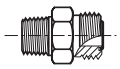

F682EDMLO
p. J36

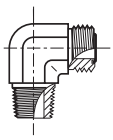

F687OML
p. J33


F65OL
p. J34


HL6
p. J25

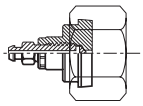
Tube to NPTF thread

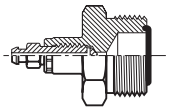

FLO
p. J32

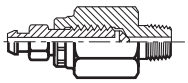

CLO
p. J43

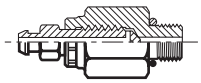
Taper threads should not be used for new projects or designs.
Parker Hannifin recommends elastomerically sealed components.

Bleed adapters


FNLBA
p. J69

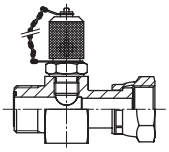

PNLOBA
p. J70


HPBA
p. J71

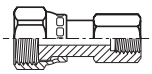

P5ONBA
p. J71

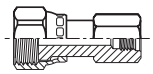
Test point and gauge adapters


TTP4ML
p. J60


R6P4MLO
p. J61


G4MLOSMO
p. J57


TT4ML
p. J58


TT8ML
p. J59


G87MLO
p. J56

Sleeves for metric and inch tube

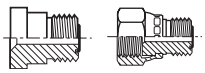

TPL
p. J6

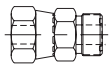

TL
p. J7


TL-Reducer sleeve
p. J8

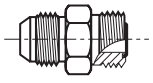
Nuts & Reducers

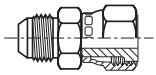

BML/BL
p. J5

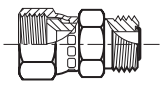

TRMLO
p. J23

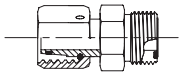

LOHL6
p. J24

Conversion adapters

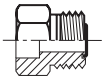

XHMLO
p. J65

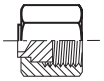

XHML6
p. J66


LOHMX6
p. J67


LOHU86
p. J68

Accessories

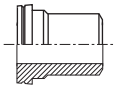

LOHB3
p. J62


FNML
p. J63


PNMLO
p. J64


O-ring
p. J73–74


SBR Braze ring
p. J75


TW3L
p. J72

J

How to order O-Lok® fittings

	1	2	3	4	5	6	7	8
Example Order code	**6-8**	**C**	**5**	**O**	**M**	**L**	**O**	**S**

1 Order codes for tube and port thread ends

Dash Size	Tube Size (Inch)	Tube Size (mm)	Port Thread Size (Inch) BSPP/BSPT/NPT	Port Thread Size UN / UNF
4	1/4	6	1/4	7/16-20
5				1/2-20
6	3/8	8,10	3/8	9/16-18
8	1/2	12	1/2	3/4-16
10	5/8	14,15,16	5/8	7/8-14
12	3/4	18,20	3/4	1 1/6-12
14				1 3/6-12
16	1	25	1	1 5/6-12
20	1 1/4	28,30,32	1 1/4	1 5/8-12
24	1 1/2	35,38	1 1/2	1 7/8-12
32	2	50	2	2 1/2-12

Metric port threads are shown as per example 4M12C87OMLOS

2 Codes for fitting styles/shapes

Code	Description
AE6	Straight Thread Swivel
B	Nut
C	Male Stud elbow
CC	Extended Male Stud elbow
C6	Swivel Nut Elbow
E	Union elbow
F	Male Stud connector
FF	Extended Male Stud connector
F6	Male Stud Swivel
FN	Cap
FNLBAS	Bleed Adapter Cap
G	Female Connector
H	Straight union
H6	Swivel/Swivel Adapter
J	Union Tee
K	Union Cross
LOHB3	Braze Adapter
LOHX6	Triple-Lok® Swivel/O-Lok® Adapter
M	Female Run Tee
O	Female Branch Tee
PN	Plug
PNLOBA	Bleed Adapter Plug
R	Male Stud Run Tee
R6	Swivel Run Tee
S	Male Stud Branch Tee
S6	Swivel Branch Tee
SBR	Braze Ring
TPL	Parflange® sleeve
TL	Brazed sleeve
TR	Tube End Reducer
TT	Test Point Adapter
TW3	Weld Nipple
V	45° male stud elbow
V6	Swivel Nut 45° Elbow
W	Bulkhead Union
WE	Bulkhead Union Elbow
WJJ	Bulkhead Run Tee
WJT	Bulkhead Branch Tee
WLNML	Bulkhead Locknut
WN	Bulkhead 45° union elbow
XHL6	Triple Lok®/Swivel O-Lok® adaptor
XHLO	Triple Lok®/O-Lok® male adaptor

3 Threads and sealing methods

Code	Description
None	NPT/NPTF Thread
3	BSPT Thread
4	BSPP Thread O-Ring & Retainer Ring
42	BSPP Thread EOLASTIC seal 'ED'
5	UN/UNF Thread (O-Ring Seal)
8	Metric Thread O-Ring & Retainer Ring
82	Metric Thread EOLASTIC seal 'ED'
87	Metric ISO 6149 Thread (O-Ring Seal)
63	Swivel Connector BSPT end
64	Swivel Connector BSPP end (O-Ring & Retainer Ring)
642	Swivel Connector BSPP end (EOLASTIC Seal 'ED')
65	Swivel Connector UN/UNF end (O-Ring seal)
68	Swivel Connector Metric end (O-Ring & Retainer Ring)
682	Swivel Connector Metric end (EOLASTIC Seal 'ED')
687	Swivel Connector Metric ISO 6149 end

4 Stud connector seal

Code	Description
O	O-Ring Seal (Assembled on fitting)
ED	Captive EOLASTIC Seal (Assembled on fitting)
No Code	No Seal (O-Ring not assembled on fitting)

5 Hexagon/ Across flats style

Code	Description
M	Metric Hexagon Dimension
No Code	Inch Hexagon Dimension

6 Fitting type

Code	Description
L	Parker O-Lok®

7 Tube connection seal ORFS

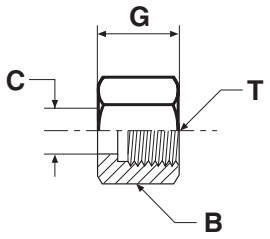
Code	Description
O	O-Ring Seal (Assembled on Fitting)
No Code	No Seal/O-Ring

8 Fitting material

Code	Description
S	Steel
SS	Stainless Steel
B	Brass

BML Nut

O-Lok® ORFS tube nut
SAE 52M0110 ISO 8434-3 NA



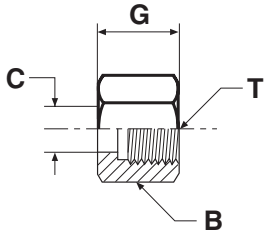
Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T	B mm	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	1/4	9/16-18	17	11	15	14	**4BMLS**	**4BMLSS**
8, 10	5/16, 3/8	11/16-16	22	14	17	17	**6BMLS**	**6BMLSS**
12	1/2	13/16-16	24	17	20	29	**8BMLS**	**8BMLSS**
14, 15, 16	5/8	1-14	30	21	24	46	**10BMLS**	**10BMLSS**
18, 20	3/4	1 3/16-12	36	24	27	69	**12BMLS**	**12BMLSS**
22, 25	1	1 7/16-12	41	29	28	109	**16BMLS**	**16BMLSS**
28, 30, 32	1 1/4	1 11/16-12	50	36	28	126	**20BMLS**	**20BMLSS**
35, 38	1 1/2	2-12	60	44	28	195	**24BMLS**	**24BMLSS**
50	2	2 1/2-12	75	56	33	800	**32BMLS**	**32BMLSS**

Part numbers shown are part of our current manufacturing programme.

J

BL Nut

O-Lok® ORFS tube nut
SAE 520110

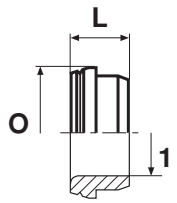


Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T	B in.	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	1/4	9/16-18	11/16	10	15	16	**4 BL-S**	**4 BL-SS**
8, 10	5/16, 3/8	11/16-16	13/16	14	17	24	**6 BL-S**	**6 BL-SS**
12	1/2	13/16-16	15/16	17	21	37	**8 BL-S**	**8 BL-SS**
14, 15, 16	5/8	1-14	1 1/8	21	24	52	**10 BL-S**	**10 BL-SS**
18, 20	3/4	1 3/16-12	1 3/8	24	26	89	**12 BL-S**	**12 BL-SS**
22, 25	1	1 7/16-12	1 5/8	29	28	119	**16 BL-S**	**16 BL-SS**
28, 30, 32	1 1/4	1 11/16-12	1 7/8	36	28	132	**20 BL-S**	**20 BL-SS**
35, 38	1 1/2	2-12	2 1/4	44	28	220	**24 BL-S**	**24 BL-SS**
50	2	2 1/2-12	2 7/8	56	33	700	**32 BL-S**	**32 BL-SS**

Part numbers shown are part of our current manufacturing programme.

TPL Sleeve metric tubing

O-Lok® ORFS Parflange® tube sleeve

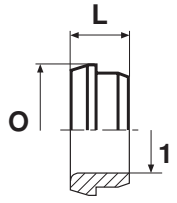


Tube O.D. 1 mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	8	13	4	**TPLS6**	**TPLSS6**
8	9	16	4	**TPLS8**	**TPLSS8**
10	9	16	5	**TPLS10**	**TPLSS10**
10	11	19	6	**TPLS12-10**	**TPLSS12-10**
12	11	19	6	**TPLS12**	**TPLSS12**
14	11	23	10	**TPLS14**	**TPLSS14**
15	11	23	9	**TPLS15**	**TPLSS15**
16	11	23	8	**TPLS16**	**TPLSS16**
18	12	28	14	**TPLS18**	**TPLSS18**
20	12	28	15	**TPLS20**	**TPLSS20**
22	14	34	20	**TPLS22**	**TPLSS22**
25	14	34	23	**TPLS25**	**TPLSS25**
28	13	41	24	**TPLS28**	**TPLSS28**
30	13	41	25	**TPLS30**	**TPLSS30**
32	13	41	26	**TPLS32**	**TPLSS32**
35	13	48	36	**TPLS35**	**TPLSS35**
38	13	48	44	**TPLS38**	**TPLSS38**
50	14	61	180	**TPLS50**	**TPLSS50**

Part numbers shown are part of our current manufacturing programme.

TPL Sleeve inch tubing

O-Lok® ORFS Parflange® tube sleeve

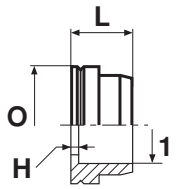


Tube O.D. 1 in.	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
1/4	8	13	4	**4 TPL-S**	**4 TPL-SS**
3/8	9	16	5	**6 TPL-S**	**6 TPL-SS**
1/2	11	19	6	**8 TPL-S**	**8 TPL-SS**
5/8	11	23	11	**10 TPL-S**	**10 TPL-SS**
3/4	12	28	19	**12 TPL-S**	**12 TPL-SS**
7/8	14	34	19	**14 TPL-S**	**14 TPL-SS**
1	14	34	22	**16 TPL-S**	**16 TPL-SS**
1 1/4	13	41	28	**20 TPL-S**	**20 TPL-SS**
1 1/2	13	48	44	**24 TPL-S**	**24 TPL-SS**
2	14	61	180	**32 TPL-S**	**32 TPL-SS**

Part numbers shown are part of our current manufacturing programme.

TL* Braze sleeve metric tubing

O-Lok® ORFS silver braze tube sleeve
SAE 52M0115 ISO 8434-3 BRSL
(*Parts delivered oil dipped finish only – steel)

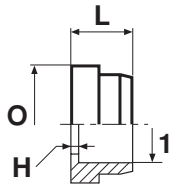


ORFS dash size	Tube O.D. 1 mm	H mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
4	6	1	10	13	5	**TLS6**	**TLSS6**
4	8	1	10	13	5	**TLS6-8**	**TLSS6-8**
6	8	2	10	16	7	**TLS10-8**	**TLSS10-8**
6	10	1	10	16	7	**TLS10**	**TLSS10**
8	12	1	10	19	10	**TLS12**	**TLSS12**
10	15	2	11	23	16	**TLS16-15**	**TLSS16-15**
10	16	2	11	23	16	**TLS16**	**TLSS16**
12	18	2	14	28	26	**TLS20-18**	**TLSS20-18**
12	20	2	14	28	21	**TLS20**	**TLSS20**
16	22	2	16	34	33	**TLS25-22**	**TLSS25-22**
16	25	2	16	34	30	**TLS25**	**TLSS25**
20	28	2	16	41	41	**TLS32-28**	**TLSS32-28**
20	30	2	16	41	42	**TLS32-30**	**TLSS32-30**
20	32	2	16	41	40	**TLS32**	**TLSS32**
24	35	2	16	49	48	**TLS38-35**	**TLSS38-35**
24	38	2	16	49	63	**TLS38**	**TLSS38**
32	50	2	16	60	210	**TLS50**	**TLSS50**

Part numbers shown are part of our current manufacturing programme.

TL* Braze sleeve inch tubing

O-Lok® ORFS silver braze tube sleeve
SAE 520115
(*Parts delivered oil dipped finish only – steel)

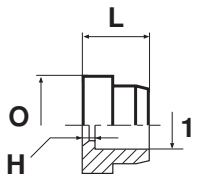


Tube O.D. 1 in.	H mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
1/4	1	10	13	5	**4 TL-S**	**4 TL-SS**
3/8	1	10	16	6	**6 TL-S**	**6 TL-SS**
1/2	1	10	19	10	**8 TL-S**	**8 TL-SS**
5/8	2	11	23	18	**10 TL-S**	**10 TL-SS**
3/4	2	14	28	26	**12 TL-S**	**12 TL-SS**
1	2	16	34	33	**16 TL-S**	**16 TL-SS**
1 1/4	2	16	41	42	**20 TL-S**	**20 TL-SS**
1 1/2	2	16	49	63	**24 TL-S**	**24 TL-SS**
2	2	17	61	210	**32 TL-S**	**32 TL-SS**

Part numbers shown are part of our current manufacturing programme.

TL* Reducing braze sleeve inch tubing

O-Lok® ORFS silver braze tube sleeve
SAE 520115
(*Parts delivered oil dipped finish only – steel)

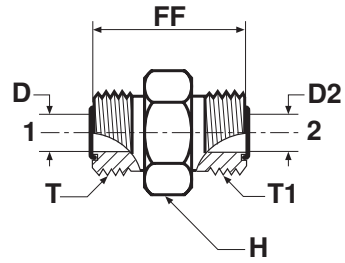


ORFS dash size	Tube O.D. 1 in.	H mm	L mm	O mm	Weight (Steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	1/4	2	10	16	10	**6-4 TL-S**	**6-4 TL-SS**
8	1/4	4	12	19	17	**8-4 TL-S**	**8-4 TL-SS**
8	3/8	4	12	19	17	**8-6 TL-S**	**8-6 TL-SS**
10	1/4	5	14	23	37	**10-4 TL-S**	**10-4 TL-SS**
10	3/8	5	14	23	32	**10-6 TL-S**	**10-6 TL-SS**
10	1/2	5	14	23	28	**10-8 TL-S**	**10-8 TL-SS**
12	1/4	6	15	28	54	**12-4 TL-S**	**12-4 TL-SS**
12	3/8	6	15	28	49	**12-6 TL-S**	**12-6 TL-SS**
12	1/2	6	15	28	44	**12-8 TL-S**	**12-8 TL-SS**
12	5/8	6	15	28	39	**12-10 TL-S**	**12-10 TL-SS**
12	7/8	2	17	28	25	**12-14 TL-S**	**12-14 TL-SS**
16	1/2	7	16	34	76	**16-8 TL-S**	**16-8 TL-SS**
16	5/8	7	16	34	71	**16-10 TL-S**	**16-10 TL-SS**
16	3/4	5	17	34	66	**16-12 TL-S**	**16-12 TL-SS**
16	7/8	3	17	34	50	**16-14 TL-S**	**16-14 TL-SS**
20	3/4	7	20	41	102	**20-12 TL-S**	**20-12 TL-SS**
20	1	7	21	41	79	**20-16 TL-S**	**20-16 TL-SS**
24	1	7	21	49	141	**24-16 TL-S**	**24-16 TL-SS**
24	1 1/4	7	21	49	107	**24-20 TL-S**	**24-20 TL-SS**

Part numbers shown are part of our current manufacturing programme.

HMLO Union

O-Lok® ORFS tube ends
SAE 520101



Tube 1 O.D. mm	Tube 1 O.D. in.	Tube 2 O.D. mm	Tube 2 O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2A T1	D mm	D2 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	6	1/4	9/16-18	9/16-18	5	5	27	16	26	**4 HLO-S**	**4HMLOSS**	630	630
8, 10	5/16, 3/8	8, 10	5/16, 3/8	11/16-16	11/16-16	7	7	31	19	49	**6HMLOS**	**6HMLOSS**	630	630
10	3/8	6	1/4	11/16-16	9/16-18	7	5	30	19	45	**6-4HMLOS**	**6-4HMLOSS**	630	630
12	1/2	12	1/2	13/16-16	13/16-16	10	10	35	22	77	**8HMLOS**	**8HMLOSS**	630	630
12	1/2	10	3/8	13/16-16	11/16-16	10	7	34	22	67	**8-6 HLO-S**	**8-6HMLOSS**	630	630
14, 15, 16	5/8	14, 15, 16	5/8	1-14	1-14	13	13	43	27	129	**10HMLOS**	**10HMLOSS**	420	420
16	5/8	12	1/2	1-14	13/16-16	13	10	40	27	112	**10-8 HLO-S**	**10-8HMLOSS**	420	420
18, 20	3/4	18, 20	3/4	1 3/16-12	1 3/16-12	16	16	47	32	204	**12HMLOS**	**12HMLOSS**	420	420
20	3/4	16	5/8	1 3/16-12	1-14	16	13	46	32	186	**12-10HMLOS**	**12-10HMLOSS**	420	420
22, 25	1	22, 25	1	1 7/16-12	1 7/16-12	21	21	49	38	291	**16HMLOS**	**16HMLOSS**	420	420
25	1	18, 20	3/4	1 7/16-12	1 3/16-12	21	16	49	41	285	**16-12HMLOS**	**16-12HMLOSS**	420	420
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	26	26	51	46	299	**20 HLO-S**	**20HMLOSS**	420	280
28, 30, 32	1 1/4	22, 25	1	1 11/16-12	1 7/16-12	26	21	51	46	280	**20-16HMLOS**	**20-16HMLOSS**	420	280
35, 38	1 1/2	35, 38	1 1/2	2-12	2-12	32	32	53	55	552	**24 HLO-S**	**24HMLOSS**	350	280
35, 38	1 1/2	28, 30, 32	1 1/4	2-12	1 11/16-12	32	26	53	55	530	**24-20HMLOS**	**24-20HMLOSS**	350	280
50	2	50	2	2 1/2-12	2 1/2-12	45	45	73	70	990	**32 HLO-S**	**32HMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

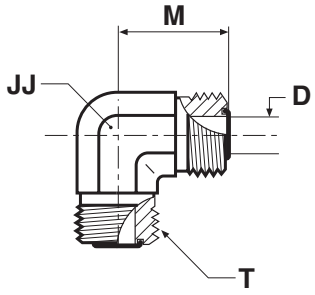
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

EMLO Union elbow

O-Lok® ORFS tube ends
SAE 520201



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	5	14	22	47	**4 ELO-S**	**4EMLOSS**	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	109	**6 ELO-S**	**6EMLOSS**	630	630
12	1/2	13/16-16	10	19	28	123	**8 ELO-S**	**8EMLOSS**	630	630
14, 15, 16	5/8	1-14	13	27	33	183	**10 ELO-S**	**10EMLOSS**	420	420
18, 20	3/4	1 3/16-12	16	30	37	255	**12 ELO-S**	**12EMLOSS**	420	420
22, 25	1	1 7/16-12	21	37	42	457	**16 ELO-S**	**16EMLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	530	**20 ELO-S**	**20EMLOSS**	350	280
35, 38	1 1/2	2-12	32	48	49	687	**24 ELO-S**	**24EMLOSS**	280	280
50	2	2 1/2-12	45	64	70	1500	**32 ELO-S**		200	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

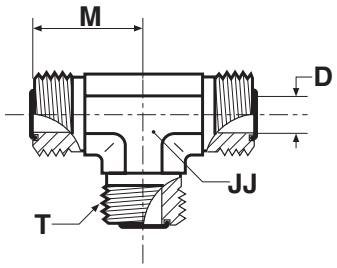
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

JMLO Union tee

O-Lok® ORFS tube ends
SAE 520401



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	5	14	22	66	**4JMLOS**	**4JMLOSS**	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	114	**6 JLO-S**	**6JMLOSS**	630	630
12	1/2	13/16-16	10	19	28	199	**8JMLOS**	**8JMLOSS**	630	630
14, 15, 16	5/8	1-14	13	27	33	239	**10 JLO-S**	**10JMLOSS**	420	420
18, 20	3/4	1 3/16-12	16	30	37	321	**12 JLO-S**	**12JMLOSS**	420	420
22, 25	1	1 7/16-12	21	36	42	488	**16 JLO-S**	**16JMLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	768	**20 JLO-S**	**20JMLOSS**	350	280
35, 38	1 1/2	2-12	32	48	49	866	**24 JLO-S**	**24JMLOSS**	280	280
50	2	2 1/2-12	45	64	70	2250	**32 JLO-S**	**32JMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

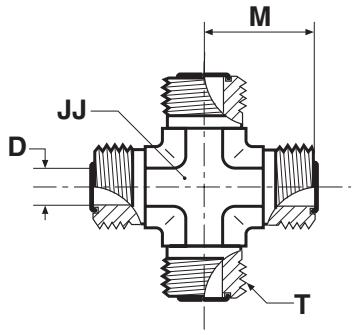
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

KLO Union cross

O-Lok® ORFS tube ends
SAE 520501



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	5	14	22	72	**4 KLO-S**	**4 KLO-SS**	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	140	**6 KLO-S**	**6 KLO-SS**	630	630
12	1/2	13/16-16	10	19	28	225	**8 KLO-S**	**8 KLO-SS**	630	630
14, 15, 16	5/8	1-14	13	27	33	288	**10 KLO-S**	**10 KLO-SS**	420	420
18, 20	3/4	1 3/16-12	16	30	37	415	**12 KLO-S**	**12 KLO-SS**	420	420
22, 25	1	1 7/16-12	21	37	42	967	**16 KLO-S**	**16 KLO-SS**	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	1247	**20 KLO-S**	**20 KLO-SS**	350	280
35, 38	1 1/2	2-12	32	48	49	1592	**24 KLO-S**	**24 KLO-SS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

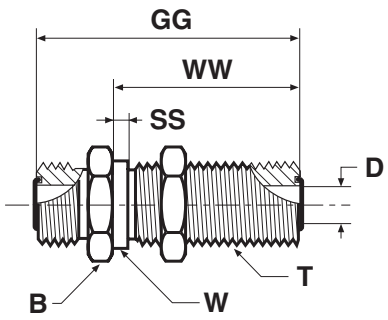
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

WMLO Bulkhead union

O-Lok® ORFS tube ends
SAE 520601 ISO 8434-3 BHS



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	B mm	D mm	GG mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	22	5	49	2	14	32	65	**4 WLO-WLNL-S**	**4WMLOWLNMLSS**	630	630
8, 10	5/16, 3/8	11/16-16	27	7	53	2	17	34	104	**6WMLOWLNMLS**	**6WMLOWLNMLSS**	630	630
12	1/2	13/16-16	30	10	58	3	20	37	141	**8WMLOWLNMLS**	**8WMLOWLNMLSS**	630	630
14, 15, 16	5/8	1-14	32	13	67	3	25	41	285	**10WMLOWLNMLS**	**10WMLOWLNMLSS**	420	420
18, 20	3/4	1 3/16-12	38	16	69	3	30	42	322	**12WMLOWLNMLS**	**12WMLOWLNMLSS**	420	420
22, 25	1	1 7/16-12	46	21	70	3	36	42	436	**16WMLOWLNMLS**	**16WMLOWLNMLSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	51	26	70	2	43	42	510	**20 WLO-WLNL-S**	**20WMLOWLNMLSS**	420	280
35, 38	1 1/2	2-12	60	32	70	2	51	42	674	**24 WLO-WLNL-S**	**24WMLOWLNMLSS**	350	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNML” (e.g. 16WMLO)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

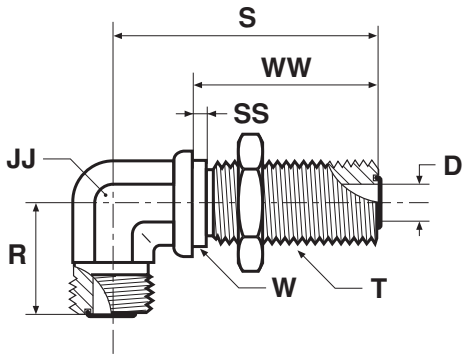
J

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

WEMLO Bulkhead union elbow

O-Lok® ORFS tube end/O-Lok® ORFS tube end
SAE520701/SAE 520701 ISO 8434-3 BHE



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	5	14	23	46	2	14	32	78	**4 WELO-WLNL-S**	**4 WELO-WLNL-SS**	630	630
8, 10	5/16, 3/8	11/16-16	7	19	26	52	2	17	34	146	**6WEMLOWLNMLS**	**6 WELO-WLNL-SS**	630	630
12	1/2	13/16-16	10	19	29	56	3	20	37	252	**8WEMLOWLNMLS**	**8 WELO-WLNL-SS**	630	630
14, 15, 16	5/8	1-14	13	27	35	63	3	25	41	287	**10WEMLOWLNMLS**	**10 WELO-WLNL-SS**	420	420
18, 20	3/4	1 3/16-12	16	30	39	67	3	30	42	445	**12 WELO-WLNL-S**	**12 WELO-WLNL-SS**	420	420
22, 25	1	1 7/16-12	21	37	42	71	2	37	42	639	**16 WELO-WLNL-S**	**16 WELO-WLNL-SS**	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	75	2	43	42	718	**20 WELO-WLNL-S**	**20 WELO-WLNL-SS**	350	280
35, 38	1 1/2	2-12	32	48	50	80	2	51	42	945	**24 WELO-WLNL-S**	**24 WELO-WLNL-SS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNML” (e.g. 16WEMLO)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

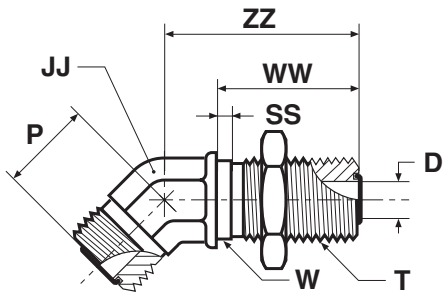
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

WNLO Bulkhead union 45° elbow

O-Lok® ORFS tube ends
SAE 520801 ISO 8434-3 BHE 45



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	P mm	SS mm	W mm	WW mm	ZZ mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	5	14	16	2	14	32	44	65	**4 WNLO-WLNL-S**	630
8, 10	5/16, 3/8	11/16-16	7	19	19	2	18	34	49	123	**6 WNLO-WLNL-S**	630
12	1/2	13/16-16	10	19	20	2	21	37	51	163	**8 WNLO-WLNL-S**	630
14, 15, 16	5/8	1-14	13	27	23	2	25	41	57	252	**10 WNLO-WLNL-S**	420
18, 20	3/4	1 3/16-12	16	30	26	2	30	42	61	386	**12 WNLO-WLNL-S**	420
22, 25	1	1 7/16-12	21	37	30	2	37	42	65	465	**16 WNLO-WLNL-S**	420
28, 30, 32	1 1/4	1 11/16-12	26	41	32	2	43	42	67	578	**20 WNLO-WLNL-S**	350
35, 38	1 1/2	2-12	32	48	37	2	51	42	67	770	**24 WNLO-WLNL-S**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNL” (e.g. 16 WNLO)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

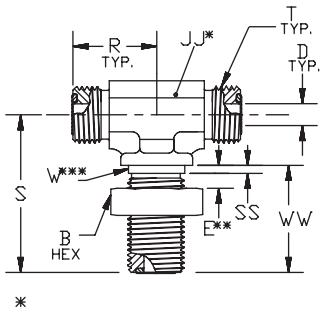
J

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

WJLO Bulkhead branch tee

O-Lok® ORFS tube ends



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A mm	B mm	D mm	E mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	18	5	14	14	23	47	2	14	32	100	**4 WJLO-WLNL-S**	630
8, 10	5/16, 3/8	11/16-16	21	7	14	19	26	52	2	18	34	178	**6 WJLO-WLNL-S**	630
12	1/2	13/16-16	24	10	14	19	29	55	2	21	37	270	**8 WJLO-WLNL-S**	630
14, 15, 16	5/8	1-14	29	13	14	27	35	63	2	25	41	370	**10 WJLO-WLNL-S**	420
18, 20	3/4	1 3/16-12	35	16	14	30	39	67	2	30	42	520	**12 WJLO-WLNL-S**	420
22, 25	1	1 7/16-12	42	21	14	36	42	71	2	37	42	680	**16 WJLO-WLNL-S**	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNL” (e.g. 16 WJLO)

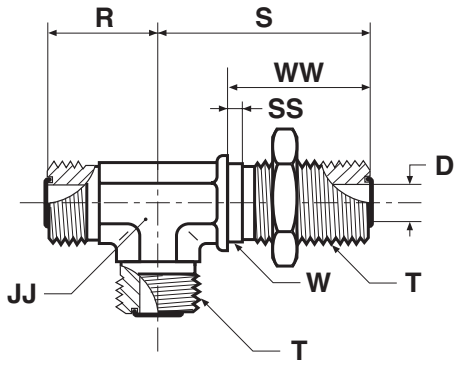
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

WJJLO Bulkhead run tee

O-Lok® ORFS tube ends
SAE 520958 ISO 8434-3 BHRT



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	5	14	23	46	2	14	32	99	**4 WJJLO-WLNL-S**	630
8, 10	5/16, 3/8	11/16-16	7	19	26	52	2	18	34	178	**6 WJJLO-WLNL-S**	630
12	1/2	13/16-16	10	19	29	55	2	21	36	270	**8 WJJLO-WLNL-S**	630
14, 15, 16	5/8	1-14	13	27	35	63	2	25	41	368	**10 WJJLO-WLNL-S**	420
18, 20	3/4	1 3/16-12	16	30	39	67	2	30	42	516	**12 WJJLO-WLNL-S**	420
22, 25	1	1 7/16-12	21	37	42	71	2	37	42	678	**16 WJJLO-WLNL-S**	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	75	2	43	42	980	**20 WJJLO-WLNL-S**	350
35, 38	1 1/2	2-12	32	48	50	80	2	51	42	1900	**24 WJJLO-WLNL-S**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNL” (e.g. 16 WJJLO)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

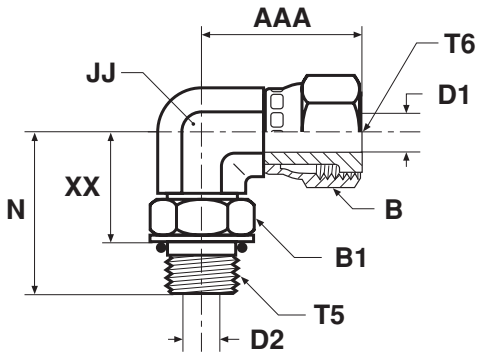
J

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

AOEL6 Swivel nut stud elbow

O-Lok® ORFS Female swivel end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 520281



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2B T6	AAA mm	B mm	B1 mm	D1 mm	D2 mm	JJ mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	27	18	16	4	4	14	33	22	47	**4 AOEL6-S**	**4 AOEL6-SS**	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	30	21	19	7	7	19	37	25	97	**6 AOEL6-S**	**6 AOEL6-SS**	420	420
12	1/2	3/4-16	13/16-16	38	24	24	9	10	19	41	27	104	**8 AOEL6-S**	**8 AOEL6-SS**	420	420
14, 15, 16	5/8	7/8-14	1-14	42	29	27	12	13	27	50	34	199	**10 AOEL6-S**	**10 AOEL6-SS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	46	35	35	14	16	27	55	37	162	**12 AOEL6-S**	**12 AOEL6-SS**	420	420
22, 25	1	1 5/16-12	1 7/16-12	53	41	41	20	21	33	60	42	365	**16 AOEL6-S**	**16 AOEL6-SS**	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	58	48	48	26	26	41	62	44	480	**20 AOEL6-S**	**20 AOEL6-SS**	280	280
35, 38	1 1/2	1 7/8-12	2-12	61	57	54	32	32	48	66	47	933	**24 AOEL6-S**	**24 AOEL6-SS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

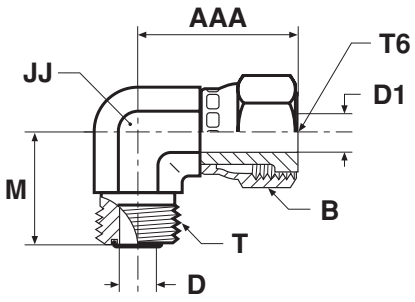
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C6MLO Swivel nut elbow

O-Lok® ORFS Female swivel end/O-Lok® ORFS tube end
SAE 52M0221 ISO 8434-3 SWE



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	45	**4C6MLOS**	**4C6MLOSS**	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	9	19	25	84	**6C6MLOS**	**6C6MLOSS**	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	126	**8C6MLOS**	**8C6MLOSS**	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	221	**10C6MLOS**	**10C6MLOSS**	420	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	36	16	14	30	37	284	**12C6MLOS**	**12C6MLOSS**	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	36	42	541	**16C6MLOS**	**16C6MLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	557	**20 C6LO-S**	**20C6MLOSS**	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	706	**24 C6LO-S**	**24C6MLOSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

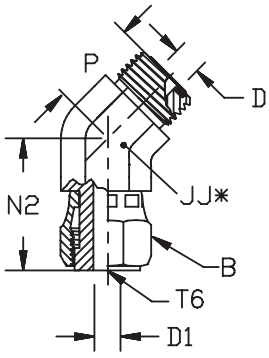
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

V6LO 45° Swivel nut elbow

O-Lok® ORFS female swivel end/O-Lok® ORFS tube end



*JJ – Across wrench flats

Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	JJ mm	N2 mm	P mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	9/16-18	18	5	4	14	25	16	44	**4 V6LO-S**	500
8, 10	5/16, 3/8	11/16-16	11/16-16	21	7	7	19	28	19	82	**6 V6LO-S**	630
12	1/2	13/16-16	13/16-16	24	10	9	19	38	20	110	**8 V6LO-S**	630
14, 15, 16	5/8	1-14	1-14	29	13	12	27	39	23	190	**10 V6LO-S**	420
18, 20	3/4	1 3/16-12	1 3/16-12	35	16	14	30	44	26	288	**12 V6LO-S**	420
22, 25	1	1 7/16-12	1 7/16-12	42	21	20	36	48	30	300	**16 V6LO-S**	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	48	26	26	41	50	32	444	**20 V6LO-S**	350
35, 38	1 1/2	2-12	2-12	58	32	32	48	52	37	568	**24 V6LO-S**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

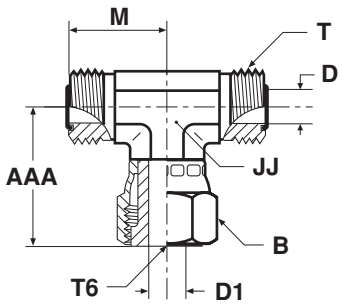
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

S6MLO Swivel nut branch tee

O-Lok® ORFS female swivel end/O-Lok® ORFS tube ends
SAE 52M0433 ISO 8434-3 SWBT



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	**4S6MLOS**	**4S6MLOSS**	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	**6S6MLOS**	**6S6MLOSS**	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	**8S6MLOS**	**8S6MLOSS**	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	**10S6MLOS**	**10S6MLOSS**	420	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	**12 S6LO-S**	**12S6MLOSS**	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	**16 S6LO-S**	**16S6MLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	**20 S6LO-S**	**20S6MLOSS**	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	**24 S6LO-S**	**24S6MLOSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

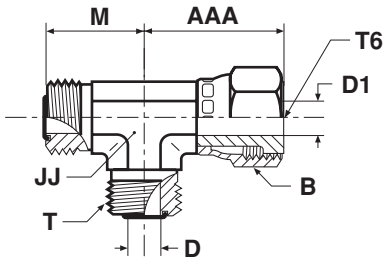
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

R6MLO Swivel nut run tee

O-Lok® ORFS female swivel end/O-Lok® ORFS tube ends
SAE 52M0432 ISO 8434-3 SWRT



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	**4R6MLOS**	**4R6MLOSS**	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	**6R6MLOS**	**6R6MLOSS**	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	**8R6MLOS**	**8R6MLOSS**	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	**10R6MLOS**	**10R6MLOSS**	420	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	**12 R6LO-S**	**12R6MLOSS**	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	**16 R6LO-S**	**16R6MLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	**20 R6LO-S**	**20R6MLOSS**	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	**24 R6LO-S**	**24R6MLOSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

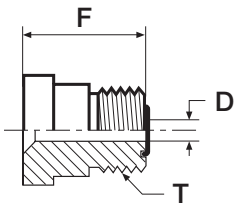
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

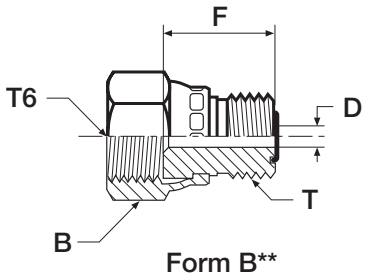
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

TRMLO Tube end reducer

O-Lok® ORFS tube end/O-Lok® ORFS swivel female end
SAE 520123 /A



Form A



Form B**

Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	F mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
10	3/8	9/16-18	11/16-16	21	5	20	21	B	**6-4TRMLONS**	**6-4TRMLONSS**	630	420
12	1/2	9/16-18	—	—	5	22	30	A	**8-4 TRLO-S**	**8-4TRMLOSS**	630	420
12	1/2	11/16-16	13/16-16	24	7	22	33	B	**8-6TRMLONS**	**8-6TRMLONSS**	630	420
16	5/8	9/16-18	—	—	5	23	37	A	**10-4 TRLO-S**	**10-4TRMLOSS**	420	420
16	5/8	11/16-16	—	—	7	24	48	A	**10-6 TRLO-S**	**10-6TRMLOSS**	420	420
16	5/8	13/16-16	—	—	10	26	50	A	**10-8 TRLO-S**	**10-8TRMLOSS**	420	420
20	3/4	9/16-18	—	—	5	25	63	A	**12-4 TRLO-S**	**12-4TRMLOSS**	420	420
20	3/4	11/16-16	—	—	7	26	66	A	**12-6 TRLO-S**	**12-6TRMLOSS**	420	420
20	3/4	13/16-16	—	—	10	28	71	A	**12-8 TRLO-S**	**12-8TRMLOSS**	420	420
20	3/4	1-14	1 3/16-12	36	13	30	85	B	**12-10TRMLONS**	**12-10TRMLONSS**	420	420
25	1	13/16-16	—	—	10	29	103	A	**16-8 TRLO-S**	**16-8TRMLOSS**	420	420
25	1	1-14	—	—	13	32	118	A	**16-10 TRLO-S**	**16-10TRMLOSS**	420	420
25	1	1 3/16-12	1 7/16-12	41	16	33	133	B	**16-12 TRLON-S**	**16-12TRMLONSS**	420	420
32	1 1/4	1 3/16-12	—	—	16	34	169	A	**20-12 TRLO-S**	**20-12TRMLOSS**	420	280
32	1 1/4	1 7/16-12	1 11/16-12	48	21	38	183	B	**20-16 TRLON-S**	**20-16TRMLONSS**	350	280
38	1 1/2	1 7/16-12	—	—	21	31	205	A	**24-16 TRLO-S**	**24-16TRMLOSS**	350	280
38	1 1/2	1 11/16-12	—	—	26	34	209	A	**24-20 TRLO-S**	**24-20TRMLOSS**	350	280
50	2	1 11/16-12	—	—	26	36	420	A	**32-20 TRLO-S**	**32-20TRMLOSS**	200	200
50	2	2-12	—	—	32	36	420	A	**32-24 TRLO-S**	**32-24TRMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

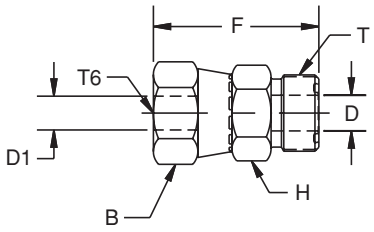
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**These size come assembled with a crimp style nut (Form B).

LOHL6 Tube end expander

O-Lok® ORFS tube end/O-Lok® ORFS female swivel end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	H mm	F mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
8, 10	5/16, 3/8	11/16-16	9/16-18	18	7	4	19	35	33	**6-4LOHL6**	630
12	1/2	13/16-16	11/16-16	21	10	7	22	39	52	**8-6LOHL6**	630
14, 15, 16	5/8	1-14	13/16-16	24	13	9	27	46	92	**10-8LOHL6**	420
18, 20	3/4	1 3/16-12	1-14	29	16	12	32	51	146	**12-10LOHL6**	420
22, 25	1	1 7/16-12	1 3/16-12	35	21	14	41	55	205	**16-12LOHL6**	420
28, 30, 32	1 1/4	1 11/16-12	1 7/16-12	42	26	20	46	58	260	**20-16LOHL6**	350
35, 38	1 1/2	2-12	1 11/16-12	48	26	26	55	60	315	**24-20LOHL6**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

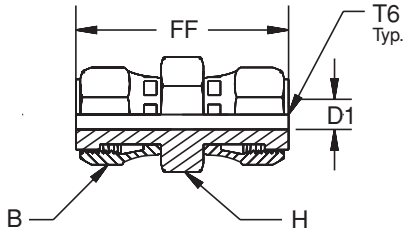
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

HL6 Swivel nut union

O-Lok® ORFS female swivel ends



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	B mm	D1 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	18	4.0	40.4	17	53	**4 HL6-S**	500
8, 10	5/16, 3/8	11/16-16	21	6.5	45.0	19	66	**6 HL6-S**	630
12	1/2	13/16-16	24	9.0	53.8	22	110	**8 HL6-S**	630
14, 15, 16	5/8	1-14	29	11.5	61.5	27	173	**10 HL6-S**	420
18, 20	3/4	1 3/16-12	35	14.0	69.6	32	275	**12 HL6-S**	420

Part numbers shown are part of our current manufacturing programme.

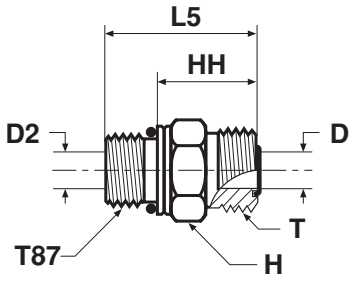
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

F87OMLO Male stud connector

O-Lok® ORFS tube end /Male metric thread – O-ring (ISO 6149-2)
SAE 52M0187 ISO 8434-3 SDS



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
6	1/4	M10×1.0	9/16-18	5	3	17	18	27	20	**4M10F87OMLOS**	**4M10F87OMLOSS**	630	630
6	1/4	M12×1.5	9/16-18	5	4	17	18	29	24	**4M12F87OMLOS**	**4M12F87OMLOSS**	630	630
6	1/4	M14×1.5	9/16-18	5	5	19	19	30	30	**4M14F87OMLOS**	**4M14F87OMLOSS**	630	630
8, 10	5/16, 3/8	M12×1.5	11/16-16	6	4	19	23	34	40	**6M12F87OMLOS**	**6M12F87OMLOSS**	630	630
8, 10	5/16, 3/8	M14×1.5	11/16-16	7	6	19	20	31	43	**6M14F87OMLOS**	**6M14F87OMLOSS**	630	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	7	7	22	21	34	43	**6M16F87OMLOS**	**6M16F87OMLOSS**	630	630
8, 10	5/16, 3/8	M18×1.5	11/16-16	7	7	24	21	35	45	**6M18F87OMLOS**	**6M18F87OMLOSS**	630	630
8, 10	5/16, 3/8	M22×1.5	11/16-16	7	7	27	23	38	52	**6M22F87OMLOS**	**6M22F87OMLOSS**	420	420
12	1/2	M14×1.5	13/16-16	10	6	22	24	35	40	**8M14F87OMLOS**	**8M14F87OMLOSS**	630	630
12	1/2	M16×1.5	13/16-16	10	7	22	20	37	58	**8M16F87OMLOS**	**8M16F87OMLOSS**	630	630
12	1/2	M18×1.5	13/16-16	10	9	24	23	37	55	**8M18F87OMLOS**	**8M18F87OMLOSS**	630	630
12	1/2	M22×1.5	13/16-16	10	10	27	24	39	60	**8M22F87OMLOS**	**8M22F87OMLOSS**	420	420
12	1/2	M27×2	13/16-16	10	10	32	26	44	70	**8M27F87OMLOS**	**8M27F87OMLOSS**	420	420
14, 15, 16	5/8	M18×1.5	1-14	13	9	27	27	41	120	**10M18F87OMLOS**	**10M18F87OMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	13	12	27	27	42	127	**10M22F87OMLOS**	**10M22F87OMLOSS**	420	420
18, 20	3/4	M22×1.5	1 3/16-12	16	12	32	35	50	170	**12M22F87OMLOS**	**12M22F87OMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	16	15	32	30	49	187	**12M27F87OMLOS**	**12M27F87OMLOSS**	420	420
18, 20	3/4	M33×2	1 3/16-12	16	16	41	31	50	200	**12M33F87OMLOS**	**12M33F87OMLOSS**	420	420
22, 25	1	M27×2	1 7/16-12	21	15	41	36	54	230	**16M27F87OMLOS**	**16M27F87OMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	21	20	41	34	52	270	**16M33F87OMLOS**	**16M33F87OMLOSS**	420	280
28, 30, 32	1 1/4	M33×2	1 11/16-12	26	20	46	36	54	370	**20M33F87OMLOS**	**20M33F87OMLOSS**	420	280
28, 30, 32	1 1/4	M42×2	1 11/16-12	26	26	50	36	55	390	**20M42F87OMLOS**	**20M42F87OMLOSS**	420	280
35, 38	1 1/2	M42×2	2-12	32	26	55	41	60	400	**24M42F87OMLOS**	**24M42F87OMLOSS**	350	280
35, 38	1 1/2	M48×2	2-12	32	32	55	36	57	412	**24M48F87OMLOS**	**24M48F87OMLOSS**	350	280
50	2	M60×2	2 1/2-12	40	40	65	41	65	800	**32M60F87OMLOS**	**32M60F87OMLOSS**	200	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

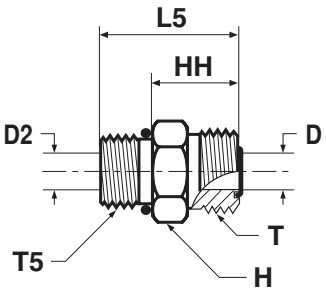
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F5OMLO Male stud connector

O-Lok® ORFS tube end /Male UN/UNF thread – O-ring (ISO 11926)
SAE 520120



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	5	5	17	18	29	21	**4F5OMLOS**	**4F5OMLOSS**	630	630
6	1/4	1/2-20	9/16-18	5	6	17	19	29	30	**4-5 F5OLO-S**	**4-5F5OMLOSS**	630	630
6	1/4	9/16-18	9/16-18	5	5	19	19	31	36	**4-6F5OMLOS**	**4-6F5OMLOSS**	630	630
6	1/4	3/4-16	9/16-18	5	5	22	20	34	67	**4-8 F5OLO-S**	**4-8F5OMLOSS**	630	630
8, 10	5/16, 3/8	9/16-18	11/16-16	7	7	19	20	32	45	**6F5OMLOS**	**6F5OMLOSS**	630	630
8, 10	5/16, 3/8	7/16-20	11/16-16	7	5	19	23	34	47	**6-4F5OMLOS**	**6-4F5OMLOSS**	630	630
8, 10	5/16, 3/8	1/2-20	11/16-16	7	6	19	21	31	50	**6-5 F5OLO-S**	**6-5F5OMLOSS**	630	630
8, 10	5/16, 3/8	3/4-16	11/16-16	7	7	22	21	35	51	**6-8F5OMLOS**	**6-8F5OMLOSS**	630	630
8, 10	5/16, 3/8	7/8-14	11/16-16	7	7	27	23	39	89	**6-10F5OMLOS**	**6-10F5OMLOSS**	420	420
10	1/2	3/4-16	13/16-16	10	10	22	23	37	56	**8F5OMLOS**	**8F5OMLOSS**	630	630
12	1/2	9/16-18	13/16-16	10	8	22	26	38	69	**8-6F5OMLOS**	**8-6F5OMLOSS**	630	630
12	1/2	7/8-14	13/16-16	10	10	27	24	40	105	**8-10F5OMLOS**	**8-10F5OMLOSS**	420	420
12	1/2	1 1/16-12	13/16-16	10	10	32	26	44	169	**8-12F5OMLOS**	**8-12F5OMLOSS**	420	420
12	1/2	1 5/16-12	13/16-16	10	10	38	27	46	227	**8-16F5OMLOS**	**8-16F5OMLOSS**	420	420
14, 15, 16	5/8	7/8-14	1-14	13	13	27	27	43	137	**10F5OMLOS**	**10F5OMLOSS**	420	420
14, 15, 16	5/8	3/4-16	1-14	13	10	27	31	45	120	**10-8F5OMLOS**	**10-8F5OMLOSS**	420	420
14, 15, 16	5/8	1 1/16-12	1-14	13	13	32	29	47	170	**10-12F5OMLOS**	**10-12F5OMLOSS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	16	16	32	30	49	189	**12F5OMLOS**	**12F5OMLOSS**	420	420
18, 20	3/4	3/4-16	1 3/16-12	16	10	32	35	49	167	**12-8 F5OLO-S**	**12-8F5OMLOSS**	420	420
18, 20	3/4	7/8-14	1 3/16-12	16	13	32	35	51	177	**12-10F5OMLOS**	**12-10F5OMLOSS**	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	16	16	38	31	50	280	**12-16F5OMLOS**	**12-16F5OMLOSS**	420	420
18, 20	3/4	1 5/8-12	1 3/16-12	16	16	46	32	51	350	**12-20F5OMLOS**	**12-20F5OMLOSS**	420	420
22, 25	1	1 5/16-12	1 7/16-12	21	21	41	32	50	271	**16 F5OLO-S**	**16F5OMLOSS**	420	420
22, 25	1	1 1/16-12	1 7/16-12	21	16	41	36	55	275	**16-12 F5OLO-S**	**16-12F5OMLOSS**	420	420
22, 25	1	1 5/8-12	1 7/16-12	21	21	46	34	52	428	**16-20 F5OLO-S**	**16-20F5OMLOSS**	420	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	26	26	46	34	52	391	**20F5OMLOS**	**20F5OMLOSS**	420	280
28, 30, 32	1 1/4	1 5/16-12	1 11/16-12	26	21	48	39	58	401	**20-16 F5OLO-S**	**20-16F5OMLOSS**	420	280
28, 30, 32	1 1/4	1 7/8-12	1 11/16-12	26	32	54	36	54	557	**20-24 F5OLO-S**	**20-24F5OMLOSS**	350	280
35, 38	1 1/2	1 7/8-12	2-12	32	32	54	36	54	412	**24 F5OLO-S**	**24F5OMLOSS**	350	280
35, 38	1 1/2	1 5/8-12	2-12	32	26	54	41	60	581	**24-20 F5OLO-S**	**24-20F5OMLOSS**	350	280
50	2	2 1/2-12	2 1/2-12	45	40	70	40	59	900	**32 F5OLO-S**	**32F5OMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

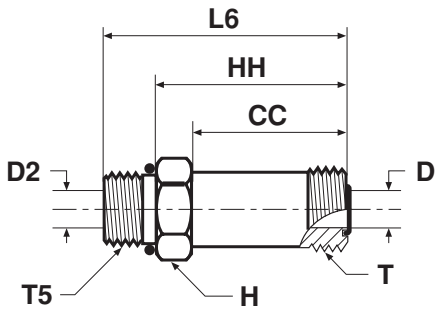
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FF5OMLO Extended male stud connector

O-Lok® ORFS tube end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 521720 (Previously 520122)



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	CC mm	D mm	D2 mm	H mm	HH mm	L6 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	34	5	5	16	42	53	51	**4 FF5OLO-S**	**4FF5OMLOSS**	630	630
8, 10	5/16, 3/8	9/16-18	11/16-16	37	7	7	19	46	58	79	**6 FF5OLO-S**	**6FF5OMLOSS**	630	630
12	1/2	3/4-16	13/16-16	44	10	10	22	54	68	125	**8 FF5OLO-S**	**8FF5OMLOSS**	630	630
14, 15, 16	5/8	7/8-14	1-14	52	13	13	27	64	80	212	**10 FF5OLO-S**	**10FF5OMLOSS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	52	16	16	33	77	96	309	**12 FF5OLO-S**	**12FF5OMLOSS**	420	420
22, 25	1	1 5/16-12	1 7/16-12	72	21	21	41	87	105	435	**16 FF5OLO-S**	**16FF5OMLOSS**	420	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	86	26	26	48	102	121	818	**20 FF5OLO-S**	**20FF5OMLOSS**	420	280
35, 38	1 1/2	1 7/8-12	2-12	97	32	32	54	115	134	1430	**24 FF5OLO-S**	**24FF5OMLOSS**	350	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

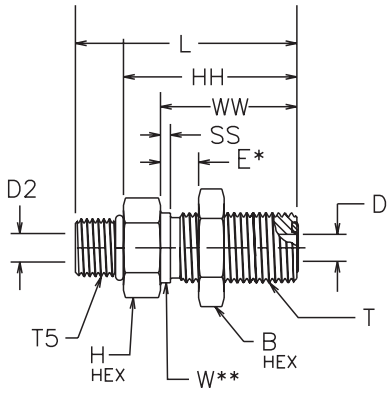
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

WF5OLO Bulkhead male connector

O-Lok® ORFS tube end/Male UN/UNF – O-ring (ISO 11926)



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2A T5	B mm	D mm	D2 mm	E mm	H mm	HH mm	L mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	7/16-20	21	5	5	14	21	43	54	2	14	32	75	**4 WF5OLO-WLNL-S**	630
6	1/4	9/16-18	9/16-18	21	5	8	14	21	43	55	2	14	32	88	**4-6 WF5OLO-WLNL-S**	630
8, 10	5/16, 3/8	11/16-16	9/16-18	25	7	8	14	25	46	58	2	18	34	112	**6 WF5OLO-WLNL-S**	630
12	1/2	13/16-16	3/4-16	29	10	10	14	29	52	65	2	21	37	147	**8 WF5OLO-WLNL-S**	630
14, 15, 16	5/8	1-14	7/8-14	33	13	13	13	33	51	67	2	25	41	295	**10 WF5OLO-WLNL-S**	420
18, 20	3/4	1 3/16-12	1 1/16-12	41	16	16	13	41	52	71	2	30	42	330	**12 WF5OLO-WLNL-S**	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

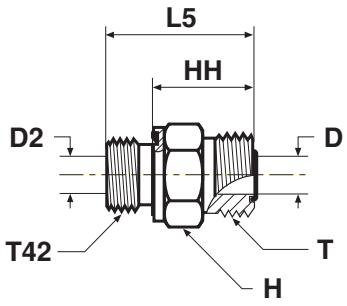
For the version without the locknut remove “WLNL” (e.g. 12 WF5OLO)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

F42EDMLO Male stud connector

O-Lok® ORFS tube end /Male BSPP thread – ED seal (ISO 1179)



Tube O.D. mm	Tube O.D. in.	BSPP male thread T42	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	5	4	17	18	26	29	**4F42EDMLOS**	**4F42EDMLOSS**	630	630
6	1/4	1/4	9/16-18	5	5	19	18	31	42	**4-4F42EDMLOS**	**4-4F42EDMLOSS**	630	630
6	1/4	3/8	9/16-18	5	5	22	20	32	61	**4-6F42EDMLOS**	**4-6F42EDMLOSS**	630	630
6	1/4	1/2	9/16-18	5	5	27	21	35	119	**4-8F42EDMLOS**	**4-8F42EDMLOSS**	420	420
8, 10	5/16, 3/8	1/4	11/16-16	7	5	19	20	32	45	**6F42EDMLOS**	**6F42EDMLOSS**	630	630
8, 10	5/16, 3/8	1/8	11/16-16	7	4	19	23	31	44	**6-2F42EDMLOS**	**6-2F42EDMLOSS**	630	630
8, 10	5/16, 3/8	3/8	11/16-16	7	7	22	21	33	63	**6-6F42EDMLOS**	**6-6F42EDMLOSS**	630	630
8, 10	5/16, 3/8	1/2	11/16-16	7	7	27	23	37	122	**6-8F42EDMLOS**	**6-8F42EDMLOSS**	420	420
8, 10	5/16, 3/8	3/4	11/16-16	7	7	32	24	40	192	**6-12F42EDMLOS**	**6-12F42EDMLOSS**	420	420
12	1/2	3/8	13/16-16	10	8	22	23	35	196	**8F42EDMLOS**	**8F42EDMLOSS**	630	630
12	1/2	1/4	13/16-16	10	5	22	25	38	193	**8-4F42EDMLOS**	**8-4F42EDMLOSS**	630	630
12	1/2	1/2	13/16-16	10	10	27	24	38	198	**8-8F42EDMLOS**	**8-8F42EDMLOSS**	420	420
12	1/2	3/4	13/16-16	10	10	32	26	42	205	**8-12F42EDMLOS**	**8-12F42EDMLOSS**	420	420
14, 15, 16	5/8	1/2	1-14	13	13	27	27	41	332	**10F42EDMLOS**	**10F42EDMLOSS**	420	420
14, 15, 16	5/8	3/8	1-14	13	8	27	31	43	315	**10-6F42EDMLOS**	**10-6F42EDMLOSS**	420	420
14, 15, 16	5/8	3/4	1-14	13	13	32	29	45	348	**10-12F42EDMLOS**	**10-12F42EDMLOSS**	420	420
14, 15, 16	5/8	1	1-14	13	13	41	30	48	360	**10-16F42EDMLOS**	**10-16F42EDMLOSS**	420	420
18, 20	3/4	3/4	1 3/16-12	16	16	32	30	46	200	**12F42EDMLOS**	**12F42EDMLOSS**	420	420
18, 20	3/4	1/2	1 3/16-12	16	12	32	34	49	183	**12-8F42EDMLOS**	**12-8F42EDMLOSS**	420	420
18, 20	3/4	1	1 3/16-12	16	16	41	31	49	362	**12-16F42EDMLOS**	**12-16F42EDMLOSS**	420	420
18, 20	3/4	1 1/4	1 3/16-12	16	16	50	33	53	505	**12-20F42EDMLOS**	**12-20F42EDMLOSS**	420	420
22, 25	1	1	1 7/16-12	21	20	41	32	50	343	**16F42EDMLOS**	**16F42EDMLOSS**	420	420
22, 25	1	1/2	1 7/16-12	21	12	41	36	50	380	**16-8F42EDMLOS**	**16-8F42EDMLOSS**	420	420
22, 25	1	3/4	1 7/16-12	21	16	41	36	52	411	**16-12F42EDMLOS**	**16-12F42EDMLOSS**	420	420
22, 25	1	1 1/4	1 7/16-12	21	21	50	34	54	487	**16-20F42EDMLOS**	**16-20F42EDMLOSS**	420	420
22, 25	1	1 1/2	1 7/16-12	21	21	55	36	58	715	**16-24F42EDMLOS**	**16-24F42EDMLOSS**	350	280
28, 30, 32	1 1/4	1 1/4	1 11/16-12	25	25	50	34	54	454	**20F42EDMLOS**	**20F42EDMLOSS**	420	280
28, 30, 32	1 1/4	1	1 11/16-12	26	20	46	39	57	412	**20-16F42EDMLOS**	**20-16F42EDMLOSS**	420	280
28, 30, 32	1 1/4	1 1/2	1 11/16-12	26	26	55	36	58	532	**20-24F42EDMLOS**	**20-24F42EDMLOSS**	350	280
35, 38	1 1/2	1 1/2	2-12	32	32	55	36	58	585	**24F42EDMLOS**	**24F42EDMLOSS**	350	280
35, 38	1 1/2	1 1/4	2-12	32	25	55	41	61	540	**24-20F42EDMLOS**	**24-20F42EDMLOSS**	350	280
50	2	2	2 1/2-12	40	40	75	41	65	900	**32F42EDMLOS**	**32F42EDMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

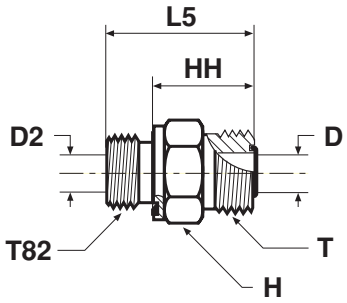
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F82EDMLO Male stud connector

O-Lok® ORFS tube end /Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	Tube O.D. in.	Thread metric T82	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10×1.0	9/16-18	5	4	17	18	26	20	**4M10F82EDMLOS**	**4M10F82EDMLOSS**	630	630
6	1/4	M12×1.5	9/16-18	5	4	17	18	30	24	**4M12F82EDMLOS**	**4M12F82EDMLOSS**	630	630
6	1/4	M14×1.5	9/16-18	5	5	19	19	31	29	**4M14F82EDMLOS**	**4M14F82EDMLOSS**	630	630
6	1/4	M16×1.5	9/16-18	5	7	22	19	31	33	**4M16F82EDMLOS**	**4M16F82EDMLOSS**	630	630
8, 10	5/16, 3/8	M12×1.5	11/16-16	7	4	19	23	35	35	**6M12F82EDMLOS**	**6M12F82EDMLOSS**	630	630
8, 10	5/16, 3/8	M14×1.5	11/16-16	7	5	19	20	32	40	**6M14F82EDMLOS**	**6M14F82EDMLOSS**	630	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	7	7	22	20	32	43	**6M16F82EDMLOS**	**6M16F82EDMLOSS**	630	630
12	1/2	M16×1.5	13/16-16	10	7	22	26	38	49	**8M16F82EDMLOS**	**8M16F82EDMLOSS**	630	630
12	1/2	M18×1.5	13/16-16	10	8	24	23	35	55	**8M18F82EDMLOS**	**8M18F82EDMLOSS**	630	630
14, 15, 16	5/8	M16×1.5	1-14	13	7	27	30	42	70	**10M16F82EDMLOS**	**10M16F82EDMLOSS**	420	420
14, 15, 16	5/8	M18×1.5	1-14	13	8	27	31	43	85	**10M18F82EDMLOS**	**10M18F82EDMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	13	12	27	27	41	127	**10M22F82EDMLOS**	**10M22F82EDMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	16	16	32	30	46	187	**12M27F82EDMLOS**	**12M27F82EDMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	20	20	41	32	50	270	**16M33F82EDMLOS**	**16M33F82EDMLOSS**	420	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	26	25	50	34	54	390	**20M42F82EDMLOS**	**20M42F82EDMLOSS**	420	280
35, 38	1 1/2	M48×2	2-12	32	32	55	36	58	412	**24M48F82EDMLOS**	**24M48F82EDMLOSS**	350	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

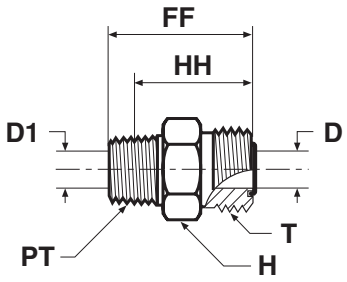
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FLO Male stud connector

O-Lok® ORFS tube end/Male NPTF* thread (SAE J476)

*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	FF mm	H mm	HH mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	9/16-18	5	5	27	16	21.0	26	**4 FLO-S**	**4 FLO-SS**	420	420
6	1/4	1/4-18	9/16-18	5	7	32	16	23.0	34	**4-4 FLO-S**	**4-4 FLO-SS**	420	420
6	1/4	3/8-18	9/16-18	5	5	36	19	25.0	47	**4-6 FLO-S**	**4-6 FLO-SS**	420	420
8, 10	5/16, 3/8	1/4-16	11/16-16	7	7	32	19	23.0	39	**6 FLO-S**	**6 FLO-SS**	420	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	7	34	19	25.0	52	**6-6 FLO-S**	**6-6 FLO-SS**	420	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	39	22	28.0	82	**6-8 FLO-S**	**6-8 FLO-SS**	420	420
12	1/2	3/8-18	13/16-16	10	10	38	22	29.0	83	**8 FLO-S**	**8 FLO-SS**	420	420
12	1/2	1/2-14	13/16-16	10	13	42	22	30.0	84	**8-8 FLO-S**	**8-8 FLO-SS**	420	420
12	1/2	3/4-14	13/16-16	10	18	43	29	31.0	166	**8-12 FLO-S**	**8-12 FLO-SS**	380	350
14, 15, 16	5/8	1/2-14	1-14	13	13	46	27	35.0	115	**10 FLO-S**	**10 FLO-SS**	420	420
14, 15, 16	5/8	3/4-14	1-14	13	18	46	29	34.0	138	**10-12 FLO-S**	**10-12 FLO-SS**	380	350
18, 20	3/4	3/4-14	1 3/16-12	15	18	49	32	37.0	179	**12 FLO-S**	**12 FLO-SS**	380	350
18, 20	3/4	1/2-14	1 3/16-12	15	13	49	32	37.0	165	**12-8 FLO-S**	**12-8 FLO-SS**	420	420
18, 20	3/4	1-11 1/2	1 3/16-12	15	24	54	35	40.0	225	**12-16 FLO-S**	**12-16 FLO-SS**	310	210
22, 25	1	1-11 1/2	1 7/16-12	21	24	56	38	41.0	271	**16 FLO-S**	**16 FLO-SS**	310	210
22, 25	1	3/4-14	1 7/16-12	21	18	51	38	39.0	238	**16-12 FLO-S**	**16-12 FLO-SS**	380	350
28, 30, 32	1 1/4	1 1/4-11 1/2	1 11/16-12	26	32	58	48	43.5	424	**20 FLO-S**	**20 FLO-SS**	210	210
35, 38	1 1/2	1 1/2-11 1/2	2-12	32	38	61	54	46.0	534	**24 FLO-S**	**24 FLO-SS**	200	175

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

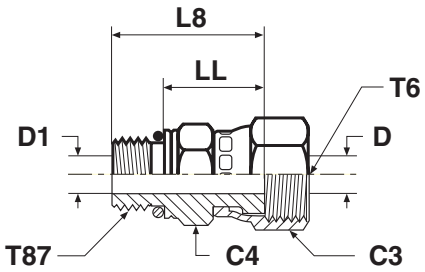
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F687OML Swivel male stud

O-Lok® ORFS Female swivel end/Male metric thread – O-ring (ISO 6149-2)



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M12×1.5	9/16-18	17	17	4	4	38	27	53	**4M12F687OMLS**	**4M12F687OMLSS**	500	420
6	5/16	M12×1.5	11/16-16	22	17	7	4	40	29	66	**6M12F687OMLS**	**6M12F687OMLSS**	630	420
8	3/8	M14×1.5	11/16-16	22	19	7	6	40	29	72	**6M14F687OMLS**	**6M14F687OMLSS**	630	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	22	7	7	42	29	85	**6M16F687OMLS**	**6M16F687OMLSS**	630	420
12	1/2	M16×1.5	13/16-16	24	22	9	7	49	36	110	**8M16F687OMLS**	**8M16F687OMLSS**	630	420
14, 15, 16	5/8	M22×1.5	1-14	30	27	12	12	53	38	173	**10M22F687OMLS**	**10M22F687OMLSS**	420	400
18, 20	3/4	M22×1.5	1 3/16-12	36	30	14	12	57	42	230	**12M22F687OMLS**	**12M22F687OMLSS**	420	400
18, 20	3/4	M27×2	1 3/16-12	36	32	14	14	61	42	275	**12M27F687OMLS**	**12M27F687OMLSS**	420	400
22, 25	1	M27×2	1 7/16-12	41	36	20	15	68	49	420	**16M27F687OMLS**	**16M27F687OMLSS**	420	400
22, 25	1	M33×2	1 7/16-12	41	41	20	20	68	49	462	**16M33F687OMLS**	**16M33F687OMLSS**	420	400
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	50	26	26	68	49	622	**20M42F687OMLS**	**20M42F687OMLSS**	350	280
35, 38	1 1/2	M48×2	2-12	60	55	32	32	71	50	885	**24M48F687OMLS**	**24M48F687OMLSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

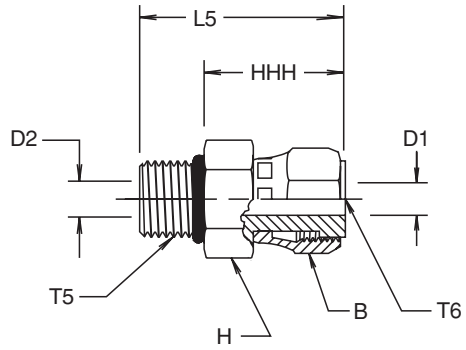
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

F65OL Swivel male stud

O-Lok® ORFS female swivel end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 520181



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2B T6	B mm	D1 mm	D2 mm	H mm	HHH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	7/16-20	9/16-18	18	4	5	17	26	37	53	**4 F65OL-S**	500
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	19	28	40	66	**6 F65OL-S**	630
12	1/2	3/4-16	13/16-16	24	9	10	22	35	50	110	**8 F65OL-S**	630
14, 15, 16	5/8	7/8-14	1-14	29	12	13	27	38	54	173	**10 F65OL-S**	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	16	32	41	59	275	**12 F65OL-S**	420
22, 25	1	1 5/16-12	1 7/16-12	42	20	21	41	49	68	462	**16 F65OL-S**	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	46	50	68	622	**20 F65OL-S**	350

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

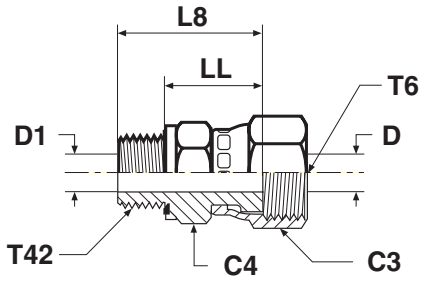
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

F642EDMLO Swivel male stud

O-Lok® ORFS Swivel female end/Male BSPP thread – ED seal (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T42	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	17	14	4	4	34	26	43	**4F642EDMLS**	**4F642EDMLSS**	500	420
6	1/4	1/4	9/16-18	17	19	4	4	38	26	59	**4-4F642EDMLS**	**4-4F642EDMLSS**	500	420
8, 10	5/16, 3/8	1/4	11/16-16	22	19	7	5	40	28	72	**6F642EDMLS**	**6F642EDMLSS**	630	420
8, 10	5/16, 3/8	3/8	11/16-16	22	22	7	7	40	28	86	**6-6F642EDMLS**	**6-6F642EDMLSS**	630	420
8, 10	5/16, 3/8	1/2	11/16-16	22	27	7	7	42	28	92	**6-8F642EDMLS**	**6-8F642EDMLSS**	420	420
12	1/2	3/8	13/16-16	24	22	9	8	47	35	104	**8F642EDMLS**	**8F642EDMLSS**	630	420
12	1/2	1/4	13/16-16	24	22	9	5	47	35	98	**8-4F642EDMLS**	**8-4F642EDMLSS**	630	420
12	1/2	1/2	13/16-16	24	27	9	9	49	35	142	**8-8F642EDMLS**	**8-8F642EDMLSS**	420	420
14, 15, 16	5/8	1/2	1-14	30	27	12	12	52	38	165	**10F642EDMLS**	**10F642EDMLSS**	420	420
14, 15, 16	5/8	3/4	1-14	30	32	12	12	54	38	185	**10-12F642EDMLS**	**10-12F642EDMLSS**	420	420
18, 20	3/4	3/4	1 3/16-12	36	32	14	14	57	41	266	**12F642EDMLS**	**12F642EDMLSS**	420	420
18, 20	3/4	1/2	1 3/16-12	36	30	14	12	55	41	220	**12-8F642EDMLS**	**12-8F642EDMLSS**	420	420
22, 25	1	1	1 7/16-12	41	41	20	20	67	49	414	**16F642EDMLS**	**16F642EDMLSS**	420	420
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	50	26	25	69	49	623	**20F642EDMLS**	**20F642EDMLSS**	350	280
35, 38	1 1/2	1 1/2	2-12	60	55	32	32	72	50	885	**24F642EDMLS**	**24F642EDMLSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

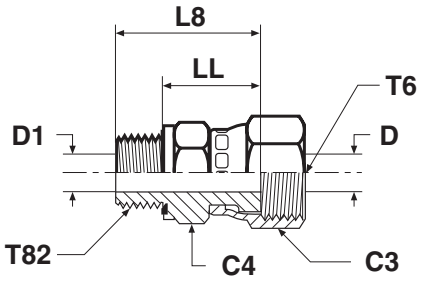
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

F682EDMLO Swivel male stud

O-Lok® ORFS Swivel female end/Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	Tube O.D. in.	Thread metric T82	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M12×1.5	9/16-18	17	17	4	4	39	27	56	**4M12F682EDMLS**	**4M12F682EDMLSS**	500	420
8, 10	5/16, 3/8	M14×1.5	11/16-16	22	19	7	5	41	29	73	**6M14F682EDMLS**	**6M14F682EDMLSS**	630	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	24	22	7	7	41	29	85	**6M16F682EDMLS**	**6M16F682EDMLSS**	630	420
12	1/2	M16×1.5	13/16-16	24	22	9	7	48	36	109	**8M16F682EDMLS**	**8M16F682EDMLSS**	630	420
14, 15, 16	5/8	M22×1.5	1-14	30	27	12	12	53	39	165	**10M22F682EDMLS**	**10M22F682EDMLSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	36	32	14	14	58	42	282	**12M27F682EDMLS**	**12M27F682EDMLSS**	420	420
22, 25	1	M33×2	1 7/16-12	41	41	20	20	68	50	467	**16M33F682EDMLS**	**16M33F682EDMLSS**	420	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	50	26	25	70	50	635	**20M42F682EDMLS**	**20M42F682EDMLSS**	350	280
35, 38	1 1/2	M48×2	2-12	60	55	32	32	72	50	885	**24M48F682EDMLS**	**24M48F682EDMLSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

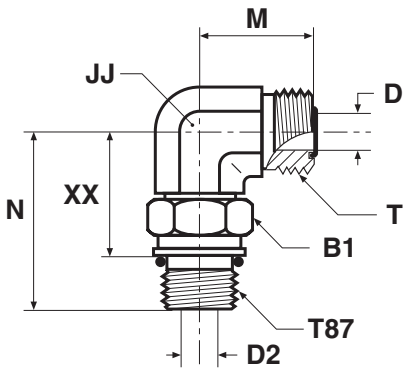
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C87OMLO Male stud elbow

O-Lok® ORFS tube end/Male metric thread – O-ring (ISO 6149-2)
SAE 52M0287 ISO 8434-3 SDE



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2B T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10×1.0	9/16-18	14	5	3	14	22	31	21	50	**4M10C87OMLOS**	**4M10C87OMLOSS**	420	420
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	22	52	**4M12C87OMLOS**	**4M12C87OMLOSS**	420	420
6	1/4	M14×1.5	9/16-18	19	5	6	14	24	36	25	55	**4M14C87OMLOS**	**4M14C87OMLOSS**	420	420
8, 10	5/16, 3/8	M12×1.5	11/16-16	17	7	4	19	25	36	25	60	**6M12C87OMLOS**	**6M12C87OMLOSS**	420	420
8, 10	5/16, 3/8	M14×1.5	11/16-16	19	7	6	19	25	36	25	60	**6M14C87OMLOS**	**6M14C87OMLOSS**	420	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	7	7	19	25	38	27	65	**6M16C87OMLOS**	**6M16C87OMLOSS**	420	420
12	1/2	M14×1.5	13/16-16	19	10	6	19	28	36	25	150	**8M14C87OMLOS**	**8M14C87OMLOSS**	420	420
12	1/2	M16×1.5	13/16-16	22	10	7	19	28	38	27	92	**8M16C87OMLOS**	**8M16C87OMLOSS**	420	420
12	1/2	M18×1.5	13/16-16	24	10	9	19	28	41	27	161	**8M18C87OMLOS**	**8M18C87OMLOSS**	420	420
12	1/2	M22×1.5	13/16-16	27	10	12	27	31	49	35	200	**8M22C87OMLOS**	**8M22C87OMLOSS**	420	420
14, 15, 16	5/8	M18×1.5	1-14	24	13	9	27	33	48	36	190	**10M18C87OMLOS**	**10M18C87OMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	34	214	**10M22C87OMLOS**	**10M22C87OMLOSS**	420	420
18, 20	3/4	M22×1.5	1 3/16-12	27	16	12	30	37	50	35	390	**12M22C87OMLOS**	**12M22C87OMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	56	40	440	**12M27C87OMLOS**	**12M27C87OMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	41	21	20	36	42	59	43	501	**16M33C87OMLOS**	**16M33C87OMLOSS**	420	420
28, 30, 32	1 1/4	M33×2	1 11/16-12	41	26	20	41	45	62	46	530	**20M33C87OMLOS**	**20M33C87OMLOSS**	350	280
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	63	46	561	**20M42C87OMLOS**	**20M42C87OMLOSS**	280	280
35, 38	1 1/2	M48×2	2-12	55	32	32	50	49	72	53	684	**24M48C87OMLOS**	**24M48C87OMLOSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

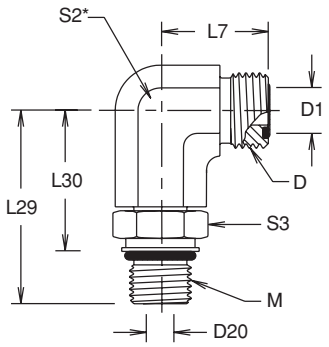
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CC87OMLO Extended male stud elbow

O-Lok® ORFS tube end/Male metric thread – O-ring (ISO 6149-2)
SAE 52M1587 ISO 8434-3 SDEL



*Across Hex Flats

Tube O.D. mm	Tube O.D. in.	Thread metric M	Thread UN/UNF-2A D	D1 mm	D20 mm	L7 mm	L29 mm	L30 mm	S2 mm	S3 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	M12×1.5	9/16-18	5	4	21	56	45	14	17	44	**4M12CC87OMLOS**	420
8, 10	5/16, 3/8	M14×1.5	11/16-16	7	6	25	56	45	17	19	51	**6M14CC87OMLOS**	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	7	7	25	67	54	17	22	51	**6M16CC87OMLOS**	420
12	1/2	M18×1.5	13/16-16	10	9	28	75	61	19	24	150	**8M18CC87OMLOS**	420
12	1/2	M22×1.5	13/16-16	10	12	31	88	73	27	27	150	**8M22CC87OMLOS**	420
14, 15, 16	5/8	M22×1.5	1-14	13	12	34	88	73	27	27	160	**10M22CC87OMLOS**	420
18, 20	3/4	M27×2	1 3/16-12	16	15	38	101	82	27	32	290	**12M27CC87OMLOS**	420
22, 25	1	M33×2	1 7/16-12	21	20	42	115	96	36	41	480	**16M33CC87OMLOS**	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	26	26	45	127	108	41	50	630	**20M42CC87OMLOS**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

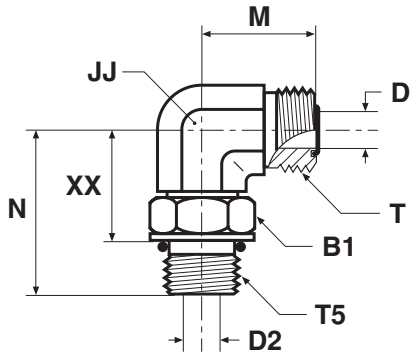
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

C5OMLO Male stud elbow

O-Lok® ORFS tube end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 520220



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	53	**4 C5OLO-S**	**4C5OMLOSS**	420	420
6	1/4	9/16-18	9/16-18	19	5	8	19	24	37	25	66	**4-6C5OMLOS**	**4-6C5OMLOSS**	420	420
6	1/4	3/4-16	9/16-18	24	5	10	19	25	41	27	67	**4-8 C5OLO-S**	**4-8C5OMLOSS**	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	68	**6C5OMLOS**	**6C5OMLOSS**	420	420
8, 10	5/16, 3/8	7/16-20	11/16-16	16	7	5	19	25	35	24	57	**6-4 C5OLO-S**	**6-4C5OMLOSS**	420	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	7	10	19	27	41	27	105	**6-8C5OMLOS**	**6-8C5OMLOSS**	420	420
8, 10	5/16, 3/8	7/8-14	11/16-16	27	7	12	22	29	50	34	196	**6-10 C5OLO-S**	**6-10C5OMLOSS**	420	420
8, 10	5/16, 3/8	1 1/16-12	11/16-16	36	7	16	27	33	55	37	250	**6-12 C5OLO-S**	**6-12C5OMLOSS**	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	164	**8C5OMLOS**	**8C5OMLOSS**	420	420
12	1/2	9/16-18	13/16-16	19	10	7	19	28	37	25	81	**8-6 C5OLO-S**	**8-6C5OMLOSS**	420	420
12	1/2	7/8-14	13/16-16	27	10	13	27	31	50	34	187	**8-10C5OMLOS**	**8-10C5OMLOSS**	420	420
12	1/2	1 1/16-12	13/16-16	36	10	15	30	36	55	37	201	**8-12 C5OLO-S**	**8-12C5OMLOSS**	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	50	34	214	**10C5OMLOS**	**10C5OMLOSS**	420	420
14, 15, 16	5/8	3/4-16	1-14	24	13	10	27	33	46	32	175	**10-8 C5OLO-S**	**10-8C5OMLOSS**	420	420
14, 15, 16	5/8	1 1/16-12	1-14	35	13	16	30	36	55	37	248	**10-12 C5OLO-S**	**10-12C5OMLOSS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	55	37	442	**12C5OMLOS**	**12C5OMLOSS**	420	420
18, 20	3/4	3/4-16	1 3/16-12	24	16	10	30	37	47	33	325	**12-8C5OMLOS**	**12-8C5OMLOSS**	420	420
18, 20	3/4	7/8-14	1 3/16-12	27	16	13	30	37	51	35	296	**12-10C5OMLOS**	**12-10C5OMLOSS**	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	22	36	41	60	41	346	**12-16 C5OLO-S**	**12-16C5OMLOSS**	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	42	60	41	502	**16 C5OLO-S**	**16C5OMLOSS**	380	380
22, 25	1	1 1/16-12	1 7/16-12	35	21	16	37	42	59	40	473	**16-12 C5OLO-S**	**16-12C5OMLOSS**	420	420
22, 25	1	1 5/8-12	1 7/16-12	48	21	26	41	45	62	44	580	**16-20 C5OLO-S**	**16-20C5OMLOSS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	563	**20 C5OLO-S**	**20C5OMLOSS**	280	280
28, 30, 32	1 1/4	1 5/16-12	1 11/16-12	41	26	22	41	45	62	43	563	**20-16C5OMLOS**	**20-16C5OMLOSS**	380	280
28, 30, 32	1 1/4	1 7/8-12	1 11/16-12	54	26	32	48	49	66	47	764	**20-24 C5OLO-S**	**20-24C5OMLOSS**	280	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	689	**24 C5OLO-S**	**24C5OMLOSS**	280	280
35, 38	1 1/2	1 5/8-12	2-12	48	32	26	48	49	66	47	644	**24-20 C5OLO-S**	**24-20C5OMLOSS**	280	280
50	2	2 1/2-12	2 1/2-12	70	45	40	64	70	78	59	2200	**32 C5OLO-S**	**32C5OMLOSS**	170	170

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

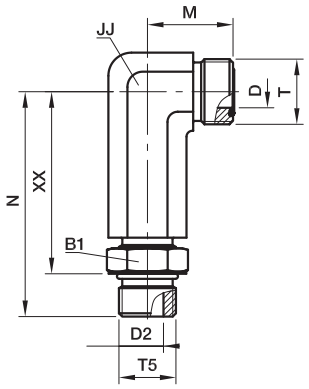
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CC5OLO Extended male stud elbow

O-Lok® ORFS tube end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 521520



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	7/16-20	9/16-18	16	5	5	14	22	57	46	44	**4 CC5OLO-S**	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	7	19	25	66	54	51	**6 CC5OLO-S**	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	75	61	146	**8 CC5OLO-S**	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	90	73	159	**10 CC5OLO-S**	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	101	82	291	**12 CC5OLO-S**	420
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	36	42	115	96	481	**16 CC5OLO-S**	380

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

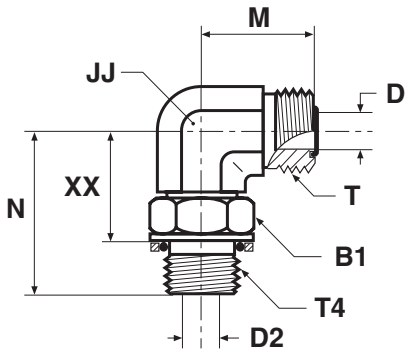
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

C4OMLO Male stud elbow

O-Lok® ORFS tube end/Male BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	14	5	4	14	22	30	22	49	**4C4OMLOS**	**4C4OMLOSS**	250	250
6	1/4	1/4	9/16-18	19	5	8	19	24	36	25	93	**4-4C4OMLOS**	**4-4C4OMLOSS**	250	200
6	1/4	3/8	9/16-18	22	5	10	19	25	38	27	99	**4-6C4OMLOS**	**4-6C4OMLOSS**	250	200
8, 10	5/16, 3/8	1/4	11/16-16	19	7	8	19	25	36	25	97	**6C4OMLOS**	**6C4OMLOSS**	250	200
8, 10	5/16, 3/8	1/8	11/16-16	14	7	5	19	25	32	24	62	**6-2C4OMLOS**	**6-2C4OMLOSS**	250	200
8, 10	5/16, 3/8	3/8	11/16-16	22	7	10	19	27	38	27	106	**6-6C4OMLOS**	**6-6C4OMLOSS**	250	200
8, 10	5/16, 3/8	1/2	11/16-16	27	7	13	27	29	49	34	120	**6-8C4OMLOS**	**6-8C4OMLOSS**	250	200
12	1/2	3/8	13/16-16	22	10	10	19	28	38	27	108	**8C4OMLOS**	**8C4OMLOSS**	250	200
12	1/2	1/4	13/16-16	19	10	8	19	28	36	25	99	**8-4C4OMLOS**	**8-4C4OMLOSS**	250	200
12	1/2	1/2	13/16-16	27	10	12	27	31	49	34	239	**8-8C4OMLOS**	**8-8C4OMLOSS**	250	200
12	1/2	3/4	13/16-16	36	10	16	30	34	52	37	258	**8-12C4OMLOS**	**8-12C4OMLOSS**	250	200
14, 15,16	5/8	1/2	1-14	27	13	12	27	33	49	34	274	**10C4OMLOS**	**10C4OMLOSS**	250	200
14, 15,16	5/8	3/8	1-14	22	13	10	27	33	43	31	235	**10-6C4OMLOS**	**10-6C4OMLOSS**	250	200
14, 15,16	5/8	3/4	1-14	36	13	16	30	36	52	37	352	**10-12C4OMLOS**	**10-12C4OMLOSS**	250	200
14, 15,16	5/8	1	1-14	41	13	22	36	40	58	41	382	**10-16C4OMLOS**	**10-16C4OMLOSS**	250	200
18, 20	3/4	3/4	1 3/16-12	36	16	16	30	37	52	37	355	**12C4OMLOS**	**12C4OMLOSS**	250	200
18, 20	3/4	1/2	1 3/16-12	27	16	12	30	37	50	35	297	**12-8C4OMLOS**	**12-8C4OMLOSS**	250	200
18, 20	3/4	1	1 3/16-12	41	16	22	36	41	58	41	362	**12-16C4OMLOS**	**12-16C4OMLOSS**	250	200
22, 25	1	1	1 7/16-12	41	21	22	36	42	58	41	551	**16C4OMLOS**	**16C4OMLOSS**	250	200
22, 25	1	3/4	1 7/16-12	36	21	16	36	42	55	41	533	**16-12C4OMLOS**	**16-12C4OMLOSS**	250	200
22, 25	1	1 1/4	1 7/16-12	50	21	28	41	45	61	44	758	**16-20C4OMLOS**	**16-20C4OMLOSS**	210	160
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	26	28	41	45	61	44	752	**20C4OMLOS**	**20C4OMLOSS**	210	160
28, 30, 32	1 1/4	1	1 11/16-12	41	26	22	41	45	61	44	712	**20-16C4OMLOS**	**20-16C4OMLOSS**	250	200
28, 30, 32	1 1/4	1 1/2	1 11/16-12	55	26	33	50	49	65	47	821	**20-24C4OMLOS**	**20-24C4OMLOSS**	140	140
35, 38	1 1/2	1 1/2	2-12	55	32	33	50	49	65	47	953	**24C4OMLOS**	**24C4OMLOSS**	140	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

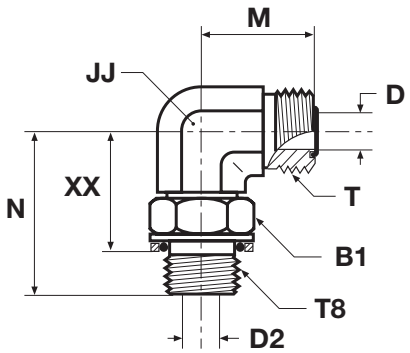
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C8OMLO Male stud elbow

O-Lok® ORFS tube end/Male metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	23	52	**4M12C8OMLOS**	250
6	1/4	M14×1.5	9/16-18	17	5	6	14	24	36	24	58	**4M14C8OMLOS**	250
8, 10	5/16, 3/8	M14×1.5	11/16-16	17	7	6	19	25	36	24	62	**6M14C8OMLOS**	250
8, 10	5/16, 3/8	M16×1.5	11/16-16	19	7	7	19	25	38	26	65	**6M16C8OMLOS**	250
12	1/2	M16×1.5	13/16-16	19	10	7	19	28	38	26	82	**8M16C8OMLOS**	250
12	1/2	M18×1.5	13/16-16	22	10	9	19	28	41	29	161	**8M18C8OMLOS**	250
14, 15, 16	5/8	M18×1.5	1-14	22	13	9	27	33	48	33	185	**10M18C8OMLOS**	250
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	35	214	**10M22C8OMLOS**	250
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	56	39	440	**12M27C8OMLOS**	250
22, 25	1	M33×2	1 7/16-12	38	21	20	36	42	59	43	501	**16M33C8OMLOS**	140
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	63	46	561	**20M42C8OMLOS**	140
35, 38	1 1/2	M48×2	2-12	55	32	32	50	49	72	49	684	**24M48C8OMLOS**	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

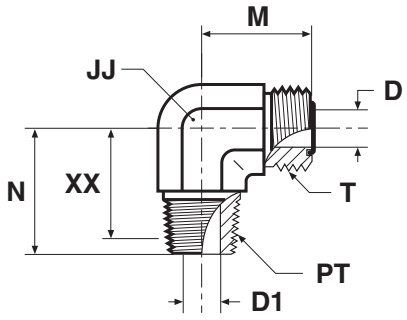
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

CLO Male stud elbow

O-Lok® ORFS tube end/Male NPTF* thread (SAE J476)

*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	9/16-18	5	5	14	22	20	15	39	**4 CLO-S**	**4 CLO-SS**	420	420
6	1/4	1/4-18	9/16-18	5	7	14	22	29	20	50	**4-4 CLO-S**	**4-4 CLO-SS**	420	420
8, 10	5/16, 3/8	1/4-18	11/16-16	7	7	19	25	28	19	75	**6 CLO-S**	**6 CLO-SS**	420	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	10	19	25	31	22	81	**6-6 CLO-S**	**6-6 CLO-SS**	420	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	22	29	37	26	84	**6-8 CLO-S**	**6-8 CLO-SS**	420	420
12	1/2	3/8-18	13/16-16	10	10	19	28	31	22	89	**8 CLO-S**	**8 CLO-SS**	420	420
12	1/2	1/2-14	13/16-16	10	13	22	28	37	26	125	**8-8 CLO-S**	**8-8 CLO-SS**	420	420
12	1/2	3/4-14	13/16-16	10	18	27	34	40	28	168	**8-12 CLO-S**	**8-12 CLO-SS**	280	280
14, 15, 16	5/8	1/2-14	1-14	13	13	27	33	37	26	154	**10 CLO-S**	**10 CLO-SS**	420	420
14, 15, 16	5/8	3/4-14	1-14	13	18	30	36	40	28	237	**10-12 CLO-S**	**10-12 CLO-SS**	280	280
18, 20	3/4	3/4-14	1 3/16-12	16	18	30	37	40	28	246	**12 CLO-S**	**12 CLO-SS**	280	280
18, 20	3/4	1/2-14	1 3/16-12	16	13	30	37	40	29	257	**12-8 CLO-S**	**12-8 CLO-SS**	420	420
18, 20	3/4	1-11 1/2	1 3/16-12	16	24	33	41	50	36	363	**12-16 CLO-S**	**12-16 CLO-SS**	210	210
22, 25	1	1-11 1/2	1 7/16-12	21	24	37	42	50	36	387	**16 CLO-S**	**16 CLO-SS**	210	210
22, 25	1	3/4-14	1 7/16-12	21	18	37	42	45	33	401	**16-12 CLO-S**	**16-12 CLO-SS**	280	280
28, 30, 32	1 1/4	1 1/4-11 1/2	1 11/16-12	26	32	41	45	61	46	469	**20 CLO-S**	**20 CLO-SS**	175	175
35, 38	1 1/2	1 1/2-11 1/2	2-12	32	38	48	49	67	52	603	**24 CLO-S**	**24 CLO-SS**	175	175

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

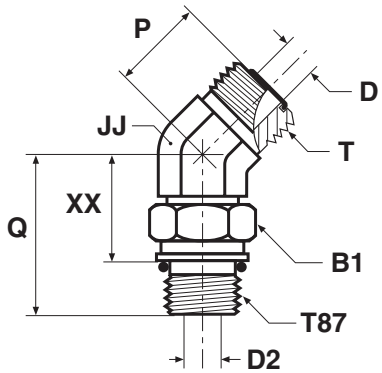
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V87OMLO 45° male stud elbow

O-Lok® ORFS tube end/Male metric thread – O-ring (ISO 6149-2)
SAE 52M0387 ISO 8434-3 SDE45



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M12×1.5	9/16-18	17	5	4	14	16	30	19	44	**4M12V87OMLOS**	**4M12V87OMLOSS**	420	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	7	7	19	19	33	19	82	**6M16V87OMLOS**	**6M16V87OMLOSS**	420	420
12	1/2	M18×1.5	13/16-16	24	10	9	19	20	37	23	110	**8M18V87OMLOS**	**8M18V87OMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	23	43	29	190	**10M22V87OMLOS**	**10M22V87OMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	26	50	32	288	**12M27V87OMLOS**	**12M27V87OMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	41	21	20	36	30	52	34	300	**16M33V87OMLOS**	**16M33V87OMLOSS**	420	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	32	54	35	444	**20M42V87OMLOS**	**20M42V87OMLOSS**	280	280
35, 38	1 1/2	M48×2	2-12	55	32	32	50	37	56	35	569	**24M48V87OMLOS**		280	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

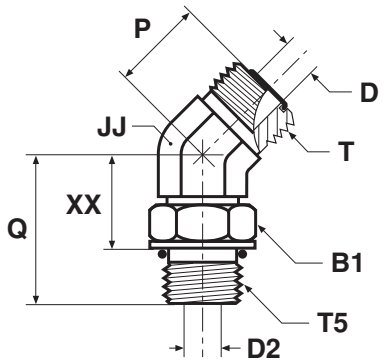
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V5OMLO 45° male stud elbow

O-Lok® ORFS tube end/Adjustable UN/UNF thread O-ring (ISO 11926)
SAE 520320



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	16	5	5	14	16	30	19	45	**4V5OMLOS**	**4V5OMLOSS**	630	420
6	1/4	9/16-18	9/16-18	19	5	8	19	17	33	21	76	**4-6 V5OLO-S**	**4-6V5OMLOSS**	630	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	19	33	21	83	**6 V5OLO-S**	**6V5OMLOSS**	630	420
8, 10	5/16, 3/8	7/16-20	11/16-16	16	7	5	19	19	31	20	64	**6-4 V5OLO-S**	**6-4V5OMLOSS**	630	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	7	10	19	19	36	23	96	**6-8 V5OLO-S**	**6-8V5OMLOSS**	630	420
12	1/2	3/4-16	13/16-16	24	10	10	19	20	36	23	117	**8V5OMLOS**	**8V5OMLOSS**	630	420
12	1/2	9/16-18	13/16-16	19	10	7	19	20	32	20	71	**8-6 V5OLO-S**	**8-6V5OMLOSS**	630	420
12	1/2	7/8-14	13/16-16	27	10	13	27	21	45	29	147	**8-10 V5OLO-S**	**8-10V5OMLOSS**	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	23	45	29	194	**10 V5OLO-S**	**10V5OMLOSS**	420	420
14, 15, 16	5/8	3/4-16	1-14	24	12	10	27	23	40	27	192	**10-8 V5OLO-S**	**10-8V5OMLOSS**	420	420
14, 15, 16	5/8	1 1/16-12	1-14	36	12	16	30	24	50	32	207	**10-12 V5OLO-S**	**10-12V5OMLOSS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	16	16	30	26	50	32	294	**12 V5OLO-S**	**12V5OMLOSS**	420	420
18, 20	3/4	7/8-14	1 3/16-12	27	16	12	30	26	46	30	219	**12-10 V5OLO-S**	**12-10V5OMLOSS**	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	21	37	30	52	34	322	**12-16 V5OLO-S**	**12-16V5OMLOSS**	420	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	30	52	34	394	**16 V5OLO-S**	**16V5OMLOSS**	420	380
22, 25	1	1 1/16-12	1 7/16-12	36	21	16	36	30	52	33	337	**16-12V5OMLOS**	**16-12V5OMLOSS**	420	420
22, 25	1	1 5/8-12	1 7/16-12	48	21	31	41	32	54	35	511	**16-20 V5OLO-S**	**16-20V5OMLOSS**	420	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	32	54	35	447	**20 V5OLO-S**	**20V5OMLOSS**	350	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	37	54	35	571	**24 V5OLO-S**	**24V5OMLOSS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

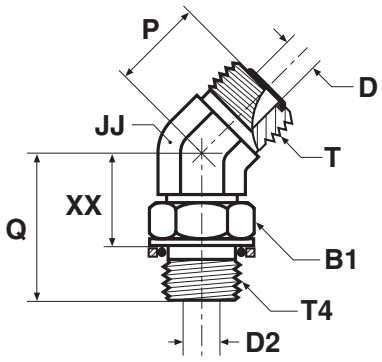
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

V4OMLO 45° male stud elbow

O-Lok® ORFS tube end/Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	14	5	4	14	16	28	19	38	**4V4OMLOS**	**4V4OMLOSS**	250	250
6	1/4	1/4	9/16-18	19	5	8	19	17	33	21	43	**4-4V4OMLOS**	**4-4V4OMLOSS**	250	200
8, 10	5/16, 3/8	1/4	11/16-16	19	7	8	19	19	32	21	83	**6V4OMLOS**	**6V4OMLOSS**	250	200
8, 10	5/16, 3/8	3/8	11/16-16	22	7	10	19	19	34	23	95	**6-6V4OMLOS**	**6-6V4OMLOSS**	250	200
8, 10	5/16, 3/8	1/2	11/16-16	27	7	12	27	19	43	28	107	**6-8V4OMLOS**	**6-8V4OMLOSS**	250	200
12	1/2	3/8	13/16-16	22	10	10	19	20	34	23	117	**8V4OMLOS**	**8V4OMLOSS**	250	200
14, 15, 16	5/8	1/2	1-14	27	13	12	27	23	43	29	191	**10V4OMLOS**	**10V4OMLOSS**	250	200
14, 15, 16	5/8	3/4	1-14	36	13	16	30	24	46	31	227	**10-12V4OMLOS**	**10-12V4OMLOSS**	250	200
18, 20	3/4	3/4	1 3/16-12	36	16	16	30	26	46	31	294	**12V4OMLOS**	**12V4OMLOSS**	250	200
18, 20	3/4	1	1 3/16-12	41	16	22	36	30	51	34	325	**12-16V4OMLOS**	**12-16V4OMLOSS**	250	200
22, 25	1	1	1 7/16-12	41	21	22	36	30	51	34	394	**16V4OMLOS**	**16V4OMLOSS**	250	200
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	26	28	41	32	52	35	430	**20V4OMLOS**	**20V4OMLOSS**	210	160
35, 38	1 1/2	1 1/2	2-12	55	32	33	50	37	52	35	551	**24V4OMLOS**	**24V4OMLOSS**	140	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

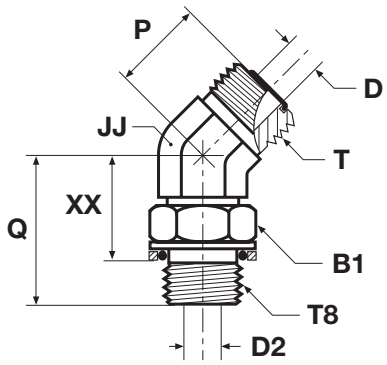
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V8OMLO 45° male stud elbow

O-Lok ®ORFS tube end/Male metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	M12×1.5	9/16-18	17	5	4	14	16	30	20	44	**4M12V8OMLOS**	250
10	3/8	M16×1.5	11/16-16	19	7	7	19	19	33	22	82	**6M16V8OMLOS**	250
12	1/2	M14×1.5	13/16-16	17	10	6	19	20	31	20	92	**8M14V8OMLOS**	250
12	1/2	M18×1.5	13/16-16	22	10	9	19	20	37	25	110	**8M18V8OMLOS**	250
14, 15, 16	5/8	M18×1.5	1-14	27	13	9	27	24	43	30	160	**10M18V8OMLOS**	250
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	23	43	30	190	**10M22V8OMLOS**	250
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	26	50	34	288	**12M27V8OMLOS**	250
22, 25	1	M33×2	1 7/16-12	38	21	20	36	30	52	36	300	**16M33V8OMLOS**	140
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	32	54	37	444	**20M42V8OMLOS**	140
35, 38	1 1/2	M48×2	2-12	55	32	32	50	37	56	37	568	**24M48V8OMLOS**	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

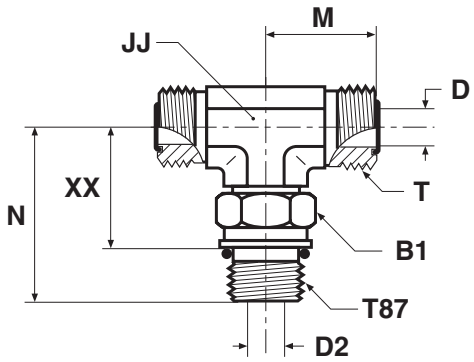
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

S87OMLO Male stud branch tee

O-Lok® ORFS tube ends/Adjustable metric thread – O-ring (ISO 6149)
SAE 52M0489 ISO 8434-3 SDBT



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	22	66	**4M12S87OMLOS**	**4M12S87OMLOSS**	420	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	7	7	19	25	37	27	131	**6M16S87OMLOS**	**6M16S87OMLOSS**	420	420
12	1/2	M18×1.5	13/16-16	24	10	9	19	28	41	27	187	**8M18S87OMLOS**	**8M18S87OMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	34	283	**10M22S87OMLOS**	**10M22S87OMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	55	37	549	**12M27S87OMLOS**	**12M27S87OMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	41	21	20	36	42	59	41	565	**16M33S87OMLOS**	**16M33S87OMLOSS**	420	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	62	44	824	**20M42S87OMLOS**	**20M42S87OMLOSS**	280	280
35, 38	1 1/2	M48×2	2-12	55	32	32	48	49	69	48	940	**24M48S87OMLOS**		280	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

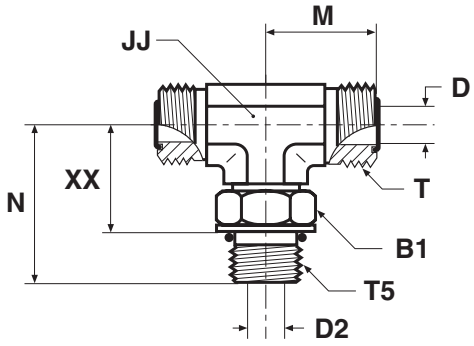
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

S5OMLO Male stud branch tee

O-Lok® ORFS tube end/Adjustable UN/UNF thread O-ring (ISO 11926)
SAE 520429



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	67	**4 S5OLO-S**	**4 S5OLO-SS**	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	131	**6S5OMLOS**	**6 S5OLO-SS**	420	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	10	10	19	26	41	27	160	**6-6-8 S5OLO-S**	**6-6-8 S5OLO-SS**	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	187	**8 S5OLO-S**	**8 S5OLO-SS**	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	12	27	33	50	34	279	**10 S5OLO-S**	**10 S5OLO-SS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	55	37	441	**12 S5OLO-S**	**12 S5OLO-SS**	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	42	18	21	37	42	60	41	500	**12-12-16 S5OLO-S**	**12-12-16 S5OLO-SS**	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	42	60	41	539	**16 S5OLO-S**	**16 S5OLO-SS**	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	851	**20 S5OLO-S**		280	—
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	942	**24 S5OLO-S**		280	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

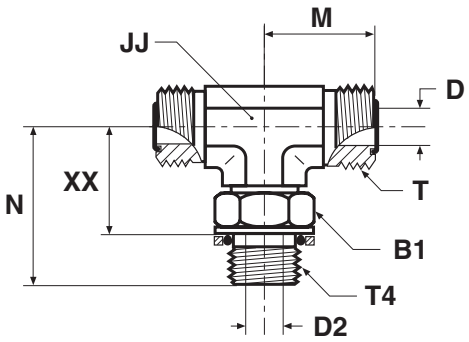
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

S4OMLO Male stud branch tee

O-Lok® ORFS tube end/Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	14	5	4	14	22	30	22	69	**4S4OMLOS**	**4S4OMLOSS**	250	250
6	1/4	1/4	9/16-18	19	5	8	19	24	36	25	97	**4-4-4S4OMLOS**	**4-4-4S4OMLOSS**	250	200
8, 10	5/16, 3/8	1/4	11/16-16	19	7	8	19	25	36	25	127	**6S4OMLOS**	**6S4OMLOSS**	250	200
8, 10	5/16, 3/8	3/8	11/16-16	22	7	10	19	27	38	27	126	**6-6-6S4OMLOS**	**6-6-6S4OMLOSS**	250	200
12	1/2	3/8	13/16-16	22	10	10	19	28	38	27	146	**8S4OMLOS**	**8S4OMLOSS**	250	200
12	1/2	1/2	13/16-16	27	10	12	27	31	49	34	174	**8-8-8S4OMLOS**	**8-8-8S4OMLOSS**	250	200
14, 15, 16	5/8	1/2	1-14	27	13	12	27	33	49	34	288	**10S4OMLOS**	**10S4OMLOSS**	250	200
14, 15, 16	5/8	3/4	1-14	36	13	16	30	36	52	37	314	**10-10-12S4OMLOS**	**10-10-12S4OMLOSS**	250	200
18, 20	3/4	3/4	1 3/16-12	36	16	16	30	37	52	37	531	**12S4OMLOS**	**12S4OMLOSS**	250	200
22, 25	1	1	1 7/16-12	41	21	22	36	42	58	41	600	**16S4OMLOS**	**16S4OMLOSS**	250	200
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	26	28	41	45	61	44	850	**20S4OMLOS**	**20S4OMLOSS**	210	160
35, 38	1 1/2	1 1/2	2-12	55	32	33	50	49	65	47	940	**24S4OMLOS**		140	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

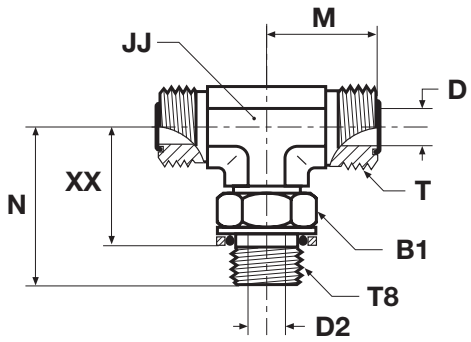
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

S8OMLO Male stud branch tee

O-Lok® ORFS tube end/Adjustable metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	23	66	**4M12S8OMLOS**	250
8, 10	5/16, 3/8	M16×1.5	11/16-16	19	7	7	19	25	37	26	131	**6M16S8OMLOS**	250
12	1/2	M18×1.5	13/16-16	22	10	9	19	28	41	29	187	**8M18S8OMLOS**	250
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	35	283	**10M22S8OMLOS**	250
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	55	39	550	**12M27S8OMLOS**	250
22, 25	1	M33×2	1 7/16-12	38	21	20	36	42	59	43	566	**16M33S8OMLOS**	140
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	62	46	824	**20M42S8OMLOS**	140
35, 38	1 1/2	M48×2	2-12	55	32	32	48	49	69	49	940	**24M48S8OMLOS**	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

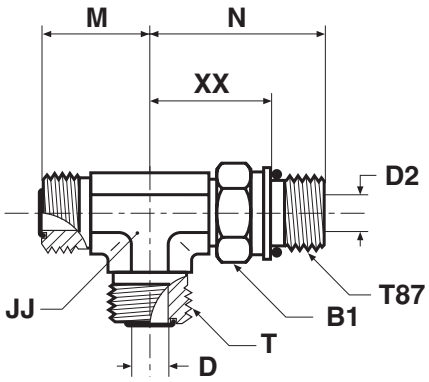
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

R87OMLO Male stud run tee

O-Lok® ORFS tube ends/Adjustable metric thread – O-ring (ISO 6149)
SAE 52M0488 ISO 8434-3 SDRT



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	22	66	**4M12R87OMLOS**	**4M12R87OMLOSS**	420	420
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	7	7	19	25	38	27	131	**6M16R87OMLOS**	**6M16R87OMLOSS**	420	420
12	1/2	M18×1.5	13/16-16	24	10	9	19	28	41	27	187	**8M18R87OMLOS**	**8M18R87OMLOSS**	420	420
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	34	283	**10M22R87OMLOS**	**10M22R87OMLOSS**	420	420
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	55	37	549	**12M27R87OMLOS**	**12M27R87OMLOSS**	420	420
22, 25	1	M33×2	1 7/16-12	41	21	20	36	42	59	41	565	**16M33R87OMLOS**	**16M33R87OMLOSS**	420	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	63	44	824	**20M42R87OMLOS**	**20M42R87OMLOSS**	280	280
35, 38	1 1/2	M48×2	2-12	55	32	32	48	49	69	47	940	**24M48R87OMLOS**		280	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

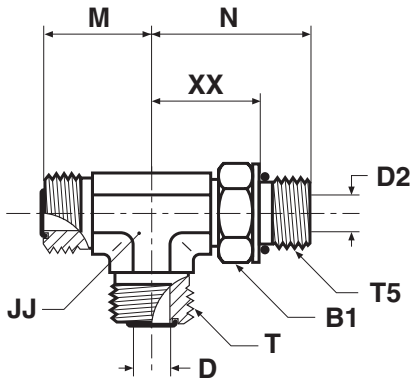
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R5OMLO Male stud run tee

O-Lok® ORFS tube end/Adjustable UN/UNF thread O-ring (ISO 11926)
SAE 520428



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	67	**4 R5OLO-S**	**4 R5OLO-SS**	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	131	**6R5OMLOS**	**6 R5OLO-SS**	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	187	**8 R5OLO-S**	**8 R5OLO-SS**	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	50	34	288	**10 R5OLO-S**	**10 R5OLO-SS**	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	16	16	30	37	55	37	558	**12 R5OLO-S**	**12 R5OLO-SS**	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	21	36	41	60	41	560	**12-16-12 R5OLO-S**	**12-16-12 R5OLO-SS**	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	36	42	60	41	566	**16 R5OLO-S**	**16 R5OLO-SS**	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	825	**20 R5OLO-S**	**20 R5OLO-SS**	280	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	942	**24 R5OLO-S**	**24 R5OLO-SS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

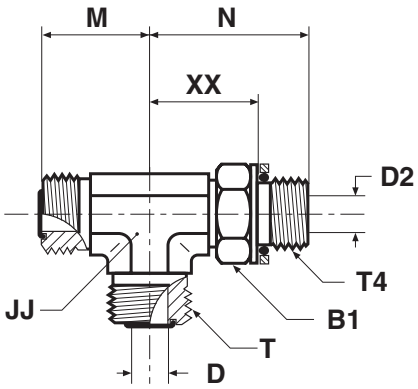
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

R4OMLO Male stud run tee

O-Lok® ORFS tube ends/Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8	9/16-18	14	5	4	14	22	30	22	69	**4R4OMLOS**	**4R4OMLOSS**	250	250
6	1/4	1/4	9/16-18	19	5	8	19	24	36	25	97	**4-4-4R4OMLOS**	**4-4-4R4OMLOSS**	250	200
8, 10	5/16. 3/8	1/4	11/16-16	19	7	8	19	25	36	25	127	**6R4OMLOS**	**6R4OMLOSS**	250	200
8, 10	5/16. 3/8	3/8	11/16-16	22	7	10	19	27	38	27	126	**6-6-6R4OMLOS**	**6-6-6R4OMLOSS**	250	200
12	1/2	3/8	13/16-16	22	10	10	19	28	38	27	146	**8R4OMLOS**	**8R4OMLOSS**	250	200
12	1/2	1/2	13/16-16	27	10	12	27	31	49	34	174	**8-8-8R4OMLOS**	**8-8-8R4OMLOSS**	250	200
14, 15, 16	5/8	1/2	1-14	27	13	12	27	33	49	34	288	**10R4OMLOS**	**10R4OMLOSS**	250	200
16		3/4	1-14	36	13	16	30	36	52	37	314	**10-12-10R4OMLOS**	**10-12-10R4OMLOSS**	250	200
18, 20	3/4	3/4	1 3/16-12	36	16	16	30	37	52	37	531	**12R4OMLOS**	**12R4OMLOSS**	250	200
18, 20	3/4	1	1 3/16-12	41	16	22	36	41	58	41	559	**12-16-12R4OMLOS**	**12-16-12R4OMLOSS**	250	200
22, 25	1	1	1 7/16-12	41	21	22	36	42	58	41	553	**16R4OMLOS**	**16R4OMLOSS**	250	200
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	26	28	41	45	61	44	824	**20R4OMLOS**	**20R4OMLOSS**	210	160
35, 38	1 1/2	1 1/2	2-12	55	32	32	50	49	65	47	940	**24R4OMLOS**		140	—

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

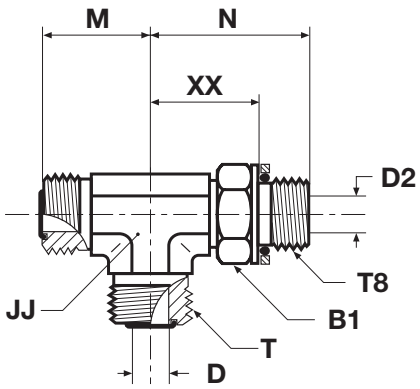
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R8OMLO Male stud run tee

O-Lok® ORFS tube end/Adjustable metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	M12×1.5	9/16-18	17	5	4	14	22	33	23	66	**4M12R8OMLOS**	250
8, 10	5/16, 3/8	M16×1.5	11/16-16	19	7	7	19	25	38	26	131	**6M16R8OMLOS**	250
12	1/2	M18×1.5	13/16-16	22	10	9	19	28	41	29	187	**8M18R8OMLOS**	250
14, 15, 16	5/8	M22×1.5	1-14	27	13	12	27	33	49	35	283	**10M22R8OMLOS**	250
18, 20	3/4	M27×2	1 3/16-12	32	16	15	30	37	55	39	550	**12M27R8OMLOS**	250
22, 25	1	M33×2	1 7/16-12	38	21	20	36	42	59	43	566	**16M33R8OMLOS**	140
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	26	26	41	45	63	46	824	**20M42R8OMLOS**	140
35, 38	1 1/2	M48×2	2-12	55	32	32	48	49	69	49	940	**24M48R8OMLOS**	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

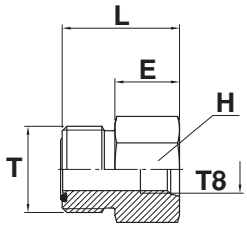
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

G87MLO Pressure gauge fitting

O-Lok® ORFS tube end/Female metric thread – O-ring (ISO 6149-1)



Tube O.D. mm	Tube O.D. in.	Thread metric T8	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M14×1.5	9/16-18	19	19	29	20	**4M14G87MLOS**	**4M14G87MLOSS**	630	630
8, 10	5/16, 3/8	M14×1.5	11/16-18	19	19	30	44	**6M14G87MLOS**	**6M14G87MLOSS**	630	630
12	1/2	M14×1.5	13/16-16	19	22	32	66	**8M14G87MLOS**	**8M14G87MLOSS**	630	630
14, 15, 16	5/8	M14×1.5	1-14	19	27	35	82	**10M14G87MLOS**	**10M14G87MLOSS**	420	420
18, 20	3/4	M14×1.5	1 3/16-12	19	32	36	104	**12M14G87MLOS**	**12M14G87MLOSS**	420	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

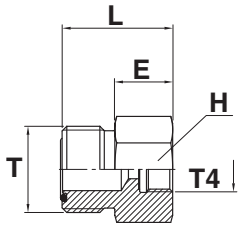
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

G4MLOSMO Pressure gauge connector

O-Lok® ORFS tube end/Female BSPP gauge thread (ISO 1179-1)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/4	9/16-18	19	17	27	32	**4-4G4MLOSMO**	**4-4G4MLOSSMO**	400	400
6	1/4	1/2	9/16-18	27	30	37	80	**4-8G4MLOSMO**	**4-8G4MLOSSMO**	400	400
8, 10	5/16, 3/8	1/4	11/16-16	17	19	28	49	**6G4MLOSMO**	**6G4MLOSSMO**	400	400
8, 10	5/16, 3/8	1/2	11/16-16	27	30	38	107	**6-8G4MLOSMO**	**6-8G4MLOSSMO**	400	400
12	1/2	1/4	13/16-16	17	22	30	60	**8-4G4MLOSMO**	**8-4G4MLOSSMO**	280	280
12	1/2	1/2	13/16-16	27	30	40	80	**8-8G4MLOSMO**	**8-8G4MLOSSMO**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

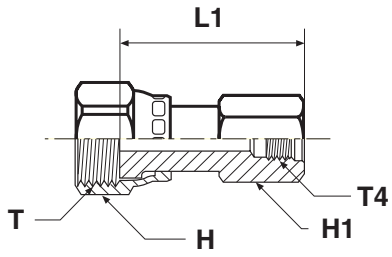
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

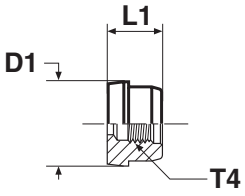
J

TT4ML Test point connection

O-Lok® ORFS swivel female end/Female BSPP thread (ISO 1179-1)
for EMA3 test point



Form A



Form B

Form B has to be assembled with a nut BMLS/BLS.

Thread UN/UNF-2B T	Thread BSPP T4	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
9/16-18	1/4	—	17	19	38	60	A	**4TT4MLS**	**4TT4MLSS**	420	420
11/16-16	1/4	—	22	19	41	74	A	**6TT4MLS**	**6TT4MLSS**	420	420
13/16-16	1/4	—	24	19	43	91	A	**8TT4MLS**	**8TT4MLSS**	420	420
—	1/4	23	—	—	18	30	B	**10TT4LS**	**10TT4MLSS**	420	420
—	1/4	28	—	—	18	48	B	**12TT4LS**	**12TT4MLSS**	420	420
—	1/4	34	—	—	18	95	B	**16TT4LS**	**16TT4MLSS**	420	420
—	1/4	41	—	—	18	130	B	**20TT4LS**	**20TT4MLSS**	280	280
—	1/4	49	—	—	18	189	B	**24TT4LS**	**24TT4MLSS**	280	280

Part numbers shown are part of our current manufacturing programme.

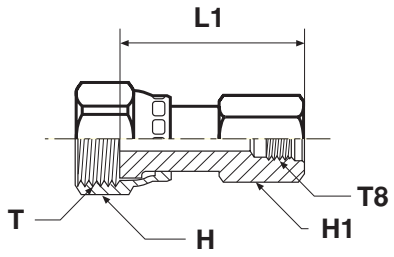
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

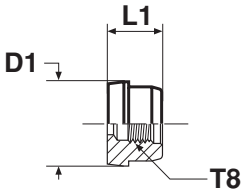
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

TT8ML Test point connection

O-Lok® ORFS female swivel end / Metric female thread
(Metric female thread designed for use with EMA3 connections only)



Form A



Form B

Form B has to be assembled with a nut BMLS/BLS.

Thread UN/UNF-2B T	Thread metric T8	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
9/16-18	M10×1	—	17	19	37	86	A	**4TT8MLS**	**4TT8MLSS**	420	420
11/16-16	M10×1	—	22	19	39	86	A	**6TT8MLS**	**6TT8MLSS**	420	420
13/16-16	M10×1	—	24	19	43	123	A	**8TT8MLS**	**8TT8MLSS**	420	420
—	M10×1	23	—	—	16	40	B	**10TT8LS**	**10TT8MLSS**	420	420
—	M10×1	28	—	—	16	60	B	**12TT8LS**	**12TT8MLSS**	420	420
—	M10×1	34	—	—	16	85	B	**16TT8LS**	**16TT8MLSS**	420	420
—	M10×1	41	—	—	16	133	B	**20TT8LS**	**20TT8MLSS**	280	280
—	M10×1	48	—	—	16	193	B	**24TT8LS**	**24TT8MLSS**	280	280

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

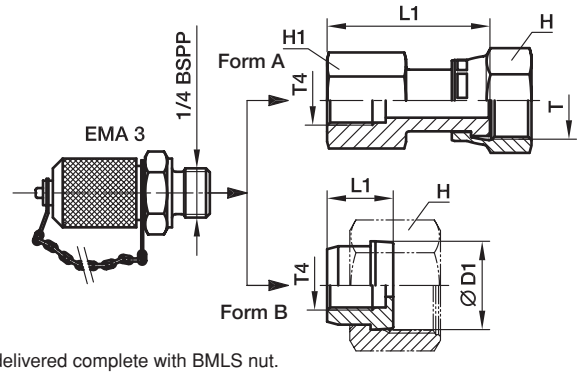
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

TTP4ML Test point connection

O-Lok® ORFS female swivel end/EMA3 test point



Form B versions delivered complete with BMLS nut.

Thread UN/UNF-2B T	Thread BSPP T4	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	PN (bar)
9/16-18	1/4	—	17	19	38	150	A	**4TTP4MLS**	420
11/16-16	1/4	—	22	19	41	164	A	**6TTP4MLS**	420
13/16-16	1/4	—	24	19	43	181	A	**8TTP4MLS**	420
—	1/4	23	30	—	18	120	B	**10TTP4LS**	420
—	1/4	28	36	—	18	138	B	**12TTP4LS**	420
—	1/4	34	41	—	18	185	B	**16TTP4LS**	420
—	1/4	41	50	—	18	200	B	**20TTP4LS**	280
—	1/4	49	60	—	18	279	B	**24TTP4LS**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

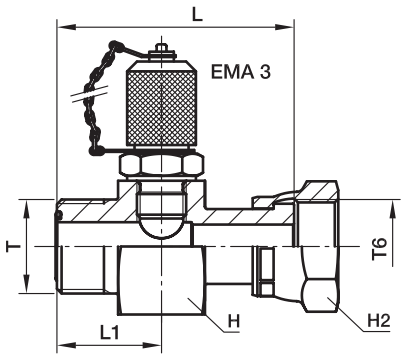
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

R6P4MLO Test point connection

O-Lok® ORFS end/O-Lok® ORFS female swivel end/EMA3 test point



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L mm	L1 mm	H mm	H2 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	9/16-18	50	22	36	17	270	**4-4R6P4MLOS**	420
8, 10	5/16, 3/8	11/16-16	11/16-16	53	23	36	22	300	**6-4R6P4MLOS**	420
12	1/2	13/16-16	13/16-16	58	25	36	24	308	**8-4R6P4MLOS**	420
14, 15,16	5/8	1-14	1-14	64	27	36	30	337	**10-4R6P4MLOS**	420
18, 20	3/4	1 3/16-12	1 3/16-12	68	29	41	36	416	**12-4R6P4MLOS**	420
25	1	1 7/16-12	1 7/16-12	71	29	46	41	506	**16-4R6P4MLOS**	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	73	29	50	50	691	**20-4R6P4MLOS**	280
35, 38	1 1/2	2-12	2-12	74	29	60	60	995	**24-4R6P4MLOS**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

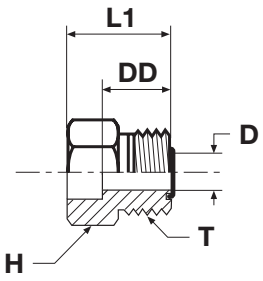
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

J

LOHB3* Braze connector

O-Lok® ORFS tube end/Braze socket
SAE 520104 / SAE 52M0104 ISO 8434-3 BRS
(*Parts delivered oil dipped finish only – steel)



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	DD mm	H in.	H mm	L1 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6		9/16-18	05	14	—	17	22	23	**4-6MMLOHB3S**		420	—
	1/4	9/16-18	5	13	5/8	—	22	24	**4 LOHB3-S**	**4 LOHB3-SS**	420	420
	3/8	9/16-18	5	13	5/8	—	22	23	**4-6 LOHB3-S**	**4-6 LOHB3-SS**	420	420
	3/8	11/16-16	7	14	3/4	—	23	36	**6 LOHB3-S**	**6 LOHB3-SS**	420	420
	1/4	11/16-16	7	14	3/4	—	23	42	**6-4 LOHB3-S**	**6-4 LOHB3-SS**	420	420
	1/2	11/16-16	7	14	3/4	—	23	36	**6-8 LOHB3-S**	**6-8 LOHB3-SS**	420	420
	5/8	11/16-16	7	15	—	19	23	30	**6-10 LOHB3-S**	**6-10 LOHB3-SS**	420	420
12		13/16-16	10	16	—	22	25	42	**8-12MMLOHB3S**		420	—
	1/2	13/16-16	10	16	7/8	—	25	44	**8 LOHB3-S**	**8 LOHB3-SS**	420	420
	1/4	13/16-16	10	16	7/8	—	25	58	**8-4 LOHB3-S**	**8-4 LOHB3-SS**	420	420
	3/8	13/16-16	10	16	7/8	—	25	43	**8-6 LOHB3-S**	**8-6 LOHB3-SS**	420	420
	5/8	13/16-16	10	16	7/8	—	25	42	**8-10 LOHB3-S**	**8-10 LOHB3-SS**	420	420
	3/4	13/16-16	10	17	1 1/16	—	30	74	**8-12 LOHB3-S**	**8-12 LOHB3-SS**	420	420
16		1-14	13	19	—	27	27	101	**10-16MMLOHB3S**		420	—
	5/8	1-14	13	19	1 1/16	—	27	104	**10 LOHB3-S**	**10 LOHB3-SS**	420	420
	3/8	1-14	13	19	1 1/16	—	27	99	**10-6 LOHB3-S**	**10-6 LOHB3-SS**	420	420
	1/2	1-14	13	19	1 1/16	—	27	96	**10-8 LOHB3-S**	**10-8 LOHB3-SS**	420	420
	3/4	1-14	13	19	1 1/16	—	31	97	**10-12 LOHB3-S**	**10-12 LOHB3-SS**	420	420
20		1 3/16-12	16	21	—	32	34	144	**12-20MMLOHB3S**		420	—
	3/4	1 3/16-12	16	21	1 1/4	—	34	149	**12 LOHB3-S**	**12 LOHB3-SS**	420	420
	1/2	1 3/16-12	16	21	1 1/4	—	30	174	**12-8 LOHB3-S**	**12-8 LOHB3-SS**	420	420
	5/8	1 3/16-12	16	21	1 1/4	—	30	171	**12-10 LOHB3-S**	**12-10 LOHB3-SS**	420	420
	1	1 3/16-12	16	21	1 1/2	—	35	220	**12-16 LOHB3-S**	**12-16 LOHB3-SS**	420	420
25		1 7/16-12	21	25	—	41	39	218	**16-25MMLOHB3S**		420	—
	1	1 7/16-12	21	25	1 1/2	—	39	225	**16 LOHB3-S**	**16 LOHB3-SS**	420	420
	1/2	1 7/16-12	21	25	1 1/2	—	33	237	**16-8 LOHB3-S**	**16-8 LOHB3-SS**	420	420
	3/4	1 7/16-12	21	25	1 1/2	—	37	228	**16-12 LOHB3-S**	**16-12 LOHB3-SS**	420	420
	1 1/4	1 7/16-12	21	25	1 3/4	—	39	276	**16-20 LOHB3-S**	**16-20 LOHB3-SS**	420	420
30		1 11/16-12	26	25	—	46	39	269	**20-30MMLOHB3S**		280	—
	1 1/4	1 11/16-12	26	25	1 3/4	—	39	278	**20 LOHB3-S**	**20 LOHB3-SS**	280	280
	1	1 11/16-12	26	25	1 3/4	—	39	278	**20-16 LOHB3-S**	**20-16 LOHB3-SS**	280	280
	1 1/2	1 11/16-12	26	25	2 1/8	—	39	371	**20-24 LOHB3-S**	**20-24 LOHB3-SS**	280	280
38		2-12	32	25	—	55	39	374	**24-38MMLOHB3S**		280	—
	1 1/2	2-12	32	25	2 1/8	—	39	384	**24 LOHB3-S**	**24 LOHB3-SS**	280	280
	1 1/4	2-12	32	25	2 1/8	—	39	442	**24-20 LOHB3-S**	**24-20 LOHB3-SS**	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

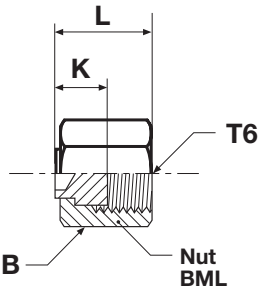
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FNML Cap

O-Lok® ORFS Female swivel cap end
SAE 520112



Thread UN/UNF-2B T6	B mm	K mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	SS
9/16-18	17	9	17	6	**4 FNL-S**	**4FNMLSS**	630	630
11/16-16	22	11	18	10	**6FNMLS**	**6FNMLSS**	630	630
13/16-16	24	12	22	11	**8FNMLS**	**8FNMLSS**	630	630
1-14	30	14	25	31	**10 FNL-S**	**10FNMLSS**	420	420
1 3/16-12	36	15	27	52	**12FNMLS**	**12FNMLSS**	420	420
1 7/16-12	41	16	29	81	**16FNMLS**	**16FNMLSS**	420	420
1 11/16-12	48	15	29	129	**20 FNL-S**	**20FNMLSS**	280	280
2-12	57	15	29	189	**24 FNL-S**	**24FNMLSS**	280	280
2 1/2-12	73	20	37	390	**32 FNL-S**		200	—

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

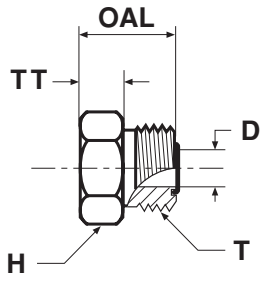
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

PNMLO Plug

O-Lok® ORFS tube end plug
SAE 520109



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	H mm	OAL mm	TT mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	5	16	17	5	18	**4 PNLO-S**	**4PNMLOSS**	630	630
8, 10	5/16, 3/8	11/16-16	7	19	19	8	34	**6PNMLOS**	**6PNMLOSS**	630	630
12	1/2	13/16-16	10	22	22	9	45	**8PNMLOS**	**8PNMLOSS**	630	630
14, 15, 16	5/8	1-14	13	27	26	10	91	**10 PNLO-S**	**10PNMLOSS**	420	420
18, 20	3/4	1 3/16-12	16	32	27	10	138	**12 PNLO-S**	**12PNMLOSS**	420	420
22, 25	1	1 7/16-12	21	38	28	10	203	**16 PNLO-S**	**16PNMLOSS**	420	420
28, 30, 32	1 1/4	1 11/16-12	26	45	28	10	266	**20 PNLO-S**	**20PNMLOSS**	420	280
35, 38	1 1/2	2-12	32	54	28	10	369	**24 PNLO-S**	**24PNMLOSS**	350	280
50	2	2 1/2-12	45	70	35	13	580	**32 PNLO-S**	**32PNMLOSS**	200	200

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

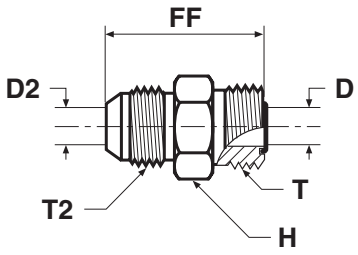
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

XHMLO Conversion union

Triple-Lok® 37° flare tube end/O-Lok® ORFS tube end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2A T2	D mm	D2 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	9/16-18	7/16-20	5	5	32	16	29	**4 XHLO-S**	**4XHMLOSS**	500	350
8, 10	5/16, 3/8	11/16-16	9/16-18	7	7	34	19	45	**6 XHLO-S**	**6XHMLOSS**	420	350
12	1/2	13/16-16	3/4-16	10	10	39	22	70	**8 XHLO-S**	**8XHMLOSS**	420	350
14, 15, 16	5/8	1-14	7/8-14	13	13	47	27	119	**10 XHLO-S**	**10XHMLOSS**	350	350
18, 20	3/4	1 3/16-12	1 1/16-12	16	16	52	32	181	**12 XHLO-S**	**12XHMLOSS**	350	350
22, 25	1	1 7/16-12	1 5/16-12	21	21	55	38	265	**16 XHLO-S**	**16XHMLOSS**	280	280
28, 30, 32	1 1/4	1 11/16-12	1 5/8-12	26	26	58	45	383	**20 XHLO-S**	**20XHMLOSS**	280	210
35, 38	1 1/2	2-12	1 7/8-12	32	32	63	54	562	**24 XHLO-S**	**24XHMLOSS**	210	140

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

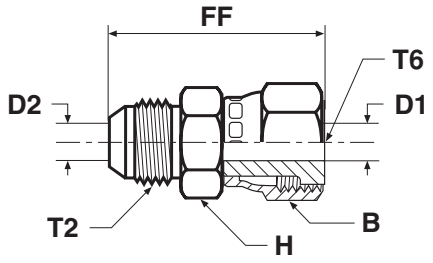
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

XHML6 Conversion swivel nut connector

Triple-Lok® 37° flare tube end/O-Lok® ORFS female swivel end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T2	Thread UN/UNF-2B T6	B mm	D1 mm	D2 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	17	4	4	38	16	29	**4 XHL6-S**	**4XHML6SS**	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	41	19	46	**6 XHL6-S**	**6XHML6SS**	420	350
12	1/2	3/4-16	13/16-16	24	9	9	48	22	73	**8 XHL6-S**	**8XHML6SS**	420	350
14, 15, 16	5/8	7/8-14	1-14	29	12	12	56	27	126	**10 XHL6-S**	**10XHML6SS**	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	14	64	32	205	**12 XHL6-S**	**12XHML6SS**	350	350
22, 25	1	1 5/16-12	1 7/16-12	41	20	20	68	38	285	**16 XHL6-S**	**16XHML6SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	71	43	623	**20 XHL6-S**	**20XHML6SS**	280	210

Part numbers shown are part of our current manufacturing programme.

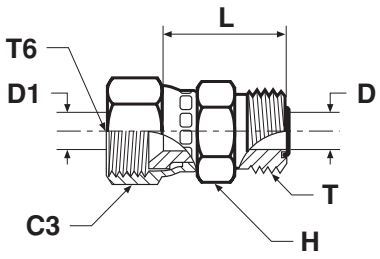
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

LOHMX6 Conversion swivel nut connector

Triple-Lok® 37 flare female swivel end/O-Lok® ORFS male end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	D1 mm	H mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
6	1/4	9/16-18	7/16-20	14	5	5	16	26	26	**4 LOHX6-S**	**4LOHMX6SS**	500	350
8, 10	5/16, 3/8	11/16-16	9/16-18	18	7	7	19	29	40	**6 LOHX6-S**	**6LOHMX6SS**	350	350
12	1/2	13/16-16	3/4-16	22	10	10	22	34	63	**8 LOHX6-S**	**8LOHMX6SS**	350	350
14, 15, 16	5/8	1-14	7/8-14	25	13	13	27	39	103	**10 LOHX6-S**	**10LOHMX6SS**	350	350
18, 20	3/4	1 3/16-12	1 1/16-12	32	16	16	32	41	162	**12 LOHX6-S**	**12LOHMX6SS**	350	350
22, 25	1	1 7/16-12	1 5/16-12	38	21	21	38	46	229	**16 LOHX6-S**	**16LOHMX6SS**	250	250

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

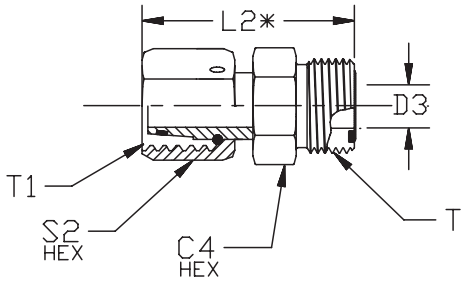
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

LOHU86 EO swivel adapter

O-Lok® ORFS tube end/EO 24° DKO swivel



Tube O.D. mm	Tube O.D. in.	EO Swivel Size	Thread UN/UNF-2A T	Thread metric T1	C4 mm	D3 mm	L2 mm	S2 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	6L	9/16-18	12×1.5	17	3	34	14	30	**4-6L LOHU86-S**	500
6	1/4	8L	9/16-18	14×1.5	17	4	34	17	50	**4-8L LOHU86-S**	500
10	3/8	10L	11/16-16	16×1.5	19	6	37	19	75	**6-10L LOHU86-S**	500
12	1/2	12L	13/16-16	18×1.5	22	8	39	22	145	**8-12L LOHU86-S**	400
16	5/8	15L	1-14	22×1.5	27	10	46	27	180	**10-15L LOHU86-S**	400
20	3/4	18L	1 3/16-12	26×1.5	32	13	48	32	250	**12-18L LOHU86-S**	400
25	1	22L	1 7/16-12	30×2	41	17	53	36	305	**16-22L LOHU86-S**	250
6	1/4	6S	9/16-18	14×1.5	17	3	34	17	30	**4-6S LOHU86-S**	630
6	1/4	8S	9/16-18	16×1.5	17	4	34	19	50	**4-8S LOHU86-S**	630
10	3/8	10S	11/16-16	18×1.5	19	5	37	22	75	**6-10S LOHU86-S**	630
12	1/2	12S	13/16-16	20×1.5	22	8	40	24	145	**8-12S LOHU86-S**	630
16	5/8	14S	1-14	22×1.5	27	9	47	27	180	**10-14S LOHU86-S**	420
16	5/8	16S	1-14	24×1.5	27	11	47	30	185	**10-16S LOHU86-S**	420
20	3/4	20S	1 3/16-12	30×2	32	14	52	36	260	**12-20S LOHU86-S**	420
25	1	25S	1 7/16-12	36×2	41	18	55	46	308	**16-25S LOHU86-S**	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

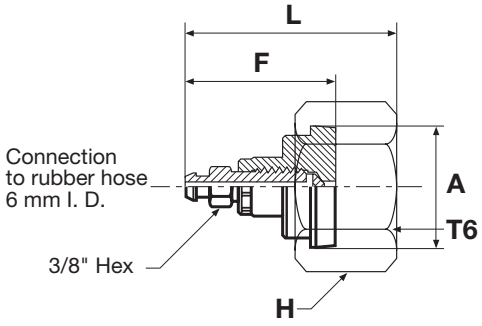
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

FNLBA Bleed adaptor

O-Lok® ORFS female end



Thread UN/UNF-2B T6	A (mm)	F (mm)	H (mm)	L (mm)	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
13/16-16	19	41	24	53	49	**8 FNLBA-S**	**8 FNLBA-SS**	420	420
1-14	23	41	30	55	77	**10 FNLBA-S**	**10 FNLBA-SS**	420	420
1 3/16-12	27	41	36	56	111	**12 FNLBA-S**	**12 FNLBA-SS**	420	420
1 7/16-12	33	41	41	56	113	**16 FNLBA-S**	**16 FNLBA-SS**	420	420
1 11/16-12	40	41	50	56	151	**20 FNLBA-S**	**20 FNLBA-SS**	280	280
2-12	48	41	60	56	161	**24 FNLBA-S**	**24 FNLBA-SS**	280	280

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

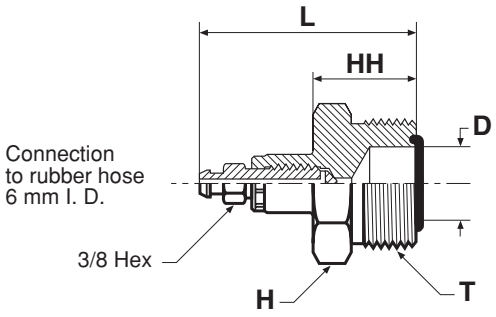
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

PNLOBA Bleed adaptor

O-Lok® ORFS female end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	H mm	HH mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	5	17	20	48	57	**4 PNLOBA-S**	420
8, 10	5/16, 3/8	11/16-16	7	19	22	50	64	**6 PNLOBA-S**	420
12	1/2	13/16-16	10	22	23	53	93	**8 PNLOBA-S**	420
14, 15, 16	5/8	1-14	13	27	26	56	127	**10 PNLOBA-S**	420
18, 20	3/4	1.3/16-12	16	32	27	58	220	**12 PNLOBA-S**	420
22, 25	1	1.7/16-12	21	38	28	60	266	**16 PNLOBA-S**	420
28, 30, 32	1 1/4	1.11/16-12	26	45	28	61	304	**20 PNLOBA-S**	280
35, 38	1 1/2	2-12	32	54	28	63	422	**24 PNLOBA-S**	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

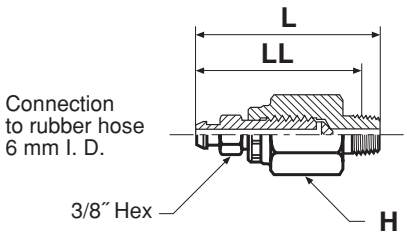
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

HPBA Bleed adaptor

Bleed hose connection/Male NPTF thread (SAE J476)



Thread NPTF	H mm	L mm	LL mm	O-Lok® Steel	PN (bar)
1/4-18	18	56	47	**1/4 HPBA-S**	420

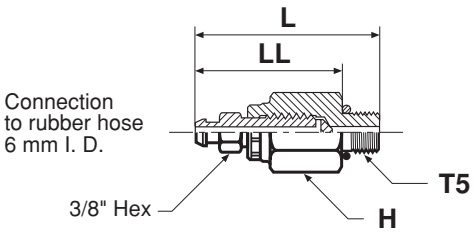
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

J

P5ONBA Bleed adaptor

Bleed hose connection/Male UN/UNF thread – O-ring (ISO 11926)



Thread UN/UNF-2A T5	H mm	L mm	LL mm	O-Lok® Steel	PN (bar)
7/16-20	18	52	**41**	**4 P5ONBA-S**	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

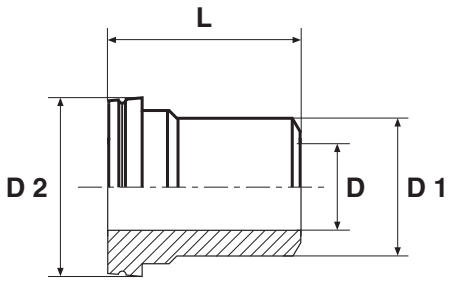
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

TW3L Weld nipple

O-Lok® ORFS female end/Butt weld end

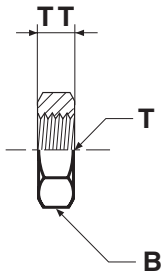


Tube O.D. mm	D mm	D1 mm	D2 mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	2	6	13	25	10	**TW3LS6**	**TW3LSS6**
8	3	8	13	25	12	**TW3LS8**	**TW3LSS8**
10	4	10	16	26	15	**TW3LS10**	**TW3LSS10**
12	5	12	19	26	18	**TW3LS12**	**TW3LSS12**
16	10	16	23	32	25	**TW3LS16**	**TW3LSS16**
20	13	20	28	37	30	**TW3LS20**	**TW3LSS20**
25	16	25	34	42	37	**TW3LS25**	**TW3LSS25**
30	22	30	41	44	43	**TW3LS30**	**TW3LSS30**
38	28	38	48	49	70	**TW3LS38**	**TW3LSS38**

Part numbers shown are part of our current manufacturing programme.

WLNML Bulkhead locknut

SAE 520118/SAE 52M0118 ISO 8434-3 BHLN

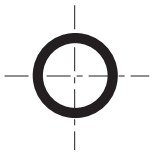


Thread UN/UNF-2B T	B mm	TT mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
9/16-18	22	7	11	**4WLNMLS**	**4WLNMLSS**
11/16-16	27	8	23	**6WLNMLS**	**6WLNMLSS**
13/16-16	30	9	26	**8WLNMLS**	**8WLNMLSS**
1-14	36	11	38	**10WLNMLS**	**10WLNMLSS**
1 3/16-12	41	11	44	**12WLNMLS**	**12WLNMLSS**
1 7/16-12	46	11	54	**16WLNMLS**	**16WLNMLSS**
1 11/16-12	51	10	73	**20 WLNL-S**	**20WLNMLSS**
2-12	60	10	102	**24 WLNL-S**	**24WLNMLSS**

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

Spare parts guide – O-Lok® retaining rings and seals



Face seal end O-rings SAE J1453/ISO 8434-3

Dash size	Thread UN/UNF	O-ring order code NBR	O-ring order code FKM	O-ring ID × section mm
4	9/16-18	**2-011-N552-9**	**2-011-V894-9**	7.65 × 1.78
6	11/16-16	**2-012-N552-9**	**2-012-V894-9**	9.25 × 1.78
8	13/16-16	**2-014-N552-9**	**2-014-V894-9**	12.42 × 1.78
10	1-14	**2-016-N552-9**	**2-016-V894-9**	15.60 × 1.78
12	1 3/16-12	**2-018-N552-9**	**2-018-V894-9**	18.77 × 1.78
16	1 7/16-12	**2-021-N552-9**	**2-021-V894-9**	23.52 × 1.78
20	1 11/16-12	**2-025-N552-9**	**2-025-V894-9**	29.87 × 1.78
24	2-12	**2-029-N552-9**	**2-029-V894-9**	37.82 × 1.78
32	2 1/2-12	**2-135-N552-9**	**2-135-V894-9**	48.90 × 2.62

BSPP male threads – ISO 1179

Thread BSPP	ED seal order code NBR	ED seal order code FKM	O-ring order code* NBR	O-ring order code* FKM	O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
1/8	**ED10X1X**	**ED10X1VITX**	**6-002-N552-9**	**6-002-V894-9**	8.00 × 2.00	**8207-1/8**	**8207SS1/8**
1/4	**ED14X1.5X**	**ED14X1.5VITX**	**2-111-N552-9**	**2-111-V894-9**	10.77 × 2.62	**8207-1/4**	**8207SS1/4A**
3/8	**ED3/8X**	**ED3/8VITX**	**2-113-N552-9**	**2-113-V894-9**	13.94 × 2.62	**8207-3/8**	**8207SS3/8A**
1/2	**ED1/2X**	**ED1/2VITX**	**5-256-N552-9**	**5-256-V894-9**	17.96 × 2.62	**8207-1/2**	**8207SS1/2**
3/4	**ED26X1.5X**	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**8207-3/4**	**8207SS3/4**
1	**ED33X2X**	**ED33X2VITX**	**2-217-N552-9**	**2-217-V894-9**	29.74 × 3.53	**8207-1**	**8207SS1A**
1 1/4	**ED42X2X**	**ED42X2VITX**	**2-222-N552-9**	**2-222-V894-9**	37.69 × 3.53	**8207-1-1/4**	**8207SS1 1/4**
1 1/2	**ED48X2X**	**ED48X2VITX**	**2-224-N552-9**	**2-224-V894-9**	44.04 × 3.53	**8207-1-1/2**	**8207SS1 1/2**

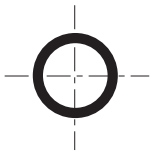
Typical fittings using these parts: F42EDMLO/C4OMLO/V4OMLO etc.
*Must be used with correct retainer ring.

Metric male threads – ISO 9974

Thread metric	ED seal order code NBR	ED seal order code FKM	O-ring order code* NBR	O-ring order code* FKM	O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
M10×1	**ED10X1/R1/8**	**ED10X1R1/8VIT**	**6-074-N552-9**	**6-074-V894-9**	8.00 × 1.50	**M10RR**	**RRM10X1SS**
M12×1.5	**ED12X1.5**	**ED14X1.5/VIT**	**2-012-N552-9**	**2-012-V894-9**	9.25 × 1.78	**M12RR**	**RRM12X1.5SS**
M14×1.5	**ED14X1.5/R1/4**	**ED14X1.5/R1/4VIT**	**2-013-N552-9**	**2-013-V894-9**	10.82 × 1.78	**M14RR**	**RRM14X1.5SS**
M16×1.5	**ED16X1.5**	**ED16X1.5/VIT**	**3-907-N552-9**	**3-907-V894-9**	13.46 × 2.08	**M16RR**	**RRM16X1.5SS**
M18×1.5	**ED18X1.5**	**ED18X1.5/VIT**	**2-114-N552-9**	**2-114-V894-9**	15.54 × 2.62	**M18RR**	**RRM18X1.5SS**
M22×1.5	**ED22X1.5**	**ED22X1.5VIT**	**2-018-N552-9**	**2-018-V894-9**	18.77 × 1.78	**M22RR**	**RRM22X1.5SS**
M27×2	**ED26X1.5X****	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**M27RR**	**RRM27X2SS**
M33×2	**ED33X2R1**	**ED33X2/R1VIT**	**2-122-N552-9**	**2-122-V894-9**	28.24 × 2.62	**M33RR**	**RRM33X2SS**
M42×2	**ED42X2/R1.1/4**	**ED42X2R1.1/4VIT**	**2-128-N552-9**	**2-128-V894-9**	37.77 × 2.62	**M42RR**	**RRM42X2SS**
M48×2	**ED48X2/R1.1/2**	**ED48X2R1.1/2VIT**	**2-132-N552-9**	**2-132-V894-9**	44.12 × 2.62	**M48RR**	**RRM48X2SS**

Typical fittings using these parts: F82EDMLO/C8OMLO/V8OMLO etc.
*Must be used with correct retainer ring.
**Same seal used for M26×1.5 and M27×2

Spare parts guide – O-Lok® retaining rings and seals



UN/UNF male threads – ISO 11926

Dash size	Thread UN/UNF	O-ring order code NBR	O-ring order code FKM	O-ring ID × section mm
2	5/16-24	**3-902-N552-9**	**3-902-V894-9**	6.07 × 1.63
3	3/8-24	**3-903-N552-9**	**3-903-V894-9**	7.65 × 1.63
4	7/16-20	**3-904-N552-9**	**3-904-V894-9**	8.92 × 1.83
5	1/2-20	**3-905-N552-9**	**3-905-V894-9**	10.52 × 1.83
6	9/16-18	**3-906-N552-9**	**3-906-V894-9**	11.89 × 1.98
8	3/4-16	**3-908-N552-9**	**3-908-V894-9**	16.36 × 2.21
10	7/8-14	**3-910-N552-9**	**3-910-V894-9**	19.18 × 2.46
12	1 1/16-12	**3-912-N552-9**	**3-912-V894-9**	23.47 × 2.95
14	1 3/16-12	**3-914-N552-9**	**3-914-V894-9**	26.59 × 2.95
16	1 5/16-12	**3-916-N552-9**	**3-916-V894-9**	29.74 × 2.95
20	1 5/8-12	**3-920-N552-9**	**3-920-V894-9**	37.47 × 3.00
24	1 7/8-12	**3-924-N552-9**	**3-924-V894-9**	43.69 × 3.00
32	2 1/2-12	**3-932-N552-9**	**3-932-V894-9**	59.36 × 3.00

Typical fittings using these parts: F5OMLO/C5OMLO/R5OMLO etc.

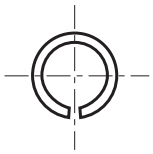
Metric male threads – ISO 6149

Thread metric	O-ring order code NBR	O-ring order code FKM	O-ring ID × section (mm)
M10×1	**6-345-N552-9**	**6-345-V894-9**	8.20 × 1.50
M12×1.5	**6-346-N552-9**	**6-346-V894-9**	9.40 × 2.10
M14×1.5	**6-347-N552-9**	**6-347-V894-9**	11.40 × 2.10
M16×1.5	**6-348-N552-9**	**6-348-V894-9**	13.40 × 2.10
M18×1.5	**6-349-N552-9**	**6-349-V894-9**	15.40 × 2.10
M22×1.5	**6-350-N552-9**	**6-350-V894-9**	19.40 × 2.10
M27×2	**6-351-N552-9**	**6-351-V894-9**	23.70 × 2.80
M33×2	**6-352-N552-9**	**6-352-V894-9**	29.70 × 2.80
M42×2	**6-353-N552-9**	**6-353-V894-9**	38.70 × 2.80
M48×2	**6-354-N552-9**	**6-354-V894-9**	46.70 × 2.80

Typical fittings using these parts: F87OMLO/S87OMLO etc.

Other seal compounds a available on request for alternative applications.

SBR Braze ring



For metric tubing

Tube O.D. mm	Order code
6	**SBR6**
8	**SBR8**
10	**SBR10**
12	**SBR12**
14	**SBR14**
15	**SBR15**
16	**SBR16**
18	**SBR18**
20	**SBR20**
22	**SBR22**
25	**SBR25**
28	**SBR28**
30	**SBR30**
32	**SBR32**
35	**SBR35**
38	**SBR38**
50	**SBR50**

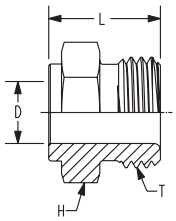
For inch tubing

Tube O.D. in.	Order code
1/4	**4SBR**
3/8	**6SBR**
1/2	**8SBR**
5/8	**10SBR**
3/4	**12SBR**
1	**16SBR**
1 1/4	**20SBR**
1 1/2	**24SBR**
2	**32SBR**

Part numbers shown are part of our current manufacturing programme.

J

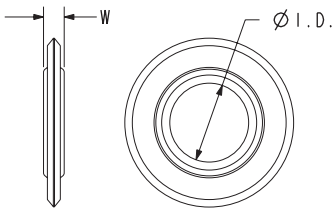
Flange-Seal components



Flange-Seal fitting
LHP

Tube O.D. mm	Thread T UN/UNF-2A	H mm	L mm	Weight (steel) g/1 St.	Order code
1/4	9/16-18	16	15.0	15	**4 LHP-S**
3/8	11/16-16	19	17.5	22	**6 LHP-S**
1/2	13/16-16	22	20.0	33	**8 LHP-S**
5/8	1-14	27	24.0	59	**10 LHP-S**
3/4	1 3/16-12	32	25.5	85	**12 LHP-S**

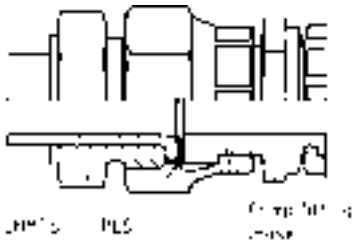
Tube O.D. mm	Thread T UN/UNF-2A	H mm	L mm	Weight (steel) g/1 St.	Order code
6	9/16-18	17	15.0	15	**LHMPS6**
8	11/16-16	17	17.5	25	**LHMPS8**
10	11/16-16	19	17.5	22	**LHMPS10**
12	13/16-16	22	20.0	33	**LHMPS12**
16	1-14	27	24.0	59	**LHMPS16**
20	1 3/16-12	32	25.5	85	**LHMPS20**



Bonded Seal element
PLS

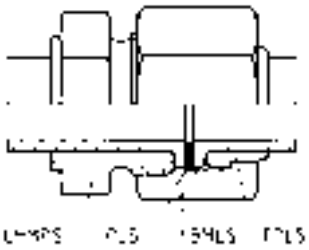
Fitting dash size	Tube O.D. mm	Tube O.D. inch	I.D. mm	W mm	Weight (steel) g/1 St.	Seal Order code
4	6	1/4	6	2	1	**4 PL-S N0702**
6	8. 10	3/8	9	2	1	**6 PL-S N0702**
8	12	1/2	12	2	1	**8 PL-S N0702**
10	16	5/8	16	2	2	**10 PL-S N0702**
12	20	3/4	20	2	2	**12 PL-S N0702**

Pressure ratings and tube limitations



Tube to hose

Order code	Dash size	Tube O.D. mm	max. wall thickness tube to hose	PN
LHMPS6	4	6	1.5	420
LHMPS8	6	8	2.0	420
LHMPS10	6	10	2.0	420
LHMPS12	8	12	2.5	420
LHMPS16	10	16	3.0	420
LHMPS20	12	20	3.5	420



Tube to tube

Order code	Dash size	Tube O.D. mm	max. wall thickn. Tube to tube	Example PN for St 37 NBK*
LHMPS6	4	6	1.0	370
LHMPS8	6	8	1.5	410
LHMPS10	6	10	1.5	360
LHMPS12	8	12	2.0	390
LHMPS16	10	16	2.0	300
LHMPS20	12	20	2.5	300

*For higher strenght tube, connection PN may be increased to maximum shown in Tube to hose table 420 bar.

Tube to hose

Order code	Dash size	Tube O.D. inch	max. wall thickness tube to hose	PN
4 LHP-S	4	1/4	0.065	420
6 LHP-S	6	3/8	0.095	420
9 LHP-S	8	1/2	0.095	420
10 LHP-S	10	5/8	0.120	420
12 LHP-S	12	3/4	0.134	420

Tube to tube

Order code	Dash size	Tube O.D. inch	max. wall thickn. Tube to tube	Example PN for St 37 NBK*
4 LHP-S	4	1/4	0.049	400
6 LHP-S	6	3/8	0.065	345
8 LHP-S	8	1/2	0.095	385
10 LHP-S	10	5/6	0.120	385
12 LHP-S	12	3/4	0.120	320

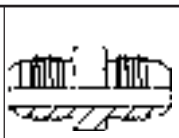
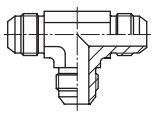
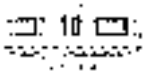
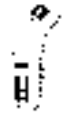
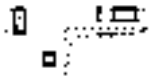
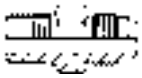
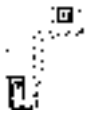
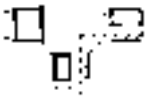
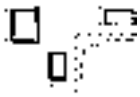
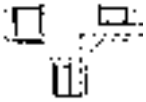
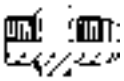
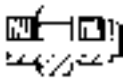
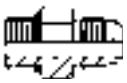
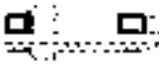
*For higher strenght tube, connection PN may be increased to maximum shown in Tube to hose table 420 bar.

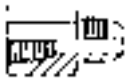
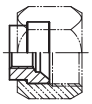
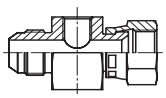
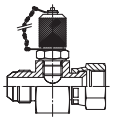
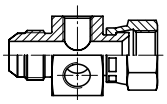
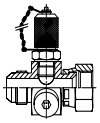
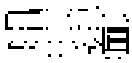
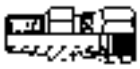
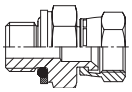
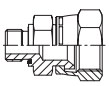
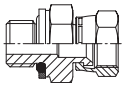
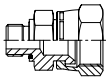
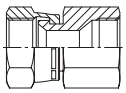
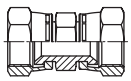
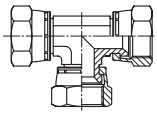
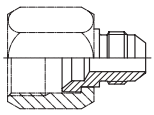
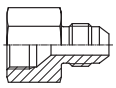
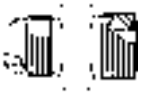
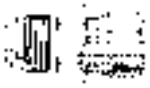
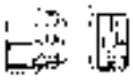
Triple-Lok®

The universal
37° flared fitting



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K

How to order Triple-Lok® fittings

	1	2	3	4	5	6	7
Example Order code	**6-8**	**C**	**5**	**O**	**M**	**X**	**S**

1 Order codes for tube and port thread ends

Dash Size	Tube Size (Inch)	Tube Size (mm)	Port Thread Size (Inch) BSPP/BSPT/NPT	Port Thread Size UN / UNF
2	1/8		1/8	5/16-24
3	3/16			3/8-24
4	1/4	6	1/4	7/16-20
5				1/2-20
6	3/8	8,10	3/8	9/16-18
8	1/2	12	1/2	3/4-16
10	5/8	14,15,16	5/8	7/8-14
12	3/4	18,20	3/4	1 1/6-12
14				1 3/6-12
16	1	25	1	1 5/6-12
20	1 1/4	28,30,32	1 1/4	1 5/8-12
24	1 1/2	35,38	1 1/2	1 7/8-12
28		42		2 1/4-12
32	2	50	2	2 1/2-12

Metric port threads are shown as per example 4M12C87OMXS

2 Codes for fitting styles/shapes

Code	Description
AE6	Straight Thread Swivel
B	Nut
C	Male Stud elbow
CC	Long Male Stud elbow
CCC	Extra Long Male Stud elbow
C6	Swivel Nut Elbow
D	Female Elbow
E	Union elbow
F	Male Stud connector
FF	Long Male Stud connector
F6	Male Stud Swivel
FN	Cap
G	Female Connector
G-MO	Gauge Adapter Fitting
G6	Female Connector Swivel
H	Straight union
H6	Swivel/Swivel Adapter
J	Union Tee
J6	Swivel Tee
K	Union Cross
LOHX6	Triple-Lok® Swivel/O-Lok® Adapter
M	Female Run Tee
O	Female Branch Tee
PN	Plug
R	Male Stud Run Tee
R6	Swivel Run Tee
S	Male Stud Branch Tee
S6	Swivel Branch Tee
T	Sleeve
TR	Tube End Reducer
TT	Test Point Adapter
V	45° male stud elbow
V6	Swivel Nut 45° Elbow
W	Bulkhead Union
WE	Bulkhead Union Elbow
WG	Female Bulkhead connector
WJJ	Bulkhead Run Tee
WJT	Bulkhead Branch Tee
WLN	Bulkhead Locknut
WN	Bulkhead 45° union elbow
XHL	Triple Lok® / O-Lok® Adaptor
XHL6	Triple Lok® / O-Lok® Swivel Adaptor

3 Threads and sealing methods

Code	Description
None	NPT/NPTF Thread
3	BSPT Thread
4	BSPP Thread O-Ring & Retainer Ring
42	BSPP Thread EOLASTIC seal 'ED'
5	UN/UNF Thread (O-Rring Seal)
8	Metric Thread O-Ring & Retainer Ring
82	Metric Thread EOLASTIC seal 'ED'
87	Metric ISO 6149 Thread (O-Ring Seal)
63	Swivel Connector BSPT end
64	Swivel Connector BSPP end (O-Ring & Retainer Ring)
642	Swivel Connector BSPP end (EOLASTIC Seal 'ED')
65	Swivel Connector UN/UNF end (O-Ring seal)
68	Swivel Connector Metric end (O-Ring & Retainer Ring)
682	Swivel Connector Metric end (EOLASTIC Seal 'ED')
687	Swivel Connector Metric ISO 6149 end

4 Stud connector seal

Code	Description
O	O-Ring Seal (Assembled on fitting)
ED	Captive EOLASTIC Seal (Assembled on fitting)
No Code	No Seal (O-Ring not assembled on fitting)

5 Hexagon/ Across flats style

Code	Description
M	Metric Hexagon Dimension
No Code	Inch Hexagon Dimension

6 Fitting type

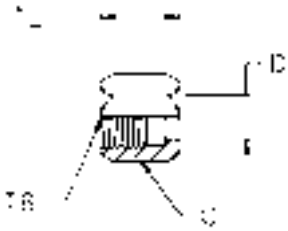
Code	Description
X	Parker Triple-Lok®

7 Fitting material

Code	Description
S	Steel
SS	Stainless Steel
B	Brass

BTX Nut

Triple-Lok® 37° Flare end nut
SAE 070110 MS51531



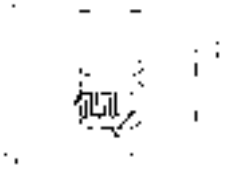
Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	C in.	D mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
	1/8	5/16-24	3/8	5	14	6	**2 BTX-S**	**2 BTX-SS**	**2 BTX-B**
	3/16	3/8-24	7/16	6	16	8	**3 BTX-S**	**3 BTX-SS**	**3 BTX-B**
6	1/4	7/16-20	9/16	8	16	11	**4 BTX-S**	**4 BTX-SS**	**4 BTX-B**
8	5/16	1/2-20	5/8	10	17	14	**5 BTX-S**	**5 BTX-SS**	**5 BTX-B**
10	3/8	9/16-18	11/16	11	18	18	**6 BTX-S**	**6 BTX-SS**	**6 BTX-B**
12	1/2	3/4-16	7/8	15	22	29	**8 BTX-S**	**8 BTX-SS**	**8 BTX-B**
14, 15, 16	5/8	7/8-14	1	18	25	54	**10 BTX-S**	**10 BTX-SS**	**10 BTX-B**
18, 20	3/4	1 1/16-12	1 1/4	21	26	73	**12 BTX-S**	**12 BTX-SS**	**12 BTX-B**
22	7/8	1 3/16-12	1 3/8	24	28	100	**14 BTX-S**	**14 BTX-SS**	**14 BTX-B**
25	1	1 5/16-12	1 1/2	28	29	104	**16 BTX-S**	**16 BTX-SS**	**16 BTX-B**
28, 30, 32	1 1/4	1 5/8-12	2	34	31	240	**20 BTX-S**	**20 BTX-SS**	**20 BTX-B**
35, 38	1 1/2	1 7/8-12	2 1/4	41	36	325	**24 BTX-S**	**24 BTX-SS**	**24 BTX-B**
	2	2 1/2-12	2 7/8	55	45	549	**32 BTX-S**	**32 BTX-SS**	

Order codes shown are part of our current manufacturing programme.

K

BMTX Nut

Triple-Lok® 37° Flare end nut
SAE 070110

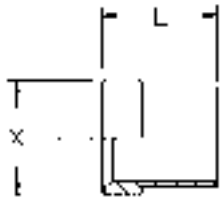


Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	C mm	D mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel
6	1/4	7/16-20	14	8	16	11	**4BMTXS**	**4BMTXSS**
8	5/16	1/2-20	17	10	17	14	**5BMTXS**	**5BMTXSS**
10	3/8	9/16-18	19	11	18	18	**6BMTXS**	**6BMTXSS**
12	1/2	3/4-16	22	15	21	29	**8BMTXS**	**8BMTXSS**
14, 15, 16	5/8	7/8-14	27	18	25	42	**10BMTXS**	**10BMTXSS**
18, 20	3/4	1 1/16-12	32	22	26	73	**12BMTXS**	**12BMTXSS**
25	1	1 5/16-12	41	28	28	104	**16BMTXS**	**16BMTXSS**
28, 30, 32	1 1/4	1 5/8-12	50	34	31	240	**20BMTXS**	**20BMTXSS**
35, 38	1 1/2	1 7/8-12	60	41	36	325	**24BMTXS**	**24BMTXSS**
42		2 1/4	65	48	40	437	**28BMTXS**	**28BMTXSS**

Order codes shown are part of our current manufacturing programme.

TX Sleeve

Triple-Lok® 37° Flare tube end sleeve for metric tubes
SAE 070105

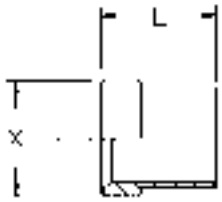


Tube O.D. mm	L mm	X mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
6	10	10	2	**TXS6**	**TXSS6**	**TXB6**
8	11	11	2	**TXS8**	**TXSS8**	**TXB8**
10	13	13	2	**TXS10**	**TXSS10**	**TXB10**
12	14	17	7	**TXS12**	**TXSS12**	**TXB12**
14	17	20	13	**TXS14**	**TXSS14**	**TXB14**
15	17	20	10	**TXS15**	**TXSS15**	**TXB15**
16	17	20	7	**TXS16**	**TXSS16**	**TXB16**
18	17	25	16	**TXS18**	**TXSS18**	**TXB18**
20	17	25	12	**TXS20**	**TXSS20**	**TXB20**
22	19	28	25	**TXS22**	**TXSS22**	**TXB22**
25	20	31	21	**TXS25**	**TXSS25**	**TXB25**
28	23	39	40	**TXS28**	**TXSS28**	**TXB28**
30	23	39	45	**TXS30**	**TXSS30**	**TXB30**
32	23	39	30	**TXS32**	**TXSS32**	**TXB32**
35	28	45	60	**TXS35**	**TXSS35**	**TXB35**
38	28	45	51	**TXS38**	**TXSS38**	**TXB38**
42	29	55	149	**TXS42**	**TXSS42**	**TXB42**

Order codes shown are part of our current manufacturing programme.

TX Sleeve

Triple-Lok® 37° Flare tube sleeve
SAE 070105 MS51533



Tube O.D. in.	L mm	X mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
1/8	9	7	2	**2 TX-S**	**2 TX-SS**	**2 TX-B**
3/16	9	8	2	**3 TX-S**	**3 TX-SS**	**3 TX-B**
1/4	10	10	2	**4 TX-S**	**4 TX-SS**	**4 TX-B**
5/16	11	11	2	**5 TX-S**	**5 TX-SS**	**5 TX-B**
3/8	13	13	3	**6 TX-S**	**6 TX-SS**	**6 TX-B**
1/2	14	17	6	**8 TX-S**	**8 TX-SS**	**8 TX-B**
5/8	17	20	8	**10 TX-S**	**10 TX-SS**	**10 TX-B**
3/4	17	25	13	**12 TX-S**	**12 TX-SS**	**12 TX-B**
7/8	19	28	18	**14 TX-S**	**14 TX-SS**	**14 TX-B**
1	20	31	23	**16 TX-S**	**16 TX-SS**	**16 TX-B**
1 1/4	23	39	30	**20 TX-S**	**20 TX-SS**	**20 TX-B**
1 1/2	28	45	51	**24 TX-S**	**24 TX-SS**	**24 TX-B**
2	30	61	156	**32 TX-S**	**32 TX-SS**	**32 TX-B**

Order codes shown are part of our current manufacturing programme.

HMTX Union

Triple-Lok® 37° Flare ends
SAE 070101 MS51501



Tube 1 O.D.		Tube 2 O.D.		Thread UN/UNF-2A	Thread UN/UNF-2A	C	D	D1	L1	Weight (steel)	Triple-Lok®	Triple-Lok®	Triple-Lok®	PN (bar)	
mm	in.	mm	in.	T1	T2	mm	mm	mm	mm	g/1 piece	Steel	Stainless Steel	Brass	S	SS
	1/8		1/8	5/16-24	5/16-24	11	2	2	30	9	**2 HTX-S**			500	—
	3/16		3/16	3/8-24	3/8-24	11	3	3	31	10	**3 HTX-S**			500	—
6	1/4	6	1/4	7/16-20	7/16-20	13	4	4	35	16	**4HMTXS**	**4HMTXSS**	**4HMTXB**	500	350
6	1/4		1/8	7/16-20	5/16-24	13	5	2	32	12	**4-2 HTX-S**	**4-2HMTXSS**	**4-2HMTXB**	500	350
6	1/4		3/16	7/16-20	3/8-24	13	5	3	33	14	**4-3 HTX-S**	**4-3HMTXSS**	**4-3HMTXB**	500	350
8	5/16	8	5/16	1/2-20	1/2-20	14	6	6	35	18	**5HMTXS**	**5HMTXSS**	**5HMTXB**	420	350
8	5/16	6	1/4	1/2-20	7/16-20	14	6	5	35	18	**5-4 HTX-S**	**5-4HMTXSS**	**5-4HMTXB**	420	350
10	3/8	10	3/8	9/16-18	9/16-18	17	8	8	36	25	**6HMTXS**	**6HMTXSS**	**6HMTXB**	420	350
10	3/8	6	1/4	9/16-18	7/16-20	17	8	4	36	22	**6-4HMTXS**	**6-4HMTXSS**	**6-4HMTXB**	420	350
10	3/8	8	5/16	9/16-18	1/2-20	17	8	6	36	25	**6-5 HTX-S**	**6-5HMTXSS**	**6-5HMTXB**	420	350
12	1/2	12	1/2	3/4-16	3/4-16	19	10	10	41	52	**8HMTXS**	**8HMTXSS**	**8HMTXB**	420	350
12	1/2	6	1/4	3/4-16	7/16-20	21	10	5	39	45	**8-4 HTX-S**	**8-4HMTXSS**	**8-4HMTXB**	420	350
12	1/2	10	3/8	3/4-16	9/16-18	19	10	8	39	45	**8-6HMTXS**	**8-6HMTXSS**	**8-6HMTXB**	420	350
14, 15,16	5/8	14, 15,16	5/8	7/8-14	7/8-14	24	12	12	48	80	**10HMTXS**	**10HMTXSS**	**10HMTXB**	350	350
14, 15,16	5/8	10	3/8	7/8-14	9/16-18	24	13	8	43	60	**10-6HMTXS**	**10-6HMTXSS**	**10-6HMTXB**	350	350
14, 15,16	5/8	12	1/2	7/8-14	3/4-16	24	12	10	45	68	**10-8HMTXS**	**10-8HMTXSS**	**10-8HMTXB**	350	350
18, 20	3/4	18, 20	3/4	1 1/16-12	1 1/16-12	27	16	16	55	125	**12HMTXS**	**12HMTXSS**	**12HMTXB**	350	350
18, 20	3/4	12	1/2	1 1/16-12	3/4-16	29	16	10	50	101	**12-8 HTX-S**	**12-8HMTXSS**	**12-8HMTXB**	350	350
20	3/4	14, 15,16	5/8	1 1/16-12	7/8-14	29	16	12	52	113	**12-10HMTXS**	**12-10HMTXSS**	**12-10HMTXB**	350	350
22	7/8	22	7/8	1 3/16-12	1 3/16-12	32	18	18	56	156	**14 HTX-S**	**14HMTXSS**	**14HMTXB**	280	280
25	1	25	1	1 5/16-12	1 5/16-12	36	22	22	57	131	**16HMTXS**	**16HMTXSS**	**16HMTXB**	280	280
25	1	20	3/4	1 5/16-12	1 1/16-12	36	22	16	56	169	**16-12HMTXS**	**16-12HMTXSS**	**16-12HMTXB**	280	280
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	46	28	28	62	271	**20HMTXS**	**20HMTXSS**	**20HMTXB**	280	210
28, 30, 32	1 1/4	25	1	1 5/8-12	1 5/16-12	46	28	22	61	235	**20-16HMTXS**	**20-16HMTXSS**	**20-16HMTXB**	280	210
35, 38	1 1/2	35, 38	1 1/2	1 7/8-12	1 7/8-12	50	33	33	70	382	**24HMTXS**	**24HMTXSS**	**24HMTXB**	210	210
42		42		2 1/4-12	2 1/4-12	60	39	39	71	469	**28HMTXS**	**28HMTXSS**	**28HMTXB**	140	150
	2		2	2 1/2-12	2 1/2-12	67	45	45	87	785	**32 HTX-S**	**32HMTXSS**	**32HMTXB**	140	150

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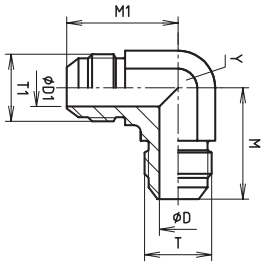
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

K

EMTX Union elbow

Triple-Lok® 37° Flare ends
SAE 070201 MS51505



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF2-A T1	D mm	D1 in.	M mm	M1 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	1/8	5/16-24	5/16-24	2	2	20	20	11	18	**2 ETX-S**			500	—
	3/16	3/8-24	3/8-24	3	3	21	21	11	20	**3 ETX-S**			500	—
6	1/4	7/16-20	7/16-20	4	4	23	23	11	25	**4EMTXS**	**4EMTXSS**	**4 ETX-B**	500	350
8	5/16	1/2-20	1/2-20	6	6	24	24	13	32	**5EMTXS**	**5EMTXSS**	**5 ETX-B**	420	350
10	3/8	9/16-18	9/16-18	8	8	27	27	14	44	**6EMTXS**	**6EMTXSS**	**6 ETX-B**	420	350
10	3/8	9/16-18	7/16-20	8	4	27	27	14	40	**6-4 ETX-S**	**6-4EMTXSS**	**6-4 ETX-B**	420	350
12	1/2	3/4-16	3/4-16	10	10	32	32	19	88	**8EMTXS**	**8EMTXSS**	**8 ETX-B**	420	350
12	1/2	3/4-16	3/8-24	10	8	32	29	19	75	**8-6 ETX-S**	**8-6EMTXSS**		420	—
14, 15,16	5/8	7/8-14	7/8-14	12	12	37	37	22	139	**10EMTXS**	**10EMTXSS**	**10 ETX-B**	350	350
14, 15,16	5/8	7/8-14	3/4-16	12	10	37	34	22	120	**10-8 ETX-S**	**10-8EMTXSS**	**10-8 ETX-B**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	16	16	42	42	27	258	**12EMTXS**	**12EMTXSS**	**12 ETX-B**	350	350
18, 20	3/4	1 1/16-12	3/4-16	16	10	42	46	27	220	**12-8 ETX-S**	**12-8EMTXSS**		350	—
18, 20	3/4	1 1/16-12	7/8-14	16	12	42	39	27	240	**12-10 ETX-S**	**12-10EMTXSS**		350	—
22	7/8	1 3/16-12	1 3/16-12	18	18	44	44	30	273	**14 ETX-S**	**14EMTXSS**		280	—
22, 25	1	1 5/16-12	1 5/16-12	22	22	46	46	33	333	**16EMTXS**	**16EMTXSS**	**16 ETX-B**	280	280
22, 25	1	1 5/16-12	1 1/16-12	22	16	46	45	33	310	**16-12 ETX-S**	**16-12EMTXSS**	**16-12 ETX-B**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	28	28	52	52	41	586	**20EMTXS**	**20EMTXSS**	**20 ETX-B**	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	33	33	59	59	48	778	**24EMTXS**	**24EMTXSS**	**24 ETX-B**	210	140
42	1 3/4	2 1/4-12	2 1/4-12	39	39	74	74	63	1100	**28 ETX-S**			140	—
	2	2 1/2-12	2 1/2-12	45	45	78	78	64	1680	**32 ETX-S**			140	—

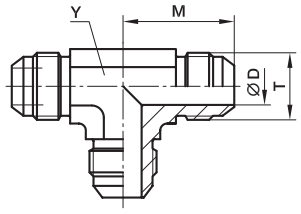
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Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

JMTX Union tee

Triple-Lok® 37° Flare end (three ends)
SAE 070401 MS51510



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	M mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	1/8	5/16-24	2	20	8	25	**2 JTX-S**			500	—
	3/16	3/8-24	3	21	11	30	**3 JTX-S**			500	—
6	1/4	7/16-20	4	23	11	33	**4JMTXS**	**4JMTXSS**	**4 JTX-B**	500	350
8	5/16	1/2-20	6	24	13	42	**5JMTXS**	**5JMTXSS**	**5 JTX-B**	420	350
10	3/8	9/16-18	8	27	14	53	**6JMTXS**	**6JMTXSS**	**6 JTX-B**	420	350
12	1/2	3/4-16	10	32	19	118	**8JMTXS**	**8JMTXSS**	**8 JTX-B**	420	350
14, 15,16	5/8	7/8-14	12	37	22	182	**10JMTXS**	**10JMTXSS**	**10 JTX-B**	350	350
18, 20	3/4	1 1/16-12	16	42	27	291	**12JMTXS**	**12JMTXSS**	**12 JTX-B**	350	350
22	7/8	1 3/16-12	18	44	33	403	**14 JTX-S**	**14JMTXSS**	**14 JTX-B**	280	245
25	1	1 5/16-12	22	46	33	415	**16JMTXS**	**16JMTXSS**	**16 JTX-B**	280	280
28, 30, 32	1 1/4	1 5/8-12	28	52	41	706	**20JMTXS**	**20JMTXSS**	**20 JTX-B**	280	210
35, 38	1 1/2	1 7/8-12	33	59	48	990	**24 JTX-S**	**24JMTXSS**	**24 JTX-B**	210	140
42	1 3/4	2 1/4-12	39	74	63	2270	**28 JTX-S**			140	—
	2	2 1/2-12	45	78	66	2450	**32 JTX-S**			140	—

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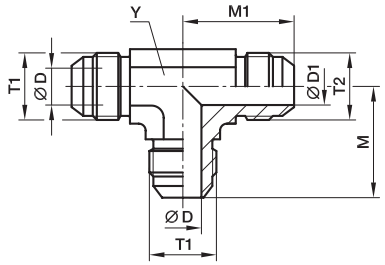
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

K

JMTX Union tee reducing

Triple-Lok® 37° Flare end (three ends)
SAE 070401 MS51510



Tube 1 O.D. mm	Tube 1 O.D. in.	Tube 2 O.D. mm	Tube 2 O.D. in.	Thread UN/UNF-2A T1	Thread UN/UNF-2A T2	D mm	D1 mm	M mm	M1 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
10	3/8	6	1/4	9/16-18	7/16-20	8	4	27	27	14	50	**6-4-6JMTXS**	**6-4-6JMTXSS**	420	350
12	1/2	6	1/4	3/4-16	7/16-20	10	4	32	29	19	96	**8-4-8JMTXS**	**8-4-8JMTXSS**	420	350
12	1/2	10	3/8	3/4-16	9/16-18	10	8	32	29	19	102	**8-6-8JMTXS**	**8-6-8JMTXSS**	420	350
14, 15,16	5/8	6	1/4	7/8-14	7/16-20	12	4	37	31	22	156	**10-4-10JMTXS**	**10-4-10JMTXSS**	350	350
14, 15,16	5/8	10	3/8	7/8-14	9/16-18	12	8	37	31	22	167	**10-6-10JMTXS**	**10-6-10JMTXSS**	350	350
14, 15,16	5/8	12	1/2	7/8-14	3/4-16	12	10	37	34	22	175	**10-8-10JMTXS**	**10-8-10JMTXSS**	350	350
18, 20	3/4	6	1/4	1 1/16-12	7/16-20	16	4	42	33	27	234	**12-4-12JMTXS**	**12-4-12JMTXSS**	350	350
18, 20	3/4	10	3/8	1 1/16-12	9/16-18	16	8	42	33	27	249	**12-6-12JMTXS**	**12-6-12JMTXSS**	350	350
18, 20	3/4	12	1/2	1 1/16-12	3/4-16	16	10	42	36	27	265	**12-8-12JMTXS**	**12-8-12JMTXSS**	350	350
18, 20	3/4	14/15/16	5/8	1 1/16-12	7/8-14	16	12	42	39	27	283	**12-10-12JMTXS**	**12-10-12JMTXSS**	350	350
25	1	10	3/8	1 5/16-12	9/16-18	22	8	46	36	33	326	**16-6-16JMTXS**	**16-6-16JMTXSS**	280	280
25	1	12	1/2	1 5/16-12	3/4-16	22	10	46	39	33	354	**16-8-16JMTXS**	**16-8-16JMTXSS**	280	280
25	1	14/15/16	5/8	1 5/16-12	7/8-14	22	12	46	42	33	379	**16-10-16JMTXS**	**16-10-16JMTXSS**	280	280
25	1	18/20	3/4	1 5/16-12	1 1/16-12	22	16	46	45	33	396	**16-12-16JMTXS**	**16-12-16JMTXSS**	280	280
28, 30, 32	1 1/4	12	1/2	1 5/8-12	3/4-16	28	10	52	44	41	478	**20-8-20JMTXS**	**20-8-20JMTXSS**	280	210
28, 30, 32	1 1/4	14/15/16	5/8	1 5/8-12	7/8-14	28	12	52	47	41	526	**20-10-20JMTXS**	**20-10-20JMTXSS**	280	210
28, 30, 32	1 1/4	18/20	3/4	1 5/8-12	1 1/16-12	28	16	52	50	41	628	**20-12-20JMTXS**	**20-12-20JMTXSS**	280	210
28, 30, 32	1 1/4	25	1	1 5/8-12	1 5/16-12	28	22	52	51	41	673	**20-16-20JMTXS**	**20-16-20JMTXSS**	280	210

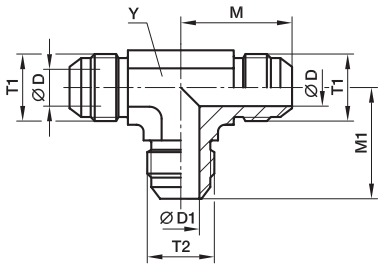
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Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

JMTX Union tee reducing

Triple-Lok® 37° Flare end (three ends)
SAE 070401 MS51510



Tube 1 O.D. mm	Tube 1 O.D. in.	Tube 2 O.D. mm	Tube 2 O.D. in.	Thread UN/UNF-2A T1	Thread UN/UNF-2A T2	D mm	D1 mm	M mm	M1 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
10	3/8	6	1/4	9/16-18	7/16-20	8	4	27	27	14	50	**6-6-4JMTXS**	**6-6-4JMTXSS**	420	350
12	1/2	6	1/4	3/4-16	7/16-20	10	4	32	29	19	96	**8-8-4JMTXS**	**8-8-4JMTXSS**	420	350
12	1/2	10	3/8	3/4-16	9/16-18	10	8	32	29	19	102	**8-8-6JMTXS**	**8-8-6JMTXSS**	420	350
14, 15,16	5/8	6	1/4	7/8-14	7/16-20	12	4	37	31	22	156	**10-10-4JMTXS**	**10-10-4JMTXSS**	350	350
14, 15,16	5/8	10	3/8	7/8-14	9/16-18	12	8	37	31	22	167	**10-10-6JMTXS**	**10-10-6JMTXSS**	350	350
14, 15,16	5/8	12	1/2	7/8-14	3/4-16	12	10	37	34	22	175	**10-10-8JMTXS**	**10-10-8JMTXSS**	350	350
18, 20	3/4	6	1/4	1 1/16-12	7/16-20	16	4	42	33	27	234	**12-12-4JMTXS**	**12-12-4JMTXSS**	350	350
18, 20	3/4	10	3/8	1 1/16-12	9/16-18	16	8	42	33	27	249	**12-12-6JMTXS**	**12-12-6JMTXSS**	350	350
18, 20	3/4	12	1/2	1 1/16-12	3/4-16	16	10	42	36	27	265	**12-12-8JMTXS**	**12-12-8JMTXSS**	350	350
18, 20	3/4	14/15/16	5/8	1 1/16-12	7/8-14	16	12	42	39	27	283	**12-12-10JMTXS**	**12-12-10JMTXSS**	350	280
25	1	10	3/8	1 5/16-12	9/16-18	22	8	46	36	33	326	**16-16-6JMTXS**	**16-16-6JMTXSS**	280	280
25	1	12	1/2	1 5/16-12	3/4-16	22	10	46	39	33	354	**16-16-8JMTXS**	**16-16-8JMTXSS**	280	280
25	1	14/15/16	5/8	1 5/16-12	7/8-14	22	12	46	42	33	379	**16-16-10JMTXS**	**16-16-10JMTXSS**	280	280
25	1	18/20	3/4	1 5/16-12	1 1/16-12	22	16	46	45	33	396	**16-16-12JMTXS**	**16-16-12JMTXSS**	280	210
28, 30, 32	1 1/4	12	1/2	1 5/8-12	3/4-16	28	10	52	44	41	478	**20-20-8JMTXS**	**20-20-8JMTXSS**	280	210
28, 30, 32	1 1/4	14/15/16	5/8	1 5/8-12	7/8-14	28	12	52	47	41	526	**20-20-10JMTXS**	**20-20-10JMTXSS**	280	210
28, 30, 32	1 1/4	18/20	3/4	1 5/8-12	1 1/16-12	28	16	52	50	41	628	**20-20-12JMTXS**	**20-20-12JMTXSS**	280	210
28, 30, 32	1 1/4	25	1	1 5/8-12	1 5/16-12	28	22	52	51	41	673	**20-20-16JMTXS**	**20-20-16JMTXSS**	280	210

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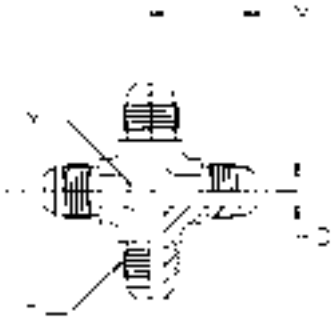
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

K

KTX Union cross

Triple-Lok® 37° Flare end (four ends)
SAE 070501 MS51517



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	M mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	4	23	11	41	**4 KTX-S**	**4 KTX-SS**	**4 KTX-B**	500	350
8	5/16	1/2-20	6	24	14	50	**5 KTX-S**	**5 KTX-SS**	**5 KTX-B**	420	350
10	3/8	9/16-18	8	27	14	68	**6 KTX-S**	**6 KTX-SS**	**6 KTX-B**	420	350
12	1/2	3/4-16	10	32	19	144	**8 KTX-S**	**8 KTX-SS**	**8 KTX-B**	420	350
14, 15,16	5/8	7/8-14	12	37	22	220	**10 KTX-S**	**10 KTX-SS**	**10 KTX-B**	350	350
18, 20	3/4	1 1/16-12	16	42	27	345	**12 KTX-S**	**12 KTX-SS**	**12 KTX-B**	350	350
25	1	1 5/16-12	22	46	33	588	**16 KTX-S**	**16 KTX-SS**	**16 KTX-B**	280	280

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$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

WMTX Bulkhead union

Triple-Lok® 37° Flare ends
SAE 070601 MS51520



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	l1 mm	L4 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	17	4	31	53	41	**4WMTXWLNMS**	**4WMTXWLNMSS**	**4WMTXWLNMB**	500	350
8	5/16	1/2-20	19	6	31	53	49	**5WMTXWLNMS**	**5WMTXWLNMSS**	**5WMTXWLNMB**	420	350
10	3/8	9/16-18	22	8	33	55	64	**6WMTXWLNMS**	**6WMTXWLNMSS**	**6WMTXWLNMB**	420	350
12	1/2	3/4-16	24	10	37	62	111	**8WMTXWLNMS**	**8WMTXWLNMSS**	**8WMTXWLNMB**	420	350
14, 15,16	5/8	7/8-14	30	12	40	70	157	**10WMTXWLNMS**	**10WMTXWLNMSS**	**10WMTXWLNMB**	350	350
18, 20	3/4	1 1/16-12	36	16	44	79	254	**12WMTXWLNMS**	**12WMTXWLNMSS**	**12WMTXWLNMB**	350	350
22	7/8	1 3/16-12	38	18	45	80	296	**14 WTX-WLN-S**	**14WMTXWLNMSS**	**14WMTXWLNMB**	280	280
25	1	1 5/16-12	41	22	44	80	337	**16WMTXWLNMS**	**16WMTXWLNMSS**	**16WMTXWLNMB**	280	280
28, 30, 32	1 1/4	1 5/8-12	50	28	46	84	462	**20WMTXWLNMS**	**20WMTXWLNMSS**	**20WMTXWLNMB**	280	210
35, 38	1 1/2	1 7/8-12	55	33	46	89	695	**24WMTXWLNMS**	**24WMTXWLNMSS**	**24WMTXWLNMB**	210	140

Order codes shown are part of our current manufacturing programme.
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For the version without the locknut remove “WLNM” (e. g. 16WMTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

WEMTX Bulkhead union elbow

Triple-Lok® 37° Flare ends
SAE 070701 MS51507



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	I2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	17	4	26	25	40	11	44	**4 WETX-WLN-S**	**4 WETX-WLN-SS**	**4 WETX-WLN-B**	500	350
8	5/16	1/2-20	19	6	26	27	44	13	59	**5 WETX-WLN-S**	**5 WETX-WLN-SS**	**5 WETX-WLN-B**	420	350
10	3/8	9/16-18	22	8	28	28	46	14	72	**6WEMTXWLNMS**	**6 WETX-WLN-SS**	**6 WETX-WLN-B**	420	350
12	1/2	3/4-16	24	10	32	36	54	19	145	**8WEMTXWLNMS**	**8 WETX-WLN-SS**	**8 WETX-WLN-B**	420	350
14, 15,16	5/8	7/8-14	30	12	35	40	61	22	212	**10WEMTXWLNMS**	**10 WETX-WLN-SS**	**10 WETX-WLN-B**	350	350
18, 20	3/4	1 1/16-12	36	16	40	45	68	27	345	**12WEMTXWLNMS**	**12 WETX-WLN-SS**	**12 WETX-WLN-B**	350	350
22	7/8	1 3/16-12	38	18	40	49	71	33	370	**14 WETX-WLN-S**	**14 WETX-WLN-SS**		280	—
25	1	1 5/16-12	41	22	40	49	71	33	474	**16 WETX-WLN-S**	**16 WETX-WLN-SS**		280	—
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	80	41	753	**20 WETX-WLN-S**	**20 WETX-WLN-SS**		280	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLNM” (e. g. 16WMTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

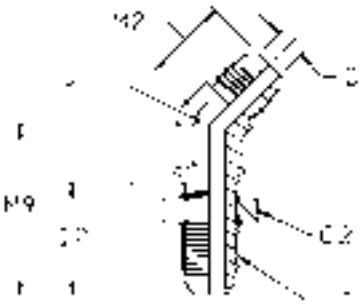
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

WNTX 45° Bulkhead union elbow

Triple-Lok® 37° Flare ends
SAE 070801 MS51509



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	l2 mm	M2 mm	M9 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	17	4	26	18	39	11	32	**4 WNTX-WLN-S**	**4 WNTX-WLN-SS**	500	350
8	5/16	1/2-20	19	6	26	20	42	14	41	**5 WNTX-WLN-S**		420	—
10	3/8	9/16-18	21	8	28	21	42	14	48	**6 WNTX-WLN-S**	**6 WNTX-WLN-SS**	420	350
12	1/2	3/4-16	25	10	32	25	49	19	105	**8 WNTX-WLN-S**	**8 WNTX-WLN-SS**	420	350
14, 15,16	5/8	7/8-14	29	12	35	28	55	22	152	**10 WNTX-WLN-S**	**10 WNTX-WLN-SS**	350	350
18, 20	3/4	1 1/16-12	35	16	40	33	62	27	245	**12 WNTX-WLN-S**	**12 WNTX-WLN-SS**	350	350
22, 25	1	1 5/16-12	41	22	40	37	65	33	355	**16 WNTX-WLN-S**	**16 WNTX-WLN-SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	48	28	41	40	67	41	465	**20 WNTX-WLN-S**		280	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLN” (e.g. 16 WNTX)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

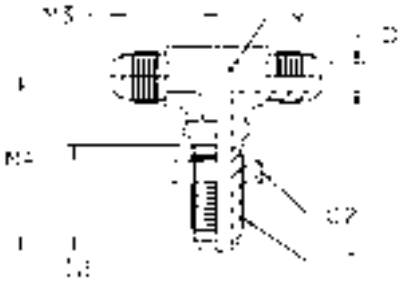
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

WJTX Bulkhead branch tee

Triple-Lok® 37° Flare ends
SAE 070959 MS51515



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	l2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	17	4	26	25	40	11	45	**4 WJTX-WLN-S**	**4 WJTX-WLN-SS**	500	350
10	3/8	9/16-18	21	8	28	28	46	14	71	**6 WJTX-WLN-S**	**6 WJTX-WLN-SS**	420	350
12	1/2	3/4-16	25	10	32	35	54	19	158	**8 WJTX-WLN-S**	**8 WJTX-WLN-SS**	420	350
14, 15,16	5/8	7/8-14	29	12	35	40	61	22	297	**10 WJTX-WLN-S**	**10 WJTX-WLN-SS**	350	350
18, 20	3/4	1 1/16-12	35	16	40	45	68	27	379	**12 WJTX-WLN-S**	**12 WJTX-WLN-SS**	350	350
22, 25	1	1 5/16-12	42	22	40	49	71	33	420	**16 WJTX-WLN-S**		280	—
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	79	41	500	**20 WJTX-WLN-S**		280	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLN” (e.g. 16 WJTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

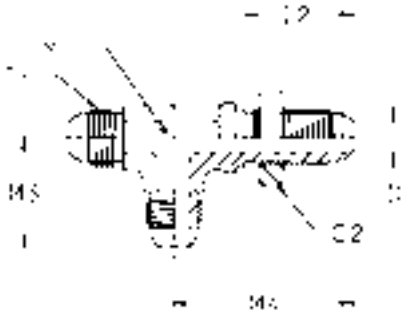
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

WJJTX Bulkhead run tee

Triple-Lok® 37° Flare ends
SAE 070958 MS51516



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	l2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	17	4	26	25	40	11	58	**4 WJJTX-WLN-S**	500
10	3/8	9/16-18	21	8	28	28	46	14	75	**6 WJJTX-WLN-S**	420
12	1/2	3/4-16	25	10	32	35	54	19	158	**8 WJJTX-WLN-S**	420
14, 15,16	5/8	7/8-14	29	12	35	40	61	22	309	**10 WJJTX-WLN-S**	350
18, 20	3/4	1 1/16-12	35	16	40	45	68	27	340	**12 WJJTX-WLN-S**	350
22, 25	1	1 5/16-12	42	22	40	49	71	36	390	**16 WJJTX-WLN-S**	280
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	79	41	450	**20 WJJTX-WLN-S**	280

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove “WLN” (e.g. 16 WJJTX)

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

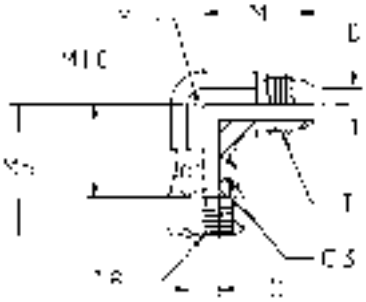
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Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

C6MX Swivel nut elbow

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel end
SAE 070221 MS51521



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
	3/16	3/8-24	3/8-24	13	3	21	25	16	11	27	**3 C6X-S**		500	—
6	1/4	7/16-20	7/16-20	16	4	23	25	17	11	37	**4C6MXS**	**4C6MXSS**	500	350
8	5/16	1/2-20	1/2-20	17	6	24	27	17	13	43	**5C6MXS**	**5C6MXSS**	420	350
10	3/8	9/16-18	9/16-18	19	8	27	32	22	14	54	**6C6MXS**	**6C6MXSS**	350	350
12	1/2	3/4-16	3/4-16	22	10	32	35	24	19	105	**8C6MXS**	**8C6MXSS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	162	**10C6MXS**	**10C6MXSS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	260	**12C6MXS**	**12C6MXSS**	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	46	45	34	33	293	**14 C6X-S**		250	—
25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	33	420	**16C6MXS**	**16C6MXSS**	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	679	**20 C6X-S**	**20C6MXSS**	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	66	47	48	747	**24 C6X-S**	**24C6MXSS**	170	140
	2	2 1/2-12	2 1/2-12	73	45	78	89	62	66	920	**32 C6X-S**		110	—

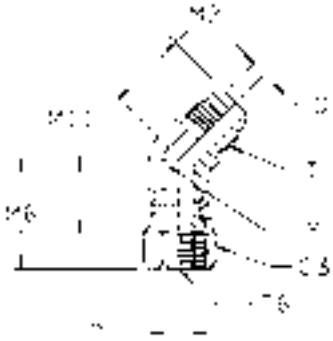
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V6MX 45° Swivel nut elbow

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel end
SAE 070321 MS51522



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M2 mm	M6 mm	M11 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	4	18	24	15	11	30	**4 V6X-S**	**4 V6X-SS**	500	350
8	5/16	1/2-20	1/2-20	16	6	20	25	16	14	45	**5 V6X-S**	**5 V6X-SS**	420	350
10	3/8	9/16-18	9/16-18	19	8	21	28	19	14	47	**6 V6X-S**	**6 V6X-SS**	350	350
12	1/2	3/4-16	3/4-16	22	10	25	33	22	19	89	**8V6MXS**	**8 V6X-SS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	28	37	24	22	131	**10 V6X-S**	**10 V6X-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	33	38	24	27	203	**12 V6X-S**	**12 V6X-SS**	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	35	41	28	30	291	**14 V6X-S**		250	—
25	1	1 5/16-12	1 5/16-12	38	22	37	44	29	33	335	**16 V6X-S**	**16 V6X-SS**	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	51	27	40	52	36	41	572	**20 V6X-S**	**20 V6X-SS**	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	45	58	39	48	715	**24 V6X-S**	**24 V6X-SS**	170	140
	2	2 1/2-12	2 1/2-12	72	45	56	70	50	66	960	**32 V6X-S**	**32 V6X-SS**	110	110

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

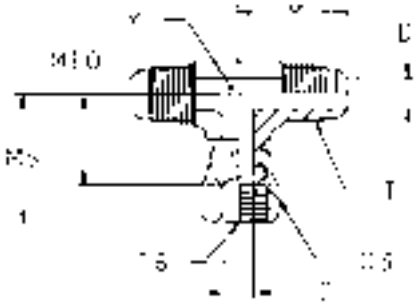
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

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S6MX Swivel nut branch tee

Triple-Lok® 37° Flare ends / Triple-Lok® 37° Flare female swivel end
SAE 070433 MS51524



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	16	4	23	25	17	11	44	**4 S6X-S**	**4 S6X-SS**	500	350
8	5/16	1/2-20	1/2-20	17	6	24	27	17	13	58	**5S6MXS**	**5 S6X-SS**	420	350
10	3/8	9/16-18	9/16-18	19	8	27	32	22	14	71	**6S6MXS**	**6 S6X-SS**	350	350
12	1/2	3/4-16	3/4-16	22	10	32	35	24	19	133	**8S6MXS**	**8 S6X-SS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	203	**10S6MXS**	**10 S6X-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	328	**12S6MXS**	**12 S6X-SS**	350	350
25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	33	483	**16S6MXS**	**16 S6X-SS**	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	708	**20 S6X-S**	**20 S6X-SS**	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	68	49	48	1100	**24 S6X-S**	**24 S6X-SS**	170	170

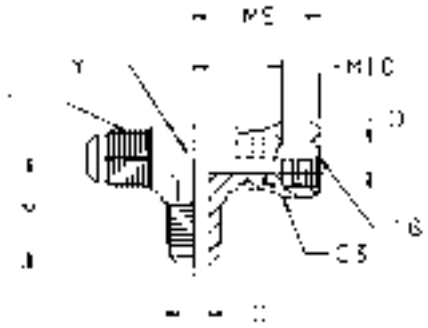
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R6MX Swivel nut run tee

Triple-Lok® 37° Flare ends / Triple-Lok® 37° Flare female swivel end
SAE 070432



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	16	4	23	25	17	11	44	**4 R6X-S**	**4 R6X-SS**	500	350
8	5/16	1/2-20	1/2-20	17	6	24	27	17	13	56	**5R6MXS**	**5 R6X-SS**	420	350
10	3/8	9/16-18	9/16-18	19	8	27	32	22	14	69	**6R6MXS**	**6 R6X-SS**	350	350
12	1/2	3/4-16	3/4-16	22	10	32	35	24	19	136	**8R6MXS**	**8 R6X-SS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	207	**10R6MXS**	**10 R6X-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	319	**12R6MXS**	**12 R6X-SS**	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	46	45	34	33	622	**14 R6X-S**	**14 R6X-SS**	250	250
25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	33	489	**16R6MXS**	**16 R6X-SS**	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	712	**20R6MXS**	**20 R6X-SS**	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	66	47	48	1100	**24 R6X-S**	**24 R6X-SS**	170	170

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

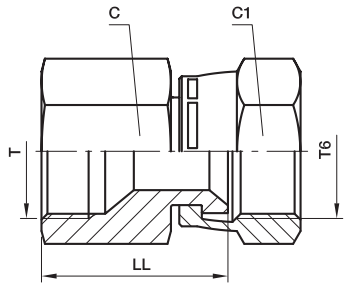
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

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BBMTX Swivel nut female connector

Triple-Lok® 37° Flare fixed female end / Triple-Lok® 37° Flare female swivel end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C mm	C1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	16	23	25	**4BBMTXS**	**4BBMTXSS**	500	350
8	5/16	1/2-20	1/2-20	17	17	26	32	**5BBMTXS**	**5BBMTXSS**	420	350
10	3/8	9/16-20	9/16-20	19	19	26	60	**6BBMTXS**	**6BBMTXSS**	350	350
12	1/2	3/4-16	3/4-16	22	22	32	87	**8BBMTXS**	**8BBMTXSS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	27	36	150	**10BBMTXS**	**10BBMTXSS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	32	37	221	**12BBMTXS**	**12BBMTXSS**	350	350
25	1	1 5/16-12	1 5/16-12	41	38	42	348	**16BBMTXS**	**16BBMTXSS**	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	50	47	955	**20BBMTXS**	**20BBMTXSS**	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	60	60	54	1031	**24BBMTXS**	**24BBMTXSS**	170	140

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

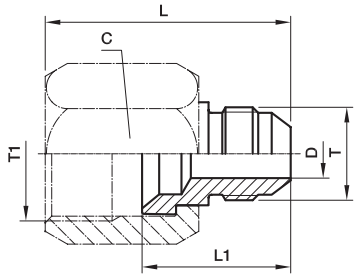
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

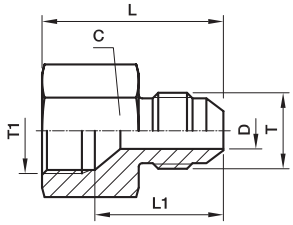
TRMTX Tube end reducer

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel* end
SAE 070123 MS51534
*Form A Fixed Female Style

Form B*



Form A



* For Form B, a BTX- or BTMX-nut is required (to be ordered separately)

Tube Metric T1 O.D.	Tube Metric T O.D.	Tube in. T1 O.D.	Tube in. T O.D.	Thread UN/UNF-2B T1	Thread UN/UNF-2A T	Typ	C mm	D mm	L mm	L1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
		1/4	1/8	7/16-20	5/16-24	B	14	2	31	19	16	**4-2TRTXS**	**4-2TRMTXSS**		500	350
8	6	5/16	1/4	1/2-20	7/16-20	A	17	4	27	24	21	**5-4TRMTXS**	**5-4TRMTXSS**		420	350
10	6	3/8	1/4	9/16-18	7/16-20	B	19	4	36	23	35	**6-4TRTXS**	**6-4TRMTXSS**	**6-4 TRTX-B**	420	350
10	8	3/8	5/16	9/16-18	1/2-20	A	19	6	29	26	29	**6-5TRMTXS**	**6-5TRMTXSS**		420	350
12	6	1/2	1/4	3/4-16	7/16-20	B	22	4	38	23	38	**8-4TRTXS**	**8-4TRMTXSS**	**8-4 TRTX-B**	420	350
12	8	1/2	5/16	3/4-16	1/2-20	B	22	6	38	23	35	**8-5TRTXS**	**8-5TRMTXSS**		420	350
12	10	1/2	3/8	3/4-16	9/16-18	B	22	8	38	23	32	**8-6TRTXS**	**8-6TRMTXSS**	**8-6 TRTX-B**	420	350
14, 15,16	6	5/8	1/4	7/8-14	7/16-20	B	27	4	45	26	83	**10-4TRTXS**	**10-4TRMTXSS**		350	350
14, 15,16	8	5/8	5/16	7/8-14	1/2-20	B	27	6	41	26	80	**10-5TRTXS**	**10-5TRMTXSS**		350	350
14, 15,16	10	5/8	3/8	7/8-14	9/16-20	B	27	8	41	29	78	**10-6TRTXS**	**10-6TRMTXSS**	**10-6 TRTX-B**	350	350
14, 15,16	12	5/8	1/2	7/8-14	3/4-16	A	27	10	37	22	73	**10-8TRMTXS**	**10-8TRMTXSS**		350	350
18, 20	6	3/4	1/4	1 1/16-12	7/16-20	B	32	4	47	28	120	**12-4TRTXS**	**12-4TRMTXSS**	**12-4 TRTX-B**	350	350
18, 20	8	3/4	5/16	1 1/16-12	1/2-20	B	32	6	45	26	118	**12-5TRTXS**	**12-5TRMTXSS**		350	350
18, 20	10	3/4	3/8	1 1/16-12	9/16-20	B	32	8	47	25	115	**12-6TRTXS**	**12-6TRMTXSS**	**12-6 TRTX-B**	350	350
18, 20	12	3/4	1/2	1 1/16-12	3/4-16	B	32	10	50	27	128	**12-8TRTXS**	**12-8TRMTXSS**	**12-8 TRTX-B**	350	350
18, 20	14,15,16	3/4	5/8	1 1/16-12	7/8-14	A	32	12	42	26	119	**12-10TRMTXS**	**12-10TRMTXSS**		350	350
22	10	7/8	3/8	1 3/16-12	9/16-20	B	35	8	50	29	102	**14-6TRTXS**	**14-6TRMTXSS**		350	350
22	14,15,16	7/8	5/8	1 3/16-12	7/8-14	B	35	12	55	34	120	**14-10TRTXS**	**14-10TRMTXSS**		350	350
22	18,20	7/8	3/4	1 3/16-12	1 1/16-12	A	35	16	47	33	166	**14-12 TRTXN-S**	**14-12TRMTXSS**		350	350
25	6	1	1/4	7/16-20	1 5/16-12	B	41	4	53	31	205	**16-4TRTXS**	**16-4TRMTXSS**		310	350
25	10	1	3/8	9/16-18	1 5/16-12	B	41	8	48	31	215	**16-6TRTXS**	**16-6TRMTXSS**		310	350
25	12	1	1/2	1 5/16-12	3/4-16	B	41	10	49	29	228	**16-8TRTXS**	**16-8TRMTXSS**		310	350
25	14,15,16	1	5/8	1 5/16-12	7/8-14	B	41	12	52	30	239	**16-10TRTXS**	**16-10TRMTXSS**		310	350
25	18,20	1	3/4	1 5/16-12	1 1/16-12	B	41	16	55	35	252	**16-12TRTXS**	**16-12TRMTXSS**		310	280
25	22	1	7/8	1 5/16-12	1 3/16-12	A	38	18	60	38	224	**16-14 TRTXN-S**	**16-14TRMTXSS**		310	280
28, 30, 32	14,15,16	1 1/4	5/8	1 5/8-12	7/8-14	B	50	12	59	32	380	**20-10TRTXS**	**20-10TRMTXSS**		280	280
28, 30, 32	18,20	1 1/4	3/4	1 5/8-12	1 1/16-12	B	50	16	62	39	370	**20-12TRTXS**	**20-12TRMTXSS**		280	280
28, 30, 32	25	1 1/4	1	1 5/8-12	1 5/16-12	B	50	21	64	40	355	**20-16TRTXS**	**20-16TRMTXSS**		280	280
35, 38	20	1 1/2	3/4	1 1/16-12	1 7/8-12	B	60	16	63	41	520	**24-12TRTXS**	**24-12TRMTXSS**		210	280
35, 38	25	1 1/2	1	1 5/16-12	1 7/8-12	B	60	22	63	41	570	**24-16TRTXS**	**24-16TRMTXSS**		210	140
35, 38	28,30,32	1 1/2	1 1/4	1 7/8-12	1 5/8-12	B	60	27	70	43	614	**24-20TRTXS**	**24-20TRMTXSS**		210	140
42	35,38			2 1/4-12	1 7/8-12	B	65	33	72	42	839	**28-24TRTXS**	**28-24TRMTXSS**		140	140
50	38	2	1 1/2	1 7/8-12	2 1/2-12	B	70	34	75	49	900	**32-24TRTXS**			140	—

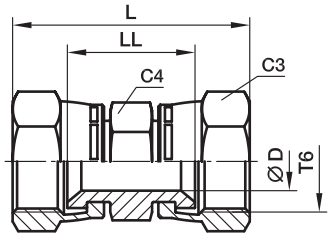
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

HMX6 Swivel nut union

Triple-Lok® 37° Flare female swivel ends



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	14	14	5	38	20	27	**4 HX6-S**	**4HMX6SS**	500	500
8, 10	5/16, 3/8	9/16-18	18	18	8	45	26	35	**6 HX6-S**	**6HMX6SS**	350	350
12	1/2	3/4-16	22	22	10	51	30	64	**8 HX6-S**	**8HMX6SS**	350	350
14, 15,16	5/8	7/8-14	25	25	13	57	32	115	**10 HX6-S**	**10HMX6SS**	350	350
18, 20	3/4	1 1/16-12	32	32	16	62	33	185	**12 HX6-S**	**12HMX6SS**	350	350
25	1	1 5/16-12	41	41	22	68	38	235	**16 HX6-S**	**16HMX6SS**	250	250

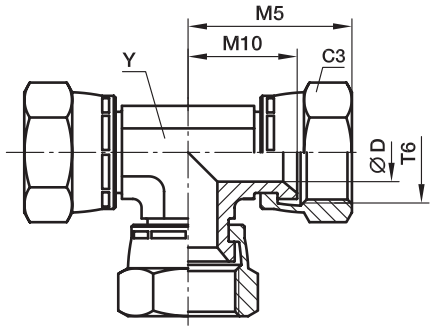
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings - PN shown, apply to Steel and Stainless Steel versions of the product.

JX6 Swivel nut union tee

Triple-Lok® 37° Flare female swivel ends



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	C3 mm	D mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	14	5	25	17	11	55	**4 JX6-S**	500
8, 10	5/16, 3/8	9/16-18	18	8	32	22	14	85	**6 JX6-S**	350
12	1/2	3/4-16	22	10	35	24	19	150	**8 JX6-S**	350
14, 15,16	5/8	7/8-14	25	13	41	29	19	220	**10 JX6-S**	350
18, 20	3/4	1 1/16-12	32	16	45	30	27	345	**12 JX6-S**	350
25	1	1 5/16-12	41	22	51	36	30	510	**16 JX6-S**	250

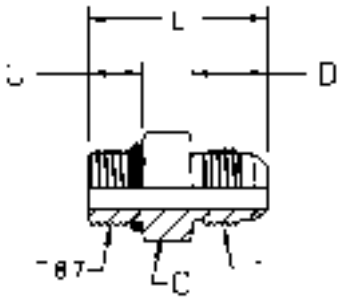
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

K

F87OMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	L mm	D mm	C mm	U mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	30	14	14	9	25	**4M10F87OMXS**	**4M10F87OMXSS**	500	350
8	5/16	M10 × 1.0	1/2-20	30	14	14	9	30	**5M10F87OMXS**	**5M10F87OMXSS**	420	350
8	5/16	M12 × 1.5	1/2-20	33	14	19	11	37	**5M12F87OMXS**	**5M12F87OMXSS**	420	350
8	5/16	M14 × 1.5	1/2-20	34	14	19	11	40	**5M14F87OMXS**	**5M14F87OMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	34	14	19	11	44	**6M14F87OMXS**	**6M14F87OMXSS**	420	350
10	3/8	M16 × 1.5	9/16-18	36	14	22	12	53	**6M16F87OMXS**	**6M16F87OMXSS**	420	350
10	3/8	M18 × 1.5	9/16-18	37	14	24	13	60	**6M18F87OMXS**	**6M18F87OMXSS**	350	350
12	1/2	M14 × 1.5	3/4-16	36	17	19	11	41	**8M14F87OMXS**	**8M14F87OMXSS**	420	350
12	1/2	M16 × 1.5	3/4-16	38	17	22	12	57	**8M16F87OMXS**	**8M16F87OMXSS**	420	350
12	1/2	M18 × 1.5	3/4-16	39	17	24	13	71	**8M18F87OMXS**	**8M18F87OMXSS**	350	350
14, 15,16	5/8	M14 × 1.5	7/8-14	41	19	24	11	73	**10M14F87OMXS**	**10M14F87OMXSS**	350	350
14, 15,16	5/8	M18 × 1.5	7/8-14	43	19	24	13	75	**10M18F87OMXS**	**10M18F87OMXSS**	350	350
14, 15,16	5/8	M22 × 1.5	7/8-14	44	19	27	13	98	**10M22F87OMXS**	**10M22F87OMXSS**	350	350
14, 15,16	5/8	M27 × 2.0	7/8-14	46	19	32	16	75	**10M27F87OMXS**	**10M27F87OMXSS**	350	350
18, 20	3/4	M22 × 1.5	1 1/16-12	48	22	27	13	104	**12M22F87OMXS**	**12M22F87OMXSS**	350	350
18, 20	3/4	M27 × 2.0	1 1/16-12	51	22	32	16	158	**12M27F87OMXS**	**12M27F87OMXSS**	350	350
25	1	M27 × 2.0	1 5/16-12	51	23	36	16	206	**16M27F87OMXS**	**16M27F87OMXSS**	280	280
25	1	M33 × 2.0	1 5/16-12	53	23	41	16	273	**16M33F87OMXS**	**16M33F87OMXSS**	280	280
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	55	24	50	16	431	**20M42F87OMXS**	**20M42F87OMXSS**	280	210
35, 38	1 1/2	M48 × 2.0	1 7/8-12	59	28	55	18	564	**24M48F87OMXS**	**24M48F87OMXSS**	210	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F5OMX Male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)
SAE 070120 MS51525



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
	1/8	5/16-24	5/16-24	11	2	2	27	19	8	**2 F5OX-S**		500	—
	3/16	3/8-24	3/8-24	13	3	3	28	20	10	**3 F5OX-S**		500	—
	3/16	5/16-24	3/8-24	13	3	2	28	20	9	**3-2 F5OX-S**		500	—
6	1/4	7/16-20	7/16-20	14	4	4	31	22	15	**4F5OMXS**	**4F5OMXSS**	500	350
6	1/4	3/8-24	7/16-20	14	5	3	30	23	12	**4-3 F5OX-S**	**4-3F5OMXSS**	500	350
6	1/4	1/2-20	7/16-20	16	4	6	31	22	25	**4-5 F5OX-S**	**4-5F5OMXSS**	420	350
6	1/4	9/16-18	7/16-20	17	4	4	33	23	27	**4-6F5OMXS**	**4-6F5OMXSS**	420	350
6	1/4	3/4-16	7/16-20	22	4	10	35	24	35	**4-8 F5OX-S**	**4-8F5OMXSS**	420	350
6	1/4	7/8-14	7/16-20	25	5	5	38	25	60	**4-10 F5OX-S**	**4-10F5OMXSS**	350	350
8	5/16	1/2-20	1/2-20	16	6	6	31	22	18	**5F5OMXS**	**5F5OMXSS**	420	350
8	5/16	7/16-20	1/2-20	14	6	5	31	22	18	**5-4 F5OX-S**	**5-4F5OMXSS**	420	350
8	5/16	9/16-18	1/2-20	17	6	6	33	23	25	**5-6 F5OX-S**	**5-6F5OMXSS**	420	350
8	5/16	3/4-16	1/2-20	22	6	6	35	24	40	**5-8 F5OX-S**	**5-8F5OMXSS**	420	350
10	3/8	9/16-18	9/16-18	17	8	8	33	23	25	**6F5OMXS**	**6F5OMXSS**	420	350
10	3/8	7/16-20	9/16-18	16	8	4	32	23	40	**6-4 F5OX-S**	**6-4F5OMXSS**	420	350
10	3/8	1/2-20	9/16-18	16	8	6	32	23	56	**6-5 F5OX-S**	**6-5F5OMXSS**	420	350
10	3/8	3/4-16	9/16-18	22	8	8	35	24	44	**6-8F5OMXS**	**6-8F5OMXSS**	420	350
10	3/8	7/8-14	9/16-18	25	8	12	38	25	85	**6-10 F5OX-S**	**6-10F5OMXSS**	350	350
10	3/8	1 1/16-12	9/16-18	32	8	16	42	27	100	**6-12 F5OX-S**	**6-12F5OMXSS**	350	350
12	1/2	3/4-16	3/4-16	22	10	10	38	27	58	**8F5OMXS**	**8F5OMXSS**	420	350
12	1/2	7/16-20	3/4-16	21	10	5	38	29	40	**8-4 F5OX-S**	**8-4F5OMXSS**	420	350
12	1/2	9/16-18	3/4-16	19	10	10	37	27	44	**8-6F5OMXS**	**8-6F5OMXSS**	420	350
12	1/2	7/8-14	3/4-16	27	10	10	41	28	73	**8-10F5OMXS**	**8-10F5OMXSS**	350	350
12	1/2	1 1/16-12	3/4-16	32	10	10	45	30	126	**8-12F5OMXS**	**8-12F5OMXSS**	350	350
12	1/2	1 5/16-12	3/4-16	41	10	10	45	30	160	**8-16 F5OX-S**	**8-16F5OMXSS**	310	310
14, 15,16	5/8	7/8-14	7/8-14	27	12	12	43	31	75	**10F5OMXS**	**10F5OMXSS**	350	350
14, 15,16	5/8	9/16-18	7/8-14	18	13	8	43	34	60	**10-6 F5OX-S**	**10-6F5OMXSS**	350	350
14, 15,16	5/8	3/4-16	7/8-14	24	12	10	42	31	65	**10-8F5OMXS**	**10-8F5OMXSS**	350	350
14, 15,16	5/8	1 1/16-12	7/8-14	32	12	12	47	32	132	**10-12F5OMXS**	**10-12F5OMXSS**	350	350
14, 15,16	5/8	1 5/16-12	7/8-14	41	13	13	48	33	170	**10-16 F5OX-S**	**10-16F5OMXSS**	310	310
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	50	35	134	**12F5OMXS**	**12F5OMXSS**	350	350
18, 20	3/4	3/4-16	1 1/16-12	29	16	10	49	38	104	**12-8 F5OX-S**	**12-8F5OMXSS**	350	350
18, 20	3/4	7/8-14	1 1/16-12	27	16	12	48	35	108	**12-10F5OMXS**	**12-10F5OMXSS**	350	350
18, 20	3/4	1 3/16-12	1 1/16-12	35	16	16	50	35	170	**12-14 F5OX-S**	**12-14F5OMXSS**	310	310
18, 20	3/4	1 5/16-12	1 1/16-12	38	16	16	51	35	197	**12-16F5OMXS**	**12-16F5OMXSS**	310	310
18, 20	3/4	1 5/8-12	1 1/16-12	48	16	16	53	38	230	**12-20 F5OX-S**	**12-20F5OMXSS**	280	280
22	7/8	1 3/16-12	1 3/16-12	35	18	18	51	36	174	**14 F5OX-S**	**14F5OMXSS**	280	280
22	7/8	1 5/16-12	1 3/16-12	38	18	22	51	36	223	**14-16 F5OX-S**	**14-16F5OMXSS**	280	280
25	1	1 5/16-12	1 5/16-12	38	22	22	52	37	203	**16F5OMXS**	**16F5OMXSS**	280	280
25	1	3/4-16	1 5/16-12	35	22	10	45	34	160	**16-8 F5OX-S**	**16-8F5OMXSS**	280	280

Continued on page K30

F5OMX Male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)
SAE 070120 MS51525



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
25	1	7/8-14	1 5/16-12	35	22	12	53	40	183	**16-10 F5OX-S**	**16-10F5OMXSS**	280	280
25	1	1 1/16-12	1 5/16-12	36	22	16	52	37	204	**16-12F5OMXS**	**16-12F5OMXSS**	280	280
25	1	1 3/16-12	1 5/16-12	35	22	18	52	37	198	**16-14 F5OX-S**	**16-14F5OMXSS**	280	280
25	1	1 5/8-12	1 5/16-12	48	22	28	54	39	270	**16-20 F5OX-S**	**16-20F5OMXSS**	280	280
25	1	1 7/8-12	1 5/16-12	55	22	22	56	41	310	**16-24 F5OX-S**	**16-24F5OMXSS**	210	210
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	28	55	40	274	**20F5OMXS**	**20F5OMXSS**	280	210
28, 30, 32	1 1/4	1 1/16-12	1 5/8-12	43	28	16	58	43	250	**20-12 F5OX-S**	**20-12F5OMXSS**	280	210
28, 30, 32	1 1/4	1 5/16-12	1 5/8-12	43	28	22	59	44	280	**20-16 F5OX-S**	**20-16F5OMXSS**	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	55	33	33	60	45	355	**24F5OMXS**	**24F5OMXSS**	210	140
35, 38	1 1/2	1 5/8-12	1 7/8-12	51	33	28	64	49	340	**24-20 F5OX-S**	**24-20F5OMXSS**	210	140
35, 38	1 1/2	2 1/2-12	1 7/8-12	70	34	34	64	49	400	**24-32 F5OX-S**		140	—
	2	2 1/2-12	2 1/2-12	70	45	45	71	56	650	**32 F5OX-S**		140	—
	2	1 7/8-12	2 1/2-12	68	45	34	75	60	600	**32-24 F5OX-S**		140	—

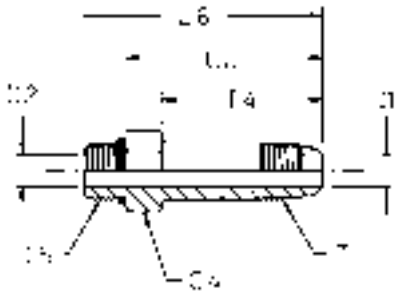
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FF5OMX Extended male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)
SAE 070122 MS51526



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	l4 mm	L6 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	4	4	35	53	44	33	**4 FF5OX-S**	**4 FF5OX-SS**	500	500
10	3/8	9/16-18	9/16-18	17	8	8	40	59	49	53	**6 FF5OX-S**	**6 FF5OX-SS**	420	420
12	1/2	3/4-16	3/4-16	22	10	10	48	69	57	104	**8 FF5OX-S**	**8 FF5OX-SS**	420	420
14, 15,16	5/8	7/8-14	7/8-14	25	12	12	53	77	64	151	**10 FF5OX-S**	**10 FF5OX-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	64	92	77	277	**12 FF5OX-S**	**12 FF5OX-SS**	350	350
18, 20	3/4	7/8-14	1 1/16-12	27	16	12	64	89	76	236	**12-10FF5OMXS**		350	—
25	1	1 5/16-12	1 5/16-12	38	21	21	72	101	86	458	**16 FF5OX-S**	**16 FF5OX-SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	27	27	88	119	104	862	**20 FF5OX-S**	**20 FF5OX-SS**	280	280

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

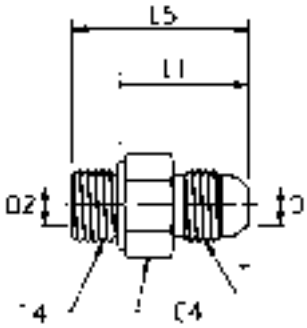
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

K

F42EDMX Male stud connector

Triple-Lok® 37° Flare end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	14	4	4	30	22	20	**4F42EDMXS**	**4F42EDMXSS**	500	350
6	1/4	1/4-19	7/16-20	19	4	4	35	23	34	**4-4F42EDMXS**	**4-4F42EDMXSS**	420	350
6	1/4	3/8-19	7/16-20	22	4	4	36	24	47	**4-6F42EDMXS**	**4-6F42EDMXSS**	420	350
6	1/4	1/2-14	7/16-20	27	4	4	39	25	99	**4-8F42EDMXS**	**4-8F42EDMXSS**	350	350
6	1/4	3/4-14	7/16-20	32	4	18	43	27	88	**4-12F42EDMXS**	**4-12F42EDMXSS**	350	350
8	5/16	1/8-28	1/2-20	14	6	4	30	22	20	**5F42EDMXS**	**5F42EDMXSS**	420	350
8	5/16	1/4-19	1/2-20	19	6	6	35	23	30	**5-4F42EDMXS**	**5-4F42EDMXSS**	420	350
8	5/16	3/8-19	1/2-20	22	6	6	36	24	47	**5-6F42EDMXS**	**5-6F42EDMXSS**	420	350
10	3/8	1/4-19	9/16-18	19	8	6	35	23	28	**6F42EDMXS**	**6F42EDMXSS**	420	350
10	3/8	1/8-28	9/16-18	16	8	4	31	23	27	**6-2F42EDMXS**	**6-2F42EDMXSS**	420	350
10	3/8	3/8-19	9/16-18	22	8	8	36	24	40	**6-6F42EDMXS**	**6-6F42EDMXSS**	420	350
10	3/8	1/2-14	9/16-18	27	8	8	40	25	95	**6-8F42EDMXS**	**6-8F42EDMXSS**	350	350
10	3/8	3/4-14	9/16-18	32	8	18	42	26	100	**6-12F42EDMXS**	**6-12F42EDMXSS**	350	350
12	1/2	3/8-19	3/4-16	22	10	10	39	27	50	**8F42EDMXS**	**8F42EDMXSS**	420	350
12	1/2	1/4-19	3/4-16	19	10	6	39	27	40	**8-4F42EDMXS**	**8-4F42EDMXSS**	420	350
12	1/2	1/2-14	3/4-16	27	10	10	42	28	100	**8-8F42EDMXS**	**8-8F42EDMXSS**	350	350
12	1/2	3/4-14	3/4-16	32	10	10	46	30	100	**8-12F42EDMXS**	**8-12F42EDMXSS**	350	350
12	1/2	1-11	3/4-16	41	10	23	53	35	150	**8-16F42EDMXS**	**8-16F42EDMXSS**	280	280
14, 15,16	5/8	1/2-14	7/8-14	27	12	12	45	31	103	**10F42EDMXS**	**10F42EDMXSS**	350	350
14, 15,16	5/8	1/4-19	7/8-14	24	13	6	41	29	110	**10-4F42EDMXS**	**10-4F42EDMXSS**	350	350
14, 15,16	5/8	3/8-19	7/8-14	24	12	9	43	31	65	**10-6F42EDMXS**	**10-6F42EDMXSS**	350	350
14, 15,16	5/8	3/4-14	7/8-14	32	12	12	48	32	160	**10-12F42EDMXS**	**10-12F42EDMXSS**	350	350
14, 15,16	5/8	1-11	7/8-14	41	13	13	51	33	205	**10-16F42EDMXS**	**10-16F42EDMXSS**	280	280
18, 20	3/4	3/4-14	1 1/16-12	32	16	16	51	35	165	**12F42EDMXS**	**12F42EDMXSS**	350	350
18, 20	3/4	3/8-19	1 1/16-12	27	16	9	50	38	105	**12-6F42EDMXS**	**12-6F42EDMXSS**	350	350
18, 20	3/4	1/2-14	1 1/16-12	27	16	14	49	35	118	**12-8F42EDMXS**	**12-8F42EDMXSS**	350	350
18, 20	3/4	1-11	1 1/16-12	41	16	16	54	35	292	**12-16F42EDMXS**	**12-16F42EDMXSS**	280	280
18, 20	3/4	1 1/4-11	1 1/16-12	50	16	30	62	42	220	**12-20F42EDMXS**	**12-20F42EDMXSS**	280	210
22	7/8	3/4-14	1 3/16-12	32	18	18	51	35	173	**14F42EDMXS**	**14F42EDMXSS**	280	280
25	1	1-11	1 5/16-12	41	22	22	55	37	262	**16F42EDMXS**	**16F42EDMXSS**	280	280
25	1	1/2-14	1 5/16-12	41	22	14	51	37	145	**16-8F42EDMXS**	**16-8F42EDMXSS**	280	280
25	1	3/4-14	1 5/16-12	36	22	18	53	37	217	**16-12F42EDMXS**	**16-12F42EDMXSS**	280	280
25	1	1 1/4-11	1 5/16-12	50	22	22	59	39	386	**16-20F42EDMXS**	**16-20F42EDMXSS**	280	280
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	60	40	375	**20F42EDMXS**	**20F42EDMXSS**	280	210
28, 30, 32	1 1/4	3/4-14	1 5/8-12	50	28	18	56	40	220	**20-12F42EDMXS**	**20-12F42EDMXSS**	280	210
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	23	62	44	255	**20-16F42EDMXS**	**20-16F42EDMXSS**	280	210
28, 30, 32	1 1/4	1 1/2-11	1 5/8-12	55	28	28	64	42	420	**20-24F42EDMXS**	**20-24F42EDMXSS**	210	140
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	67	45	480	**24F42EDMXS**	**24F42EDMXSS**	210	140
35, 38	1 1/2	1-11	1 7/8-12	50	33	23	63	45	390	**24-16F42EDMXS**	**24-16F42EDMXSS**	210	210
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	30	62	42	420	**24-20F42EDMXS**	**24-20F42EDMXSS**	210	210
42		1 1/2-11	2 1/4-12	60	39	36	71	49	746	**28-24F42EDMXS**	**28-24F42EDMXSS**	140	105

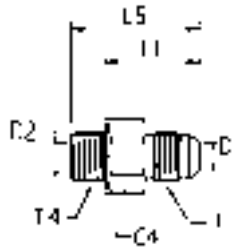
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme. Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F4OMX Male stud connector

Triple-Lok® 37° Flare end / Male BSPP thread – O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	16	4	4	28	22	20	**4F4OMXS**	**4F4OMXSS**	350	350
6	1/4	1/4-19	7/16-20	19	4	4	32	23	34	**4-4F4OMXS**	**4-4F4OMXSS**	350	350
6	1/4	3/8-19	7/16-20	22	4	4	33	24	47	**4-6F4OMXS**	**4-6F4OMXSS**	350	350
6	1/4	1/2-14	7/16-20	30	4	4	39	26	99	**4-8F4OMXS**	**4-8F4OMXSS**	350	350
8	5/16	1/8-28	1/2-20	16	6	4	28	22	25	**5F4OMXS**	**5F4OMXSS**	350	350
8	5/16	1/4-19	1/2-20	19	6	6	32	23	30	**5-4F4OMXS**	**5-4F4OMXSS**	350	350
8	5/16	3/8-19	1/2-20	22	6	6	33	24	47	**5-6F4OMXS**	**5-6F4OMXSS**	350	350
10	3/8	1/4-19	9/16-18	19	8	6	33	23	28	**6F4OMXS**	**6F4OMXSS**	350	350
10	3/8	1/8-28	9/16-18	16	8	4	29	23	27	**6-2F4OMXS**	**6-2F4OMXSS**	350	350
10	3/8	3/8-19	9/16-18	22	8	8	33	24	40	**6-6F4OMXS**	**6-6F4OMXSS**	350	350
10	3/8	1/2-14	9/16-18	30	8	8	38	25	25	**6-8F4OMXS**	**6-8F4OMXSS**	350	350
10	3/8	3/4-14	9/16-18	36	8	8	40	25	100	**6-12F4OMXS**	**6-12F4OMXSS**	280	280
12	1/2	3/8-19	3/4-16	22	10	10	36	27	50	**8F4OMXS**	**8F4OMXSS**	350	350
12	1/2	1/4-19	3/4-16	19	10	6	35	26	40	**8-4F4OMXS**	**8-4F4OMXSS**	350	350
12	1/2	1/2-14	3/4-16	30	10	10	41	29	100	**8-8F4OMXS**	**8-8F4OMXSS**	350	350
12	1/2	3/4-14	3/4-16	36	10	10	42	30	100	**8-12F4OMXS**	**8-12F4OMXSS**	280	250
12	1/2	1-11	3/4-16	46	10	10	47	29	150	**8-16F4OMXS**	**8-16F4OMXSS**	280	250
14, 15,16	5/8	1/2-14	7/8-14	30	12	12	43	31	103	**10F4OMXS**	**10F4OMXSS**	350	350
14, 15,16	5/8	1/4-19	7/8-14	24	12	6	39	28	110	**10-4F4OMXS**	**10-4F4OMXSS**	350	350
14, 15,16	5/8	3/8-19	7/8-14	24	12	9	39	30	65	**10-6F4OMXS**	**10-6F4OMXSS**	350	350
14, 15,16	5/8	3/4-14	7/8-14	36	12	12	45	32	160	**10-12F4OMXS**	**10-12F4OMXSS**	280	250
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	48	35	165	**12F4OMXS**	**12F4OMXSS**	280	250
18, 20		3/8-19	1 1/16-12	27	16	9	44	34	97	**12-6F4OMXS**	**12-6F4OMXSS**	350	250
18, 20	3/4	1/2-14	1 1/16-12	30	16	12	47	34	118	**12-8F4OMXS**	**12-8F4OMXSS**	350	350
18, 20	3/4	1-11	1 1/16-12	46	16	16	53	37	292	**12-16F4OMXS**	**12-16F4OMXSS**	280	250
18, 20	3/4	1 1/4-11	1 1/16-12	50	16	16	53	34	220	**12-20F4OMXS**	**12-20F4OMXSS**	250	175
25	1	1-11	1 5/16-12	46	22	22	54	38	262	**16F4OMXS**	**16F4OMXSS**	280	250
25	1	1/2-14	1 5/16-12	36	22	12	49	34	145	**16-8F4OMXS**	**16-8F4OMXSS**	280	250
25	1	3/4-14	1 5/16-12	36	22	16	49	36	173	**16-12F4OMXS**	**16-12F4OMXSS**	280	250
25	1	1 1/4-11	1 5/16-12	50	22	22	55	39	386	**16-20F4OMXS**	**16-20F4OMXSS**	250	175
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	56	40	325	**20F4OMXS**	**20F4OMXSS**	250	175
28, 30, 32	1 1/4	3/4-14	1 5/8-12	46	28	16	51	36	220	**20-12F4OMXS**	**20-12F4OMXSS**	280	175
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	22	55	39	330	**20-16F4OMXS**	**20-16F4OMXSS**	280	210
28, 30, 32	1 1/4	1 1/2-11	1 5/8-12	55	28	28	57	41	480	**20-24F4OMXS**	**20-24F4OMXSS**	210	140
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	61	45	480	**24F4OMXS**	**24F4OMXSS**	210	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	28	60	44	420	**24-20F4OMXS**	**24-20F4OMXSS**	210	140
42		1 1/2-11	2 1/4	60	39	33	68	52	740	**28-24F4OMXS**	**28-24F4OMXSS**	140	105

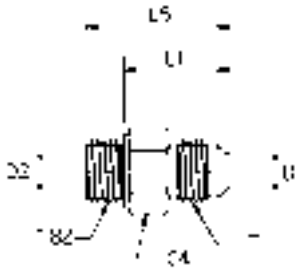
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F82EDMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	Tube O.D. in.	Thread Metric T82	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	14	4	4	30	22	19	**4M10F82EDMXS**	**4M10F82EDMXSS**	500	350
6	1/4	M12 × 1.5	7/16-20	17	4	4	34	22	30	**4M12F82EDMXS**	**4M12F82EDMXSS**	420	350
8	5/16	M10 × 1.0	1/2-20	14	6	4	30	22	17	**5M10F82EDMXS**	**5M10F82EDMXSS**	420	350
8	5/16	M12 × 1.5	1/2-20	17	6	5	34	22	28	**5M12F82EDMXS**	**5M12F82EDMXSS**	420	350
8	5/16	M14 × 1.5	1/2-20	19	6	7	36	24	35	**5M14F82EDMXS**	**5M14F82EDMXSS**	420	350
10	3/8	M12 × 1.5	9/16-18	17	8	5	35	23	33	**6M12F82EDMXS**	**6M12F82EDMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	19	8	7	35	23	38	**6M14F82EDMXS**	**6M14F82EDMXSS**	420	350
10	3/8	M16 × 1.5	9/16-18	22	8	8	36	24	53	**6M16F82EDMXS**	**6M16F82EDMXSS**	420	350
10	3/8	M18 × 1.5	9/16-18	24	8	8	36	24	60	**6M18F82EDMXS**	**6M18F82EDMXSS**	350	350
10	3/8	M22 × 1.5	9/16-18	27	8	8	39	25	68	**6M22F82EDMXS**	**6M22F82EDMXSS**	350	350
12	1/2	M14 × 1.5	3/4-16	19	10	7	39	27	41	**8M14F82EDMXS**	**8M14F82EDMXSS**	420	350
12	1/2	M16 × 1.5	3/4-16	22	10	9	39	27	57	**8M16F82EDMXS**	**8M16F82EDMXSS**	420	350
12	1/2	M18 × 1.5	3/4-16	24	10	10	39	27	71	**8M18F82EDMXS**	**8M18F82EDMXSS**	350	350
12	1/2	M22 × 1.5	3/4-16	27	10	10	42	28	70	**8M22F82EDMXS**	**8M22F82EDMXSS**	350	350
14, 15,16	5/8	M18 × 1.5	7/8-14	24	12	11	43	31	104	**10M18F82EDMXS**	**10M18F82EDMXSS**	350	350
14, 15,16	5/8	M20 × 1.5	7/8-14	27	11	11	46	32	90	**10M20F82EDMXS**	**10M20F82EDMXSS**	350	350
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	12	45	31	161	**10M22F82EDMXS**	**10M22F82EDMXSS**	350	350
18, 20	3/4	M18 × 1.5	1 1/16-12	27	16	11	46	34	85	**12M18F82EDMXS**	**12M18F82EDMXSS**	350	350
18, 20	3/4	M22 × 1.5	1 1/16-12	27	16	14	49	35	273	**12M22F82EDMXS**	**12M22F82EDMXSS**	350	350
18, 20	3/4	M26 × 1.5	1 1/16-12	32	16	16	51	35	135	**12M26F82EDMXS**	**12M26F82EDMXSS**	350	350
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	16	51	35	431	**12M27F82EDMXS**	**12M27F82EDMXSS**	350	350
25	1	M26 × 1.5	1 5/16-12	41	22	18	55	39	350	**16M26F82EDMXS**	**16M26F82EDMXSS**	280	280
25	1	M27 × 2.0	1 5/16-12	36	16	16	53	37	360	**16M27F82EDMXS**	**16M27F82EDMXSS**	280	280
25	1	M33 × 2.0	1 5/16-12	41	22	22	55	37	431	**16M33F82EDMXS**	**16M33F82EDMXSS**	280	280
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	50	28	28	60	40	431	**20M42F82EDMXS**	**20M42F82EDMXSS**	280	210
35, 38	1 1/2	M48 × 2.0	1 7/8-12	55	33	33	67	45	580	**24M48F82EDMXS**	**24M48F82EDMXSS**	210	140

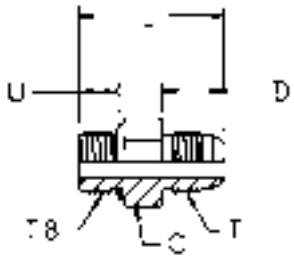
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F8OMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retainer ring



Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2A T	L mm	D mm	C mm	U mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	30	14	14	9	25	**4M10F8OMXS**	**4M10F8OMXSS**	350	350
6	1/4	M12 × 1.5	7/16-20	33	14	17	11	35	**4M12F8OMXS**	**4M12F8OMXSS**	420	350
8	5/16	M10 × 1.0	1/2-20	30	14	14	9	25	**5M10F8OMXS**	**5M10F8OMXSS**	350	350
8	5/16	M12 × 1.5	1/2-20	33	14	19	11	35	**5M12F8OMXS**	**5M12F8OMXSS**	420	350
8	5/16	M14 × 1.5	1/2-20	34	14	19	11	35	**5M14F8OMXS**	**5M14F8OMXSS**	350	350
10	3/8	M12 × 1.5	9/16-18	34	14	17	11	35	**6M12F8OMXS**	**6M12F8OMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	34	14	19	11	35	**6M14F8OMXS**	**6M14F8OMXSS**	350	350
10	3/8	M16 × 1.5	9/16-18	36	14	22	12	51	**6M16F8OMXS**	**6M16F8OMXSS**	350	350
10	3/8	M18 × 1.5	9/16-18	37	14	24	13	60	**6M18F8OMXS**	**6M18F8OMXSS**	250	350
12	1/2	M14 × 1.5	3/4-16	36	17	19	11	38	**8M14F8OMXS**	**8M14F8OMXSS**	350	350
12	1/2	M16 × 1.5	3/4-16	38	17	22	12	55	**8M16F8OMXS**	**8M16F8OMXSS**	350	350
12	1/2	M18 × 1.5	3/4-16	39	17	24	13	66	**8M18F8OMXS**	**8M18F8OMXSS**	250	250
12	1/2	M22 × 1.5	3/4-16	41	17	27	13	70	**8M22F8OMXS**	**8M22F8OMXSS**	250	250
14, 15,16	5/8	M18 × 1.5	7/8-14	43	19	24	13	71	**10M18F8OMXS**	**10M18F8OMXSS**	250	250
14, 15,16	5/8	M20 × 1.5	7/8-14	45	19	27	14	90	**10M20F8OMXS**	**10M20F8OMXSS**	250	250
14, 15,16	5/8	M22 × 1.5	7/8-14	44	19	27	13	98	**10M22F8OMXS**	**10M22F8OMXSS**	250	250
18, 20	3/4	M18 × 1.5	1 1/16-12	51	22	27	13	85	**12M18F8OMXS**	**12M18F8OMXSS**	250	250
18, 20	3/4	M22 × 1.5	1 1/16-12	48	22	27	13	104	**12M22F8OMXS**	**12M22F8OMXSS**	250	250
18, 20	3/4	M24 × 1.5	1 1/16-12	45	22	30	12	120	**12M24F8OMXS**	**12M24F8OMXSS**	210	210
18, 20	3/4	M27 × 2.0	1 1/16-12	51	22	32	16	154	**12M27F8OMXS**	**12M27F8OMXSS**	210	210
25	1	M22 × 1.5	1 5/16-12	48	23	36	13	180	**16M22F8OMXS**	**16M22F8OMXSS**	250	250
25	1	M26 × 1.5	1 5/16-12	52	23	36	17	202	**16M26F8OMXS**	**16M26F8OMXSS**	210	210
25	1	M27 × 2.0	1 5/16-12	51	23	36	16	202	**16M27F8OMXS**	**16M27F8OMXSS**	210	210
25	1	M33 × 2.0	1 5/16-12	53	23	41	16	267	**16M33F8OMXS**	**16M33F8OMXSS**	210	210
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	55	24	50	16	427	**20M42F8OMXS**	**20M42F8OMXSS**	210	210
35, 38	1 1/2	M48 × 2.0	1 7/8-12	59	28	55	18	545	**24M48F8OMXS**	**24M48F8OMXSS**	140	140

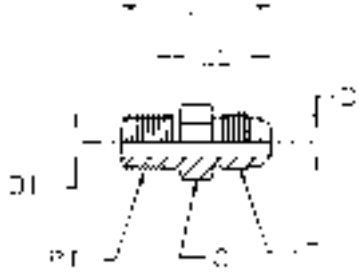
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FMTX Male stud connector

Triple-Lok® 37° Flare end / Male NPTF* thread (SAE 476)
SAE 070102 MS51500
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	C mm	D mm	D1 mm	L mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	1/8	1/8-27	5/16-24	11	2	5	28	22	10	**2 FTX-S**			420	—
5	3/16	1/8-27	3/8-24	11	3	5	29	23	12	**3 FTX-S**			420	—
6	1/4	1/8-27	7/16-20	13	4	4	31	23	14	**4FMTXS**	**4FMTXSS**	**4FMTXB**	420	350
6	1/4	1/4-18	7/16-20	14	4	4	36	24	26	**4-4FMTXS**	**4-4FMTXSS**	**4-4FMTXB**	420	350
6	1/4	3/8-18	7/16-20	19	4	10	37	28	26	**4-6 FTX-S**	**4-6FMTXSS**	**4-6FMTXB**	420	350
6	1/4	1/2-14	7/16-20	22	4	14	43	31	26	**4-8 FTX-S**	**4-8FMTXSS**	**4-8FMTXB**	420	350
8	5/16	1/8-27	1/2-20	14	6	5	31	23	17	**5FMTXS**	**5FMTXSS**	**5FMTXB**	420	350
8	5/16	1/4-18	1/2-20	14	6	6	36	24	25	**5-4FMTXS**	**5-4FMTXSS**	**5-4FMTXB**	420	350
8	5/16	3/8-18	1/2-20	19	6	6	36	26	30	**5-6FMTXS**	**5-6FMTXSS**	**5-6FMTXB**	420	350
10	3/8	1/4-16	9/16-18	16	8	8	36	25	25	**6FMTXS**	**6FMTXSS**	**6FMTXB**	420	350
10	3/8	1/8-27	9/16-18	16	8	5	32	26	21	**6-2 FTX-S**	**6-2FMTXSS**	**6-2FMTXB**	420	350
10	3/8	3/8-18	9/16-18	19	8	8	36	25	39	**6-6FMTXS**	**6-6FMTXSS**	**6-6FMTXB**	420	350
10	3/8	1/2-14	9/16-18	22	8	8	43	28	47	**6-8FMTXS**	**6-8FMTXSS**	**6-8FMTXB**	420	350
12	1/2	3/8-18	3/4-16	19	10	10	39	27	45	**8FMTXS**	**8FMTXSS**	**8FMTXB**	420	350
12	1/2	1/4-16	3/4-16	19	10	7	39	27	42	**8-4FMTXS**	**8-4FMTXSS**	**8-4FMTXB**	420	350
12	1/2	1/2-14	3/4-16	22	10	10	46	30	74	**8-8FMTXS**	**8-8FMTXSS**	**8-8FMTXB**	420	350
12	1/2	3/4-14	3/4-16	27	10	10	47	31	121	**8-12FMTXS**	**8-12FMTXSS**	**8-12FMTXB**	380	350
14, 15,16	5/8	1/2-14	7/8-14	24	12	12	48	33	77	**10FMTXS**	**10FMTXSS**	**10FMTXB**	350	350
14, 15,16	5/8	3/8-18	7/8-14	24	12	10	43	31	63	**10-6FMTXS**	**10-6FMTXSS**	**10-6FMTXB**	350	350
14, 15,16	5/8	3/4-14	7/8-14	27	12	12	50	34	122	**10-12FMTXS**	**10-12FMTXSS**	**10-12FMTXB**	350	350
18, 20	3/4	3/4-14	1 1/16-12	27	16	16	52	37	123	**12 FTX-S**	**12FMTXSS**	**12FMTXB**	350	350
18, 20	3/4	3/8-18	1 1/16-12	29	16	10	48	39	90	**12-6 FTX-S**	**12-6FMTXSS**	**12-6FMTXB**	350	350
18, 20	3/4	1/2-14	1 1/16-12	27	16	14	52	37	103	**12-8 FTX-S**	**12-8FMTXSS**	**12-8FMTXB**	350	350
18, 20	3/4	1-11 1/2	1 1/16-12	36	16	16	57	38	176	**12-16 FTX-S**	**12-16FMTXSS**	**12-16FMTXB**	310	280
22	7/8	3/4-14	1 3/16-12	32	18	18	53	41	137	**14 FTX-S**	**14FMTXSS**	**14FMTXB**	280	245
25	1	1-11 1/2	1 5/16-12	36	22	22	58	39	189	**16FMTXS**	**16FMTXSS**	**16FMTXB**	280	280
25	1	1/2-14	1 5/16-12	35	22	14	54	42	110	**16-8 FTX-S**	**16-8FMTXSS**	**16-8FMTXB**	280	280
25	1	3/4-14	1 5/16-12	36	22	18	54	38	149	**16-12FMTXS**	**16-12FMTXSS**	**16-12FMTXB**	280	280
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	46	28	28	62	42	315	**20FMTXS**	**20FMTXSS**	**20FMTXB**	210	210
28, 30, 32	1 1/4	1-11 1/2	1 5/8-12	46	28	24	61	42	248	**20-16 FTX-S**	**20-16FMTXSS**	**20-16FMTXB**	280	210
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	50	33	33	68	48	430	**24FMTXS**	**24FMTXSS**	**24FMTXB**	210	140
35, 38	1 1/2	1-11 1/2	1 7/8-12	50	33	24	67	52	310	**24-16 FTX-S**	**24-16FMTXSS**	**24-16FMTXB**	210	140
35, 38	1 1/2	1 1/4-11 1/2	1 7/8-12	50	33	32	67	47	359	**24-20 FTX-S**	**24-20FMTXSS**	**24-20FMTXB**	210	140
35, 38	1 1/2	2-11 1/2	1 7/8-12	68	33	33	73	57	720	**24-32 FTX-S**	**24-32FMTXSS**	**24-32FMTXB**	140	140
	2	2-11/12	2 1/2-12	67	45	49	79	64	858	**32 FTX-S**	**32FMTXSS**	**32FMTXB**	140	105
	2	1 1/2-11 1/2	2 1/2-12	68	45	38	78	63	720	**32-24 FTX-S**	**32-24FMTXSS**	**32-24FMTXB**	140	105

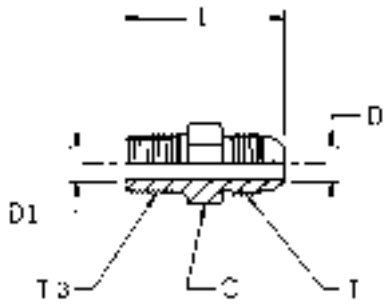
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Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

F3MX Male stud connector

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2A T	C mm	D mm	D1 mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	13	4	4	31	13	**4F3MXS**	**4F3MXSS**	315	315
6	1/4	1/4-19	7/16-20	14	4	4	36	25	**4-4F3MXS**	**4-4F3MXSS**	315	315
8	5/16	1/8-28	1/2-20	14	6	5	31	17	**5F3MXS**	**5F3MXSS**	315	315
8	5/16	1/4-19	1/2-20	14	6	6	36	24	**5-4F3MXS**	**5-4F3MXSS**	315	315
10	3/8	1/4-19	9/16-18	16	8	8	36	25	**6F3MXS**	**6F3MXSS**	315	315
10	3/8	3/8-19	9/16-18	19	8	8	36	37	**6-6F3MXS**	**6-6F3MXSS**	315	315
10	3/8	1/2-14	9/16-18	22	8	8	43	45	**6-8F3MXS**	**6-8F3MXSS**	315	315
12	1/2	3/8-19	3/4-16	19	10	10	39	43	**8F3MXS**	**8F3MXSS**	315	315
12	1/2	1/4-19	3/4-16	19	10	7	39	41	**8-4F3MXS**	**8-4F3MXSS**	315	315
12	1/2	1/2-14	3/4-16	22	10	10	46	71	**8-8F3MXS**	**8-8F3MXSS**	315	315
14, 15,16	5/8	1/2-14	7/8-14	24	12	12	48	74	**10F3MXS**	**10F3MXSS**	315	315
14, 15,16	5/8	3/8-19	7/8-14	24	12	10	43	61	**10-6F3MXS**	**10-6F3MXSS**	315	315
14, 15,16	5/8	3/4-14	7/8-14	27	12	12	50	117	**10-12F3MXS**	**10-12F3MXSS**	160	160
18, 20	3/4	3/4-14	1 1/16-12	27	16	16	52	119	**12F3MXS**	**12F3MXSS**	160	160
18, 20	3/4	1/2-14	1 1/16-12	27	16	14	52	100	**12-8F3MXS**	**12-8F3MXSS**	315	315
18, 20	3/4	1-11	1 1/16-12	36	16	16	57	214	**12-16F3MXS**	**12-16F3MXSS**	160	160
25	1	1-11	1 5/16-12	36	22	22	58	185	**16F3MXS**	**16F3MXSS**	160	160
25	1	3/4-14	1 5/16-12	36	22	18	54	146	**16-12F3MXS**	**16-12F3MXSS**	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	46	28	28	62	309	**20F3MXS**	**20F3MXSS**	160	160
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	24	61	243	**20-16F3MXS**	**20-16F3MXSS**	160	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	50	33	33	68	421	**24F3MXS**	**24F3MXSS**	160	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	32	67	352	**24-20F3MXS**	**24-20F3MXSS**	160	140

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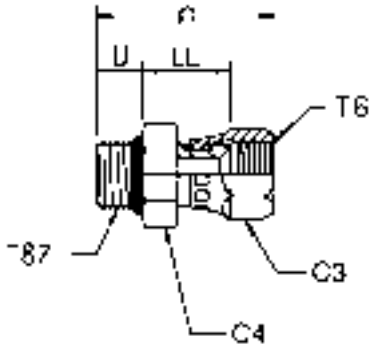
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

K

F687OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2B T6	A mm	LL mm	U mm	C3 mm	C4 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	34	15	9	16	14	25	**4M10F687OMXS**	**4M10F687OMXSS**	500	350
6	1/4	M12 × 1.5	7/16-20	38	15	11	16	17	30	**4M12F687OMXS**	**4M12F687OMXSS**	420	350
8	5/16	M10 × 1.0	1/2-20	39	18	9	17	17	40	**5M10F687OMXS**	**5M10F687OMXSS**	420	350
8	5/16	M12 × 1.5	1/2-20	44	17	11	17	17	64	**5M12F687OMXS**	**5M12F687OMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	45	18	11	19	19	65	**6M14F687OMXS**	**6M14F687OMXSS**	350	350
10	3/8	M16 × 1.5	9/16-18	46	19	12	19	22	75	**6M16F687OMXS**	**6M16F687OMXSS**	350	350
12	1/2	M16 × 1.5	3/4-16	46	21	12	22	22	80	**8M16F687OMXS**	**8M16F687OMXSS**	350	350
12	1/2	M18 × 1.5	3/4-16	47	21	13	22	24	90	**8M18F687OMXS**	**8M18F687OMXSS**	350	350
14, 15,16	5/8	M18 × 1.5	7/8-14	47	23	13	27	24	108	**10M18F687OMXS**	**10M18F687OMXSS**	350	350
14, 15,16	5/8	M22 × 1.5	7/8-14	49	23	13	27	27	115	**10M22F687OMXS**	**10M22F687OMXSS**	350	350
18, 20	3/4	M22 × 1.5	1 1/16-12	53	25	13	32	27	183	**12M22F687OMXS**	**12M22F687OMXSS**	350	350
18, 20	3/4	M27 × 2.0	1 1/16-12	54	24	16	32	32	197	**12M27F687OMXS**	**12M27F687OMXSS**	350	350
25	1	M27 × 2.0	1 5/16-12	56	25	16	38	32	230	**16M27F687OMXS**	**16M27F687OMXSS**	250	280
25	1	M33 × 2.0	1 5/16-12	58	27	16	38	41	250	**16M33F687OMXS**	**16M33F687OMXSS**	250	280
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	73	31	16	50	50	500	**20M42F687OMXS**	**20M42F687OMXSS**	250	210
35, 38	1 1/2	M48 × 2.0	1 7/8-12	72	33	18	60	55	688	**24M48F687OMXS**	**24M48F687OMXSS**	170	140

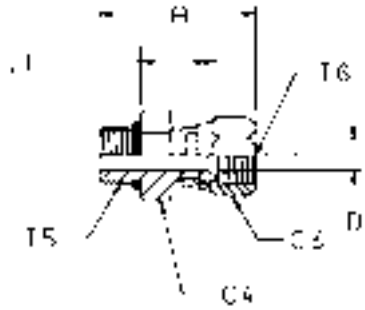
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
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$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F65OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male UN/UNF thread – O-ring (ISO 11926)



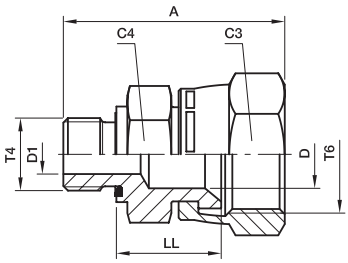
Tube O.D. mm	Tube O.D. in.	Thread UNF T5	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	34	16	14	4	15	27	**4F65OMXS**	500
8	5/16	1/2-20	1/2-20	34	17	17	6	17	30	**5F65OMXS**	420
10	3/8	9/16-18	9/16-18	36	19	17	8	16	35	**6F65OMXS**	350
12	1/2	3/4-16	3/4-16	42	22	22	10	21	64	**8 F65OX-S**	350
14, 15,16	5/8	7/8-14	7/8-14	47	27	27	12	23	112	**10 F65OX-S**	350
18, 20	3/4	1 1/16-12	1 1/16-12	52	32	32	16	24	183	**12F65OMXS**	350
25	1	1 5/16-12	1 5/16-12	55	38	41	22	27	234	**16F65OMXS**	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	63	50	50	28	32	500	**20 F65OX-S**	250

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

F642EDMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	24	16	14	4	4	15	30	**4F642EDMXS**	**4F642EDMXSS**	500	350
6	1/4	1/4-19	7/16-20	29	16	19	4	4	16	30	**4-4F642EDMXS**	**4-4F642EDMXSS**	420	350
8	5/16	1/8-28	1/2-20	25	17	14	6	4	17	28	**5F642EDMXS**	**5F642EDMXSS**	420	350
8	5/16	1/4-19	1/2-20	29	17	19	6	6	18	37	**5-4F642EDMXS**	**5-4F642EDMXSS**	420	350
10	3/8	1/4-19	9/16-18	30	19	19	8	6	18	41	**6F642EDMXS**	**6F642EDMXSS**	350	350
10	3/8	3/8-19	9/16-18	31	19	22	8	8	19	57	**6-6F642EDMXS**	**6-6F642EDMXSS**	350	350
12	1/2	3/8-19	3/4-16	33	22	22	10	9	21	62	**8F642EDMXS**	**8F642EDMXSS**	350	350
12	1/2	1/4-19	3/4-16	33	22	19	10	6	21	60	**8-4F642EDMXS**	**8-4F642EDMXSS**	350	350
12	1/2	1/2-14	3/4-16	34	22	27	10	10	23	75	**8-8F642EDMXS**	**8-8F642EDMXSS**	350	350
14, 15,16	5/8	1/2-14	7/8-14	49	27	27	12	12	23	127	**10F642EDMXS**	**10F642EDMXSS**	350	350
14, 15,16	5/8	3/8-19	7/8-14	35	27	22	12	9	23	84	**10-6F642EDMXS**	**10-6F642EDMXSS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	42	32	32	16	16	24	183	**12F642EDMXS**	**12F642EDMXSS**	350	350
18, 20	3/4	1/2-14	1 1/16-12	40	32	27	16	14	25	170	**12-8F642EDMXS**	**12-8F642EDMXSS**	350	350
25	1	1-11	1 5/16-12	45	38	41	22	22	27	296	**16F642EDMXS**	**16F642EDMXSS**	250	250
25	1	3/4-14	1 5/16-12	43	38	36	22	18	27	254	**16-12F642EDMXS**	**16-12F642EDMXSS**	250	250
28, 30, 33	1 1/4	1 1/4-11	1 5/8-12	52	50	50	28	28	32	500	**20F642EDMXS**	**20F642EDMXSS**	250	210
28, 30, 32	1 1/4	1-11	1 5/8-12	54	50	41	28	23	36	440	**20-16F642EDMXS**	**20-16F642EDMXSS**	250	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	58	60	55	33	33	36	739	**24F642EDMXS**	**24F642EDMXSS**	170	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	60	60	50	33	30	33	627	**24-20F642EDMXS**	**24-20F642EDMXSS**	170	140

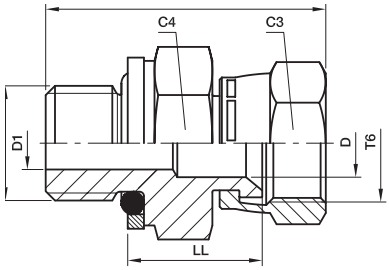
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F64OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end /
Male BSPP thread – O-ring + retainer ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	32	16	16	4	4	17	30	**4F64OMXS**	**4F64OMXSS**	350	350
6	1/4	1/4-19	7/16-20	35	16	19	4	4	16	30	**4-4F64OMXS**	**4-4F64OMXSS**	350	350
8	5/16	1/8-28	1/2-20	32	17	16	6	4	17	28	**5F64OMXS**	**5F64OMXSS**	350	350
8	5/16	1/4-19	1/2-20	36	17	19	6	6	18	37	**5-4F64OMXS**	**5-4F64OMXSS**	350	350
10	3/8	1/4-19	9/16-18	37	19	19	8	6	18	41	**6F64OMXS**	**6F64OMXSS**	350	350
10	3/8	3/8-19	9/16-18	38	19	22	8	8	19	57	**6-6F64OMXS**	**6-6F64OMXSS**	350	350
12	1/2	3/8-19	3/4-16	41	22	22	10	10	21	62	**8F64OMXS**	**8F64OMXSS**	350	350
12	1/2	1/4-19	3/4-16	39	22	19	10	6	20	57	**8-4F64OMXS**	**8-4F64OMXSS**	350	350
12	1/2	1/2-14	3/4-16	42	22	30	10	10	21	75	**8-8F64OMXS**	**8-8F64OMXSS**	350	350
14, 15,16	5/8	1/2-14	7/8-14	49	27	30	12	12	24	127	**10F64OMXS**	**10F64OMXSS**	350	350
14, 15,16	5/8	3/8-19	7/8-14	43	27	22	12	9	22	84	**10-6F64OMXS**	**10-6F64OMXSS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	51	32	36	16	16	26	183	**12F64OMXS**	**12F64OMXSS**	280	280
18, 20	3/4	1/2-14	1 1/16-12	50	32	30	16	12	24	169	**12-8F64OMXS**	**12-8F64OMXSS**	350	350
25	1	1-11	1 5/16-12	59	38	46	22	22	28	296	**16F64OMXS**	**16F64OMXSS**	250	250
25	1	3/4-14	1 5/16-12	54	38	36	22	16	27	253	**16-12F64OMXS**	**16-12F64OMXSS**	250	250
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	64	50	50	28	28	32	500	**20F64OMXS**	**20F64OMXSS**	250	175
28, 30, 32	1 1/4	1-11	1 5/8-12	62	50	46	28	22	31	420	**20-16F64OMXS**	**20-16F64OMXSS**	250	175
35, 38	1 1/2	1 1/2-11	1 7/8-12	70	60	55	33	33	36	739	**24F64OMXS**	**24F64OMXSS**	170	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	70	60	50	33	28	35	627	**24-20F64OMXS**	**24-20F64OMXSS**	170	140

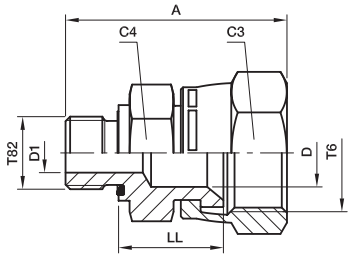
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F682EDMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	Tube O.D. in.	Thread Metric T82	Thread UN/UNF-2B T6	A mm	C4 mm	C3 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	24	14	16	4	4	15	28	**4M10F682EDMXS**	**4M10F682EDMXSS**	500	350
8	5/16	M12 × 1.5	1/2-20	29	17	17	6	5	17	32	**5M12F682EDMXS**	**5M12F682EDMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	30	19	19	8	7	18	42	**6M14F682EDMXS**	**6M14F682EDMXSS**	350	350
12	1/2	M16 × 1.5	3/4-16	34	22	22	10	9	21	62	**8M16F682EDMXS**	**8M16F682EDMXSS**	350	350
12	1/2	M18 × 1.5	3/4-16	34	24	22	10	10	21	70	**8M18F682EDMXS**	**8M18F682EDMXSS**	350	350
14, 15,16	5/8	M18 × 1.5	7/8-14	36	24	27	12	11	23	125	**10M18F682EDMXS**	**10M18F682EDMXSS**	350	350
14, 15,16	5/8	M22 × 1.5	7/8-14	38	27	27	12	12	23	155	**10M22F682EDMXS**	**10M22F682EDMXSS**	350	350
18, 20	3/4	M22 × 1.5	1 1/16-12	40	27	32	16	14	25	160	**12M22F682EDMXS**	**12M22F682EDMXSS**	350	350
18, 20	3/4	M27 × 2.0	1 1/16-12	42	32	32	16	16	24	172	**12M27F682EDMXS**	**12M27F682EDMXSS**	350	350
25	1	M33 × 2.0	1 5/16-12	45	41	38	22	22	27	259	**16M33F682EDMXS**	**16M33F682EDMXSS**	250	250
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	52	50	50	28	28	32	484	**20M42F682EDMXS**	**20M42F682EDMXSS**	250	210

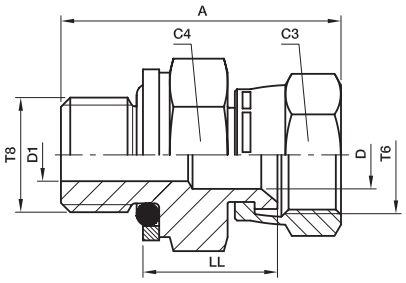
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F68OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male metric thread O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	34	16	14	4	4	16	28	**4M10F68OMXS**	350
8	5/16	M12 × 1.5	1/2-20	38	17	17	6	6	18	32	**5M12F68OMXS**	420
10	3/8	M14 × 1.5	9/16-18	39	19	19	8	8	20	42	**6M14F68OMXS**	350
12	1/2	M16 × 1.5	3/4-16	42	22	22	10	8	22	62	**8M16F68OMXS**	350
12	1/2	M18 × 1.5	3/4-16	44	22	24	10	10	23	62	**8M18F68OMXS**	250
14, 15,16	5/8	M18 × 1.5	7/8-14	47	27	24	12	11	25	127	**10M18F68OMXS**	250
14, 15,16	5/8	M22 × 1.5	7/8-14	48	27	27	12	12	24	155	**10M22F68OMXS**	250
18, 20	3/4	M27 × 2.0	1 1/16-12	52	32	32	16	16	26	172	**12M27F68OMXS**	210
25	1	M33 × 2.0	1 5/16-12	57	38	41	22	22	29	259	**16M33F68OMXS**	210
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	62	50	50	28	28	33	484	**20M42F68OMXS**	210

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

F6MX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male NPT* thread (SAE 476)
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	14	14	4	4	29	16	18	**4 F6X-S**	**4F6MXSS**	420	350
6	1/4	1/4-18	7/16-20	14	14	4	4	39	22	19	**4-4 F6X-S**	**4-4F6MXSS**	420	350
8	5/16	1/8-27	1/2-20	17	14	6	5	35	16	26	**5F6MXS**	**5F6MXSS**	420	350
8	5/16	1/4-18	1/2-20	16	16	6	7	40	22	37	**5-4 F6X-S**	**5-4F6MXSS**	420	350
10	3/8	1/4-16	9/16-18	17	17	8	8	40	24	30	**6 F6X-S**	**6F6MXSS**	350	350
10	3/8	3/8-18	9/16-18	17	19	7	7	40	24	48	**6-6 F6X-S**	**6-6F6MXSS**	350	350
12	1/2	3/8-18	3/4-16	22	22	10	10	43	24	50	**8 F6X-S**	**8F6MXSS**	350	350
12	1/2	1/4-16	3/4-16	22	19	10	7	44	27	46	**8-4F6MXS**	**8-4F6MXSS**	350	350
12	1/2	1/2-14	3/4-16	22	22	10	10	50	28	69	**8-8F6MXS**	**8-8F6MXSS**	350	350
14, 15,16	5/8	1/2-14	7/8-14	25	25	12	12	52	27	75	**10 F6X-S**	**10F6MXSS**	350	350
14, 15,16	5/8	3/8-18	7/8-14	27	22	12	10	47	25	67	**10-6F6MXS**	**10-6F6MXSS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	32	27	16	16	55	29	125	**12 F6X-S**	**12F6MXSS**	350	350
18, 20	3/4	1/2-14	1 1/16-12	32	27	16	14	55	30	124	**12-8 F6X-S**	**12-8F6MXSS**	350	350
25	1	1-11 1/2	1 5/16-12	38	36	22	22	64	48	204	**16 F6X-S**	**16F6MXSS**	250	250
25	1	3/4-14	1 5/16-12	38	32	22	18	59	31	169	**16-12 F6X-S**	**16-12F6MXSS**	250	250
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	50	46	28	28	70	38	496	**20 F6X-S**	**20F6MXSS**	210	210
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	58	58	34	34	78	43	750	**24 F6X-S**	**24F6MXSS**	170	170

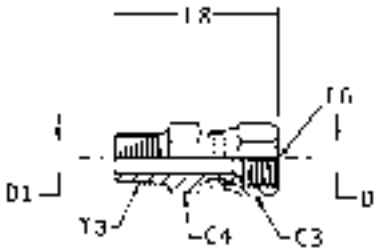
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F63MX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male BSPT thread (ISO 7)



Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	16	13	4	4	34	18	**4F63MXS**	**4F63MXSS**	315	315
6	1/4	1/4-19	7/16-20	16	14	4	4	38	19	**4-4F63MXS**	**4-4F63MXSS**	315	315
8	5/16	1/4-19	1/2-20	17	14	6	6	39	37	**5-4F63MXS**	**5-4F63MXSS**	315	315
10	3/8	1/4-19	9/16-18	19	14	8	8	40	30	**6F63MXS**	**6F63MXSS**	315	315
10	3/8	3/8-19	9/16-18	19	19	8	8	41	48	**6-6F63MXS**	**6-6F63MXSS**	315	315
12	1/2	3/8-19	3/4-16	22	19	10	10	43	50	**8F63MXS**	**8F63MXSS**	315	315
12	1/2	1/4-19	3/4-16	22	19	10	7	41	46	**8-4F63MXS**	**8-4F63MXSS**	315	315
14, 15,16	5/8	1/2-14	7/8-14	27	22	12	12	51	75	**10F63MXS**	**10F63MXSS**	315	315
14, 15,16	5/8	3/8-19	7/8-14	27	22	12	10	46	67	**10-6F63MXS**	**10-6F63MXSS**	315	315
18, 20	3/4	3/4-14	1 1/16-12	32	27	16	16	55	125	**12F63MXS**	**12F63MXSS**	160	160
18, 20	3/4	1/2-14	1 1/16-12	32	27	16	14	55	120	**12-8F63MXS**	**12-8F63MXSS**	315	315
25	1	1-11	1 5/16-12	38	36	22	22	64	204	**16F63MXS**	**16F63MXSS**	160	160
25	1	3/4-14	1 5/16-12	38	32	22	18	59	165	**16-12F63MXS**	**16-12F63MXSS**	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	46	28	28	69	496	**20F63MXS**	**20F63MXSS**	160	160

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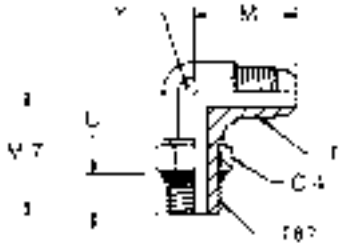
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

K

C87OMX Male stud elbow

Triple-Lok® 37° Flare end /
Adjustable metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	M mm	M7 mm	U mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	M10 × 1.0	7/16-20	14	23	27	9	11	17	**4M10C87OMXS**	**4M10C87OMXSS**	420	350
6	1/4	M12 × 1.5	7/16-20	17	24	31	11	13	20	**4M12C87OMXS**	**4M12C87OMXSS**	420	350
8	5/16	M10 × 1.0	1/2-20	14	24	26	9	13	22	**5M10C87OMXS**	**5M10C87OMXSS**	420	350
8	5/16	M12 × 1.5	1/2-20	17	24	31	11	13	25	**5M12C87OMXS**	**5M12C87OMXSS**	420	350
10	3/8	M14 × 1.5	9/16-18	19	27	34	11	14	31	**6M14C87OMXS**	**6M14C87OMXSS**	420	350
10	3/8	M16 × 1.5	9/16-18	22	29	38	12	19	55	**6M16C87OMXS**	**6M16C87OMXSS**	350	350
10	1/2	M16 × 1.5	3/4-16	22	32	38	12	19	65	**8M16C87OMXS**	**8M16C87OMXSS**	350	350
12	1/2	M18 × 1.5	3/4-16	24	32	38	13	19	66	**8M18C87OMXS**	**8M18C87OMXSS**	350	350
14, 15,16	5/8	M18 × 1.5	7/8-14	24	37	42	13	22	99	**10M18C87OMXS**	**10M18C87OMXSS**	350	350
14, 15,16	5/8	M22 × 1.5	7/8-14	27	37	43	13	22	99	**10M22C87OMXS**	**10M22C87OMXSS**	350	350
18, 20	3/4	M22 × 1.5	1 1/16-12	27	42	45	13	27	164	**12M22C87OMXS**	**12M22C87OMXSS**	350	350
18, 20	3/4	M27 × 2.0	1 1/16-12	32	42	50	16	27	173	**12M27C87OMXS**	**12M27C87OMXSS**	350	350
25	1	M27 × 2.0	1 5/16-12	32	46	53	16	33	287	**16M27C87OMXS**	**16M27C87OMXSS**	280	280
25	1	M33 × 2.0	1 5/16-12	41	46	53	16	33	287	**16M33C87OMXS**	**16M33C87OMXSS**	280	280
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	50	52	58	16	41	575	**20M42C87OMXS**	**20M42C87OMXSS**	210	210
35, 38	1 1/2	M48 × 2.0	1 7/8-12	55	59	64	17	48	874	**24M48C87OMXS**	**24M48C87OMXSS**	140	140

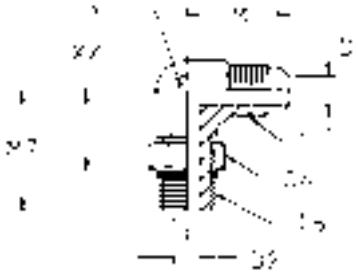
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C5OMX Male stud elbow

Triple-Lok® 37° Flare end /
Adjustable UN/UNF thread – O-ring (ISO 11926)
SAE 070220 MS51527



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
	1/8	5/16-24	5/16-24	11	2	2	20	24	15	11	25	**2 C5OX-S**		350	—
	3/16	3/8-24	3/8-24	13	3	3	21	24	16	11	30	**3 C5OX-S**		350	—
6	1/4	7/16-20	7/16-20	14	4	4	23	26	16	11	37	**4C5OMXS**	**4C5OMXSS**	420	350
6	1/4	9/16-18	7/16-20	17	4	8	27	32	21	14	43	**4-6 C5OX-S**	**4-6C5OMXSS**	420	350
8	5/16	1/2-20	1/2-20	16	6	6	24	29	18	13	47	**5C5OMXS**	**5C5OMXSS**	420	350
8	5/16	7/16-18	1/2-20	14	6	5	24	29	19	14	55	**5-4 C5OX-S**	**5-4C5OMXSS**	420	350
8	5/16	9/16-18	1/2-20	17	6	8	24	32	20	14	62	**5-6 C5OX-S**	**5-6C5OMXSS**	420	350
10	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	63	**6C5OMXS**	**6C5OMXSS**	420	350
10	3/8	7/16-20	9/16-18	14	8	4	27	30	20	14	99	**6-4 C5OX-S**	**6-4C5OMXSS**	420	350
10	3/8	1/2-20	9/16-18	16	8	6	27	30	18	14	99	**6-5 C5OX-S**	**6-5C5OMXSS**	420	350
10	3/8	3/4-16	9/16-18	22	8	10	29	37	24	19	125	**6-8C5OMXS**	**6-8C5OMXSS**	420	350
10	3/8	7/8-14	9/16-18	25	8	12	31	43	32	22	145	**6-10 C5OX-S**	**6-10C5OMXSS**	350	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	160	**8C5OMXS**	**8C5OMXSS**	420	350
12	1/2	7/16-18	3/4-16	14	10	5	32	32	22	19	150	**8-4 C5OX-S**	**8-4C5OMXSS**	420	350
12	1/2	9/16-18	3/4-16	17	10	8	32	34	23	19	130	**8-6 C5OX-S**	**8-6C5OMXSS**	420	350
12	1/2	7/8-14	3/4-16	27	10	13	34	43	29	22	180	**8-10C5OMXS**	**8-10C5OMXSS**	350	350
12	1/2	1 1/16-12	3/4-16	32	10	16	36	49	33	27	210	**8-12C5OMXS**	**8-12C5OMXSS**	350	350
12	1/2	1 5/16-12	3/4-16	41	10	22	39	52	36	33	380	**8-16 C5OX-S**	**8-16C5OMXSS**	280	280
14, 15,16	5/8	7/8-14	7/8-14	27	12	13	37	43	29	22	186	**10C5OMXS**	**10C5OMXSS**	350	350
14, 15,16	5/8	9/16-18	7/8-14	18	13	8	37	36	25	22	130	**10-6 C5OX-S**	**10-6C5OMXSS**	350	350
14, 15,16	5/8	3/4-16	7/8-14	22	12	10	37	39	27	22	157	**10-8 C5OX-S**	**10-8C5OMXSS**	350	350
14, 15,16	5/8	1 1/16-12	7/8-14	32	12	16	39	49	33	27	331	**10-12 C5OX-S**	**10-12C5OMXSS**	350	350
14, 15,16	5/8	1 5/16-12	7/8-14	41	13	22	42	52	36	33	400	**10-16 C5OX-S**	**10-16C5OMXSS**	280	280
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	301	**12C5OMXS**	**12C5OMXSS**	350	350
18, 20	3/4	3/4-16	1 1/16-12	22	16	10	42	41	30	27	297	**12-8 C5OX-S**	**12-8C5OMXSS**	350	350
18, 20	3/4	7/8-14	1 1/16-12	27	16	13	42	45	31	27	297	**12-10C5OMXS**	**12-10C5OMXSS**	350	350
18, 20	3/4	1 3/16-12	1 1/16-12	35	16	18	45	51	34	33	350	**12-14 C5OX-S**		280	—
18, 20	3/4	1 5/16-12	1 1/16-12	38	16	22	46	52	36	33	421	**12-16 C5OX-S**	**12-16C5OMXSS**	280	280
22	7/8	1 3/16-12	1 3/16-12	35	18	18	44	51	34	33	417	**14 C5OX-S**		280	—
25	1	1 5/16-12	1 5/16-12	38	22	22	46	52	36	33	426	**16C5OMXS**	**16C5OMXSS**	280	280
25	1	1 1/16-12	1 5/16-12	32	22	16	46	52	36	33	418	**16-12 C5OX-S**	**16-12C5OMXSS**	280	280
25	1	1 3/16-12	1 5/16-12	35	22	18	46	53	36	33	450	**16-14 C5OX-S**		280	—
25	1	1 5/8-12	1 5/16-12	48	22	28	51	57	41	41	546	**16-20 C5OX-S**	**16-20C5OMXSS**	280	210
25	1	1 7/8-12	1 5/16-12	55	22	34	55	61	44	48	600	**16-24 C5OX-S**	**16-24C5OMXSS**	210	210
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	28	52	57	41	41	674	**20 C5OX-S**	**20C5OMXSS**	280	210
28, 30, 32	1 1/4	1 5/16-12	1 5/8-12	41	28	22	52	57	41	41	650	**20-16 C5OX-S**	**20-16C5OMXSS**	280	280
28, 30, 32	1 1/4	1 7/8-12	1 5/8-12	55	28	34	56	61	44	48	920	**20-24 C5OX-S**	**20-24C5OMXSS**	210	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	55	33	33	59	61	44	48	917	**24 C5OX-S**	**24C5OMXSS**	210	140
35, 38	1 1/2	1 5/8-12	1 7/8-12	48	34	28	59	61	44	48	920	**24-20 C5OX-S**	**24-20C5OMXSS**	210	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CC5OX Extended male stud elbow

Triple-Lok® 37° Flare end / Male UNF thread – O-ring (ISO 11926)



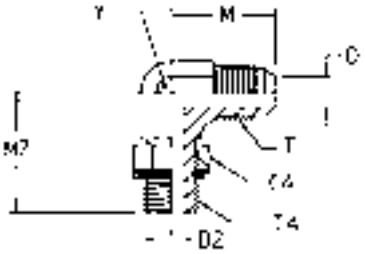
Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M9 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	14	4	4	25	44	34	14	44	**4 CC5OX-S**	420
10	3/8	9/16-18	9/16-18	18	8	8	27	53	42	14	51	**6 CC5OX-S**	420
12	1/2	3/4-16	3/4-16	22	10	10	32	64	51	22	146	**8 CC5OX-S**	420
14, 15,16	5/8	7/8-14	7/8-14	25	12	12	37	73	59	22	169	**10 CC5OX-S**	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	85	68	27	291	**12 CC5OX-S**	350
25	1	1 5/16-12	1 5/16-12	38	21	21	46	95	78	33	481	**16 CC5OX-S**	280

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Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

C4OMX Male stud elbow

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	37	**4C4OMXS**	**4C4OMXSS**	250	250
6	1/4	1/4-19	7/16-20	19	4	8	27	32	14	43	**4-4C4OMXS**	**4-4C4OMXSS**	250	200
6	1/4	3/8-19	7/16-20	22	4	10	29	37	19	50	**4-6C4OMXS**	**4-6C4OMXSS**	250	200
8	5/16	1/8-28	1/2-20	14	6	4	24	27	13	47	**5C4OMXS**	**5C4OMXSS**	250	250
8	5/16	1/4-19	1/2-20	19	6	8	27	32	14	55	**5-4C4OMXS**	**5-4C4OMXSS**	250	200
8	5/16	3/8-19	1/2-20	22	6	10	29	37	19	57	**5-6C4OMXS**	**5-6C4OMXSS**	250	200
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	61	**6C4OMXS**	**6C4OMXSS**	250	200
10	3/8	1/8-28	9/16-18	14	8	4	27	28	14	52	**6-2C4OMXS**	**6-2C4OMXSS**	250	200
10	3/8	3/8-19	9/16-18	22	8	10	29	37	19	95	**6-6C4OMXS**	**6-6C4OMXSS**	250	200
10	3/8	1/2-14	9/16-18	27	8	12	31	43	22	80	**6-8C4OMXS**	**6-8C4OMXSS**	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	102	**8C4OMXS**	**8C4OMXSS**	250	200
12	1/2	1/4-19	3/4-16	19	10	8	32	37	19	91	**8-4C4OMXS**	**8-4C4OMXSS**	250	200
12	1/2	1/2-14	3/4-16	27	10	12	34	43	22	155	**8-8C4OMXS**	**8-8C4OMXSS**	250	200
12	1/2	3/4-14	3/4-16	36	10	16	36	50	27	205	**8-12C4OMXS**	**8-12C4OMXSS**	250	200
14, 15,16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	164	**10C4OMXS**	**10C4OMXSS**	250	200
14, 15,16	5/8	3/8-19	7/8-14	22	12	10	37	36	22	190	**10-6C4OMXS**	**10-6C4OMXSS**	250	200
14, 15,16	5/8	3/4-14	7/8-14	36	12	16	39	50	27	217	**10-12C4OMXS**	**10-12C4OMXSS**	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	295	**12C4OMXS**	**12C4OMXSS**	250	200
18, 20	3/4	1/2-14	1 1/16-12	27	16	12	42	50	27	245	**12-8C4OMXS**	**12-8C4OMXSS**	250	200
18, 20	3/4	1-11	1 1/16-12	41	16	22	45	52	33	317	**12-16C4OMXS**	**12-16C4OMXSS**	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	425	**16C4OMXS**	**16C4OMXSS**	250	200
25	1	3/4-14	1 5/16-12	36	22	16	46	47	33	405	**16-12C4OMXS**	**16-12C40MXSS**	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	697	**20C4OMXS**	**20C4OMXSS**	210	160
28, 30, 32	1 1/4	1-11	1 5/8-12	41	28	22	52	57	41	650	**20-16C4OMXS**	**20-16C4OMXSS**	250	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	59	61	48	953	**24C4OMXS**	**24C4OMXSS**	140	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	28	59	61	48	964	**24-20C4OMXS**	**24-20C4OMXSS**	210	140

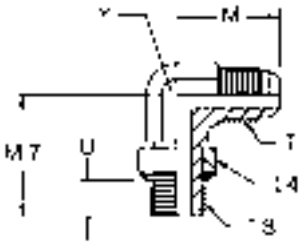
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
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$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C8OMX Male stud elbow

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retainer ring



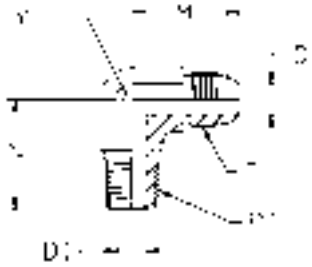
Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2A T	M mm	Y mm	U mm	C4 mm	M7 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	23	11	8	13	27	23	**4M10C8OMXS**	250
6	1/4	M12 × 1.5	7/16-20	24	13	10	17	31	28	**4M12C8OMXS**	250
8	5/16	M10 × 1.0	1/2-20	24	13	8	13	26	29	**5M10C8OMXS**	250
8	5/16	M12 × 1.5	1/2-20	24	13	10	17	31	29	**5M12C8OMXS**	250
10	3/8	M14 × 1.5	9/16-18	27	14	10	17	34	36	**6M14C8OMXS**	250
10	3/8	M16 × 1.5	9/16-18	29	19	10	19	38	74	**6M16C8OMXS**	250
12	1/2	M16 × 1.5	3/4-16	32	19	10	19	38	77	**8M16C8OMXS**	250
12	1/2	M18 × 1.5	3/4-16	32	19	11	22	38	78	**8M18C8OMXS**	250
14, 15,16	5/8	M18 × 1.5	7/8-14	37	22	11	22	42	104	**10M18C8OMXS**	250
14, 15,16	5/8	M20 × 1.5	7/8-14	37	22	11	24	41	110	**10M20C8OMXS**	250
14, 15,16	5/8	M22 × 1.5	7/8-14	37	22	12	27	43	119	**10M22C8OMXS**	250
18, 20	3/4	M22 × 1.5	1 1/16-12	42	27	12	27	45	198	**12M22C8OMXS**	250
18, 20	3/4	M27 × 2.0	1 1/16-12	42	27	14	32	50	208	**12M27C8OMXS**	175
25	1	M27 × 2.0	1 5/16-12	46	33	14	32	53	333	**16M27C8OMXS**	175
25	1	M33 × 2.0	1 5/16-12	46	33	14	38	53	333	**16M33C8OMXS**	140
28, 30, 32	1 1/4	M42 × 2.0	1 5/8-12	52	41	14	50	58	575	**20M42C8OMXS**	140
35, 38	1 1/2	M48 × 2.0	1 7/8-12	59	48	15	55	64	872	**24M48C8OMXS**	140

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$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

CMTX Male stud elbow

Triple-Lok® 37° Flare end / Male NPTF* thread (SAE 476)
SAE 070202 MS51504
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
	1/8	1/8-27	5/16-24	2	5	20	18	8	12	**2 CTX-S**		420	—
	3/16	1/8-27	3/8-24	3	5	21	18	10	15	**3 CTX-S**		420	—
6	1/4	1/8-27	7/16-20	4	5	23	20	11	23	**4CMTXS**	**4CMTXSS**	420	350
6	1/4	1/4-18	7/16-20	4	7	27	28	14	42	**4-4CMTXS**	**4-4CMTXSS**	420	350
6	1/4	3/8-18	7/16-20	4	10	29	31	19	26	**4-6 CTX-S**	**4-6CMTXSS**	420	350
6	1/4	1/2-14	7/16-20	4	14	31	37	22	30	**4-8 CTX-S**	**4-8CMTXSS**	420	350
8	5/16	1/8-27	1/2-20	6	5	24	20	13	29	**5CMTXS**	**5CMTXSS**	420	350
8	5/16	1/4-18	1/2-20	6	7	27	28	14	42	**5-4 CTX-S**	**5-4CMTXSS**	420	350
8	5/16	3/8-18	1/2-20	6	10	29	31	19	45	**5-6 CTX-S**	**5-6CMTXSS**	420	350
10	3/8	1/4-16	9/16-18	8	7	27	28	14	45	**6CMTXS**	**6CMTXSS**	420	350
10	3/8	1/8-27	9/16-18	8	5	27	23	14	55	**6-2 CTX-S**	**6-2CMTXSS**	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	76	**6-6CMTXS**	**6-6CMTXSS**	420	350
10	3/8	1/2-14	9/16-18	8	14	31	37	22	117	**6-8CMTXS**	**6-8CMTXSS**	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	86	**8CMTXS**	**8CMTXSS**	420	350
12	1/2	1/4-16	3/4-16	10	7	32	31	19	82	**8-4CMTXS**	**8-4CMTXSS**	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	125	**8-8CMTXS**	**8-8CMTXSS**	420	350
12	1/2	3/4-14	3/4-16	10	18	36	40	27	190	**8-12 CTX-S**	**8-12CMTXSS**	280	280
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	129	**10CMTXS**	**10CMTXSS**	350	350
14, 15,16	5/8	3/8-18	7/8-14	12	10	37	33	22	127	**10-6 CTX-S**	**10-6CMTXSS**	350	350
14, 15,16	5/8	3/4-14	7/8-14	12	18	39	40	27	192	**10-12CMTXS**	**10-12CMTXSS**	280	280
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	198	**12 CTX-S**	**12CMTXSS**	280	280
18, 20	3/4	1/2-14	1 1/16-12	16	14	42	40	27	204	**12-8 CTX-S**	**12-8CMTXSS**	350	350
18, 20	3/4	1-11 1/2	1 1/16-12	16	24	45	50	33	318	**12-16CMTXS**	**12-16CMTXSS**	210	210
22	7/8	3/4-14	1 3/16-12	18	18	46	43	31	260	**14 CTX-S**	**14CMTXSS**	280	245
25	1	1-11 1/2	1 5/16-12	22	24	46	50	33	328	**16 CTX-S**	**16CMTXSS**	210	210
25	1	3/4-14	1 5/16-12	22	18	46	45	33	318	**16-12 CTX-S**	**16-12CMTXSS**	280	280
25	1	1 1/4-11 1/2	1 5/16-12	22	32	54	61	45	477	**16-20 CTX-S**	**16-20CMTXSS**	170	170
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	28	32	52	61	45	549	**20 CTX-S**	**20CMTXSS**	170	170
28, 30, 32	1 1/4	1-11 1/2	1 5/8-12	28	24	52	60	41	536	**20-16CMTXS**	**20-16CMTXSS**	210	210
28, 30, 32	1 1/4	1 1/2-11 1/2	1 7/8-12	28	38	56	67	48	630	**20-24 CTX-S**	**20-24CMTXSS**	170	140
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	33	38	59	67	48	747	**24 CTX-S**	**24CMTXSS**	170	140
35, 38	1 1/2	1 1/4-11 1/2	1 7/8-12	33	32	59	57	48	715	**24-20 CTX-S**	**24-20CMTXSS**	170	140
	2	2-11/12	2 1/2-12	45	49	78	76	64	1644	**32 CTX-S**		140	—
	2	1 1/2-11 1/2	2 1/2-12	45	38	78	75	66	1450	**32-24 CTX-S**		140	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CCTX Extended male stud elbow

Triple-Lok® 37° Flare end / Male NPTF* thread (SAE 476)
SAE 070202 MS51504
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N3 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	5	5	23	30	11	28	**4 CCTX-S**	**4 CCTX-SS**	420	350
6	1/4	1/4-18	7/16-20	5	7	27	37	14	28	**4-4 CCTX-S**	**4-4 CCTX-SS**	420	350
8	5/16	1/8-27	1/2-20	6	5	24	30	14	35	**5 CCTX-S**	**5 CCTX-SS**	420	350
10	3/8	1/4-16	9/16-18	8	7	27	40	14	58	**6 CCTX-S**	**6 CCTX-SS**	420	350
10	3/8	3/8-18	9/16-18	8	11	29	46	19	58	**6-6 CCTX-S**	**6-6 CCTX-SS**	420	350
12	1/2	3/8-18	3/4-16	10	10	32	45	19	111	**8 CCTX-S**	**8 CCTX-SS**	420	350
12	1/2	1/2-14	3/4-16	10	14	34	55	22	136	**8-8 CCTX-S**	**8-8 CCTX-SS**	420	350
14, 15,16	5/8	1/2-14	7/8-14	13	14	37	55	22	183	**10 CCTX-S**	**10 CCTX-SS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	61	27	253	**12 CCTX-S**	**12 CCTX-SS**	280	280
25	1	1-11 1/2	1 5/16-12	21	24	46	76	33	435	**16 CCTX-S**	**16 CCTX-SS**	210	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	28	32	52	93	41	1021	**20 CCTX-S**	**20 CCTX-SS**	170	170

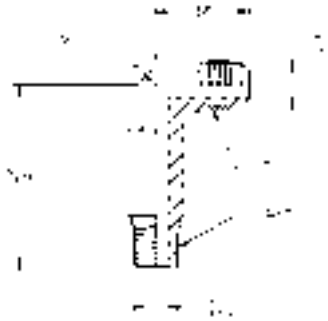
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CCCTX Extended male stud elbow

Triple-Lok® 37° Flare end / Male NPTF* thread (SAE 476)
SAE 071602



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	1/8-27	7/16-20	5	5	23	40	11	32	**4 CCCTX-S**	420
6	1/4	1/4-18	7/16-20	5	7	27	52	14	32	**4-4 CCCTX-S**	420
8	5/16	1/8-27	1/2-20	6	5	25	41	14	39	**5 CCCTX-S**	420
10	3/8	1/4-16	9/16-18	8	7	27	53	14	72	**6 CCCTX-S**	420
10	3/8	3/8-18	9/16-18	8	11	29	59	19	72	**6-6 CCCTX-S**	420
12	1/2	3/8-18	3/4-16	10	10	32	59	19	130	**8 CCCTX-S**	420
12	1/2	1/2-14	3/4-16	10	14	34	72	22	163	**8-8 CCCTX-S**	420
14, 15,16	5/8	1/2-14	7/8-14	13	14	37	72	22	212	**10 CCCTX-S**	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	82	27	356	**12 CCCTX-S**	280
25	1	1-11 1/2	1 5/16-12	21	24	46	101	33	520	**16 CCCTX-S**	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	28	32	52	126	41	1196	**20 CCCTX-S**	170

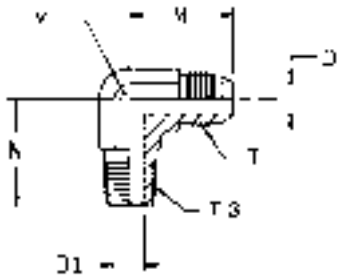
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

K

C3MX Male stud elbow

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	23	**4C3MXS**	**4C3MXSS**	315	315
6	1/4	1/4-19	7/16-20	4	7	27	28	14	42	**4-4C3MXS**	**4-4C3MXSS**	315	315
8	5/16	1/8-28	1/2-20	6	5	24	20	13	29	**5C3MXS**	**5C3MXSS**	315	315
8	5/16	1/4-19	1/2-20	6	7	27	28	14	42	**5-4C3MXS**	**5-4C3MXSS**	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	45	**6C3MXS**	**6C3MXSS**	315	315
10	3/8	3/8-19	9/16-18	8	10	29	31	19	76	**6-6C3MXS**	**6-6C3MXSS**	315	315
10	3/8	1/2-14	9/16-18	8	14	31	37	22	117	**6-8C3MXS**	**6-8C3MXSS**	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	86	**8C3MXS**	**8C3MXSS**	315	315
12	1/2	1/4-19	3/4-16	10	7	32	31	19	82	**8-4C3MXS**	**8-4C3MXSS**	315	315
12	1/2	1/2-14	3/4-16	10	14	34	37	22	125	**8-8C3MXS**	**8-8C3MXSS**	315	315
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	129	**10C3MXS**	**10C3MXSS**	315	315
14, 15,16	5/8	3/8-19	7/8-14	12	10	37	33	22	127	**10-6C3MXS**	**10-6C3MXSS**	315	315
14, 15,16	5/8	3/4-14	7/8-14	12	18	39	40	27	192	**10-12C3MXS**	**10-12C3MXSS**	160	160
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	198	**12C3MXS**	**12C3MXSS**	160	160
18, 20	3/4	1/2-14	1 1/16-12	16	14	42	40	27	204	**12-8C3MXS**	**12-8C3MXSS**	315	315
18, 20	3/4	1-11	1 1/16-12	16	24	45	50	33	251	**12-16C3MXS**	**12-16C3MXSS**	160	160
25	1	1-11	1 5/16-12	22	24	46	50	33	328	**16C3MXS**	**16C3MXSS**	160	160
25	1	3/4-14	1 5/16-12	22	18	46	45	33	318	**16-12C3MXS**	**16-12C3MXSS**	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	28	32	52	61	41	549	**20C3MXS**	**20C3MXSS**	160	160
28, 30, 32	1 1/4	1-11	1 5/8-12	28	24	52	60	41	536	**20-16C3MXS**	**20-16C3MXSS**	160	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	33	38	59	67	48	747	**24C3MXS**	**24C3MXSS**	160	140

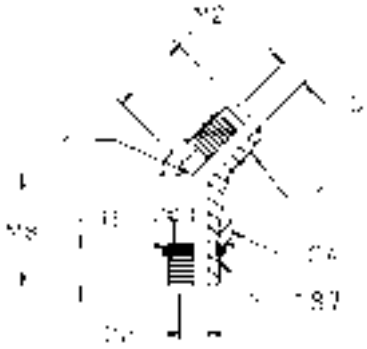
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V87OMX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male metric thread O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	TE mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	14	4	5	18	27	9	11	17	**4M10V87OMXS**	420
4	1/4	M12 × 1.0	7/16-20	17	4	6	20	28	11	13	25	**4M12V87OMXS**	420
8	5/16	M10 × 1.0	1/2-20	14	6	5	18	27	9	13	31	**5M10V87OMXS**	420
8	5/16	M12 × 1.5	1/2-20	17	6	6	20	28	11	13	25	**5M12V87OMXS**	420
10	3/8	M14 × 1.5	9/16-18	19	8	8	21	28	11	14	31	**6M14V87OMXS**	420
10	3/8	M16 × 1.5	9/16-18	22	8	9	22	32	12	19	58	**6M16V87OMXS**	350
10	3/8	M18 × 1.5	9/16-18	24	8	11	22	33	13	19	66	**6M18V87OMXS**	350
12	1/2	M16 × 1.5	3/4-16	22	10	9	25	33	12	19	65	**8M16V87OMXS**	350
12	1/2	M18 × 1.5	3/4-16	24	10	11	25	33	13	19	66	**8M18V87OMXS**	350
14, 15,16	5/8	M18 × 1.5	7/8-14	24	12	11	28	37	13	22	99	**10M18V87OMXS**	350
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	28	38	13	22	99	**10M22V87OMXS**	350
18, 20	3/4	M22 × 1.5	1 1/16-12	27	16	14	33	40	13	27	164	**12M22V87OMXS**	350
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	33	46	16	27	173	**12M27V87OMXS**	350
25	1	M33 × 2.0	1 5/16-12	41	22	23	37	46	16	33	287	**16M33V87OMXS**	280

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

K

V5OMX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male UNF thread O-ring (ISO 11926)
SAE 070320 MS51528



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	4	5	18	27	11	34	**4 V5OX-S**	**4 V5OX-SS**	420	350
8	5/16	1/2-20	1/2-20	16	6	6	20	27	13	42	**5 V5OX-S**	**5 V5OX-SS**	420	350
10	3/8	9/16-18	9/16-18	17	8	8	21	29	14	52	**6 V5OX-S**	**6 V5OX-SS**	420	350
10	3/8	3/4-16	9/16-19	22	8	10	22	33	19	104	**6-8 V5OX-S**	**6-8 V5OX-SS**	420	350
12	1/2	3/4-16	3/4-16	22	10	10	25	33	19	104	**8 V5OX-S**	**8 V5OX-SS**	420	350
12	1/2	9/16-18	3/4-16	17	10	8	25	30	19	98	**8-6 V5OX-S**	**8-6 V5OX-SS**	420	350
12	1/2	7/8-14	3/4-16	25	10	12	25	39	22	148	**8-10 V5OX-S**	**8-10 V5OX-SS**	350	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	13	28	39	22	157	**10V5OMXS**	**10 V5OX-SS**	350	350
14, 15,16	5/8	3/4-16	7/8-14	22	12	10	28	35	22	157	**10-8V5OMXS**	**10-8 V5OX-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	33	44	27	258	**12 V5OX-S**	**12 V5OX-SS**	350	350
18, 20	3/4	7/8-14	1 1/16-12	25	16	12	33	40	27	227	**12-10 V5OX-S**	**12-10 V5OX-SS**	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	18	37	47	33	275	**14 V5OX-S**		280	—
25	1	1 5/16-12	1 5/16-12	38	22	22	37	47	33	375	**16 V5OX-S**	**16 V5OX-SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	40	49	41	570	**20 V5OX-S**	**20 V5OX-SS**	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	54	33	33	45	49	48	706	**24 V5OX-S**	**24 V5OX-SS**	210	140

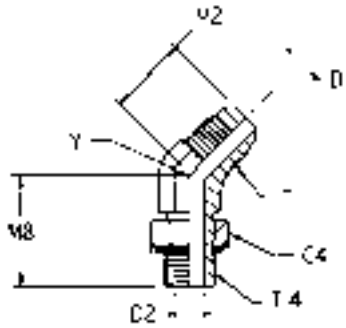
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V4OMX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male BSPP thread O-ring + retaining ring (ISO 1179)



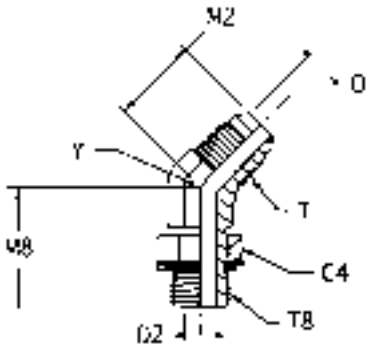
Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	1/8-28	7/16-20	14	4	4	18	27	11	35	**4V4OMXS**	250
6	1/4	1/4-19	7/16-20	19	4	8	21	29	14	48	**4-4V4OMXS**	250
8	5/16	1/8-28	1/2-20	14	6	4	20	27	13	44	**5V4OMXS**	250
8	5/16	1/4-19	1/2-20	19	6	8	21	27	14	51	**5-4V4OMXS**	250
10	3/8	1/4-19	9/16-18	19	8	8	21	29	14	55	**6V4OMXS**	250
10	3/8	3/8-19	9/16-18	22	8	10	22	33	19	70	**6-6V4OMXS**	250
10	3/8	1/2-14	9/16-18	27	8	12	22	39	22	92	**6-8V4OMXS**	250
12	1/2	3/8-19	3/4-16	22	10	10	25	33	19	104	**8V4OMXS**	250
12	1/2	1/2-14	3/4-16	27	10	12	25	39	22	148	**8-8V4OMXS**	250
14, 15,16	5/8	1/2-14	7/8-14	27	10	12	28	39	22	165	**10V4OMXS**	250
14, 15,16	5/8	3/4-14	7/8-14	36	12	16	30	44	27	235	**10-12V4OMXS**	250
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	33	44	27	270	**12V4OMXS**	250
25	1	1-11	1 5/16-12	41	22	22	37	47	33	394	**16V4OMXS**	250
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	40	48	41	599	**20V4OMXS**	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	45	48	48	750	**24V4OMXS**	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

V8OMX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retaining ring



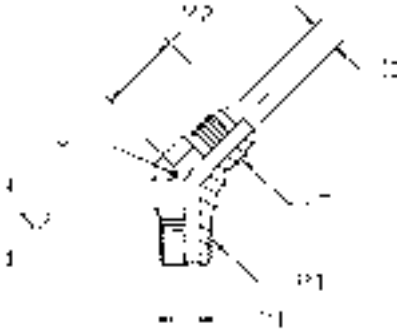
Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	13	4	5	18	27	11	23	**4M10V8OMXS**	250
6	1/4	M12 × 1.5	7/16-20	17	4	6	20	27	13	25	**4M12V8OMXS**	250
8	5/16	M12 × 1.5	1/2-20	17	6	6	20	28	13	28	**5M12V8OMXS**	250
10	3/8	M14 × 1.5	9/16-18	17	8	8	21	28	14	36	**6M14V8OMXS**	250
12	1/2	M16 × 1.5	3/4-16	19	10	9	25	33	19	68	**8M16V8OMXS**	250
12	1/2	M18 × 1.5	3/4-16	22	10	11	25	33	19	78	**8M18V8OMXS**	250
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	28	38	22	119	**10M22V8OMXS**	250
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	33	46	27	208	**12M27V8OMXS**	175
25	1	M33 × 2.0	1 5/16-12	38	22	23	37	46	33	333	**16M33V8OMXS**	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

VMTX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male NPTF* thread (SAE 476)
SAE 070302 MS51508
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M2 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	3/16	1/8-27	3/8-24	3	5	18	14	11	15	**3 VTX-S**	**3 VTX-SS**	**3 VTX-B**	420	350
6	1/4	1/8-27	7/16-20	4	5	18	16	11	18	**4 VTX-S**	**4 VTX-SS**	**4 VTX-B**	420	350
6	1/4	1/4-18	7/16-20	4	7	21	22	14	30	**4-4 VTX-S**	**4-4 VTX-SS**	**4-4 VTX-B**	420	350
8	5/16	1/8-27	1/2-20	6	5	20	16	13	22	**5VMTXS**	**5 VTX-SS**	**5 VTX-B**	420	350
8	5/16	1/4-18	1/2-20	6	7	21	22	14	31	**5-4 VTX-S**	**5-4 VTX-SS**	**5-4 VTX-B**	420	350
10	3/8	1/4-16	9/16-18	8	7	21	22	14	27	**6 VTX-S**	**6 VTX-SS**	**6 VTX-B**	420	350
10	3/8	1/8-27	9/16-18	8	5	21	17	14	23	**6-2 VTX-S**	**6-2 VTX-SS**	**6-2 VTX-B**	420	350
10	3/8	3/8-18	9/16-18	8	10	22	24	19	52	**6-6 VTX-S**	**6-6 VTX-SS**	**6-6 VTX-B**	420	350
10	3/8	1/2-14	9/16-18	8	14	22	30	22	74	**6-8VMTXS**	**6-8 VTX-SS**	**6-8 VTX-B**	420	350
12	1/2	1/4-16	3/4-16	10	7	25	24	19	62	**8-4 VTX-S**	**8-4 VTX-SS**	**8-4 VTX-B**	420	350
12	1/2	3/8-18	3/4-16	10	10	25	24	19	61	**8 VTX-S**	**8 VTX-SS**	**8 VTX-B**	420	350
12	1/2	1/2-14	3/4-18	10	14	25	30	22	92	**8-8 VTX-S**	**8-8 VTX-SS**	**8-8 VTX-B**	420	350
12	1/2	3/4-14	3/4-18	10	18	26	31	27	144	**8-12 VTX-S**	**8-12 VTX-SS**	**8-12 VTX-B**	280	280
14, 15,16	5/8	1/2-14	7/8-14	12	14	28	30	22	92	**10 VTX-S**	**10 VTX-SS**	**10 VTX-B**	350	350
14, 15,16	5/8	3/8-18	7/8-14	12	10	28	25	22	94	**10-6 VTX-S**	**10-6 VTX-SS**	**10-6 VTX-B**	350	350
14, 15,16	5/8	3/4-14	7/8-14	12	18	30	31	27	156	**10-12VTMXS**	**10-12 VTX-SS**		280	280
18, 20	3/4	3/4-14	1 1/16-12	16	18	33	31	27	148	**12 VTX-S**	**12 VTX-SS**	**12 VTX-B**	280	280
18, 20	3/4	1/2-14	1 1/16-12	16	14	36	31	27	144	**12-8VMTXS**	**12-8 VTX-SS**	**12-8 VTX-B**	350	350
18, 20	3/4	1-11 1/2	1 1/16-12	16	24	36	38	33	169	**12-16 VTX-S**	**12-16 VTX-SS**	**12-16 VTX-B**	210	210
22	7/8	3/4-14	1 3/16-12	18	18	35	32	33	197	**14 VTX-S**	**14 VTX-B**		280	280
25	1	1-11 1/2	1 5/16-12	22	24	37	38	33	239	**16 VTX-S**	**16 VTX-SS**	**16 VTX-B**	210	210
25	1	3/4-14	1 5/16-12	22	18	37	33	33	213	**16-12 VTX-S**	**16-12 VTX-SS**	**16-12 VTX-B**	280	280
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	28	32	40	42	41	385	**20VMTXS**	**20 VTX-SS**	**20 VTX-B**	170	170
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	33	38	45	45	48	495	**24 VTX-S**	**24 VTX-SS**	**24 VTX-B**	170	140

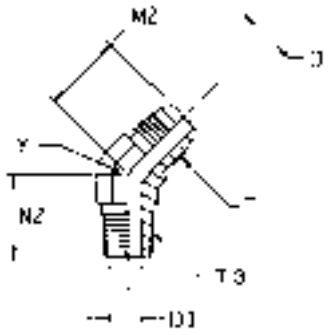
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

V3MX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



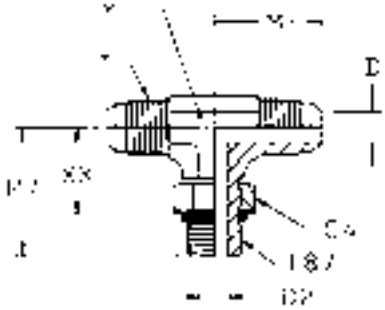
Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M2 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	1/8-27	7/16-20	4	5	18	16	11	18	**4V3MXS**	315
6	1/4	1/4-18	7/16-20	4	7	21	22	14	30	**4-4V3MXS**	315
8	5/16	1/8-27	1/2-20	6	5	20	16	13	22	**5V3MXS**	315
8	5/16	1/4-18	1/2-20	6	7	21	22	14	31	**5-4V3MXS**	315
10	3/8	1/4-16	9/16-18	8	7	21	22	14	27	**6V3MXS**	315
10	3/8	3/8-18	9/16-18	8	10	22	24	19	52	**6-6V3MXS**	315
10	3/8	1/2-14	9/16-18	8	14	22	30	22	74	**6-8V3MXS**	315
12	1/2	3/8-18	3/4-16	10	10	25	24	19	61	**8V3MXS**	315
12	1/2	1/2-14	3/4-16	10	14	25	30	22	92	**8-8V3MXS**	315
14, 15,16	5/8	1/2-14	7/8-14	12	14	28	30	22	92	**10V3MXS**	315
18, 20	3/4	3/4-14	1 1/16-12	16	18	33	31	27	148	**12V3MXS**	160
25	1	1-11	1 5/16-12	22	24	37	38	33	239	**16V3MXS**	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	28	32	40	42	41	385	**20V3MXS**	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	33	38	45	45	48	495	**24V3MXS**	160

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

S87OMX Male stud branch tee

Triple-Lok® 37° Flare ends / Male metric thread O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	14	4	5	23	27	16	11	27	**4M10S87OMXS**	420
8	5/16	M12 × 1.5	1/2-20	17	6	6	24	31	19	13	42	**5M12S87OMXS**	420
10	3/8	M14 × 1.5	9/16-18	19	8	8	27	34	21	14	53	**6M14S87OMXS**	420
12	1/2	M16 × 1.5	3/4-16	22	10	9	32	38	24	19	113	**8M16S87OMXS**	350
12	1/2	M18 × 1.5	3/4-16	24	10	11	32	38	24	19	114	**8M18S87OMXS**	350
14, 15,16	5/8	M18 × 1.5	7/8-14	24	12	11	37	42	28	22	174	**10M18S87OMXS**	350
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	37	43	29	22	175	**10M22S87OMXS**	350
18, 20	3/4	M22 × 1.5	1 1/16-12	27	16	14	42	45	32	27	295	**12M22S87OMXS**	350
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	42	48	33	27	304	**12M27S87OMXS**	350
25	1	M27 × 2.0	1 5/16-12	32	22	18	46	53	36	33	491	**16M27S87OMXS**	280
25	1	M33 × 2.0	1 5/16-12	41	22	23	46	53	38	33	530	**16M33S87OMXS**	280

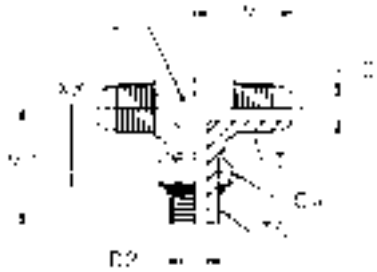
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

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S5OMX Male stud branch tee

Triple-Lok® 37° Flare ends / Male UNF thread O-ring (ISO 11926)
SAE 070429 MS51529



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	4	5	23	26	16	11	46	**4S5OMXS**	**4 S5OX-SS**	420	350
8	5/16	1/2-20	1/2-20	16	6	6	25	29	18	14	66	**5 S5OX-S**	**5 S5OX-SS**	420	350
10	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	76	**6S5OMXS**	**6 S5OX-SS**	420	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	150	**8S5OMXS**	**8 S5OX-SS**	420	350
14, 15,16	5/8	7/8-14	7/8-14	27	12	13	37	43	29	22	224	**10S5OMXS**	**10 S5OX-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	367	**12 S5OX-S**	**12 S5OX-SS**	350	350
25	1	1 5/16-12	1 5/16-12	38	22	22	46	52	36	33	506	**16 S5OX-S**	**16 S5OX-SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	52	57	41	42	1053	**20 S5OX-S**	**20 S5OX-SS**	280	280
35, 38	1 1/2	1 7/8-12	1 7/8-12	55	34	34	59	61	44	48	1296	**24 S5OX-S**		210	—
	2	2 1/2-12	2 1/2-12	70	45	45	78	73	57	66	2000	**32 S5OX-S**		140	—

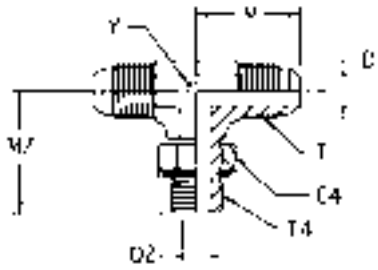
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

S4OMX Male stud branch tee

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	47	**4S4OMXS**	**4S4OMXSS**	250	250
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	78	**6S4OMXS**	**6S4OMXSS**	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	154	**8S4OMXS**	**8S4OMXSS**	250	200
12	1/2	1/2-14	3/4-16	27	10	12	34	44	22	186	**8-8-8S4OMXS**	**8-8-8S4OMXSS**	250	200
14, 15,16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	231	**10S4OMXS**	**10S4OMXSS**	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	379	**12S4OMXS**	**12S4OMXSS**	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	569	**16S4OMXS**	**16S4OMXSS**	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	1075	**20S4OMXS**	**20S4OMXSS**	210	160

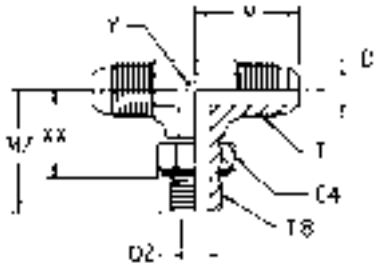
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

S8OMX Male stud branch tee

Triple-Lok® 37° Flare ends / Male metric thread – O-ring + retaining ring



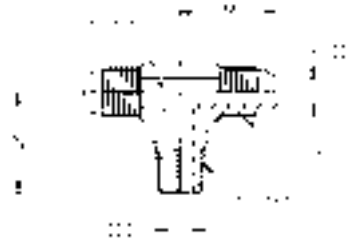
Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	13	4	5	23	27	19	11	27	**4M10S8OMXS**	250
8	5/16	M12 × 1.5	1/2-20	17	6	6	24	31	21	13	42	**5M12S8OMXS**	250
10	3/8	M14 × 1.5	9/16-18	17	8	8	27	34	24	14	53	**6M14S8OMXS**	250
12	1/2	M16 × 1.5	3/4-16	19	10	9	32	38	28	19	95	**8M16S8OMXS**	250
12	1/2	M18 × 1.5	3/4-16	22	10	11	32	38	27	19	114	**8M18S8OMXS**	250
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	37	43	31	22	175	**10M22S8OMXS**	250
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	42	50	36	27	304	**12M27S8OMXS**	175
25	1	M33 × 2.0	1 5/16-12	38	22	23	46	53	39	33	491	**16M33S8OMXS**	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

SMTX Male stud branch tee

Triple-Lok® 37° Flare ends / Male NPTF* thread (SAE 476)
SAE 070425 MS51512
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	3/16	1/8-27	3/8-24	3	5	21	18	11	25	**3 STX-S**	**3 STX-SS**	**3 STX-B**	420	350
6	1/4	1/8-27	7/16-20	4	5	23	20	11	31	**4 STX-S**	**4 STX-SS**	**4 STX-B**	420	350
6	1/4	1/4-18	7/16-20	4	7	27	28	14	49	**4-4-4 STX-S**	**4-4-4 STX-SS**	**4-4-4 STX-B**	420	350
8	5/16	1/8-27	1/2-20	6	5	24	20	14	37	**5 STX-S**	**5 STX-SS**	**5 STX-B**	420	350
10	3/8	1/4-16	9/16-18	8	7	27	28	14	57	**6SMTXS**	**6 STX-SS**	**6 STX-B**	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	77	**6-6-6 STX-S**	**6-6-6 STX-SS**	**6-6-6 STX-B**	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	113	**8 STX-S**	**8 STX-SS**	**8 STX-B**	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	164	**8-8-8 STX-S**	**8-8-8 STX-SS**	**8-8-8 STX-B**	420	350
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	173	**10 STX-S**	**10 STX-SS**	**10 STX-B**	350	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	272	**12 STX-S**	**12 STX-SS**	**12 STX-B**	280	280
22	7/8	3/4-14	1 3/16-12	18	18	46	43	33	323	**14 STX-S**			280	—
25	1	1-11 1/2	1 5/16-12	21	24	46	50	33	413	**16 STX-S**	**16 STX-SS**	**16 STX-B**	210	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	27	32	52	61	41	681	**20 STX-S**	**20 STX-SS**	**20 STX-B**	170	170
	2	1 1/2-11 1/2	1 7/8-12	33	38	34	67	48	905	**24 STX-S**	**24 STX-SS**	**24 STX-B**	170	170

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

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S3MX Male stud branch tee

Triple-Lok® 37° Flare ends / Male BSPT thread (ISO 7)



Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	30	**4S3MXS**	**4S3MXSS**	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	55	**6S3MXS**	**6S3MXSS**	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	111	**8S3MXS**	**8S3MXSS**	315	315
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	169	**10S3MXS**	**10S3MXSS**	315	315
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	267	**12S3MXS**	**12S3MXSS**	160	160
25	1	1-11	1 5/16-12	22	24	46	50	33	407	**16S3MXS**	**16S3MXSS**	160	160

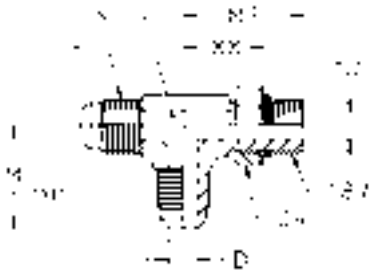
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R87OMX Male stud run tee

Triple-Lok® 37° Flare ends / Male metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	14	4	5	23	27	16	11	27	**4M10R87OMXS**	420
10	3/8	M14 × 1.5	9/16-18	19	8	8	27	34	21	14	53	**6M14R87OMXS**	420
10	3/8	M18 × 1.5	9/16-18	24	8	11	29	38	24	19	90	**6M18R87OMXS**	350
12	1/2	M16 × 1.5	3/4-16	22	10	9	32	38	24	19	113	**8M16R87OMXS**	350
12	1/2	M18 × 1.5	3/4-16	24	10	11	32	37	24	19	114	**8M18R87OMXS**	350
14, 15,16	5/8	M18 × 1.5	7/8-14	24	12	11	37	42	29	22	174	**10M18R87OMXS**	350
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	37	43	29	22	175	**10M22R87OMXS**	350
18, 20	3/4	M22 × 1.5	1 1/16-12	27	16	14	42	45	32	27	295	**12M22R87OMXS**	350
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	42	51	33	27	315	**12M27R87OMXS**	350
25	1	M33 × 2.0	1 5/16-12	41	22	23	46	53	40	33	495	**16M33R87OMXS**	280

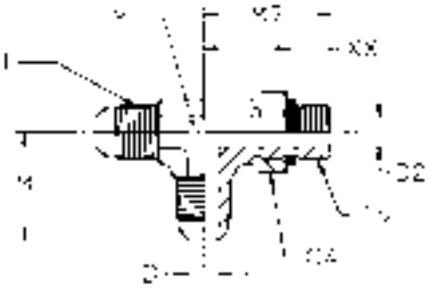
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

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R5OMX Male stud run tee

Triple-Lok® 37° Flare ends / Male UNF thread O-ring (ISO 11926)
SAE 070428 MS51530



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	7/16-20	14	4	4	23	26	16	11	46	**4 R5OX-S**	**4 R5OX-SS**	420	350
8	5/16	1/2-20	1/2-20	16	6	6	25	29	18	14	66	**5 R5OX-S**	**5 R5OX-SS**	420	350
10	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	76	**6R5OMXS**	**6 R5OX-SS**	420	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	151	**8R5OMXS**	**8 R5OX-SS**	420	350
14, 15,16	5/8	7/8-14	7/8-14	25	12	12	37	43	29	22	226	**10 R5OX-S**	**10 R5OX-SS**	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	372	**12 R5OX-S**	**12 R5OX-SS**	350	350
25	1	1 5/16-12	1 5/16-12	38	22	22	46	52	36	33	557	**16 R5OX-S**	**16 R5OX-SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	52	57	41	41	1053	**20 R5OX-S**	**20 R5OX-SS**	280	280
35, 38	1 1/2	1 7/8-12	1 7/8-12	54	33	33	59	61	44	48	1296	**24 R5OX-S**	**24 R5OX-SS**	210	210
	2	2 1/2-12	2 1/2-12	70	45	45	78	73	57	66	2000	**32 R5OX-S**	**32 R5OX-SS**	140	140

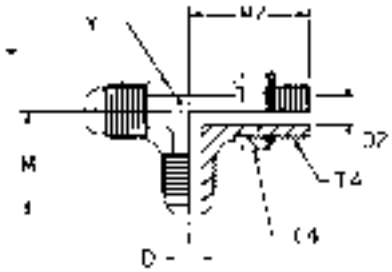
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R4OMX Male stud run tee

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	47	**4R4OMXS**	**4R4OMXSS**	250	200
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	78	**6R4OMXS**	**6R4OMXSS**	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	154	**8R4OMXS**	**8R4OMXSS**	250	200
14, 15,16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	231	**10R4OMXS**	**10R4OMXSS**	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	379	**12R4OMXS**	**12R4OMXSS**	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	569	**16R4OMXS**	**16R4OMXSS**	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	1075	**20R4OMXS**	**20R4OMXSS**	210	160

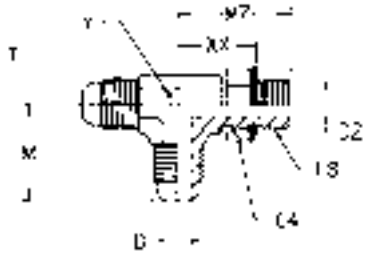
Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

R8OMX Male stud run tee

Triple-Lok® 37° Flare ends / Male metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M10 × 1.0	7/16-20	13	4	5	23	27	19	11	27	**4M10R8OMXS**	250
8	5/16	M12 × 1.5	1/2-20	17	6	6	24	31	21	13	42	**5M12R8OMXS**	250
10	3/8	M14 × 1.5	9/16-18	17	8	8	27	34	24	14	53	**6M14R8OMXS**	250
12	1/2	M16 × 1.5	3/4-16	19	10	9	32	38	28	19	95	**8M16R8OMXS**	250
12	1/2	M18 × 1.5	3/4-16	22	10	10	32	38	27	19	114	**8M18R8OMXS**	250
14, 15,16	5/8	M22 × 1.5	7/8-14	27	12	14	37	43	31	22	175	**10M22R8OMXS**	250
18, 20	3/4	M27 × 2.0	1 1/16-12	32	16	18	42	50	36	27	304	**12M27R8OMXS**	175
25	1	M33 × 2.0	1 5/16-12	38	22	23	46	53	39	33	491	**16M33R8OMXS**	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

RMTX Male stud run tee

Triple-Lok® 37° Flare ends / Male NPTF* thread (SAE 476)
SAE 070424 MS51511
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	3/16	1/8-27	3/8-24	3	5	21	18	11	25	**3 RTX-S**	**3 RTX-SS**		420	350
6	1/4	1/8-27	7/16-20	4	5	23	20	11	31	**4 RTX-S**	**4 RTX-SS**	**4 RTX-B**	420	350
6	1/4	1/4-18	7/16-20	4	7	27	28	14	49	**4-4-4 RTX-S**	**4-4-4 RTX-SS**	**4-4-4 RTX-B**	420	350
8	5/16	1/8-27	1/2-20	6	5	25	21	14	37	**5 RTX-S**	**5 RTX-SS**	**5 RTX-B**	420	350
10	3/8	1/4-16	9/16-18	8	7	27	28	14	57	**6 RTX-S**	**6 RTX-SS**	**6 RTX-B**	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	77	**6-6-6 RTX-S**	**6-6-6 RTX-SS**	**6-6-6 RTX-B**	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	109	**8 RTX-S**	**8 RTX-SS**	**8 RTX-B**	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	163	**8-8-8RMTXS**	**8-8-8 RTX-SS**	**8-8-8 RTX-B**	420	350
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	172	**10 RTX-S**	**10 RTX-SS**	**10 RTX-B**	350	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	268	**12 RTX-S**	**12 RTX-SS**	**12 RTX-B**	280	280
22	7/8	3/4-14	1 3/16-12	18	18	46	43	33	323	**14 RTX-S**			280	—
25	1	1-11 1/2	1 5/16-12	21	24	46	50	33	413	**16 RTX-S**	**16 RTX-SS**	**16 RTX-B**	210	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	27	32	52	61	41	681	**20 RTX-S**	**20 RTX-SS**	**20 RTX-B**	170	170
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	33	38	59	67	48	905	**24 RTX-S**	**24 RTX-SS**		170	140

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

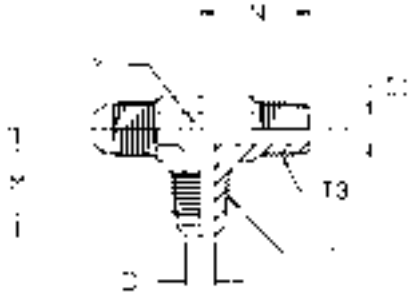
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

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R3MX Male stud run tee

Triple-Lok® 37° Flare ends / Male BSPT thread (ISO 7)



Tube O.D. mm	Tube O.D. in.	Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	30	**4R3MXS**	**4R3MXSS**	315	315
8	5/16	1/8-28	1/2-20	6	5	24	20	13	36	**5R3MXS**	**5R3MXSS**	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	55	**6R3MXS**	**6R3MXSS**	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	107	**8R3MXS**	**8R3MXSS**	315	315
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	170	**10R3MXS**	**10R3MXSS**	315	315

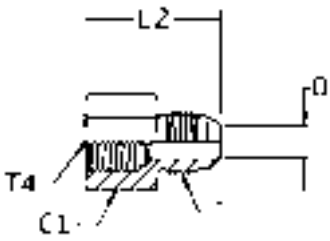
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

G4MX Female connector

Triple-Lok® 37° Flare end / Female BSPP thread (ISO 1179-1)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C1 mm	D mm	L2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-28	7/16-20	16	4	30	15	**4G4MXS**	**4G4MXSS**	315	315
6	1/4	1/4-19	7/16-20	19	4	35	42	**4-4G4MXS**	**4-4G4MXSS**	400	350
8	5/16	1/8-28	1/2-20	16	6	30	22	**5G4MXS**	**5G4MXSS**	315	315
8	5/16	1/4-19	1/2-20	19	6	35	40	**5-4G4MXS**	**5-4G4MXSS**	400	350
10	3/8	1/4-19	9/16-18	19	8	36	40	**6G4MXS**	**6G4MXSS**	400	350
10	3/8	3/8-19	9/16-18	22	8	37	50	**6-6G4MXS**	**6-6G4MXSS**	350	350
12	1/2	3/8-19	3/4-16	22	10	40	64	**8G4MXS**	**8G4MXSS**	350	350
12	1/2	1/2-14	3/4-16	30	10	46	116	**8-8G4MXS**	**8-8G4MXSS**	400	350
14, 15,16	5/8	1/2-14	7/8-14	30	12	48	121	**10G4MXS**	**10G4MXSS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	36	16	52	188	**12G4MXS**	**12G4MXSS**	315	315
25	1	1 11	1 5/16-12	46	22	60	340	**16G4MXS**	**16G4MXSS**	280	280
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	63	438	**20G4MXS**	**20G4MXSS**	210	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	67	526	**24G4MXS**	**24G4MXSS**	140	140

Order codes shown are part of our current manufacturing programme.
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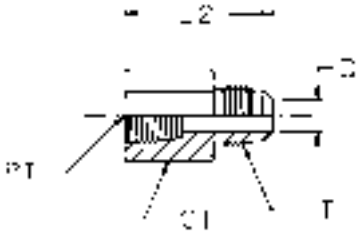
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

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GMTX Female connector

Triple-Lok® 37° Flare end / Female NPTF* thread (SAE J476)
SAE 070103 MS51503
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	C1 mm	D mm	L2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	14	4	30	42	**4 GTX-S**	**4GMTXSS**	420	350
6	1/4	1/4-18	7/16-20	19	4	36	40	**4-4GMTXS**	**4-4GMTXSS**	420	350
6	1/4	3/8-18	7/16-20	22	5	37	40	**4-6 GTX-S**	**4-6GMTXSS**	420	350
6	1/4	1/2-14	7/16-20	29	5	37	42	**4-8 GTX-S**	**4-8GMTXSS**	350	350
8	5/16	1/8-27	1/2-20	14	6	30	40	**5 GTX-S**	**5GMTXSS**	420	350
8	5/16	1/4-18	1/2-20	19	6	35	42	**5-4 GTX-S**	**5-4GMTXSS**	420	350
10	3/8	1/4-18	9/16-18	19	8	36	40	**6GMTXS**	**6GMTXSS**	420	350
10	3/8	3/8-18	9/16-18	22	8	37	62	**6-6 GTX-S**	**6-6GMTXSS**	420	350
10	3/8	1/2-14	9/16-18	29	8	45	90	**6-8 GTX-S**	**6-8GMTXSS**	350	350
12	1/2	3/8-18	3/4-16	22	10	40	45	**8 GTX-S**	**8GMTXSS**	420	350
12	1/2	1/4-18	3/4-16	21	10	36	80	**8-4 GTX-S**	**8-4GMTXSS**	420	350
12	1/2	1/2-14	3/4-16	29	10	46	116	**8-8 GTX-S**	**8-8GMTXSS**	350	350
12	1/2	3/4-14	3/4-16	35	10	48	150	**8-12 GTX-S**	**8-12GMTXSS**	280	280
14, 15,16	5/8	1/2-14	7/8-14	29	12	48	121	**10 GTX-S**	**10GMTXSS**	350	350
14, 15,16	5/8	3/4-14	7/8-14	35	13	51	182	**10-12 GTX-S**	**10-12GMTXSS**	280	280
18, 20	3/4	3/4-14	1 1/16-12	35	16	52	188	**12 GTX-S**	**12GMTXSS**	280	280
18, 20	3/4	1/2-14	1 1/16-12	29	16	49	133	**12-8 GTX-S**	**12-8GMTXSS**	350	350
22	7/8	3/4-14	1 3/16-12	35	18	52	201	**14 GTX-S**	**14GMTXSS**	210	210
25	1	1-11 1/2	1 5/16-12	41	22	59	280	**16 GTX-S**	**16GMTXSS**	210	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	51	27	63	408	**20 GTX-S**	**20GMTXSS**	170	170
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	60	33	67	370	**24 GTX-S**	**24GMTXSS**	140	140
	2	2-11 1/2	2 1/2-12	73	44	75	1262	**32 GTX-S**		140	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

WGMTX Female bulkhead connector

Triple-Lok® 37° Flare end / Female NPTF* thread (SAE J476)
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	C2 mm	D mm	l1 mm	L7 mm	W mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	17	4	31	47	11	42	**4 WGTX-S**	**4WGMTXSS**	420	350
6	1/4	1/4-18	7/16-20	19	4	34	54	11	62	**4-4 WGTX-S**	**4-4WGMTXSS**	420	350
10	3/8	1/4-18	9/16-18	21	8	33	52	14	72	**6 WGTX-S**	**6WGMTXSS**	420	350
12	1/2	3/8-18	3/4-16	25	10	37	59	19	117	**8 WGTX-S**	**8WGMTXSS**	420	350
14, 15,16	5/8	1/2-14	7/8-14	29	12	40	68	22	179	**10 WGTX-S**	**10WGMTXSS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	35	16	45	74	27	284	**12 WGTX-S**	**12WGMTXSS**	280	280
25	1	1-11 1/2	1 5/16-12	41	21	45	79	33	415	**16 WGTX-S**	**16WGMTXSS**	210	210

Order codes shown are part of our current manufacturing programme.
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$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

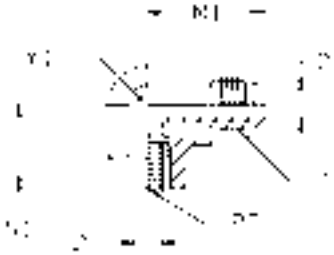
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Maximum bulkhead wallthickness

Size	Tube O.D. inch	Tube O.D. metric	Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

DMTX Female elbow connector

Triple-Lok® 37° Flare end / Female NPTF* thread (SAE J476)
SAE 070203 MS51506
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	33	**4 DTX-S**	**4 DTX-SS**	**4 DTX-B**	350	350
6	1/4	1/4-18	7/16-20	4	11	31	22	19	70	**4-4 DTX-S**	**4-4 DTX-SS**	**4-4 DTX-B**	350	350
8	5/16	1/8-27	1/2-20	6	8	27	17	14	33	**5 DTX-S**	**5 DTX-SS**	**5 DTX-B**	350	350
8	5/16	1/4-18	1/2-20	6	11	29	22	19	67	**5-4 DTX-S**	**5-4 DTX-SS**	**5-4 DTX-B**	350	350
10	3/8	1/4-18	9/16-18	8	11	31	22	19	67	**6 DTX-S**	**6 DTX-SS**	**6 DTX-B**	350	350
10	3/8	1/8-27	9/16-18	8	8	31	17	14	39	**6-2 DTX-S**	**6-2 DTX-SS**	**6-2 DTX-B**	350	350
10	3/8	3/8-18	9/16-18	8	14	33	26	22	103	**6-6 DTX-S**	**6-6 DTX-SS**	**6-6 DTX-B**	310	310
12	1/2	3/8-18	3/4-16	10	14	36	26	22	115	**8 DTX-S**	**8 DTX-SS**	**8 DTX-B**	310	310
12	1/2	1/4-18	3/4-16	10	11	36	26	19	190	**8-4 DTX-S**	**8-4 DTX-SS**	**8-4 DTX-B**	350	350
12	1/2	1/2-14	3/4-16	10	18	39	31	27	178	**8-8DMTXS**	**8-8 DTX-SS**	**8-8 DTX-B**	210	210
14, 15,16	5/8	1/2-14	7/8-14	12	18	42	31	27	180	**10 DTX-S**	**10 DTX-SS**	**10 DTX-B**	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	315	**12DMTXS**	**12 DTX-SS**	**12 DTX-B**	210	210
18, 20	3/4	1/2-14	1 1/16-12	16	18	48	34	27	175	**12-8 DTX-S**	**12-8 DTX-SS**	**12-8 DTX-B**	210	210
22	7/8	3/4-14	1 3/16-12	18	23	47	36	33	285	**14 DTX-S**	**14 DTX-SS**		125	125
25	1	1-11 1/2	1 5/16-12	21	29	55	41	41	506	**16 DTX-S**	**16 DTX-SS**	**16 DTX-B**	125	125
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	27	37	59	43	48	619	**20 DTX-S**	**20 DTX-SS**	**20 DTX-B**	100	100
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	33	43	73	53	64	1725	**24 DTX-S**	**24 DTX-SS**		100	100

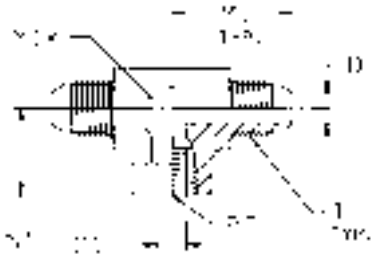
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

OTX Female branch tee

Triple-Lok® 37° Flare ends / Female NPTF* thread (SAE J476)
SAE 070427 MS51513
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	53	**4 OTX-S**	**4 OTX-SS**	**4 OTX-B**	350	350
6	1/4	1/4-18	7/16-20	4	11	29	22	19	90	**4-4-4 OTX-S**	**4-4-4 OTX-SS**	**4-4-4 OTX-B**	350	350
8	5/16	1/8-27	1/2-20	6	8	27	17	14	53	**5 OTX-S**	**5 OTX-SS**	**5 OTX-B**	350	350
10	3/8	1/4-18	9/16-18	8	11	32	22	19	98	**6 OTX-S**	**6 OTX-SS**	**6 OTX-B**	350	350
12	1/2	3/8-18	3/4-16	10	14	36	26	22	145	**8 OTX-S**	**8 OTX-SS**	**8 OTX-B**	310	310
14, 15,16	5/8	1/2-14	7/8-14	12	18	42	32	27	240	**10 OTX-S**	**10 OTX-SS**	**10 OTX-B**	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	390	**12 OTX-S**	**12 OTX-SS**	**12 OTX-B**	210	210
25	1	1-11 1/2	1 5/16-12	21	29	55	41	41	745	**16 OTX-S**	**16 OTX-SS**	**16 OTX-B**	125	125
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	27	37	59	43	48	930	**20 OTX-S**	**20 OTX-SS**		100	100
35, 38	1 1/2	1 1/2-11 1/2	1 7/8-12	33	43	73	53	64	2255	**24 OTX-S**	**24 OTX-SS**		100	100

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

K

MTX Female run tee

Triple-Lok® 37° Flare ends / Female NPTF* thread (SAE J476)
SAE 070426 MS51514
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	45	**4 MTX-S**	**4 MTX-SS**	**4 MTX-B**	350	350
6	1/4	1/4-18	7/16-20	4	11	29	22	19	10	**4-4-4 MTX-S**	**4-4-4 MTX-SS**	**4-4-4 MTX-B**	350	350
10	3/8	1/4-18	9/16-18	8	11	32	22	19	88	**6 MTX-S**	**6 MTX-SS**	**6 MTX-B**	350	350
12	1/2	3/8-18	3/4-16	10	14	36	26	22	125	**8 MTX-S**	**8 MTX-SS**	**8 MTX-B**	310	310
14, 15,16	5/8	1/2-14	7/8-14	12	18	42	32	27	210	**10 MTX-S**	**10 MTX-SS**	**10 MTX-B**	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	280	**12 MTX-S**	**12 MTX-SS**	**12 MTX-B**	210	210
22	7/8	3/4-14	1 3/16-12	18	23	47	36	33	446	**14 MTX-S**			210	—
25	1	1-11 1/2	1 5/16-12	21	29	55	41	41	620	**16 MTX-S**	**16 MTX-SS**		125	125
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	27	37	59	43	48	805	**20 MTX-S**	**20 MTX-SS**		100	100

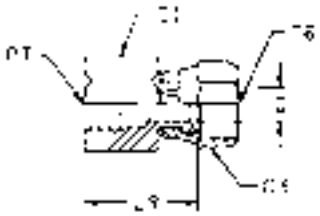
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

G6X Swivel connector

Triple-Lok® 37° Flare female swivel end / Female NPTF* thread (SAE J476)
*Stainless Steel = NPT to prevent galling



Tube O.D. mm	Tube O.D. in.	Thread NPT/NPTF PT	Thread UN/UNF-2B T6	C1 mm	C3 mm	D mm	L9 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/8-27	7/16-20	14	14	5	23	29	**4 G6X-S**	**4 G6X-SS**	420	420
6	1/4	1/4-18	7/16-20	19	14	5	27	33	**4-4 G6X-S**	**4-4 G6X-SS**	420	420
10	3/8	1/4-18	9/16-18	19	17	8	27	38	**6 G6X-S**	**6 G6X-SS**	350	350
10	3/8	3/8-18	9/16-18	22	17	7	30	45	**6-6 G6X-S**	**6-6 G6X-SS**	350	350
12	1/2	3/8-18	3/4-16	22	22	10	31	47	**8 G6X-S**	**8 G6X-SS**	350	350
12	1/2	1/2-14	3/4-16	29	22	10	38	99	**8-8 G6X-S**	**8-8 G6X-SS**	350	350
14, 15,16	5/8	1/2-14	7/8-14	29	25	12	37	99	**10 G6X-S**	**10 G6X-SS**	350	350
18, 20	3/4	3/4-14	1 1/16-12	35	32	16	38	147	**12 G6X-S**	**12 G6X-SS**	280	280
25	1	1-11 1/2	1 5/16-12	41	38	21	47	248	**16 G6X-S**	**16 G6X-SS**	210	210
28, 30, 32	1 1/4	1 1/4-11 1/2	1 5/8-12	50	50	28	55	370	**20 G6X-S**	**20 G6X-SS**	170	170
35, 38	1 1/2	1 1/2-12 1/2	1 7/8-12	60	58	34	57	510	**24 G6X-S**	**24 G6X-SS**	140	140

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

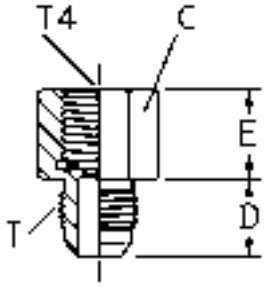
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

K

G4MXMO Pressure gauge connector

Triple-Lok® 37° Flare end / Female BSPP gauge thread (ISO 1179-1)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	D mm	E mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/4-19	7/16-20	14	17	17	86	**4-4G4MXSMO**	**4-4G4MXSSMO**	350	350
6	1/4	1/2-14	7/16-20	14	27	27	246	**4-8G4MXSMO**	**4-8G4MXSSMO**	315	315
8	5/16	1/4-19	1/2-20	14	14	17	49	**5-4G4MXSMO**	**5-4G4MXSSMO**	350	350
8	5/16	1/2-14	1/2-20	14	27	27	246	**5-8G4MXSMO**	**5-8G4MXSSMO**	315	315
10	3/8	1/4-19	9/16-18	14	14	17	49	**6G4MXSMO**	**6G4MXSSMO**	350	350
10	3/8	1/2-14	9/16-18	14	21	27	239	**6-8G4MXSMO**	**6-8G4MXSSMO**	315	315
12	1/2	1/4-19	3/4-16	17	14	19	74	**8-4G4MXSMO**	**8-4G4MXSSMO**	400	350
12	1/2	1/2-14	3/4-16	17	21	27	263	**8-8G4MXSMO**	**8-8G4MXSSMO**	315	315

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

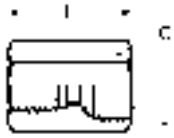
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

TT4MX Test point connection

Triple-Lok® 37° Flare female end / Female BSPP thread (ISO 1179-1)
for EMA3 test point

Form A



Form B*



* Form B has to be assembled with a nut
BMTX / BTX (not delivered).

Tube O.D. T mm	Tube O.D. T in.	Thread BSPP	Thread UN/UNF-2B T	Form	L mm	L1 mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	1/4-19	7/16-20	A	29	–	19	42	**4TT4MXS**	**4TT4MXSS**	400	350
8	5/16	1/4-19	1/2-20	A	29	–	19	46	**5TT4MXS**	**5TT4MXSS**	400	350
10	3/8	1/4-19	9/16-18	A	29	–	19	43	**6TT4MXS**	**6TT4MXSS**	400	350
12	1/2	1/4-19	3/4-16	A	32	–	22	62	**8TT4MXS**	**8TT4MXSS**	400	350
14, 15,16	5/8	1/4-19	7/8-14	A	32	–	27	102	**10TT4MXS**	**10TT4MXSS**	350	350
18, 20	3/4	1/4-19	1 1/16-12	B	–	13	32	42	**12TT4XS**	**12TT4MXSS**	350	350
25	1	1/4-19	1 5/16-12	B	–	13	41	56	**16TT4XS**	**16TT4MXSS**	280	280
28, 30, 32	1 1/4	1/4-19	1 5/8-12	B	–	15	50	98	**20TT4XS**	**20TT4MXSS**	280	210
35, 38	1 1/2	1/4-19	1 7/8-12	B	–	18	60	185	**24TT4XS**	**24TT4MXSS**	210	210

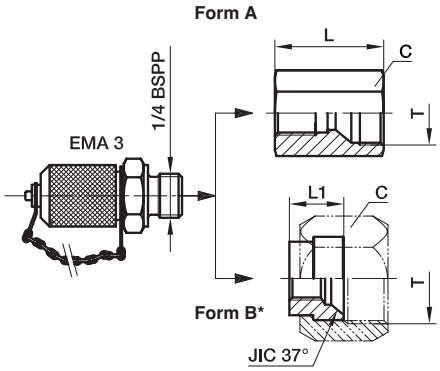
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

TTP4MX Test point connection

Triple-Lok® 37° Flare female end / EMA3 test point



* Form B versions delivered complete with BMTXS nut.

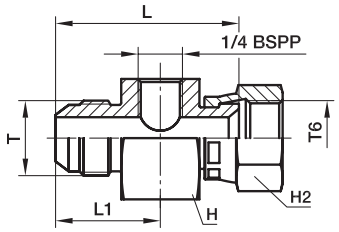
Tube O.D. T mm	Tube O.D. T in.	Thread BSPP	Thread UN/UNF-2B T	Form	L mm	L1 mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	1/4-19	7/16-20	A	29	–	19	132	**4TTP4MXS**	400
8	5/16	1/4-19	1/2-20	A	29	–	19	136	**5TTP4MXS**	400
10	3/8	1/4-19	9/16-18	A	29	–	19	133	**6TTP4MXS**	400
12	1/2	1/4-19	3/4-16	A	32	–	22	152	**8TTP4MXS**	400
14, 15,16	5/8	1/4-19	7/8-14	A	32	–	27	192	**10TTP4MXS**	350
18, 20	3/4	1/4-19	1 1/16-12	B	–	13	32	132	**12TTP4XS**	350
25	1	1/4-19	1 5/16-12	B	–	13	41	146	**16TTP4XS**	280
28, 30, 32	1 1/4	1/4-19	1 5/8-12	B	–	15	50	188	**20TTP4XS**	280
35, 38	1 1/2	1/4-19	1 7/8-12	B	–	18	60	275	**24TTP4XS**	210

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

R6O4MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / Female BSPP thread (ISO 1179-1)



Tube O.D. T mm	Tube O.D. T in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L mm	L1 mm	H mm	H2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	45	26	36	16	180	**4-4R6O4MXS**	500
8	5/16	1/2-20	1/2-20	46	26	36	17	200	**5-4R6O4MXS**	420
10	3/8	9/16-18	9/16-18	47	26	36	19	210	**6-4R6O4MXS**	350
12	1/2	3/4-16	3/4-16	50	28	36	22	218	**8-4R6O4MXS**	350
14, 15,16	5/8	7/8-14	7/8-14	54	31	36	27	247	**10-4R6O4MXS**	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	326	**12-4R6O4MXS**	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	416	**16-4R6O4MXS**	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	64	36	50	50	601	**20-4R6O4MXS**	250
35, 38	1 1/2	1 7/8-12	1 7/8-12	69	39	60	60	905	**24-4R6O4MXS**	170

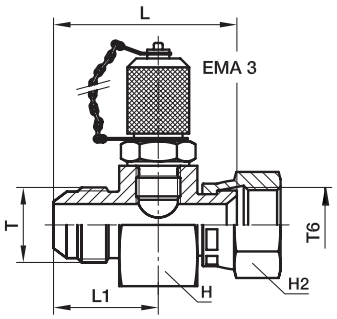
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

K

R6P4MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / EMA3 test point



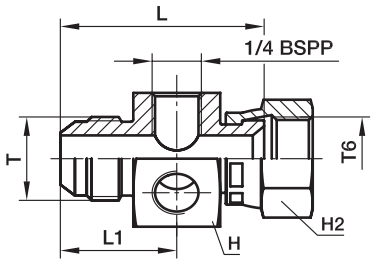
Tube O.D. T mm	Tube O.D. T in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L mm	L1 mm	H mm	H2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	45	26	36	16	270	**4-4R6P4MXS**	500
8	5/16	1/2-20	1/2-20	46	26	36	17	290	**5-4R6P4MXS**	420
10	3/8	9/16-18	9/16-18	47	26	36	19	300	**6-4R6P4MXS**	350
12	1/2	3/4-16	3/4-16	50	28	36	22	308	**8-4R6P4MXS**	350
14, 15,16	5/8	7/8-14	7/8-14	54	31	36	27	337	**10-4R6P4MXS**	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	416	**12-4R6P4MXS**	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	506	**16-4R6P4MXS**	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	64	36	50	50	691	**20-4R6P4MXS**	250
35, 38	1 1/2	1 7/8-12	1 7/8-12	69	39	60	60	995	**24-4R6P4MXS**	170

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

K6OO4MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / 2 BSPP female threads



Tube O.D. T mm	Tube O.D. T in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L mm	L1 mm	H mm	H2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	45	26	36	16	170	**4-4K6OO4MXS**	500
8	5/16	1/2-20	1/2-20	46	26	36	17	190	**5-4K6OO4MXS**	420
10	3/8	9/16-18	9/16-18	47	26	36	19	200	**6-4K6OO4MXS**	350
12	1/2	3/4-16	3/4-16	50	28	36	22	208	**8-4K6OO4MXS**	350
14, 15,16	5/8	7/8-14	7/8-14	54	31	36	27	237	**10-4K6OO4MXS**	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	316	**12-4K6OO4MXS**	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	406	**16-4K6OO4MXS**	250

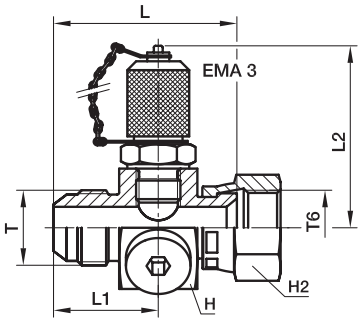
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

K

K6PP4MX Test point connector

Male / female swivel Triple-Lok® 37° flare end / EMA3 test point & blanking plug



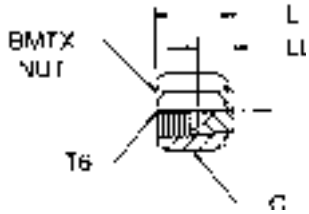
Tube O.D. T mm	Tube O.D. T in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L mm	L1 mm	L2 mm	H mm	H2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	7/16-20	7/16-20	45	26	54	36	16	270	**4-4K6PP4MXS**	500
8	5/16	1/2-20	1/2-20	46	26	54	36	17	290	**5-4K6PP4MXS**	420
10	3/8	9/16-18	9/16-18	47	26	54	36	19	300	**6-4K6PP4MXS**	350
12	1/2	3/4-16	3/4-16	50	28	54	36	22	308	**8-4K6PP4MXS**	350
14, 15,16	5/8	7/8-14	7/8-14	54	31	54	36	27	337	**10-4K6PP4MXS**	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	54	41	32	416	**12-4K6PP4MXS**	350
25	1	1 5/16-12	1 5/16-12	60	35	54	46	38	506	**16-4K6PP4MXS**	250

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

FNMTX Cap

Triple-Lok® 37° Flare female swivel cap end
SAE 070112 MS51532



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2B T6	C mm	LL mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S	PN (bar) SS
	1/8	5/16-24	10	10	15	10	**2 FNTX-S**			500	—
	3/16	3/8-24	11	10	17	11	**3 FNTX-S**			500	—
6	1/4	7/16-20	14	9	17	14	**4FNMTXS**	**4FNMTXSS**	**4 FNTX-B**	500	350
8	5/16	1/2-20	17	10	20	19	**5FNMTXS**	**5FNMTXSS**	**5 FNTX-B**	420	350
10	3/8	9/16-18	19	12	21	31	**6FNMTXS**	**6FNMTXSS**	**6 FNTX-B**	420	350
12	1/2	3/4-16	22	14	24	45	**8FNMTXS**	**8FNMTXSS**	**8 FNTX-B**	420	350
14, 15,16	5/8	7/8-14	27	14	27	75	**10FNMTXS**	**10FNMTXSS**	**10 FNTX-B**	350	350
18, 20	3/4	1 1/16-12	32	17	32	114	**12FNMTXS**	**12FNMTXSS**	**12 FNTX-B**	350	350
22	7/8	1 3/16-12	35	16	32	133	**14 FNTX-S**	**14FNMTXSS**	**14 FNTX-B**	310	280
25	1	1 5/16-12	41	16	33	200	**16FNMTXS**	**16FNMTXSS**	**16 FNTX-B**	310	280
28, 30, 32	1 1/4	1 5/8-12	50	19	35	272	**20FNMTXS**	**20FNMTXSS**	**20 FNTX-B**	280	210
35, 38	1 1/2	1 7/8-12	60	24	43	553	**24FNMTXS**	**24FNMTXSS**	**24 FNTX-B**	210	140
	2	2 1/2-12	73	28	51	930	**32 FNTX-S**			140	—

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

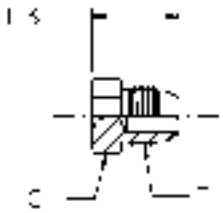
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.
For Brass parts reduce pressures by 35%

K

PNMTX Plug

Triple-Lok® 37° Flare end plug
SAE 070109 MS51518



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C mm	L3 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
	1/8	5/16-24	11	18	9	**2 PNTX-S**		500	—
	3/16	3/8-24	11	19	10	**3 PNTX-S**		500	—
6	1/4	7/16-20	13	20	10	**4PNMTXS**	**4PNMTXSS**	500	350
8	5/16	1/2-20	14	20	14	**5PNMTXS**	**5PNMTXSS**	420	350
10	3/8	9/16-18	17	21	19	**6PNMTXS**	**6PNMTXSS**	420	350
12	1/2	3/4-16	19	24	39	**8PNMTXS**	**8PNMTXSS**	420	350
14, 15,16	5/8	7/8-14	24	28	60	**10PNMTXS**	**10PNMTXSS**	350	350
18, 20	3/4	1 1/16-12	27	33	93	**12PNMTXS**	**12PNMTXSS**	350	350
22	7/8	1 3/16-12	32	33	95	**14 PNTX-S**	**14PNMTXSS**	280	280
25	1	1 5/16-12	36	34	98	**16 PNTX-S**	**16PNMTXSS**	280	280
28, 30, 32	1 1/4	1 5/8-12	46	37	269	**20 PNTX-S**	**20PNMTXSS**	280	210
35, 38	1 1/2	1 7/8-12	51	42	360	**24 PNTX-S**	**24PNMTXSS**	210	140
	2	2 1/2-12	67	52	470	**32 PNTX-S**		140	—

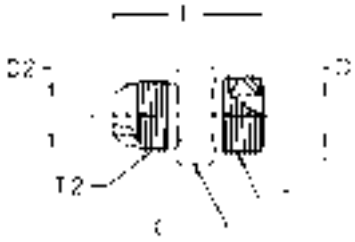
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

XHMLO Conversion union

Triple-Lok® 37° Flare End / O-Lok ORFS end



Tube O.D. T2/T mm	Tube O.D. T2/T in.	Thread UN/UNF-2A T2	Thread UN/UNF-2A T	D mm	D2 mm	L mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	5	5	32	16	29	**4 XHLO-S**	**4XHMLOSS**	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	7	7	34	19	45	**6 XHLO-S**	**6XHMLOSS**	420	350
12	1/2	3/4-16	13/16-16	10	10	39	22	70	**8 XHLO-S**	**8XHMLOSS**	420	350
14, 15,16	5/8	7/8-14	1-14	13	13	47	27	119	**10 XHLO-S**	**10XHMLOSS**	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	16	16	52	32	181	**12 XHLO-S**	**12XHMLOSS**	350	350
22, 25	1	1 5/16-12	1 7/16-12	21	21	55	38	265	**16 XHLO-S**	**16XHMLOSS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	26	26	58	45	383	**20 XHLO-S**	**20XHMLOSS**	280	210
35, 38	1 1/2	1 7/8-12	2-12	32	32	63	54	562	**24 XHLO-S**	**24XHMLOSS**	210	140

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

XHML6 Conversion swivel nut connector

Triple-Lok® 37° Flare end / O-Lok ORFS female swivel end



Tube O.D. T2/T6 mm	Tube O.D. T2/T6 in.	Thread UN/UNF-2A T2	Thread UN/UNF-2B T6	C3 mm	D1 mm	D2 mm	L mm	C4 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	PN (bar) SS
6	1/4	7/16-20	9/16-18	17	4	4	38	16	29	**4 XHL6-S**	**4XHML6SS**	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	41	19	46	**6 XHL6-S**	**6XHML6SS**	420	350
12	1/2	3/4-16	13/16-16	24	9	9	48	22	73	**8 XHL6-S**	**8XHML6SS**	420	350
14, 15,16	5/8	7/8-14	1-14	29	12	12	56	27	126	**10 XHL6-S**	**10XHML6SS**	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	14	64	32	205	**12 XHL6-S**	**12XHML6SS**	350	350
22, 25	1	1 5/16-12	1 7/16-12	41	20	20	68	38	285	**16 XHL6-S**	**16XHML6SS**	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	71	43	360	**20 XHL6-S**	**20XHML6SS**	280	280

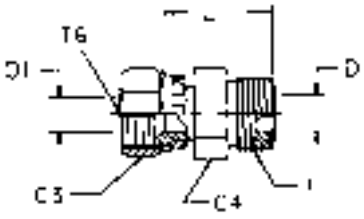
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

LOHMX6 Conversion swivel nut connector

Triple-Lok® 37° Flare female swivel end / O-Lok ORFS end



Tube O.D. T6/T mm	in.	Thread UN/UNF-2B T6	Thread UN/UNF-2A T	C3 mm	D mm	D1 mm	C4 mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar) S	SS
6	1/4	7/16-20	9/16-18	14	5	5	16	26	26	**4 LOHX6-S**	**4LOHMX6SS**	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	18	7	7	19	29	40	**6 LOHX6-S**	**6LOHMX6SS**	350	350
12	1/2	3/4-16	13/16-16	22	10	10	22	34	63	**8 LOHX6-S**	**8LOHMX6SS**	350	350
14, 15,16	5/8	7/8-14	1-14	25	13	13	27	39	103	**10 LOHX6-S**	**10LOHMX6SS**	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	32	16	16	32	41	162	**12 LOHX6-S**	**12LOHMX6SS**	350	350
22, 25	1	1 5/16-12	1 7/16-12	38	21	21	38	46	229	**16 LOHX6-S**	**16LOHMX6SS**	250	250

Triple-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K93
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

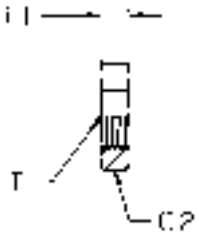
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

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WLNM Bulkhead locknut

Bulkhead fitting locknut
SAE 080118 MS51860



Thread UN/UNF-2B T	C2 mm	T1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
3/8-24	17	6	9	**3 WLN-S**		
7/16-20	17	7	9	**4WLNMS**	**4WLNMSS**	**4WLNMB**
1/2-20	19	7	9	**5WLNMS**	**5WLNMSS**	**5WLNMB**
9/16-18	22	7	11	**6WLNMS**	**6WLNMSS**	**6WLNMB**
3/4-16	24	8	18	**8WLNMS**	**8WLNMSS**	**8WLNMB**
7/8-14	30	9	24	**10WLNMS**	**10WLNMSS**	**10WLNMB**
1 1/16-12	36	10	42	**12WLNMS**	**12WLNMSS**	**12WLNMB**
1 3/16-12	38	10	45	**14 WLN-S**	**14WLNMSS**	**14WLNMB**
1 5/16-12	41	10	49	**16WLNMS**	**16WLNMSS**	**16WLNMB**
1 5/8-12	50	10	50	**20WLNMS**	**20WLNMSS**	**20WLNMB**
1 7/8-12	55	10	68	**24WLNMS**	**24WLNMSS**	**24WLNMB**
2 1/2-12	70	10	80	**32 WLN-S**		

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

Spare parts guide – Triple-Lok® retaining rings and seals

BSPP Male threads – ISO 1179

BSPP Thread	ED Seal Order code NBR	ED Seal Order code FKM	O-ring Order code* NBR	O-ring Order code* FKM	O-Ring ID × section (mm)	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
1/8	**ED10X1X**	**ED10X1VITX**	**6-002-N552-9**	**6-002-V894-9**	8.00 × 2.00	**8207-1/8**	**8207SS1/8**
1/4	**ED14X1.5X**	**ED14X1.5VITX**	**2-111-N552-9**	**2-111-V894-9**	10.77 × 2.62	**8207-1/4**	**8207SS1/4A**
3/8	**ED3/8X**	**ED3/8VITX**	**2-113-N552-9**	**2-113-V894-9**	13.94 × 2.62	**8207-3/8**	**8207SS3/8A**
1/2	**ED1/2X**	**ED1/2VITX**	**5-256-N552-9**	**5-256-V894-9**	17.96 × 2.62	**8207-1/2**	**8207SS1/2**
3/4	**ED26X1.5X**	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**8207-3/4**	**8207SS3/4**
1	**ED33X2X**	**ED33X2VITX**	**2-217-N552-9**	**2-217-V894-9**	29.74 × 3.53	**8207-1**	**8207SS1A**
1 1/4	**ED42X2X**	**ED42X2VITX**	**2-222-N552-9**	**2-222-V894-9**	37.69 × 3.53	**8207-1-1/4**	**8207SS1 1/4**
1 1/2	**ED48X2X**	**ED48X2VITX**	**2-224-N552-9**	**2-224-V894-9**	44.04 × 3.53	**8207-1-1/2**	**8207SS1 1/2**
Typical fittings using these parts: F42EDMX / F4OMX / C4OMX / V4OMX etc.							

* Must be used with correct retainer ring

Metric male threads – ISO 9974

Metric Thread	ED Seal Order code NBR	ED Seal Order code FKM	O-ring Order code* NBR	O-ring Order code* FKM	O-Ring ID × section (mm)	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
M10x1	**ED10X1X**	**ED10X1VITX**	**6-074-N552-9**	**6-074-V894-9**	8.00 × 1.50	**M10RR**	**RRM10X1SS**
M12x1.5	**ED12X1.5X**	**ED12x1.5VITX**	**2-012-N552-9**	**2-012-V894-9**	9.25 × 1.78	**M12RR**	**RRM12X1.5SS**
M14x1.5	**ED14X1.5X**	**ED14X1.5VITX**	**2-013-N552-9**	**2-013-V894-9**	10.82 × 1.78	**M14RR**	**RRM14X1.5SS**
M16x1.5	**ED16X1.5X**	**ED16X1.5VITX**	**3-907-N552-9**	**3-907-V894-9**	13.46 × 2.08	**M16RR**	**RRM16X1.5SS**
M18x1.5	**ED18X1.5X**	**ED18X1.5VITX**	**2-114-N552-9**	**2-114-V894-9**	15.54 × 2.62	**M18RR**	**RRM18X1.5SS**
M22x2	**ED22X1.5X**	**ED22X1.5VITX**	**2-018-N552-9**	**2-018-V894-9**	18.77 × 1.78	**M22RR**	**RRM22X1.5SS**
M27x2	**ED26X1.5X****	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**M27RR**	**RRM27X2SS**
M33x2	**ED33X2X**	**ED33X2VITX**	**2-122-N552-9**	**2-122-V894-9**	28.24 × 2.62	**M33RR**	**RRM33X2SS**
M42x2	**ED42X2X**	**ED42X2VITX**	**2-128-N552-9**	**2-128-V894-9**	37.77 × 2.62	**M42RR**	**RRM42X2SS**
M48x2	**ED48X2X**	**ED48X2VITX**	**2-132-N552-9**	**2-132-V894-9**	44.12 × 2.62	**M48RR**	**RRM48X2SS**
Typical fittings using these parts: F82EDMX / F8OMX / C8OMX / V8OMX etc.							

* Must be used with correct retainer ring
** Same seal used for M26X1.5 and M27X2 Threads

UN / UNF male threads – ISO 11926

UN / UNF Thread	Dash size	O-ring Order code* NBR	O-ring Order code* FKM	O-Ring ID x section (mm)
5/16-24	2	**3-902-N552-9**	**3-902-V894-9**	6.07 × 1.63
3/8-24	3	**3-903-N552-9**	**3-903-V894-9**	7.65 × 1.63
7/16-20	4	**3-904-N552-9**	**3-904-V894-9**	8.92 × 1.83
1/2-20	5	**3-905-N552-9**	**3-905-V894-9**	10.52 × 1.83
9/16-18	6	**3-906-N552-9**	**3-906-V894-9**	11.89 × 1.98
3/4-16	8	**3-908-N552-9**	**3-908-V894-9**	16.36 × 2.21
7/8-14	10	**3-910-N552-9**	**3-910-V894-9**	19.18 × 2.46
1 1/16-12	12	**3-912-N552-9**	**3-912-V894-9**	23.47 × 2.95
1 3/16-12	14	**3-914-N552-9**	**3-914-V894-9**	26.59 × 2.95
1 5/16-12	16	**3-916-N552-9**	**3-916-V894-9**	29.74 × 2.95
1 5/8-12	20	**3-920-N552-9**	**3-920-V894-9**	37.47 × 3.00
1 7/8-12	24	**3-924-N552-9**	**3-924-V894-9**	43.69 × 3.00
2 1/2-12	32	**3-932-N552-9**	**3-932-V894-9**	59.36 × 3.00
Typical fittings using these parts: F5OMX / C5OMX / R5OMX etc.				

Metric male threads – ISO 6149

Metric Thread	O-ring Order code* NBR	O-ring Order code* FKM	O-Ring ID × section (mm)
M10 × 1	**6-345-N552-9**	**6-345-V894-9**	8.20 × 1.50
M12 × 1.5	**6-346-N552-9**	**6-346-V894-9**	9.40 × 2.10
M14 × 1.5	**6-347-N552-9**	**6-347-V894-9**	11.40 × 2.10
M16 × 1.5	**6-348-N552-9**	**6-348-V894-9**	13.40 × 2.10
M18 × 1.5	**6-349-N552-9**	**6-349-V894-9**	15.40 × 2.10
M22 × 1.5	**6-350-N552-9**	**6-350-V894-9**	19.40 × 2.10
M27 × 2	**6-351-N552-9**	**6-351-V894-9**	23.70 × 2.80
M33 × 2	**6-352-N552-9**	**6-352-V894-9**	29.70 × 2.80
M42 × 2	**6-353-N552-9**	**6-353-V894-9**	38.70 × 2.80
M48 × 2	**6-354-N552-9**	**6-354-V894-9**	46.70 × 2.80
Typical fittings using these parts: F87OMX / S87OMX etc.			

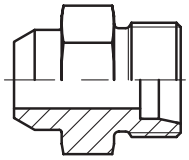
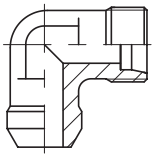
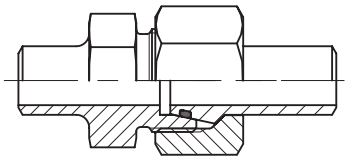
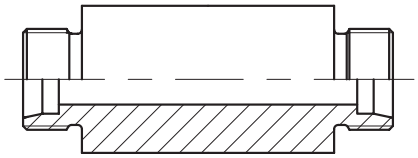
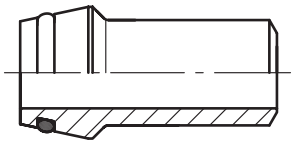
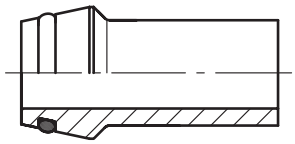
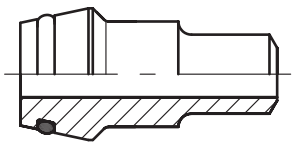
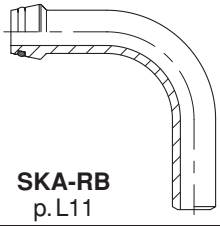
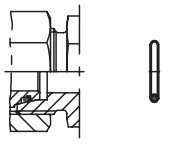
Other seal compounds available on request for alternative applications

Parker

Ermeto Original
Weld fittings

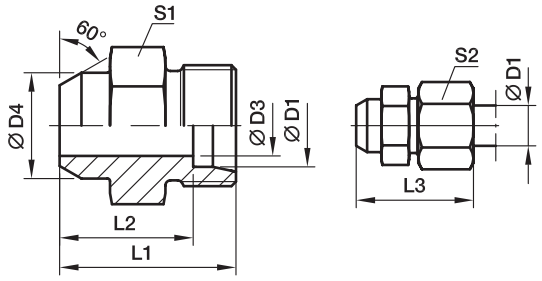


Visual index

Tube to weld	 **AS** p. L3	 **WAS** p. L4
Weld fitting	 **ASK** p. L5	
Weld bulkhead	 **ESV** p. L6	
Weld nipple	 **SKA** p. L7	 **SKA-ORB** p. L10
Reducing weld nipple	 **SKAR** p. L8/9	
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O-ring	 **O-ring** p. L12	

AS weld connector

Butt weld / EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	S1	S2	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
L[3])	06	4	10	21	14.0	29	12	14	11	**AS06L**	315	315
	08	6	12	23	16.0	31	14	17	15	**AS08L**	315	315
	10	8	14	25	18.0	33	17	19	22	**AS10L**	315	315
	12	10	16	25	18.0	33	19	22	25	**AS12L**	315	315
	15	12	19	29	22.0	37	22	27	44	**AS15L**	315	315
	18	15	22	31	23.5	40	27	32	67	**AS18L**	315	315
	22	19	27	36	28.5	45	32	36	98	**AS22L**	160	160
	28	24	32	38	30.5	47	41	41	165	**AS28L**	160	160
	35	30	40	43	32.5	54	46	50	232	**AS35L**	160	160
	42	36	46	46	35.0	58	55	60	342	**AS42L**	160	160
S[4])	06	4	11	26	19.0	34	14	17	21	**AS06S**	630	630
	08	5	13	28	21.0	36	17	19	31	**AS08S**	630	630
	10	7	15	30	22.5	39	19	22	41	**AS10S**	630	630
	12	8	17	32	24.5	41	22	24	93	**AS12S**	630	630
	14	10	19	35	27.0	45	24	27	55	**AS14S**	630	630
	16	12	21	35	26.5	45	27	30	82	**AS16S**	400	400
	20	16	26	40	29.5	51	32	36	131	**AS20S**	400	400
	25	20	31	44	32.0	56	41	46	219	**AS25S**	400	400
	30	25	36	49	35.5	62	46	50	297	**AS30S**	400	400
	38	32	44	54	38.0	69	55	60	448	**AS38S**	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

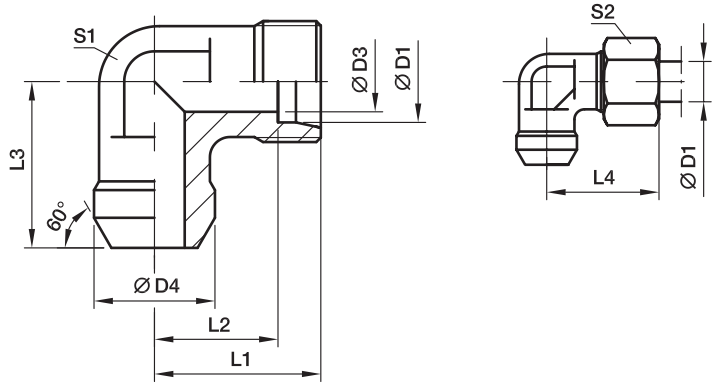
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		AS16SX
Stainless Steel	71X	AS16S71X

WAS Weld elbow

Butt weld / EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
L[3])	06	4	10	19	12.0	19	27	12	14	20	**WAS06L**	315	315
	08	6	12	21	14.0	23	29	12	17	25	**WAS08L**	315	315
	10	8	14	22	15.0	24	30	14	19	34	**WAS10L**	315	315
	12	10	16	24	17.0	25	32	17	22	45	**WAS12L**	315	315
	15	12	19	28	21.0	30	36	19	27	81	**WAS15L**	315	315
	18	15	22	31	23.5	33	40	24	32	113	**WAS18L**	315	315
	22	19	27	35	27.5	37	44	27	36	151	**WAS22L**	160	160
	28	24	32	38	30.5	42	47	36	41	271	**WAS28L**	160	160
	35	30	40	45	34.5	49	56	41	50	113	**WAS35L**	160	160
	42	36	46	51	40.0	57	63	50	60	420	**WAS42L**	160	160
S[4])	06	4	11	23	16.0	23	31	12	17	31	**WAS06S**	630	630
	08	5	13	24	17.0	24	32	14	19	44	**WAS08S**	630	630
	10	7	15	25	17.5	25	34	17	22	59	**WAS10S**	630	630
	12	8	17	29	21.5	29	38	17	24	78	**WAS12S**	630	630
	14	10	19	30	22.0	30	40	19	27	98	**WAS14S**	630	630
	16	12	21	33	24.5	33	43	24	30	133	**WAS16S**	400	400
	20	16	26	37	26.5	37	48	27	36	192	**WAS20S**	400	400
	25	20	31	42	30.0	42	54	36	46	351	**WAS25S**	400	400
	30	25	36	49	35.5	49	62	41	50	525	**WAS30S**	400	400
	38	32	44	57	41.0	57	72	50	60	785	**WAS38S**	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

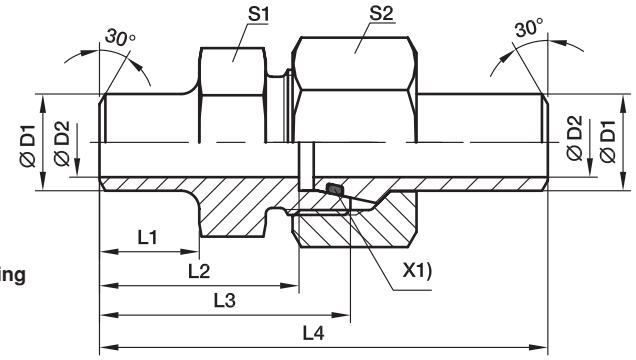
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		WAS16SX
Stainless Steel	71X	WAS16S71X

ASK Weld fitting for tubes

Butt weld / Butt weld



Series	D1	D2	L1	L2	L3	L4	S1	S2	recommended tube	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
S[4])	10	8	10.0	24.5	32.0	58.0	19	22	10X1.0	75	**ASK610X1S**	249	242
	10	7	10.0	24.5	32.0	58.0	19	22	10X1.5	81	**ASK610X1.5S**	358	349
	10	6	10.0	24.5	32.0	58.0	19	22	10X2.0	86	**ASK610X2S**	460	447
	12	9	15.0	29.5	37.0	63.0	22	24	12X1.5	106	**ASK612X1.5S**	305	297
	12	8	15.0	29.5	37.0	63.0	22	24	12X2.0	107	**ASK612X2S**	393	383
	12	7	15.0	29.5	37.0	63.0	22	24	12X2.5	109	**ASK612X2.5S**	476	463
	16	13	16.5	33.0	41.5	73.5	27	30	16X1.5	166	**ASK616X1.5S**	234	228
	16	12	16.5	33.0	41.5	73.5	27	30	16X2.0	175	**ASK616X2S**	305	297
	16	11	16.5	33.0	41.5	73.5	27	30	16X2.5	184	**ASK616X2.5S**	372	362
	16	10	16.5	33.0	41.5	73.5	27	30	16X3.0	193	**ASK616X3S**	400	400
	20	16	19.0	36.5	47.0	83.5	32	36	20X2.0	301	**ASK620X2S**	249	242
	20	15	19.0	36.5	47.0	83.5	32	36	20X2.5	311	**ASK620X2.5S**	305	297
	20	14	19.0	36.5	47.0	83.5	32	36	20X3.0	316	**ASK620X3S**	358	349
	20	12	19.0	36.5	47.0	83.5	32	36	20X4.0	322	**ASK620X4S**	400	400
	25	19	19.5	39.5	51.5	92.5	41	46	25X3.0	551	**ASK625X3S**	294	286
	25	17	19.5	39.5	51.5	92.5	41	46	25X4.0	559	**ASK625X4S**	379	369
	25	15	19.5	39.5	51.5	92.5	41	46	25X5.0	589	**ASK625X5S**	400	400
	30	24	23.0	44.5	58.0	101.5	46	50	30X3.0	671	**ASK630X3S**	249	242
	30	22	23.0	44.5	58.0	101.5	46	50	30X4.0	679	**ASK630X4S**	323	314
	30	20	23.0	44.5	58.0	101.5	46	50	30X5.0	726	**ASK630X5S**	393	383
	30	18	23.0	44.5	58.0	101.5	46	50	30X6.0	791	**ASK630X6S**	400	400
	38	30	22.0	44.0	60.0	108.0	55	60	38X4.0	988	**ASK638X4S**	261	254
	38	28	22.0	44.0	60.0	108.0	55	60	38X5.0	1044	**ASK638X5S**	315	311
	38	26	22.0	44.0	60.0	108.0	55	60	38X6.0	1108	**ASK638X6S**	315	315
	38	24	22.0	44.0	60.0	108.0	55	60	38X7.0	1205	**ASK638X7S**	315	315

[1]) Pressure shown = item deliverable

[4]) S = heavy series

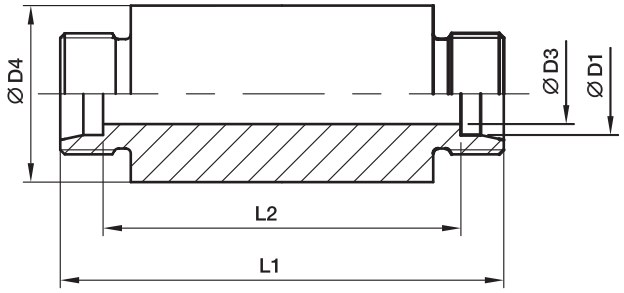
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

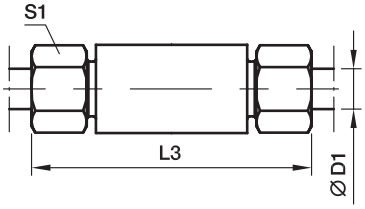
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel		ASK616X2S	NBR
Stainless Steel	71	ASK616X2S71	VIT

ESV Weld bulkhead fitting

EO 24° cone end / EO 24° cone end





Series	D1	D3	D4	L1	L2	L3	S1	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
L[3])	06	04	18	70	56	85	14	103	**ESV06L**	500	315
	08	6	20	70	56	85	17	121	**ESV08L**	500	315
	10	8	22	72	58	87	19	142	**ESV10L**	500	315
	12	10	25	72	58	87	22	176	**ESV12L**	400	315
	15	12	28	84	70	100	27	262	**ESV15L**	400	315
	18	15	32	84	69	101	32	333	**ESV18L**	400	315
	22	19	36	88	73	105	36	394	**ESV22L**	250	160
	28	24	40	88	73	106	41	448	**ESV28L**	250	160
	35	30	50	92	71	114	50	713	**ESV35L**	250	160
	42	36	60	92	70	115	60	997	**ESV42L**	250	160
S[4])	06	4	20	74	60	89	17	135	**ESV06S**	800	630
	08	5	22	74	60	89	19	163	**ESV08S**	800	630
	10	7	25	74	59	91	22	201	**ESV10S**	800	630
	12	8	28	74	59	91	24	249	**ESV12S**	630	630
	14	10	30	88	72	107	27	337	**ESV14S**	630	630
	16	12	35	88	71	107	30	441	**ESV16S**	630	400
	20	16	38	92	71	114	36	509	**ESV20S**	420	400
	25	20	45	96	72	120	46	720	**ESV25S**	420	400
	30	25	50	100	73	126	50	873	**ESV30S**	420	400
	38	32	60	104	72	133	60	1248	**ESV38S**	420	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

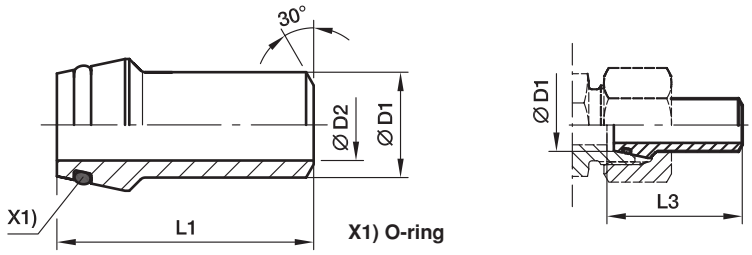
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		ESV16SX
Stainless Steel	71X	ESV16S71X

SKA Weld nipple

EO 24° O-ring weld nipple / butt weld



Series	D1	D2	L1	L3	recommended tube	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
L[3])/S[4])	06	3.0	31.0	31.5	6X1.5	7	**SKA06X1.5**	528	539
	08	4.5	31.0	31.5	8X1.5	11	**SKA08X1.5**	414	424
	08	4.0	31.0	31.5	8X2.0	11	**SKA08X2**	528	539
	10	8.0	32.5	33.5	10X1.0	13	**SKA10X1**	249	242
	10	7.0	32.5	33.5	10X1.5	13	**SKA10X1.5**	358	349
	10	6.0	32.5	33.5	10X2.0	16	**SKA10X2**	460	447
	12	9.0	32.5	33.5	12X1.5	21	**SKA12X1.5**	305	297
	12	8.0	32.5	33.5	12X2.0	20	**SKA12X2**	393	383
	12	7.0	32.5	33.5	12X2.5	22	**SKA12X2.5**	476	463
L[3])	15	11.0	34.0	34.5	15X2.0	29	**SKA15X2**	315	315
	15	10.0	34.0	34.5	15X2.5	31	**SKA15X2.5**	315	315
	18	13.0	35.5	36.5	18X2.5	40	**SKA18X2.5**	315	315
	22	17.0	38.5	39.5	22X2.5	57	**SKA22X2.5**	160	160
	28	23.0	41.5	42.5	28X2.5	73	**SKA28X2.5**	160	160
	28	22.0	41.5	42.5	28X3.0	89	**SKA28X3**	160	160
	35	28.0	47.5	49.5	35X3.5	140	**SKA35X3.5**	160	160
	35	27.0	47.5	49.5	35X4.0	150	**SKA35X4**	160	160
	42	36.0	47.5	50.0	42X3.0	155	**SKA42X3**	160	160
	42	34.0	47.5	50.0	42X4.0	190	**SKA42X4**	160	160
S[4])	14	10.0	38.5	39.5	14X2.0	26	**SKA14X2**	343	334
	14	8.0	38.5	39.5	14X3.0	33	**SKA14X3**	487	474
	16	13.0	39.0	40.5	16X1.5	32	**SKA16X1.5**	234	228
	16	12.0	39.0	40.5	16X2.0	31	**SKA16X2**	305	297
	16	11.0	39.0	40.5	16X2.5	38	**SKA16X2.5**	372	362
	16	10.0	39.0	40.5	16X3.0	41	**SKA16X3**	400	400
	20	16.0	45.0	47.0	20X2.0	57	**SKA20X2**	249	242
	20	15.0	45.0	47.0	20X2.5	57	**SKA20X2.5**	305	297
	20	14.0	45.0	47.0	20X3.0	64	**SKA20X3**	358	349
	20	13.0	45.0	47.0	20X3.5	71	**SKA20X3.5**	400	400
	20	12.0	45.0	47.0	20X4.0	78	**SKA20X4**	400	400
	25	19.0	49.5	53.0	25X3.0	89	**SKA25X3**	294	286
	25	18.0	49.5	53.0	25X3.5	100	**SKA25X3.5**	337	328
	25	17.0	49.5	53.0	25X4.0	111	**SKA25X4**	379	369
	25	15.0	49.5	53.0	25X5.0	125	**SKA25X5**	400	400
	30	24.0	52.0	57.0	30X3.0	113	**SKA30X3**	249	242
	30	22.0	52.0	57.0	30X4.0	141	**SKA30X4**	323	314
	30	20.0	52.0	57.0	30X5.0	166	**SKA30X5**	393	383
	30	18.0	52.0	57.0	30X6.0	188	**SKA30X6**	400	400
	38	32.0	56.5	64.0	38X3.0	163	**SKA38X3**	200	195
	38	30.0	56.5	64.0	38X4.0	209	**SKA38X4**	261	254
	38	28.0	56.5	64.0	38X5.0	247	**SKA38X5**	315	315
	38	26.0	56.5	64.0	38X6.0	270	**SKA38X6**	315	315
	38	24.0	56.5	64.0	38X7.0	270	**SKA38X7**	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel		SKA16X2	NBR
Stainless Steel	71	SKA16X271	VIT

SKAR Reducing weld nipple

EO 24° O-ring weld nipple / butt weld

Fig. A

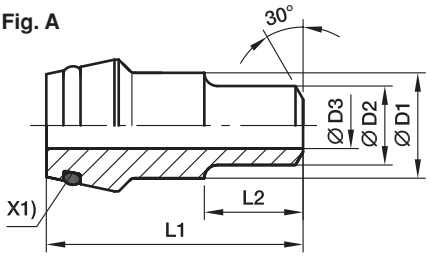
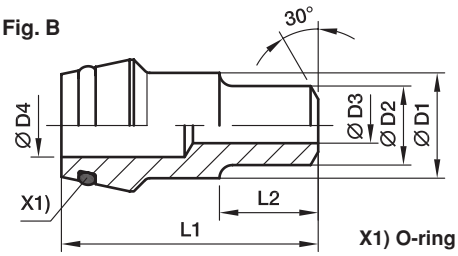
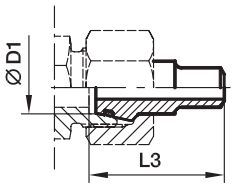


Fig. B



X1) O-ring



Series	D1	D2	D3	D4	L1	L2	L3	Fig.	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
L[3])/S[4])	08	06	3		31.0	12	31.5	A	14	**SKAR08/06X1.5**	528	539
	10	06	3	5	32.5	12	33.5	B	15	**SKAR10/06X1.5**	528	539
	10	08	5		32.5	12	33.5	A	16	**SKAR10/08X1.5**	414	424
	10	08	4		32.5	12	33.5	A	17	**SKAR10/08X2**	528	539
	12	08	5		32.5	14	33.5	A	18	**SKAR12/08X1.5**	414	424
	12	08	4	6	32.5	14	33.5	B	20	**SKAR12/08X2**	528	539
	12	10	7		32.5	14	33.5	A	18	**SKAR12/10X1.5**	358	349
S[4])	16	10	6		39.0	15	40.5	A	43	**SKAR16/10X2**	400	400
	16	12	9		39.0	15	40.5	A	45	**SKAR16/12X1.5**	305	297
	16	12	8		39.0	15	40.5	A	47	**SKAR16/12X2**	393	383
	16	12	7		39.0	15	40.5	A	49	**SKAR16/12X2.5**	400	400
	20	12	9		45.0	17	47.0	A	76	**SKAR20/12X1.5**	305	297
	20	12	8		45.0	17	47.0	A	78	**SKAR20/12X2**	393	383
	20	12	7		45.0	17	47.0	A	80	**SKAR20/12X2.5**	400	400
	20	12	6		45.0	17	47.0	A	86	**SKAR20/12X3**	400	400
	20	16	12		45.0	17	47.0	A	74	**SKAR20/16X2**	305	297
	20	16	11		45.0	17	47.0	A	76	**SKAR20/16X2.5**	372	362
	20	16	10		45.0	17	47.0	A	78	**SKAR20/16X3**	400	400
	25	12	9		49.5	20	53.0	A	117	**SKAR25/12X1.5**	305	297
	25	12	8		49.5	20	53.0	A	121	**SKAR25/12X2**	393	383
	25	12	7		49.5	20	53.0	A	125	**SKAR25/12X2.5**	400	400
	25	12	6	15	49.5	20	53.0	B	129	**SKAR25/12X3**	400	400
	25	16	12		49.5	20	53.0	A	115	**SKAR25/16X2**	305	297
	25	16	11		49.5	20	53.0	A	120	**SKAR25/16X2.5**	372	362
	25	16	10		49.5	20	53.0	A	123	**SKAR25/16X3**	400	400
	25	20	16		49.5	20	53.0	A	94	**SKAR25/20X2**	249	242
	25	20	15		49.5	20	53.0	A	104	**SKAR25/20X2.5**	305	297
	25	20	14		49.5	20	53.0	A	114	**SKAR25/20X3**	358	349
	25	20	12		49.5	20	53.0	A	124	**SKAR25/20X4**	400	400
	30	12	9	22	52.0	22	57.0	B	135	**SKAR30/12X1.5**	305	297
	30	12	8	22	52.0	22	57.0	B	145	**SKAR30/12X2**	323	383
	30	12	6	22	52.0	22	57.0	B	155	**SKAR30/12X3**	400	400
	30	16	12		52.0	22	57.0	A	166	**SKAR30/16X2**	305	297
	30	16	11		52.0	22	57.0	A	176	**SKAR30/16X2.5**	323	362
	30	20	16		52.0	22	57.0	A	149	**SKAR30/20X2**	249	242
	30	20	15		52.0	22	57.0	A	159	**SKAR30/20X2.5**	305	297
	30	20	14		52.0	22	57.0	A	169	**SKAR30/20X3**	358	349
	30	20	12		52.0	22	57.0	A	184	**SKAR30/20X4**	400	400
	30	25	20		52.0	22	57.0	A	141	**SKAR30/25X2.5**	249	242
	30	25	19		52.0	22	57.0	A	156	**SKAR30/25X3**	294	286
	30	25	17		52.0	22	57.0	A	168	**SKAR30/25X4**	379	369

SKAR Reducing weld nipple

EO 24° O-ring weld nipple / butt weld

Fig. A

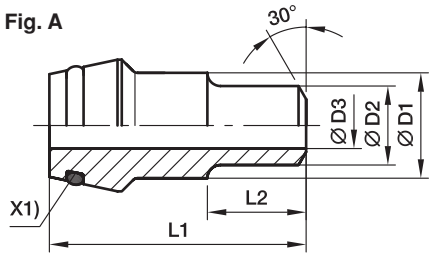
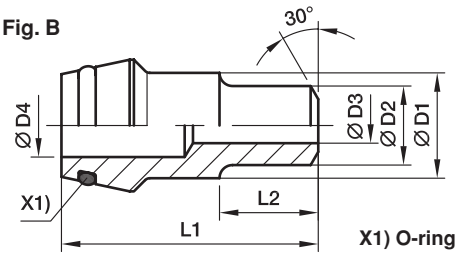
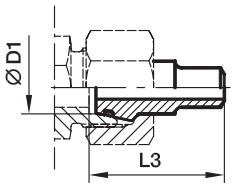


Fig. B



X1) O-ring



Series	D1	D2	D3	D4	L1	L2	L3	Fig.	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
S[4])	38	12	9	28	56.5	26	64.0	B	219	**SKAR38/12X1.5**	305	297
	38	12	8	28	56.5	26	64.0	B	234	**SKAR38/12X2**	315	315
	38	12	6	28	56.5	26	64.0	B	249	**SKAR38/12X3**	315	315
	38	16	12		56.5	26	64.0	A	279	**SKAR38/16X2**	305	297
	38	16	11		56.5	26	64.0	A	294	**SKAR38/16X2.5**	315	315
	38	16	10		56.5	26	64.0	A	309	**SKAR38/16X3**	315	315
	38	20	16		56.5	26	64.0	A	263	**SKAR38/20X2**	249	242
	38	20	15		56.5	26	64.0	A	278	**SKAR38/20X2.5**	305	297
	38	20	14		56.5	26	64.0	A	293	**SKAR38/20X3**	315	315
	38	20	12		56.5	26	64.0	A	299	**SKAR38/20X4**	315	315
	38	25	20		56.5	26	64.0	A	242	**SKAR38/25X2.5**	249	242
	38	25	19		56.5	26	64.0	A	262	**SKAR38/25X3**	294	286
	38	25	17		56.5	26	64.0	B	285	**SKAR38/25X4**	315	315
	38	30	24		56.5	26	64.0	A	256	**SKAR38/30X3**	249	242
	38	30	22		56.5	26	64.0	A	286	**SKAR38/30X4**	315	315
	38	30	20		56.5	26	64.0	A	316	**SKAR38/30X5**	315	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

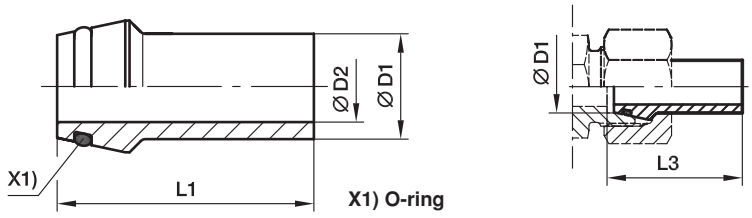
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel		SKAR16/12X2	NBR
Stainless Steel	71	SKAR16/12X271	VIT

SKA-ORB Weld nipple (orbital)

EO 24° O-ring weld nipple / butt weld (orbital)



Series	D1	D2	L1	L3	recommended tube	Weight g/1 piece	Order code	PN (bar)[1] Stainless Steel
L[3])/S[4])	10	6.0	37.5	38.5	10X1.5	13	**SKA10X1.5ORB**	358
	12	8.0	37.5	38.5	12X1.5	21	**SKA12X1.5ORB**	305
	12	8.0	37.5	38.5	12X2.0	255	**SKA12X2ORB**	393
L[3])	18	13.0	38.0	39.0	18X2.0	43	**SKA18X2ORB**	290
	22	17.0	38.5	39.5	22X2.0	50	**SKA22X2ORB**	250
	28	22.0	41.5	42.5	28X2.0	69	**SKA28X2ORB**	204
	42	36.0	47.5	50.0	42X3.0	160	**SKA42X3ORB**	182
S[4])	16	12.0	39.0	40.5	16X2.0	310	**SKA16X2ORB**	305
	20	14.0	45.0	47.0	20X3.0	640	**SKA20X3ORB**	358
	25	19.0	49.5	53.0	25X3.0	890	**SKA25X3ORB**	294

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

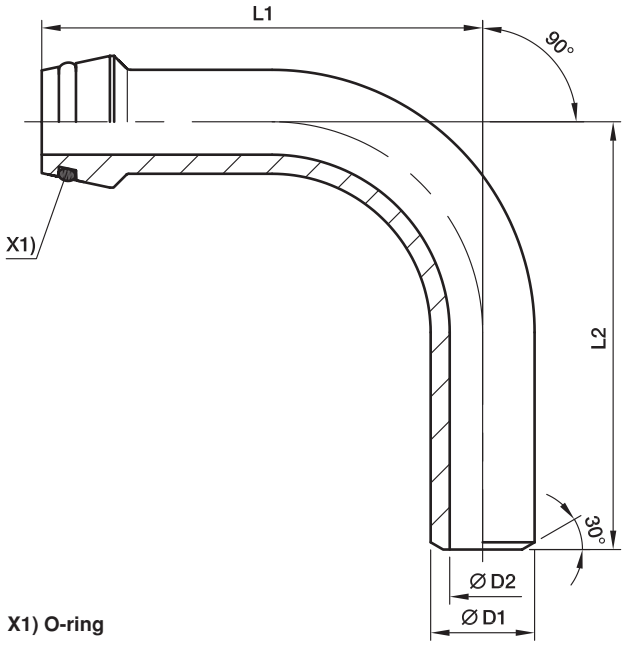
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

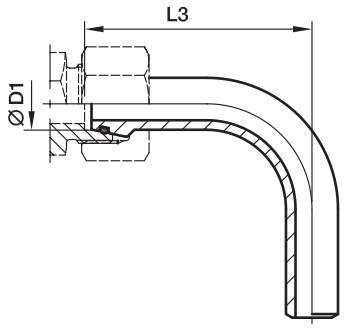
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Stainless Steel	71	SKA16X2ORB71	VIT

SKA-RB Tube bend weld nipple

EO 24° O-ring weld nipple / butt weld





X1) O-ring

Series	D1	D2	L1	L2	L3	recommended tube	Weight g/1 piece	Order code	PN (bar)[1] Steel	PN (bar)[1] Stainless Steel
S[4])	10	6	49	45	50.0	10X2	38	**SKA10X2RB**	460	447
	12	7	51	50	52.0	12X2.5	50	**SKA12X2.5RB**	476	463
	16	10	67	60	68.5	16X3	105	**SKA16X3RB**	400	400
	20	12	85	65	87.0	20X4	217	**SKA20X4RB**	400	400
	25	17	85	85	88.5	25X4	295	**SKA25X4RB**	379	369
	25	15	85	85	88.5	25X5	353	**SKA25X5RB**	400	400
	30	22	111	110	116.0	30X4	469	**SKA30X4RB**	323	314
	30	20	111	110	116.0	30X5	568	**SKA30X5RB**	393	383
	38	28	136	130	143.5	38X5	876	**SKA38X5RB**	315	315
	38	26	136	130	143.5	38X6	1045	**SKA38X6RB**	315	315

[1]) Pressure shown = item deliverable

[4]) S = heavy series

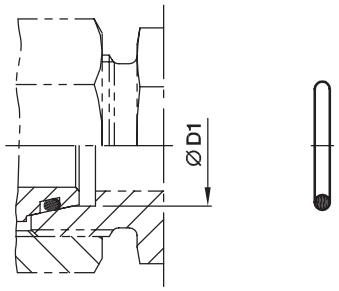
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel		SKA16X3RB	NBR
Stainless Steel	71	SKA16X3RB71	VIT

OR O-ring for weld nipple

For Type: SKA, SKAR, SKA-RB



Series	D1	O-ring NBR Shore-Hardness approx. 90	O-ring FKM Shore-Hardness approx. 90
L[3])	06	**OR4.5X1.5X**	**OR4.5X1.5VITX**
	08	**OR6.5X1.5X**	**OR6.5X1.5VITX**
	10	**OR8.5X1.5X**	**OR8X1.5VITX**
	12	**OR10.5X1.5X**	**OR10X1.5VITX**
	15	**OR12.5X1.5X**	**OR12X2VITX**
	18	**OR16X2X**	**OR15X2VITX**
	22	**OR20X2X**	**OR20X2VITX**
	28	**OR26X2X**	**OR26X2VITX**
	35	**OR32X2.5X**	**OR32X2.5VITX**
	42	**OR39X2.5X**	**OR38X2.5VITX**
S[4])	06	**OR4.5X1.5X**	**OR4.5X1.5VITX**
	08	**OR6.5X1.5X**	**OR6.5X1.5VITX**
	10	**OR8.5X1.5X**	**OR8X1.5VITX**
	12	**OR10.5X1.5X**	**OR10X1.5VITX**
	14	**OR12X2X**	**OR11X2VITX**
	16	**OR14X2X**	**OR13X2VITX**
	20	**OR17X2.5X**	**OR16.3X2.4VITX**
	25	**OR22X2.5X**	**OR20.3X2.4VITX**
	30	**OR27X2.5X**	**OR25.3X2.4VITX**
	38	**OR35X2.5X**	**OR33.3X2.4VITX**

[3]) L = light series; [4]) S = heavy series

Parker

Ermeto Original
High Pressure Hydraulic Flanges



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M

Introduction

The 4 bolt flange connections conforming to SAE J518 and ISO 6162-1 and –2 are proven, leak-free connections, especially suited for larger sizes, high pressures and assembly in tight quarters. Threaded port connections such as SAE straight thread O-ring and ISO 6149 are reasonably easy to assemble and provide 6000 psi and higher pressure capability up to size 12 (M27). Beyond this size the pressure rating starts to decrease and assembly torques increase rapidly.

The 4 bolt flange port connections provide ability to connect larger sizes and achieve higher-pressure capability at reasonable assembly torques. Because of the lower assembly torques compared to an equivalent size threaded port, these connections are well suited for tight quarters where wrench clearances are limited.

Design and construction

Parker 4 bolt flange products are designed to provide different methods of connecting a tube, hose, pipe or another fitting to the SAE standard 4-bolt flange port.

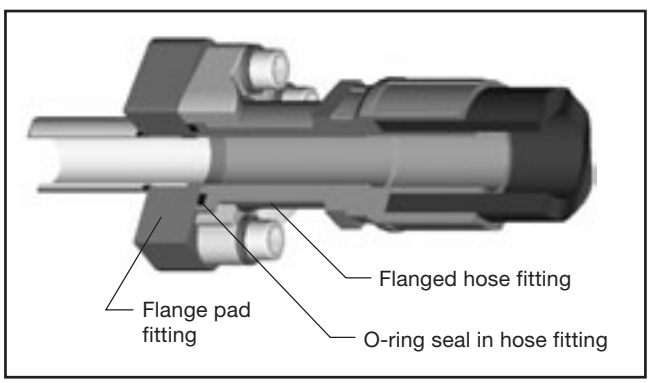
Flange fittings – All Parker flange fittings, except for those with square mounting hole pattern, are designed to conform to O-ring groove, bolt holes and bolt pattern dimensions of either Code 61 or Code 62 of SAE J518 and ISO 6162-1 or ISO 6162-2.

The flange adapters and 4 bolt flange block fittings have O-ring grooves conforming to dimensions in ISO 6162-1 and -2 (SAE J518). The 4 bolt flange block fittings have through holes for the mounting bolts, again conforming to ISO 6162-1 and -2 (SAE J518).

The counter fittings have a flat face (no O-ring groove) and the mounting holes are tapped. Where these fittings are used, the seal is in the mating part (flange adapter, flange hose fitting, flange block fitting, etc.) as shown in Fig. 1.

Dimensions other than the O-ring groove, bolt holes, bolt pattern, and the flange foot print are not governed by any industry standard. However, Parker product design follows common industry practice and sound engineering.

Fig. 1 – Flange pad fitting



Flange clamps – Clamps are used for providing the holding power to the 4 bolt flange connection. They are offered in split and captive (one-piece) versions. The captive ones are also offered with either drilled or tapped bolt holes. The captive flange clamp with tapped holes is used while connecting a tube to another tube or a hose.

Parker flange clamps are forged for higher strength and durability. They meet all requirements of ISO 6162-1 and -2 (SAE J518). The split clamps make it easy to assemble the connection in close quarters. They also make removal of the flange head component, such as a hose assembly, easy by loosening all four bolts and removing one clamp half.

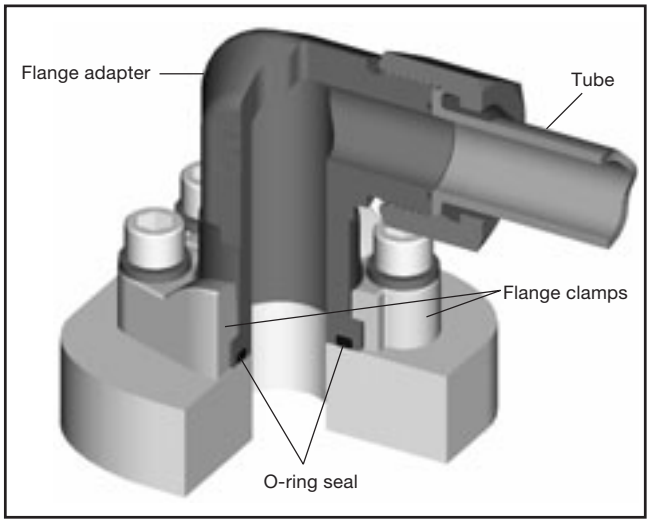
Junction block tees – These are solid block union fittings to connect two/three tube/hose assemblies using 4 bolt flange connection, at a junction, to SAE 4 bolt flange port, or three tube/hose assemblies to each other.

Connector plate – Connector plate is used as a middle plate to connect two flange heads with O-ring grooves, such as two hose assemblies with flange connection ends. The flat surface of the plate provides sealing surface on each side for the O-ring housed in the hose ends.

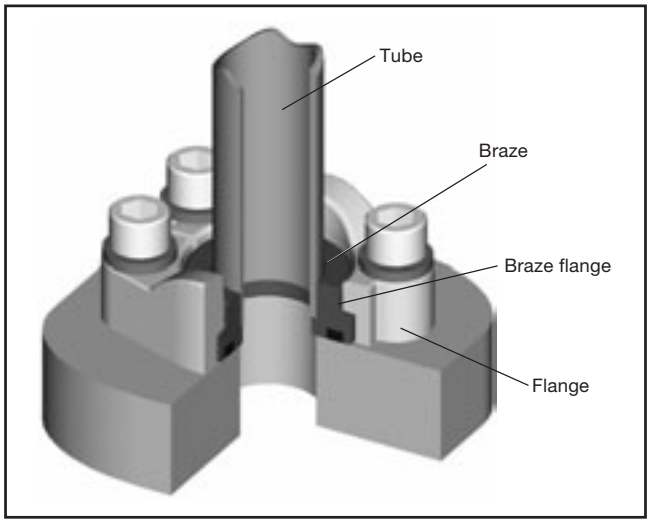
Spacer plate – Spacer plate provides access to the system fluid via the gage port on the side. The plate is sandwiched in the flange connection to provide this access.

Plugs – Plugs provide a means to block off the 4 bolt flange port with and without clamps, and to plug the end of a pipe (via welding).

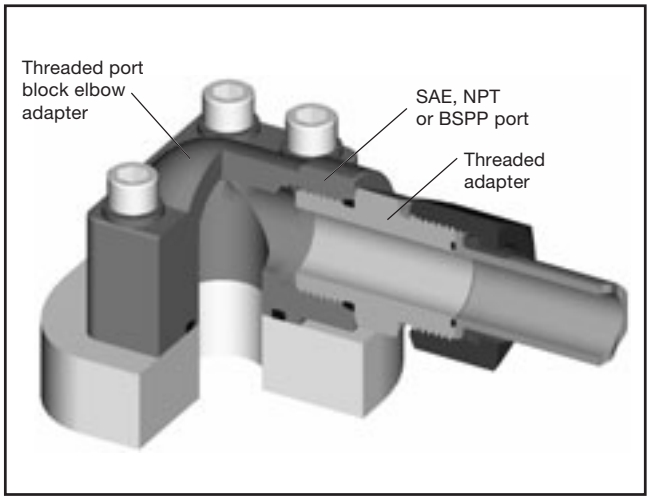
Methods of connection – Parker 4 bolt flange products



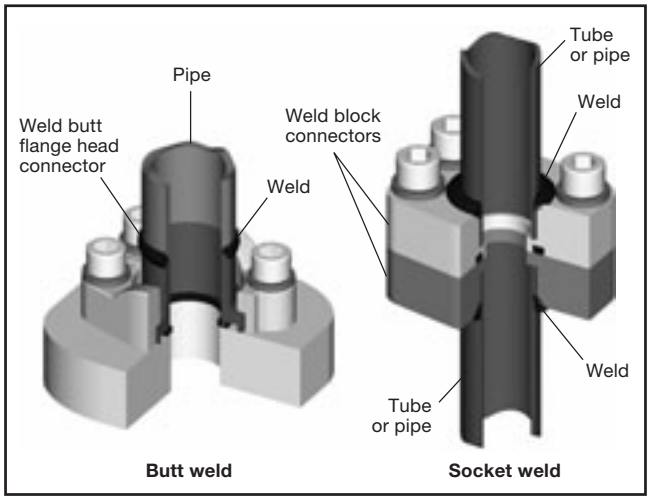
Connecting tube and hose via a threaded tube/hose end connection: The flange adapters provide means of connecting tubes or hoses to a 4 bolt flange port via threaded connection such as Seal-Lok (ORFS), Triple-Lok® (37° flare), etc.



Connecting tubes via brazing. The braze flange head fittings for Code 61 and Code 62 connections provide the means of connecting tubes directly to 4 bolt flange ports.



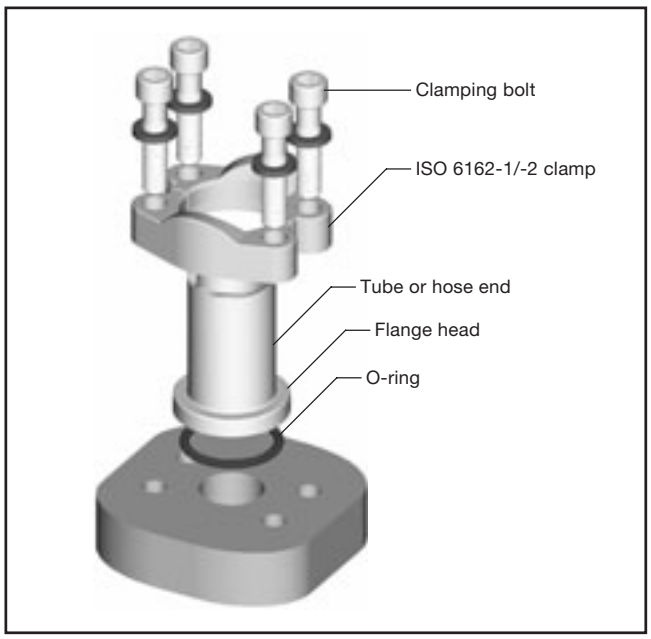
Connecting tube, hose and pipe via threaded port connection. The flange head and flange block conversion adapters provide the means of converting a 4 bolt flange port to either SAE, NPT or BSPP port. A user can then use appropriate threaded adapters to connect tube and hose, or connect threaded pipe directly into NPT and BSPP ports.



Connecting tube and pipe via welding. The flange head and flange block weld fittings provide the means of connecting tubes and pipes to 4 bolt flange port via socket welding for tubes and socket and butt welding for pipes.

M

How flange connections work



4 bolt flange connection ISO 6162-1 and -2 (SAE J518) is a proven leak-free connection, especially suited for larger sizes. As a result, it has achieved worldwide acceptance.

The connection's success is in its simplicity. It is a static face seal using a high durometer O-ring for the seal and clamps and bolts for holding power as shown here.

The (O-ring) seal is compressed between the bottom of the groove in the flange head and the flat surface of the port or flange pad, providing a reliable soft seal. The alternate seal plate has a high durometer bonded rubber seal on the inside edge, which compresses between the two flat surfaces, providing a soft seal with the same reliability. A metal-to-metal contact at the outer face of the flange with the port face keeps the seal from extruding under pressure. This metal-to-metal contact is maintained by the clamping force provided by tightening of the bolts via the clamps.

This simple design provides several advantages over threaded port connections, such as NPT, SAE, BSPP, ISO 6149, etc., in larger sizes:

- Ability to connect up to 5 inch O.D. tube (ISO 6162-1 only)
- Much lower tightening torque required from the four bolts compared to that required for equivalent size threaded port.
- Less tightening torque means smaller wrenches and wrench swing clearances – providing ease of assembly in tight quarters.
- Up to 6000 psi capability through 2" size (ISO 6162-2 only)
- Single seal point between tube/pipe/hose assembly and the port
- Ease of disassembly through use of split clamps

The connection has one disadvantage – it requires a larger area (foot print) on the component than an equivalent threaded port.

Flanges



Assembly of flanges

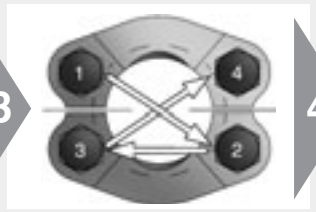
- SAE flange adapters
- SAE 4 bolt flanges
- Gear pump flanges
- CETOP square flanges



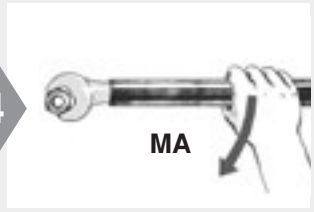
- Make sure sealing surfaces are free of burrs, nicks, scratches or any contamination
- Lubricate the O-ring with system fluid or compatible lubricant



- Position flange and clamp halves
- Place lock washers on bolts and bolt through clamp halves



- Hand tighten bolts
- Torque bolts in diagonal sequence in small increments to the appropriate torque level listed in chart



- Tighten bolts according to chart

3000 PSI Series (Code 61) Flange recommended screws torque

Dash size	Flange size	Inch screws (J518)	Torque Nm[1])	Metric screws (ISO 6162)	Torque Nm[1])
13	1/2	5/16-18	24	M8	24
19	3/4	3/8-16	43	M10	50
25	1	3/8-16	43	M10	50
32	1-1/4	7/16-14	70	M12*	50
38	1-1/2	1/2-13	105	M12	92
51	2	1/2-13	105	M14*	135
64	2-1/2	1/2-13	105	M12	92
76	3	5/8-11	210	M16	210
89	3-1/2	5/8-11	210	M16	210
102	4	5/8-11	210	M16	210
127	5	5/8-11	210	M16	210

*Does not meet ISO 6162 specification

6000 PSI Series (Code 62) Flange recommended screws torque

Dash size	Flange size	Inch screws (J518)	Torque Nm[1])	Metric screws (ISO 6162)	Torque Nm[1])
13	1/2	5/16-18	24	M8	24
19	3/4	3/8-16	43	M10	50
25	1	7/16-14	70	M12	92
32	1-1/4	1/2-13	105	M14*	130
38	1-1/2	5/8-11	210	M16	210
51	2	3/4-10	360	M20	400

*Does not meet ISO 6162 specification

Hydraulic Flange recommended screws torque

Socket screw bolt circle (LK)	Socket head cap screws	Tightening torques Nm[1])
LK30	M6	10
LK35	M6	10
LK40	M6	10
LK51	M10	49
LK55	M8	25
LK56	M10	49
LK62	M10	49
LK72.5	M12	85

1) Tolerances: max. 10%
min. 0%

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Technical data

Flange screws

SAE Flanges according to ISO 6162-1 and -2 (SAE J518)

– metric screws according to
DIN 912-8.8 (ISO 4762-8.8) or
DIN 912-10.9 (ISO 4762-10.9)[1]

– UNC screws according to ASA B 18.3

Square flanges according to ISO 6164 (1994) and Cetop

– metric screws according to
DIN 912-8.8 (ISO 4762-8.8) or
DIN 912-10.9 (ISO 4762-10.9)[1]

Gear pump flanges

– metric screws according to
DIN 912-8.8 (ISO 4762-8.8)

[1] **Screws with grade 10.9/12.9 are to be used, when the material for the flanges is high tempered!**

Used Sealing

Materials

Flanges according **SAE J518 (ISO 6162-1 and -2), ISO 6164, Cetop** and all **gear pump flanges** in this catalogue are sealed with an O-ring. The seals of our flanges are out of the following materials:

– NBR (e.g. perbunan) 90 durometer is our standard seal material for hydraulic **steel** flange appplications.

– FKM (e.g. Viton®) 85 or 90 durometer is our standard seal material for hydraulic **stainless steel** flange applications.

Viton® = registered trademark of DuPont
Perbunan = registered trademark of Bayer

Dimensions

O-ring dimensions of ISO 6164 flanges, Cetop flanges and gear pump flanges are shown direct on the product catalogue page. For all flanges according to **SAE J518 (ISO 6162-1 and -2)** the O-ring dimension are according to the following table:

Nominal flange size	Nominal inch tube size (in inches)	ISO 3601-1 O-ring	SAE J515 O-ring	SAE J515 O-ring size number
13	1/2	19×3.55	18.64×3.53	210
19	3/4	25×3.55	24.99×3.53	214
25	1	32.5×3.55	32.92×3.53	219
32	1 1/4	37.5×3.55	37.69×3.53	222
38	1 1/2	47.5×3.55	47.22×3.53	225
51	2	56×3.55	56.74×3.53	228
64	2 1/2	69×3.55	69.44×3.53	232
76	3	85×3.55	85.32×3.53	237
89	3 1/2	97.5×3.55	98.02×3.53	241
102	4	112×3.55	110.72×3.53	245
127	5	136×3.55	136.12×3.53	253

Pressure ratings

The maximum recommended working pressure is indicated for each article.
Before using a part, please take notice of the pressure ratings.
All pressure indications are based on a working temperature from –20° celsius up to +100° celsius (resp. ambient temperature from –40° celsius up to +120° celius). Outside of this temperature range the physical properties of the material is affected and the maximum recommended working pressure is reduced.
The indicated working pressures refer only to the flange itself.
For the tubes, fittings and connections the pressure ratings of the specific manufacturer must also be taken into account.

Materials

SAE flanges according to ISO 6162-1 and -2 (SAE 518)

Flange clamps, flange adapter and forged 4 bolt flanges are made of the material ST 52.3 or compatible for **steel** construction. For **stainless steel** constructions we are using for flange clamps, flange adapters and 4 bolt forged flanges the material 1.4401 (316) or compatible. For special applications it is also possible to get the flange adapters made from the material 1.4571 (316Ti).

Square flanges according to ISO 6164 (1994) and Cetop

Steel construction: ST52.3, C40 or compatible
Stainless steel construction: 1.4571 (316Ti) or compatible

Gear pump flanges

Steel forged construction: GTW40 or compatible
Steel construction: ST52.3, 11SMnPb30 or compatible

If different materials are used for manufacturing, this will be shown on the catalogue product page.

Surface protection

All surface order possibilities are described on each catalogue page!

Surface possibilities are:

1. Oil dipped
2. zinc yellow plated surface protection type A3C according to DIN EN ISO 4042
3. silver surface protection type A3K according to DIN EN ISO 4042
4. chrome^{6-}free surface protection type CF with better corrosion resistance than A3C surface protection

Order codes screws and O-rings

Screws for flanges

according ISO 6162-1 and -2 (SAE J518)

Nominal flange size			Screws for flange halves		Screws for full flanges	
Series	ISO	SAE	metr. Order code	UNC Order code	metr. Order code	UNC Order code
3000 PSI	13	1/2	**ZYLS8X25A3CX**	**UNC5/16-18X11/4**	**ZYLS8X30A3CX**	**UNC5/16-18X11/4**
3000 PSI	19	3/4	**ZYLS10X30A3CX**	**UNC3/8-16X11/4**	**ZYLS10X35A3CX**	**UNC3/8-16X11/2**
3000 PSI	25	1	**ZYLS10X30A3CX**	**UNC3/8-16X11/4**	**ZYLS10X35A3CX**	**UNC3/8-16X11/2**
3000 PSI	32	1 1/4	**ZYLS10X30A3CX**	**UNC7/16-14X11/2**	**ZYLS10X40A3CX**	**UNC7/16-14X11/2**
3000 PSI	32	1 1/4	**ZYLS10X35A3CX** *	—	—	—
3000 PSI	32	1 1/4	**ZYLS12X35A3CX** *	—	—	—
3000 PSI	38	1 1/2	**ZYLS12X35A3CX**	**UNC1/2-13X11/2**	**ZYLS12X45A3CX**	**UNC1/2-13X13/4**
3000 PSI	38	1 1/2	**ZYLS14X35A3CX** *	—	—	—
3000 PSI	51	2	**ZYLS12X35A3CX**	**UNC1/2-13X11/2**	**ZYLS12X45A3CX**	**UNC1/2-13X13/4**
3000 PSI	51	2	**ZYLS14X35A3CX** *	—	—	—
3000 PSI	64	2 1/2	**ZYLS12X40A3CX**	**UNC1/2-13X11/2** *	**ZYLS12X45A3CX**	**UNC1/2-13X13/4**
3000 PSI	64	2 1/2	**ZYLS14X35A3CX** *	**UNC1/2-13X13/4**	—	—
3000 PSI	76	3	**ZYLS16X50A3CX**	**UNC5/8-11X2** *	**ZYLS16X55A3CX**	**UNC5/8-11X21X4**
3000 PSI	76	3	**ZYLS16X45A3CX** *	**UNC5/8-11X13/4**	—	—
3000 PSI	89	3 1/2	**ZYLS16X50A3CX**	**UNC5/8-11X2** *	**ZYLS16X55A3CX**	**UNC5/8-11X21X4**
3000 PSI	89	3 1/2	**ZYLS16X45A3CX** *	—	—	—
3000 PSI	102	4	**ZYLS16X50A3CX**	**UNC5/8-11X2**	**ZYLS16X55A3CX**	**UNC5/8-11X21X4**
3000 PSI	102	4	**ZYLS16X45A3CX** *	—	—	—
3000 PSI	127	5	**ZYLS16X50A3CX** *	**UNC5/8-11X21/4**	**ZYLS16X55A3CX**	**UNC5/8-11X21X4**
3000 PSI	127	5	**ZYLS16X55A3CX**	**UNC5/8-11X2** *	—	—
Series	ISO	SAE	metr.	UNC	metr.	UNC
6000 PSI	13	1/2	**ZYLS8X30A3CX**	**UNC5/16-18X11/4**	**ZYLS8X30A3CX**	**UNC5/16-18X11/4**
6000 PSI	19	3/4	**ZYLS10X35A3CX**	**UNC3/8-16X11/2**	**ZYLS10X35A3CX**	**UNC3/8-16X11/2**
6000 PSI	25	1	**ZYLS12X45A3CX**	**UNC7/16-14X11/2** *	**ZYLS12X45A3CX**	**UNC7/16-14X11/2**
6000 PSI	25	1	—	**UNC7/16-14X13/4**	—	—
6000 PSI	32	1 1/4	**ZYLS14X50A3CX** *	**UNC1/2-13X13/4**	**ZYLS14X50A3CX**	**UNC1/2-13X13/4**
6000 PSI	32	1 1/4	**ZYLS12X45A3CX**	—	—	—
6000 PSI	38	1 1/2	**ZYLS16X55A3CX**	**UNC5/8-11X21/4**	**ZYLS16X55A3CX**	**UNC5/8-11X21X4**
6000 PSI	38	1 1/2	—	**UNC5/8-11X2** *	—	—
6000 PSI	51	2	**ZYLS20X65A3CX**	**UNC3/4-10X23/4**	**ZYLS20X70A3CX**	**UNC3/4-10X23X4**
6000 PSI	51	2	**ZYLS20X70A3C**	**UNC3/4-10X21/2** *	—	—
6000 PSI	64	2 1/2	**ZYLS24X75A3CX**	—	**ZYLS24X90A3CX**	—
6000 PSI	76	3	**ZYLS30X90A3CX**	—	**ZYLS30X110A3CX**	—

* = are not implemented in the ISO 6162 -1 and ISO 6162-2.

Screws for hydraulic flanges

(BFG, BFW)

Type	Screws Order code	Description
BFG (10L-28L)	**ZYLS6X22A3CX**	4 pieces
BFG (20S)	**ZYLS8X25A3CX**	4 pieces

Type		LK	Screws Order code	Order code	Description
BFW	10L	35	**ZYLS6X22A3CX**	**ZYLS6X35A3CX**	2 Pieces of each screws
BFW	12L	35	**ZYLS6X22A3CX**	**ZYLS6X35A3CX**	2 Pieces of each screws
BFW	15L	35	**ZYLS6X22A3CX**	**ZYLS6X35A3CX**	2 Pieces of each screws
BFW	16S	35	**ZYLS6X22A3CX**	**ZYLS6X40A3CX**	2 Pieces of each screws
BFW	20S	35	**ZYLS6X22A3CX**	**ZYLS6X45A3CX**	2 Pieces of each screws
BFW	15L	40	**ZYLS6X22A3CX**	**–**	4 Pieces
BFW	18L	40	**ZYLS6X22A3CX**	**–**	4 Pieces
BFW	22L	40	**ZYLS6X22A3CX**	**–**	4 Pieces
BFW	28L	40	**ZYLS6X20A3CX**	**ZYLS6X50A3CX**	2 Pieces of each screws
BFW	35L	40	**ZYLS6X22A3CX**	**ZYLS6X60A3CX**	2 Pieces of each screws
BFW	20S	40	**ZYLS6X22A3CX**	**ZYLS6X45A3CX**	2 Pieces of each screws
BFW	35L	55	**ZYLS8X25A3CX**	**ZYLS8X60A3CX**	2 Pieces of each screws
BFW	42L	55	**ZYLS8X25A3CX**	**ZYLS8X70A3CX**	2 Pieces of each screws
BFW	20S	55	**ZYLS8X25A3CX**	**ZYLS8X50A3CX**	2 Pieces of each screws
BFW	25S	55	**ZYLS8X25A3CX**	**ZYLS8X55A3CX**	2 Pieces of each screws
BFW	30S	55	**ZYLS8X25A3CX**	**ZYLS8X50A3CX**	2 Pieces of each screws

O-rings for flanges

SAE J518

ISO (DN)	SAE (in)	O-ring NBR Order code	O-ring FKM Order code
13	1/2	**OR18.64X3.53X**	**OR18.64X3.53VITX**
19	3/4	**OR25X3.53X**	**OR25X3.53VITX**
25	1	**OR32.92X3.53X**	**OR32.92X3.53VITX**
32	1 1/4	**OR37.69X3.53X**	**OR37.69X3.53VITX**
38	1 1/2	**OR47.22X3.53X**	**OR47.22X3.53VITX**
51	2	**OR56.75X3.53X**	**OR56.75X3.53VITX**
64	2 1/2	**OR69.44X3.53X**	**OR69.44X3.53VITX**
76	3	**OR85.32X3.53X**	**OR85.32X3.53VITX**
89	3 1/2	**OR98.02X3.53X**	**OR98.02X3.53VITX**
102	4	**OR110.72X3.53X**	**OR110.72X3.53VITX**
127	5	**OR136.12X3.53X**	**OR136.12X3.53VITX**

O-rings for hydraulic flanges

(BFG, BFW)

LK	O-ring size	Order code
35	20×2.5	**OR20X2.5X**
40	26×2.5	**OR26X2.5X**
55	32×2.5	**OR32X2.5X**

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Features, advantages and benefits

1. **Manufacture** – Code 61/62 fittings conform to SAE J518 and ISO 6162. This specification controls dimensions and tolerances of Code 61/62 port connections.

2. **Available configurations** – Over 60 different configurations are standard in a range of sizes. The breadth of product provides flexibility in plumbing to insure the best solution possible.

3. **Materials** – All configurations are available as standard in steel, with commonly used styles available in stainless steel.

4. **Available sizes** – Most configurations are available as standard in 1/2" through 2" with sizes as large as 5" available in some styles.

5. **Construction** – Parker offers a completely forged steel product line to insure our products hold up in the most rigorous applications.

6. **Envelope size** – Forged construction provides a compact design compared to flanges machined from block steel.

7. **Pressure ratings** – Code 61/62 fittings and flanges have pressure ratings up to 6000 psi. The recommended working pressure can be found directly on each catalogue page. This is a quick and easy way to verify the part in question meets the application pressure requirements.

8. **Flange kits** – To reduce ordering and assembly errors, kits that include mounting hardware (bolts, O-ring, and if needed flange halves) are available.

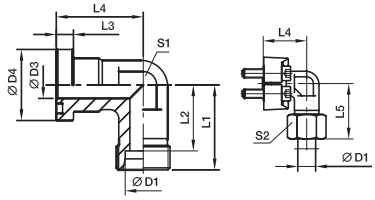
9. **Mounting hardware** – Bolts used in mounting kits are designated at least grade 8.8 to provide long dependable use.

How to order

SAE Flange adapters

WFS SAE 90° Elbow flange adapter

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	D1[2]	D3	D4	L1	L2	L3	L4	L5	S1	S2	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] 71
1/2	13	12S	12	30.2	50	42.5	6.7	44	57	22	24	M 8x25	5/16x1 1/4	0.38	**WFS32/12S**	210	210
1/2	13	15L	12	30.2	36	29.0	6.7	36	44	24	27	M 8x25	5/16x1 1/4	0.40	**WFS32/15L**	315	315
1/2	13	16S	12	30.2	38	29.5	6.7	36	48	24	30	M 8x25	5/16x1 1/4	0.43	**WFS32/16S**	350	350
1/2	13	18L	12	30.2	50	42.5	6.7	44	59	22	32	M 8x25	5/16x1 1/4	0.44	**WFS32/18L**	315	315
3/4	19	16S	19	38.1	64	55.5	6.7	53	74	27	30	M10x30	3/8x1 1/4	0.60	**WFS33/16S**	350	350
3/4	19	18L	19	38.1	39	31.5	6.7	42	48	30	32	M10x30	3/8x1 1/4	0.66	**WFS33/18L**	315	315
3/4	19	22L	19	38.1	41	33.5	6.7	42	50	30	36	M10x30	3/8x1 1/4	0.66	**WFS33/22L**	160	160
3/4	19	20S	19	38.1	43	32.5	6.7	42	54	30	36	M10x30	3/8x1 1/4	0.76	**WFS33/20S**	350	350
3/4	19	25S	19	38.1	45	33.0	6.7	42	57	30	46	M10x30	3/8x1 1/4	0.80	**WFS33/25S**	350	350
1	25	20S	25	44.5	65	54.5	8.0	60	76	34	36	M10x30	3/8x1 1/4	0.96	**WFS34/20S**	350	350
1	25	22L	25	44.5	65	49.5	8.0	60	74	34	36	M10x30	3/8x1 1/4	1.00	**WFS34/22L**	160	160
1	25	28L	25	44.5	44	36.5	8.0	45	53	36	41	M10x30	3/8x1 1/4	1.00	**WFS34/28L**	315	315
1	25	25S	25	44.5	48	36.5	8.0	45	57	36	46	M10x30	3/8x1 1/4	1.00	**WFS34/25S**	315	315
1	25	30S	25	44.5	50	36.5	8.0	45	63	36	50	M10x30	3/8x1 1/4	1.00	**WFS34/30S**	315	315
1 1/4	32	35L	29	50.8	57	46.5	8.0	50	68	41	50	M10x35	3/8x1 1/4	1.00	**WFS35/35L/103)**	160	160
1 1/4	32	25S	29	50.8	55	43.0	8.0	60	67	41	46	M10x35	3/8x1 1/4	1.00	**WFS35/25S/10**	200	200
1 1/4	32	30S	29	50.8	57	43.5	8.0	50	70	41	50	M10x35	3/8x1 1/4	1.00	**WFS35/30S/10**	200	200
1 1/4	32	38S	29	50.8	59	43.0	8.0	50	74	46	60	M10x35	3/8x1 1/4	1.00	**WFS35/38S/10**	200	200
1 1/4	32	35L	29	50.8	57	46.5	8.0	50	68	41	50	M12x40	7/16x1 1/2	1.00	**WFS35/35L**	160	160
1 1/4	32	25S	29	50.8	55	43.0	8.0	60	67	41	46	M12x40	7/16x1 1/2	1.35	**WFS35/25S**	200	200
1 1/4	32	30S	29	50.8	57	43.5	8.0	50	70	41	50	M12x40	7/16x1 1/2	1.40	**WFS35/30S**	200	200
1 1/4	32	38S	29	50.8	59	43.0	8.0	50	74	46	60	M12x40	7/16x1 1/2	1.53	**WFS35/38S**	200	200
1 1/2	38	35L	36	60.3	78	67.5	8.0	66	83	50	50	M12x35	1/2x1 1/2	1.55	**WFS36/35L**	160	160
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70	46	60	M12x35	1/2x1 1/2	1.60	**WFS36/42L**	160	160
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79	46	60	M12x35	1/2x1 1/2	1.95	**WFS36/38S**	200	200

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{PN\ (bar)}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

[3]) Order code for the elbow flange adapter assembled with FHS35/10A3CX and M10X35 screws.

*Please add the suffixes below to the material / surface requ

Material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	ges,	Standard sealing material (no additional suffix needed)
	WFS32/16SCFX	WFS32/16SOMDCF	MDCFU	NBR
Steel, zinc plated, chrome[6]-	WFS32/16SA3CX	WFS32/16SOMDA3C	MDA3CU	NBR
Steel, zinc yellow plated	WFS32/16S71X	WFS32/16SOMD71	MD71U	VIT
Stainless steel				

The corresponding order variant is contained in the table printed at the bottom of every page in the catalogue.

The right way to order made easy!

Step 1

Selecting order code

1. All flange sizes available in our program of supply are clearly listed in the index at the front of this catalogue.

2. Open the catalogue at the corresponding page containing detailed information of the product of your choice.

3. Select the required flange size!
The basic order code is printed in bold type on the right-hand side of the table of dimensions.
Example: **WFS34/30S**.

Step 2

Selecting material and surface . . .

Now simply add the corresponding ID code for the surface and material variant of the product you require to the basic order code.
This ID code is contained in the table printed at the bottom of every page.
Example: WFS34/30S + **A3CX = WFS34/30SA3CX**

4. **Ordering single parts**
Example: single part, yellow galvanized
WFS34/30S + **A3CX = WFS34/30SA3CX**

5. **Ordering complete types**
Example: order incl. splitflanges, metric-screw pack and O-ring
WFS34/30S + **OMD**A3C **= WFS34/30SOMDA3C**

6. **Order containing nut and cutting ring**
Example: flange incl. splitflanges, metric-screw pack, O-ring, nut and cutting ring
WFS34/30S + **A3C = WFS34/30SA3C**

7. **Order with functional nut**
Example: flange incl. splitflanges, metric-screw pack, O-ring, nut and functional nut
WFS34/30 **(+Z)** S **+ A3C = WFS34/30ZSA3C**

8. **Other sealing materials**
Example: flange made of steel incl. splitflanges, metric-screw pack and O-ring made of **FKM** (for example, Viton®).
WFS34/30S + **VIT**OMDA3C **= WFS34/30SVITOMDA3C**

Example: flange made of stainless steel incl. splitflanges, metric-screw pack and O-ring made of **NBR** (for example, Perbunan).
WFS34/30S + **NBR**OMD71 **= WFS34/30SNBROMD71**

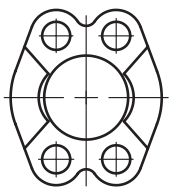
Viton® = registered trademark of DuPont
Perbunan = registered trademark of Bayer

M

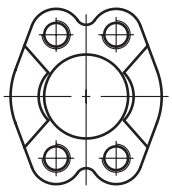
SAE Flange clamps



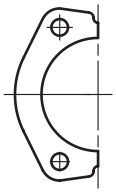
FHS – p. M15



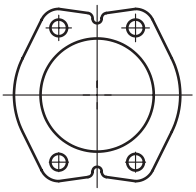
FUS – p. M16



FUSM – p. M17



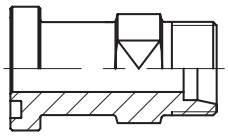
FHSF – p. M18



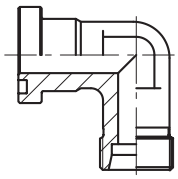
FUSF – p. M19

SAE Flange adapters

EO 24° cone end

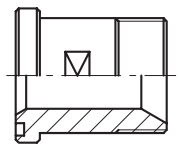


GFS – p. M20

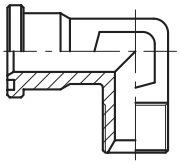


WFS – p. M22

BSPP 60° cone end

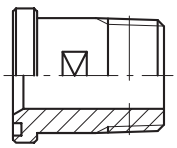


GFS-G – p. M24



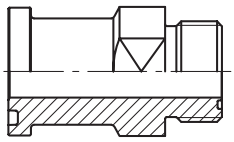
WFS-G – p. M25

Male NPT thread

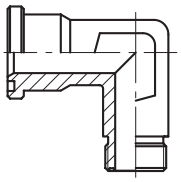


GFS-N – p. M26

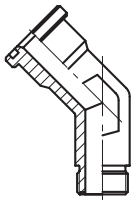
O-Lok® ORFS end



L(O)HQ – p. M27

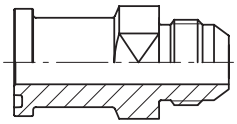


L(O)EMQ – p. M28

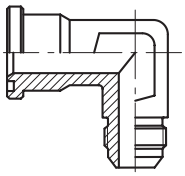


L(O)VQ – p. M29

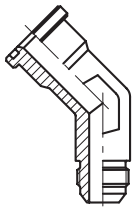
Triple-Lok® 37° flare end



XHQ – p. M30

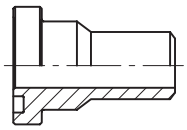


XEMQ – p. M31

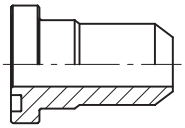


XVQ – p. M32

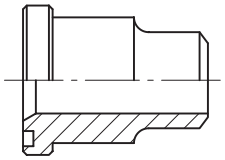
Butt weld end



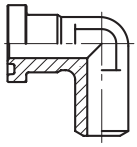
ASR – p. M33



AS – p. M34

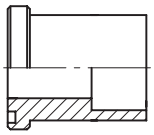


ASL – p. M36

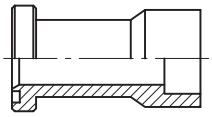


WAS – p. M37

Socket weld end



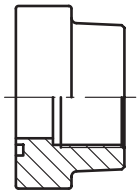
ES – p. M38



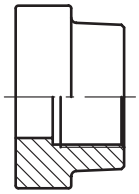
ESL – p. M40

SAE 4 bolt flanges

BSPP Female thread



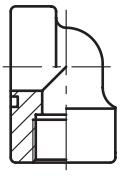
PFF-G– p. M41



PCFF-G – p. M42

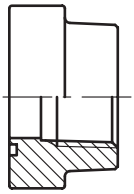


PAFSF-G – p. M43

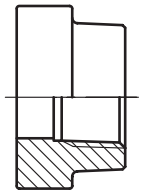


PEFF-G – p. M44

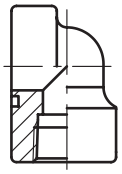
Female NPT thread



PFF-N – p. M45

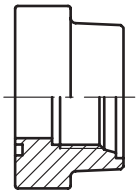


PCFF-N – p. M46

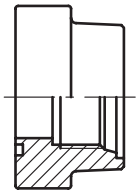


PEFF-N – p. M47

Female metric and UN/UNF thread

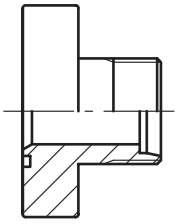


PAFS-M – p. M48

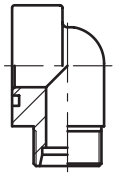


PAFS-U – p. M49

EO 24° cone end

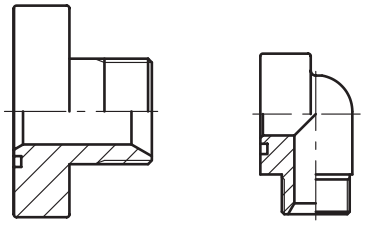


PFF-..S/L – p. M50



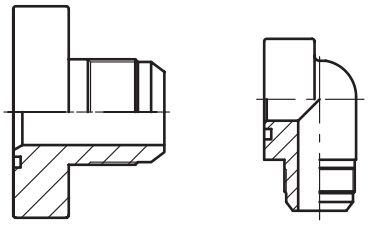
PAFG-90M – p. M51

BSPP 60° cone end



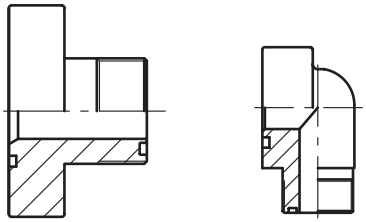
PAFG-G – p. M52 **PAFG-90G** – p. M53

Triple-Lok® 37° flare end



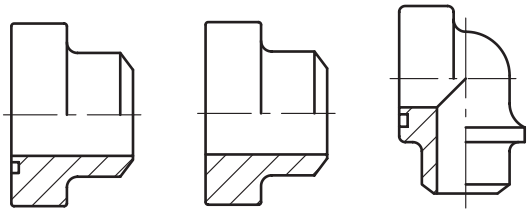
PAFG-X – p. M54 **PAFG-90X** – p. M55

O-Lok® ORFS end



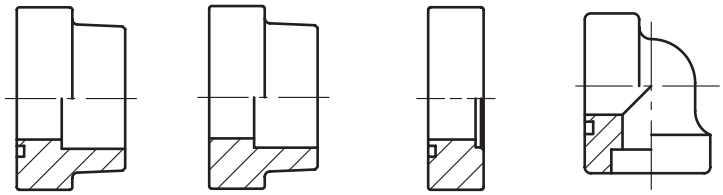
PAFG-L – p. M56 **PAFG-90L** – p. M57

Butt weld end



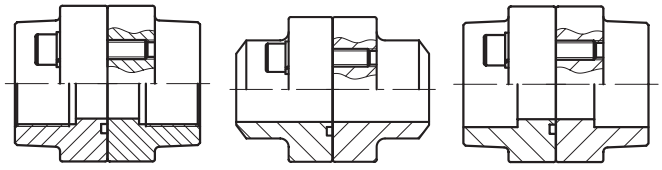
PAFS-B – p. M58 **PGFS-B** – p. M59 **PAFS-90B** – p. M60

Socket weld end



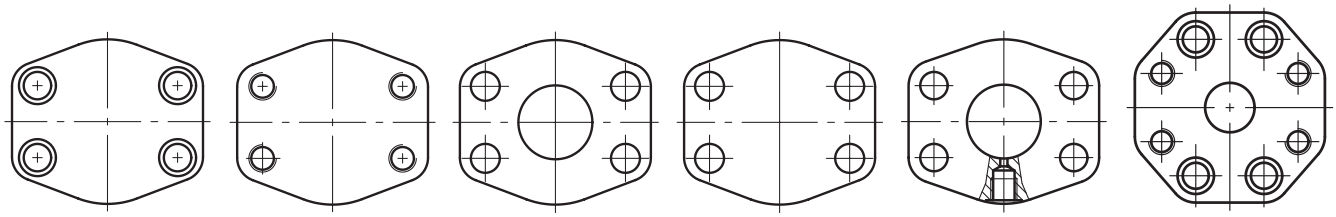
PAFS-S – p. M61 **PGFS-S** – p. M62 **PAFSF-S** – p. M63 **PAFS-90S** – p. M64

Complete flange connections



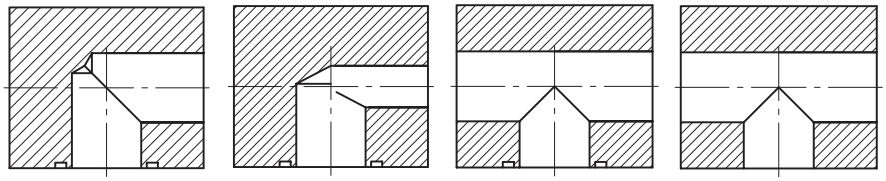
PDFS-G – p. M65 **PDFS-B** – p. M66 **PDFS-S** – p. M67

SAE Flange accessories



PCFF – p. M68 **PCCFF** – p. M69 **CPM** – p. M70 **AP** – p. M71 **PAGL-(G/M)** – p. M72 **PRF** – p. M73

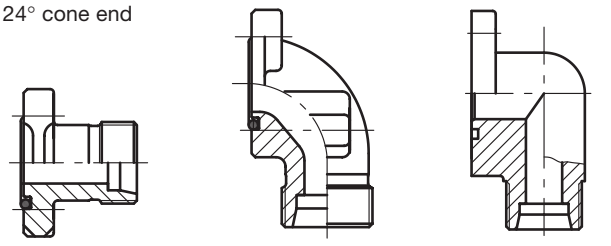
SAE Junction blocks



PBL – p. M74 **PBLR** – p. M75 **PBT** – p. M76 **PBTC** – p. M77

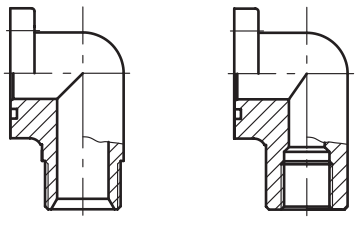
Gear pump flanges

EO 24° cone end



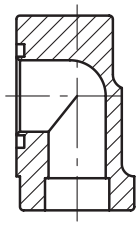
BFG – p. M78 **BFW** – p. M79 **BFW-3** – p. M80

Male/Female BSPP thread



BFW-G – p. M81 **BFW-GI** – p. M82

Socket weld end



BFW-S – p. M83

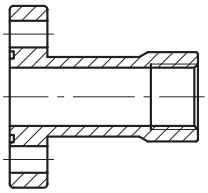
M

Gear pump flanges

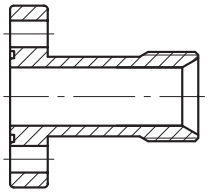
Special pump size flanges



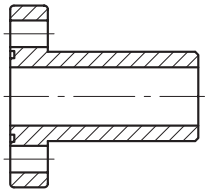
PF – p. M84



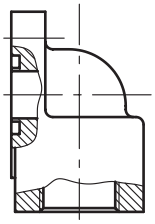
PFL – p. M84



PFE – p. M85

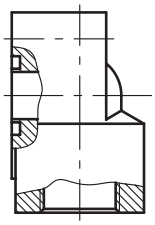


PFB – p. M85

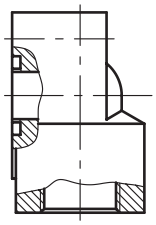


BFW3-G – p. M86

Aluminium flanges

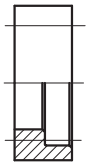


PWDS-G – p. M87

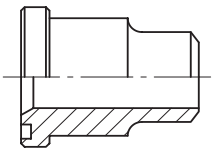


PWDA – p. M88

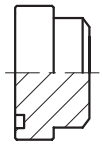
ISO 6164 Square flanges



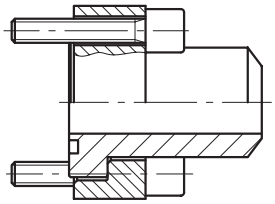
PSFC – p. M89



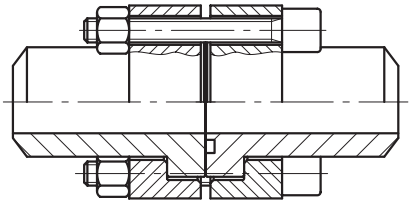
PSFA-B – p. M90



PSFP – p. M91

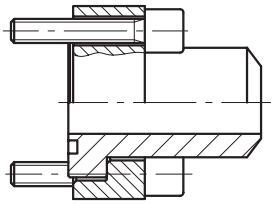


PSF-B – p. M92

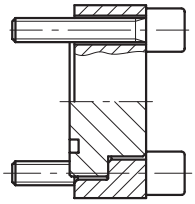


PDSF-B – p. M93

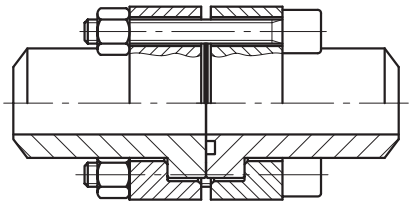
Cetop square flanges



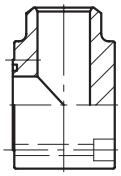
PCF-B – p. M94



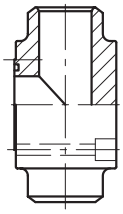
PPCF – p. M95



PDCF-B – p. M96

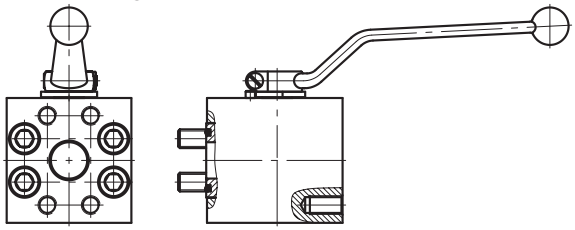


PLCF-B – p. M97

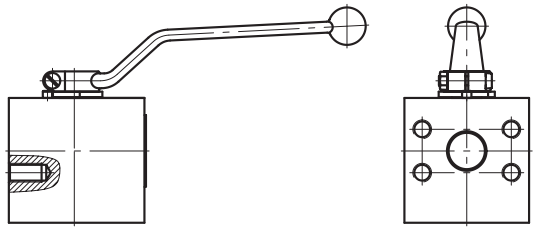


PTCF-B – p. M98

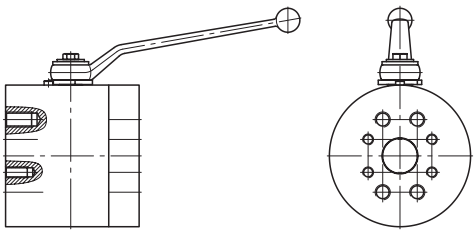
Ball valve flanges



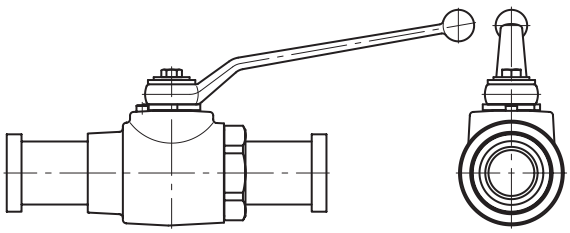
KH-B1V-S – p. M99



KH-B2V-S – p. M100



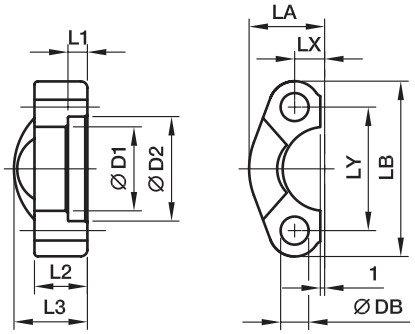
KH-B3V-S – p. M101



KH-A-S – p. M102

FHS SAE Split flange halves

ISO 6162-1/-2



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	24.3	31.0	6.2	13	20	23.0	54	8.7	38.1	8.8	M 8×25	5/16×1 1/4	0.07	**FHS32**	345	345
3/4	19	32.1	38.9	6.2	14	22	26.0	65	11.1	47.6	10.5	M10×30	3/8×1 1/4	0.09	**FHS33**	345	345
1	25	38.5	45.2	7.5	16	22	29.2	70	13.1	52.4	10.5	M10×30	3/8×1 1/4	0.11	**FHS34**	345	345
1 1/4	32	43.7	51.6	7.5	14	22	36.3	80	15.1	58.7	10.5	M10×35	–	0.15	**FHS35/10**	276	276
1 1/4	32	43.7	51.6	7.5	14	22	36.3	80	15.1	58.7	12.0	–	7/16×1 1/2	0.15	**FHS35/12**	276	276
1 1/4	32	43.7	51.6	7.5	14	22	36.3	80	15.1	58.7	12.5	M12×35	–	0.15	**FHS35**	276	276
1 1/2	38	50.8	61.1	7.5	16	24	41.1	94	17.9	69.9	13.5	M12×35	1/2×1 1/2	0.23	**FHS36**	207	207
1 1/2	38	50.8	61.1	7.5	16	24	41.1	94	17.9	69.9	14.5	M14×35	–	0.23	**FHS36/14**	207	207
2	51	62.7	72.2	9.0	16	26	48.2	102	21.4	77.8	13.5	M12×35	1/2×1 1/2	0.25	**FHS38/12**	207	207
2	51	62.7	72.2	9.0	16	26	48.2	102	21.4	77.8	14.5	M14×35	–	0.25	**FHS38**	207	207
2 1/2	64	74.9	84.9	9.0	19	38	54.0	115	25.4	88.9	13.5	M12×40	1/2×1 3/4	0.37	**FHS310**	172	172
2 1/2	64	74.9	84.9	9.0	19	38	54.0	115	25.4	88.9	14.5	M14×40	–	0.37	**FHS310/14**	172	172
3	76	90.9	102.4	9.0	22	40	65.3	135	31.0	106.4	17.0	M16×45	5/8×1 3/4	0.65	**FHS312**	138	138
3 1/2	89	102.4	115.0	10.7	22	45	70.0	152	34.9	120.7	17.0	M16×45	5/8×2	0.75	**FHS314**	34	34
4	102	115.1	127.8	10.7	25	48	75.0	160	38.9	130.2	17.0	M16×50	5/8×2	0.84	**FHS316**	34	34
5	127	140.5	153.2	10.7	28	50	82.0	183	46.0	152.4	17.0	M16×50	5/8×2 1/4	1.25	**FHS320**	34	34

6000 PSI Series

1/2	13	24.6	32.5	7.2	16	22	24.0	57	9.1	40.5	8.8	M 8×30	5/16×1 1/4	0.08	**FHS62**	420	420
3/4	19	32.5	42.0	8.3	19	28	30.0	72	11.9	50.8	10.5	M10×35	3/8×1 1/2	0.18	**FHS63**	420	420
1	25	38.9	48.4	9.0	24	32	35.0	81	13.9	57.2	13.0	M12×45	–	0.27	**FHS64**	420	420
1	25	38.9	48.4	9.0	24	32	35.0	81	13.9	57.2	12.0	–	7/16×1 3/4	0.27	**FHS64/12**	420	420
1 1/4	32	44.5	54.8	9.8	27	38	39.0	96	15.9	66.6	15.0	M14×50	–	0.27	**FHS65**	420	420
1 1/4	32	44.5	54.8	9.8	27	38	39.0	96	15.9	66.6	13.5	M12×45	1/2×1 3/4	0.27	**FHS65/12**	420	420
1 1/2	38	51.6	64.3	12.1	30	42	48.0	113	18.3	79.3	17.0	M16×55	5/8×2 1/4	0.40	**FHS66**	420	420
2	51	67.6	80.2	12.1	37	52	57.0	134	22.2	96.8	21.0	M20×65	3/4×2 3/4	0.40	**FHS68**	420	420
2 1/2	64	89.5	108.5	20.0	48	48	75.0	175	29.4	123.8	25.0	M24×75	–	0.68	**FHS610**	420	420
3	76	114.5	132.5	25.0	58	58	89.0	210	35.7	152.4	32.0	M30×90	–	1.05	**FHS612**	420	420

[1]) Pressure shown = Item deliverable

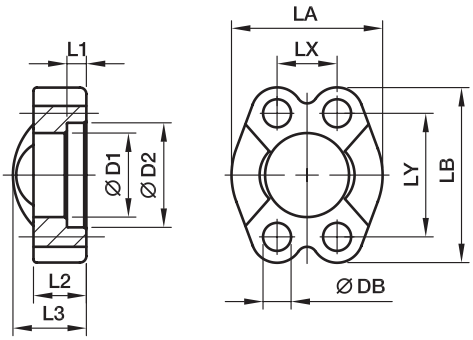
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	FHS32CF	only flange half
Steel, zinc yellow plated	A3C	FHS32A3CX	only flange half
Stainless steel	SS	FHS32SS	only flange half

FUS SAE Flange clamps

ISO 6162-1/-2



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	24.3	31.0	6.2	13	20	46	54	17.5	38.1	8.8	M 8×25	5/16×1 1/4	0.15	**FUS32**	345	345
3/4	19	32.1	38.9	6.2	14	22	52	65	22.3	47.6	10.5	M10×30	3/8×1 1/4	0.17	**FUS33**	345	345
1	25	38.5	45.2	7.5	16	22	59	70	26.2	52.4	10.5	M10×30	3/8×1 1/4	0.22	**FUS34**	345	345
1 1/4	32	43.7	51.6	7.5	14	22	73	80	30.2	58.7	10.5	M10×35	–	0.30	**FUS35/10**	276	276
1 1/4	32	43.7	51.6	7.5	14	22	73	80	30.2	58.7	12.0	–	7/16×1 1/2	0.29	**FUS35/12**	276	276
1 1/4	32	43.7	51.6	7.5	14	22	73	80	30.2	58.7	12.5	M12×35	–	0.29	**FUS35**	276	276
1 1/2	38	50.8	61.1	7.5	16	24	83	94	35.8	69.9	13.5	M12×35	1/2×1 1/2	0.45	**FUS36**	207	207
1 1/2	38	50.8	61.1	7.5	16	24	83	94	35.8	69.9	14.5	M14×35	–	0.44	**FUS36/14**	207	207
2	51	62.7	72.2	9.0	16	26	97	102	42.8	77.8	13.5	M12×35	1/2×1 1/2	0.50	**FUS38/12**	207	207
2	51	62.7	72.2	9.0	16	26	97	102	42.8	77.8	14.5	M14×35	–	0.49	**FUS38**	207	207
2 1/2	64	74.9	84.9	9.0	19	38	109	115	50.8	88.9	13.5	M12×40	1/2×1 3/4	0.74	**FUS310**	172	172
2 1/2	64	74.9	84.9	9.0	19	38	109	115	50.8	88.9	14.5	M14×40	–	0.73	**FUS310/14**	172	172
3	76	90.9	102.4	9.0	22	40	131	135	61.9	106.4	17.0	M16×45	5/8×1 3/4	1.30	**FUS312**	138	138
3 1/2	89	102.4	115.0	10.7	22	45	140	152	69.9	120.7	17.0	M16×45	5/8×2	1.50	**FUS314**	34	34
4	102	115.1	127.8	10.7	25	48	150	160	77.8	130.2	17.0	M16×50	5/8×2	1.65	**FUS316**	34	34
5	127	140.5	153.2	10.7	28	50	180	183	92.1	152.4	17.0	M16×50	5/8×2 1/4	2.50	**FUS320**	34	34

6000 PSI Series

1/2	13	24.6	32.5	7.2	16	22	48	57	18.2	40.5	8.8	M 8×30	5/16×1 1/4	0.16	**FUS62**	420	420
3/4	19	32.5	42.0	8.3	19	28	60	72	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.35	**FUS63**	420	420
1	25	38.9	48.4	9.0	24	32	70	81	27.8	57.2	13.0	M12×45	–	0.53	**FUS64**	420	420
1	25	38.9	48.4	9.0	24	32	70	81	27.8	57.2	12.0	–	7/16×1 3/4	0.53	**FUS64/12**	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	96	31.8	66.6	15.0	M14×50	–	0.80	**FUS65**	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	96	31.8	66.6	13.5	M12×45	1/2×1 3/4	0.80	**FUS65/12**	420	420
1 1/2	38	51.6	64.3	12.1	30	42	96	113	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.35	**FUS66**	420	420
2	51	67.6	80.2	12.1	37	52	114	134	44.5	96.8	21.0	M20×65	3/4×2 3/4	2.10	**FUS68**	420	420
2 1/2	64	89.5	108.5	20.0	48	48	150	175	58.7	123.8	25.0	M24×75	–	4.10	**FUS610**	420	420
3	76	114.5	132.5	25.0	58	58	178	210	71.4	152.4	32.0	M30×90	–	8.60	**FUS612**	420	420

[1]) Pressure shown = Item deliverable

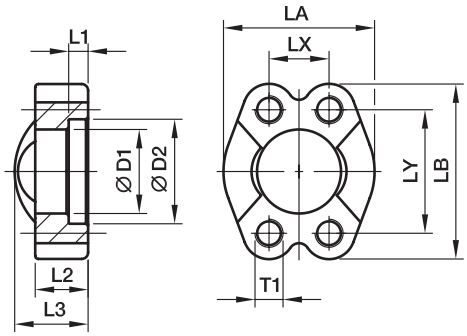
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	FUS32CF	only flange clamp
Steel, zinc yellow plated	A3C	FUS32A3CX	only flange clamp
Stainless steel	SS	FUS32SS	only flange clamp

FUSM SAE Flange clamps with metric tapped holes

ISO 6162-1/-2



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	T1	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] SS
1/2	13	24.3	31.0	6.2	13	20	46	54	17.5	38.1	**M 8**	0.15	**FUSM32**	345	345
3/4	19	32.1	38.9	6.2	14	22	52	65	22.3	47.6	**M10**	0.17	**FUSM33**	345	345
1	25	38.5	45.2	7.5	16	22	59	70	26.2	52.4	**M10**	0.22	**FUSM34**	345	345
1 1/4	32	43.7	51.6	7.5	14	22	73	80	30.2	58.7	**M10**	0.30	**FUSM35/10**	276	276
1 1/4	32	43.7	51.6	7.5	14	22	73	80	30.2	58.7	**M12**	0.29	**FUSM35/12**	276	276
1 1/2	38	50.8	61.1	7.5	16	24	83	94	35.8	69.9	**M12**	0.45	**FUSM36**	207	207
1 1/2	38	50.8	61.1	7.5	16	24	83	94	35.8	69.9	**M14**	0.44	**FUSM36/14**	207	207
2	51	62.7	72.2	9.0	16	26	97	102	42.8	77.8	**M12**	0.50	**FUSM38/12**	207	207
2	51	62.7	72.2	9.0	16	26	97	102	42.8	77.8	**M14**	0.49	**FUSM38**	207	207
2 1/2	64	74.9	84.9	9.0	19	38	109	115	50.8	88.9	**M12**	0.74	**FUSM310**	172	172
2 1/2	64	74.9	84.9	9.0	19	38	109	115	50.8	88.9	**M14**	0.73	**FUSM310/14**	172	172
3	76	90.9	102.4	9.0	22	40	131	135	61.9	106.4	**M16**	1.30	**FUSM312**	138	138
3 1/2	89	102.4	115.0	10.7	23	45	140	152	69.9	120.7	**M16**	1.50	**FUSM314**	34	34
4	102	115.1	127.8	10.7	25	48	150	160	77.8	130.2	**M16**	1.65	**FUSM316**	34	34
5	127	140.5	153.2	10.7	28	50	180	183	92.1	152.4	**M16**	2.50	**FUSM320**	34	34

6000 PSI Series

1/2	13	24.6	32.5	7.2	16	22	48	57	18.2	40.5	**M 8**	0.16	**FUSM62**	420	420
3/4	19	32.5	42.0	8.3	19	28	60	72	23.8	50.8	**M10**	0.35	**FUSM63**	420	420
1	25	38.9	48.4	9.0	24	32	70	81	27.8	57.2	**M12**	0.53	**FUSM64**	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	96	31.8	66.6	**M14**	0.80	**FUSM65**	420	420
1 1/2	38	51.6	64.3	12.1	30	42	96	113	36.5	79.3	**M16**	1.35	**FUSM66**	420	420
2	51	67.6	80.2	12.1	37	52	114	134	44.5	96.8	**M20**	2.10	**FUSM68**	420	420
2 1/2	64	89.5	108.5	20.0	48	48	150	175	58.7	123.8	**M24**	4.10	**FUSM610**	420	420
3	76	114.5	132.5	25.0	58	58	178	210	71.4	152.4	**M30**	8.60	**FUSM612**	420	420

[1]) Pressure shown = Item deliverable

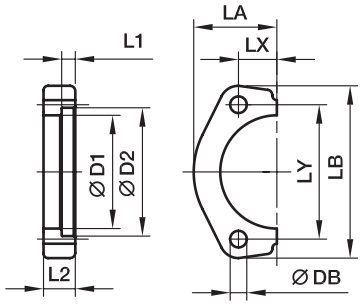
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange clamp with metr. threads	Description
Steel, zinc plated, chrome[6]-free	CF	FUSM32CFM	only flange clamp
Steel, zinc yellow plated	A3C	FUSM32A3CM	only flange clamp
Stainless steel	SS	FUSM32SSM	only flange clamp

FHSF SAE Flange halves flat

ISO 6162-1/-2



3000 PSI Series

Nom. flange size											Screws		Weight (steel)			PN (bar)[1])	
SAE (in)	ISO (DN)	D1	D2	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*		A3C	SS
1/2	13	24.3	31.0	6.2	13	24	56	8.7	38.1	8.8	M 8×25	5/16×1 1/4	0.06	**FHSF32**		345	345
3/4	19	32.1	38.9	6.2	14	27	66	11.1	47.6	10.5	M10×30	3/8×1 1/4	0.07	**FHSF33**		345	345
1	25	38.5	45.2	7.5	16	30	70	13.1	52.4	10.5	M10×30	3/8×1 1/4	0.10	**FHSF34**		345	345
1 1/4	32	43.7	51.6	7.5	16	35	79	15.1	58.7	10.5	M10×35	7/16×1 1/2	0.15	**FHSF35/10**		276	276
1 1/4	32	43.7	51.6	7.5	16	35	79	15.1	58.7	12.5	M12×35	–	0.14	**FHSF35/12**		276	276
1 1/2	38	50.8	61.1	7.5	16	39	94	17.9	69.9	13.5	M12×35	1/2×1 1/2	0.18	**FHSF36**		207	207
1 1/2	38	50.8	61.1	7.5	16	39	94	17.9	69.9	14.5	M14×35	–	0.17	**FHSF36/14**		207	207
2	51	62.7	72.2	9.0	16	49	104	21.4	77.8	13.5	M12×35	1/2×1 1/2	0.22	**FHSF38**		207	207
2	51	62.7	72.2	9.0	16	49	104	21.4	77.8	14.5	M14×35	–	0.21	**FHSF38/14**		207	207
2 1/2	64	74.9	84.9	9.0	20	55	114	25.4	88.9	13.5	M12×40	1/2×1 3/4	0.58	**FHSF310**		172	172
2 1/2	64	74.9	84.9	9.0	20	55	114	25.4	88.9	14.5	M14×40	–	0.57	**FHSF310/14**		172	172
3	76	90.9	102.4	9.0	22	66	135	31.0	106.4	17.0	M16×45	5/8×1 3/4	0.98	**FHSF312**		138	138

6000 PSI Series

1/2	13	24.6	32.5	7.2	18	24	56	9.1	40.5	8.8	M 8×30	5/16×1 1/4	0.08	**FHSF62**		420	420
3/4	19	32.5	42.0	8.3	21	30	70	11.9	50.8	10.5	M10×35	3/8×1 1/2	0.16	**FHSF63**		420	420
1	25	38.9	48.4	9.0	26	35	79	13.9	57.2	13.0	M12×45	–	0.25	**FHSF64**		420	420
1 1/4	32	44.5	54.8	9.8	29	39	94	15.9	66.6	15.0	M14×50	1/2×1 3/4	0.34	**FHSF65**		420	420
1 1/2	38	51.6	64.3	12.1	33	49	109	18.3	79.3	17.0	M16×55	5/8×2 1/4	0.55	**FHSF66**		420	420
2	51	67.6	80.2	12.1	42	57	133	22.2	96.8	21.0	M20×65	3/4×2 3/4	1.02	**FHSF68**		420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

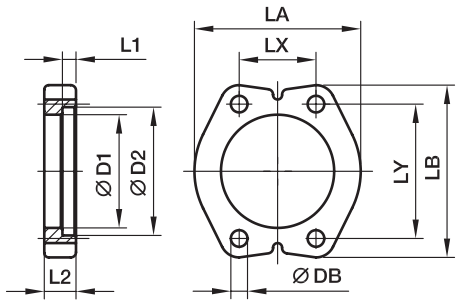
Material for steel: C60

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	FHSF32CF	only flange half
Steel, zinc yellow plated	A3C	FHSF32A3C	only flange half
Stainless steel	SS	FHSF32SS	only flange half

FUSF SAE Flange clamps flat

ISO 6162-1/-2



3000 PSI Series

Nom. flange size											Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	D1	D2	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	24.3	31.0	6.2	13	48	56	17.4	38.1	8.8	M 8×25	5/16×1 1/4	0.13	**FUSF32**	345	345
3/4	19	32.1	38.9	6.2	14	54	66	22.2	47.6	10.5	M10×30	3/8×1 1/4	0.15	**FUSF33**	345	345
1	25	38.5	45.2	7.5	16	60	70	26.2	52.4	10.5	M10×30	3/8×1 1/4	0.21	**FUSF34**	345	345
1 1/4	32	43.7	51.6	7.5	16	70	79	30.2	58.7	10.5	M10×35	7/16×1 1/2	0.31	**FUSF35/10**	276	276
1 1/4	32	43.7	51.6	7.5	16	70	79	30.2	58.7	12.5	M12×35	–	0.28	**FUSF35/12**	276	276
1 1/2	38	50.8	61.1	7.5	16	78	94	35.8	69.9	13.5	M12×35	1/2×1 1/2	0.35	**FUSF36**	207	207
1 1/2	38	50.8	61.1	7.5	16	78	94	35.8	69.9	14.5	M14×35	–	0.33	**FUSF36/14**	207	207
2	51	62.7	72.2	9.0	16	98	104	42.8	77.8	13.5	M12×35	1/2×1 1/2	0.43	**FUSF38/12**	207	207
2	51	62.7	72.2	9.0	16	98	104	42.8	77.8	14.5	M14×35	–	0.41	**FUSF38**	207	207
2 1/2	64	74.9	84.9	9.0	20	110	114	50.8	88.9	13.5	M12×40	1/2×1 3/4	1.15	**FUSF310**	172	172
2 1/2	64	74.9	84.9	9.0	20	110	114	50.8	88.9	14.5	M14×40	–	1.43	**FUSF310/14**	172	172
3	76	90.9	102.4	9.0	22	132	135	61.9	106.4	17.0	M16×45	5/8×1 3/4	1.95	**FUSF312**	138	138

6000 PSI Series

1/2	13	24.6	32.5	7.2	18	48	56	18.2	40.5	8.8	M 8×30	5/16×1 1/4	0.15	**FUSF62**	420	420
3/4	19	32.5	42.0	8.3	21	60	70	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.31	**FUSF63**	420	420
1	25	38.9	48.4	9.0	26	70	79	27.8	57.2	13.0	M12×45	–	0.49	**FUSF64**	420	420
1 1/4	32	44.5	54.8	9.8	29	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.67	**FUSF65**	420	420
1 1/2	38	51.6	64.3	12.1	33	98	109	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.08	**FUSF66**	420	420
2	51	67.6	80.2	12.1	42	114	133	44.5	96.8	21.0	M20×65	3/4×2 3/4	2.03	**FUSF68**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

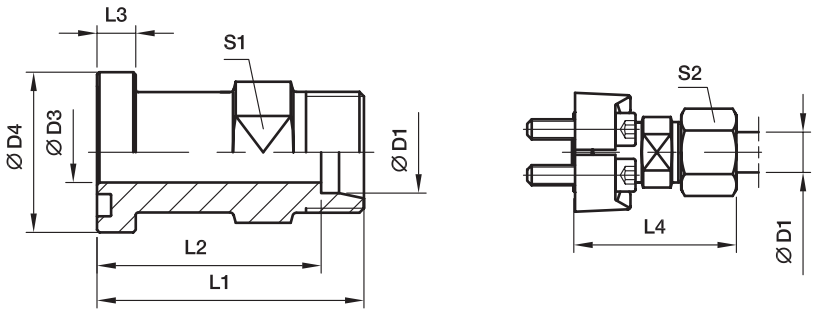
Material for steel: C60

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	FUSF32CF	only flange clamp
Steel, zinc yellow plated	A3C	FUSF32A3C	only flange clamp
Stainless steel	SS	FUSF32SS	only flange clamp

GFS SAE Straight flange adapter

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		D1[2])									Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)	kg/piece	Order code*	A3C	71
1/2	13	15L	12	30.2	48.0	41.0	6.7	56	24	27	M 8x25	5/16x1 1/4	0.36	**GFS32/15L**	315	315
1/2	13	16S	12	30.2	50.0	41.5	6.7	60	24	30	M 8x25	5/16x1 1/4	0.40	**GFS32/16S**	350	350
1/2	13	18L	12	30.2	50.0	42.5	6.7	61	19	32	M 8x25	5/16x1 1/4	0.42	**GFS32/18L**	315	315
3/4	19	16S	19	38.1	55.0	46.5	6.7	65	27	30	M10x30	3/8x1 1/4	0.52	**GFS33/16S**	350	350
3/4	19	18L	19	38.1	53.0	45.5	6.7	62	30	32	M10x30	3/8x1 1/4	0.59	**GFS33/18L**	315	315
3/4	19	22L	19	38.1	53.0	45.5	6.7	62	30	36	M10x30	3/8x1 1/4	0.59	**GFS33/22L**	160	160
3/4	19	28L	19	38.1	53.0	45.5	6.7	62	30	41	M10x30	3/8x1 1/4	0.60	**GFS33/28L**	160	160
3/4	19	20S	19	38.1	57.0	46.5	6.7	68	30	36	M10x30	3/8x1 1/4	0.65	**GFS33/20S**	350	350
3/4	19	25S	19	38.1	57.0	45.0	6.7	69	30	46	M10x30	3/8x1 1/4	0.78	**GFS33/25S**	350	350
1	25	20S	25	44.5	60.0	48.5	8.0	71	32	36	M10x30	3/8x1 1/4	0.70	**GFS34/20S**	350	350
1	25	28L	25	44.5	54.0	46.5	8.0	63	36	41	M10x30	3/8x1 1/4	0.73	**GFS34/28L**	160	160
1	25	25S	25	44.5	58.0	46.5	8.0	60	36	46	M10x30	3/8x1 1/4	0.84	**GFS34/25S**	350	350
1	25	30S	25	44.5	63.0	49.5	8.0	76	36	50	M10x30	3/8x1 1/4	0.94	**GFS34/30S**	250	250
1 1/4	32	35L	29	50.8	58.0	47.5	8.0	69	41	50	M10x35	–	0.96	**GFS35/35L/10[3])**	160	160
1 1/4	32	25S	29	50.8	60.0	48.0	8.0	72	41	46	M10x35	–	1.11	**GFS35/25S/10**	200	200
1 1/4	32	30S	29	50.8	62.0	48.5	8.0	75	41	50	M10x35	–	1.13	**GFS35/30S/10**	200	200
1 1/4	32	38S	29	50.8	66.0	50.0	8.0	81	46	60	M10x35	–	1.36	**GFS35/38S/10**	200	200
1 1/4	32	28L	29	50.8	58.0	50.5	8.0	67	36	41	M12x40	7/16x1 1/2	1.12	**GFS35/28L**	160	160
1 1/4	32	35L	29	50.8	58.0	47.5	8.0	69	41	50	M12x40	7/16x1 1/2	1.02	**GFS35/35L**	160	160
1 1/4	32	25S	29	50.8	60.0	48.0	8.0	72	41	46	M12x40	7/16x1 1/2	1.17	**GFS35/25S**	200	200
1 1/4	32	30S	29	50.8	62.0	48.5	8.0	75	41	50	M12x40	7/16x1 1/2	1.20	**GFS35/30S**	200	200
1 1/4	32	38S	29	50.8	66.0	50.0	8.0	81	46	60	M12x40	7/16x1 1/2	1.41	**GFS35/38S**	200	200
1 1/2	38	35L	36	60.3	65.0	54.5	8.0	76	46	50	M12x35	1/2x1 1/2	1.20	**GFS36/35L**	160	160
1 1/2	38	42L	36	60.3	64.0	53.0	8.0	76	46	60	M12x35	1/2x1 1/2	1.36	**GFS36/42L**	160	160
1 1/2	38	38S	36	60.3	70.0	54.0	8.0	85	46	60	M12x35	1/2x1 1/2	1.63	**GFS36/38S**	200	200

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings
or alternative sealing materials see page M11.

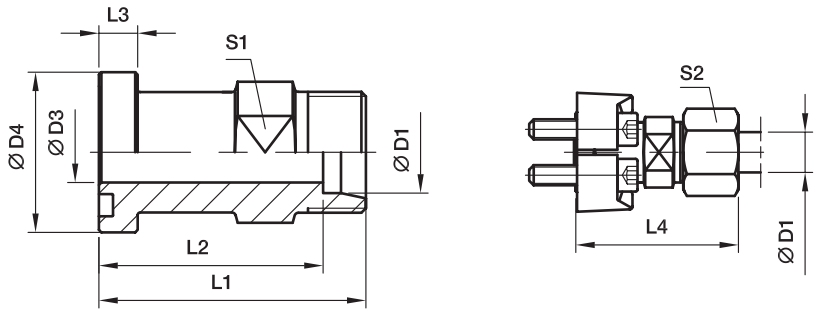
[3]) Order code for the flange adapter assembled with FHS35/10A3CX and M10X35 screws.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GFS32/16SCFX	GFS32/16SOMDCF	GFS32/16SOMDCFU	NBR
Steel, zinc yellow plated	A3C	GFS32/16SA3CX	GFS32/16SOMDA3C	GFS32/16SOMDA3CU	NBR
Stainless steel	71	GFS32/16S71X	GFS32/16SOMD71	GFS32/16SOMD71U	VIT

GFS SAE Straight flange adapter

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size		D1[2])									Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)	kg/piece	Order code*	A3C	71
1/2	13	12S	12	31.8	43.0	50.0	7.7	57	19	24	M 8x30	5/16x1 1/4	0.35	**GFS62/12S**	420	420
1/2	13	14S	12	31.8	43.5	50.0	7.7	59	19	27	M 8x30	5/16x1 1/4	0.39	**GFS62/14S**	420	420
1/2	13	16S	12	31.8	44.5	53.0	7.7	63	24	30	M 8x30	5/16x1 1/4	0.47	**GFS62/16S**	420	420
3/4	19	16S	17	41.3	50.5	59.0	8.7	69	30	30	M10x35	3/8x1 1/2	0.79	**GFS63/16S**	420	420
3/4	19	20S	17	41.3	50.5	61.0	8.7	72	30	36	M10x35	3/8x1 1/2	0.86	**GFS63/20S**	420	400
3/4	19	25S	17	41.3	51.0	63.0	8.7	75	30	46	M10x35	3/8x1 1/2	0.97	**GFS63/25S**	420	400
3/4	19	30S	17	41.3	62.0	76.0	8.7	90	30	50	M10x35	3/8x1 1/2	1.15	**GFS63/30S**	420	400
1	25	20S	24	47.6	63.0	75.0	9.5	88	36	36	M12x45	7/16x1 3/4	0.97	**GFS64/20S**	420	400
1	25	25S	24	47.6	60.0	72.0	9.5	84	36	46	M12x45	7/16x1 3/4	1.42	**GFS64/25S**	420	400
1	25	30S	24	47.6	62.0	74.0	9.5	87	36	50	M12x45	7/16x1 3/4	1.40	**GFS64/30S**	420	400
1 1/4	32	25S	30	54.0	68.0	80.0	10.2	90	41	46	M14x50	1/2x1 3/4	1.85	**GFS65/25S**	420	400
1 1/4	32	30S	30	54.0	65.5	79.0	10.2	92	41	50	M12x45	–	1.95	**GFS65/30S/12[3])**	420	400
1 1/4	32	38S	30	54.0	67.0	83.0	10.2	98	46	60	M12x45	–	2.16	**GFS65/38S/12**	315	315
1 1/4	32	30S	30	54.0	65.5	79.0	10.2	92	41	50	M14x50	1/2x1 3/4	1.90	**GFS65/30S**	420	400
1 1/4	32	38S	30	54.0	67.0	83.0	10.2	98	46	60	M14x50	1/2x1 3/4	2.10	**GFS65/38S**	315	315
1 1/2	38	30S	30	63.5	74.0	90.0	12.5	98	46	50	M16x55	5/8x2 1/4	2.10	**GFS66/30S**	420	400
1 1/2	38	38S	30	63.5	73.0	89.0	12.5	104	46	60	M16x55	5/8x2 1/4	3.06	**GFS66/38S**	315	315

[1]) Pressure shown = Item deliverable

[2]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings
or alternative sealing materials see page M11.

[3]) Order code for the flange adapter assembled with FHS65/12A3CX and M12X45 screws.

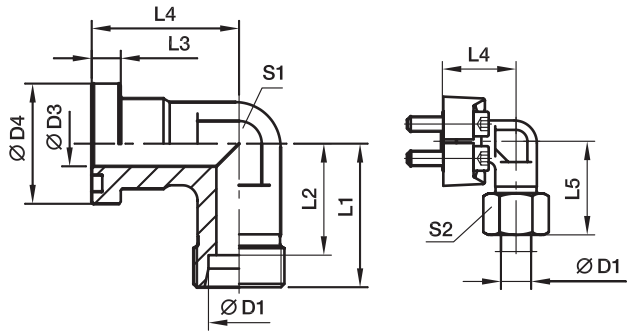
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*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GFS62/16SCFX	GFS62/16SOMDCF	GFS62/16SOMDCFU	NBR
Steel, zinc yellow plated	A3C	GFS62/16SA3CX	GFS62/16SOMDA3C	GFS62/16SOMDA3CU	NBR
Stainless steel	71	GFS62/16S71X	GFS62/16SOMD71	GFS62/16SOMD71U	VIT

WFS SAE 90° Elbow flange adapter

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		D1[2])										Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)	kg/piece	Order code*	A3C	71
1/2	13	12S	12	30.2	50	42.5	6.7	44	57	22	24	M 8x25	5/16x1 1/4	0.38	**WFS32/12S**	210	210
1/2	13	15L	12	30.2	36	29.0	6.7	36	44	24	27	M 8x25	5/16x1 1/4	0.40	**WFS32/15L**	315	315
1/2	13	16S	12	30.2	38	29.5	6.7	36	48	24	30	M 8x25	5/16x1 1/4	0.43	**WFS32/16S**	350	350
1/2	13	18L	12	30.2	50	42.5	6.7	44	59	22	32	M 8x25	5/16x1 1/4	0.44	**WFS32/18L**	315	315
3/4	19	16S	19	38.1	64	55.5	6.7	53	74	27	30	M10x30	3/8x1 1/4	0.60	**WFS33/16S**	350	350
3/4	19	18L	19	38.1	39	31.5	6.7	42	48	30	32	M10x30	3/8x1 1/4	0.66	**WFS33/18L**	315	315
3/4	19	22L	19	38.1	41	33.5	6.7	42	50	30	36	M10x30	3/8x1 1/4	0.66	**WFS33/22L**	160	160
3/4	19	20S	19	38.1	43	32.5	6.7	42	54	30	36	M10x30	3/8x1 1/4	0.76	**WFS33/20S**	350	350
3/4	19	25S	19	38.1	45	33.0	6.7	42	57	30	46	M10x30	3/8x1 1/4	0.89	**WFS33/25S**	350	350
1	25	20S	25	44.5	65	54.5	8.0	60	76	34	36	M10x30	3/8x1 1/4	0.78	**WFS34/20S**	350	350
1	25	22L	25	44.5	65	49.5	8.0	60	74	34	36	M10x30	3/8x1 1/4	0.81	**WFS34/22L**	160	160
1	25	28L	25	44.5	44	36.5	8.0	45	53	36	41	M10x30	3/8x1 1/4	0.85	**WFS34/28L**	160	160
1	25	25S	25	44.5	48	36.5	8.0	45	57	36	46	M10x30	3/8x1 1/4	0.95	**WFS34/25S**	350	350
1	25	30S	25	44.5	50	36.5	8.0	45	63	36	50	M10x30	3/8x1 1/4	1.06	**WFS34/30S**	250	250
1 1/4	32	35L	29	50.8	57	46.5	8.0	50	68	41	50	M10x35	3/8x1 1/4	1.15	**WFS35/35L/10[3])**	160	160
1 1/4	32	25S	29	50.8	55	43.0	8.0	60	67	41	46	M10x35	3/8x1 1/4	1.35	**WFS35/25S/10**	200	200
1 1/4	32	30S	29	50.8	57	43.5	8.0	50	70	41	50	M10x35	3/8x1 1/4	1.40	**WFS35/30S/10**	200	200
1 1/4	32	38S	29	50.8	59	43.0	8.0	50	74	46	60	M10x35	3/8x1 1/4	1.53	**WFS35/38S/10**	200	200
1 1/4	32	35L	29	50.8	57	46.5	8.0	50	68	41	50	M12x40	7/16x1 1/2	1.15	**WFS35/35L**	160	160
1 1/4	32	25S	29	50.8	55	43.0	8.0	60	67	41	46	M12x40	7/16x1 1/2	1.35	**WFS35/25S**	200	200
1 1/4	32	30S	29	50.8	57	43.5	8.0	50	70	41	50	M12x40	7/16x1 1/2	1.40	**WFS35/30S**	200	200
1 1/4	32	38S	29	50.8	59	43.0	8.0	50	74	46	60	M12x40	7/16x1 1/2	1.53	**WFS35/38S**	200	200
1 1/2	38	35L	36	60.3	78	67.5	8.0	66	83	50	50	M12x35	1/2x1 1/2	1.55	**WFS36/35L**	160	160
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70	46	60	M12x35	1/2x1 1/2	1.60	**WFS36/42L**	160	160
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79	46	60	M12x35	1/2x1 1/2	1.95	**WFS36/38S**	200	200

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings
or alternative sealing materials see page M11.

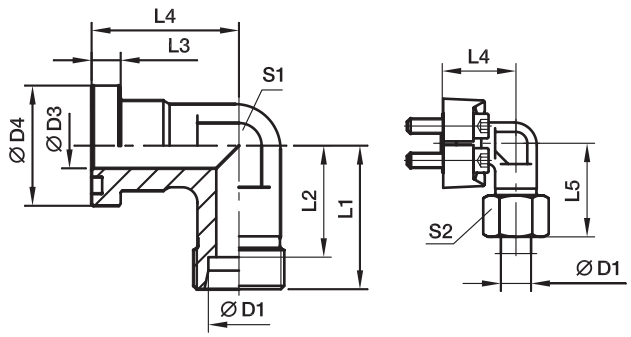
[3]) Order code for the elbow flange adapter assembled with FHS35/10A3CX and M10X35 screws.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WFS32/16SCFX	WFS32/16SOMDCF	WFS32/16SOMDCFU	NBR
Steel, zinc yellow plated	A3C	WFS32/16SA3CX	WFS32/16SOMDA3C	WFS32/16SOMDA3CU	NBR
Stainless steel	71	WFS32/16S71X	WFS32/16SOMD71	WFS32/16SOMD71U	VIT

WFS SAE 90° Elbow flange adapter

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size		D1[2])										Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)	kg/piece	Order code*	A3C	71
1/2	13	12S	12	31.8	50	43.0	7.7	44	57	22	24	M 8x30	5/16x1 1/4	0.37	**WFS62/12S**	420	420
1/2	13	14S	12	31.8	50	43.5	7.7	44	59	22	27	M 8x30	5/16x1 1/4	0.39	**WFS62/14S**	420	420
1/2	13	16S	12	31.8	38	29.5	7.7	39	48	24	30	M 8x30	5/16x1 1/4	0.49	**WFS62/16S**	420	420
3/4	19	16S	17	41.3	45	36.5	8.7	48	55	32	30	M10x35	3/8x1 1/2	0.92	**WFS63/16S**	420	420
3/4	19	20S	17	41.3	46	35.5	8.7	48	57	32	36	M10x35	3/8x1 1/2	0.97	**WFS63/20S**	420	400
3/4	19	25S	17	41.3	48	36.0	8.7	48	60	32	46	M10x35	3/8x1 1/2	1.19	**WFS63/25S**	420	400
1	25	20S	24	47.6	62	51.5	9.5	60	75	34	36	M12x45	7/16x1 3/4	1.69	**WFS64/20S**	420	400
1	25	25S	24	47.6	53	44.0	9.5	60	65	41	46	M12x45	7/16x1 3/4	1.67	**WFS64/25S**	420	400
1	25	30S	24	47.6	55	41.5	9.5	60	68	41	50	M12x45	7/16x1 3/4	1.63	**WFS64/30S**	420	400
1 1/4	32	25S	30	54.0	72	60.0	10.2	70	84	42	46	M12x45	7/16x1 1/2	2.23	**WFS65/25S/12**[3])	420	400
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71	46	50	M12x45	7/16x1 1/2	2.20	**WFS65/30S/12**	420	400
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76	46	60	M12x45	7/16x1 1/2	2.39	**WFS65/38S/12**	315	315
1 1/4	32	25S	30	54.0	72	60.0	10.2	70	84	42	46	M14x50	1/2x1 3/4	2.23	**WFS65/25S**	420	400
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71	46	50	M14x50	1/2x1 3/4	2.20	**WFS65/30S**	420	400
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76	46	60	M14x50	1/2x1 3/4	2.39	**WFS65/38S**	315	315
1 1/2	38	30S	30	63.5	76	63.5	12.5	77	90	50	50	M16x55	5/8x2 1/4	2.38	**WFS66/30S**	420	400
1 1/2	38	38S	30	63.5	72	56.0	12.5	76	87	50	60	M16x55	5/8x2 1/4	2.58	**WFS66/38S**	315	315

[1]) Pressure shown = Item deliverable

[2]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings
or alternative sealing materials see page M11.

[3]) Order code for the elbow flange adapter assembled with FHS65/12A3CX and M12X45 screws.

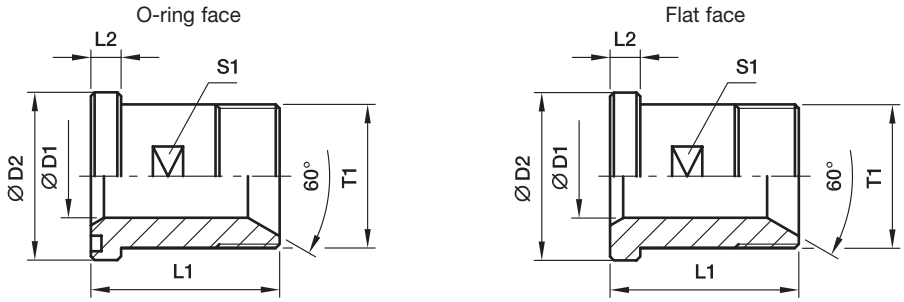
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*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WFS62/16SCFX	WFS62/16SOMDCF	WFS62/16SOMDCFU	NBR
Steel, zinc yellow plated	A3C	WFS62/16SA3CX	WFS62/16SOMDA3C	WFS62/16SOMDA3CU	NBR
Stainless steel	71	WFS62/16S71X	WFS62/16SOMD71	WFS62/16SOMD71U	VIT

GFS-G SAE Straight flange adapter

SAE Flange / BSPP 60° cone end
(ISO 6162-1/-2) (ISO 8434-6)



3000 PSI Series

Nom. flange size								Weight			PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	S1	(steel) kg/piece	O-ring face Order code*	Flat face Order code*	A3C	SS
1/2	13	**G1/2**	12	30.2	50	6.7	19	0.08	**GFS32/12G**	**GFSG32/12G**	345	345
1/2	13	**G3/8**	10	30.2	50	6.7	19	0.08	**GFS32/38G**	**GFSG32/38G**	345	345
3/4	19	**G3/4**	17	38.1	55	6.7	27	0.16	**GFS33/34G**	**GFSG33/34G**	345	345
3/4	19	**G1/2**	12	38.1	55	6.7	27	0.16	**GFS33/12G**	**GFSG33/12G**	345	345
1	25	**G1**	22	44.4	60	8.0	32	0.23	**GFS34/1G**	**GFSG34/1G**	345	345
1	25	**G3/4**	17	44.4	60	8.0	32	0.23	**GFS34/34G**	**GFSG34/34G**	345	345
1 1/4	32	**G1 1/4**	27	50.8	65	8.0	41	0.30	**GFS35/114G**	**GFSG35/114G**	276	276
1 1/4	32	**G1**	22	50.8	65	8.0	41	0.30	**GFS35/1G**	**GFSG35/1G**	276	276
1 1/2	38	**G1 1/2**	32	60.3	70	8.0	46	0.40	**GFS36/112G**	**GFSG36/112G**	207	207
1 1/2	38	**G1 1/4**	27	60.3	70	8.0	46	0.40	**GFS36/114G**	**GFSG36/114G**	207	207
2	51	**G2**	40	71.4	75	9.5	55	0.50	**GFS38/2G**	**GFSG38/2G**	207	207
2	51	**G1 1/2**	32	71.4	75	9.5	55	0.50	**GFS38/112G**	**GFSG38/112G**	207	207

6000 PSI Series

1/2	13	**G1/2**	12	31.8	50	7.7	19	0.09	**GFS62/12G**	**GFSG62/12G**	420	420
1/2	13	**G3/8**	10	31.8	50	7.7	19	0.09	**GFS62/38G**	**GFSG62/38G**	420	420
3/4	19	**G3/4**	17	41.3	60	8.7	26	0.15	**GFS63/34G**	**GFSG63/34G**	420	420
3/4	19	**G1/2**	12	41.3	60	8.7	26	0.15	**GFS63/12G**	**GFSG63/12G**	420	420
1	25	**G1**	22	47.6	70	9.5	32	0.23	**GFS64/1G**	**GFSG64/1G**	420	420
1	25	**G3/4**	17	47.6	70	9.5	32	0.23	**GFS64/34G**	**GFSG64/34G**	420	420
1 1/4	32	**G1 1/4**	27	54.0	75	10.3	36	0.30	**GFS65/114G**	**GFSG65/114G**	420	420
1 1/4	32	**G1**	22	54.0	75	10.3	36	0.30	**GFS65/1G**	**GFSG65/1G**	420	420
1 1/2	38	**G1 1/2**	32	63.5	80	12.5	46	0.50	**GFS66/112G**	**GFSG66/112G**	420	420
1 1/2	38	**G1 1/4**	27	63.5	80	12.5	46	0.50	**GFS66/114G**	**GFSG66/114G**	420	420
2	51	**G2**	40	79.4	90	12.5	55	0.80	**GFS68/2G**	**GFSG68/2G**	420	420
2	51	**G1 1/2**	32	79.4	90	12.5	55	0.80	**GFS68/112G**	**GFSG68/112G**	420	420

[1]) Pressure shown = Item deliverable

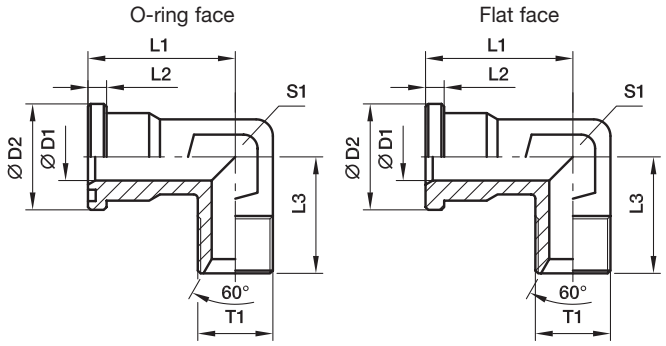
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GFS32/12GCF	GFS32/12GCFM	GFS32/12GCFU	NBR
Steel, zinc yellow plated	A3C	GFS32/12GA3C	GFS32/12GA3CM	GFS32/12GA3CU	NBR
Stainless steel	SS	GFS32/12GSS	GFS32/12GSSM	GFS32/12GSSU	VIT

WFS-G SAE 90° Elbow flange adapter

SAE Flange / BSPP 60° cone end
(ISO 6162-1/-2) (ISO 8434-6)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] A3C	PN (bar)[1] SS
1/2	13	**G1/2**	12	30.2	44	6.7	50	22	0.40	**WFS32/12G**	**WFSG32/12G**	345	345
1/2	13	**G3/8**	10	30.2	44	6.7	50	22	0.34	**WFS32/38G**	**WFSG32/38G**	345	345
3/4	19	**G1/2**	12	38.1	53	6.7	64	27	0.60	**WFS33/12G**	**WFSG33/12G**	345	345
3/4	19	**G3/4**	17	38.1	53	6.7	64	27	0.63	**WFS33/34G**	**WFSG33/34G**	345	345
3/4	19	**G1**	19	38.1	53	6.7	64	27	0.66	**WFS33/1G**	**WFSG33/1G**	345	345
1	25	**G3/4**	17	44.4	60	8.0	65	34	0.80	**WFS34/34G**	**WFSG34/34G**	345	345
1	25	**G1**	22	44.4	60	8.0	65	34	0.85	**WFS34/1G**	**WFSG34/1G**	345	345
1	25	**G1 1/4**	25	44.4	60	8.0	65	34	0.89	**WFS34/114G**	**WFSG34/114G**	345	345
1 1/4	32	**G1**	22	50.8	55	8.0	64	42	1.16	**WFS35/1G**	**WFSG35/1G**	276	276
1 1/4	32	**G1 1/4**	28	50.8	55	8.0	64	42	1.27	**WFS35/114G**	**WFSG35/114G**	276	276
1 1/2	38	**G1 1/4**	28	60.3	66	8.0	78	50	1.90	**WFS36/114G**	**WFSG36/114G**	207	207
1 1/2	38	**G1 1/2**	34	60.3	66	8.0	78	50	2.05	**WFS36/112G**	**WFSG36/112G**	207	207

6000 PSI Series

1/2	13	**G1/2**	12	31.8	44	7.7	50	22	0.45	**WFS62/12G**	**WFSG62/12G**	420	420
1/2	13	**G3/8**	10	31.8	44	7.7	50	22	0.37	**WFS62/34G**	**WFSG62/34G**	420	420
3/4	19	**G1/2**	14	41.3	53	8.7	64	27	0.88	**WFS63/12G**	**WFSG63/12G**	420	420
3/4	19	**G3/4**	17	41.3	53	8.7	64	27	0.97	**WFS63/34G**	**WFSG63/34G**	420	420
3/4	19	**G1**	19	41.3	53	8.7	64	27	1.02	**WFS63/1G**	**WFSG63/1G**	420	420
1	25	**G3/4**	17	47.6	60	9.5	62	34	1.46	**WFS64/34G**	**WFSG64/34G**	420	420
1	25	**G1**	22	47.6	60	9.5	62	34	1.57	**WFS64/1G**	**WFSG64/1G**	420	420
1	25	**G1 1/4**	25	47.6	60	9.5	62	34	1.70	**WFS64/114G**	**WFSG64/114G**	420	420
1 1/4	32	**G1**	22	54.0	70	10.3	72	42	2.20	**WFS65/1G**	**WFSG65/1G**	420	420
1 1/4	32	**G1 1/4**	27	54.0	70	10.3	72	42	2.30	**WFS65/114G**	**WFSG65/114G**	420	420
1 1/2	38	**G1 1/4**	27	63.5	80	12.5	84	50	3.08	**WFS66/114G**	**WFSG66/114G**	420	420
1 1/2	38	**G1 1/2**	32	63.5	80	12.5	84	50	3.45	**WFS66/112G**	**WFSG66/112G**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

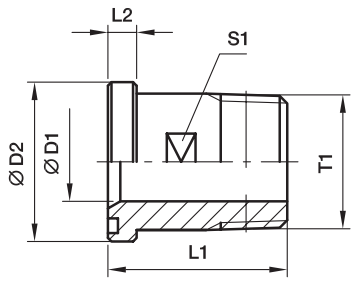
*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	WFS32/12GCF	WFS32/12GCFM	WFS32/12GCFU	NBR
Steel, zinc yellow plated	A3C	WFS32/12GA3C	WFS32/12GA3CM	WFS32/12GA3CU	NBR
Stainless steel	SS	WFS32/12GSS	WFS32/12GSSM	WFS32/12GSSU	VIT

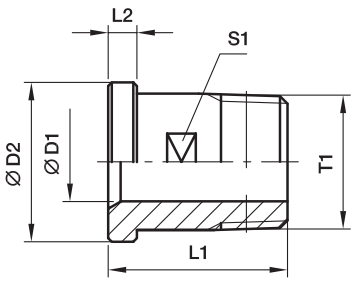
GFS-N SAE Flange adapters straight

SAE Flange / Male NPT thread
(ISO 6162-1/-2) (SAE J476)

O-ring face



Flat face



3000 PSI Series

Nom. flange size								Weight			PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	S1	(steel) kg/piece	O-ring face Order code*	Flat face Order code*	A3C	SS
1/2	13	**1/2NPT**	12	30.2	50	6.7	19	0.08	**GFS32/12N**	**GFSG32/12N**	345	345
1/2	13	**3/8NPT**	10	30.2	50	6.7	19	0.08	**GFS32/38N**	**GFSG32/38N**	345	345
3/4	19	**3/4NPT**	17	38.1	55	6.7	27	0.16	**GFS33/34N**	**GFSG33/34N**	345	345
3/4	19	**1/2NPT**	12	38.1	55	6.7	27	0.16	**GFS33/12N**	**GFSG33/12N**	345	345
1	25	**1NPT**	22	44.4	60	8.0	32	0.23	**GFS34/1N**	**GFSG34/1N**	345	345
1	25	**3/4NPT**	17	44.4	60	8.0	32	0.23	**GFS34/34N**	**GFSG34/34N**	345	345
1 1/4	32	**1 1/4NPT**	27	50.8	65	8.0	41	0.30	**GFS35/114N**	**GFSG35/114N**	276	276
1 1/4	32	**1NPT**	22	50.8	65	8.0	41	0.30	**GFS35/1N**	**GFSG35/1N**	276	276
1 1/2	38	**1 1/2NPT**	32	60.3	70	8.0	46	0.40	**GFS36/112N**	**GFSG36/112N**	207	207
1 1/2	38	**1 1/4NPT**	27	60.3	70	8.0	46	0.40	**GFS36/114N**	**GFSG36/114N**	207	207
2	51	**2NPT**	40	71.4	75	9.5	55	0.50	**GFS38/2N**	**GFSG38/2N**	207	207
2	51	**1 1/2NPT**	32	71.4	75	9.5	55	0.50	**GFS38/112N**	**GFSG38/112N**	207	207

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1/2	13	**1/2NPT**	12	31.8	50	7.7	19	0.09	**GFS62/12N**	**GFSG62/12N**	420	420
1/2	13	**3/8NPT**	10	31.8	50	7.7	19	0.09	**GFS62/38N**	**GFSG62/38N**	420	420
3/4	19	**3/4NPT**	17	41.3	60	8.7	26	0.15	**GFS63/34N**	**GFSG63/34N**	420	420
3/4	19	**1/2NPT**	12	41.3	60	8.7	26	0.15	**GFS63/12N**	**GFSG63/12N**	420	420
1	25	**1NPT**	22	47.6	70	9.5	32	0.23	**GFS64/1N**	**GFSG64/1N**	420	420
1	25	**3/4NPT**	17	47.6	70	9.5	32	0.23	**GFS64/34N**	**GFSG64/34N**	420	420
1 1/4	32	**1 1/4NPT**	27	54.0	75	10.3	36	0.30	**GFS65/114N**	**GFSG65/114N**	420	420
1 1/4	32	**1NPT**	22	54.0	75	10.3	36	0.30	**GFS65/1N**	**GFSG65/1N**	420	420
1 1/2	38	**1 1/2NPT**	32	63.5	80	12.5	46	0.50	**GFS66/112N**	**GFSG66/112N**	420	420
1 1/2	38	**1 1/4NPT**	27	63.5	80	12.5	46	0.50	**GFS66/114N**	**GFSG66/114N**	420	420
2	51	**2NPT**	40	79.4	90	12.5	55	0.80	**GFS68/2N**	**GFSG68/2N**	420	420
2	51	**1 1/2NPT**	32	79.4	90	12.5	55	0.80	**GFS68/112N**	**GFSG68/112N**	420	420

[1]) Pressure shown = Item deliverable

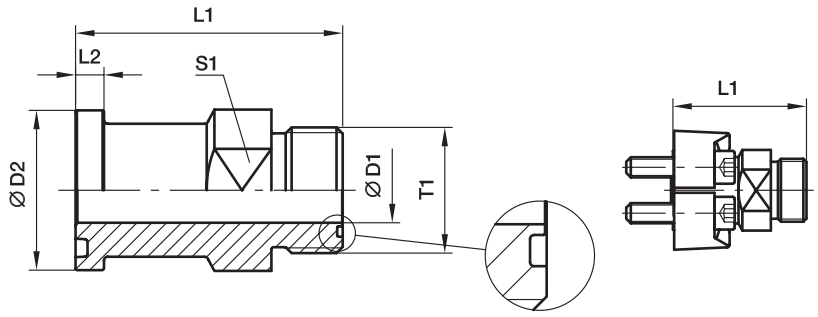
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GFS32/12NCF	GFS32/12NCFM	GFS32/12NCFU	NBR
Steel, zinc yellow plated	A3C	GFS32/12NA3C	GFS32/12NA3CM	GFS32/12NA3CU	NBR
Stainless steel	SS	GFS32/12NSS	GFS32/12NSSM	GFS32/12NSSU	VIT

L(O)HQ SAE Straight flange adapter

SAE Flange / O-Lok® ORFS end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube								O-ring face without ORFS O-ring	O-ring face include ORFS O-ring	PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	Weight (steel) kg/piece	Order code*	Order code*	S	SS
3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15.5	38.1	69.6	6.7	0.21	**12LHQ1**	**12LOHQ1**	350	350
1	25	22, 25	7/8, 1	**1 7/16-12UN-2A**	20.6	44.5	71.4	8.0	0.30	**16LHQ1**	**16LOHQ1**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26.0	50.8	81.5	8.0	0.31	**20LHQ1**	**20LOHQ1**	280	280
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32.0	60.3	83.6	8.0	0.56	**24LHQ1**	**24LOHQ1**	210	210

6000 PSI Series

3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15.5	41.3	76.7	8.8	0.21	**12LHQ2**	**12LOHQ2**	420	420
1	25	18, 20	3/4	**1 3/16-12UN-2A**	15.5	47.6	84.8	9.5	0.26	**12-16LHQ2**	**12-16LOHQ2**	420	420
1	25	22, 27	3/4, 7/8	**1 7/16-12UN-2A**	20.6	47.6	85.3	9.5	0.30	**16LHQ2**	**16LOHQ2**	420	420
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26.0	54.0	88.4	10.3	0.31	**20LHQ2**	**20LOHQ2**	345	345
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32.0	63.5	105.2	12.6	0.56	**24LHQ2**	**24LOHQ2**	310	310

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

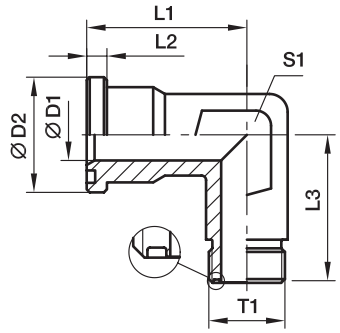
M

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	12LHQ1-CF	12LOHQ1-CF	NBR
Steel, zinc yellow plated	A3C	12LHQ1-S	12LOHQ1-S	NBR
Stainless steel	SS	12LHQ1-SS	12LOHQ1-SS	VIT

L(O)EMQ SAE 90° Elbow flange adapter

SAE Flange / O-Lok® ORFS end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube									Weight	O-ring face without ORFS O-ring	O-ring face include ORFS O-ring	PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	L3	S1	(steel) kg/piece	Order code*	Order code*	S	SS
1/2	13	8, 10	3/8	**11/16-16UN-2A**	6	30.2	44	6.7	50	22	0.40	**6-8LEMQ1**	**6-8LOEMQ1**	350	350
1/2	13	12	1/2	**13/16-16UN-2A**	9	30.2	44	6.7	50	22	0.36	**8LEMQ1**	**8LOEMQ1**	350	350
1/2	13	14, 15, 16	5/8	**1-14UN-2A**	12	30.2	44	6.7	50	22	0.32	**10-8LEMQ1**	**10-8LOEMQ1**	350	350
3/4	19	14, 15, 16	5/8	**1-14UN-2A**	12	38.1	53	6.7	64	27	0.47	**10-12LEMQ1**	**10-12LOEMQ1**	350	350
3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15	38.1	53	6.7	64	27	0.44	**12LEMQ1**	**12LOEMQ1**	350	350
1	25	18, 20	3/4	**1 3/16-12UN-2A**	15	44.4	60	8.0	65	34	0.52	**12-16LEMQ1**	**12-16LOEMQ1**	350	350
1	25	22, 25	7/8, 1	**1 7/16-12UN-2A**	20	44.4	60	8.0	65	34	0.50	**16LEMQ1**	**16LOEMQ1**	350	350
1 1/4	32	22, 25	7/8, 1	**1 7/16-12UN-2A**	20	50.8	55	8.0	64	42	0.48	**16-20LEMQ1**	**16-20LOEMQ1**	278	278
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26	50.8	55	8.0	64	42	0.56	**20LEMQ1**	**20LOEMQ1**	278	278
1 1/2	38	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26	60.3	66	8.0	78	50	0.73	**20-24LEMQ1**	**20-24LOEMQ1**	207	207
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32	60.3	66	8.0	78	50	0.69	**24LEMQ1**	**24LOEMQ1**	207	207

6000 PSI Series

1/2	13	8, 10	3/8	**11/16-16UN-2A**	6	31.8	44	7.7	50	22	0.40	**6-8LEMQ2**	**6-8LOEMQ2**	420	420
1/2	13	12	1/2	**13/16-16UN-2A**	9	31.8	44	7.7	50	22	0.36	**8LEMQ2**	**8LOEMQ2**	420	420
1/2	13	14, 15, 16	5/8	**1-14UN-2A**	12	31.8	44	7.7	50	22	0.32	**10-8LEMQ2**	**10-8LOEMQ2**	420	420
3/4	19	14, 15, 16	5/8	**1-14UN-2A**	12	41.3	53	8.7	64	27	0.47	**10-12LEMQ2**	**10-12LOEMQ2**	420	420
3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15	41.3	53	8.7	64	27	0.44	**12LEMQ2**	**12LOEMQ2**	420	420
1	25	18, 20	3/4	**1 3/16-12UN-2A**	15	47.6	60	9.5	62	34	0.52	**12-16LEMQ2**	**12-16LOEMQ2**	420	420
1	25	22, 25	7/8, 1	**1 7/16-12UN-2A**	20	47.6	60	9.5	62	34	0.50	**16LEMQ2**	**16LOEMQ2**	420	420
1 1/4	32	22, 25	7/8, 1	**1 7/16-12UN-2A**	20	54.0	70	10.3	72	42	0.48	**16-20LEMQ2**	**16-20LOEMQ2**	420	420
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26	54.0	70	10.3	72	42	0.56	**20LEMQ2**	**20LOEMQ2**	345	345
1 1/2	38	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26	63.5	80	12.5	84	50	0.73	**20-24LEMQ2**	**20-24LOEMQ2**	345	345
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32	63.5	80	12.5	84	50	0.69	**24LEMQ2**	**24LOEMQ2**	310	310

[1]) Pressure shown = Item deliverable

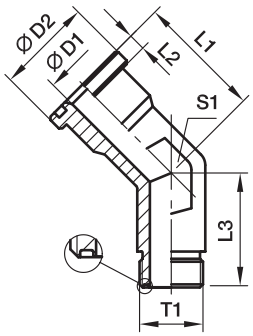
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	12LEMQ1CF	12LOEMQ1CF	NBR
Steel, zinc yellow plated	A3C	12LEMQ1A3C	12LOEMQ1A3C	NBR
Stainless steel	SS	12LEMQ1SS	12LOEMQ1SS	VIT

L(O)VQ SAE 45° Elbow flange adapter

SAE Flange / O-Lok® ORFS end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube											O-ring face without ORFS O-ring	O-ring face include ORFS O-ring	PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece		Order code*	Order code*	S	SS
3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15.5	38.1	40	6.7	26	30	0.29		**12LVQ1**	**12LOVQ1**	350	350
1	25	22, 25	7/8, 1	**1 7/16-12UN-2A**	20.5	44.5	47	8.0	30	36	0.39		**16LVQ1**	**16LOVQ1**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26.0	50.8	52	8.0	32	41	0.45		**20LVQ1**	**20LOVQ1**	280	280
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32.0	60.3	60	8.0	37	48	0.57		**24LVQ1**	**24LOVQ1**	210	210

6000 PSI Series

3/4	19	18, 20	3/4	**1 3/16-12UN-2A**	15.5	41.3	40	8.8	26	30	0.29		**12LVQ2**	**12LOVQ2**	420	420
1	25	22, 25	7/8, 1	**1 7/16-12UN-2A**	20.5	47.6	47	9.5	30	36	0.39		**16LVQ2**	**16LOVQ2**	420	420
1 1/4	32	28, 30, 32	1 1/4	**1 11/16-12UN-2A**	26.0	54.0	52	10.3	32	41	0.45		**20LVQ2**	**20LOVQ2**	345	345
1 1/2	38	35, 38	1 1/2	**2-12UN-2A**	32.0	63.5	60	12.6	37	48	0.57		**24LVQ2**	**24LOVQ2**	310	310

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

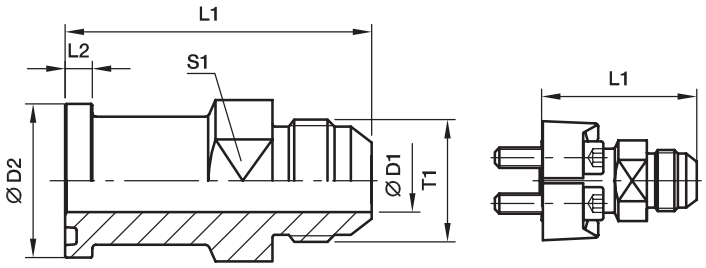
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*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	12LVQ1-CF	12LOVQ1-CF	NBR
Steel, zinc yellow plated	A3C	12LVQ1-S	12LOVQ1-S	NBR
Stainless steel	SS	12LVQ1-SS	12LOVQ1-SS	VIT

XHQ SAE Straight flange adapter

SAE Flange / Triple-Lok® 37° flare end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube									PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	Weight (steel) kg/piece	Order code*	S	SS
3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	15.5	38.1	70.4	6.7	0.21	**12XHQ1**	350	350
1	25	22, 25	7/8, 1	**1 5/16-12UN-2A**	21.5	44.5	73.9	8.0	0.30	**16XHQ1**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 5/8-12UN-2A**	27.5	50.8	85.3	8.0	0.31	**20XHQ1**	275	275
1 1/2	38	35, 38	1 1/2	**1 7/8-12UN-2A**	33.5	60.3	90.7	8.0	0.56	**24XHQ1**	210	210
2	51	50	2	**2 1/2-12UN-2A**	45.0	71.4	102.6	9.5	1.10	**32XHQ1**	210	210

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3/4	19	18. 20	3/4	**1 1/16-12UN-2A**	15.5	41.3	78.2	8.8	0.21	**12XHQ2**	350	350
1	25	22. 25	7/8, 1	**1 5/16-12UN-2A**	21.5	47.6	87.1	9.5	0.30	**16XHQ2**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 5/8-12UN-2A**	27.5	54.0	91.4	10.3	0.31	**20XHQ2**	275	275
1 1/2	38	35. 38	1 1/2	**1 7/8-12UN-2A**	33.5	63.5	110.2	12.6	0.56	**24XHQ2**	210	210

[1]) Pressure shown = Item deliverable

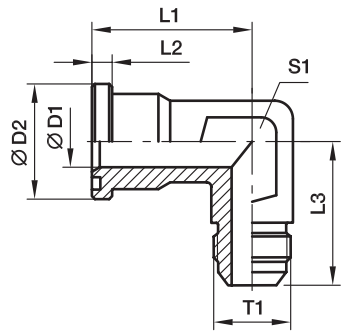
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	12XHQ1-CF	NBR
Steel, zinc yellow plated	A3C	12XHQ1-S	NBR
Stainless steel	SS	12XHQ1-SS	VIT

XEMQ SAE 90° Elbow flange adapter

SAE Flange / Triple-Lok® 37° flare end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube									Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	L3	S1	kg/piece	Order code*	S	SS
1/2	13	12	1/2	**3/4-16UNF-2A**	10	30.2	44	6.7	50	22	0.20	**8XEMQ1**	350	350
1/2	13	14, 15, 16	5/8	**7/8-14UNF-2A**	12	30.2	44	6.7	50	22	0.20	**10-8XEMQ1**	350	350
3/4	19	14, 15, 16	5/8	**7/8-14UNF-2A**	19	38.1	53	6.7	64	27	0.29	**10-12XEMQ1**	350	350
3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	19	38.1	53	6.7	64	27	0.29	**12XEMQ1**	350	350
3/4	19	25	1	**1 5/16-12UN-2A**	19	38.1	53	6.7	64	27	0.29	**16-12XEMQ1**	350	350
1	25	18, 20	3/4	**1 1/16-12UN-2A**	22	44.4	60	8.0	65	34	0.39	**12-16XEMQ1**	350	350
1	25	25	1	**1 5/16-12UN-2A**	22	44.4	60	8.0	65	34	0.39	**16XEMQ1**	350	350
1	25	30, 32	1 1/4	**1 5/8-12UN-2A**	22	44.4	60	8.0	65	34	0.39	**20-16XEMQ1**	275	275
1 1/4	32	25	1	**1 5/16-12UN-2A**	28	50.8	55	8.0	64	42	0.45	**16-20XEMQ1**	275	275
1 1/4	32	30, 32	1 1/4	**1 5/8-12UN-2A**	28	50.8	55	8.0	64	42	0.45	**20XEMQ1**	275	275
1 1/2	38	30, 32	1 1/4	**1 5/8-12UN-2A**	35	60.3	66	8.0	78	50	0.57	**20-24XEMQ1**	210	210
1 1/2	38	38	1 1/2	**1 7/8-12UN-2A**	35	60.3	66	8.0	78	50	0.57	**24XEMQ1**	210	210

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1/2	13	12	1/2	**3/4-16UNF-2A**	12	31.8	44	7.7	50	22	0.20	**8XEMQ2**	350	350
1/2	13	14, 15, 16	5/8	**7/8-14UNF-2A**	12	31.8	44	7.7	50	22	0.20	**10-8XEMQ2**	350	350
3/4	19	14, 15, 16	5/8	**7/8-14UNF-2A**	18	41.3	53	8.7	64	27	0.29	**10-12XEMQ2**	350	350
3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	18	41.3	53	8.7	64	27	0.29	**12XEMQ2**	350	350
3/4	19	25	1	**1 5/16-12UN-2A**	18	41.3	53	8.7	64	27	0.29	**16-12XEMQ2**	350	350
1	25	18, 20	3/4	**1 1/16-12UN-2A**	22	47.6	60	9.5	62	34	0.39	**12-16XEMQ2**	350	350
1	25	25	1	**1 5/16-12UN-2A**	22	47.6	60	9.5	62	34	0.39	**16XEMQ2**	350	350
1	25	30, 32	1 1/4	**1 5/8-12UN-2A**	22	47.6	60	9.5	62	34	0.39	**20-16XEMQ2**	275	275
1 1/4	32	25	1	**1 5/16-12UN-2A**	27	54.0	70	10.3	70	42	0.45	**16-20XEMQ2**	350	350
1 1/4	32	30, 32	1 1/4	**1 5/8-12UN-2A**	27	54.0	70	10.3	72	42	0.45	**20XEMQ2**	275	275
1 1/2	38	30, 32	1 1/4	**1 5/8-12UN-2A**	32	63.5	80	12.5	87	50	0.57	**20-24XEMQ2**	275	275
1 1/2	38	38	1 1/2	**1 7/8-12UN-2A**	32	63.5	80	12.5	87	50	0.57	**24XEMQ2**	210	210

[1]) Pressure shown = Item deliverable

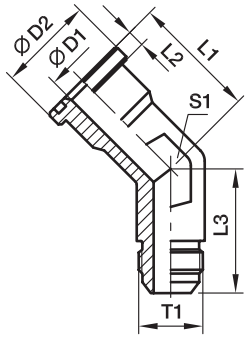
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	8XEMQ1CF	NBR
Steel, zinc yellow plated	A3C	8XEMQ1A3C	NBR
Stainless steel	SS	8XEMQ1SS	VIT

XVQ SAE 45° Elbow flange adapter

SAE Flange / Triple-Lok® 37° flare end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		Tube											PN (bar)[1]	
SAE (in)	ISO (DN)	(metr.)	(in)	T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	Order code*	S	SS
3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	15.5	38.1	40.1	6.7	32.5	1 1/16	0.29	**12XVQ1**	350	350
1	25	22, 25	7/8, 1	**1 5/16-12UN-2A**	21.4	44.5	47.0	8.0	37.3	1 5/16	0.39	**16XVQ1**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 5/8-12UN-2A**	27.4	50.8	51.8	8.0	40.4	1 5/8	0.45	**20XVQ1**	275	275
1 1/2	38	35, 38	1 1/2	**1 7/8-12UN-2A**	33.3	60.3	60.5	8.0	45.2	1 7/8	0.57	**24XVQ1**	210	210
2	51	50	2	**2 1/2-12UN-2A**	45.2	71.4	76.2	9.5	56.4	2 1/2	1.15	**32XVQ1**	210	210

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3/4	19	18, 20	3/4	**1 1/16-12UN-2A**	15.5	41.3	40.1	8.8	32.5	1 1/16	0.42	**12XVQ2**	350	350
1	25	22, 25	7/8, 1	**1 5/16-12UN-2A**	21.4	47.6	47.0	9.5	37.3	1 5/16	0.52	**16XVQ2**	350	350
1 1/4	32	28, 30, 32	1 1/4	**1 5/8-12UN-2A**	27.4	54.0	51.8	10.3	40.4	1 5/8	0.56	**20XVQ2**	275	275
1 1/2	38	35, 38	1 1/2	**1 7/8-12UN-2A**	33.3	63.5	60.5	12.6	45.2	1 7/8	0.69	**24XVQ2**	210	210

[1]) Pressure shown = Item deliverable

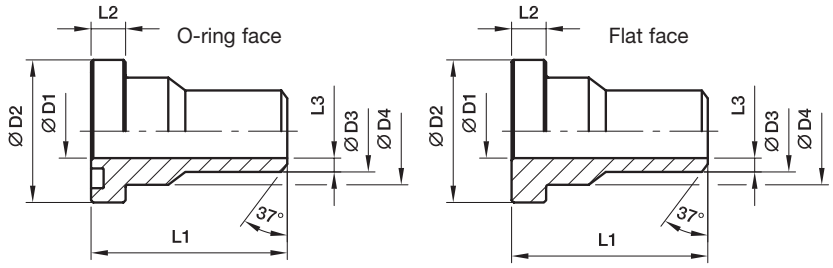
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	12XVQ1-CF	NBR
Steel, zinc yellow plated	A3C	12XVQ1-S	NBR
Stainless steel	SS	12XVQ1-SS	VIT

ASR SAE Straight flange adapter

SAE Flange / Butt weld reducer tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	18×4.5	10	30.2	18.0	24.0	45	6.7	4.0	0.30	**ASR32/18X4.5**	**ASRG32/18X4.5**	345	345
3/4	19	22×4.5	13	38.1	22.0	31.5	50	6.7	4.5	0.40	**ASR33/22X4.5**	**ASRG33/22X4.5**	345	345
1	25	28×4.5	19	44.4	28.0	38.0	55	8.0	4.5	0.49	**ASR34/28X4.5**	**ASRG34/28X4.5**	345	345
1 1/4	32	35×5	25	50.8	35.0	43.0	60	8.0	5.0	0.75	**ASR35/35X5**	**ASRG35/35X5**	276	276
1 1/2	38	43×6	31	60.3	43.0	50.0	65	8.0	6.0	1.01	**ASR36/43X6**	**ASRG36/43X6**	207	207
2	51	50×6	38	71.4	50.0	62.0	70	9.5	6.0	1.15	**ASR38/50X6**	**ASRG38/50X6**	207	207
2 1/2	64	62×7.5	47	84.1	62.0	74.0	75	9.5	7.5	1.40	**ASR310/62X7.5**	**ASRG310/62X7.5**	172	172
3	76	76×9	58	101.6	76.0	90.0	85	9.5	9.0	1.76	**ASR312/76X9**	**ASRG312/76X9**	138	138
3 1/2	89	90×10	70	114.3	90.0	102.0	90	11.2	10.0	2.15	**ASR314/90X10**	**ASRG314/90X10**	34	34
4	102	102×7	88	127.0	102.0	114.0	100	11.2	7.0	2.35	**ASR316/102X7**	**ASRG316/102X7**	34	34

6000 PSI Series

1/2	13	18×4	10	31.8	18.0	24.0	45	7.7	4.0	0.40	**ASR62/18X4**	**ASRG62/18X4**	420	420
3/4	19	22×4.5	13	41.3	22.0	32.0	50	8.7	4.5	0.50	**ASR63/22X4.5**	**ASRG63/22X4.5**	420	420
1	25	28×5	18	47.6	28.0	38.0	55	9.5	5.0	0.90	**ASR64/28X5**	**ASRG64/28X5**	420	420
1 1/4	32	35×6.5	22	54.0	35.0	44.0	60	10.3	6.5	1.35	**ASR65/35X6.5**	**ASRG65/35X6.5**	420	420
1 1/2	38	44×7.5	29	63.5	44.0	51.0	65	12.5	7.5	2.65	**ASR66/44X7.5**	**ASRG66/44X7.5**	420	420
2	51	51×8	35	79.4	51.0	67.0	70	12.5	8.0	3.90	**ASR68/51X8**	**ASRG68/51X8**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

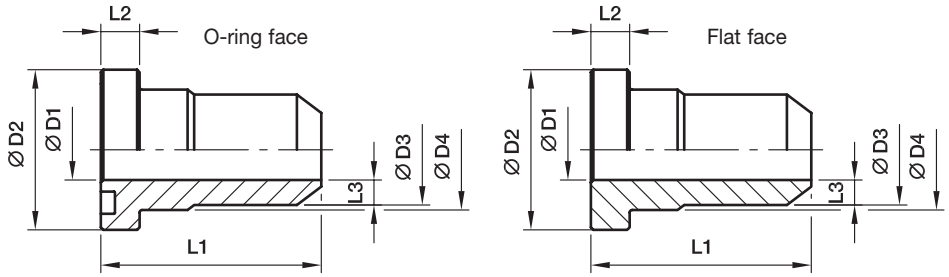
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ASR32/18X4.5S	ASR32/18X4.5SM	ASR32/18X4.5SU	NBR
Stainless steel	SS	ASR32/18X4.5SS	ASR32/18X4.5SSM	ASR32/18X4.5SSU	VIT

AS SAE Straight flange adapter

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	15×2	11	30.2	23.9	23.9	38	6.7	6.5	0.26	**AS32/15X2**	**ASG32/15X2**	345	345
1/2	13	16×3	10	30.2	23.9	23.9	38	6.7	7.0	0.27	**AS32/16X3**	**ASG32/16X3**	345	345
1/2	13	21.3×2.6	13	30.2	22.0	24.0	45	6.7	4.5	0.29	**AS32/21.3X2.6**	**ASG32/21.3X2.6**	345	345
3/4	19	18×1.5	15	38.1	31.8	31.8	50	8.0	8.4	0.51	**AS33/18X1.5**	**ASG33/18X1.5**	345	345
3/4	19	22×2	18	38.1	31.8	31.8	50	8.0	6.9	0.49	**AS33/22X2**	**ASG33/22X2**	345	345
3/4	19	20×3	14	38.1	31.8	31.8	50	8.0	8.9	0.52	**AS33/20X3**	**ASG33/20X3**	345	345
3/4	19	25×4	17	38.1	31.8	31.8	50	8.0	7.4	0.49	**AS33/25X4**	**ASG33/25X4**	345	345
3/4	19	26.9×2.6	19	38.1	28.0	31.5	50	6.7	4.5	0.51	**AS33/26.9X2.6**	**ASG33/26.9X2.6**	345	345
1	25	28×2	24	44.5	38.0	38.0	50	8.0	7.0	0.59	**AS34/28X2**	**ASG34/28X2**	345	345
1	25	30×4.5	21	44.5	38.0	38.0	50	8.0	8.5	0.62	**AS34/30X4.5**	**ASG34/30X4.5**	345	345
1	25	33.7×4	25	44.4	35.0	38.0	55	8.0	5.0	0.70	**AS34/33.7X4**	**ASG34/33.7X4**	345	345
1 1/4	32	35×2	31	50.8	43.0	43.0	55	8.0	6.0	0.75	**AS35/35X2**	**ASG35/35X2**	276	276
1 1/4	32	25×3	19	50.8	43.0	43.0	55	8.0	12.0	0.89	**AS35/25X3**	**ASG35/25X3**	276	276
1 1/4	32	30×4	22	50.8	43.0	43.0	55	8.0	10.5	0.88	**AS35/30X4**	**ASG35/30X4**	276	276
1 1/4	32	38×5	28	50.8	43.0	43.0	55	8.0	7.5	0.81	**AS35/38X5**	**ASG35/38X5**	276	276
1 1/4	32	42.4×5.0	31	50.8	43.0	43.0	60	8.0	6.0	0.92	**AS35/42.4X5**	**ASG35/42.4X5**	276	276
1 1/2	38	42×3	36	60.3	50.0	50.0	57	8.0	7.0	1.03	**AS36/42X3**	**ASG36/42X3**	207	207
1 1/2	38	38×4	30	60.3	50.0	50.0	57	8.0	10.0	1.17	**AS36/38X4**	**ASG36/38X4**	207	207
1 1/2	38	48.3×5.0	38	60.3	50.0	50.0	65	8.0	6.0	1.21	**AS36/48.3X5**	**ASG36/48.3X5**	207	207
2	51	50×6	38	71.4	62.0	62.0	62	9.5	12.0	1.49	**AS38/50X6**	**ASG38/50X6**	207	207
2	51	65×8	49	71.4	65.0	65.0	62	9.5	8.0	1.38	**AS38/65X8**	**ASG38/65X8**	207	207
2	51	60.3×6.3	47	71.4	62.0	62.0	70	9.5	7.5	1.25	**AS38/62X7.5**	**ASG38/62X7.5**	207	207
2 1/2	64	76.1×5.5	63	84.1	74.0	74.0	75	9.5	5.5	1.50	**AS310/74X5.5**	**ASG310/74X5.5**	172	172
3	76	88.9×10	70	101.6	90.0	90.0	85	9.5	10.0	2.11	**AS312/90X10**	**ASG312/90X10**	138	138
3 1/2	89	101.6×7.0	88	114.3	102.0	102.0	90	11.2	7.0	2.51	**AS314/102X7**	**ASG314/102X7**	34	34
4	102	115×8.5	98	127.0	115.0	114.0	100	11.2	8.5	2.75	**AS316/115X8.5**	**ASG316/115X8.5**	34	34
5	127	139.7×10	120	152.4	140.0	140.0	100	11.2	10.0	3.41	**AS320/140X10**	**ASG320/140X10**	34	34

[1]) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

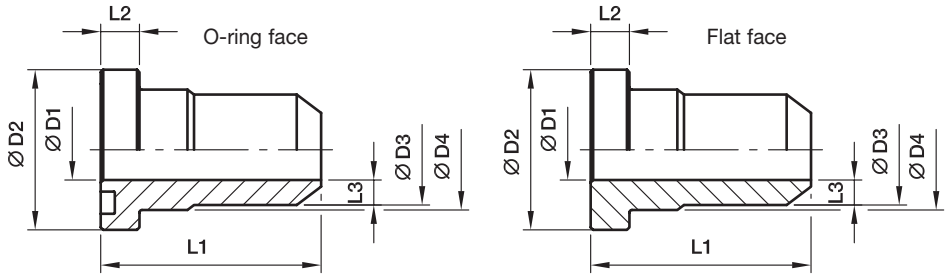
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	AS32/15X2S	AS32/15X2SM	AS32/15X2SU	NBR
Stainless steel	SS	AS32/15X2SS	AS32/15X2SSM	AS32/15X2SSU	VIT

AS SAE Straight flange adapter

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	16×3	10	31.8	23.9	23.9	41	7.7	7.0	0.36	**AS62/16X3**	**ASG62/16X3**	420	420
1/2	13	21.3×3.2	13	31.8	22.0	24.0	45	7.7	4.5	0.45	**AS62/21.3X3.2**	**ASG62/21.3X3.2**	420	420
3/4	19	16×3	10	41.3	31.8	31.8	55	8.7	10.9	0.85	**AS63/16X3**	**ASG63/16X3**	420	420
3/4	19	20×4	12	41.3	31.8	31.8	55	8.7	9.9	0.79	**AS63/20X4**	**ASG63/20X4**	420	420
3/4	19	26.9×4	18	41.3	28.0	32.0	50	8.7	5.0	0.74	**AS63/26.9X4**	**ASG63/26.9X4**	420	420
3/4	19	25×5	15	41.3	31.8	31.8	55	8.7	8.4	0.75	**AS63/25X5**	**ASG63/25X5**	420	420
1	25	25×5	15	47.3	38.0	38.0	67	9.5	11.5	1.20	**AS64/25X5**	**ASG64/25X5**	420	420
1	25	30×4	22	47.3	38.0	38.0	67	9.5	8.0	1.10	**AS64/30X4**	**ASG64/30X4**	420	420
1	25	30×6	18	47.3	38.0	38.0	67	9.5	10.0	1.15	**AS64/30X6**	**ASG64/30X6**	420	420
1	25	33.7×6.3	22	47.6	35.0	38.0	55	9.5	6.5	1.21	**AS64/33.7X6.3**	**ASG64/33.7X6.3**	420	420
1 1/4	32	30×4	22	54.0	43.7	43.7	78	10.2	10.8	1.82	**AS65/30X4**	**ASG65/30X4**	420	420
1 1/4	32	30×6	18	54.0	43.7	43.7	78	10.2	12.8	1.92	**AS65/30X6**	**ASG65/30X6**	420	420
1 1/4	32	38×5	28	54.0	43.7	43.7	78	10.2	7.8	1.70	**AS65/38X5**	**ASG65/38X5**	420	420
1 1/4	32	38×8	22	54.0	43.7	43.7	78	10.2	10.8	1.72	**AS65/38X8**	**ASG65/38X8**	420	420
1 1/4	32	42.4×6.3	29	54.0	44.0	44.0	60	10.3	7.5	1.85	**AS65/42.4X6.3**	**ASG65/42.4X6.3**	420	420
1 1/2	38	38×5	28	63.5	50.8	50.8	85	12.5	11.4	2.71	**AS66/38X5**	**ASG66/38X5**	420	420
1 1/2	38	38×8	22	63.5	50.8	50.8	85	12.5	14.4	2.85	**AS66/38X8**	**ASG66/38X8**	420	420
1 1/2	38	48.3×8	35	63.5	51.0	51.0	65	12.5	8.0	2.90	**AS66/48.3X8**	**ASG66/48.3X8**	420	420
2	51	50×9	32	79.4	66.6	66.6	116	12.5	17.3	5.01	**AS68/50X9**	**ASG68/50X9**	420	420
2	51	65×8	49	79.4	66.6	66.6	116	12.5	8.8	4.37	**AS68/65X8**	**ASG68/65X8**	420	420
2	51	60.3×10	43	79.4	61.0	67.0	70	12.5	9.0	4.52	**AS68/60.3X10**	**ASG68/60.3X10**	420	420
2 1/2	64	73×14	45	107.8	74.0	88.9	90	20.6	14.5	6.41	**AS610/73X14**	**ASG610/73X14**	420	420
3	76	88.6×16	58	131.7	90.0	113.8	110	25.6	16.0	9.31	**AS612/88.6X16**	**ASG612/88.6X16**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

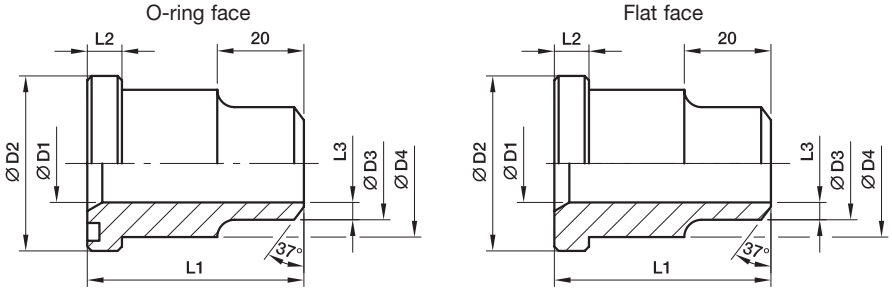
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	AS62/16X3S	AS62/16X3SM	AS62/16X3SU	NBR
Stainless steel	SS	AS62/16X3SS	AS62/16X3SSM	AS62/16X3SSU	VIT

ASL SAE Straight flange adapter

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	ISO (DN)	Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	SS
1/2	13	16×2	12	30.2	17	23.9	41	6.7	2.5	0.26	**ASL32/16X2**	**ASLG32/16X2**	210	210
3/4	19	25×3	19	38.1	25	31.7	50	6.7	3.0	0.45	**ASL33/25X3**	**ASLG33/25X3**	210	210
1	25	30×4	22	44.4	30	38.0	50	8.0	4.0	0.59	**ASL34/30X4**	**ASLG34/30X4**	210	210
1 1/4	32	38×5	28	50.8	38	43.0	55	8.0	5.0	0.82	**ASL35/38X5**	**ASLG35/38X5**	210	210
1 1/2	38	45×5	35	60.3	45	50.0	57	8.0	5.0	1.10	**ASL36/45X5**	**ASLG36/45X5**	210	210
2	51	60×7	45	71.4	60	62.0	57	9.5	7.5	1.35	**ASL38/60X7**	**ASLG38/60X7**	210	210
2 1/2	64	70×7.5	55	84.1	70	74.0	58	9.5	7.5	1.52	**ASL310/70X7.5**	**ASLG310/70X7.5**	175	175
3	76	80×6	68	101.6	80	90.0	60	9.5	6.0	2.13	**ASL312/80X6**	**ASLG312/80X6**	138	138
3 1/2	89	100×6	88	114.3	100	102.0	60	11.2	6.0	2.41	**ASL314/100X6**	**ASLG314/100X6**	35	35
4	102	110×6	98	127.0	110	114.0	60	11.2	6.0	2.52	**ASL316/110X6**	**ASLG316/110X6**	35	35
5	127	133×6.5	120	152.4	133	140.0	60	11.2	6.5	3.12	**ASL320/133X6.5**	**ASLG320/133X6.5**	35	35

6000 PSI Series

1/2	13	16×2	12	31.8	16	24.0	34	7.7	2.0	0.32	**ASL62/16X2**	**ASLG62/16X2**	420	420
3/4	19	25×3.5	18	41.3	25	32.0	38	8.7	3.5	0.70	**ASL63/25X3.5**	**ASLG63/25X3.5**	420	420
1	25	30×4	22	47.6	30	38.5	40	9.5	4.0	1.10	**ASL64/30X4**	**ASLG64/30X4**	420	420
1 1/4	32	38×5.5	27	54.0	38	44.0	45	10.3	5.5	1.70	**ASL65/38X5.5**	**ASLG65/38X5.5**	420	420
1 1/2	38	45×6.5	32	63.5	45	51.0	50	12.5	6.5	2.85	**ASL66/45X6.5**	**ASLG66/45X6.5**	420	420
2	51	60×7.5	45	79.4	60	67.0	58	12.5	7.5	4.60	**ASL68/60X7.5**	**ASLG68/60X7.5**	420	420
2 1/2	64	74×14.5	45	107.8	74	88.9	90	20.6	14.5	6.50	**ASL610/74X14.5**	**ASLG610/74X14.5**	420	420
3	76	90×16	58	131.7	90	113.8	110	25.6	16.0	9.62	**ASL612/90X16**	**ASLG612/90X16**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

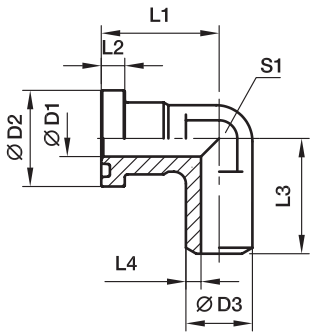
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ASL32/16X2S	ASL32/16X2SM	ASL32/16X2SU	NBR
Stainless steel	SS	ASL32/16X2SS	ASL32/16X2SSM	ASL32/16X2SSU	VIT

WAS SAE 90° Elbow flange adapter

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	D3	L1	L2	L3	L4	S1	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	30.2	21.6	44	6.7	50	4.3	22	0.38	**WAS32/21.6**	345	345
3/4	19	26.9	19	38.1	27.2	53	6.7	64	4.1	27	0.64	**WAS33/27.2**	345	345
1	25	33.7	25	44.4	34.5	60	8.0	65	4.7	34	1.13	**WAS34/34.5**	345	345
1 1/4	32	42.4	30	50.8	42.8	55	8.0	64	6.4	42	1.27	**WAS35/42.8**	276	276
1 1/2	38	48.3	38	60.3	48.6	66	8.0	78	5.3	50	2.04	**WAS36/48.6**	207	207

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1/2	13	21.3	13	31.8	21.6	44	7.7	50	4.3	22	0.48	**WAS62/21.6**	420	420
3/4	19	26.9	18	41.3	27.2	53	8.7	64	4.6	27	0.96	**WAS63/27.2**	420	420
1	25	33.7	22	47.6	34.5	60	9.5	62	6.3	34	1.42	**WAS64/34.5**	420	420
1 1/4	32	42.4	28	54.0	42.8	70	10.3	72	7.4	42	2.45	**WAS65/42.8**	420	420
1 1/2	38	48.3	32	63.5	48.6	80	12.5	84	8.3	50	3.25	**WAS66/48.6**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

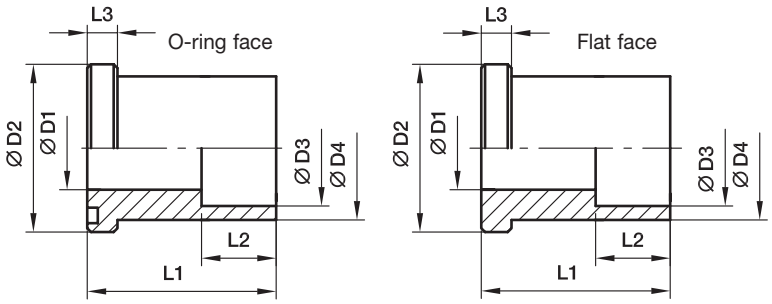
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*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	WAS32/21.6S	WAS32/21.6SM	WAS32/21.6SU	NBR
Stainless steel	SS	WAS32/21.6SS	WAS32/21.6SSM	WAS32/21.6SSU	VIT

ES SAE Straight flange adapter

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	16.0	12.5	30.2	16.5	24.0	35	12	6.7	0.25	**ES32/16.5**	**ESG32/16.5**	345	345
1/2	13	17.3	12.5	30.2	17.6	24.0	35	12	6.7	0.23	**ES32/17.6**	**ESG32/17.6**	345	345
3/4	19	20.0	15.0	38.1	20.5	31.5	40	13	6.7	0.35	**ES33/20.5**	**ESG33/20.5**	345	345
3/4	19	21.3	15.0	38.1	21.7	31.5	40	13	6.7	0.32	**ES33/21.7**	**ESG33/21.7**	345	345
1	25	25.0	20.0	44.4	25.5	38.0	45	14	8.0	0.45	**ES34/25.5**	**ESG34/25.5**	345	345
1	25	26.9	20.0	44.4	27.3	38.0	45	14	8.0	0.41	**ES34/27.3**	**ESG34/27.3**	345	345
1 1/4	32	30.0	25.0	50.8	30.5	43.0	50	16	8.0	0.65	**ES35/30.5**	**ESG35/30.5**	276	276
1 1/4	32	32.0	25.0	50.8	32.5	43.0	50	16	8.0	0.63	**ES35/32.5**	**ESG35/32.5**	276	276
1 1/4	32	33.7	25.0	50.8	34.2	43.0	50	16	8.0	0.61	**ES35/34.2**	**ESG35/34.2**	276	276
1 1/2	38	38.0	32.0	60.3	38.5	50.0	55	18	8.0	0.89	**ES36/38.5**	**ESG36/38.5**	207	207
1 1/2	38	40.0	32.0	60.3	40.7	50.0	55	18	8.0	0.86	**ES36/40.7**	**ESG36/40.7**	207	207
1 1/2	38	42.4	32.0	60.3	43.0	50.0	55	18	8.0	0.95	**ES36/43**	**ESG36/43**	207	207
2	51	48.3	32.0	71.4	49.0	62.0	65	20	9.5	1.21	**ES38/49**	**ESG38/49**	207	207
2	51	50.0	38.0	71.4	50.7	62.0	65	20	9.5	1.17	**ES38/50.7**	**ESG38/50.7**	207	207
2 1/2	64	60.3	38.0	84.1	61.0	74.0	75	22	9.5	1.45	**ES310/61**	**ESG310/61**	172	172
2 1/2	64	63.5	47.0	84.1	64.0	74.0	75	22	9.5	1.41	**ES310/64**	**ESG310/64**	172	172
3	76	73.5	47.0	101.6	74.0	90.0	85	24	9.5	2.50	**ES312/74**	**ESG312/74**	138	138
3	76	76.1	58.0	101.6	77.0	90.0	85	24	9.5	2.45	**ES312/77**	**ESG312/77**	138	138
3	76	80.0	58.0	101.6	81.0	90.0	85	24	9.5	2.30	**ES312/81**	**ESG312/81**	138	138

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

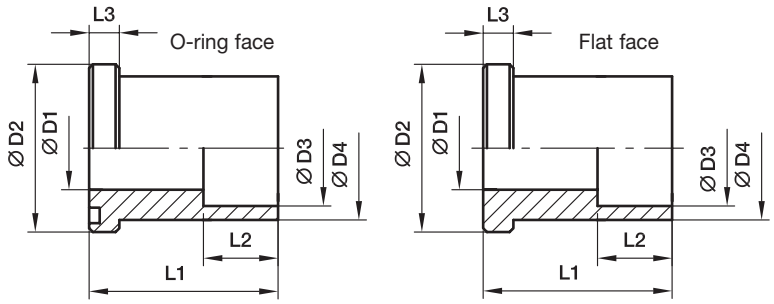
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ES32/16.5S	ES32/16.5SM	ES32/16.5SU	NBR
Stainless steel	SS	ES32/16.5SS	ES32/16.5SSM	ES32/16.5SSU	VIT

ES SAE Straight flange adapter

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	16.0	11.0	31.8	16.5	24.0	35	13	7.7	0.26	**ES62/16.5**	**ESG62/16.5**	420	420
1/2	13	17.3	11.0	31.8	17.6	24.0	35	13	7.7	0.24	**ES62/17.6**	**ESG62/17.6**	420	420
3/4	13	20.0	15.0	41.3	20.5	31.8	40	13	8.7	0.37	**ES63/20.5**	**ESG63/20.5**	420	420
3/4	19	21.3	15.0	41.3	21.7	31.8	40	13	8.7	0.33	**ES63/21.7**	**ESG63/21.7**	420	420
1	25	25.0	20.0	47.6	25.5	38.0	45	13	9.5	0.48	**ES64/25.5**	**ESG64/25.5**	420	420
1	25	26.9	20.0	47.6	27.3	38.0	45	13	9.5	0.43	**ES64/27.3**	**ESG64/27.3**	420	420
1 1/4	32	30.0	24.0	54.0	30.5	44.0	50	16	10.3	0.68	**ES65/30.5**	**ESG65/30.5**	420	420
1 1/4	32	32.0	24.0	54.0	32.5	44.0	50	16	10.3	0.65	**ES65/32.5**	**ESG65/32.5**	420	420
1 1/4	32	33.7	24.0	54.0	34.2	44.0	50	16	10.3	0.64	**ES65/34.2**	**ESG65/34.2**	420	420
1 1/2	38	38.0	31.0	63.5	38.5	51.0	55	18	12.5	0.92	**ES66/38.5**	**ESG66/38.5**	420	420
1 1/2	38	40.0	31.0	63.5	40.7	51.0	55	18	12.5	0.88	**ES66/40.7**	**ESG66/40.7**	420	420
1 1/2	38	42.4	31.0	63.5	42.8	51.0	55	18	12.5	0.85	**ES66/42.8**	**ESG66/42.8**	420	420
2	51	48.3	38.0	79.4	49.0	67.0	65	20	12.5	1.25	**ES68/49**	**ESG68/49**	420	420
2	51	50.0	38.0	79.4	50.7	67.0	65	20	12.5	1.21	**ES68/50.7**	**ESG68/50.7**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

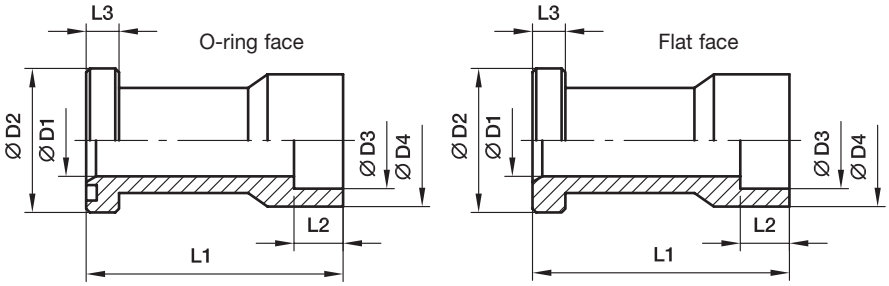
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*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ES62/16.5S	ES62/16.5SM	ES62/16.5SU	NBR
Stainless steel	SS	ES62/16.5SS	ES62/16.5SSM	ES62/16.5SSU	VIT

ESL SAE Straight flange adapter

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	20.0	15	30.2	20.5	30	60	13	6.7	0.45	**ESL32/20.5**	**ESLG32/20.5**	345	345
1/2	13	21.3	15	30.2	21.7	30	60	13	6.7	0.44	**ESL32/21.7**	**ESLG32/21.7**	345	345
3/4	19	25.0	19	38.1	25.5	35	68	13	6.7	0.60	**ESL33/25.5**	**ESLG33/25.5**	345	345
3/4	19	26.9	19	38.1	27.3	35	68	13	6.7	0.58	**ESL33/27.3**	**ESLG33/27.3**	345	345
1	25	30.0	23	44.4	30.5	44	75	16	8.0	0.75	**ESL34/30.5**	**ESLG34/30.5**	345	345
1	25	32.0	24	44.4	32.5	44	75	16	8.0	0.72	**ESL34/32.5**	**ESLG34/32.5**	345	345
1	25	33.7	25	44.4	34.0	44	75	16	8.0	0.70	**ESL34/34**	**ESLG34/34**	345	345
1	25	35.0	25	44.4	35.5	44	75	16	8.0	0.68	**ESL34/35.5**	**ESLG34/35.5**	345	345
1 1/4	32	38.0	32	50.8	38.5	55	95	18	8.0	0.87	**ESL35/38.5**	**ESLG35/38.5**	276	276
1 1/4	32	40.0	32	50.8	40.5	55	95	18	8.0	0.95	**ESL35/40.5**	**ESLG35/40.5**	276	276
1 1/4	32	42.4	32	50.8	43.0	55	95	18	8.0	0.93	**ESL35/43**	**ESLG35/43**	276	276
1 1/2	38	48.3	38	60.3	49.0	68	100	20	8.0	1.54	**ESL36/49**	**ESLG36/49**	207	207
1 1/2	38	50.0	38	60.3	50.4	68	100	20	8.0	1.50	**ESL36/50.4**	**ESLG36/50.4**	207	207
2	51	60.3	50	71.4	61.0	79	107	22	9.5	1.89	**ESL38/61**	**ESLG38/61**	207	207
2	51	65.0	50	71.4	65.8	79	107	22	9.5	1.80	**ESL38/65.8**	**ESLG38/65.8**	207	207
2 1/2	64	73.0	58	84.1	74.0	98	130	24	9.5	2.30	**ESL310/74**	**ESLG310/74**	172	172
2 1/2	64	76.1	58	84.1	77.0	98	130	24	9.5	2.25	**ESL310/77**	**ESLG310/77**	172	172
2 1/2	64	80.0	58	84.1	81.0	98	130	24	9.5	2.15	**ESL310/81**	**ESLG310/81**	172	172
3	76	88.9	70	101.6	90.5	116	150	28	9.5	3.00	**ESL312/90.5**	**ESL312/90.5**	138	138

6000 PSI Series

1/2	13	20.0	15	31.8	20.5	32	60	13	7.7	0.45	**ESL62/20.5**	**ESLG62/20.5**	420	420
1/2	13	21.3	15	31.8	21.7	32	60	13	7.7	0.44	**ESL62/21.7**	**ESLG62/21.7**	420	420
1/2	13	22.0	15	31.8	22.5	32	60	13	7.7	0.65	**ESL62/22.5**	**ESLG62/22.5**	420	420
3/4	19	25.0	19	41.3	25.7	40	68	13	8.7	0.63	**ESL63/25.7**	**ESLG63/25.7**	420	420
3/4	19	26.9	19	41.3	27.3	40	68	13	8.7	0.61	**ESL63/27.3**	**ESLG63/27.3**	420	420
3/4	19	28.0	19	41.3	28.7	40	68	13	8.7	0.60	**ESL63/28.7**	**ESLG63/28.7**	420	420
1	25	33.7	25	47.6	34.0	48	75	16	9.5	0.75	**ESL64/34**	**ESLG64/34**	420	420
1	25	35.0	25	47.6	35.5	48	75	16	9.5	0.73	**ESL64/35.5**	**ESLG64/35.5**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

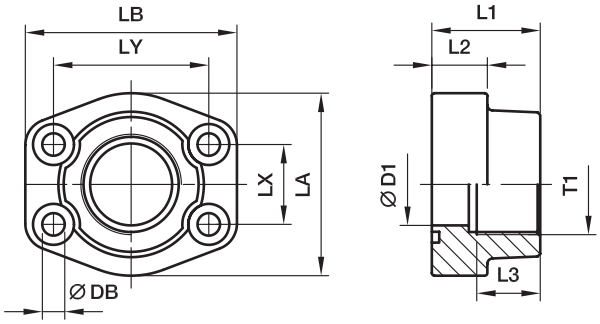
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ESL32/20.5S	ESL32/20.5SM	ESL32/20.5SU	NBR
Stainless steel	SS	ESL32/20.5SS	ESL32/20.5SSM	ESL32/20.5SSU	VIT

PFF-G SAE Straight 4 bolt flange with BSPP thread

SAE Flange / Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**G3/8**	13	36	16	13	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PFF32G38**	345	345
1/2	13	**G1/2**	13	36	16	15	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.28	**PFF32G**	345	345
3/4	19	**G3/4**	19	36	18	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.39	**PFF33G**	345	345
1	25	**G1**	25	38	18	20	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.46	**PFF34G**	345	345
1 1/4	32	**G1 1/4**	31	41	21	22	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.66	**PFF35G**	276	276
1 1/2	38	**G1 1/2**	38	44	25	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.05	**PFF36G**	207	207
2	51	**G2**	50	45	25	26	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.19	**PFF38G**	207	207
2 1/2	64	**G2 1/2**	63	50	25	30	101	115	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.40	**PFF310G**	172	172
3	76	**G3**	73	50	27	30	124	135	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.15	**PFF312G**	138	138
3 1/2	89	**G3 1/2**	89	50	27	30	136	152	61.9	120.7	17.0	M16×55	5/8×2 1/4	2.40	**PFF314G**	34	34
4	102	**G4**	99	50	27	30	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.85	**PFF316G**	34	34
5	127	**G5**	120	50	28	30	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.25	**PFF320G**	34	34

6000 PSI Series

1/2	13	**G3/8**	13	36	16	13	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.26	**PFF62G38**	420	420
1/2	13	**G1/2**	13	36	16	15	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.29	**PFF62G**	420	420
3/4	19	**G3/4**	19	36	19	18	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.50	**PFF63G**	420	420
1	25	**G1**	25	44	24	20	69	80	27.8	57.2	10.5	M12×45	7/16×1 1/2	0.76	**PFF64G**	420	420
1 1/4	32	**G1 1/4**	31	44	27	22	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.20	**PFF65G**	420	420
1 1/2	38	**G1 1/2**	38	51	30	24	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.65	**PFF66G**	420	420
2	51	**G2**	50	70	37	33	116	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.45	**PFF68G**	420	420
2 1/2	64	**G2 1/2**	63	75	45	35	150	166	58.7	123.8	25.0	M24×90	–	3.05	**PFF610G**	420	420
3	76	**G3**	73	90	55	40	178	208	71.4	152.4	32.0	M30×110	–	3.45	**PFF612G**	420	420

[1]) Pressure shown = Item deliverable

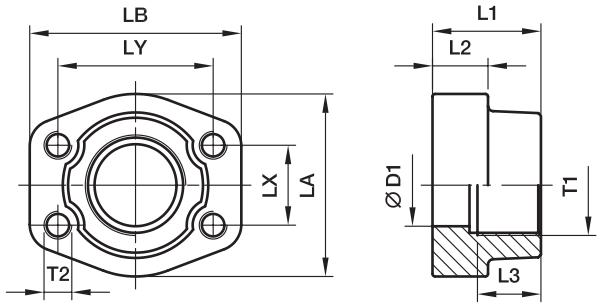
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PFF32G38S	PFF32G38SM	PFF32G38SU	
Stainless steel	SS	PFF32G38SS	PFF32G38SSM	PFF32G38SSU	VIT

PCFF-G SAE Straight 4 bolt flange with BSPP thread

SAE Counter flange / Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



3000 PSI Series

Nom. flange size											T2		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**G3/8**	13	36	16	19	46	58	17.5	38.1	M 8	5/16	0.25	**PCFF32G38**	345	345
1/2	13	**G1/2**	13	36	16	19	46	58	17.5	38.1	M 8	5/16	0.28	**PCFF32G**	345	345
3/4	19	**G3/4**	19	36	18	19	49	66	22.3	47.6	M10	3/8	0.39	**PCFF33G**	345	345
1	25	**G1**	25	38	18	19	53	71	26.2	52.4	M10	3/8	0.46	**PCFF34G**	345	345
1 1/4	32	**G1 1/4**	31	41	21	22	69	80	30.2	58.7	M10	7/16	0.66	**PCFF35G**	276	276
1 1/2	38	**G1 1/2**	38	44	25	24	77	94	35.7	69.9	M12	1/2	1.05	**PCFF36G**	207	207
2	51	**G2**	50	45	25	26	89	103	42.9	77.8	M12	1/2	1.19	**PCFF38G**	207	207
2 1/2	64	**G2 1/2**	63	50	25	30	101	115	50.8	88.9	M12	1/2	1.40	**PCFF310G**	172	172
3	76	**G3**	73	50	27	30	124	135	61.9	106.4	M16	5/8	2.15	**PCFF312G**	138	138
3 1/2	89	**G3 1/2**	89	50	27	30	136	152	69.9	120.7	M16	5/8	2.40	**PCFF314G**	34	34
4	102	**G4**	99	50	27	30	146	162	77.8	130.2	M16	5/8	2.85	**PCFF316G**	34	34
5	127	**G5**	120	50	28	30	180	184	92.1	152.4	M16	5/8	3.25	**PCFF320G**	34	34

6000 PSI Series

1/2	13	**G3/8**	13	36	16	19	46	58	18.2	40.5	M 8	5/16	0.26	**PCFF62G38**	420	420
1/2	13	**G1/2**	13	36	16	19	46	58	18.2	40.5	M 8	5/16	0.29	**PCFF62G**	420	420
3/4	19	**G3/4**	19	36	19	22	53	71	23.8	50.8	M10	3/8	0.50	**PCFF63G**	420	420
1	25	**G1**	25	44	24	24	69	80	27.8	57.2	M12	7/16	0.76	**PCFF64G**	420	420
1 1/4	32	**G1 1/4**	31	44	27	25	77	94	31.8	66.6	M14	1/2	1.20	**PCFF65G**	420	420
1 1/2	38	**G1 1/2**	38	51	30	28	89	106	36.5	79.3	M16	5/8	1.65	**PCFF66G**	420	420
2	51	**G2**	50	70	37	33	116	135	44.5	96.8	M20	3/4	2.45	**PCFF68G**	420	420
2 1/2	64	**G2 1/2**	63	75	45	35	150	166	58.7	123.8	M24	–	3.05	**PCFF610G**	420	420
3	76	**G3**	73	90	55	40	178	208	71.4	152.4	M30	–	3.45	**PCFF612G**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

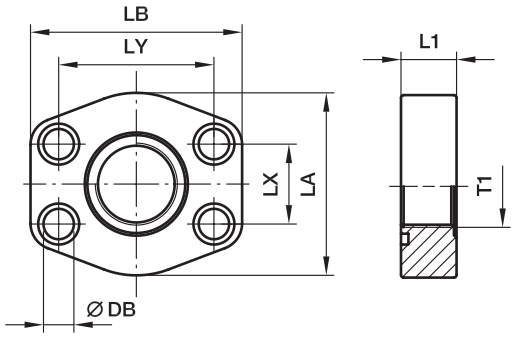
*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PCFF32G38SM	PCFF32G38SU	NBR
Stainless steel	SS	PCFF32G38SSM	PCFF32G38SSU	VIT

PAFSF-G SAE Straight 4 bolt flange flat with BSPP thread

SAE Flange / Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)

only for low pressure applications



3000 PSI Series

Nom. flange size									Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	L1	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**G3/8**	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.20	**PAFSF080G38**	40	40
1/2	13	**G1/2**	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.27	**PAFSF080G**	40	40
3/4	19	**G1/2**	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.29	**PAFSF100G12**	40	40
3/4	19	**G3/4**	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.27	**PAFSF100G**	40	40
1	25	**G3/4**	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.32	**PAFSF102G34**	40	40
1	25	**G1**	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.31	**PAFSF102G**	40	40
1 1/4	32	**G1**	21	69	80	30.2	58.7	10.5	M10×35	7/16×1 1/2	0.44	**PAFSF104G1**	40	40
1 1/4	32	**G1 1/4**	21	69	80	30.2	58.7	10.5	M10×35	7/16×1 1/2	0.56	**PAFSF104G**	40	40
1 1/2	38	**G1 1/4**	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	0.83	**PAFSF106G114**	40	40
1 1/2	38	**G1 1/2**	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	0.76	**PAFSF106G**	40	40
2	51	**G1 1/2**	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.00	**PAFSF108G112**	40	40
2	51	**G2**	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	0.90	**PAFSF108G**	40	40
2 1/2	64	**G2**	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.30	**PAFSF110G2**	40	40
2 1/2	64	**G2 1/2**	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.25	**PAFSF110G**	40	40
3	76	**G2 1/2**	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	1.86	**PAFSF112G212**	30	30
3	76	**G3**	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	1.49	**PAFSF112G**	30	30
3 1/2	89	**G3**	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	1.68	**PAFSF114G3**	30	30
3 1/2	89	**G3 1/2**	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	1.59	**PAFSF114G**	30	30
4	102	**G3 1/2**	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.35	**PAFSF116G312**	30	30
4	102	**G4**	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.25	**PAFSF116G**	30	30
5	127	**G4**	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.45	**PAFSF118G4**	30	30
5	127	**G5**	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.15	**PAFSF118G**	30	30

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1/2	13	**G3/8**	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.25	**PAFSF401G38**	40	40
1/2	13	**G1/2**	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.20	**PAFSF401G**	40	40
3/4	19	**G1/2**	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.37	**PAFSF402G12**	40	40
3/4	19	**G3/4**	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.36	**PAFSF402G**	40	40
1	25	**G3/4**	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.64	**PAFSF403G34**	40	40
1	25	**G1**	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.60	**PAFSF403G**	40	40
1 1/4	32	**G1**	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.88	**PAFSF404G1**	40	40
1 1/4	32	**G1 1/4**	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.87	**PAFSF404G**	40	40
1 1/2	38	**G1 1/4**	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.14	**PAFSF405G114**	40	40
1 1/2	38	**G1 1/2**	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.01	**PAFSF405G**	40	40
2	51	**G1 1/2**	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.94	**PAFSF406G112**	40	40
2	51	**G2**	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.84	**PAFSF406G**	40	40

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFSF080GS	PAFSF080GSM	PAFSF080GSU	NBR
Stainless steel	SS	PAFSF080GSS	PAFSF080GSSM	PAFSF080GSSU	VIT

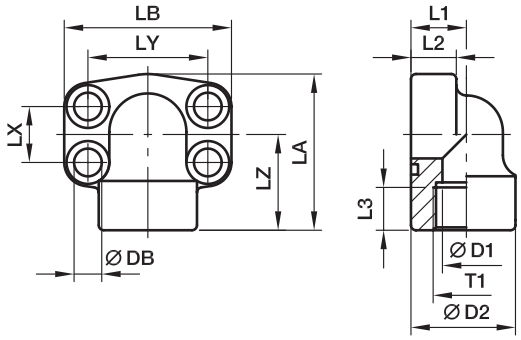
[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

M

PEFF-G SAE 90° 4 bolt flange with BSPP thread

SAE 90° Flange / Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



3000 PSI Series

Nom. flange size														Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**G1/2**	13	34.0	18	16	16	59	57	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.35	**PEFF32G**	348	348
3/4	19	**G3/4**	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M10×35	3/8×1 1/2	0.55	**PEFF33G**	348	348
1	25	**G1**	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF34G**	348	348
1 1/4	32	**G1 1/4**	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M10×35	7/16×1 1/2	1.30	**PEFF35G**	278	278
1 1/2	38	**G1 1/2**	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.60	**PEFF36G**	210	210
2	51	**G2**	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M12×45	1/2×1 3/4	2.00	**PEFF38G**	210	210
2 1/2	64	**G2 1/2**	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M12×45	1/2×1 3/4	2.40	**PEFF310G**	175	175

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1/2	13	**G1/2**	13	34.0	18	16	16	59	57	18.2	40.5	36	8.8	M 8×30	5/16×1 1/4	0.35	**PEFF62G**	420	420
3/4	19	**G3/4**	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF63G**	420	420
1	25	**G1**	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M12×45	7/16×1 1/2	1.30	**PEFF64G**	420	420
1 1/4	32	**G1 1/4**	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M14×50	1/2×1 3/4	1.60	**PEFF65G**	420	420
1 1/2	38	**G1 1/2**	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	2.00	**PEFF66G**	420	420
2	51	**G2**	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M20×70	3/4×2 3/4	2.50	**PEFF68G**	420	420

** DB = 13.5 for UNC Screws

[1]) Pressure shown = Item deliverable

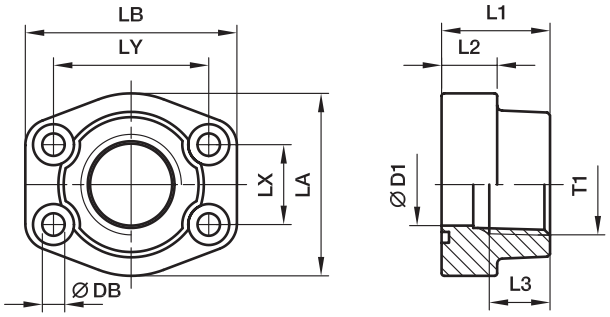
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PEFF32GS	PEFF32GSM	PEFF32GSU	NBR
Stainless steel	SS	PEFF32GSS	PEFF32GSSM	PEFF32GSSU	VIT

PFF-N SAE Straight 4 bolt flange with NPT thread

SAE Flange / Female NPT thread
(ISO 6162-1/-2) (SAE 476)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**3/8NPT**	13	36	16	15	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PFF32N38**	345	345
1/2	13	**1/2NPT**	13	36	16	15	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.28	**PFF32N**	345	345
3/4	19	**3/4NPT**	19	36	18	19	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.39	**PFF33N**	345	345
1	25	**1NPT**	25	38	18	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.46	**PFF34N**	345	345
1 1/4	32	**1 1/4NPT**	31	41	21	22	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.66	**PFF35N**	276	276
1 1/2	38	**1 1/2NPT**	38	44	25	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.05	**PFF36N**	207	207
2	51	**2NPT**	50	45	25	26	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.19	**PFF38N**	207	207
2 1/2	64	**2 1/2NPT**	63	50	25	30	101	115	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.40	**PFF310N**	172	172
3	76	**3NPT**	73	50	27	34	124	135	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.15	**PFF312N**	138	138
3 1/2	89	**3 1/2NPT**	89	50	27	36	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	2.40	**PFF314N**	34	34
4	102	**4NPT**	99	50	27	36	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.85	**PFF316N**	34	34
5	127	**5NPT**	120	50	28	36	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.25	**PFF320N**	34	34

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1/2	13	**3/8NPT**	13	36	16	15	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.26	**PFF62N38**	420	420
1/2	13	**1/2NPT**	13	36	16	15	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.29	**PFF62N**	420	420
3/4	19	**3/4NPT**	19	36	19	22	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.50	**PFF63N**	420	420
1	25	**1NPT**	25	44	24	24	69	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.76	**PFF64N**	420	420
1 1/4	32	**1 1/4NPT**	31	44	27	25	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.20	**PFF65N**	420	420
1 1/2	38	**1 1/2NPT**	38	51	30	28	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.65	**PFF66N**	420	420
2	51	**2NPT**	50	70	37	33	116	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.45	**PFF68N**	420	420
2 1/2	64	**2 1/2NPT**	63	75	45	35	150	166	58.7	123.8	25.0	M24×90	–	3.05	**PFF610N**	420	420
3	76	**3NPT**	73	90	55	40	178	208	71.4	152.4	32.0	M30×110	–	3.45	**PFF612N**	420	420

[1]) Pressure shown = Item deliverable

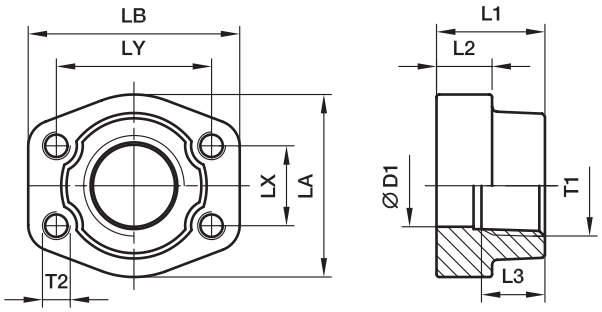
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PFF32N38S	PFF32N38SM	PFF32N38SU	NBR
Stainless steel	SS	PFF32N38SS	PFF32N38SSM	PFF32N38SSU	VIT

PCFF-N SAE Straight 4 bolt flange with NPT thread

SAE Counter flange / Female NPT thread
(ISO 6162-1/-2) (SAE 476)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	T2 (metr.)	T2 (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	**3/8NPT**	13	36	16	19	47	57	17.5	38.1	M 8	5/16	0.25	**PCFF32N38**	345	345
1/2	13	**1/2NPT**	13	36	16	19	47	57	17.5	38.1	M 8	5/16	0.28	**PCFF32N**	345	345
3/4	19	**3/4NPT**	19	36	18	19	49	66	22.3	47.6	M10	3/8	0.39	**PCFF33N**	345	345
1	25	**1NPT**	25	38	18	19	53	71	26.2	52.4	M10	3/8	0.46	**PCFF34N**	345	345
1 1/4	32	**1 1/4NPT**	31	41	21	22	69	80	30.2	58.7	M10	7/16	0.66	**PCFF35N**	276	276
1 1/2		**1 1/2NPT**	38	44	25	24	77	94	35.7	69.9	M12	1/2	1.05	**PCFF36N**	207	207
2	51	**2NPT**	50	45	25	26	89	103	42.9	77.8	M12	1/2	1.19	**PCFF38N**	207	207
2 1/2	64	**2 1/2NPT**	63	50	25	30	101	115	50.8	88.9	M12	1/2	1.40	**PCFF310N**	172	172
3	76	**3NPT**	73	50	27	30	124	135	61.9	106.4	M16	5/8	2.15	**PCFF312N**	138	138
3 1/2	89	**3 1/2NPT**	89	50	27	30	136	152	69.9	120.7	M16	5/8	2.40	**PCFF314N**	34	34
4	102	**4NPT**	99	50	27	30	146	162	77.8	130.2	M16	5/8	2.85	**PCFF316N**	34	34
5	127	**5NPT**	120	50	28	30	180	184	92.1	152.4	M16	5/8	3.25	**PCFF320N**	34	34

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1/2	13	**3/8NPT**	13	36	16	19	47	57	18.2	40.5	M 8	5/16	0.26	**PCFF62N38**	420	420
1/2	13	**1/2NPT**	13	36	16	19	47	57	18.2	40.5	M 8	5/16	0.29	**PCFF62N**	420	420
3/4	19	**3/4NPT**	19	36	19	22	53	71	23.8	50.8	M10	3/8	0.50	**PCFF63N**	420	420
1	25	**1NPT**	25	44	24	24	69	80	27.8	57.2	M12	7/16	0.76	**PCFF64N**	420	420
1 1/4	32	**1 1/4NPT**	31	44	27	25	77	94	31.8	66.6	M14	1/2	1.20	**PCFF65N**	420	420
1 1/2	32	**1 1/2NPT**	38	51	30	28	89	106	36.5	79.3	M16	5/8	1.65	**PCFF66N**	420	420
2	51	**2NPT**	50	70	37	33	116	135	44.5	96.8	M20	3/4	2.45	**PCFF68N**	420	420
2 1/2	64	**2 1/2NPT**	63	75	45	35	150	166	58.7	123.8	M24	–	3.05	**PCFF610N**	420	420
3	76	**3NPT**	73	90	55	40	178	208	71.4	152.4	M30	–	3.45	**PCFF612N**	420	420

[1]) Pressure shown = Item deliverable

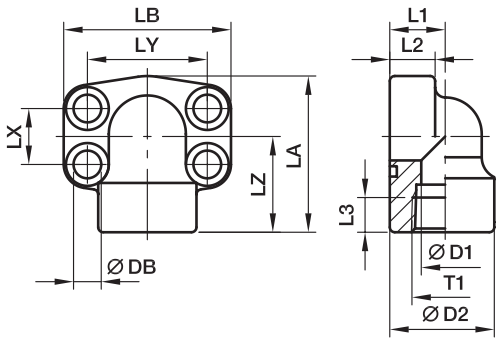
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PCFF32N38SM	PCFF32N38SU	NBR
Stainless steel	SS	PCFF32N38SSM	PCFF32N38SSU	VIT

PEFF-N SAE 90° 4 bolt flange with NPT thread

SAE 90° Flange / Female NPT thread
(ISO 6162-1/-2) (SAE 476)



3000 PSI Series

Nom. flange size														Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**1/2NPT**	13	34.0	18	16	16	59	56	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.35	**PEFF32N**	348	348
3/4	19	**3/4NPT**	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M10×35	3/8×1 1/2	0.55	**PEFF33N**	348	348
1	25	**1NPT**	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF34N**	348	348
1 1/4	32	**1 1/4NPT**	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M10×35	7/16×1 1/2	1.30	**PEFF35N**	278	278
1 1/2	38	**1 1/2NPT**	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.60	**PEFF36N**	210	210
2	51	**2NPT**	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M12×45	1/2×1 3/4	2.00	**PEFF38N**	210	210
2 1/2	64	**2 1/2NPT**	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M12×45	1/2×1 3/4	2.40	**PEFF310N**	175	175

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1/2	13	**1/2NPT**	13	34.0	18	16	16	59	56	18.2	40.5	36	9.0	M 8×30	5/16×1 1/4	0.35	**PEFF62N**	420	420
3/4	19	**3/4NPT**	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M10×35	3/8×1 1/2	0.80	**PEFF63N**	420	420
1	25	**1NPT**	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M12×45	7/16×1 1/2	1.30	**PEFF64N**	420	420
1 1/4	32	**1 1/4NPT**	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M14×50	1/2×1 3/4	1.60	**PEFF65N**	420	420
1 1/2	38	**1 1/2NPT**	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	2.00	**PEFF66N**	420	420
2	51	**2NPT**	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M20×70	3/4×2 3/4	2.50	**PEFF68N**	420	420

** DB = 13.5 for UNC Screws

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

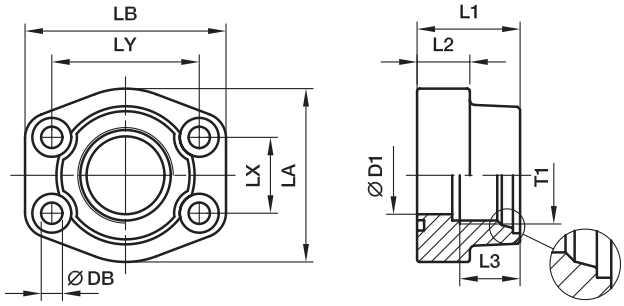
M

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PEFF32NS	PEFF32NSM	PEFF32NSU	NBR
Stainless steel	SS	PEFF32NSS	PEFF32NSSM	PEFF32NSSU	VIT

PAFS-M SAE Straight 4 bolt flange with metric thread

SAE Flange / Female metric thread for O-ring
(ISO 6162-1/-2) (ISO 6149-1)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**M18×1.5**	13	36	16	15	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.33	**PAFS080MA**	345	345
1/2	13	**M20×1.5**	13	36	16	15	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.30	**PAFS080MB**	345	345
3/4	19	**M22×1.5**	19	36	18	16	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.45	**PAFS100MA**	345	345
3/4	19	**M27×2.0**	19	36	18	19	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.42	**PAFS100MB**	345	345
1	25	**M27×2.0**	25	38	18	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.48	**PAFS102MA**	345	345
1	25	**M33×2.0**	25	38	18	19	53	71	26.2	52.4	13.5	M10×35	3/8×1 1/2	0.45	**PAFS102MB**	345	345
1 1/4	32	**M33×2.0**	31	41	21	19	69	80	30.2	58.7	13.5	M10×40	7/16×1 1/2	0.84	**PAFS104MA**	276	276
1 1/4	32	**M42×2.0**	31	41	21	20	69	80	30.2	58.7	13.5	M10×40	7/16×1 1/2	0.71	**PAFS104MB**	276	276
1 1/2	38	**M42×2.0**	38	44	25	20	77	94	35.7	69.9	17.0	M12×45	1/2×1 3/4	1.25	**PAFS106MA**	207	207
1 1/2	38	**M48×2.0**	38	44	25	22	77	94	35.7	69.9	17.0	M12×45	1/2×1 3/4	1.14	**PAFS106MB**	207	207

6000 PSI Series

1/2	13	**M18×1.5**	13	36	16	15	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.33	**PAFS401MA**	420	420
1/2	13	**M20×1.5**	13	36	16	15	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PAFS401MB**	420	420
3/4	19	**M22×1.5**	19	36	19	16	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.53	**PAFS402MA**	420	420
3/4	19	**M27×2.0**	19	36	19	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.50	**PAFS402MB**	420	420
1	25	**M27×2.0**	25	44	24	19	69	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.86	**PAFS403MA**	420	420
1	25	**M33×2.0**	25	44	24	19	69	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.84	**PAFS403MB**	420	420
1 1/4	32	**M33×2.0**	31	44	27	19	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.30	**PAFS404MA**	420	420
1 1/4	32	**M42×2.0**	31	44	27	20	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.25	**PAFS404MB**	420	420
1 1/2	38	**M42×2.0**	38	51	30	20	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.78	**PAFS405MA**	420	420
1 1/2	38	**M48×2.0**	38	51	30	22	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.70	**PAFS405MB**	420	420

[1]) Pressure shown = Item deliverable

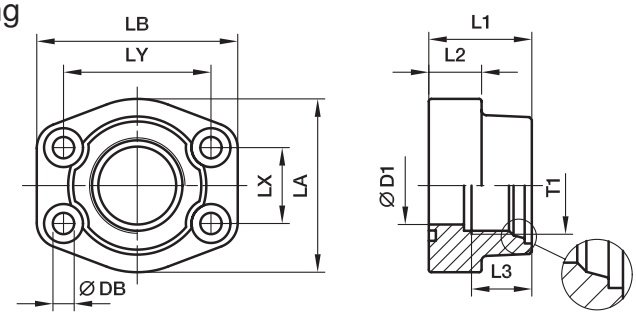
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFS080MAS	PAFS080MASM	PAFS080MASU	NBR
Stainless steel	SS	PAFS080MASS	PAFS080MASSM	PAFS080MASSU	VIT

PAFS-U SAE Straight 4 bolt flange with UN/UNF thread

SAE Flange (ISO 6162-1/-2) / Female UN/UNF thread for O-ring (ISO 11926-1)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**3/4-16UNF-2A**	13	36	16	17	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.30	**PAFS080UA**	345	345
3/4	19	**7/8-14UNF-2A**	19	36	18	17	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.45	**PAFS100UA**	345	345
3/4	19	**1 1/16-12UN-2A**	19	36	18	23	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.42	**PAFS100UB**	345	345
1	25	**1 1/16-12UN-2A**	25	38	18	23	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.48	**PAFS102UA**	345	345
1	25	**1 5/16-12UN-2A**	25	38	18	23	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.45	**PAFS102UB**	345	345
1 1/4	32	**1 5/16-12UN-2A**	31	41	21	23	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.84	**PAFS104UA**	276	276
1 1/4	32	**1 5/8-12UN-2A**	31	41	21	23	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.71	**PAFS104UB**	276	276
1 1/2	38	**1 5/8-12UN-2A**	38	44	25	23	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.25	**PAFS106UA**	207	207
1 1/2	38	**1 7/8-12UN-2A**	38	44	25	23	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.14	**PAFS106UB**	207	207

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1/2	13	**3/4-16UNF-2A**	13	36	16	17	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PAFS401UA**	420	420
3/4	19	**7/8-14UNF-2A**	19	36	19	17	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.53	**PAFS402UA**	420	420
3/4	19	**1 1/16-12UN-2A**	19	36	19	23	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.50	**PAFS402UB**	420	420
1	25	**1 1/16-12UN-2A**	25	44	24	23	69	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.86	**PAFS403UA**	420	420
1	25	**1 5/16-12UN-2A**	25	44	24	23	69	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.84	**PAFS403UB**	420	420
1 1/4	32	**1 5/16-12UN-2A**	31	44	27	23	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.30	**PAFS404UA**	420	420
1 1/4	32	**1 5/8-12UN-2A**	31	44	27	23	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.25	**PAFS404UB**	420	420
1 1/2	38	**1 5/8-12UN-2A**	38	51	30	23	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.78	**PAFS405UA**	420	420
1 1/2	38	**1 7/8-12UN-2A**	38	51	30	23	89	106	36.5	79.3	18.0	M16×55	5/8×2 1/4	1.70	**PAFS405UB**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

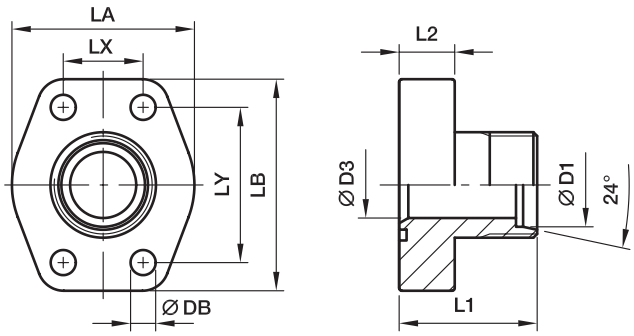
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*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFS080UAS	PAFS080UASM	PAFS080UASU	NBR
Stainless steel	SS	PAFS080UASS	PAFS080UASSM	PAFS080UASSU	VIT

PFF-..S/L SAE Straight 4 bolt flange with EO 24° cone end

SAE Flange / EO 24° cone end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	D1[2])	D3	L1	L2	LA	LB	LX	LY	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1]) A3C	PN (bar)[1]) SS
1/2	13	12S	8	47	16	42	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PFF32/12S**	348	348
1/2	13	15L	11	47	16	42	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.29	**PFF32/15L**	348	315
1/2	13	16S	12	47	16	42	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.32	**PFF32/16S**	348	348
3/4	19	16S	12	52	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.35	**PFF33/16S**	348	348
3/4	19	20S	16	52	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.36	**PFF33/20S**	348	348
3/4	19	22L	18	52	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.37	**PFF33/22L**	250	160
1	25	20S	16	55	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.44	**PFF34/20S**	348	348
1	25	25S	20	55	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.46	**PFF34/25S**	348	348
1	25	28L	23	55	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.50	**PFF34/28L**	250	160
1 1/4	32	25S	20	60	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.65	**PFF35/25S**	278	278
1 1/4	32	30S	25	60	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.70	**PFF35/30S**	278	278
1 1/4	32	35L	30	60	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.72	**PFF35/35L**	278	278
1 1/2	38	35L	30	70	25	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PFF36/35L**	210	210
1 1/2	38	38S	32	70	25	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PFF36/38S**	210	210
1 1/2	38	42L	36	70	25	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.02	**PFF36/42L**	210	210
2	51	38S	32	74	25	90	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.40	**PFF38/38S**	210	210
2	51	42L	36	74	25	90	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.35	**PFF38/42L**	210	210

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1/2	13	12S	8	47	16	47	57	18.3	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PFF62/12S**	420	420
1/2	13	14S	10	47	16	47	57	18.3	40.5	9.0	M 8×30	5/16×1 1/4	0.32	**PFF62/14S**	420	420
1/2	13	16S	12	47	16	47	57	18.3	40.5	9.0	M 8×30	5/16×1 1/4	0.35	**PFF62/16S**	420	420
3/4	19	16S	12	52	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.68	**PFF63/16S**	420	420
3/4	19	20S	16	52	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.73	**PFF63/20S**	420	400
3/4	19	22L	18	52	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.82	**PFF63/22L**	250	160
1	25	20S	16	60	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.00	**PFF64/20S**	420	400
1	25	25S	20	60	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.15	**PFF64/25S**	420	400
1	25	28L	23	60	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.20	**PFF64/28L**	250	160
1 1/4	32	25S	20	68	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.60	**PFF65/25S**	420	400
1 1/4	32	30S	25	68	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.80	**PFF65/30S**	420	400
1 1/4	32	35L	30	68	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.85	**PFF65/35L**	250	160
1 1/2	38	35L	25	72	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.20	**PFF66/35L**	250	160
1 1/2	38	38S	32	72	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.25	**PFF66/38S**	315	315
1 1/2	38	42L	36	72	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.35	**PFF66/42L**	250	160

[2]) L = light series; S = heavy series

*Please add the suffixes below according to the material / surface required.

Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

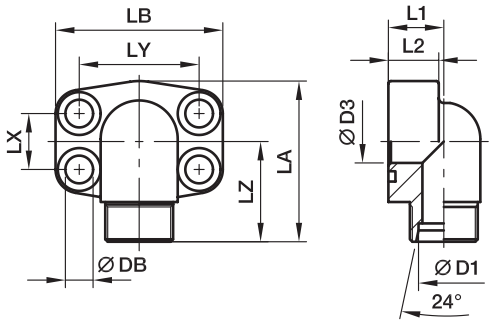
[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PFF32/12SCF	PFF32/12SOMDCFM	PFF32/12SOMDCFU	NBR
Steel, zinc yellow plated	A3C	PFF32/12SA3C	PFF32/12SOMDA3CM	PFF32/12SOMDA3CU	NBR
Stainless steel	SS	PFF32/12S-SS	PFF32/12SOMDSSM	PFF32/12SOMDSSU	VIT

PAFG-90M SAE 90° 4 bolt flange with EO 24° cone end

SAE 90° Flange / EO 24° cone end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	D1[2]	D3	L1	L2	LA	LB	LX	LY	LZ	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] SS
1/2	13	12S	8	18	16	60	57	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.28	**PAFG080/90M12S**	348	348
1/2	13	15L	11	18	16	60	57	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.33	**PAFG080/90M15L**	348	315
1/2	13	16S	12	18	16	60	57	17.5	38.1	36	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG080/90M16S**	348	348
3/4	19	16S	12	22	18	63	66	22.3	47.6	38	11.0	M10×35	3/8×1 1/2	0.43	**PAFG100/90M16S**	348	348
3/4	19	20S	16	22	18	63	66	22.3	47.6	38	11.0	M10×35	3/8×1 1/2	0.43	**PAFG100/90M20S**	348	348
3/4	19	22L	18	22	18	63	66	22.3	47.6	38	11.0	M10×35	3/8×1 1/2	0.43	**PAFG100/90M22L**	250	160
1	25	20S	16	28	19	80	71	26.2	52.4	42	11.0	M10×35	3/8×1 1/2	0.68	**PAFG102/90M20S**	348	348
1	25	25S	20	28	19	80	71	26.2	52.4	42	11.0	M10×35	3/8×1 1/2	0.64	**PAFG102/90M25S**	348	348
1	25	28L	23	28	19	80	71	26.2	52.4	42	11.0	M10×35	3/8×1 1/2	0.62	**PAFG102/90M28L**	250	160
1 1/4	32	25S	20	30	22	84	80	30.2	58.7	50	11.5	M10×40	7/16×1 1/2	1.15	**PAFG104/90M25S**	278	278
1 1/4	32	30S	25	30	22	84	80	30.2	58.7	50	11.5	M10×40	7/16×1 1/2	1.02	**PAFG104/90M30S**	278	278
1 1/4	32	35L	30	30	22	84	80	30.2	58.7	50	11.5	M10×40	7/16×1 1/2	0.94	**PAFG104/90M35L**	278	278
1 1/2	38	35L	30	36	25	88	94	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.50	**PAFG106/90M35L**	210	210
1 1/2	38	38S	32	36	25	88	94	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.50	**PAFG106/90M38S**	210	210
1 1/2	38	42L	36	36	25	88	94	35.7	69.9	58	13.5	M12×45	1/2×1 3/4	1.50	**PAFG106/90M42L**	210	210

6000 PSI Series

1/2	13	12S	8	20	16	60	57	18.2	40.5	36	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401/90M12S**	420	420
1/2	13	14S	10	20	16	60	57	18.2	40.5	36	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401/90M14S**	420	420
1/2	13	16S	12	20	16	60	57	18.2	40.5	36	9.0	M 8×30	5/16×1 1/4	0.35	**PAFG401/90M16S**	420	420
3/4	19	16S	12	26	19	68	71	23.8	50.8	41	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90M16S**	420	420
3/4	19	20S	20	26	19	68	71	23.8	50.8	41	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90M20S**	420	400
3/4	19	22L	23	26	19	68	71	23.8	50.8	41	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90M22L**	250	160
1	25	20S	16	30	24	83	80	27.8	57.2	50	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90M20S**	420	400
1	25	25S	20	30	24	83	80	27.8	57.2	50	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90M25S**	420	400
1	25	28L	23	30	24	83	80	27.8	57.2	50	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90M28L**	250	160
1 1/4	32	25S	20	36	25	97	94	31.8	66.6	58	15.0	M14×50	1/2×1 3/4	1.35	**PAFG404/90M25S**	420	400
1 1/4	32	30S	25	36	25	97	94	31.8	66.6	58	15.0	M14×50	1/2×1 3/4	1.40	**PAFG404/90M30S**	420	400
1 1/4	32	35L	30	36	25	97	94	31.8	66.6	58	15.0	M14×50	1/2×1 3/4	1.45	**PAFG404/90M35L**	250	160
1 1/2	38	35L	25	41	26	110	106	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	1.80	**PAFG405/90M35L**	250	160
1 1/2	38	38S	32	41	26	110	106	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	1.85	**PAFG405/90M38S**	315	315
1 1/2	38	42L	36	41	26	110	106	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	1.90	**PAFG405/90M42L**	250	160

[2]) L = light series; S = heavy series

Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

[1]) Pressure shown = Item deliverable

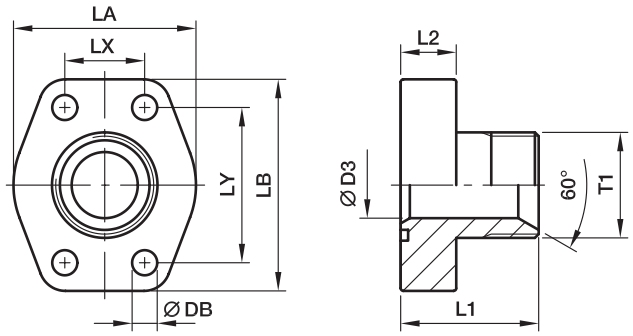
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080/90M12SCF	PAFG080/90M12SOMDCFM	PAFG080/90M12SOMDCFU	NBR
Steel, zinc yellow plated	A3C	PAFG080/90M12SA3C	PAFG080/90M12SOMDA3CM	PAFG080/90M12SOMDA3CU	NBR
Stainless steel	SS	PAFG080/90M12S-SS	PAFG080/90M12SOMDSSM	PAFG080/90M12SOMDSSU	VIT

PAFG-G SAE Straight 4 bolt flange with BSPP 60° cone end

SAE Flange / BSPP 60° cone end
(ISO 6162-1/-2) (ISO 8434-6)



3000 PSI Series

Nom. flange size											Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D3	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	**G3/8**	10	37	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PAFG080G38**	348	348
1/2	13	**G1/2**	12	39	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.29	**PAFG080G**	348	348
1/2	13	**G3/4**	13	42	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG080G34**	348	348
3/4	19	**G1/2**	12	42	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.35	**PAFG100G12**	348	348
3/4	19	**G3/4**	17	45	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.34	**PAFG100G**	348	348
3/4	19	**G1**	19	47	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.37	**PAFG100G1**	348	348
1	25	**G3/4**	17	47	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.44	**PAFG102G34**	348	348
1	25	**G1**	22	49	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.46	**PAFG102G**	348	348
1	25	**G1 1/4**	25	49	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.50	**PAFG102G114**	348	348
1 1/4	32	**G1**	22	53	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.65	**PAFG104G1**	278	278
1 1/4	32	**G1 1/4**	27	53	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.70	**PAFG104G**	278	278
1 1/4	32	**G1 1/2**	31	55	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.72	**PAFG104G112**	278	278
1 1/2	38	**G1 1/4**	27	59	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PAFG106G114**	210	210
1 1/2	38	**G1 1/2**	34	61	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PAFG106G**	210	210
1 1/2	38	**G2**	38	63	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.02	**PAFG106G2**	210	210
2	51	**G1 1/2**	34	69	25	90	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.40	**PAFG108G112**	210	210
2	51	**G2**	42	69	25	90	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.35	**PAFG108G**	210	210

6000 PSI Series

1/2	13	**G3/8**	10	38	16	47	56	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401G38**	420	420
1/2	13	**G1/2**	12	40	16	47	56	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401G**	420	420
1/2	13	**G3/4**	13	43	16	47	56	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.35	**PAFG401G34**	420	420
3/4	19	**G1/2**	12	44	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.68	**PAFG402G12**	420	420
3/4	19	**G3/4**	17	47	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.73	**PAFG402G**	420	420
3/4	19	**G1**	19	49	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.82	**PAFG402G1**	420	420
1	25	**G3/4**	17	54	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.00	**PAFG403G34**	420	420
1	25	**G1**	22	56	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.15	**PAFG403G**	420	420
1	25	**G1 1/4**	25	56	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.20	**PAFG403G114**	420	420
1 1/4	32	**G1**	22	61	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.60	**PAFG404G1**	420	420
1 1/4	32	**G1 1/4**	27	61	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.80	**PAFG404G**	420	420
1 1/4	32	**G1 1/2**	31	63	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.85	**PAFG404G112**	420	420
1 1/2	38	**G1 1/4**	27	65	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.20	**PAFG405G114**	420	420
1 1/2	38	**G1 1/2**	32	67	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.25	**PAFG405G**	420	420

[1]) Pressure shown = Item deliverable

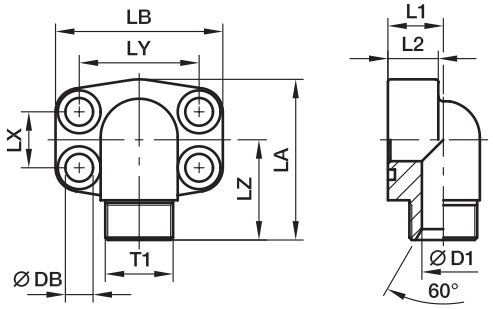
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080GCF	PAFG080GCFM	PAFG080GCFU	NBR
Steel, zinc yellow plated	A3C	PAFG080GA3C	PAFG080GA3CM	PAFG080GA3CU	NBR
Stainless steel	SS	PAFG080GSS	PAFG080GSSM	PAFG080GSSU	VIT

PAFG-90G SAE 90° 4 bolt flange with BSPP 60° cone end

SAE 90° Flange / BSPP 60° cone end
(ISO 6162-1/-2) (ISO 8434-6)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D3	L1	L2	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	**G3/8**	10	17	16	60	57	17.5	38.1	37	9.0	M 8×30	5/16×1 1/4	0.27	**PAFG080/90G38**	348	348
1/2	13	**G1/2**	12	17	16	60	57	17.5	38.1	39	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG080/90G**	348	348
1/2	13	**G3/4**	13	20	16	60	57	17.5	38.1	40	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG080/90G34**	348	348
3/4	19	**G1/2**	12	20	18	63	66	22.3	47.6	41	11.0	M10×35	3/8×1 1/2	0.47	**PAFG100/90G12**	348	348
3/4	19	**G3/4**	17	20	18	63	66	22.3	47.6	44	11.0	M10×35	3/8×1 1/2	0.42	**PAFG100/90G**	348	348
3/4	19	**G1**	19	25	18	63	66	22.3	47.6	45	11.0	M10×35	3/8×1 1/2	0.60	**PAFG100/90G1**	348	348
1	25	**G3/4**	17	20	19	80	71	26.2	52.4	47	11.0	M10×35	3/8×1 1/2	0.66	**PAFG102/90G34**	348	348
1	25	**G1**	22	25	19	80	71	26.2	52.4	48	11.0	M10×35	3/8×1 1/2	0.62	**PAFG102/90G**	348	348
1	25	**G1 1/4**	25	31	19	80	71	26.2	52.4	49	11.0	M10×40	3/8×1 1/2	0.65	**PAFG102/90G114**	348	348
1 1/4	32	**G1**	22	25	22	84	80	30.2	58.7	54	11.5	M10×40	7/16×1 1/2	1.06	**PAFG104/90G1**	278	278
1 1/4	32	**G1 1/4**	27	31	22	84	80	30.2	58.7	55	11.5	M10×35	7/16×1 1/2	0.93	**PAFG104/90G**	278	278
1 1/4	32	**G1 1/2**	31	37	22	84	80	30.2	58.7	56	11.5	M10×40	7/16×1 1/2	0.96	**PAFG104/90G112**	278	278
1 1/2	38	**G1 1/4**	27	31	25	88	94	35.7	69.9	59	13.5	M12×45	1/2×1 3/4	1.44	**PAFG106/90G114**	210	210
1 1/2	38	**G1 1/2**	34	37	25	88	94	35.7	69.9	61	13.5	M12×45	1/2×1 3/4	1.35	**PAFG106/90G**	210	210

6000 PSI Series

1/2	13	**G3/8**	10	17	16	60	57	18.2	40.5	37	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401/90G38**	420	420
1/2	13	**G1/2**	12	17	16	60	57	18.2	40.5	39	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401/90G**	420	420
1/2	13	**G3/4**	13	20	16	60	57	18.2	40.5	40	9.0	M 8×30	5/16×1 1/4	0.35	**PAFG401/90G34**	420	420
3/4	19	**G1/2**	12	20	19	68	71	23.8	50.8	45	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90G12**	420	420
3/4	19	**G3/4**	17	20	19	68	71	23.8	50.8	48	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90G**	420	420
3/4	19	**G1**	19	25	19	68	71	23.8	50.8	50	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90G1**	420	420
1	25	**G3/4**	17	25	24	83	80	27.8	57.2	52	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90G34**	420	420
1	25	**G1**	22	25	24	83	80	27.8	57.2	54	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90G**	420	420
1	25	**G1 1/4**	25	31	24	83	80	27.8	57.2	55	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90G114**	420	420
1 1/4	32	**G1**	22	31	25	97	94	31.8	66.6	59	15.0	M14×50	1/2×1 3/4	1.35	**PAFG404/90G1**	420	420
1 1/4	32	**G1 1/4**	27	31	25	97	94	31.8	66.6	59	15.0	M14×50	1/2×1 3/4	1.40	**PAFG404/90G**	420	420
1 1/4	32	**G1 1/2**	31	37	25	97	94	31.8	66.6	61	15.0	M14×50	1/2×1 3/4	1.45	**PAFG404/90G112**	420	420
1 1/2	38	**G1 1/4**	27	37	26	110	106	36.5	79.3	64	17.0	M16×55	5/8×2 1/4	1.80	**PAFG405/90G114**	420	420
1 1/2	38	**G1 1/2**	32	37	26	110	106	36.5	79.3	66	17.0	M16×55	5/8×2 1/4	1.85	**PAFG405/90G**	420	420

[1]) Pressure shown = Item deliverable

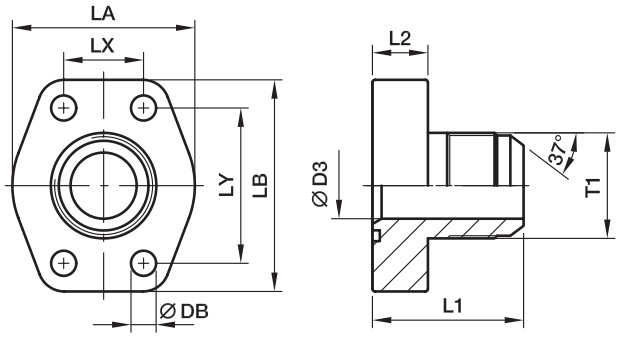
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080/90GCF	PAFG080/90GCFM	PAFG080/90GCFU	NBR
Steel, zinc yellow plated	A3C	PAFG080/90GA3C	PAFG080/90GA3CM	PAFG080/90GA3CU	NBR
Stainless steel	SS	PAFG080/90GSS	PAFG080/90GSSM	PAFG080/90GSSU	VIT

PAFG-X SAE Straight 4 bolt flange with Triple-Lok® 37° flare end

SAE Flange / Triple-Lok® 37° flare end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size											Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D3	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	**3/4-16UNF-2A**	9.9	41	16	47	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PAFG080X-A**	348	348
1/2	13	**7/8-14UNF-2A**	12.3	41	16	47	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.29	**PAFG080X-B**	348	348
1/2	13	**1 1/16-12UN-2A**	12.3	46	16	47	57	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG080X-C**	348	348
3/4	19	**7/8-14UN-2A**	12.3	47	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.35	**PAFG100X-A**	348	348
3/4	19	**1 1/16-12UN-2A**	15.5	49	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.34	**PAFG100X-B**	348	348
3/4	19	**1 5/16-12UN-2A**	21.5	50	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.37	**PAFG100X-C**	348	348
1	25	**1 1/16-12UN-2A**	15.5	51	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.44	**PAFG102X-A**	348	348
1	25	**1 5/16-12UN-2A**	21.5	52	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.46	**PAFG102X-B**	348	348
1	25	**1 5/8-12UN-2A**	27.5	54	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.50	**PAFG102X-C**	348	348
1 1/4	32	**1 5/16-12UN-2A**	21.5	56	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.65	**PAFG104X-A**	278	278
1 1/4	32	**1 5/8-12UN-2A**	27.5	58	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.70	**PAFG104X-B**	278	278
1 1/4	32	**1 7/8-12UN-2A**	33.0	61	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.72	**PAFG104X-C**	278	278
1 1/2	38	**1 5/8-12UN-2A**	27.5	64	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PAFG106X-A**	210	210
1 1/2	38	**1 7/8-12UN-2A**	33.0	67	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.00	**PAFG106X-B**	210	210

6000 PSI Series

1/2	13	**3/4-16UNF-2A**	9.9	42	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401X-A**	350	350
1/2	13	**7/8-14UNF-2A**	12.3	45	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401X-B**	350	350
1/2	13	**1 1/16-12UN-2A**	12.3	47	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.35	**PAFG401X-C**	350	350
3/4	19	**7/8-14UN-2A**	12.3	49	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.68	**PAFG402X-A**	350	350
3/4	19	**1 1/16-12UN-2A**	15.5	51	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.73	**PAFG402X-B**	350	350
3/4	19	**1 5/16-12UN-2A**	21.5	52	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.82	**PAFG402X-C**	350	350
1	25	**1 1/16-12UN-2A**	15.5	58	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.00	**PAFG403X-A**	350	350
1	25	**1 5/16-12UN-2A**	21.5	59	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.15	**PAFG403X-B**	350	350
1	25	**1 5/8-12UN-2A**	27.5	61	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	1.20	**PAFG403X-C**	275	275
1 1/4	32	**1 5/16-12UN-2A**	21.5	64	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.60	**PAFG404X-A**	350	350
1 1/4	32	**1 5/8-12UN-2A**	27.5	66	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.80	**PAFG404X-B**	275	275
1 1/4	32	**1 7/8-12UN-2A**	33.0	69	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.85	**PAFG404X-C**	210	210
1 1/2	38	**1 5/8-12UN-2A**	27.5	70	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.20	**PAFG405X-A**	275	275
1 1/2	38	**1 7/8-12UN-2A**	33.0	73	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	2.25	**PAFG405X-B**	210	210

[1]) Pressure shown = Item deliverable

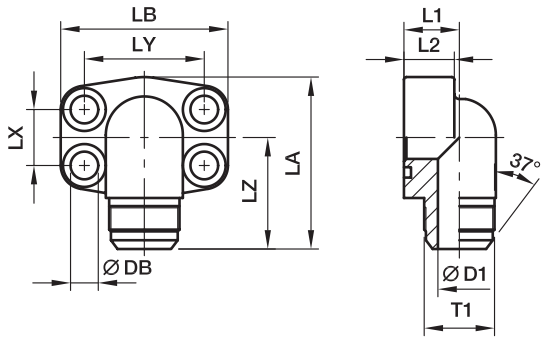
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080X-ACF	PAFG080X-ACFM	PAFG080X-ACFU	NBR
Steel, zinc yellow plated	A3C	PAFG080X-AA3C	PAFG080X-AA3CM	PAFG080X-AA3CU	NBR
Stainless steel	SS	PAFG080X-ASS	PAFG080X-ASSM	PAFG080X-ASSU	VIT

PAFG-90X SAE 90° 4 bolt flange with Triple-Lok® 37° flare end

SAE 90° Flange / Triple-Lok® 37° flare end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	L1	L2	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	3/4-16	9.9	17	16	60	56	17.5	38.1	40	9.0	M 8×30	5/16×1 1/4	0.27	**PAFG080/90X-A**	348	348
1/2	13	7/8-14	12.3	17	16	60	56	17.5	38.1	42	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG080/90X-B**	348	348
1/2	13	1 1/16-12	12.3	20	16	60	57	17.5	38.1	43	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG080/90X-C**	348	348
3/4	19	7/8-14	12.3	20	18	63	66	22.3	47.6	45	11.0	M10×35	3/8×1 1/2	0.47	**PAFG100/90X-A**	348	348
3/4	19	1 1/16-12	15.5	20	18	63	66	22.3	47.6	47	11.0	M10×35	3/8×1 1/2	0.42	**PAFG100/90X-B**	348	348
3/4	19	1 5/16-12	21.5	25	18	63	66	22.3	47.6	48	11.0	M10×35	3/8×1 1/2	0.60	**PAFG100/90X-C**	348	348
1	25	1 1/16-12	15.5	20	19	80	71	26.2	52.4	50	11.0	M10×35	3/8×1 1/2	0.66	**PAFG102/90X-A**	348	348
1	25	1 5/16-12	21.5	25	19	80	71	26.2	52.4	51	11.0	M10×35	3/8×1 1/2	0.62	**PAFG102/90X-B**	348	348
1 1/4	32	1 5/16-12	21.5	25	22	84	80	30.2	58.7	56	11.5	M10×40	7/16×1 1/2	1.06	**PAFG104/90X-A**	278	278
1 1/4	32	1 5/8-12	27.5	31	22	84	80	30.2	58.7	58	11.5	M10×40	7/16×1 1/2	0.93	**PAFG104/90X-B**	278	278
1 1/4	32	1 7/8-12	33.0	37	22	84	80	30.2	58.7	61	11.5	M10×40	7/16×1 1/2	0.96	**PAFG104/90X-C**	278	278
1 1/2	38	1 5/8-12	27.5	31	25	88	94	35.7	69.9	63	13.5	M10×40	1/2×1 3/4	1.44	**PAFG106/90X-A**	210	210
1 1/2	38	1 7/8-12	33.0	37	25	88	94	35.7	69.9	66	13.5	M12×45	1/2×1 3/4	1.35	**PAFG106/90X-B**	210	210

6000 PSI Series

1/2	13	3/4-16	9.9	17	16	60	57	18.2	40.5	40	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401/90X-A**	350	350
1/2	13	7/8-14	12.3	17	16	60	57	18.2	40.5	42	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401/90X-B**	350	350
1/2	13	1 1/16-12	12.3	20	16	60	57	18.2	40.5	43	9.0	M 8×30	5/16×1 1/4	0.35	**PAFG401/90X-C**	350	350
3/4	19	7/8-14	12.3	20	19	68	71	23.8	50.8	49	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90X-A**	350	350
3/4	19	1 1/16-12	15.5	20	19	68	71	23.8	50.8	51	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90X-B**	350	350
3/4	19	1 5/16-12	21.5	25	19	68	71	23.8	50.8	52	11.0	M10×35	3/8×1 1/2	0.53	**PAFG402/90X-C**	350	350
1	25	1 1/16-12	15.5	25	24	83	80	27.8	57.2	55	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90X-A**	350	350
1	25	1 5/16-12	21.5	25	24	83	80	27.8	57.2	56	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90X-B**	350	350
1	25	1 5/8-12	27.5	31	24	83	80	27.8	57.2	58	13.0	M12×45	7/16×1 1/2	0.90	**PAFG403/90X-C**	275	275
1 1/4	32	1 5/16-12	21.5	31	25	97	94	31.8	66.6	56	15.0	M14×50	1/2×1 3/4	1.35	**PAFG404/90X-A**	350	350
1 1/4	32	1 5/8-12	27.5	31	25	97	94	31.8	66.6	63	15.0	M14×50	1/2×1 3/4	1.40	**PAFG404/90X-B**	275	275
1 1/4	32	1 7/8-12	33.0	37	25	97	94	31.8	66.6	63	15.0	M14×50	1/2×1 3/4	1.45	**PAFG404/90X-C**	210	210
1 1/2	38	1 5/8-12	27.5	37	26	110	106	36.5	79.3	67	17.0	M16×55	5/8×2 1/4	1.80	**PAFG405/90X-A**	275	275
1 1/2	38	1 7/8-12	33.0	37	26	110	106	36.5	79.3	70	17.0	M16×55	5/8×2 1/4	1.85	**PAFG405/90X-B**	210	210

[1]) Pressure shown = Item deliverable

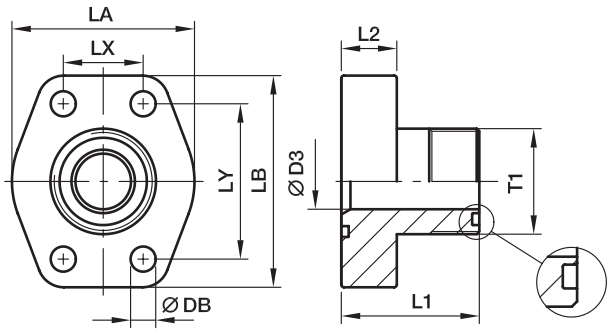
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080/90X-ACF	PAFG080/90X-ACFM	PAFG080/90X-ACFU	NBR
Steel, zinc yellow plated	A3C	PAFG080/90X-AA3C	PAFG080/90X-AA3CM	PAFG080/90X-AA3CU	NBR
Stainless steel	SS	PAFG080/90X-ASS	PAFG080/90X-ASSM	PAFG080/90X-ASSU	VIT

PAFG-L SAE Straight 4 bolt flange with O-Lok® ORFS end

SAE Flange / O-Lok® ORFS end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size											Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D3	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	**11/16-16UN-2A**	6	37	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.24	**PAFG080L-A**	348	348
1/2	13	**13/16-16UN-2A**	9	39	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PAFG080L-B**	348	348
1/2	13	**1-14UN-2A**	12	42	16	47	56	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.27	**PAFG080L-C**	348	348
3/4	19	**1-14UN-2A**	12	45	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.44	**PAFG100L-A**	348	348
3/4	19	**1 3/16-12UN-2A**	15	47	18	50	66	22.3	47.6	11.0	M10×35	3/8×1 1/2	0.46	**PAFG100L-B**	348	348
1	25	**1 3/16-12UN-2A**	15	49	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.53	**PAFG102L-A**	348	348
1	25	**1 7/16-12UN-2A**	20	49	18	53	71	26.2	52.4	11.0	M10×35	3/8×1 1/2	0.52	**PAFG102L-B**	348	348
1 1/4	32	**1 7/16-12UN-2A**	20	53	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.75	**PAFG104L-A**	278	278
1 1/4	32	**1 11/16-12UN-2A**	26	53	21	69	80	30.2	58.7	11.5	M10×40	7/16×1 1/2	0.78	**PAFG104L-B**	278	278
1 1/2	38	**1 11/16-12UN-2A**	26	61	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.20	**PAFG106L-A**	210	210
1 1/2	38	**2-12UN-2A**	32	61	24	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.25	**PAFG106L-B**	210	210

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1/2	13	**11/16-16UN-2A**	6	38	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.25	**PAFG401L-A**	420	420
1/2	13	**13/16-16UN-2A**	9	40	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.27	**PAFG401L-B**	420	420
1/2	13	**1-14UN-2A**	12	43	16	47	57	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG401L-C**	420	420
3/4	19	**1-14UN-2A**	12	47	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.56	**PAFG402L-A**	420	420
3/4	19	**1 3/16-12UN-2A**	15	49	18	53	71	23.8	50.8	11.0	M10×35	3/8×1 1/2	0.65	**PAFG402L-B**	420	420
1	25	**1 3/16-12UN-2A**	15	56	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	0.62	**PAFG403L-A**	420	420
1	25	**1 7/16-12UN-2A**	20	56	21	66	80	27.8	57.2	13.0	M12×45	7/16×1 1/2	0.66	**PAFG403L-B**	420	420
1 1/4	32	**1 7/16-12UN-2A**	20	61	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.95	**PAFG404L-A**	345	345
1 1/4	32	**1 11/16-12UN-2A**	26	61	24	78	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.08	**PAFG404L-B**	345	345
1 1/2	38	**1 11/16-12UN-2A**	26	65	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.66	**PAFG405L-A**	310	310
1 1/2	38	**2-12UN-2A**	32	67	27	90	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.75	**PAFG405L-B**	310	310

[1]) Pressure shown = Item deliverable

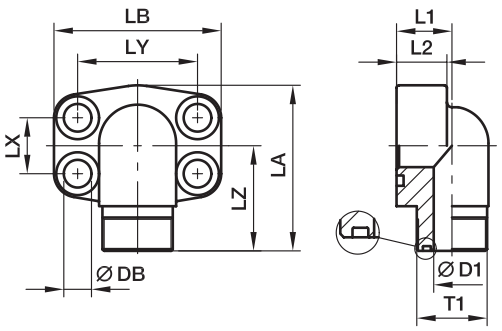
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080L-ACF	PAFG080L-ACFM	PAFG080L-ACFU	NBR
Steel, zinc yellow plated	A3C	PAFG080L-AA3C	PAFG080L-AA3CM	PAFG080L-AA3CU	NBR
Stainless steel	SS	PAFG080L-ASS	PAFG080L-ASSM	PAFG080L-ASSU	VIT

PAFG-90L SAE 90° 4 bolt flange with O-Lok® ORFS end

SAE 90° Flange / O-Lok® ORFS end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	L1	L2	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	kg/piece	Order code*	A3C	SS
1/2	13	**11/16-16UN-2A**	6	17	16	60	56	17.5	38.1	37	9.0	M 8×30	5/16×1 1/4	0.26	**PAFG080/90L-A**	348	348
1/2	13	**13/16-16UN-2A**	9	17	16	60	56	17.5	38.1	39	9.0	M 8×30	5/16×1 1/4	0.29	**PAFG080/90L-B**	348	348
1/2	13	**1-14UN-2A**	12	20	16	60	56	17.5	38.1	40	9.0	M 8×30	5/16×1 1/4	0.31	**PAFG080/90L-C**	348	348
3/4	19	**1-14UN-2A**	12	20	18	63	66	22.3	47.6	44	11.0	M10×35	3/8×1 1/2	0.63	**PAFG100/90L-A**	348	348
3/4	19	**1 3/16-12UN-2A**	15	25	18	63	66	22.3	47.6	45	11.0	M10×35	3/8×1 1/2	0.64	**PAFG100/90L-B**	348	348
1	25	**1 3/16-12UN-2A**	15	25	19	80	71	26.2	52.4	48	11.0	M10×35	3/8×1 1/2	0.63	**PAFG102/90L-A**	348	348
1	25	**1 7/16-12UN-2A**	20	31	19	80	71	26.2	52.4	49	11.0	M10×35	3/8×1 1/2	0.66	**PAFG102/90L-B**	348	348
1 1/4	32	**1 7/16-12UN-2A**	20	31	22	84	80	30.2	58.7	55	11.5	M10×40	7/16×1 1/2	1.02	**PAFG104/90L-A**	278	278
1 1/4	32	**1 11/16-12UN-2A**	26	31	22	84	80	30.2	58.7	55	11.5	M10×40	7/16×1 1/2	1.08	**PAFG104/90L-B**	278	278
1 1/2	38	**1 11/16-12UN-2A**	26	31	25	88	94	35.7	69.9	59	13.5	M12×45	1/2×1 3/4	1.66	**PAFG106/90L-A**	210	210
1 1/2	38	**2-12UN-2A**	32	37	25	88	94	35.7	69.9	61	13.5	M12×45	1/2×1 3/4	1.68	**PAFG106/90L-B**	210	210

6000 PSI Series

1/2	13	**11/16-16UN-2A**	16	17	16	60	57	18.2	40.5	37	9.0	M 8×30	5/16×1 1/4	0.27	**PAFG401/90L-A**	420	420
1/2	13	**13/16-16UN-2A**	16	17	16	60	57	18.2	40.5	39	9.0	M 8×30	5/16×1 1/4	0.30	**PAFG401/90L-B**	420	420
1/2	13	**1-14UN-2A**	16	20	16	60	57	18.2	40.5	40	9.0	M 8×30	5/16×1 1/4	0.32	**PAFG401/90L-C**	420	420
3/4	19	**1-14UN-2A**	19	20	19	68	71	23.8	50.8	48	11.0	M10×35	3/8×1 1/2	0.64	**PAFG402/90L-A**	420	420
3/4	19	**1 3/16-12UN-2A**	19	25	19	68	71	23.8	50.8	50	11.0	M10×35	3/8×1 1/2	0.65	**PAFG402/90L-B**	420	420
1	25	**1 3/16-12UN-2A**	24	25	24	83	80	27.8	57.2	54	13.0	M12×45	7/16×1 1/2	0.64	**PAFG403/90L-A**	420	420
1	25	**1 7/16-12UN-2A**	24	31	24	83	80	27.8	57.2	55	13.0	M12×45	7/16×1 1/2	0.67	**PAFG403/90L-B**	420	420
1 1/4	32	**1 7/16-12UN-2A**	25	31	25	97	94	31.8	66.6	59	15.0	M14×50	1/2×1 3/4	1.04	**PAFG404/90L-A**	420	420
1 1/4	32	**1 11/16-12UN-2A**	25	31	25	97	94	31.8	66.6	59	15.0	M14×50	1/2×1 3/4	1.10	**PAFG404/90L-B**	345	345
1 1/2	38	**1 11/16-12UN-2A**	26	37	26	110	106	36.5	79.3	64	17.0	M16×55	5/8×2 1/4	1.69	**PAFG405/90L-A**	345	345
1 1/2	38	**2-12UN-2A**	26	37	26	110	106	36.5	79.3	66	17.0	M16×55	5/8×2 1/4	1.71	**PAFG405/90L-B**	310	310

[1]) Pressure shown = Item deliverable

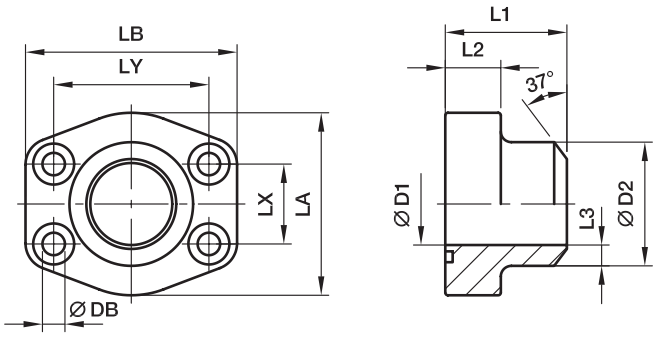
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	PAFG080/90L-ACF	PAFG080/90L-ACFM	PAFG080/90L-ACFU	NBR
Steel, zinc yellow plated	A3C	PAFG080/90L-AA3C	PAFG080/90L-AA3CM	PAFG080/90L-AA3CU	NBR
Stainless steel	SS	PAFG080/90L-ASS	PAFG080/90L-ASSM	PAFG080/90L-ASSU	VIT

PAFS-B SAE Straight 4 bolt flange (butt weld)

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	21.6	36	16	4.3	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.28	**PAFS080B**	345	345
3/4	19	26.9	19	27.2	36	18	4.1	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.39	**PAFS100B**	345	345
1	25	33.7	25	34.5	38	18	4.7	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.46	**PAFS102B**	345	345
1 1/4	32	42.4	31	42.8	41	21	3.0	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.66	**PAFS104B**	276	276
1 1/2	38	48.3	38	48.6	44	25	5.3	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.05	**PAFS106B**	207	207
2	51	60.3	50	61.0	45	25	5.5	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.19	**PAFS108B**	207	207
2 1/2	64	76.1	63	76.6	50	25	6.8	101	115	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.40	**PAFS110B**	172	172
3	76	88.9	73	89.0	50	27	8.0	124	135	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.15	**PAFS112B**	138	138
3 1/2	89	101.6	89	103.0	50	27	7.0	134	153	69.9	120.7	17.0	M16×55	5/8×2 1/4	2.40	**PAFS114B**	34	34
4	102	114.3	99	115.0	50	27	8.0	147	163	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.85	**PAFS116B**	34	34
5	127	140.0	120	141.0	50	28	10.5	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	4.85	**PAFS118B**	34	34

6000 PSI Series

1/2	13	17.2	10	17.5	36	18	3.7	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.26	**PAFS401B38**	420	420
1/2	13	21.3	13	21.6	36	18	4.3	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.29	**PAFS401B**	420	420
3/4	19	26.9	18	27.2	36	18	4.6	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.50	**PAFS402B**	420	420
1	25	33.7	22	34.5	44	24	6.3	66	80	27.8	57.2	10.5	M12×45	7/16×1 1/2	0.76	**PAFS403B**	420	420
1 1/4	32	42.4	28	42.8	44	25	7.4	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.35	**PAFS404B**	420	420
1 1/2	38	48.3	32	48.6	51	29	8.3	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.80	**PAFS405B**	420	420
2	51	60.3	41	61.0	70	35	10.0	116	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.45	**PAFS406B**	420	420
2 1/2	64	76.1	50	76.6	75	45	13.0	150	166	58.7	123.8	25.0	M24×90	–	6.25	**PAFS407B**	420	420
3	76	88.9	58	90.0	90	55	16.0	178	208	71.4	152.4	32.0	M30×110	–	8.10	**PAFS408B**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

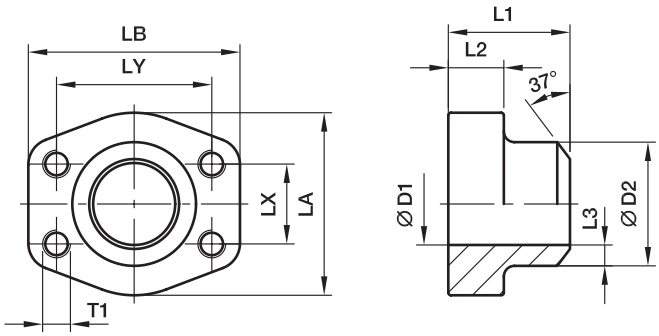
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080BS	PAFS080BSM	PAFS080BSU	NBR
Stainless steel	SS	PAFS080BSS	PAFS080BSSM	PAFS080BSSU	VIT

PGFS-B SAE Straight 4 bolt counter flange (butt weld)

SAE Counter flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L1	L2	L3	LA	LB	LX	LY	T1 (metr.)	T1 (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	21.6	36	16	4.3	47	57	17.5	38.1	M 8	5/16	0.25	**PGFS080B**	345	345
3/4	19	26.9	19	27.2	36	18	4.1	49	66	22.3	47.6	M10	3/8	0.35	**PGFS100B**	345	345
1	25	33.7	25	34.5	38	18	4.7	53	71	26.2	52.4	M10	3/8	0.46	**PGFS102B**	345	345
1 1/4	32	42.4	31	42.8	41	21	6.0	69	80	30.2	58.7	M10	7/16	0.66	**PGFS104B**	276	276
1 1/2	38	48.3	38	48.6	44	25	5.3	77	94	35.7	69.9	M12	1/2	1.05	**PGFS106B**	207	207
2	51	60.3	50	61.0	45	25	5.5	89	103	42.9	77.8	M12	1/2	1.19	**PGFS108B**	207	207
2 1/2	64	76.1	63	76.6	50	25	6.8	101	115	50.8	88.9	M12	1/2	1.40	**PGFS110B**	172	172
3	76	88.9	73	89.0	50	27	8.0	124	135	61.9	106.4	M16	5/8	2.15	**PGFS112B**	138	138
3 1/2	89	101.6	89	103.0	50	27	7.0	134	153	69.9	120.7	M16	5/8	2.40	**PGFS114B**	34	34
4	102	114.3	99	115.0	50	27	8.0	147	163	77.8	130.2	M16	5/8	2.85	**PGFS116B**	34	34
5	127	140.0	120	141.0	50	28	10.5	180	184	92.1	152.4	M16	5/8	4.90	**PGFS118B**	34	34

6000 PSI Series

1/2	13	17.2	10	17.5	36	16	3.7	47	57	18.2	40.5	M 8	5/16	0.29	**PGFS401B38**	420	420
1/2	13	21.3	13	21.6	36	16	4.3	47	57	18.2	40.5	M 8	5/16	0.26	**PGFS401B**	420	420
3/4	19	26.9	18	27.2	36	19	4.6	53	71	23.8	50.8	M10	3/8	0.50	**PGFS402B**	420	420
1	25	33.7	22	34.5	44	24	6.3	66	80	27.8	57.2	M12	7/16	0.76	**PGFS403B**	420	420
1 1/4	32	42.4	28	42.8	44	27	7.4	77	94	31.8	66.6	M14	1/2	1.20	**PGFS404B**	420	420
1 1/2	38	48.3	32	48.6	51	30	8.3	89	106	36.5	79.3	M16	5/8	1.65	**PGFS405B**	420	420
2	51	60.3	41	61.0	70	37	10.0	116	135	44.5	96.8	M20	3/4	2.75	**PGFS406B**	420	420
2 1/2	64	76.1	50	76.6	75	45	13.0	150	166	58.7	123.8	M24	–	6.40	**PGFS407B**	420	420
3	76	88.9	58	90.0	90	55	16.0	178	208	71.4	152.4	M30	–	8.25	**PGFS408B**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

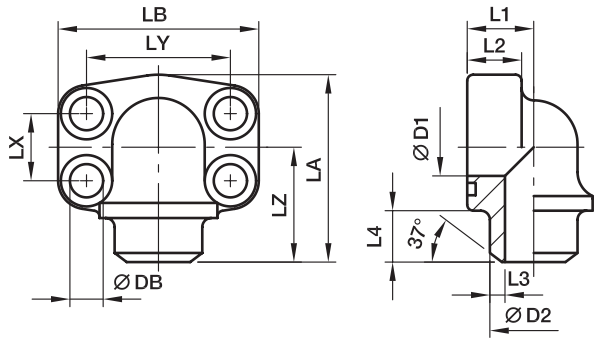
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PGFS080BSM	PGFS080BSU	NBR
Stainless steel	SS	PGFS080BSSM	PGFS080BSSU	VIT

PAFS-90B SAE 90° 4 bolt flange (butt weld)

SAE 90° Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L1	L2	L3	L4	LA	LB	LX	LY	LZ	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	21.6	18	16	4.3	12	63	56	17.5	38.1	40	9.0	M 8×30	5/16×1 1/4	0.45	**PAFS080/90B**	345	345
3/4	19	26.9	19	27.2	22	18	4.1	12	74	68	22.3	47.6	41	10.5	M10×35	3/8×1 1/2	0.65	**PAFS100/90B**	345	345
1	25	33.7	25	34.5	28	19	4.7	13	77	74	26.2	52.4	50	10.5	M10×35	3/8×1 1/2	0.85	**PAFS102/90B**	345	345
1 1/4	32	42.4	31	42.8	30	22	6.0	13	91	81	30.2	58.7	57	10.5	M10×40	7/16×1 1/2	1.15	**PAFS104/90B**	276	276
1 1/2	38	48.3	38	48.6	36	25	5.3	14	105	95	35.7	69.9	66	13.5	M12×45	1/2×1 3/4	1.70	**PAFS106/90B**	207	207
2	51	60.3	50	61.0	41	25	5.5	15	110	105	42.9	77.8	66	13.5	M12×45	1/2×1 3/4	2.15	**PAFS108/90B**	207	207
2 1/2	64	76.1	60	76.6	50	25	8.0	25	127	115	50.8	88.9	77	13.5	M12×45	1/2×1 3/4	2.95	**PAFS110/90B**	172	172

6000 PSI Series

1/2	13	21.3	13	21.6	18	16	4.3	12	63	56	18.2	40.5	40	9.0	M 8×30	5/16×1 1/4	0.50	**PAFS401/90B**	420	420
3/4	19	26.9	18	27.2	28	20	4.6	12	77	72	23.8	50.8	50	10.5	M10×35	3/8×1 1/2	0.55	**PAFS402/90B**	420	420
1	25	33.7	22	34.5	26	24	6.3	13	91	82	27.8	57.2	57	13.5	M12×45	7/16×1 1/2	0.80	**PAFS403/90B**	420	420
1 1/4	32	42.4	28	42.8	36	25	7.4	13	105	95	31.8	66.6	66	15.0	M14×50	1/2×1 3/4	1.15	**PAFS404/90B**	420	420
1 1/2	38	48.3	32	48.6	41	26	8.3	15	109	110	36.5	79.3	65	17.0	M16×55	5/8×2 1/4	2.00	**PAFS405/90B**	420	420
2	51	60.3	41	61.0	45	35	10.0	15	133	134	44.5	96.8	75	21.0	M20×70	3/4×2 3/4	3.00	**PAFS406/90B**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

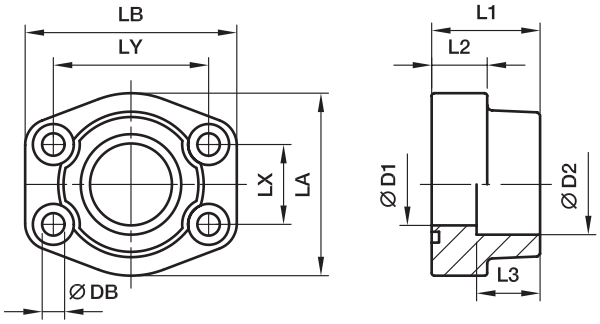
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080/90BS	PAFS080/90BSM	PAFS080/90BSU	NBR
Stainless steel	SS	PAFS080/90BSS	PAFS080/90BSSM	PAFS080/90BSSU	VIT

PAFS-S SAE Straight 4 bolt flange (socket weld)

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	17.2	13	17.5	36	16	18	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.25	**PAFS080S17.5**	345	345
1/2	13	21.3	13	21.6	36	16	18	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.28	**PAFS080S21.6**	345	345
3/4	19	26.9	19	27.2	36	18	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.39	**PAFS100S27.2**	345	345
1	25	33.7	25	34.1	38	18	18	53	70	26.2	52.4	10.3	M10×35	3/8×1 1/2	0.46	**PAFS102S34.1**	345	345
1 1/4	32	42.4	31	42.8	41	21	20	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.66	**PAFS104S42.8**	276	276
1 1/2	38	48.3	38	48.6	44	25	22	77	94	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.05	**PAFS106S48.6**	207	207
2	51	60.3	50	61.0	45	25	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.19	**PAFS108S61**	207	207
2 1/2	64	76.1	63	76.6	50	25	28	101	115	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.40	**PAFS110S76.6**	172	172
3	76	88.9	73	90.5	50	27	28	124	135	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.15	**PAFS112S90.5**	138	138
3 1/2	89	101.6	89	103.0	50	27	28	137	153	69.9	120.7	17.0	M16×55	5/8×2 1/4	2.40	**PAFS114S103**	34	34
4	102	114.3	99	115.5	50	27	28	147	163	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.85	**PAFS116S115.5**	34	34
5	127	140.0	120	142.0	50	28	28	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.25	**PAFS118S142**	34	34

6000 PSI Series

1/2	13	17.2	13	17.5	36	16	18	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.26	**PAFS401S17.5**	420	420
1/2	13	21.3	13	21.6	36	16	18	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.29	**PAFS401S21.6**	420	420
3/4	19	26.9	19	27.2	36	19	20	53	71	23.8	50.8	10.3	M10×35	3/8×1 1/2	0.50	**PAFS402S27.2**	420	420
1	25	33.7	25	34.1	44	24	22	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.76	**PAFS403S34.1**	420	420
1 1/4	32	42.4	31	42.8	44	27	22	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	1.20	**PAFS404S42.8**	420	420
1 1/2	38	48.3	38	48.6	51	30	24	89	106	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.65	**PAFS405S48.6**	420	420
2	51	60.3	50	61.0	70	37	25	116	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	2.45	**PAFS406S61**	420	420
2 1/2	64	76.1	63	76.6	75	45	28	150	166	58.7	123.8	25.0	M24×90	–	3.05	**PAFS407S76.6**	420	420
3	76	88.9	73	90.5	90	55	30	178	208	71.4	152.4	32.0	M30×110	–	3.45	**PAFS408S90.5**	420	420

[1]) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

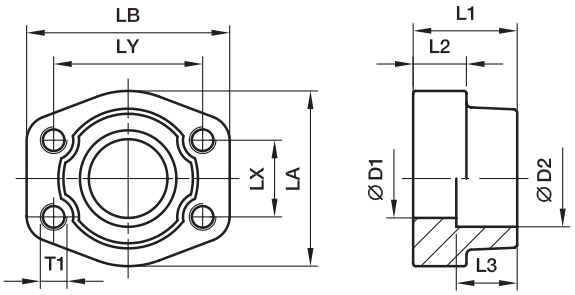
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080S17.5S	PAFS080S17.5SM	PAFS080S17.5SU	NBR
Stainless steel	SS	PAFS080S17.5SS	PAFS080S17.5SSM	PAFS080S17.5SSU	VIT

PGFS-S SAE Straight counter 4 bolt flange (socket weld)

SAE Counter flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size													T1		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	max.	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	17.2	13	17.5	36	18	16	46	58	17.5	38.1	9.0	M 8	5/16	0.25	**PGFS080S17.5**	345	345
1/2	13	21.3	13	21.6	36	18	16	46	58	17.5	38.1	9.0	M 8	5/16	0.28	**PGFS080S21.6**	345	345
3/4	19	26.9	19	27.2	36	18	18	49	66	22.3	47.6	10.5	M10	3/8	0.39	**PGFS100S27.2**	345	345
1	25	33.7	25	34.1	38	18	18	53	70	26.2	52.4	10.5	M10	3/8	0.46	**PGFS102S34.1**	345	345
1 1/4	32	42.4	31	42.8	41	20	21	69	80	30.2	58.7	10.5	M10	7/16	0.66	**PGFS104S42.8**	276	276
1 1/2	38	48.3	38	48.6	44	22	25	77	94	35.7	69.9	13.5	M12	1/2	1.05	**PGFS106S48.6**	207	207
2	51	60.3	50	61.0	45	24	25	89	103	42.9	77.8	13.5	M12	1/2	1.19	**PGFS108S61**	207	207
2 1/2	64	76.1	63	76.6	50	28	25	101	115	50.8	88.9	13.5	M12	1/2	1.40	**PGFS110S76.6**	172	172
3	76	88.9	73	90.5	50	28	27	124	135	61.9	106.4	17.0	M16	5/8	2.15	**PGFS112S90.5**	138	138
3 1/2	89	101.6	89	103.0	50	28	27	137	153	69.9	120.7	17.0	M16	5/8	2.40	**PGFS114S103**	34	34
4	102	114.3	99	115.5	50	28	27	147	163	77.8	130.2	17.0	M16	5/8	2.85	**PGFS116S115.5**	34	34
5	127	140.0	120	142.0	50	28	28	180	184	92.1	152.4	17.0	M16	5/8	3.25	**PGFS118S142**	34	34

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1/2	13	17.2	13	17.5	36	18	16	46	58	18.2	40.5	9.0	M 8	5/16	0.26	**PGFS401S17.5**	420	420
1/2	13	21.3	13	21.6	36	18	16	46	58	18.2	40.5	9.0	M 8	5/16	0.29	**PGFS401S21.6**	420	420
3/4	19	26.9	19	27.2	36	20	19	53	71	23.8	50.8	10.5	M10	3/8	0.50	**PGFS402S27.2**	420	420
1	25	33.7	25	34.1	44	22	24	66	80	27.8	57.2	13.5	M12	7/16	0.76	**PGFS403S34.1**	420	420
1 1/4	32	42.4	31	42.8	44	22	27	77	94	31.8	66.6	15.0	M14	1/2	1.20	**PGFS404S42.8**	420	420
1 1/2	38	48.3	38	48.6	51	24	30	89	106	36.5	79.3	17.0	M16	5/8	1.65	**PGFS405S48.6**	420	420
2	51	60.3	50	61.0	70	25	37	116	135	44.5	96.8	21.0	M20	3/4	2.45	**PGFS406S61**	420	420
2 1/2	64	76.1	63	76.6	75	28	45	150	166	58.7	123.8	25.0	M24	–	3.05	**PGFS407S76.6**	420	420
3	76	88.9	73	90.5	90	30	55	178	208	71.4	152.4	32.0	M30	–	3.45	**PGFS408S90.5**	420	420

[1]) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

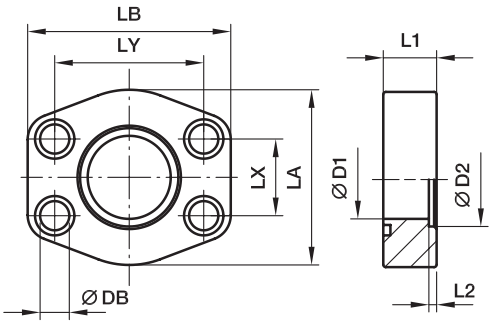
*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PGFS080S17.5SM	PGFS080S17.5SU	NBR
Stainless steel	SS	PGFS080S17.5SSM	PGFS080S17.5SSU	VIT

PAFSF-S SAE Straight 4 bolt flange flat (socket weld)

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)

only for low pressure applications



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	max.	D1	D2	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	17.2	13	17.5	16	3	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.12	**PAFSF080S17.5**	40	40
1/2	13	21.3	13	21.6	16	3	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.12	**PAFSF080S21.6**	40	40
3/4	19	21.3	13	21.6	18	4	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.20	**PAFSF100S21.6**	40	40
3/4	19	26.9	19	27.2	18	4	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.20	**PAFSF100S27.2**	40	40
1	25	26.9	19	27.2	19	4	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.25	**PAFSF102S27.2**	40	40
1	25	33.7	25	34.5	19	4	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.25	**PAFSF102S34.5**	40	40
1 1/4	32	33.7	25	34.5	21	4	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.31	**PAFSF104S34.5**	40	40
1 1/4	32	42.4	31	42.8	21	4	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.31	**PAFSF104S42.8**	40	40
1 1/2	38	42.4	31	42.8	24	4	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	0.50	**PAFSF106S42.8**	40	40
1 1/2	38	48.3	38	48.6	24	4	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	0.50	**PAFSF106S48.6**	40	40
2	51	48.3	38	48.6	24	4	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	0.59	**PAFSF108S48.6**	40	40
2	51	60.3	50	61.0	24	4	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	0.59	**PAFSF108S61.0**	40	40
2 1/2	64	60.3	50	61.0	25	5	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	0.72	**PAFSF110S61.0**	40	40
2 1/2	64	76.1	63	76.6	25	5	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	0.72	**PAFSF110S76.6**	40	40
3	76	76.1	63	76.6	25	5	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	1.25	**PAFSF112S76.6**	30	30
3	76	88.9	73	90.5	25	5	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	1.25	**PAFSF112S90.5**	30	30
3 1/2	89	88.9	73	90.5	25	5	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	1.50	**PAFSF114S90.5**	30	30
3 1/2	89	101.6	89	103.0	25	5	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	1.50	**PAFSF114S103**	30	30
4	102	101.6	89	103.0	25	6	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.15	**PAFSF116S103**	30	30
4	102	114.3	99	115.5	25	6	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	2.15	**PAFSF116S115.5**	30	30
5	127	114.3	99	115.5	25	6	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	3.00	**PAFSF118S115.5**	30	30
5	127	140.0	120	142.5	25	6	180	184	92.1	135.0	17.0	M16×55	5/8×2 1/4	3.00	**PAFSF118S142.5**	30	30

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1/2	13	17.2	13	17.5	16	4	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.12	**PAFSF401S17.5**	40	40
1/2	13	21.3	13	21.6	16	4	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.12	**PAFSF401S21.6**	40	40
3/4	19	21.3	13	21.6	19	4	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.20	**PAFSF402S21.6**	40	40
3/4	19	26.9	19	27.2	19	4	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.20	**PAFSF402S27.2**	40	40
1	25	26.9	19	27.2	24	4	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.25	**PAFSF403S27.2**	40	40
1	25	33.7	25	34.5	24	4	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.25	**PAFSF403S34.5**	40	40
1 1/4	32	33.7	25	34.5	27	4	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.31	**PAFSF404S34.5**	40	40
1 1/4	32	42.4	31	42.8	27	4	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.31	**PAFSF404S42.8**	40	40
1 1/2	38	42.4	31	42.8	30	4	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	0.50	**PAFSF405S42.8**	40	40
1 1/2	38	48.3	38	48.6	30	4	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	0.50	**PAFSF405S48.6**	40	40
2	51	48.3	38	48.6	35	4	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	0.59	**PAFSF406S48.6**	40	40
2	51	60.3	50	61.0	35	4	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	0.59	**PAFSF406S61.0**	40	40

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

[1]) Pressure shown = Item deliverable

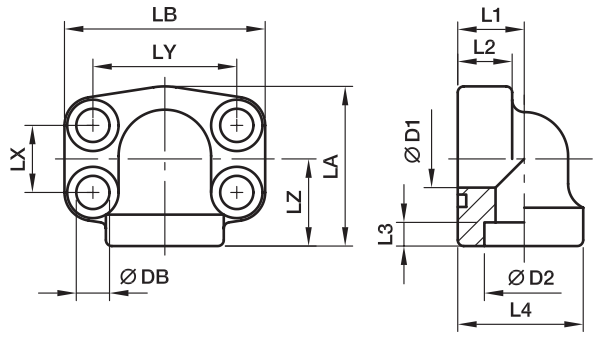
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFSF080S17.5S	PAFSF080S17.5SM	PAFSF080S17.5SU	NBR
Stainless steel	SS	PAFSF080S17.5SS	PAFSF080S17.5SSM	PAFSF080S17.5SSU	VIT

PAFS-90S SAE 90° 4 bolt flange (socket weld)

SAE 90° Flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L1	L2	L3	L4	LA	LB	LX	LY	LZ	DB	Screws (metr.)	Screws (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	21.6	18	17	5	34.0	51	57	17.5	38.1	28	9.0	M 8×30	5/16×1 1/4	0.35	**PAFS080/90S21.6**	345	345
3/4	19	26.9	19	27.2	22	18	5	38.5	50	68	22.2	47.6	25	10.5	M10×35	3/8×1 1/2	0.55	**PAFS100/90S27.2**	345	345
1	25	33.7	25	34.1	28	19	6	44.5	55	72	26.2	52.4	28	10.5	M10×35	3/8×1 1/2	0.80	**PAFS102/90S34.1**	345	345
1 1/4	32	42.4	31	42.8	30	22	7	53.5	68	82	30.2	58.7	34	10.5	M10×40	7/16×1 1/2	1.30	**PAFS104/90S42.8**	276	276
1 1/2	38	48.3	38	48.6	36	25	8	62.5	82	95	35.7	69.9	43	13.5	M12×45	1/2×1 3/4	1.60	**PAFS106/90S48.6**	207	207
2	51	60.3	50	61.0	41	25	10	77.0	94	105	42.9	77.8	50	13.5	M12×45	1/2×1 3/4	2.00	**PAFS108/90S61**	207	207
2 1/2	64	76.1	60	76.6	50	25	28	85.0	127	115	50.8	88.9	77	13.5	M12×45	1/2×1 3/4	2.60	**PAFS110/90S76.6**	172	172

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1/2	13	21.3	13	21.6	18	17	5	34.0	51	57	18.2	40.5	28	9.0	M 8×30	5/16×1 1/4	0.35	**PAFS401/90S21.6**	420	420
3/4	19	26.9	19	27.2	28	19	6	44.5	55	72	23.8	50.8	28	10.5	M10×35	3/8×1 1/2	0.80	**PAFS402/90S27.2**	420	420
1	25	33.7	25	34.1	30	24	7	53.5	68	82	27.8	57.2	34	13.5	M12×50	7/16×1 1/2	1.30	**PAFS403/90S34.1**	420	420
1 1/4	32	42.4	31	42.8	36	25	8	62.5	82	95	31.8	66.6	43	15.0	M14×45	1/2×1 3/4	1.60	**PAFS404/90S42.8**	420	420
1 1/2	38	48.3	38	48.6	41	26	10	77.0	94	110	36.5	79.3	50	17.0	M16×55	5/8×2 1/4	2.00	**PAFS405/90S48.6**	420	420
2	51	60.3	50	61.0	45	35	12	89.0	123	134	44.5	96.8	65	21.0	M20×70	3/4×2 3/4	2.50	**PAFS406/90S61**	420	420

[1]) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

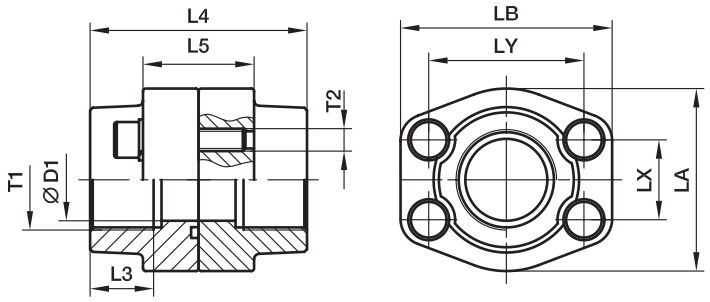
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080/90S21.6S	PAFS080/90S21.6SM	PAFS080/90S21.6SU	NBR
Stainless steel	SS	PAFS080/90S21.6SS	PAFS080/90S21.6SSM	PAFS080/90S21.6SSU	VIT

PDFS-G SAE Straight 4 bolt flange connection

SAE Flange / Female BSPP thread
(ISO 6162-1/-2) (ISO 1179-1)



3000 PSI Series

Nom. flange size											T2		Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	T1	D1	L3	L4	L5	LA	LB	LX	LY	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	**G3/8**	13	19	72	32	47	57	17.5	38.1	M 8	5/16	0.50	**PDFS080G38**	345	345
1/2	13	**G1/2**	13	19	72	32	47	57	17.5	38.1	M 8	5/16	0.56	**PDFS080G**	345	345
3/4	19	**G3/4**	19	19	72	36	49	66	22.3	47.6	M10	3/8	0.78	**PDFS100G**	345	345
1	25	**G1**	25	19	76	36	53	71	26.2	52.4	M10	3/8	0.92	**PDFS102G**	345	345
1 1/4	32	**G1 1/4**	31	22	82	42	69	80	30.2	58.7	M10	7/16	1.32	**PDFS104G**	276	276
1 1/2	38	**G1 1/2**	38	24	88	48	77	94	35.7	69.9	M12	1/2	2.10	**PDFS106G**	207	207
2	51	**G2**	50	26	90	48	89	103	42.9	77.8	M12	1/2	2.38	**PDFS108G**	207	207
2 1/2	64	**G2 1/2**	63	30	100	48	101	115	50.8	88.9	M12	1/2	2.80	**PDFS110G**	172	172
3	76	**G3**	73	34	100	53	124	135	61.9	106.4	M16	5/8	4.30	**PDFS112G**	138	138
3 1/2	89	**G3 1/2**	89	27	100	54	136	152	69.9	120.7	M16	5/8	4.80	**PDFS114G**	34	34
4	102	**G4**	99	30	100	54	146	162	77.8	130.2	M16	5/8	5.70	**PDFS116G**	34	34
5	127	**G5**	120	30	100	54	180	184	92.1	152.4	M16	5/8	6.60	**PDFS118G**	34	34

6000 PSI Series

1/2	13	**G3/8**	13	19	72	32	47	57	18.2	40.5	M 8	5/16	0.52	**PDFS401G38**	420	420
1/2	13	**G1/2**	13	19	72	32	47	57	18.2	40.5	M 8	5/16	0.58	**PDFS401G**	420	420
3/4	19	**G3/4**	19	22	72	38	53	71	23.8	50.8	M10	3/8	1.00	**PDFS402G**	420	420
1	25	**G1**	25	24	88	48	69	80	27.8	57.2	M12	7/16	1.52	**PDFS403G**	420	420
1 1/4	32	**G1 1/4**	31	25	88	54	77	94	31.8	66.6	M14	1/2	2.40	**PDFS404G**	420	420
1 1/2	38	**G1 1/2**	38	28	102	60	89	106	36.5	79.3	M16	5/8	3.30	**PDFS405G**	420	420
2	51	**G2**	50	33	140	74	116	135	44.5	96.8	M20	3/4	4.90	**PDFS406G**	420	420
2 1/2	64	**G2 1/2**	63	35	150	90	150	166	58.7	123.8	M24	–	6.50	**PDFS407G**	420	420
3	76	**G3**	73	40	180	110	178	208	71.4	152.4	M30	–	8.00	**PDFS408G**	420	420

[1]) Pressure shown = Item deliverable

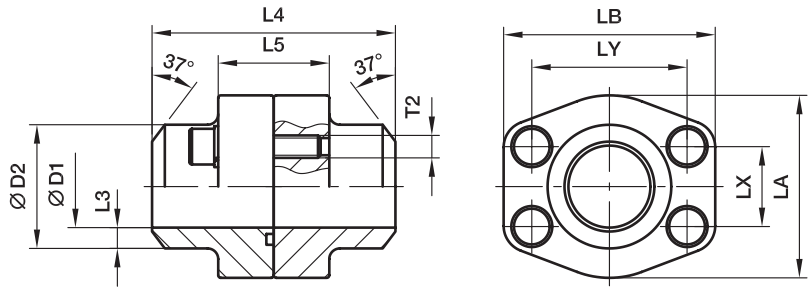
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080GS	PDFS080GSU	NBR
Stainless steel	SS	PDFS080GSS	PDFS080GSSU	VIT

PDFS-B SAE Straight 4 bolt flange connection (butt weld)

SAE Flange / Butt weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L3	L4	L5	LA	LB	LX	LY	T2 (metr.)	T2 (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	21.3	13	21.6	4.3	72	32	47	57	17.5	38.1	M 8	5/16	0.50	**PDFS080B**	345	345
3/4	19	26.9	19	27.2	4.1	72	36	49	66	22.3	47.6	M10	3/8	0.56	**PDFS100B**	345	345
1	25	33.7	25	34.5	4.7	76	36	53	71	26.2	52.4	M10	3/8	0.78	**PDFS102B**	345	345
1 1/4	32	42.4	31	42.8	6.0	82	42	69	80	30.2	58.7	M10	7/16	0.92	**PDFS104B**	345	345
1 1/2	38	48.3	38	48.6	5.3	88	48	77	94	35.7	69.9	M12	1/2	1.32	**PDFS106B**	276	276
2	51	60.3	50	61.0	5.5	90	48	89	103	42.9	77.8	M12	1/2	2.10	**PDFS108B**	207	207
2 1/2	64	76.1	63	76.6	6.8	100	48	101	115	50.8	88.9	M12	1/2	2.38	**PDFS110B**	207	207
3	76	88.9	73	89.0	8.0	100	53	124	135	61.9	106.4	M16	5/8	2.80	**PDFS112B**	172	172
3 1/2	89	101.6	89	103.0	7.0	100	54	137	153	69.9	120.7	M16	5/8	4.30	**PDFS114B**	138	138
4	102	114.3	99	115.0	8.0	100	54	147	163	77.8	130.2	M16	5/8	4.80	**PDFS116B**	34	34
5	127	140.0	120	141.0	10.5	100	54	180	184	92.1	152.4	M16	5/8	5.70	**PDFS118B**	34	34

6000 PSI Series

1/2	13	17.2	10	17.5	3.7	72	32	47	57	18.2	40.5	M 8	5/16	0.52	**PDFS401B38**	420	420
1/2	13	21.3	13	21.6	4.3	72	32	47	57	18.2	40.5	M 8	5/16	0.58	**PDFS401B**	420	420
3/4	19	26.9	18	27.2	4.6	72	38	53	71	23.8	50.8	M10	3/8	1.00	**PDFS402B**	420	420
1	25	33.7	22	34.5	6.3	88	48	66	80	27.8	57.2	M12	7/16	1.52	**PDFS403B**	420	420
1 1/4	32	42.4	28	42.8	7.4	88	54	77	94	31.8	66.5	M14	1/2	2.40	**PDFS404B**	420	420
1 1/2	38	48.3	32	48.6	8.3	102	60	89	106	36.5	79.3	M16	5/8	3.30	**PDFS405B**	420	420
2	51	60.3	41	61.0	10.0	140	74	116	135	44.5	96.8	M20	3/4	4.90	**PDFS406B**	420	420
2 1/2	64	76.1	50	76.6	13.0	150	90	150	166	58.7	123.8	M24	–	6.50	**PDFS407B**	420	420
3	76	88.9	58	90.0	16.0	180	110	178	208	71.4	152.4	M30	–	8.00	**PDFS408B**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

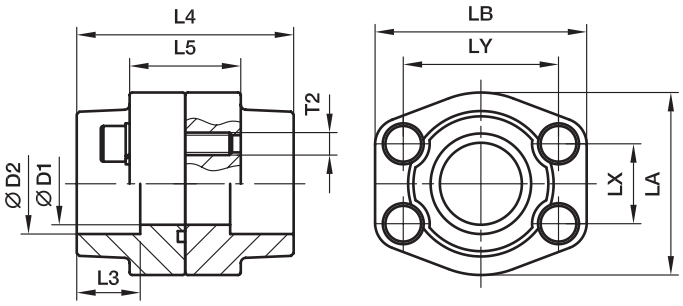
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080BS	PDFS080BSU	NBR
Stainless steel	SS	PDFS080BSS	PDFS080BSSU	VIT

PDFS-S SAE Straight 4 bolt flange connection (socket weld)

SAE Flange / Socket weld tube end
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	Nom. flange size ISO (DN)	max.	D1	D2	L3	L4	L5	LA	LB	LX	LY	T2 (metr.)	T2 (unc.)	Weight (steel) kg/piece	Order code*	PN (bar)[1] S	PN (bar)[1] SS
1/2	13	17.2	13	17.5	18	72	36	47	57	17.5	38.1	M 8	5/16	0.50	**PDFS080S17.5**	345	345
1/2	13	21.3	13	21.6	18	72	36	47	57	17.5	38.1	M 8	5/16	0.50	**PDFS080S21.6**	345	345
3/4	19	26.9	19	27.2	18	72	36	49	66	22.3	47.6	M10	3/8	0.56	**PDFS100S27.2**	345	345
1	25	33.7	25	34.1	18	76	36	53	71	26.2	52.4	M10	3/8	0.78	**PDFS102S34.1**	345	345
1 1/4	32	42.4	31	42.8	20	82	42	69	80	30.2	58.7	M10	7/16	0.92	**PDFS104S42.8**	345	345
1 1/2	38	48.3	38	48.6	22	88	48	77	94	35.7	69.9	M12	1/2	1.32	**PDFS106S48.6**	276	276
2	51	60.3	50	61.0	24	90	48	89	103	42.9	77.8	M12	1/2	2.10	**PDFS108S61**	207	207
2 1/2	64	76.1	63	76.6	28	100	48	101	116	50.8	88.9	M12	1/2	2.38	**PDFS110S76.6**	207	207
3	76	88.9	73	90.5	28	100	53	124	135	61.9	106.4	M16	5/8	2.80	**PDFS112S90.5**	172	172
3 1/2	89	101.6	89	103.0	28	100	54	137	153	69.9	120.7	M16	5/8	4.30	**PDFS114S103**	138	138
4	102	114.3	99	115.5	28	100	54	147	163	77.8	130.2	M16	5/8	4.80	**PDFS116S115.5**	34	34
5	127	140.0	120	142.0	28	100	54	180	184	92.1	152.4	M16	5/8	5.70	**PDFS118S142**	34	34

6000 PSI Series

1/2	13	17.2	13	17.5	18	72	32	47	57	18.2	40.5	M 8	5/16	0.52	**PDFS401S17.5**	420	420
1/2	13	21.3	13	21.6	18	72	32	47	57	18.2	40.5	M 8	5/16	0.58	**PDFS401S21.6**	420	420
3/4	19	26.9	19	27.2	20	72	38	53	71	23.8	50.8	M10	3/8	1.00	**PDFS402S27.2**	420	420
1	25	33.7	25	34.1	22	88	48	66	80	27.8	57.2	M12	7/16	1.52	**PDFS403S34.1**	420	420
1 1/4	32	42.4	31	42.8	22	88	54	77	94	31.8	66.6	M14	1/2	2.40	**PDFS404S42.8**	420	420
1 1/2	38	48.3	38	48.6	24	102	60	89	106	36.5	79.3	M16	5/8	3.30	**PDFS405S48.6**	420	420
2	51	60.3	50	61.0	25	140	74	116	135	44.5	96.8	M20	3/4	4.90	**PDFS406S61**	420	420
2 1/2	64	76.1	63	76.6	28	150	90	150	166	58.7	123.8	M24	–	6.50	**PDFS407S76.6**	420	420
3	76	88.9	73	90.5	30	180	110	178	208	71.4	152.4	M30	–	8.00	**PDFS408S90.5**	420	420

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

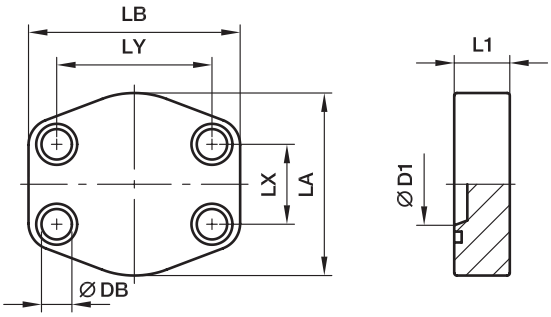
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080S17.5S	PDFS080S17.5SU	NBR
Stainless steel	SS	PDFS080S17.5SS	PDFS080S17.5SSU	VIT

PCFF SAE Closed flange

SAE Closed flange
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size									Screws		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	D1	L1	LA	LB	LX	LY	DB	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	13	16	46	58	17.5	38.1	9.0	M 8×30	5/16×1 1/4	0.30	**PCFF32**	345	345
3/4	19	15	18	49	66	22.3	47.6	10.5	M10×35	3/8×1 1/2	0.37	**PCFF33**	345	345
1	25	18	19	53	71	26.2	52.4	10.5	M10×35	3/8×1 1/2	0.54	**PCFF34**	345	345
1 1/4	32	23	21	69	80	30.2	58.7	10.5	M10×40	7/16×1 1/2	0.90	**PCFF35**	276	276
1 1/2	38	28	24	77	95	35.7	69.9	13.5	M12×45	1/2×1 3/4	1.03	**PCFF36**	207	207
2	51	45	24	89	103	42.9	77.8	13.5	M12×45	1/2×1 3/4	1.30	**PCFF38**	207	207
2 1/2	64	58	25	101	116	50.8	88.9	13.5	M12×45	1/2×1 3/4	1.45	**PCFF310**	172	172
3	76	70	25	124	136	61.9	106.4	17.0	M16×55	5/8×2 1/4	2.72	**PCFF312**	138	138
3 1/2	89	85	25	136	152	69.9	120.7	17.0	M16×55	5/8×2 1/4	2.90	**PCFF314**	34	34
4	102	95	25	146	162	77.8	130.2	17.0	M16×55	5/8×2 1/4	3.85	**PCFF316**	34	34
5	127	110	25	180	184	92.1	152.4	17.0	M16×55	5/8×2 1/4	4.20	**PCFF320**	34	34

6000 PSI Series

1/2	13	13	16	46	58	18.2	40.5	9.0	M 8×30	5/16×1 1/4	0.30	**PCFF62**	420	420
3/4	19	15	19	53	71	23.8	50.8	10.5	M10×35	3/8×1 1/2	0.44	**PCFF63**	420	420
1	25	22	24	66	80	27.8	57.2	13.5	M12×45	7/16×1 1/2	0.73	**PCFF64**	420	420
1 1/4	32	30	27	77	94	31.8	66.6	15.0	M14×50	1/2×1 3/4	0.85	**PCFF65**	420	420
1 1/2	38	35	30	89	103	36.5	79.3	17.0	M16×55	5/8×2 1/4	1.61	**PCFF66**	420	420
2	51	48	35	123	135	44.5	96.8	21.0	M20×70	3/4×2 3/4	3.31	**PCFF68**	420	420
2 1/2	64	55	45	150	166	58.7	123.8	25.0	M24×90	–	4.50	**PCFF610**	420	420
3	76	65	55	178	208	71.4	152.4	32.0	M30×110	–	5.30	**PCFF612**	420	420

[1]) Pressure shown = Item deliverable

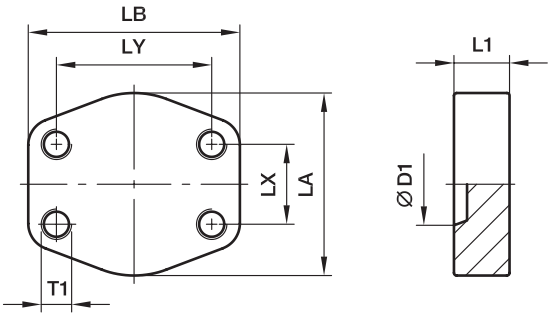
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes					
Material	Suffix surface and material	Example only closed flange	Example closed flange incl. metr. screws and O-ring	Example closed flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCFF32S	PCFF32SM	PCFF32SU	NBR
Stainless steel	SS	PCFF32SS	PCFF32SSM	PCFF32SSU	VIT

PCCFF SAE Closed counter flange

SAE Closed counter flange
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size								T1		Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	D1	L1	LA	LB	LX	LY	(metr.)	(unc.)	kg/piece	Order code*	S	SS
1/2	13	13	16	46	58	17.5	38.1	M 8	5/16	0.30	**PCCFF32**	345	345
3/4	19	15	18	49	66	22.3	47.6	M10	3/8	0.37	**PCCFF33**	345	345
1	25	18	19	53	71	26.2	52.4	M10	3/8	0.54	**PCCFF34**	345	345
1 1/4	32	23	21	69	80	30.2	58.7	M10	7/16	0.90	**PCCFF35**	276	276
1 1/2	38	28	24	77	95	35.7	69.9	M12	1/2	1.03	**PCCFF36**	207	207
2	51	45	24	89	103	42.9	77.8	M12	1/2	1.20	**PCCFF38**	207	207
2 1/2	64	58	25	101	116	50.8	88.9	M12	1/2	1.45	**PCCFF310**	172	172
3	76	70	25	124	136	61.9	106.4	M16	5/8	2.72	**PCCFF312**	138	138
3 1/2	89	85	25	136	152	69.9	120.7	M16	5/8	2.90	**PCCFF314**	34	34
4	102	95	25	146	162	77.8	130.2	M16	5/8	3.85	**PCCFF316**	34	34
5	127	110	25	180	184	92.1	152.4	M16	5/8	4.20	**PCCFF320**	34	34

6000 PSI Series

1/2	13	13	16	46	58	18.2	40.5	M 8	5/16	0.30	**PCCFF62**	420	420
3/4	19	15	19	53	71	23.8	50.8	M10	3/8	0.44	**PCCFF63**	420	420
1	25	22	24	66	80	27.8	57.2	M12	7/16	0.73	**PCCFF64**	420	420
1 1/4	32	30	27	77	94	31.8	66.6	M14	1/2	0.85	**PCCFF65**	420	420
1 1/2	38	35	30	89	103	36.5	79.3	M16	5/8	1.61	**PCCFF66**	420	420
2	51	48	35	123	135	44.5	96.8	M20	3/4	3.31	**PCCFF68**	420	420
2 1/2	64	55	45	150	166	58.7	123.8	M24	–	4.50	**PCCFF610**	420	420
3	76	65	55	178	208	71.4	152.4	M30	–	5.30	**PCCFF612**	420	420

[1]) Pressure shown = Item deliverable

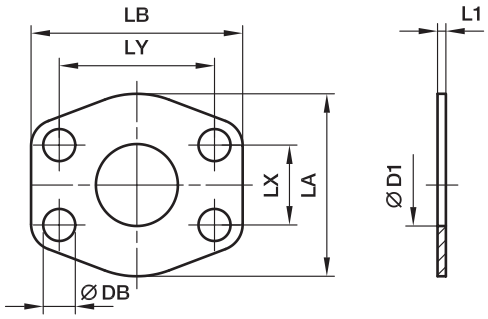
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example closed flange with metr. threads	Example closed flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCCFF32SM	PCCFF32SU	NBR
Stainless steel	SS	PCCFF32SSM	PCCFF32SSU	VIT

CPM SAE Flange connector plate

ISO 6162-1/-2



3000 PSI Series

Nom. flange size											PN (bar)[1])	
SAE (in)	ISO (DN)	D1	L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	S	SS
1/2	13	13	3	47	57	17.5	38.1	9.0	0.01	**8CPM1**	345	345
3/4	19	19	3	49	66	22.3	47.6	11.0	0.01	**12CPM1**	345	345
1	25	25	3	53	71	26.2	52.4	11.0	0.01	**16CPM1**	345	345
1 1/4	32	32	3	69	80	30.2	58.7	11.5	0.02	**20CPM1**	276	276
1 1/2	38	38	3	77	95	35.7	69.9	13.5	0.02	**24CPM1**	207	207
2	51	51	3	89	103	42.9	77.8	13.5	0.03	**32CPM1**	207	207
2 1/2	64	63	3	101	116	50.8	88.9	13.5	0.03	**40CPM1**	172	172
3	76	73	4	124	136	61.9	106.4	17.0	0.04	**48CPM1**	138	138
3 1/2	89	89	4	136	152	69.9	120.7	17.0	0.06	**56CPM1**	34	34
4	102	99	4	146	162	77.8	130.2	17.0	0.08	**64CPM1**	34	34
5	127	120	4	180	184	92.1	152.4	17.0	0.09	**80CPM1**	34	34

6000 PSI Series

1/2	13	13	4	47	57	18.2	40.5	9.0	0.01	**8CPM2**	420	420
3/4	19	17	4	53	71	23.8	50.8	11.0	0.01	**12CPM2**	420	420
1	25	24	4	66	80	27.8	57.2	13.0	0.02	**16CPM2**	420	420
1 1/4	32	31	4	77	94	31.8	66.6	15.0	0.03	**20CPM2**	420	420
1 1/2	38	38	4	89	103	36.5	79.3	17.0	0.04	**24CPM2**	420	420
2	51	51	4	123	135	44.5	96.8	21.0	0.05	**32CPM2**	420	420
2 1/2	64	63	4	150	166	58.7	123.8	25.0	0.07	**40CPM2**	420	420
3	76	73	4	178	208	71.4	152.4	32.0	0.08	**48CPM2**	420	420

[1]) Pressure shown = Item deliverable

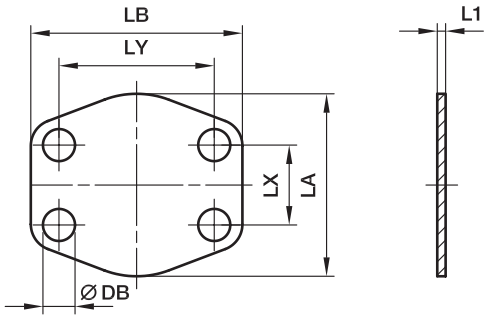
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	8CPM1CF	only connector plate
Steel, zinc yellow plated	A3C	8CPM1A3C	only connector plate
Stainless steel	SS	8CPM1SS	only connector plate

AP SAE Flange locking plate

ISO 6162-1/-2



3000 PSI Series

Nom. flange size								Weight (steel)		PN (bar)[1]	
SAE (in)	ISO (DN)	L1	LA	LB	LX	LY	DB	kg/piece	Order code*	S	SS
1/2	13	3	47	57	17.5	38.1	9.0	0.02	**8AP1**	–	–
3/4	19	3	49	66	22.3	47.6	11.0	0.02	**12AP1**	–	–
1	25	3	53	71	26.2	52.4	11.0	0.02	**16AP1**	–	–
1 1/4	32	3	69	80	30.2	58.7	11.5	0.03	**20AP1**	–	–
1 1/2	38	3	77	95	35.7	69.9	13.5	0.03	**24AP1**	–	–
2	51	3	89	103	42.9	77.8	13.5	0.04	**32AP1**	–	–
2 1/2	64	3	101	116	50.8	89.9	13.5	0.04	**40AP1**	–	–
3	76	4	124	136	61.9	106.4	17.0	0.07	**48AP1**	–	–
3 1/2	89	4	136	152	69.9	102.7	17.0	0.07	**56AP1**	–	–
4	102	4	146	162	77.8	130.2	17.0	0.09	**64AP1**	–	–
5	127	4	180	184	92.1	152.4	17.0	0.10	**80AP1**	–	–

6000 PSI Series

1/2	13	4	47	57	18.2	40.5	9.0	0.02	**8AP2**	–	–
3/4	19	4	53	71	23.8	50.8	11.0	0.02	**12AP2**	–	–
1	25	4	66	80	27.8	57.1	13.0	0.03	**16AP2**	–	–
1 1/4	32	4	77	94	31.8	66.7	15.0	0.04	**20AP2**	–	–
1 1/2	38	4	89	103	36.5	79.4	17.0	0.05	**24AP2**	–	–
2	51	4	123	135	44.5	96.8	21.0	0.06	**32AP2**	–	–
2 1/2	64	4	150	166	58.7	123.8	25.0	0.08	**40AP2**	–	–
3	76	4	178	208	71.4	152.4	32.0	0.10	**48AP2**	–	–

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

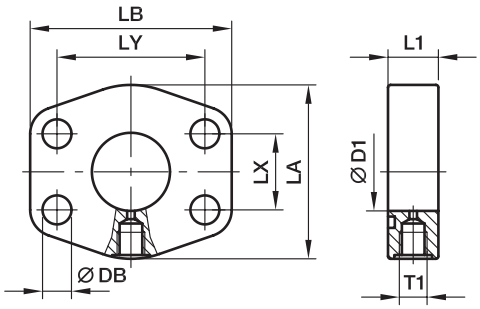
This flange locking plate is not used under pressure.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, chrome[6]-free	CF	8AP1CF	only locking plate
Steel, zinc yellow plated	A3C	8AP1A3C	only locking plate
Stainless steel	SS	8AP1SS	only locking plate

PAGL-(G/M) SAE 4 bolt flange with test point port

SAE Flange with test point port
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size												PN (bar)[1]	
SAE (in)	ISO (DN)	T1	D1	L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	S	SS
1	25	**G1/4**	25	22	53	71	26.2	52.4	11.0	0.65	**PAGL102G14**	348	348
1	25	**M10×1**	25	19	53	71	26.2	52.4	11.0	0.65	**PAGL102M10**	348	348
1 1/4	32	**G1/4**	31	20	69	80	30.2	58.7	11.5	0.75	**PAGL104G14**	278	278
1 1/4	32	**M10×1**	31	20	69	80	30.2	58.7	11.5	0.75	**PAGL104M10**	278	278
1 1/2	38	**G1/4**	38	25	77	94	35.7	69.9	13.5	0.80	**PAGL106G14**	210	210
1 1/2	38	**M10×1**	38	25	77	94	35.7	69.9	13.5	0.80	**PAGL106M10**	210	210
2	51	**G1/4**	50	25	89	103	42.9	77.8	13.5	1.25	**PAGL108G14**	210	210
2	51	**M10×1**	50	25	89	103	42.9	77.8	13.5	1.25	**PAGL108M10**	210	210
2 1/2	64	**G1/4**	63	25	101	115	50.8	88.9	13.5	1.75	**PAGL110G14**	175	175
2 1/2	64	**M10×1**	63	25	101	115	50.8	88.9	13.5	1.75	**PAGL110M10**	175	175
3	76	**G1/4**	73	27	124	135	61.9	106.4	17.0	2.25	**PAGL112G14**	138	138
3	76	**M10×1**	73	27	124	135	61.9	106.4	17.0	2.25	**PAGL112M10**	138	138
3 1/2	89	**G1/4**	89	27	136	152	61.9	120.7	17.0	3.00	**PAGL114G14**	35	35
3 1/2	89	**M10×1**	89	27	136	152	61.9	120.7	17.0	3.00	**PAGL114M10**	35	35
4	102	**G1/4**	99	26	146	162	77.8	130.2	17.0	4.25	**PAGL116G14**	35	35
4	102	**M10×1**	99	26	146	162	77.8	130.2	17.0	4.25	**PAGL116M10**	35	35
5	127	**G1/4**	120	23	180	184	92.1	152.4	17.0	5.75	**PAGL118G14**	35	35
5	127	**M10×1**	120	23	180	184	92.1	152.4	17.0	5.75	**PAGL118M10**	35	35

6000 PSI Series

1	25	**G1/4**	25	22	69	80	27.8	57.2	13.0	0.65	**PAGL403G14**	420	420
1	25	**M10×1**	25	22	69	80	27.8	57.2	13.0	0.65	**PAGL403M10**	420	420
1 1/4	32	**G1/4**	31	26	77	94	31.8	66.6	15.0	0.75	**PAGL404G14**	420	420
1 1/4	32	**M10×1**	31	26	77	94	31.8	66.6	15.0	0.75	**PAGL404M10**	420	420
1 1/2	38	**G1/4**	38	30	89	106	36.5	79.3	17.0	0.95	**PAGL405G14**	420	420
1 1/2	38	**M10×1**	38	30	89	106	36.5	79.3	17.0	0.85	**PAGL405M10**	420	420
2	51	**G1/4**	50	36	116	135	44.5	96.8	21.0	1.25	**PAGL406G14**	420	420
2	51	**M10×1**	50	36	116	135	44.5	96.8	21.0	1.25	**PAGL406M10**	420	420
2 1/2	64	**G1/4**	63	45	150	166	58.7	123.8	25.0	1.75	**PAGL408G14**	420	420
2 1/2	64	**M10×1**	63	45	150	166	58.7	123.8	25.0	1.75	**PAGL408M10**	420	420
3	76	**G1/4**	73	55	178	208	71.4	152.4	32.0	2.25	**PAGL410G14**	420	420
3	76	**M10×1**	73	55	178	208	71.4	152.4	32.0	2.25	**PAGL410M10**	420	420

[1]) Pressure shown = Item deliverable

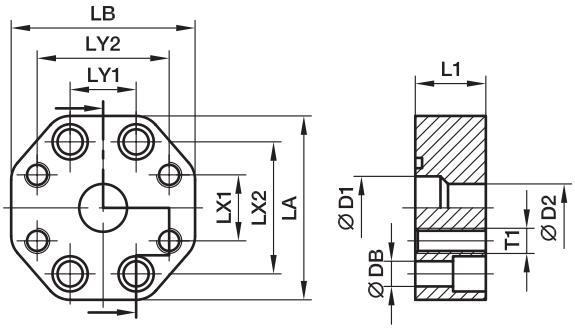
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PAGL102G14S	only flange
Stainless steel	SS	PAGL102G14SS	only flange

PRF SAE Straight reducing flange adapter

ISO 6162-1/-2



3000 PSI Series

Nom. flange size												Screws		Weight (steel)		PN (bar)[1]
SAE (in)	ISO (DN)	D1	D2	L1	LA	LB	LX1	LX2	LY1	LY2	DB	(metr.)	T1	kg/piece	Order code*	S
1×1	25/25	25	25	28	73	73	26.2	52.4	26.2	52.4	11	M10×35	**M10**	1.10	**PRF102/102**	210
1×3/4	25/19	25	19	28	73	73	22.3	52.4	26.2	47.6	11	M10×35	**M10**	1.15	**PRF102/100**	210
1 1/4×1 1/4	32/32	30	30	28	80	80	30.2	58.7	30.2	58.7	11	M10×35	**M10**	1.55	**PRF104/104**	210
1 1/4×1	32/25	30	25	28	80	71	26.2	58.7	30.2	52.4	11	M10×35	**M10**	1.55	**PRF104/102**	210
1 1/2×1 1/2	38/38	38	38	32	94	94	35.7	69.9	35.7	69.9	13	M12×45	**M12**	2.25	**PRF106/106**	210
1 1/2×1 1/4	38/32	38	30	32	94	80	30.2	69.9	35.7	58.7	13	M10×35	**M10**	2.40	**PRF106/104**	210
2×2	51/51	50	50	33	103	103	42.9	77.8	42.9	77.8	13	M12×45	**M12**	3.00	**PRF108/108**	210
2×1 1/2	51/38	50	38	33	103	94	35.7	77.8	42.9	70.0	13	M12×45	**M12**	3.15	**PRF108/106**	210
2 1/2×2 1/2	64/64	63	63	33	115	115	50.8	88.9	50.8	88.9	13	M12×45	**M12**	3.85	**PRF110/110**	175
2 1/2×2	64/51	63	50	33	115	103	42.9	88.9	50.8	77.8	13	M12×45	**M12**	3.95	**PRF110/108**	175
3×3	76/76	73	73	36	135	135	61.9	106.4	61.9	106.4	17	M16×50	**M16**	4.25	**PRF112/112**	138
3×2 1/2	76/64	73	63	36	135	115	50.8	106.4	61.9	89.0	17	M12×45	**M12**	4.45	**PRF112/110**	138

6000 PSI Series

3/4×3/4	19/19	19	19	28	71	71	23.8	50.8	23.8	50.8	11	M10×35	**M10**	0.80	**PRF402/402**	420
1×1	25/25	25	25	33	80	80	27.8	57.2	27.8	57.2	13	M12×45	**M12**	1.10	**PRF403/403**	420
1×3/4	25/19	25	19	33	80	71	23.8	57.2	27.8	50.8	13	M10×35	**M10**	1.10	**PRF403/402**	420
1 1/4×1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	15	M14×45	**M14**	1.40	**PRF404/404**	420
1 1/4×1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	15	M12×45	**M12**	1.60	**PRF404/403**	420
1 1/2×1 1/2	38/38	38	38	48	106	106	36.5	79.3	36.5	79.3	17	M16×50	**M16**	3.30	**PRF405/405**	420
1 1/2×1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	17	M14×45	**M14**	3.60	**PRF405/404**	420
2×2	51/51	50	50	48	135	135	44.5	96.8	44.5	96.8	21	M20×65	**M20**	5.00	**PRF406/406**	420
2×1 1/2	51/38	50	38	48	135	106	36.5	96.8	44.5	79.3	21	M16×50	**M16**	5.25	**PRF406/405**	420
2 1/2×2	64/51	63	50	53	166	150	44.5	123.8	58.7	96.8	25	M20×65	**M20**	6.50	**PRF408/406**	420
3×2	76/51	73	50	58	208	178	44.5	152.4	71.4	96.8	31	M20×65	**M20**	7.50	**PRF410/406**	420

[1]) Pressure shown = Item deliverable

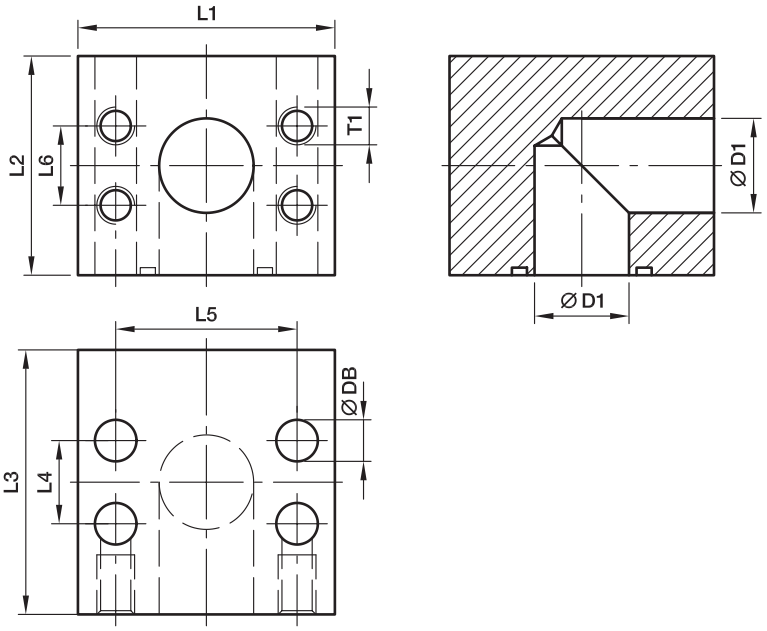
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PRF102/102S	only flange
Stainless steel	SS	PRF102/102SS	only flange

PBL SAE 90° L-block

SAE Flange 90° block
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size													PN (bar)[1]	
SAE (in)	ISO (DN)	D1	L1	L2	L3	L4	L5	L6	DB	T1	Weight (steel) kg/piece	Order code*	S	SS
1 1/4	32	31	80	80	80	30.2	58.7	30.2	11.0	**M10**	3.50	**PBL304**	210	210
1 1/2	38	38	94	94	94	35.7	69.9	35.7	13.5	**M12**	5.00	**PBL305**	210	210
2	51	50	103	87	97	42.9	77.8	42.9	13.5	**M12**	7.90	**PBL306**	210	210

6000 PSI Series

3/4	19	19	70	55	60	23.8	50.8	23.8	11.0	**M10**	1.40	**PBL602**	420	420
1	25	25	80	69	69	27.8	57.2	27.8	13.0	**M12**	2.30	**PBL603**	420	420
1 1/4	32	30	94	75	75	31.8	66.6	31.8	15.0	**M14**	3.30	**PBL604**	420	420
1 1/2	38	38	106	89	89	36.5	79.3	36.5	17.0	**M16**	5.30	**PBL605**	420	420
2	51	50	135	116	116	44.5	96.8	44.5	21.0	**M20**	9.40	**PBL606**	420	420

[1]) Pressure shown = Item deliverable

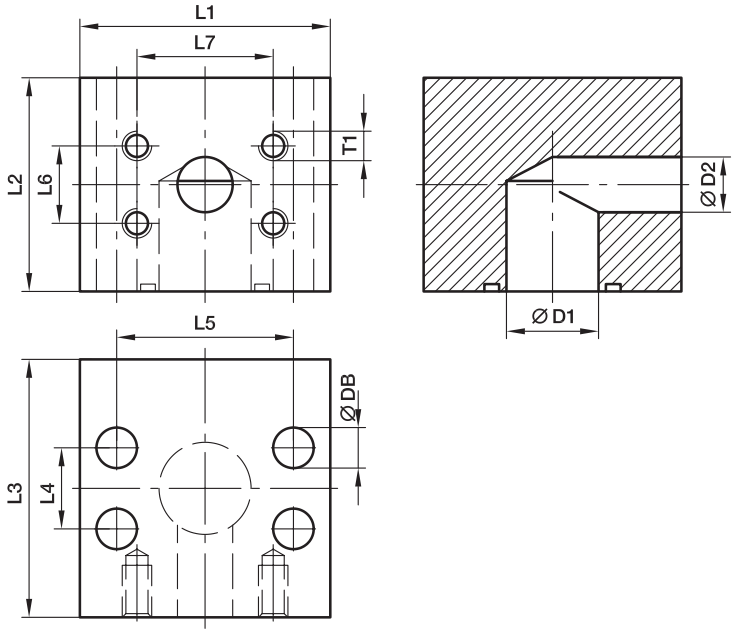
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PBL304S	only flange block
Stainless steel	SS	PBL304SS	only flange block

PBLR SAE 90° L-reduction block

SAE Flange reduction 90° block
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size															PN (bar)[1]	
SAE (in)	ISO (DN)	D1	D2	L1	L2	L3	L4	L5	L6	L7	DB	T1	Weight (steel) kg/piece	Order code*	S	SS
1	25	25	19	80	69	69	27.8	57.2	23.8	50.8	13	**M10**	2.30	**PBLR403-402**	420	420
1 1/4	32	30	19	94	75	75	31.8	66.6	23.8	50.8	15	**M10**	3.30	**PBLR404-402**	420	420
1 1/4	32	30	25	94	75	75	31.8	66.6	27.8	57.2	15	**M12**	2.90	**PBLR404-403**	420	420
1 1/2	38	38	30	106	89	89	36.5	79.4	31.6	66.7	17	**M14**	5.40	**PBLR405-404**	420	420
2	51	50	38	135	116	116	44.5	96.8	31.8	79.3	21	**M16**	9.00	**PBLR406-405**	420	420

[1]) Pressure shown = Item deliverable

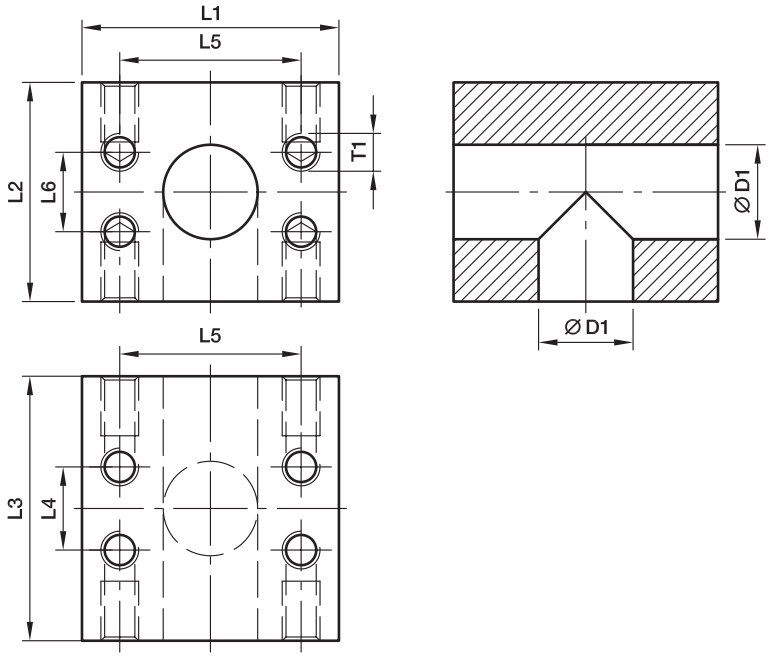
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PBLR403-402S	only flange block
Stainless steel	SS	PBLR403-402SS	only flange block

PBT SAE 90° T-block

SAE Flange T-block
(ISO 6162-1/-2)



6000 PSI Series

Nom. flange size													PN (bar)[1]	
SAE (in)	ISO (DN)	D1	L1	L2	L3	L4	L5	L6	DB	T1	Weight (steel) kg/piece	Order code*	S	SS
3/4	19	19	70	55	70	23.8	50.8	23.8	11	**M10**	1.70	**PBT602-602**	420	420
1	25	20	80	69	80	27.8	57.2	27.8	13	**M12**	2.90	**PBT603-603**	420	420
1 1/4	32	30	94	75	94	31.8	66.6	31.8	15	**M14**	3.80	**PBT604-604**	420	420
1 1/2	38	38	106	100	106	36.5	79.3	36.7	17	**M16**	8.90	**PBT605-605**	420	420
2	51	50	135	116	140	44.5	96.8	44.5	21	**M20**	12.70	**PBT606-606**	420	420

[1]) Pressure shown = Item deliverable

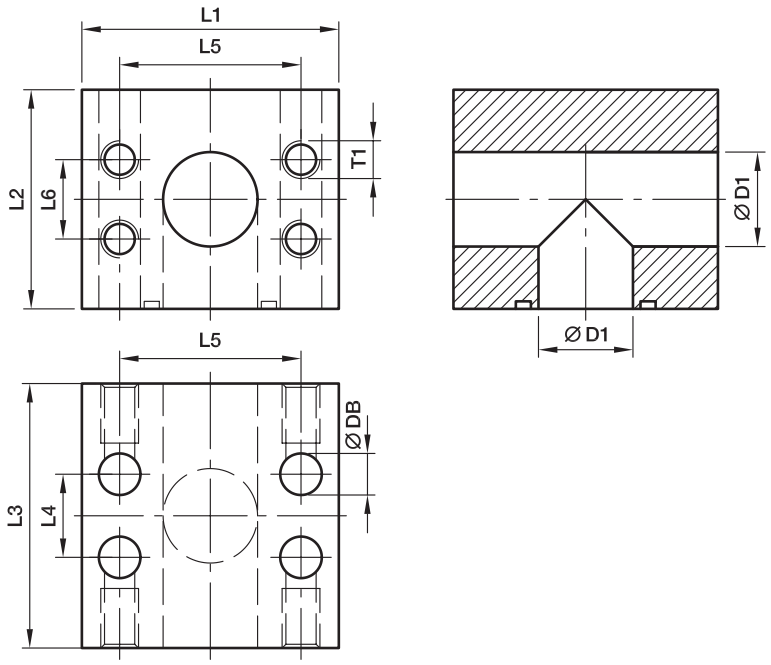
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PBT602-602S	only flange block
Stainless steel	SS	PBT602-602SS	only flange block

PBTC SAE Counter flange T-block

ISO 6162-1/-2



6000 PSI Series

Nom. flange size										Weight (steel)		PN (bar)[1])	
SAE (in)	ISO (DN)	D1	L1	L2	L3	L4	L5	L6	T1	kg/piece	Order code*	S	SS
3/4	19	19	70	55	70	23.8	50.8	23.8	**M10**	1.70	**PBTC602-602**	420	420
1	25	25	80	69	80	27.8	57.2	27.8	**M12**	2.90	**PBTC603-603**	420	420
1 1/4	32	30	94	75	94	31.8	66.6	31.8	**M14**	3.80	**PBTC604-604**	420	420
1 1/2	38	38	106	100	106	36.5	79.3	36.5	**M16**	8.90	**PBTC605-605**	420	420
2	51	50	135	116	140	44.5	96.8	44.5	**M20**	12.70	**PBTC606-606**	420	420

[1]) Pressure shown = Item deliverable

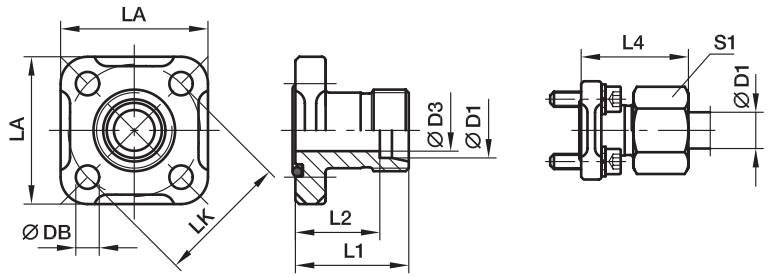
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PBTC602-602S	only flange block
Stainless steel	SS	PBTC602-602SS	only flange block

BFG Gear pump flange straight

Hydraulic flange / EO 24° cone end



BFG Straight flange connection EO 24° cone end

LK	D1[2]	D3	L1	L2	L4	LA	S1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C
35	10L	8	30	23.0	39.0	39	19	6.4	M6×22	20×2.5	0.15	**BFG10L/LK35**	315
35	12L	10	30	23.0	39.0	39	22	6.4	M6×22	20×2.5	0.16	**BFG12L/LK35**	315
35	15L	12	30	23.0	38.0	39	27	6.4	M6×22	20×2.5	0.19	**BFG15L/LK35**	250
35	16S	12	30	21.5	39.5	39	30	6.4	M6×22	20×2.5	0.21	**BFG16S/LK35**	315
40	15L	12	35	28.0	43.0	42	27	6.4	M6×22	26×2.5	0.17	**BFG15L/LK40**	100
40	18L	15	35	27.5	44.0	42	32	6.4	M6×22	26×2.5	0.22	**BFG18L/LK40**	100
40	22L	19	35	27.5	44.5	42	36	6.4	M6×22	26×2.5	0.24	**BFG22L/LK40**	100
40	28L	24	35	27.5	44.5	42	41	6.4	M6×22	26×2.5	0.28	**BFG28L/LK40**	100
55	20S	16	50	39.5	61.0	57	36	8.4	M8×25	32×2.5	0.35	**BFG20S/LK55**	250

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

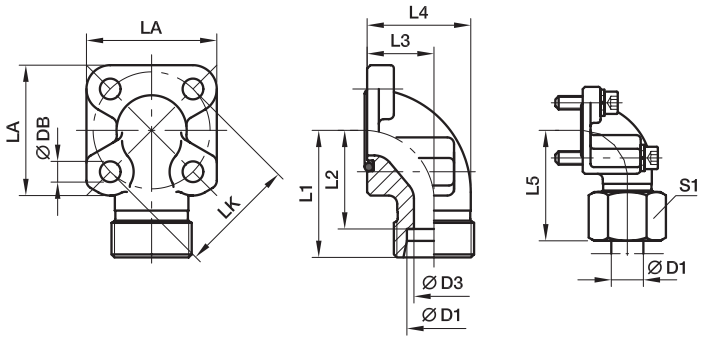
Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	BFG16S/LK35CFX	BFG16S/LK35OMDCF	NBR
Steel, zinc yellow plated	A3C	BFG16S/LK35A3CX	BFG16S/LK35OMDA3C	NBR

BFW Gear pump flange 90° elbow

Hydraulic flange / EO 24° cone end



BFW 90° Flange connection EO 24° cone end

LK	D1[2]	D3	L1	L2	L3	L4	L5	LA	S1	DB	Screws 2 pieces (metr.)	Screws 2 pieces (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C
35	10L	8	38	31.0	16.5	26.5	47.0	40	19	6.4	M6×22	M6×35	20×2.5	0.23	**BFW10L/LK35**	315
35	12L	10	38	31.0	16.5	26.5	47.0	40	22	6.4	M6×22	M6×35	20×2.5	0.26	**BFW12L/LK35**	315
35	15L	12	38	31.0	16.5	26.5	46.0	40	27	6.4	M6×22	M6×35	20×2.5	0.38	**BFW15L/LK35**	315
35	16S	12	38	29.5	20.0	31.0	48.0	40	30	6.4	M6×22	M6×40	20×2.5	0.55	**BFW16S/LK35**	315
35	20S	16	45	34.5	25.0	38.0	56.0	40	36	6.4	M6×22	M6×45	20×2.5	0.65	**BFW20S/LK35**	315
40	15L	12	38	31.0	22.5	36.5	46.0	42	27	6.4	M6×22	M6×22	26×2.5	0.29	**BFW15L/LK40**	100
40	18L	15	38	30.5	22.5	36.5	47.0	42	32	6.4	M6×22	M6×22	26×2.5	0.70	**BFW18L/LK40**	100
40	22L	19	38	30.5	22.5	36.5	47.5	42	36	6.4	M6×22	M6×22	26×2.5	0.36	**BFW22L/LK40**	100
40	28L	22	40	32.5	28.0	43.0	49.0	42	41	6.4	M6×20	M6×50	26×2.5	0.82	**BFW28L/LK40**	100
40	35L	31	41	30.5	32.0	55.0	52.0	42	50	6.4	M6×22	M6×60	26×2.5	0.22	**BFW35L/LK40**	100
40	20S	16	40	29.5	22.5	35.5	50.0	42	36	6.4	M6×22	M6×45	26×2.5	0.23	**BFW20S/LK40**	250
55	35L	31	49	38.5	32.0	51.5	62.0	58	50	8.4	M8×25	M8×60	32×2.5	0.27	**BFW35L/LK55**	250
55	42L	38	49	38.0	40.0	64.5	61.0	58	60	8.4	M8×25	M8×70	32×2.5	0.41	**BFW42L/LK55**	250
55	20S	17	45	34.5	24.0	38.0	56.0	58	36	8.4	M8×25	M8×50	32×2.5	0.94	**BFW20S/LK55**	250
55	25S	20	49	37.0	30.0	46.0	61.0	58	46	8.4	M8×25	M8×55	32×2.5	0.80	**BFW25S/LK55**	250
55	30S	26	49	35.5	32.0	50.0	62.0	58	50	8.4	M8×25	M8×50	32×2.5	0.20	**BFW30S/LK55**	250

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

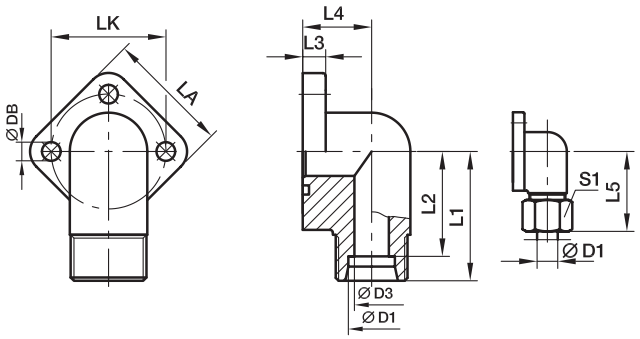
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*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	BFW16S/LK35CFX	BFW16S/LK35OMDCF	NBR
Steel, zinc yellow plated	A3C	BFW16S/LK35A3CX	BFW16S/LK35OMDA3C	NBR

BFW3 Gear pump flange 90° elbow 3 holes

Hydraulic flange / EO 24° cone end



BFW-3 90° Flange connection EO 24° cone end

LK	D1[2]	D3	L1	L2	L3	L4	L5	LA	S1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C
30	12L	10	37	30.0	10	37.5	46	38	22	6.4	M6×22	16×2.5	0.13	**BFW3-12L/LK30**	250
30	15L	12	37	30.0	10	37.5	47	38	27	6.4	M6×22	16×2.5	0.14	**BFW3-15L/LK30**	250
30	18L	15	37	30.0	10	37.5	47	38	32	6.4	M6×22	16×2.5	0.17	**BFW3-18L/LK30**	160
40	22L	19	43	35.5	14	41.0	53	48	36	8.4	M8×30	24×2.5	0.29	**BFW3-22L/LK40**	160
40	28L	24	43	35.5	14	41.0	53	48	41	8.4	M8×30	24×2.5	0.40	**BFW3-28L/LK40**	160

[1]) Pressure shown = Item deliverable

[2]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

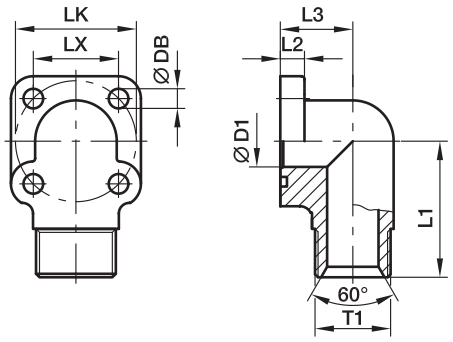
Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page M11.

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	BFW3-12L/LK30CFX	BFW3-12L/LK30OMDCF	NBR
Steel, zinc yellow plated	A3C	BFW3-12L/LK30A3CX	BFW3-12L/LK30OMDA3C	NBR

BFW-G Gear pump flange 90° elbow

Hydraulic flange / BSPP 60° cone end
(ISO 8434-6)



BFW-G 90° BSPP 60° cone end

LK	T1	D1	L1	L2	L3	LX	DB	Screws 2 pieces (metr.)	Screws 2 pieces (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C
35	**G3/8**	10	40	8	20.0	24.8	6.5	M6×20	M6×35	18.72×2.62	0.22	**BFW-G38/LK35**	315
35	**G1/2**	12	40	8	20.0	24.8	6.5	M6×20	M6×35	18.72×2.62	0.24	**BFW-G12/LK35**	315
35	**G3/4**	15	40	8	20.0	24.8	6.5	M6×20	M6×40	18.72×2.62	0.26	**BFW-G34/LK35**	315
40	**G3/8**	10	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.30	**BFW-G38/LK40**	250
40	**G1/2**	12	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.32	**BFW-G12/LK40**	250
40	**G3/4**	17	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.34	**BFW-G34/LK40**	250
40	**G1**	19	40	8	28.0	28.2	6.5	M6×20	M6×50	25.07×2.62	0.36	**BFW-G1/LK40**	250
55	**G1/2**	12	49	12	24.0	38.8	8.5	M8×25	M8×45	31.42×2.62	0.35	**BFW-G12/LK55**	250
55	**G3/4**	17	46	12	24.0	38.8	8.5	M8×25	M8×60	31.42×2.62	0.40	**BFW-G34/LK55**	250
55	**G1**	22	49	12	31.0	38.8	8.5	M8×25	M8×70	31.42×2.62	0.45	**BFW-G1/LK55**	250

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

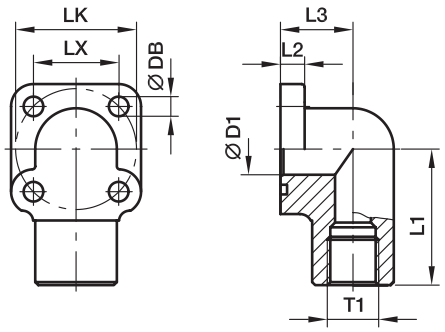
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*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	BFW-G38/LK35CF	BFW-G38/LK35CFM	NBR
Steel, zinc yellow plated	A3C	BFW-G38/LK35A3C	BFW-G38/LK35A3CM	NBR

BFW-GI Gear pump flange 90° elbow

Hydraulic flange / Female BSPP thread
(ISO 1179-1)



BFW-GI 90° Female BSPP thread

LK	T1	D1	L1	L2	L3	LX	DB	Screws 2 pieces (metr.)	Screws 2 pieces (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3C
35	**G3/8**	10	40	8	20.0	24.8	6.5	M6×20	M6×35	18.72×2.62	0.22	**BFW-GI38/LK35**	315
35	**G1/2**	12	40	8	20.0	24.8	6.5	M6×20	M6×35	18.72×2.62	0.24	**BFW-GI12/LK35**	315
40	**G3/8**	10	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.30	**BFW-GI38/LK40**	250
40	**G1/2**	12	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.32	**BFW-GI12/LK40**	250
40	**G3/4**	17	40	8	22.5	28.2	6.5	M6×20	M6×40	25.07×2.62	0.34	**BFW-GI34/LK40**	250
55	**G1/2**	12	49	12	24.0	38.8	8.5	M8×25	M8×45	31.42×2.62	0.35	**BFW-GI12/LK55**	250
55	**G3/4**	17	46	12	24.0	38.8	8.5	M8×25	M8×60	31.42×2.62	0.40	**BFW-GI34/LK55**	250
55	**G1**	22	49	12	31.0	38.8	8.5	M8×25	M8×70	31.42×2.62	0.45	**BFW-GI1/LK55**	250

[1]) Pressure shown = Item deliverable

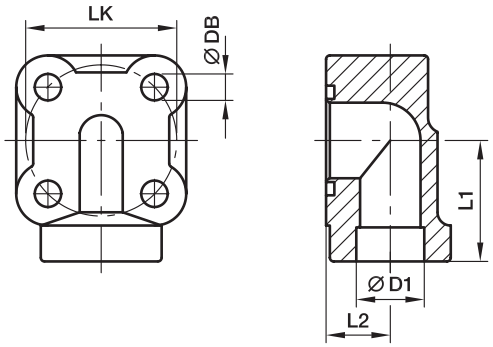
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, chrome[6]-free	CF	BFW-GI38/LK35CF	BFW-GI38/LK35CFM	NBR
Steel, zinc yellow plated	A3C	BFW-GI38/LK35A3C	BFW-GI38/LK35A3CM	NBR

BFW-S Gear pump flange 90° elbow

Hydraulic flange / Socket weld end



BFW-S 90° Socket weld end

LK	D1	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] S
30	12	30	14	7.0	M 6×30	15.88×2.62	0.15	**BFW-S12/LK30/M6**	200
30	12	27	13	8.5	M 8×35	15.88×2.62	0.15	**BFW-S12/LK30/M8**	250
30	14	27	13	6.5	M 6×30	15.88×2.62	0.14	**BFW-S14/LK30/M6**	200
30	14	27	13	8.5	M 8×35	15.88×2.62	0.14	**BFW-S14/LK30/M8**	250
30	16	27	13	6.5	M 6×30	15.88×2.62	0.12	**BFW-S16/LK30/M6**	200
30	16	27	13	8.5	M 8×35	15.88×2.62	0.12	**BFW-S16/LK30/M8**	250
30	18	27	13	6.5	M 6×30	15.88×2.62	0.10	**BFW-S18/LK30/M6**	200
35	14	30	12	6.5	M 6×35	18.72×2.62	0.20	**BFW-S14/LK35/M6**	200
35	14	30	14	8.5	M 8×40	18.72×2.62	0.20	**BFW-S14/LK35/M8**	250
35	16	30	12	6.5	M 6×35	18.72×2.62	0.18	**BFW-S16/LK35/M6**	200
35	16	30	14	8.5	M 8×40	18.72×2.62	0.18	**BFW-S16/LK35/M8**	250
35	18	30	14	6.5	M 6×35	18.72×2.62	0.18	**BFW-S18/LK35/M6**	200
35	18	30	14	8.5	M 8×40	18.72×2.62	0.18	**BFW-S18/LK35/M8**	250
35	20	30	14	6.5	M 6×35	18.72×2.62	0.17	**BFW-S20/LK35/M6**	200
40	18	32	17	6.5	M 6×40	23.81×2.62	0.25	**BFW-S18/LK40/M6**	200
40	18	32	17	8.5	M 8×40	23.81×2.62	0.25	**BFW-S18/LK40/M8**	250
40	20	32	17	6.5	M 6×40	23.81×2.62	0.24	**BFW-S20/LK40/M6**	200
40	20	32	17	8.5	M 8×40	23.81×2.62	0.24	**BFW-S20/LK40/M8**	250
40	22	32	17	6.5	M 6×40	23.81×2.62	0.23	**BFW-S22/LK40/M6**	200
40	22	32	17	8.5	M 8×40	23.81×2.62	0.23	**BFW-S22/LK40/M8**	250
40	25	32	17	6.5	M 6×40	23.81×2.62	0.22	**BFW-S25/LK40/M6**	200
40	25	32	17	8.5	M 8×40	23.81×2.62	0.22	**BFW-S25/LK40/M8**	250

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

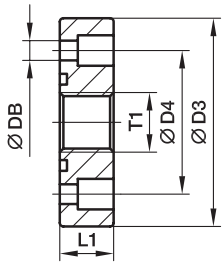
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	BFW-S16/LK30/M6SM	NBR

PF Gear pump flange straight

Hydraulic flange / Female BSPP thread
(ISO 1179-1)

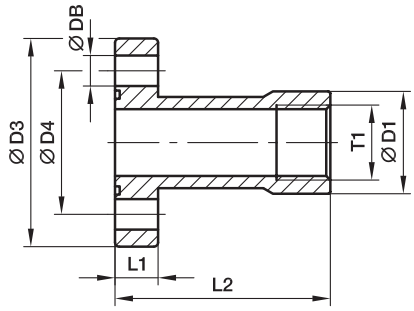


PF

Pump size	LK	T1	D3	D4	L1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3K
1.0	30.0	**G3/8**	45	30.0	13	6.5	M 6×16	18.77×1.78	0.10	**PF1**	250
2.0	40.0	**G1/2**	58	40.0	15	8.5	M 8×20	25.12×1.78	0.21	**PF2**	250
3.0	51.0	**G3/4**	75	51.0	18	10.5	M10×25	31.42×2.62	0.48	**PF3**	250
3B	56.0	**G3/4**	76	56.0	18	10.5	M10×25	31.42×2.62	0.48	**PF3B**	250
3.5	62.0	**G1**	88	62.0	20	10.5	M10×25	39.69×3.53	0.53	**PF3.5**	180
3.5B	62.0	**G1**	88	62.0	20	12.5	M12×25	39.69×3.53	0.59	**PF3.5B**	180
4.0	72.5	**G1 1/4**	98	72.5	22	12.5	M12×30	47.22×3.53	0.64	**PF4**	180

PFL Gear pump flange straight

Hydraulic flange / Female BSPP thread – long version
(ISO 1179-1)



PFL

Pump size	LK	T1	D1	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3K
1.0	30.0	**G3/8**	23.0	45	30.0	10	55	6.5	M 6×20	18.77×1.78	0.15	**PFL1**	250
2.0	40.0	**G1/2**	26.5	58	40.0	12	60	8.5	M 8×25	25.12×1.78	0.27	**PFL2**	250
3.0	51.0	**G3/4**	33.5	76	51.0	16	72	10.5	M10×35	31.42×2.62	0.59	**PFL3**	250
3B	56.0	**G3/4**	33.5	76	56.0	19	72	10.5	M10×35	31.42×2.62	0.69	**PFL3.5**	250

[1]) Pressure shown = Item deliverable

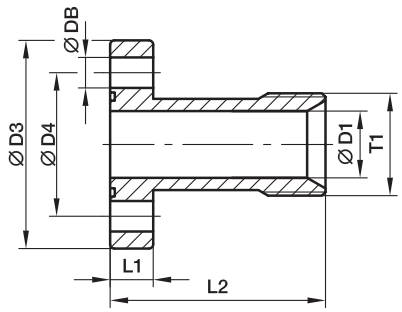
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc silver plated **PF**	A3K	PF1A3KM	NBR
Steel, zinc silver plated **PFL**	A3K	PFL1A3KM	NBR

PFE Gear pump flange straight

Hydraulic flange / BSPP 60° cone end
(ISO 8434-6)

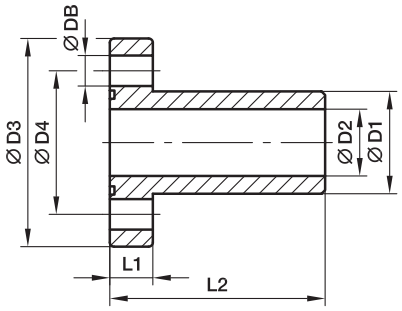


PFE

Pump size	LK	T1	D1	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3K
1.0	30.0	**G1/2**	14.0	45	30.0	10	55	6.5	M 6×20	18.77×1.78	0.15	**PFE1**	250
2.0	40.0	**G3/4**	19.0	58	40.0	12	60	8.5	M 8×25	25.12×1.78	0.27	**PFE2**	250
3.0	51.0	**G1**	24.0	76	51.0	16	72	10.5	M10×35	31.42×2.62	0.59	**PFE3**	250
3B	56.0	**G1**	24.0	76	56.0	16	72	10.5	M10×35	31.42×2.62	0.69	**PFE3.5**	250

PFB Gear pump flange straight

Hydraulic flange / Butt weld tube end



PFB

Pump size	LK	D1	D2	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] S
1.0	30.0	19.5	14.0	45	30.0	10	55	6.5	M 6×20	18.77×1.78	0.15	**PFB1**	250
2.0	40.0	25.4	19.0	58	40.0	12	60	8.5	M 8×25	25.12×1.78	0.27	**PFB2**	250
3.0	51.0	32.0	24.5	76	51.0	16	72	10.5	M10×35	31.42×2.62	0.59	**PFB3**	250
3B	56.0	32.0	24.5	76	56.0	16	72	10.5	M10×35	31.42×2.62	0.69	**PFB3.5**	250

[1]) Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

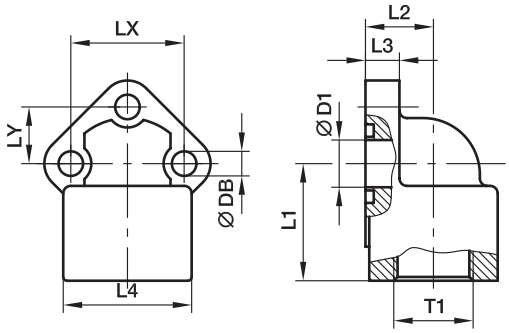
The pressures **(PFB)** given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc silver plated **PFE**	A3K	PFE1A3KM	NBR
Steel, blanc oil dipped **PFB**	S	PFB1SM	NBR

BFW3-G Gear pump flange 90° elbow 3 holes

Hydraulic flange / Female BSPP thread
(ISO 1179-1)



PWDS Female BSPP thread

Pump size	LK	T1	D1	L1	L2	L3	L4	LX	LY	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A3K
0.5	26.0	3/8	11	28	17	9.0	30	26.0	13.0	5.5	M 5×18	15.60×1.78	0.16	**BFW3-G38/LK26**	315
0.5	26.0	1/2	11	28	17	9.0	30	26.0	13.0	5.5	M 5×18	15.60×1.78	0.15	**BFW3-G12/LK26**	315
1.0	30.0	3/8	12	30	17	9.0	30	30.0	15.0	6.5	M 6×20	15.88×2.62	0.16	**BFW3-G38/LK30**	315
1.0	30.0	1/2	12	30	17	9.0	30	30.0	15.0	6.5	M 6×20	15.88×2.62	0.15	**BFW3-G12/LK30**	315
2.0	40.0	1/2	18	36	23	11.5	36	40.0	20.0	8.5	M 8×25	23.81×2.62	0.33	**BFW3-G12/LK40**	315
2.0	40.0	3/4	18	36	23	11.5	36	40.0	20.0	8.5	M 8×25	23.81×2.62	0.31	**BFW3-G34/LK40**	315
3.0	51.0	3/4	24	46	26	13.0	45	51.0	25.5	10.5	M10×30	29.75×3.53	0.57	**BFW3-G34/LK51**	315
3.0	51.0	1	24	46	26	13.0	45	51.0	25.5	10.5	M10×30	29.75×3.53	0.52	**BFW3-G1/LK51**	315
3B	56.0	3/4	24	46	26	13.0	45	56.0	28.0	10.5	M10×30	29.75×3.53	0.57	**BFW3-G34/LK56**	315
3B	56.0	1	24	46	26	13.0	45	56.0	28.0	10.5	M10×30	29.75×3.53	0.52	**BFW3-G1/LK56**	315
3.5	62.0	1 1/4	31	55	35	14.0	55	62.0	31.0	11.0	M10×30	37.69×3.53	0.74	**BFW3-G114/LK62**	315
3.5	62.0	1	25	55	35	14.0	55	62.0	31.0	11.0	M10×30	37.69×3.53	0.73	**BFW3-G1/LK62**	315
3.5	62.0	1 1/4	31	55	35	14.0	55	62.0	31.0	13.0	M12×35	37.69×3.53	0.74	**BFW3-G114/LK62/12**	315
3.5	62.0	1	25	55	35	14.0	55	62.0	31.0	13.0	M12×35	37.69×3.53	0.73	**BFW3-G1/LK62/12**	315
4.0	72.5	1 1/2	38	58	38	15.0	62	72.5	36.2	13.0	M12×35	47.22×3.53	0.95	**BFW3-G112/LK72.5**	315
4.0	72.5	1 1/4	31	58	38	15.0	62	72.5	36.2	13.0	M12×35	47.22×3.53	0.93	**BFW3-G114/LK72.5**	315

[1]) Pressure shown = Item deliverable

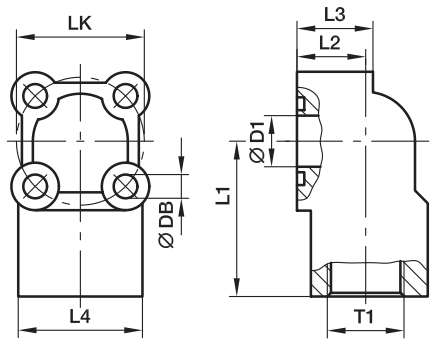
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only hydraulic flange	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc silver plated	A3K	BFW3-G38/LK26A3K	BFW3-G38/LK26A3KM	NBR

PWDS-G Gear pump flange 90° elbow 4 holes – aluminium

Hydraulic flange / Female BSPP thread
(ISO 1179-1)



PWDS-G 90° Female BSPP thread

LK	T1	D1	L1	L2	L3	L4	DB	Screws 2 pieces (metr.)	Screws 2 pieces (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1)] A
30	**G3/8**	11.5	39.0	18	20	33	6.5	M6×30	M6×40	15.88×2.62	0.09	**PWDS-G38/LK30**	180
30	**G1/2**	11.5	39.0	18	20	33	6.5	M6×30	M6×40	15.88×2.62	0.09	**PWDS-G12/LK30**	180
35	**G3/8**	14.0	42.5	18	20	34	6.5	M6×30	M6×40	18.72×2.62	0.11	**PWDS-G38/LK35**	180
35	**G1/2**	14.0	42.5	18	20	34	6.5	M6×30	M6×40	18.72×2.62	0.11	**PWDS-G12/LK35**	180
40	**G1/2**	18.0	47.5	24	28	41	6.5	M6×40	M6×50	22.22×2.62	0.18	**PWDS-G12/LK40**	180
40	**G3/4**	18.0	47.5	24	28	41	6.5	M6×40	M6×50	22.22×2.62	0.18	**PWDS-G34/LK40**	180
55	**G3/4**	24.5	54.0	29	31	49	8.5	M8×45	M8×60	29.75×3.53	0.31	**PWDS-G34/LK55**	180
55	**G1**	24.5	54.0	29	31	49	8.5	M8×45	M8×60	29.75×3.53	0.30	**PWDS-G1/LK55**	180

[1)] Pressure shown = Item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

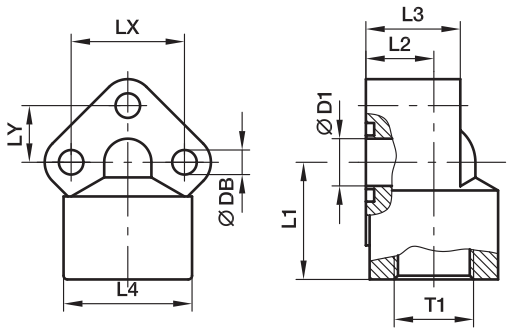
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*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Aluminium	A	PWDS-G38/LK30AM	NBR

PWDA Gear pump flange 90° elbow 3 holes – aluminium

Hydraulic flange / Female BSPP thread
(ISO 1179-1)



PWDA 90° Female BSPP thread

Pump size	LK	T1	D1	L1	L2	L3	L4	LX	LY	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] A
0.5	26	**G3/8**	10.0	31	18.0	25	31	26	13.0	5.5	M 5×35	14×1.78	0.06	**PWDA-05/38**	180
0.5	26	**G1/2**	10.0	31	18.0	25	31	26	13.0	5.5	M 5×35	14×1.78	0.06	**PWDA-05/12**	180
1.0	30	**G3/8**	12.5	31	18.0	26	34	30	15.0	6.5	M 6×35	15.88×2.62	0.08	**PWDA-1/38**	180
1.0	30	**G1/2**	12.5	31	18.0	26	34	30	15.0	6.5	M 6×35	15.88×2.62	0.08	**PWDA-1/12**	180
2.0	40	**G1/2**	18.0	40	21.5	31	42	40	20.0	8.5	M 8×45	22.22×2.62	0.15	**PWDA-2/12**	180
2.0	40	**G3/4**	18.0	40	21.5	31	42	40	20.0	8.5	M 8×45	22.22×2.62	0.15	**PWDA-2/34**	180
3.0*	51	**G3/4**	24.5	46	26.0	42	49	56	25.5-28	11.0	M10×60	29.75×3.53	0.32	**PWDA-3/34**	180
3.0*	51	**G1**	24.5	46	26.0	42	49	56	25.5-28	11.0	M10×60	29.75×3.53	0.32	**PWDA-3/100**	180

[1]) Pressure shown = Item deliverable

*Oval drill hole

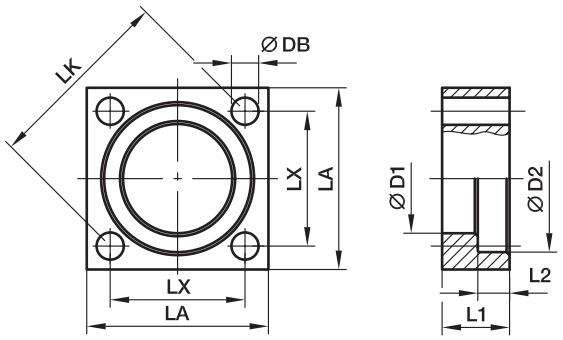
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Aluminium	A	PWDA-05/38AM	NBR

PSFC Square flange clamp

ISO 6164



250 bar Series

Nom. flange size											Weight (steel)		PN (bar)[1]
Series[2]	SAE (in)	ISO (DN)	LK	D1	D2	L1	L2	LA	LX	DB	kg/piece	Order code*	S
L	3/8	10	35	18.5	25.0	18	6.2	40	24.7	6.6	0.07	**PSFC/L/10**	250
L	1/2	13	42	24.3	31.0	20	6.2	45	29.7	9.0	0.08	**PSFC/L/13**	250
L	3/4	19	50	32.2	38.9	22	6.2	50	35.4	9.0	0.12	**PSFC/L/19**	250
L	1	25	62	38.5	45.3	25	7.5	65	43.8	11.0	0.24	**PSFC/L/25**	250
L	1 1/4	32	73	43.7	51.6	30	7.5	75	51.6	13.5	0.35	**PSFC/L/32**	250
L	1 1/2	38	85	50.8	61.1	36	7.5	90	60.1	17.5	0.51	**PSFC/L/38**	250
L	2	51	98	62.8	72.3	40	9.0	100	69.3	17.5	0.88	**PSFC/L/51**	250
L	2 1/2	56	118	76.6	88.0	45	9.0	120	83.4	22.0	1.53	**PSFC/L/56**	250
L	3	63	145	90.8	102.3	52	9.0	140	102.5	22.0	2.31	**PSFC/L/63**	250
L	4	80	160	114.5	132.0	60	21.0	160	113.5	25.0	4.19	**PSFC/L/80**	250

400 bar Series

S	3/8	10	35	18.5	26.4	18	7.2	40	24.7	6.6	0.08	**PSFC/S/10**	400
S	1/2	13	42	24.7	32.6	20	7.2	45	29.7	9.0	0.12	**PSFC/S/13**	400
S	3/4	19	50	32.5	42.1	22	8.2	50	35.4	9.0	0.17	**PSFC/S/19**	400
S	1	25	62	38.9	48.4	25	9.0	65	43.8	1.0	0.32	**PSFC/S/25**	400
S	1 1/4	32	73	44.6	54.8	30	9.8	75	51.6	13.5	0.46	**PSFC/S/32**	400
S	1 1/2	38	85	51.6	64.3	36	12.0	90	60.1	17.5	0.69	**PSFC/S/38**	400
S	2	51	98	67.6	80.2	40	12.0	100	69.3	17.5	1.18	**PSFC/S/51**	400
S	2 1/2	56	118	80.5	95.0	50	16.1	120	83.4	22.0	1.97	**PSFC/S/56**	400
S	3	63	145	90.5	111.0	52	16.1	150	102.5	26.0	2.81	**PSFC/S/63**	400
S	3 1/2	70	160	102.5	120.0	60	17.5	160	113.1	26.0	3.09	**PSFC/S/70**	400
S	4	80	175	114.5	136.0	70	21.0	180	123.7	33.0	4.88	**PSFC/S/80**	350

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

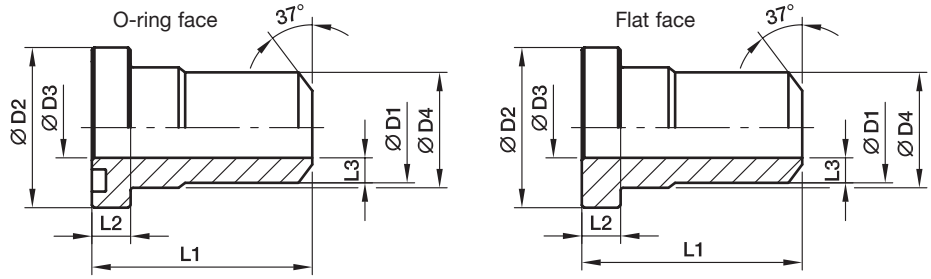
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFC/L/10S	only flange clamp

PSFA-B Square flange adapter (butt weld)

Square flange / Butt weld end
(ISO 6164)



250 bar Series

Nom. flange size														PN (bar)[1]
Series[2]	SAE (in)	ISO (DN)	D1	D2	D3	D4	L1	L2	L3	O-ring	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	S
L	3/8	10	17.5	24.5	10	18.0	40	6.8	3.75	17.13×2.62	0.09	**PSFA10/L/17.5B**	**PSCFA10/L/17.5B**	250
L	1/2	13	21.6	30.2	13	24.0	50	6.8	4.30	18.64×3.53	0.12	**PSFA13/L/21.6B**	**PSCFA13/L/21.6B**	250
L	3/4	19	27.2	38.1	19	31.5	60	6.8	4.10	24.99×3.53	0.18	**PSFA19/L/27.2B**	**PSCFA19/L/27.2B**	250
L	1	25	34.5	44.5	25	38.0	70	8.0	4.75	32.93×3.53	0.35	**PSFA25/L/34.5B**	**PSCFA25/L/34.5B**	250
L	1 1/4	32	43.0	50.8	31	43.0	80	8.0	6.00	37.89×3.53	0.50	**PSFA32/L/43B**	**PSCFA32/L/43B**	250
L	1 1/2	38	48.6	60.4	38	50.0	90	8.0	5.30	47.22×3.53	0.74	**PSFA38/L/48.6B**	**PSCFA38/L/48.6B**	250
L	2	51	61.0	71.4	50	62.0	100	9.6	5.50	56.74×3.53	1.27	**PSFA51/L/61B**	**PSCFA51/L/61B**	250
L	2 1/2	56	76.6	87.2	63	76.0	110	12.0	6.80	69.44×3.53	2.20	**PSFA56/L/76.6B**	**PSCFA56/L/76.6B**	250
L	3	63	89.0	101.6	70	90.0	120	15.0	9.50	85.32×3.53	3.32	**PSFA63/L/89B**	**PSCFA63/L/89B**	250
L	4	80	114.0	131.0	90	114.0	140	23.5	12.00	97.79×5.34	6.03	**PSFA80/L/114B**	**PSCFA80/L/114B**	250

400 bar Series

S	3/8	10	17.5	26.0	10	18.0	40	7.8	3.75	17.13×2.62	0.11	**PSFA10/S/17.5B**	**PSCFA10/S/17.5B**	400
S	1/2	13	21.6	31.8	13	24.0	50	7.8	4.30	18.64×3.53	0.17	**PSFA13/S/21.6B**	**PSCFA13/S/21.6B**	400
S	3/4	19	27.2	41.3	18	32.0	60	8.8	4.60	24.99×3.53	0.25	**PSFA19/S/27.2B**	**PSCFA19/S/27.2B**	400
S	1	25	34.5	47.6	22	38.0	70	9.5	6.25	32.93×3.53	0.46	**PSFA25/S/34.5B**	**PSCFA25/S/34.5B**	400
S	1 1/4	32	43.0	54.0	28	44.0	90	10.3	7.50	37.89×3.53	0.65	**PSFA32/S/43B**	**PSCFA32/S/43B**	400
S	1 1/2	38	48.6	63.5	32	51.0	90	12.6	8.30	47.22×3.53	0.99	**PSFA38/S/48.6B**	**PSCFA38/S/48.6B**	400
S	2	51	61.0	79.4	41	67.0	100	12.6	10.00	56.52×5.34	1.69	**PSFA51/S/61B**	**PSCFA51/S/61B**	400
S	2 1/2	56	76.6	94.2	50	90.0	110	16.5	13.30	69.22×5.34	2.83	**PSFA56/S/76.6B**	**PSCFA56/S/76.6B**	400
S	3	63	89.0	104.0	58	90.0	120	18.0	15.50	75.57×5.34	4.04	**PSFA63/S/89B**	**PSCFA63/S/89B**	400
S	3 1/2	70	102.0	119.0	63	102.0	130	20.0	19.50	85.09×5.34	4.45	**PSFA70/S/102B**	**PSCFA70/S/102B**	400
S	4	80	114.0	131.0	74	114.0	140	23.5	20.00	88.27×5.34	7.01	**PSFA80/S/114B**	**PSCFA80/S/114B**	350

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

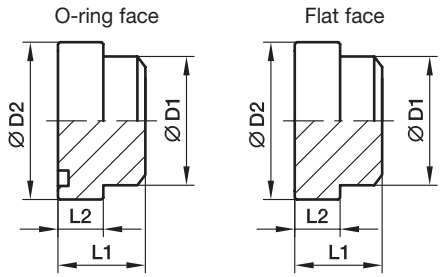
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFA10/L/17.5BS	only flange adapter

PSFP Square flange plug

ISO 6164



250 bar Series

Nom. flange size											PN (bar)[1]
Series[2]	SAE (in)	ISO (DN)	D1	D2	L1	L2	O-ring	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	S
L	3/8	10	18.0	24.5	6.8	18.0	17.13×2.62	0.07	**PSFP10/L/18B**	**PSCFP10/L/18B**	250
L	1/2	13	24.0	30.2	6.8	20.0	18.64×3.53	0.08	**PSFP13/L/24B**	**PSCFP13/L/24B**	250
L	3/4	19	31.5	38.1	6.8	22.0	24.99×3.53	0.12	**PSFP19/L/31.5B**	**PSCFP19/L/31.5B**	250
L	1	25	38.0	44.5	8.0	25.0	32.93×3.53	0.24	**PSFP25/L/38B**	**PSCFP25/L/38B**	250
L	1 1/4	32	43.0	50.8	8.0	30.0	37.89×3.53	0.35	**PSFP32/L/43B**	**PSCFP32/L/43B**	250
L	1 1/2	38	50.0	60.4	8.0	36.0	47.22×3.53	0.51	**PSFP38/L/50B**	**PSCFP38/L/50B**	250
L	2	51	62.0	71.4	9.6	40.0	56.74×3.53	0.88	**PSFP51/L/62B**	**PSCFP51/L/62B**	250
L	2 1/2	56	76.0	87.2	12.0	45.0	69.44×3.53	1.53	**PSFP56/L/76B**	**PSCFP56/L/76B**	250
L	3	63	90.0	101.6	15.0	52.0	85.32×3.53	2.31	**PSFP63/L/90B**	**PSCFP63/L/90B**	250
L	4	80	114.0	131.0	23.5	61.5	97.79×5.34	4.19	**PSFP80/L/114B**	**PSCFP80/L/114B**	250

400 bar Series

S	3/8	10	18.0	26.0	7.8	18.0	17.13×2.62	0.08	**PSFP10/S/18B**	**PSCFP10/S/18B**	400
S	1/2	13	24.0	31.8	7.8	20.0	18.64×3.53	0.12	**PSFP13/S/24B**	**PSCFP13/S/24B**	400
S	3/4	19	32.0	41.3	8.8	22.0	24.99×3.53	0.17	**PSFP19/S/32B**	**PSCFP19/S/32B**	400
S	1	25	38.0	47.6	9.5	25.0	32.93×3.53	0.32	**PSFP25/S/38B**	**PSCFP25/S/38B**	400
S	1 1/4	32	44.0	54.0	10.3	30.0	37.89×3.53	0.46	**PSFP32/S/44B**	**PSCFP32/S/44B**	400
S	1 1/2	38	51.0	63.5	12.6	36.0	47.22×3.53	0.69	**PSFP38/S/51B**	**PSCFP38/S/51B**	400
S	2	51	67.0	79.4	12.6	40.0	56.52×5.34	1.18	**PSFP51/S/67B**	**PSCFP51/S/67B**	400
S	2 1/2	56	80.0	94.2	16.5	45.0	69.22×5.34	1.97	**PSFP56/S/80B**	**PSCFP56/S/80B**	400
S	3	63	90.0	104.0	18.0	52.0	75.57×5.34	2.81	**PSFP63/S/90B**	**PSCFP63/S/90B**	400
S	3 1/2	70	102.0	119.0	20.0	60.0	85.09×5.34	3.09	**PSFP70/S/102B**	**PSCFP70/S/102B**	400
S	4	80	114.0	131.0	23.5	70.0	88.27×5.34	4.88	**PSFP80/S/114B**	**PSCFP80/S/114B**	350

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

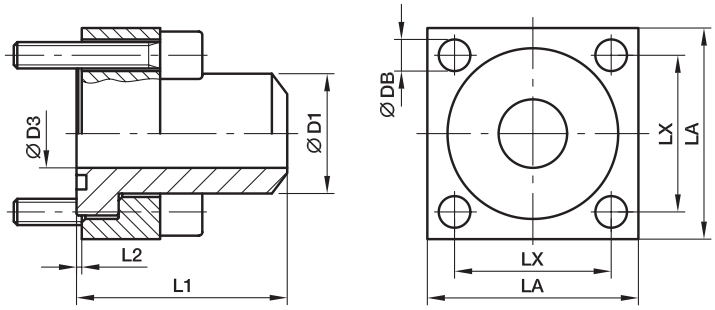
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFP10/L/18BS	only flange plug

PSF-B Square flange (butt weld adapter coupling)

Square flange / Butt weld end
(ISO 6164)



250 bar Series

Nom. flange size										Screws		Weight (steel)		PN (bar)[1]
Series[2]	SAE (in)	ISO (DN)	D1	D3	L1	L2	LA	LX	DB	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	10	17.5	10	40	0.4	40	24.7	6.6	M 6 ×30	17.13×2.62	0.17	**PSF10/L/17.5B**	250
L	1/2	13	21.6	13	50	0.4	45	29.7	9.0	M 8×35	18.64×3.53	0.22	**PSF13/L/21.6B**	250
L	3/4	19	27.2	19	60	0.4	50	35.4	9.0	M8×35	24.99×3.53	0.32	**PSF19/L/27.2B**	250
L	1	25	34.5	25	70	0.5	65	43.8	11.0	M10×40	32.93×3.53	0.63	**PSF25/L/34.5B**	250
L	1 1/4	32	43.0	31	80	0.5	75	51.6	13.5	M12×50	37.89×3.53	0.92	**PSF32/L/43B**	250
L	1 1/2	38	48.6	38	90	0.5	90	60.1	17.5	M16×60	47.22×3.53	1.34	**PSF38/L/48.6B**	250
L	2	51	61.0	50	100	0.6	100	69.3	17.5	M16×70	56.74×3.53	2.30	**PSF51/L/61B**	250
L	2 1/2	56	76.6	63	110	3.0	120	83.4	22.0	M20×80	69.44×3.53	4.00	**PSF56/L/76.6B**	250
L	3	63	89.0	70	120	6.0	140	102.5	22.0	M20×90	85.32×3.53	6.03	**PSF63/L/89B**	250
L	4	80	114.0	90	140	2.5	160	113.5	25.0	M24×100	97.79×5.34	10.96	**PSF80/L/114B**	250

400 bar Series

S	3/8	10	17.5	10	40	0.6	40	24.7	6.6	M 6 ×30	17.13×2.62	0.20	**PSF10/S/17.5B**	400
S	1/2	13	21.6	13	50	0.6	45	29.7	9.0	M 8×35	18.64×3.53	0.31	**PSF13/S/21.6B**	400
S	3/4	19	27.2	18	60	0.6	50	35.4	9.0	M 8×35	24.99×3.53	0.45	**PSF19/S/27.2B**	400
S	1	25	34.5	22	70	0.5	65	43.8	11.0	M10×40	32.93×3.53	0.83	**PSF25/S/34.5B**	400
S	1 1/4	32	43.0	28	90	0.5	75	51.6	13.5	M12×50	37.89×3.53	1.19	**PSF32/S/43B**	400
S	1 1/2	38	48.6	32	90	0.6	90	60.1	17.5	M16×60	47.22×3.53	1.80	**PSF38/S/48.6B**	400
S	2	51	61.0	41	100	0.6	100	69.3	17.5	M16×70	56.52×5.34	3.08	**PSF51/S/61B**	400
S	2 1/2	56	76.6	50	110	0.4	120	83.4	22.0	M20×80	69.22×5.34	5.14	**PSF56/S/76.6B**	400
S	3	63	89.0	58	120	1.9	150	102.5	26.0	M24×90	75.57×5.34	7.34	**PSF63/S/89B**	400
S	3 1/2	70	102.0	63	130	2.5	160	113.1	26.0	M24×100	85.09×5.34	8.09	**PSF70/S/102B**	400
S	4	80	114.0	74	140	2.5	180	123.7	33.0	M30×120	88.27×5.34	12.75	**PSF80/S/114B**	350

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

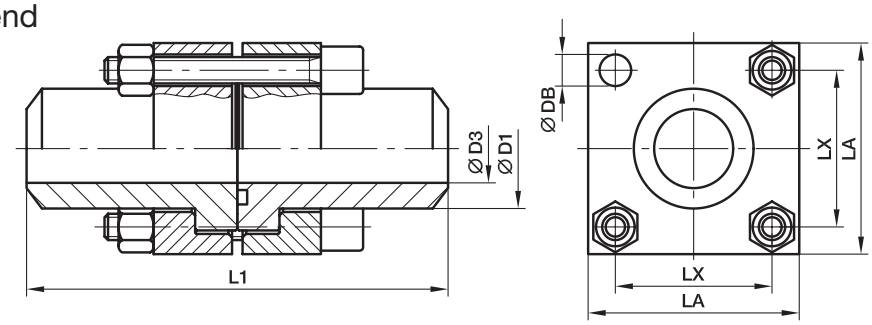
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PSF10/L/17.5BS	NBR

PDSF-B Square flange (butt weld connection)

Square flange / Butt weld tube end
(ISO 6164)



250 bar Series

Nom. flange size									Screws		Weight (steel)		PN (bar)[1]
Series[2]	SAE (in)	ISO (DN)	D1	D3	L1	LA	LX	DB	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	10	17.5	10	80	40	24.7	6.6	M 8×45	17.13×2.62	0.34	**PDSF10/L/17.5B**	250
L	1/2	13	21.6	13	100	45	29.7	9.0	M 8×50	18.64×3.53	0.44	**PDSF13/L/21.6B**	250
L	3/4	19	27.2	19	120	50	35.4	9.0	M 8×55	24.99×3.53	0.64	**PDSF19/L/27.2B**	250
L	1	25	34.5	25	140	65	43.8	11.0	M10×65	32.93×3.53	1.26	**PDSF25/L/34.5B**	250
L	1 1/4	32	43.0	31	160	75	51.6	13.5	M12×75	37.89×3.53	1.84	**PDSF32/L/43B**	250
L	1 1/2	38	48.6	38	180	90	60.1	17.5	M16×90	47.22×3.53	2.68	**PDSF38/L/48.6B**	250
L	2	51	61.0	50	200	100	69.3	17.5	M16×100	56.74×3.53	4.60	**PDSF51/L/61B**	250
L	2 1/2	56	76.6	63	220	120	83.4	22.0	M20×120	69.44×3.53	8.00	**PDSF56/L/76.6B**	250
L	3	63	89.0	70	240	140	102.5	22.0	M20×140	85.32×3.53	12.06	**PDSF63/L/89B**	250
L	4	80	114.0	90	280	160	113.5	22.0	M24×150	97.79×5.34	21.92	**PDSF80/L/114B**	250

400 bar Series

S	3/8	10	17.5	10	80	40	24.7	6.6	M 8×45	17.13×2.62	0.40	**PDSF10/S/17.5B**	400
S	1/2	13	21.6	13	100	45	29.7	9.0	M 8×50	18.64×3.53	0.62	**PDSF13/S/21.6B**	400
S	3/4	19	27.2	18	120	50	35.4	9.0	M 8×55	24.99×3.53	0.90	**PDSF19/S/27.2B**	400
S	1	25	34.5	22	140	65	43.8	11.0	M10×65	32.93×3.53	1.66	**PDSF25/S/34.5B**	400
S	1 1/4	32	43.0	28	160	75	51.6	13.5	M12×75	37.89×3.53	2.38	**PDSF32/S/43B**	400
S	1 1/2	38	48.6	32	180	90	60.1	17.5	M16×90	47.22×3.53	3.60	**PDSF38/S/48.6B**	400
S	2	51	61.0	41	200	100	69.3	17.5	M16×100	56.52×5.34	6.16	**PDSF51/S/61B**	400
S	2 1/2	56	76.6	50	220	120	83.4	22.0	M20×130	69.22×5.34	10.28	**PDSF56/S/76.6B**	400
S	3	63	89.0	58	240	150	102.5	26.0	M24×140	75.57×5.34	14.68	**PDSF63/S/89B**	400
S	3 1/2	70	102.0	63	260	160	113.1	26.0	M24×150	85.09×5.34	16.18	**PDSF70/S/102B**	400
S	4	80	114.0	74	280	180	123.7	33.0	M30×180	88.27×5.34	25.50	**PDSF80/S/114B**	350

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

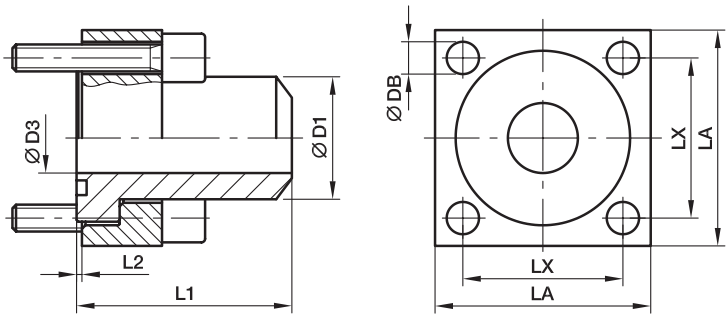
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example Flange coupling incl. flange clamps, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDSF10/L/17.5BS	NBR

PCF-B Cetop square flange (weld connection)

Cetop flange / Butt weld end



250 bar Series

Nom. flange size Series[2]	(in)	D1	D3	L1	L2	LA	LX	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] S
L	3/8	18	12.5	40	1.0	40	24.7	6.5	M 6×25	17.3×2.62	0.17	**PCF38/L/18B**	250
L	1/2	22	14.0	45	1.0	45	29.7	8.5	M 8×30	18.64×3.53	0.22	**PCF12/L/22B**	250
L	3/4	28	20.0	50	1.0	50	35.3	8.5	M 8×30	24.99×3.53	0.32	**PCF34/L/28B**	250
L	1	35	25.0	55	1.0	65	43.8	10.5	M10×35	32.93×3.53	0.63	**PCF1/L/35B**	250
L	1 1/4	43	31.0	61	1.0	75	51.6	13.0	M12×40	37.89×3.53	0.92	**PCF114/L/43B**	250
L	1 1/2	50	38.0	65	1.0	85	60.0	15.0	M14×45	47.22×3.53	1.34	**PCF112/L/50B**	250
L	2	62	47.0	70	1.5	100	69.4	17.0	M16×55	56.74×3.53	2.30	**PCF2/L/62B**	250
L	2 1/2	76	58.0	75	1.5	120	83.4	21.0	M20×70	69.44×3.53	4.00	**PCF212/L/76B**	250
L	3	90	70.0	85	1.5	140	102.5	21.0	M20×80	85.32×3.53	6.03	**PCF3/L/90B**	250
L	3 1/2	102	80.0	90	1.5	140	102.5	21.0	M20×90	85.09×5.35	7.56	**PCF312/L/102B**	250
L	4	114	90.0	105	1.5	160	113.2	25.0	M24×100	97.79×5.34	10.96	**PCF4/L/114B**	250

400 bar Series

S	3/8	18	11.0	40	1.0	40	24.7	6.5	M 6×25	17.3×2.62	0.20	**PCF38/S/18B**	400
S	1/2	22	14.0	45	1.0	45	29.7	8.5	M 8×30	18.64×3.53	0.31	**PCF12/S/22B**	400
S	3/4	28	18.0	50	1.0	50	35.3	8.5	M 8×35	24.99×3.53	0.45	**PCF34/S/28B**	400
S	1	35	22.0	55	1.0	65	43.8	10.5	M10×40	32.93×3.53	0.83	**PCF1/S/35B**	400
S	1 1/4	44	29.0	61	1.0	75	51.6	13.0	M12×45	37.89×3.53	1.19	**PCF114/S/44B**	400
S	1 1/2	51	35.0	65	1.0	85	60.0	15.0	M14×55	47.22×3.53	1.80	**PCF112/S/51B**	400
S	2	61	43.0	70	1.5	100	69.4	17.0	M16×65	56.74×3.53	3.08	**PCF2/S/61B**	400
S	2 1/2	80	53.0	80	1.5	120	83.4	21.0	M20×70	69.22×5.34	5.14	**PCF212/S/80B**	400
S	3	90	58.0	90	1.5	140	102.5	21.0	M20×90	75.57×5.34	7.34	**PCF3/S/90B**	400
S	3 1/2	102	63.0	90	1.5	140	102.5	21.0	M20×90	85.09×5.34	8.09	**PCF312/S/102B**	400
S	4	114	74.0	105	1.5	160	113.2	25.0	M24×100	88.27×5.34	12.75	**PCF4/S/114B**	400

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

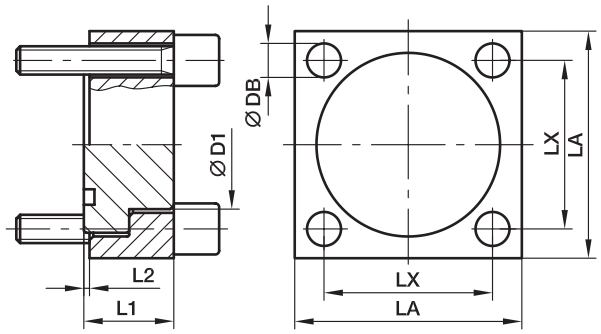
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCF38/L/18BS	NBR

PPCF Cetop square flange plug

Cetop square flange / Plug



250 bar Series

Nom. flange size		D1					Screws		Weight (steel)		PN (bar)[1]
Series[2]	(in)		L1	L2	LA	LX	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	18.0	15	1.0	40	24.7	M 6×25	17.3×2.62	0.09	**PPCF38/L/18**	250
L	1/2	24.0	16	1.0	45	29.7	M 8×30	18.64×3.53	0.11	**PPCF12/L/24**	250
L	3/4	31.5	17	1.0	50	35.3	M 8×30	24.99×3.53	0.16	**PPCF34/L/31.5**	250
L	1	38.0	19	1.0	65	43.8	M10×35	32.93×3.53	0.32	**PPCF1/L/38**	250
L	1 1/4	43.0	23	1.0	75	51.6	M12×40	37.89×3.53	0.46	**PPCF114/L/43**	250
L	1 1/2	50.0	26	1.0	85	60.0	M14×45	47.22×3.53	0.67	**PPCF112/L/50**	250
L	2	62.0	31	1.5	100	69.4	M16×55	56.74×3.53	1.15	**PPCF2/L/62**	250
L	2 1/2	76.0	37	1.5	120	83.4	M20×70	69.44×3.53	2.00	**PPCF212/L/76**	250
L	3	90.0	42	1.5	140	102.5	M20×80	85.32×3.53	3.02	**PPCF3/L/90**	250
L	3 1/2	102.0	54	1.5	140	102.5	M20×90	85.09×5.35	3.78	**PPCF312/L/102**	250
L	4	114.0	62	1.5	160	113.2	M24×100	97.79×5.34	5.48	**PPCF4/L/114**	250
L	5	141.0	62	1.5	180	132.0	M27×100	120.7×5.34	6.48	**PPCF5/L/141**	250

400 bar Series

S	3/8	18.0	17	1.0	40	24.7	M 6×25	17.3×2.62	0.10	**PPCF38/S/18**	400
S	1/2	24.0	19	1.0	45	29.7	M 8×30	18.64×3.53	0.16	**PPCF12/S/24**	400
S	3/4	32.0	21	1.0	50	35.3	M 8×35	24.99×3.53	0.23	**PPCF34/S/32**	400
S	1	38.0	25	1.0	65	43.8	M10×40	32.93×3.53	0.42	**PPCF1/S/38**	400
S	1 1/4	44.0	31	1.0	75	51.6	M12×50	37.89×3.53	0.60	**PPCF114/S/44**	400
S	1 1/2	51.0	33	1.0	85	60.0	M14×55	47.22×3.53	0.90	**PPCF112/S/51**	400
S	2	67.0	42	1.5	100	69.4	M16×65	56.74×3.53	1.54	**PPCF2/S/67**	400
S	2 1/2	80.0	48	1.5	120	83.4	M20×70	69.22×5.34	2.57	**PPCF212/S/80**	400
S	3	90.0	54	1.5	140	102.5	M20×90	75.57×5.34	3.67	**PPCF3/S/90**	400
S	3 1/2	102.0	54	1.5	140	102.5	M20×90	85.09×5.34	4.05	**PPCF312/S/102**	400
S	4	114.0	62	1.5	160	113.2	M24×100	88.27×5.34	6.38	**PPCF4/S/114**	400

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

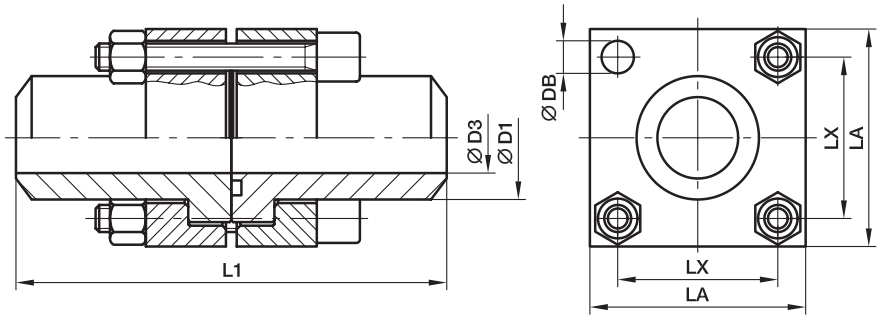
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example flange plug incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PPCF38/L/18S	NBR

PDCF-B Cetop square flange coupling

Cetop square flange / Butt weld end



250 bar Series

Nom. flange size		D1					Screws		Weight (steel)		PN (bar)[1]
Series[2]	(in)		D3	L1	LA	LX	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	18	12.5	80	40	24.7	M 6×35	17.3×2.62	0.43	**PDCF38/L/18B**	250
L	1/2	22	14.0	90	45	29.7	M 8×40	18.64×3.53	0.55	**PDCF12/L/22B**	250
L	3/4	28	20.0	100	50	35.3	M 8×45	24.99×3.53	0.80	**PDCF34/L/28B**	250
L	1	35	25.0	110	65	43.8	M10×50	32.93×3.53	1.58	**PDCF1/L/35B**	250
L	1 1/4	43	31.0	120	75	51.6	M12×60	37.89×3.53	2.30	**PDCF114/L/43B**	250
L	1 1/2	50	38.0	130	85	60.0	M14×70	47.22×3.53	3.35	**PDCF112/L/50B**	250
L	2	62	47.0	140	100	69.4	M16×80	56.74×3.53	5.75	**PDCF2/L/62B**	250
L	2 1/2	76	58.0	150	120	83.4	M20×100	69.44×3.53	10.0	**PDCF212/L/76B**	250
L	3	90	70.0	170	140	102.5	M20×110	85.32×3.53	15.08	**PDCF3/L/90B**	250
L	3 1/2	102	80.0	180	140	102.5	M20×130	85.09×5.35	18.90	**PDCF312/L/102B**	250
L	4	114	90.0	210	160	113.2	M24×150	97.79×5.34	27.40	**PDCF4/L/114B**	250

400 bar Series

S	3/8	18	11.0	80	40	24.7	M 6×40	17.3×2.62	0.50	**PDCF38/S/18B**	400
S	1/2	22	14.0	90	45	29.7	M 8×45	18.64×3.53	0.78	**PDCF12/S/22B**	400
S	3/4	28	18.0	100	50	35.3	M8×50	24.99×3.53	1.13	**PDCF34/S/28B**	400
S	1	35	22.0	110	65	43.8	M10×60	32.93×3.53	2.08	**PDCF1/S/35B**	400
S	1 1/4	44	29.0	120	75	51.6	M12×70	37.89×3.53	2.98	**PDCF114/S/44B**	400
S	1 1/2	51	35.0	130	85	60.0	M14×80	47.22×3.53	4.50	**PDCF112/S/51B**	400
S	2	61	43.0	140	100	69.4	M16×100	56.74×3.53	7.70	**PDCF2/S/61B**	400
S	2 1/2	80	53.0	160	120	83.4	M20×120	69.22×5.34	12.85	**PDCF212/S/80B**	400
S	3	90	58.0	180	140	102.5	M20×130	75.57×5.34	18.35	**PDCF3/S/90B**	400
S	3 1/2	102	63.0	180	140	102.5	M20×130	85.09×5.34	20.23	**PDCF312/S/102B**	400
S	4	114	74.0	210	160	113.2	M24×150	88.27×5.34	31.88	**PDCF4/S/114B**	400

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

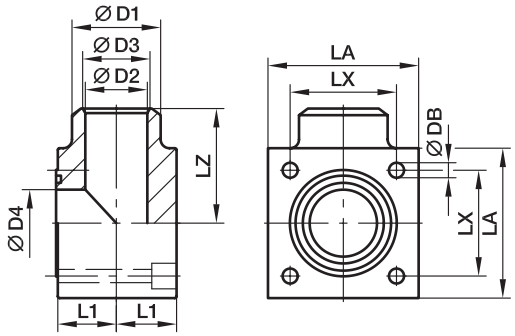
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example Flange coupling incl. flange clamps, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDCF38/L/18BS	NBR

PLCF-B Cetop square flange 90° elbow connection

Cetop square flange 90° elbow / Butt weld end



250 bar Series

Nom. flange size		D1									Screws		Weight (steel)		PN (bar)[1]
Series[2]	(in)		D2	D3	D4	L1	LA	LX	LZ	DB	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 6×30	17.3×2.62	0.44	**PLCF38/L/18B**	250
L	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 8×40	18.64×3.53	0.57	**PLCF12/L/22B**	250
L	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 8×45	24.99×3.53	0.83	**PLCF34/L/28B**	250
L	1	35	23	23	25.0	24	65	43.8	50	10.5	M10×55	32.93×3.53	1.64	**PLCF1/L/35B**	250
L	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M12×70	37.89×3.53	2.39	**PLCF114/L/44B**	250
L	1 1/2	50	35	38	38.0	34	85	60.0	65	15.0	M14×80	47.22×3.53	3.48	**PLCF112/L/50B**	250
L	2	63	43	47	47.0	42	100	69.4	75	17.0	M16×100	56.74×3.53	5.98	**PLCF2/L/63B**	250
L	2 1/2	86	53	58	58.0	53	120	83.4	85	21.0	M20×120	69.44×3.53	10.40	**PLCF212/L/86B**	250
L	3	90	65	70	70.0	59	140	102.5	100	21.0	M20×140	85.32×3.53	15.68	**PLCF3/L/90B**	250
L	4	114	80	90	90.0	65	160	113.2	110	25.0	M24×140	97.79×5.34	19.66	**PLCF4/L/114B**	250

400 bar Series

S	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 6×30	17.3×2.62	0.52	**PLCF38/S/18B**	400
S	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 8×40	18.64×3.53	0.81	**PLCF12/S/22B**	400
S	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 8×45	24.99×3.53	1.17	**PLCF34/S/28B**	400
S	1	35	23	23	25.0	24	65	43.8	50	10.5	M10×55	32.93×3.53	2.16	**PLCF1/S/35B**	400
S	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M12×70	37.89×3.53	3.09	**PLCF114/S/44B**	400
S	1 1/2	51	32	35	38.0	34	85	60.0	65	15.0	M14×80	47.22×3.53	4.68	**PLCF112/S/51B**	400
S	2	63	38	43	47.0	42	100	69.4	75	17.0	M16×100	56.74×3.53	8.01	**PLCF2/S/63B**	400
S	2 1/2	80	48	53	58.0	53	120	83.4	85	21.0	M20×120	69.22×5.34	13.36	**PLCF212/S/80B**	400
S	3	90	58	58	58.0	59	140	102.5	100	21.0	M20×140	75.57×5.34	19.08	**PLCF3/S/90B**	400

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

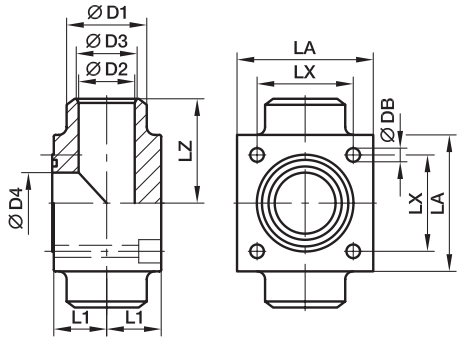
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PLCF38/L/18BSM	NBR

PTCF-B Cetop square flange 180° T-connection

Cetop square flange 180° T-connection / Butt weld end



250 bar Series

Nom. flange size		D1									Screws		Weight (steel)		PN (bar)[1]
Series[2])	(in)		D2	D3	D4	L1	LA	LX	LZ	DB	(metr.)	O-ring	kg/piece	Order code*	S
L	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 6×30	17.3×2.62	0.75	**PTCF38/L/18B**	250
L	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 8×40	18.64×3.53	0.97	**PTCF12/L/22B**	250
L	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 8×45	24.99×3.53	1.41	**PTCF34/L/28B**	250
L	1	35	23	23	25.0	24	65	43.8	50	10.5	M10×55	32.93×3.53	2.78	**PTCF1/L/35B**	250
L	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M12×70	37.89×3.53	4.07	**PTCF114/L/44B**	250
L	1 1/2	50	35	38	38.0	34	85	60.0	65	15.0	M14×80	47.22×3.53	5.92	**PTCF112/L/50B**	250
L	2	63	43	47	47.0	42	100	69.4	75	17.0	M16×100	56.74×3.53	10.17	**PTCF2/L/63B**	250
L	2 1/2	76	53	58	58.0	53	120	83.4	85	21.0	M20×120	69.44×3.53	17.68	**PTCF212/L/76B**	250
L	3	90	65	70	70.0	59	140	102.5	100	21.0	M20×140	85.32×3.53	26.65	**PTCF3/L/90B**	250
L	4	114	80	90	90.0	65	160	113.2	110	25.0	M24×140	97.79×5.34	33.42	**PTCF4/L/114B**	250

400 bar Series

S	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 6×30	17.3×2.62	0.88	**PTCF38/S/18B**	400
S	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 8×40	18.64×3.53	1.37	**PTCF12/S/22B**	400
S	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 8×45	24.99×3.53	1.99	**PTCF34/S/28B**	400
S	1	35	23	23	25.0	24	65	43.8	50	10.5	M10×55	32.93×3.53	3.67	**PTCF1/S/35B**	400
S	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M12×70	37.89×3.53	5.26	**PTCF114/S/44B**	400
S	1 1/2	51	32	35	38.0	34	85	60.0	65	15.0	M14×80	47.22×3.53	7.96	**PTCF112/S/51B**	400
S	2	63	38	43	47.0	42	100	69.4	75	17.0	M16×100	56.74×3.53	13.61	**PTCF2/S/63B**	400
S	2 1/2	80	48	53	58.0	53	120	83.4	85	21.0	M20×120	69.22×5.34	22.72	**PTCF212/S/80B**	400
S	3	90	58	58	58.0	59	140	102.5	100	21.0	M20×140	75.57×5.34	32.44	**PTCF3/S/90B**	400

[1]) Pressure shown = Item deliverable

[2]) L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

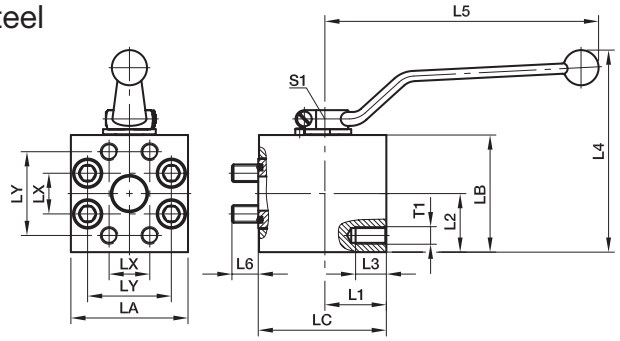
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PTCF38/L/18BSM	NBR

KH-B1V-S Ball valve with SAE Flange connection (6000 PSI)

SAE Flange (ISO 6162-1/-2) / Ball valve 2/2 way steel



6000 PSI Series

Nom. flange size															Screws		Weight (steel)		PN (bar)[1]
SAE (in)	ISO (DN)	L1	L2	L3	L4	L5	L6	LX	LY	LA	LB	LC	S1	T1	(metr.)	O-ring	kg/piece	Order code*	S
1/2	12	32.0	28.5	19	107	112	13.5	18.2	40.5	60	55	60.5	10	M 8	M 8 ×65	18.66×3.53	1.29	**KH12B1V62**	420
3/4	20	31.0	35.0	16	134	187	14.0	23.8	50.8	70	70	62.5	14	M10	M10×65	25.00×3.53	2.15	**KH20B1V63**	420
1	25	39.0	40.0	21	144	187	18.0	27.8	57.2	80	80	75.5	14	M12	M12×80	32.92×3.53	2.95	**KH25B1V64**	420
1 1/4	32	43.5	50.0	23	129	320	18.0	31.8	66.7	100	100	82.0	17	M14	M14×85	37.70×3.53	6.21	**KH32B1V65**	420
1 1/2	40	53.5	60.0	26	149	320	18.0	36.5	79.4	120	120	99.0	17	M16	M16×100	47.22×3.53	9.50	**KH40B1V66**	420
2	50	61.0	61.5	34	153	320	22.0	44.5	96.8	134	124	109.5	17	M20	M20×100	56.74×3.53	12.80	**KH50B1V68**	420

[1]) Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Materials:
Body made of steel, coating DIN 50938-FE/A/T4,
ball of hard chrome plated carbon steel, stem of zinc plated steel.

Seals:
Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For air applications suitable up to 100 bar.

Temperature range:
–10 up to +100° C

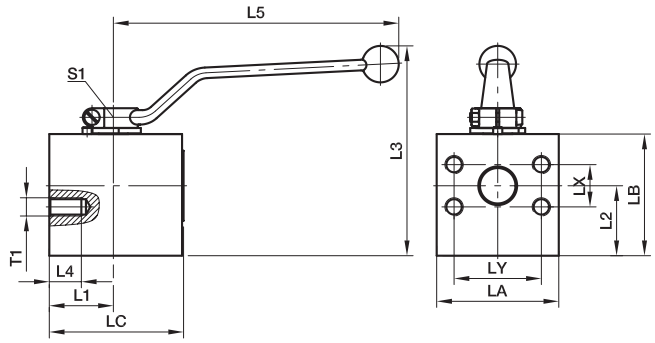
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*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only ball valve flange	Example ball valve flange incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	KH12B1V62S	KH12B1V62SM	NBR

KH-B2V-S Ball valve with SAE Flange connection (block 3000/6000 PSI)

SAE Flange / Ball valve 2/2 way steel
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size		T1													Weight (steel)		PN (bar)[1]
SAE (in)	ISO (DN)	(metr.)	(in)	L1	L2	L3	L4	L5	LX	LY	LA	LB	LC	S1	kg/piece	Order code*	S
1/2	12	**M 8**	**5/16-18UNC**	23.5	22	97	17	112	17.5	38.1	55	45	60	10	1.1	**KH12B2V32**	210
3/4	20	**M10**	**3/8-16UNC**	39.5	39	128	21	187	22.2	47.6	70	70	80	14	2.8	**KH20B2V33**	210
1	25	**M10**	**3/8-16UNC**	42.0	46	138	19	187	26.2	52.4	80	80	88	14	4.0	**KH25B2V34**	210

6000 PSI Series

1/2	12	**M 8**	**5/16-18UNC**	23.5	22	97	17	112	18.2	40.5	55	45	60	10	1.1	**KH12B2V62**	420
3/4	20	**M10**	**3/8-16UNC**	39.5	39	128	21	187	23.8	50.8	70	70	80	14	2.8	**KH20B2V63**	420
1	25	**M10**	**7/16-16UNC**	42.0	46	138	19	187	27.8	57.2	80	80	88	14	4.0	**KH25B2V64**	420

[1]) Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Materials:
Body made of steel, coating DIN 50938-FE/A/T4,
ball of hard chrome plated carbon steel, stem of zinc plated steel.

Seals:
Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For air applications suitable up to 100 bar.

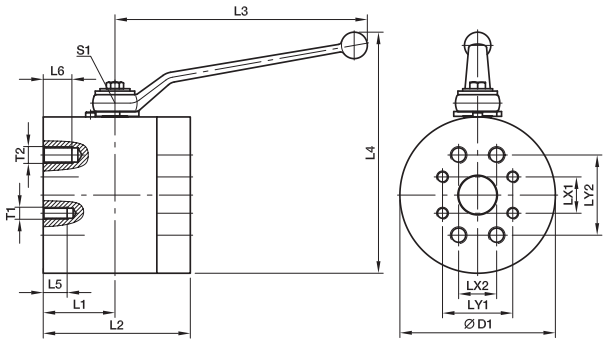
Temperature range:
–10 up to +100° C

*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only ball valve flange with metr. threads	Example only ball valve flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	KH12B2V32SM	KH12B2V32SU	NBR

KH-B3V-S Ball valve with SAE Flange connection

SAE Flange / Ball valve 2/2 way steel
(ISO 6162-1/-2)



3000 PSI Series / 6000 PSI Series

Nom. flange size								3000 PSI Connection						6000 PSI Connection						Weight (steel)		
SAE (in)	ISO (DN)	D1	L1	L2	L3	L4	S1	T1						T2						kg/piece	Order code*	PN (bar)[1]
									UNC	LX1	LY1	L5	PN		**UNC**	LX2	LY2	L6	PN			
1 1/4	32	130	60	123	320	158.5	17	**M12**	**7/16-14**	30.2	58.7	27	276	**M14**	**1/2-13**	31.8	66.7	24	420	11.3	**KH32B3V35**	420
1 1/2	40	140	61	126	320	168.5	17	**M12**	**1/2-13**	35.7	69.9	25	207	**M16**	**5/8-11**	36.5	79.4	26	420	13.1	**KH40B3V36**	420
2	50	160	79	158	320	178.5	17	**M12**	**1/2-13**	42.8	77.8	25	207	**M20**	**3/4-10**	44.4	96.8	34	420	21.2	**KH50B3V38**	420

[1]) Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Materials:
Body made of steel, coating DIN 50938-FE/A/T4,
ball of hard chrome plated carbon steel, stem of zinc plated steel.

Seals:
Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For air applications suitable up to 100 bar.

Temperature range:
–10 up to +100° C

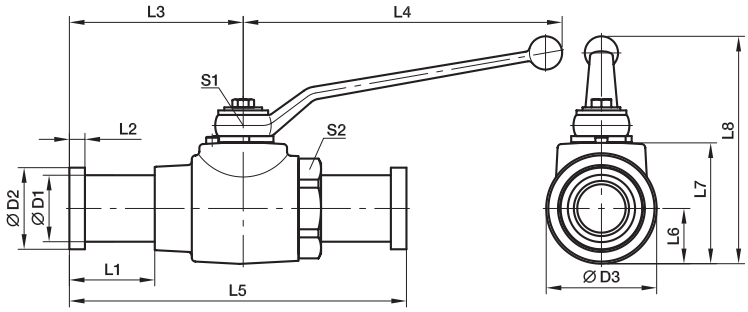
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*Please add the suffixes below according to the material / surface required.

Order code suffixes				
Material	Suffix surface and material	Example only ball valve flange with metr. threads	Example only ball valve flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	KH32B3V35SM	KH32B3V35SU	NBR

KH-A-S Ball valve with SAE Flange adapter connection

SAE Flange / Ball valve 2/2 way steel
(ISO 6162-1/-2)



3000 PSI Series

Nom. flange size SAE (in)	ISO (DN)	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	O-ring	Weight (steel) kg/piece	Order code*	PN (bar)[1] S
1/2	12	24	30.2	35	42.0	6.7	75.5	112	151.0	17.0	40	92	10	32	18.66×3.53	0.9	**KH12A32**	350
3/4	20	32	38.1	45	43.0	6.7	81.0	187	162.0	24.0	55	113	14	41	25.00×3.53	1.7	**KH20A33**	315
1	25	38	44.4	55	38.9	8.0	89.0	187	178.0	26.0	60	118	14	50	32.92×3.53	2.5	**KH25A34**	315
1 1/4	32	43	50.8	73	40.3	8.0	99.0	227	190.5	36.5	80	155	17	60	37.70×3.53	3.1	**KH32A35**	276
1 1/2	40	50	60.3	85	58.3	8.0	115.5	227	231.0	42.5	90	165	17	70	47.22×3.53	4.3	**KH40A36**	207
2	50	62	71.4	99	50.9	9.5	116.0	227	232.0	49.5	104	179	17	85	56.74×3.53	5.8	**KH50A38**	207

6000 PSI Series

1/2	12	24	31.7	35	42.0	7.7	75.5	112	151.0	17.0	40	92	10	32	18.66×3.53	1.0	**KH12A62**	420
3/4	20	32	41.3	45	49.0	8.8	87.0	187	174.0	24.0	55	113	14	46	25.00×3.53	1.9	**KH20A63**	315
1	25	38	47.6	55	49.0	9.5	99.0	187	198.0	26.0	60	118	14	50	32.92×3.53	2.8	**KH25A64**	315
1 1/4	32	44	54.0	73	56.5	10.3	115.0	227	223.0	36.5	80	155	17	60	37.70×3.53	3.3	**KH32A65**	315
1 1/2	40	51	63.5	85	83.5	12.6	14.5	227	281.0	42.5	90	165	17	70	47.22×3.53	4.8	**KH40A66**	315
2	50	67	79.4	99	93.0	12.6	158.0	227	316.0	49.5	104	179	17	85	56.74×3.53	7.4	**KH50A68**	315

[1]) Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Materials:
Body made of steel, coating DIN 50938-FE/A/T4,
ball of hard chrome plated carbon steel, stem of zinc plated steel.

Seals:
Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For air applications suitable up to 100 bar.

Temperature range:
–10 up to +100° C

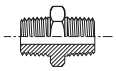
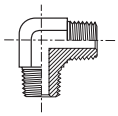
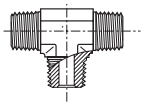
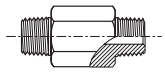
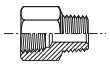
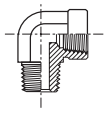
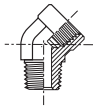
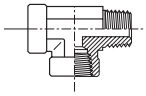
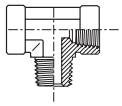
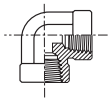
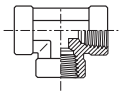
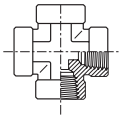
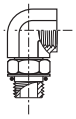
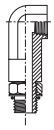
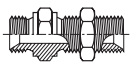
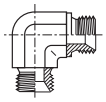
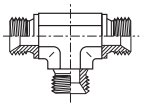
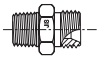
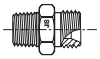
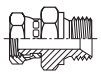
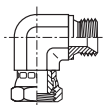
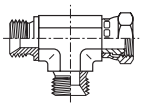
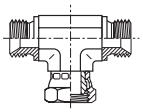
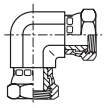
*Please add the suffixes below according to the material / surface required.

Order code suffixes			
Material	Suffix surface and material	Example only ball valve flange adapter	Description
Steel, blanc oil dipped	S	KH12A32S	only ball valve flange adapter

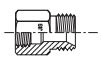
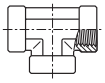
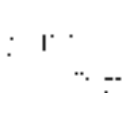
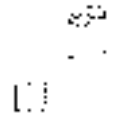
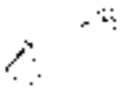
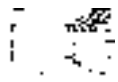
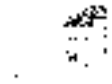
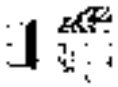
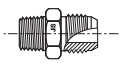
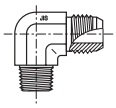
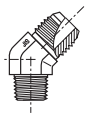
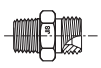
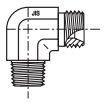
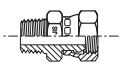
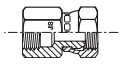
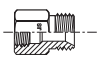
Adapters



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NPTF Adapters Male/male	 **FFM** / p. N4	 **CRM** / p. N5	 **RRS** / p. N5	 **FFFM** / p. N6		
NPTF Adapters Male/Female	 **PTRM** / p. N7	 **FGM** / p. N8	 **CDM** / p. N9	 **CD45M** / p. N10	 **MRO** / p. N11	 **MMS** / p. N12
NPTF Adapters Female/Female	 **GGM** / p. N13	 **DDM** / p. N14	 **DD45** / p. N14	 **MMOM** / p. N15	 **KMMOO** / p. N15	
NPTF Plug	 **HPM** / p. N16	 **HHP** / p. N16	UNF/NPTF Adapters	 **F5OG** / p. N17	 **AOEG** / p. N18	 **AOE4G** / p. N18
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Male/Female swivel adapters BSPP 60° cone	 **F6MK4** / p. N30	 **C6MK4** / p. N31	 **R6MK4** / p. N32	 **S6MK4** / p. N33		
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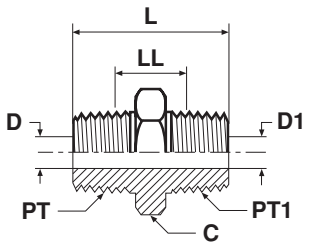
Visual index

BSPP 60° cone Expander/Adapter cap	 **G4MK4** / p. N37	 **FNMK4** / p. N39	 **PNMK4** / p. N29			
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Seals/ Retaining ring	 **Adapter Components** / p. N61					

N

FFM Male nipple

Male NPTF* thread (SAE J476) / Male NPTF* thread (SAE J476)
SAE 140137
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	Thread NPT/NPTF PT1	C mm	D mm	D1 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	11	5	5	27	15	11	**1/8 FF-S**	**1/8FFMSS**	420	420
1/4-18	1/8-27	16	7	5	32	17	31	**1/4 X 1/8 FF-S**	**1/4X1/8FFMSS**	420	420
1/4-18	1/4-18	16	7	7	37	20	28	**1/4FFMS**	**1/4FFMSS**	420	420
3/8-18	1/8-27	19	10	5	37	22	45	**3/8 X 1/8 FF-S**	**3/8X1/8FFMSS**	420	420
3/8-18	1/4-18	19	10	10	37	19	51	**3/8 X 1/4 FF-S**	**3/8X1/4FFMSS**	420	420
3/8-18	3/8-18	19	10	10	37	19	40	**3/8 FF-S**	**3/8FFMSS**	420	420
1/2-14	1/8-27	22	14	5	39	21	58	**1/2 X 1/8 FF-S**	**1/2X1/8FFMSS**	420	420
1/2-14	1/4-18	22	7	7	43	23	88	**1/2 X 1/4 FF-S**	**1/2X1/4FFMSS**	420	420
1/2-14	3/8-18	22	10	10	43	23	71	**1/2 X 3/8 FF-S**	**1/2X3/8FFMSS**	420	420
1/2-14	1/2-14	22	14	14	48	24	71	**1/2FFMS**	**1/2FFMSS**	420	420
3/4-14	1/4-18	29	18	7	45	24	104	**3/4 X 1/4 FF-S**	**3/4X1/4FFMSS**	380	380
3/4-14	3/8-18	29	19	11	45	24	134	**3/4 X 3/8 FF-S**	**3/4X3/8FFMSS**	380	380
3/4-14	1/2-14	29	18	7	50	21	161	**3/4 X 1/2 FF-S**	**3/4X1/2FFMSS**	380	380
3/4-14	3/4-14	27	18	18	50	18	104	**3/4FFMS**	**3/4FFMSS**	380	380
1-11 1/2	1-11 1/2	36	24	24	59	30	179	**1 FF-S**	**1FFMSS**	380	380
1-11 1/2	1/4-18	35	24	7	50	27	188	**1 X 1/4 FF-S**	**1X1/4FFMSS**	380	380
1-11 1/2	3/4-14	35	18	18	53	26	195	**1 X 3/4 FF-S**	**1X3/4FFMSS**	380	380
1 1/4-11 12	1-11 1/2	45	32	24	62	33	256	**1 1/4 X 1 FF-S**	**11/4X1FFMSS**	350	350
1 1/4-11 1/2	1 1/4-11 1/2	45	32	32	63	33	256	**1 1/4 FF-S**	**11/4FFMSS**	350	350
1 1/2-11 1/2	1 1/2-11 1/2	51	38	38	66	36	364	**1 1/2 FF-S**	**11/2FFMSS**	210	210
2-11 1/2	2-11 1/2	64	49	49	72	41	848	**2 FF-S**	**2FFMSS**	170	170

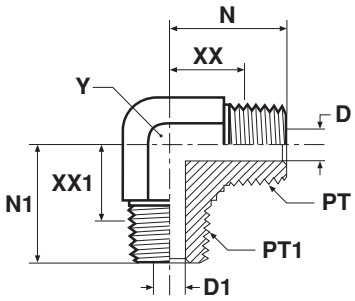
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CRM Male thread elbow

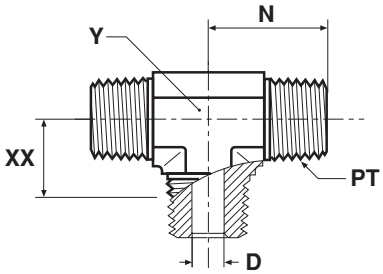
Male NPTF* thread (SAE J476) / Male NPTF* thread (SAE J476)
SAE 140237
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	Thread NPT/NPTF PT1	D mm	D1 mm	N mm	N1 mm	XX mm	XX1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	5	5	20	20	14	14	11	27	**1/8 CR-S**	**1/8 CR-SS**	420	420
1/4-18	1/4-18	7	7	28	28	19	19	14	54	**1/4 CR-S**	**1/4 CR-SS**	420	420
3/8-18	3/8-18	10	10	31	31	22	22	19	181	**3/8 CR-S**	**3/8 CR-SS**	420	420
3/8-18	1/4-18	10	7	31	31	22	22	19	66	**3/8 X 1/4 CR-S**	**3/8 X 1/4 CR-SS**	420	420
1/2-14	1/2-14	14	14	37	37	26	26	22	172	**1/2 CR-S**	**1/2 CR-SS**	420	420
1/2-14	3/8-18	14	10	37	33	26	24	22	103	**1/2 X 3/8 CR-S**	**1/2 X 3/8 CR-SS**	420	420
3/4-14	3/4-14	18	18	40	40	28	28	27	263	**3/4 CR-S**	**3/4 CR-SS**	280	280
3/4-14	1/2-14	18	14	40	37	28	26	27	164	**3/4 X 1/2 CR-S**	**3/4 X 1/2 CR-SS**	280	280
1-11 1/2	1-11 1/2	24	24	50	50	36	36	41	462	**1 CR-S**	**1 CR-SS**	210	210
1 1/4-11 1/2	1 1/4-11 1/2	32	32	56	56	41	41	48	782	**1 1/4 CR-S**	**1 1/4 CR-SS**	170	170
1 1/2-11 1/2	1 1/2-11 1/2	38	38	59	59	56	45	48	782	**1 1/2 CR-S**	**1 1/2 CR-SS**	170	170

RRS Male thread tee

Male NPTF* thread (SAE J476)
SAE 140437
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	D mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	5	20	14	11	33	**1/8 RRS-S**	**1/8 RRS-SS**	420	420
1/4-18	7	28	19	14	56	**1/4 RRS-S**	**1/4 RRS-SS**	420	420
3/8-18	10	31	22	19	92	**3/8 RRS-S**	**3/8 RRS-SS**	420	420
1/2-14	14	37	26	22	96	**1/2 RRS-S**	**1/2 RRS-SS**	420	420
3/4-14	19	40	28	27	235	**3/4 RRS-S**	**3/4 RRS-SS**	280	280

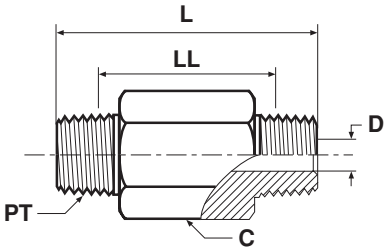
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FFFM Extended male nipple

Male NPTF* thread (SAE J476) / Male NPTF* thread (SAE J476)
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	C mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	11	5	38	26	23	**1/8 X 1.5 FFF-S**	**1/8X1.5FFFMSS**	420	420
1/8-27	11	5	51	39	33	**1/8 X 2.0 FFF-S**	**1/8X2.0FFFMSS**	420	420
1/8-27	11	5	64	52	41	**1/8 X 2.5 FFF-S**	**1/8X2.5FFFMSS**	420	420
1/8-27	11	5	76	64	50	**1/8 X 3.0 FFF-S**	**1/8X3.0FFFMSS**	420	420
1/4-18	16	7	38	21	35	**1/4 X 1.5 FFF-S**	**1/4X1.5FFFMSS**	420	420
1/4-18	16	7	51	34	51	**1/4 X 2.0 FFF-S**	**1/4X2.0FFFMSS**	420	420
1/4-18	16	7	64	46	72	**1/4 X 2.5 FFF-S**	**1/4X2.5FFFMSS**	420	420
1/4-18	16	7	76	59	93	**1/4 X 3.0 FFF-S**	**1/4X3.0FFFMSS**	420	420
1/4-18	16	7	102	84	110	**1/4 X 4.0 FFF-S**	**1/4X4.0FFFMSS**	420	420
1/2-14	22	14	51	27	91	**1/2 X 2.0 FFF-S**	**1/2X2.0FFFMSS**	420	420
1/2-14	22	14	76	53	151	**1/2 X 3.0 FFF-S**	**1/2X3.0FFFMSS**	420	420

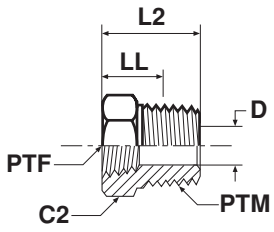
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$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

PTRM Thread reducer

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140140
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	C2 mm	D mm	L2 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4-18	1/8-27	17	7	22	13	24	**1/4 X 1/8 PTR-S**	**1/4X1/8PTRMSS**	420	420
3/8-18	1/8-27	19	8	22	13	25	**3/8 X 1/8 PTR-S**	**3/8X1/8PTRMSS**	420	420
3/8-18	1/4-18	19	10	22	13	25	**3/8 X 1/4 PTR-S**	**3/8X1/4PTRMSS**	420	420
1/2-14	1/8-27	22	8	28	17	58	**1/2 X 1/8 PTR-S**	**1/2X1/8PTRMSS**	420	350
1/2-14	1/4-18	22	11	28	17	53	**1/2 X 1/4 PTR-S**	**1/2X1/4PTRMSS**	420	350
1/2-14	3/8-18	22	14	28	17	40	**1/2X3/8PTRMS**	**1/2X3/8PTRMSS**	420	350
3/4-14	1/4-18	29	11	30	18	94	**3/4 X 1/4 PTR-S**	**3/4X1/4PTRMSS**	280	280
3/4-14	3/8-18	30	15	30	18	101	**3/4 X 3/8 PTR-S**	**3/4X3/8PTRMSS**	380	280
3/4-14	1/2-14	30	18	30	18	110	**3/4 X 1/2 PTR-S**	**3/4X1/2PTRMSS**	350	280
1-11 1/2	3/8-18	35	14	35	20	163	**1 X 3/8 PTR-S**	**1X3/8PTRMSS**	210	210
1-11 1/2	1/2-14	35	18	35	20	139	**1 X 1/2 PTR-S**	**1X1/2PTRMSS**	210	210
1-11 1/2	3/4-14	36	23	35	20	116	**1 X 3/4 PTR-S**	**1X3/4PTRMSS**	280	210
1 1/4-11 1/2	1/2-14	45	18	37	22	220	**1 1/4 X 1/2 PTR-S**	**11/4X1/2PTRMSS**	170	170
1 1/4-11 1/2	3/4-14	45	23	37	22	236	**1 1/4 X 3/4 PTR-S**	**11/4X3/4PTRMSS**	170	170
1 1/4-11 1/2	1-11 1/2	46	29	37	22	250	**1 1/4X1PTRMS**	**11/4X1PTRMSS**	210	175
1 1/2-11 1/2	3/4-14	51	23	40	25	306	**1 1/2 X 3/4 PTR-S**	**11/2X3/4PTRMSS**	140	140
1 1/2-11 1/2	1-11 1/2	50	29	40	25	360	**1 1/2X1PTRMS**	**11/2X1PTRMSS**	210	140
1 1/2-11 1/2	1 1/4-11 1/2	50	38	40	25	282	**1 1/2X1 1/4PTRMS**	**11/2X11/4PTRMSS**	170	140
2-11 1/2	1/2-14	66	18	45	29	561	**2 X 1/2 PTR-S**	**2X1/2PTRMSS**	140	140
2-11 1/2	1 1/4-11 1/2	64	44	45	29	548	**2 X 1 1/4 PTR-S**	**2X11/4PTRMSS**	140	140

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

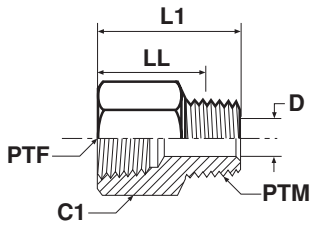
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

FGM Thread expander / Adapter

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140139
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	Thread NPT/NPTF PTM	C1 mm	D mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	16	5	26	20	30	**1/8 FG-S**	**1/8FGMSS**	420	420
1/4-18	1/8-27	19	5	31	25	57	**1/4 X 1/8 FG-S**	**1/4X1/8FGMSS**	420	420
1/4-18	1/4-18	19	7	35	27	44	**1/4 FG-S**	**1/4FGMSS**	420	420
3/8-18	1/8-27	22	5	32	26	50	**3/8 X 1/8 FG-S**	**3/8X1/8FGMSS**	420	420
3/8-18	1/4-18	22	7	37	28	108	**3/8 X 1/4 FG-S**	**3/8X1/4FGMSS**	420	420
3/8-18	3/8-18	22	10	37	28	55	**3/8 FG-S**	**3/8FGMSS**	420	420
1/2-14	1/8-27	29	5	38	32	98	**1/2 X 1/8 FG-S**	**1/2X1/8FGMSS**	350	350
1/2-14	1/4-18	29	7	43	34	104	**1/2 X 1/4 FG-S**	**1/2X1/4FGMSS**	350	350
1/2-14	3/8-18	29	10	43	34	108	**1/2 X 3/8 FG-S**	**1/2X3/8FGMSS**	350	350
1/2-14	1/2-14	29	14	43	31	108	**1/2 FG-S**	**1/2FGMSS**	350	350
3/4-14	3/4-14	35	19	49	37	178	**3/4 FG-S**	**3/4FGMSS**	280	280
3/4-14	1/4-18	35	7	45	36	129	**3/4 X 1/4 FG-S**	**3/4X1/4FGMSS**	280	280
3/4-14	1/2-14	35	14	49	38	129	**3/4 X 1/2FG-S**	**3/4X1/2FGMSS**	280	280
1-11 1/2	1-11 1/2	42	24	60	46	160	**1 FG-S**	**1FGMSS**	210	210
1-11.1/2	1/2-14	41	14	56	44	180	**1 X 1/2FG-S**	**1X1/2FGMSS**	210	210
1-11.1/2	3/4-14	41	18	56	43	98	**1 X 3/4FG-S**	**1X3/4FGMSS**	210	210
1 1/4-11 1/2	1-11 1/2	51	24	63	48	296	**1 1/4 X 1FG-S**	**11/4X1FGMSS**	170	170

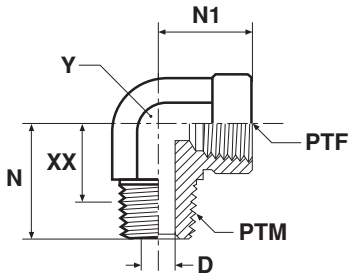
Order codes shown are part of our current manufacturing programme.
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$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

CDM Male female thread elbow

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140239
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	Thread NPT/NPTF PTM	D mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	5	20	17	14	14	30	**1/8 CD-S**	**1/8 CD-SS**	350	350
1/4-18	1/4-18	7	28	22	19	19	77	**1/4CDMS**	**1/4 CD-SS**	350	350
1/4-18	1/8-27	7	28	17	19	14	33	**1/4 X 1/8 CD-S**	**1/4 X 1/8 CD-SS**	350	350
3/8-18	3/8-18	10	31	26	22	22	96	**3/8CDMS**	**3/8 CD-SS**	310	310
3/8-18	1/4-18	10	31	22	22	19	79	**3/8 X 1/4 CD-S**	**3/8 X 1/4 CD-SS**	350	350
3/8-18	1/2-14	10	33	31	24	27	260	**3/8 X 1/2 CD-S**	**3/8 X 1/2 CD-SS**	210	210
1/2-14	1/2-14	14	37	31	26	27	174	**1/2 CD-S**	**1/2 CD-SS**	210	210
1/2-14	3/8-18	14	38	32	26	22	96	**1/2 X 3/8 CD-S**	**1/2 X 3/8 CD-SS**	310	310
1/2-14	3/4-14	14	40	35	29	33	319	**1/2 X 3/4 CD-S**	**1/2 X 3/4 CD-SS**	210	210
3/4-14	3/4-14	18	40	35	28	33	285	**3/4 CD-S**	**3/4 CD-SS**	210	210
3/4-14	1/2-14	18	40	31	28	27	164	**3/4 X 1/2 CD-S**	**3/4 X 1/2 CD-SS**	210	210
1-11 1/2	1-11 1/2	24	50	41	36	41	515	**1 CD-S**	**1 CD-SS**	125	120
1 1/4-11 1/2	1 1/4-11 1/2	32	61	43	46	48	978	**1 1/4 CD-S**	**1 1/4 CD-SS**	100	100
1 1/2-11 1/2	1 1/2-11 1/2	38	67	53	52	64	1679	**1 1/2 CD-S**	**1 1/2 CD-SS**	100	100

Order codes shown are part of our current manufacturing programme.
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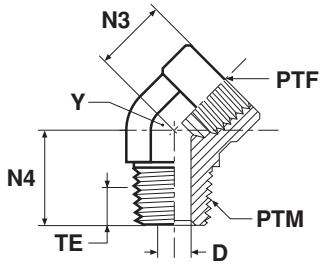
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

CD45M Male female thread 45° elbow

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140339
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	N3 mm	N4 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	5	12	18	6	14	24	**1/8CD45MS**	**1/8 CD45-SS**	350	350
1/4-18	1/4-18	7	16	27	9	19	57	**1/4 CD45-S**	**1/4 CD45-SS**	350	350
3/8-18	3/8-18	10	18	27	9	22	79	**3/8 CD45-S**	**3/8 CD45-SS**	310	310
1/2-14	1/2-14	14	23	34	12	27	141	**1/2 CD45-S**	**1/2 CD45-SS**	210	210
3/4-14	3/4-14	18	25	35	12	33	196	**3/4 CD45-S**	**3/4 CD45-SS**	210	210
1-11 1/2	1-11 1/2	24	29	44	15	41	380	**1 CD45-S**	**1 CD45-SS**	125	120
1 1/4-11 1/2	1 1/4-11 1/2	32	41	46	15	48	719	**1 1/4 CD45-S**	**1 1/4 CD45-SS**	100	100

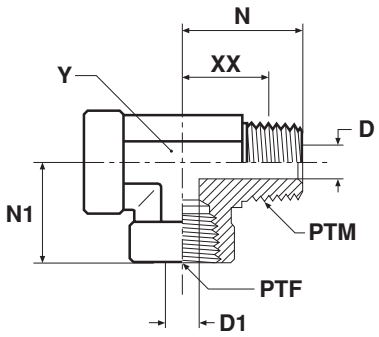
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

MRO Male female thread tee

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140424
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	D1 mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	5	8	20	17	14	14	59	**1/8 MRO-S**	**1/8 MRO-SS**	350	350
1/4-18	1/4-18	7	11	28	22	19	19	115	**1/4 MRO-S**	**1/4 MRO-SS**	350	350
3/8-18	3/8-18	10	14	31	26	22	22	122	**3/8 MRO-S**	**3/8 MRO-SS**	310	310
1/2-14	1/2-14	14	18	37	31	26	27	285	**1/2 MRO-S**	**1/2 MRO-SS**	210	210
3/4-14	3/4-14	18	23	40	35	28	33	497	**3/4 MRO-S**	**3/4 MRO-SS**	210	210
1-11 1/2	1-11 1/2	24	29	50	41	36	41	987	**1 MRO-S**	**1 MRO-SS**	125	120

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

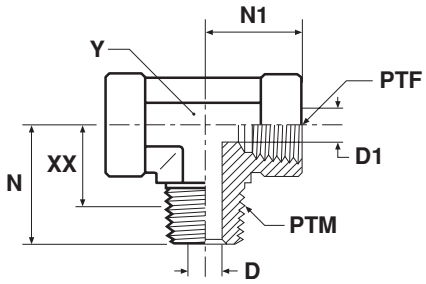
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

MMS Male female thread tee

Male NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140425
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	D1 mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	5	8	20	17	14	14	45	**1/8 MMS-S**	**1/8 MMS-SS**	350	350
1/4-18	1/4-18	7	11	28	22	19	19	118	**1/4 MMS-S**	**1/4 MMS-SS**	350	350
3/8-18	3/8-18	10	14	31	26	22	22	126	**3/8 MMS-S**	**3/8 MMS-SS**	310	310
1/2-14	1/2-14	14	18	37	31	26	27	272	**1/2 MMS-S**	**1/2 MMS-SS**	210	210
3/4-14	3/4-14	18	23	40	35	28	33	408	**3/4 MMS-S**	**3/4 MMS-SS**	210	210
1-11 1/2	1-11 1/2	24	29	50	41	36	41	606	**1 MMS-S**	**1 MMS-SS**	125	120

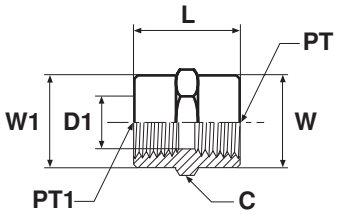
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

GGM Female thread coupling

Female NPTF* thread (SAE J476) / Female NPTF* thread (SAE J476)
SAE 140138
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	Thread NPT/NPTF PT1	C mm	D1 mm	L mm	W mm	W1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	16	8	19	16	16	19	**1/8 GG-S**	**1/8 GG-SS**	420	420
1/4-18	1/8-27	19	8	24	19	16	35	**1/4 X 1/8 GG-S**	**1/4 X 1/8 GG-SS**	420	420
1/4-18	1/4-18	19	11	29	19	19	45	**1/4 GG-S**	**1/4 GG-SS**	420	420
3/8-18	1/8-27	22	8	26	22	16	56	**3/8 X 1/8 GG-S**	**3/8 X 1/8 GG-SS**	420	420
3/8-18	1/4-18	22	11	29	22	19	56	**3/8 X 1/4 GG-S**	**3/8 X 1/4 GG-SS**	420	420
3/8-18	3/8-18	22	14	29	22	22	62	**3/8 GG-S**	**3/8 GG-SS**	420	420
1/2-14	1/4-18	29	11	35	29	19	117	**1/2 X 1/4 GG-S**	**1/2 X 1/4 GG-SS**	350	350
1/2-14	3/8-18	29	14	38	29	22	100	**1/2 X 3/8 GG-S**	**1/2 X 3/8 GG-SS**	350	350
1/2-14	1/2-14	30	18	38	30	30	112	**1/2 GG-S**	**1/2 GG-SS**	350	350
3/4-14	1/4-18	35	11	39	35	19	150	**3/4 X 1/4 GG-S**	**3/4 X 1/4 GG-SS**	280	280
3/4-14	1/2-14	35	18	48	35	29	134	**3/4 X 1/2 GG-S**	**3/4 X 1/2 GG-SS**	280	280
3/4-14	3/4-14	36	23	39	36	36	156	**3/4 GG-S**	**3/4GG-SS**	280	280
1-11 1/2	1-11 1/2	41	29	48	41	41	289	**1 GG-S**	**1 GG-SS**	210	210
1-11 1/2	1/2-14	42	18	45	41	29	235	**1 X 1/2 GG-S**	**1 X 1/2 GG-SS**	210	210
1-11 1/2	3/4-14	42	23	45	41	35	239	**1 X 3/4 GG-S**	**1 X 3/4 GG-SS**	210	210
1 1/4-11 1/2	1 1/4-11 1/2	51	37	49	51	51	340	**1 1/4 GG-S**	**1 1/4 GG-SS**	170	170
1 1/4-11 1/2	1-11 1/2	50	29	49	51	41	182	**1 1/4 X 1 GG-S**	**1 1/4 X 1 GG-SS**	170	170
1 1/2-11 1/2	1 1/2-11 1/2	60	43	49	61	61	706	**1 1/2 GG-S**	**1 1/2 GG-SS**	140	140
1 1/2-11 1/2	1 1/4-11 1/2	60	38	49	60	60	531	**1 1/2 X 1 1/4 GG-S**	**1 1/2 X 1 1/4 GG-SS**	140	140
2-11 1/2	2-11 1/2	73	56	50	73	73	814	**2 GG-S**	**2 GG-SS**	140	140

Order codes shown are part of our current manufacturing programme.
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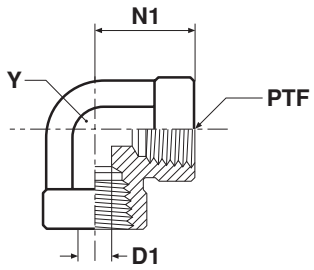
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

DDM Female thread elbow

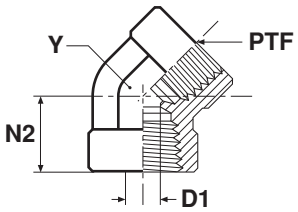
Female NPTF* thread (SAE J476)
SAE 140238
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	9	17	14	28	**1/8 DD-S**	**1/8 DD-SS**	350	350
1/4-18	11	22	19	28	**1/4 DD-S**	**1/4 DD-SS**	350	350
3/8-18	15	26	22	96	**3/8DDMS**	**3/8 DD-SS**	310	310
1/2-14	18	31	27	159	**1/2DDMS**	**1/2 DD-SS**	210	210
3/4-14	23	35	41	263	**3/4 DD-S**	**3/4 DD-SS**	210	210
1-11 1/2	29	41	48	488	**1 DD-S**	**1 DD-SS**	125	120
1 1/4-11 1/2	37	43	48	978	**1 1/4 DD-S**	**1 1/4 DD-SS**	100	100
1 1/2-11 1/2	43	53	64	1889	**1 1/2 DD-S**	**1 1/2 DD-SS**	100	100

DD45 Female thread 45° elbow

Female NPTF* thread (SAE J476)
SAE 140338
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4-18	11	18	19	69	**1/4 DD45-S**	**1/4 DD45-SS**	350	350
3/8-18	14	19	22	97	**3/8 DD45-S**	**3/8 DD45-SS**	310	310
1/2-14	18	24	27	172	**1/2 DD45-S**	**1/2 DD45-SS**	210	210
3/4-14	23	25	33	248	**3/4 DD45-S**	**3/4 DD45-SS**	210	210
1-11 1/2	29	30	41	479	**1 DD45-S**	**1 DD45-SS**	125	120

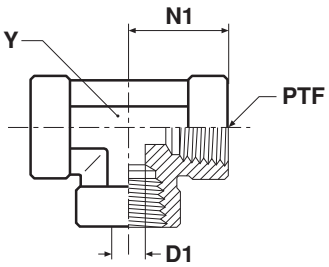
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

MMOM Female thread tee

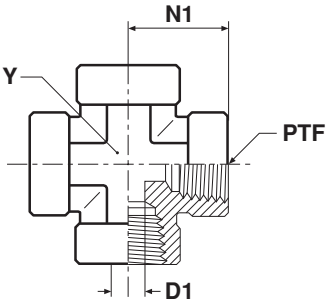
Female NPTF* threads (SAE J476)
SAE 140438
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	8	17	14	36	**1/8 MMO-S**	**1/8 MMO-SS**	350	350
1/4-18	11	22	19	94	**1/4 MMO-S**	**1/4 MMO-SS**	350	350
3/8-18	14	26	22	121	**3/8 MMO-S**	**3/8 MMO-SS**	210	210
1/2-14	17	31	27	202	**1/2 MMO-S**	**1/2 MMO-SS**	210	210
3/4-14	23	35	33	312	**3/4 MMO-S**	**3/4 MMO-SS**	210	210
1-11 1/2	29	41	41	606	**1 MMO-S**	**1 MMO-SS**	125	120
1 1/4-11 1/2	37	43	48	576	**1 1/4 MMO-S**	**1 1/4 MMO-SS**	100	100
1 1/2-11 1/2	43	53	64	576	**1 1/2 MMO-S**	**1 1/2 MMO-SS**	100	100

KMMOO Female thread cross

Female NPTF* threads (SAE J476)
SAE 140538
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	8	17	14	45	**1/8 KMMOO-S**	**1/8 KMMOO-SS**	350	350
1/4-18	11	22	19	113	**1/4 KMMOO-S**	**1/4 KMMOO-SS**	350	350
3/8-18	14	26	22	147	**3/8 KMMOO-S**	**3/8 KMMOO-SS**	210	210
1/2-14	18	31	27	257	**1/2 KMMOO-S**	**1/2 KMMOO-SS**	210	210
3/4-14	23	35	33	382	**3/4 KMMOO-S**	**3/4 KMMOO-SS**	210	210
1-11 1/2	29	41	41	690	**1 KMMOO-S**	**1 KMMOO-SS**	125	120

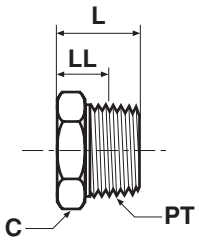
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

HPM Hexagon head plug

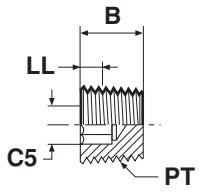
Male NPTF* Thread (SAE J476)
SAE 130109E
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	C mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
- 1/8-27	11	14	8	19	**1/8 HP-S**	**1/8HPMSS**	420	420
1/4-18	14	19	10	22	**1/4 HP-S**	**1/4HPMSS**	420	420
3/8-18	18	20	11	28	**3/8 HP-S**	**3/8HPMSS**	420	420
1/2-14	22	25	13	72	**1/2 HP-S**	**1/2HPMSS**	420	420
3/4-14	27	27	15	119	**3/4 HP-S**	**3/4HPMSS**	380	380
1-11 1/2	35	32	17	218	**1 HP-S**	**1HPMSS**	380	380
1 1/4-11 1/2	46	36	21	217	**1 1/4 HP-S**	**11/4HPMSS**	350	345
1 1/2-11 1/2	50	38	22	300	**1 1/2 HP-S**	**11/2HPMSS**	210	210

HHP Hexagon socket plug

Male NPTF* thread (SAE J476)
SAE 130109N
*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	B mm	C5 inch	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/16-27	8	5/32	2	2	**1/16 HHP-S**	**1/16 HHP-SS**	420	420
1/8-27	8	3/16	2	3	**1/8 HHP-S**	**1/8 HHP-SS**	420	420
1/4-18	12	1/4	3	7	**1/4 HHP-S**	**1/4 HHP-SS**	420	420
3/8-18	12	5/16	3	13	**3/8 HHP-S**	**3/8 HHP-SS**	420	420
1/2-14	16	3/8	4	16	**1/2 HHP-S**	**1/2 HHP-SS**	420	420
3/4-14	16	9/16	4	66	**3/4 HHP-S**	**3/4 HHP-SS**	380	380
1-11 1/2	20	1 3/8	5	73	**1 HHP-S**	**1 HHP-SS**	380	380

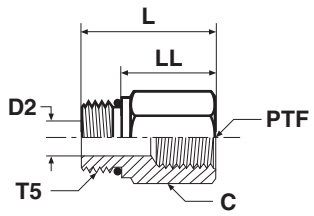
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

F5OG Male female thread adapter

Male UN/UNF thread – O-ring (ISO 11926) / Female NPTF* thread (SAE 476)
*Stainless Steel = NPT to prevent galling



Thread UN/UNF-2A T5	Thread NPT/NPTF PTF	C mm	D2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
9/16-18	1/4-18	19	8	30	20	36	**6-1/4 F5OG-S**	**6-1/4 F5OG-SS**	420	420
3/4-16	1/4-18	22	10	29	18	53	**8-1/4 F5OG-S**	**8-1/4 F5OG-SS**	420	420
3/4-16	3/8-18	22	10	33	21	67	**8-3/8 F5OG-S**	**8-3/8 F5OG-SS**	420	420
3/4-16	1/2-14	29	10	38	27	98	**8-1/2 F5OG-S**	**8-1/2 F5OG-SS**	350	350
7/8-14	1/4-18	25	13	21	8	78	**10-1/4 F5OG-S**	**10-1/4 F5OG-SS**	380	380
7/8-14	3/8-18	25	13	33	21	77	**10-3/8 F5OG-S**	**10-3/8 F5OG-SS**	380	380
7/8-14	1/2-14	29	13	39	26	98	**10-1/2 F5OG-S**	**10-1/2 F5OG-SS**	350	350
7/8-14	3/4-14	35	13	41	29	153	**10-3/4 F5OG-S**	**10-3/4 F5OG-SS**	280	280
1 1/16-12	1/2-14	32	17	36	21	114	**12-1/2 F5OG-S**	**12-1/2 F5OG-SS**	350	350
1 1/16-12	3/4-14	35	17	44	29	150	**12-3/4 F5OG-S**	**12-3/4 F5OG-SS**	280	280
1 3/16-12	1/2-14	35	18	27	12	159	**14-1/2 F5OG-S**	**14-1/2 F5OG-SS**	280	280
1 3/16-12	3/4-14	35	18	43	28	167	**14-3/4 F5OG-S**	**14-3/4 F5OG-SS**	280	280
1 5/16-12	1/2-14	38	21	25	10	137	**16-1/2 F5OG-S**	**16-1/2 F5OG-SS**	280	280
1 5/16-12	3/4-14	38	21	38	23	189	**16-3/4 F5OG-S**	**16-3/4 F5OG-SS**	280	280
1 5/16-12	1-11 1/2	41	22	48	33	216	**16-1 F5OG-S**	**16-1 F5OG-SS**	210	210
1 5/8-12	1-11 1/2	48	27	25	10	151	**20-1 F5OG-S**	**20-1 F5OG-SS**	210	210
1 5/8-12	1 1/4-11 1/2	51	27	50	35	191	**20-1 1/4 F5OG-S**	**20-1 1/4 F5OG-SS**	170	170
1 7/8-12	1-11 1/2	54	34	25	10	612	**24-1 F5OG-S**	**24-1 F5OG-SS**	170	170
1 7/8-12	1 1/2-11 1/2	57	34	51	36	653	**24-1 1/2 F5OG-S**	**24-1 1/2 F5OG-SS**	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
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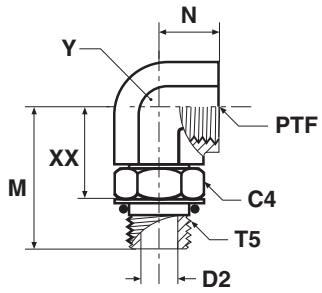
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

AOEG Elbow

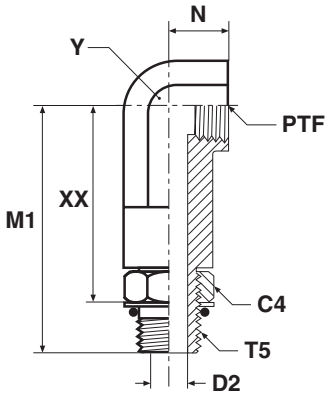
Male UN/UNF thread O-ring (ISO 11926) / Female NPTF thread (SAE 476)



Thread UN/UNF-2A T5	Thread NPTF/NPTF PTF	C4 mm	D2 mm	M mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
3/4-16	3/8-18	22	10	37	16	25	22	100	**8-3/8 AOEG-S**	310
7/8-14	1/2-14	25	12	46	19	32	27	172	**10-1/2 AOEG-S**	210
1 1/16-12	3/4-14	32	16	51	21	34	33	274	**12-3/4 AOEG-S**	210
1 5/16-12	1-11 1/2	38	21	57	25	41	41	471	**16-1 AOEG-S**	125

AOE4G Extra long elbow

Male UN/UNF thread O-ring (ISO 11926) / Female NPTF thread (SAE 476)



Thread UN/UNF-2A T5	Thread NPTF/NPTF PTF	C4 mm	D2 mm	M1 mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
3/4-16	3/8-18	22	10	75	16	62	22	176	**8-3/8 AOE4G-S**	310
7/8-14	1/2-14	25	12	90	19	76	27	246	**10-1/2 AOE4G-S**	210
1 1/16-12	3/4-14	32	16	103	21	87	33	356	**12-3/4 AOE4G-S**	210
1 5/16-12	1-11 1/2	38	21	118	25	101	41	956	**16-1 AOE4G-S**	125

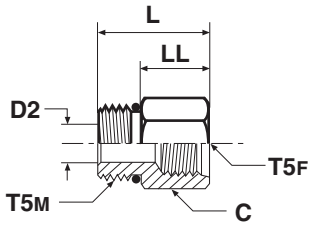
Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to the Steel version of the product.

F5OG5 Thread reducer / Expander

Male UN/UNF threads – O-ring (ISO 11926)
SAE 090136



Thread UN/UNF-2A T5M	Thread UN/UNF-2B T5F	C mm	D2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
7/16-20	7/16-20	18	4	27	18	42	**4-4 F5OG5-S**	**4-4 F5OG5-SS**	500	315
7/16-20	9/16-18	21	4	30	20	49	**4-6 F5OG5-S**	**4-6 F5OG5-SS**	420	315
9/16-18	7/16-20	18	8	26	16	30	**6-4 F5OG5-S**	**6-4 F5OG5-SS**	500	315
9/16-18	3/4-16	27	8	35	26	64	**6-8 F5OG5-S**	**6-8 F5OG5-SS**	420	280
3/4-16	9/16-18	22	10	29	18	93	**8-6 F5OG5-S**	**8-6 F5OG5-SS**	420	315
3/4-16	7/8-14	29	10	40	29	73	**8-10 F5OG5-S**	**8-10 F5OG5-SS**	310	210
7/8-14	9/16-18	25	12	32	19	73	**10-6 F5OG5-S**	**10-6 F5OG5-SS**	420	350
7/8-14	3/4-16	25	12	33	21	75	**10-8 F5OG5-S**	**10-8 F5OG5-SS**	310	280
7/8-14	1 1/16-12	35	12	43	30	209	**10-12 F5OG5-S**	**10-12 F5OG5-SS**	310	245
1 1/16-12	3/4-16	32	16	37	22	114	**12-8 F5OG5-S**	**12-8 F5OG5-SS**	420	315
1 1/16-12	7/8-14	32	16	39	24	150	**12-10 F5OG5-S**	**12-10 F5OG5-SS**	350	210
1 1/16-12	1 5/16-12	41	16	48	33	170	**12-16 F5OG5-S**	**12-16 F5OG5-SS**	240	140
1 5/16-12	3/4-16	38	19	25	10	159	**16-8 F5OG5-S**	**16-8 F5OG5-SS**	310	310
1 5/16-12	7/8-14	38	20	25	10	240	**16-10 F5OG5-S**	**16-10 F5OG5-SS**	310	245
1 5/16-12	1 1/16-12	38	22	45	29	259	**16-12 F5OG5-S**	**16-12 F5OG5-SS**	310	245
1 5/16-12	1 5/8-12	54	22	50	35	280	**16-20 F5OG5-S**	**16-20 F5OG5-SS**	210	175
1 5/8-12	1 1/16-12	48	27	25	10	249	**20-12 F5OG5-S**	**20-12 F5OG5-SS**	280	210
1 5/8-12	1 5/16-12	48	27	44	29	249	**20-16 F5OG5-S**	**20-16 F5OG5-SS**	280	140
1 7/8-12	1 1/16-12	54	32	25	10	263	**24-12 F5OG5-S**	**24-12 F5OG5-SS**	210	140
1 7/8-12	1 5/16-12	54	32	25	10	268	**24-16 F5OG5-S**	**24-16 F5OG5-SS**	210	140
1 7/8-12	1 5/8-12	54	33	45	29	272	**24-20 F5OG5-S**	**24-20 F5OG5-SS**	210	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
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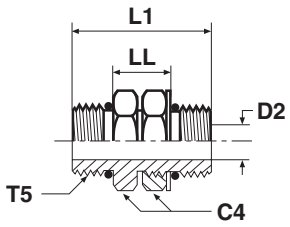
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

N

F5OHAO Straight thread union

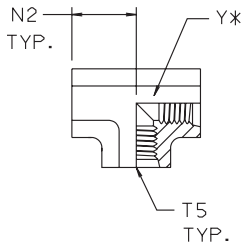
Male UN/UNF threads – O-ring (ISO 11926)



Thread UN/UNF-2A T5	C4 mm	D2 mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
7/16-20	14	5	31	12	25	**4 F5OHAO-S**	**4 F5OHAO-SS**	350	350
9/16-18	18	8	36	15	52	**6 F5OHAO-S**	**6 F5OHAO-SS**	350	350
3/4-16	22	11	40	16	76	**8 F5OHAO-S**	**8 F5OHAO-SS**	350	350
7/8-14	25	12	46	19	118	**10 F5OHAO-S**	**10 F5OHAO-SS**	310	310
1 1/16-12	32	17	54	23	213	**12 F5OHAO-S**	**12 F5OHAO-SS**	280	280
1 5/16-12	41	22	54	23	235	**16 F5OHAO-S**	**16 F5OHAO-SS**	210	210
1 5/8-12	48	28	54	23	367	**20 F5OHAO-S**	**20 F5OHAO-SS**	170	170
1 7/8-12	54	34	54	23	538	**24 F5OHAO-S**	**24 F5OHAO-SS**	140	140

G5G5JG5 Female straight thread tee

Female UN/UNF threads – all 3 ends



Thread UN/UNF-2B T5	N2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	19	19	68	**4 G5G5JG5-S**	350
9/16-18	22	19	47	**6 G5G5JG5-S**	350
3/4-16	26	27	228	**8 G5G5JG5-S**	350
7/8-14	30	27	228	**10 G5G5JG5-S**	310

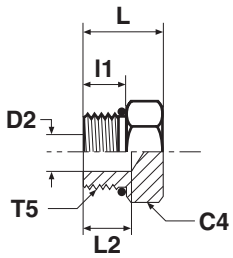
Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

P5ONM Hexagon head plug

Male UN/UNF thread – O-ring (ISO 11926)
SAE 090109A



Thread UN/UNF-2A T5	C4 mm	D2 mm	I1 mm	L mm	L2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
5/16-24	11	2	8	16	10	7	**2 P5ON-S**	**2P5ONMSS**	420	420
3/8-24	13	3	8	16	9	9	**3 P5ON-S**	**3P5ONMSS**	420	420
7/16-20	14	5	9	17	10	13	**4 P5ON-S**	**4P5ONMSS**	420	420
1/2-20	16	6	9	17	10	19	**5 P5ON-S**	**5P5ONMSS**	420	420
9/16-18	18	8	10	19	11	22	**6 P5ON-S**	**6P5ONMSS**	420	420
3/4-16	22	11	11	20	11	44	**8 P5ON-S**	**8P5ONMSS**	420	420
7/8-14	25	13	13	24	12	53	**10 P5ON-S**	**10P5ONMSS**	420	420
1 1/16-12	32	17	15	28	15	117	**12 P5ON-S**	**12P5ONMSS**	420	420
1 3/16-12	35	18	15	28	14	124	**14 P5ON-S**	**14P5ONMSS**	380	380
1 5/16-12	38	22	15	29	13	141	**16 P5ON-S**	**16P5ONMSS**	380	380
1 5/8-12	48	28	15	31	10	284	**20 P5ON-S**	**20P5ONMSS**	280	280
1 7/8-12	54	34	15	32	9	447	**24 P5ON-S**	**24P5ONMSS**	210	210
2 1/2-12	70	46	15	37	3	807	**32 P5ON-S**	**32P5ONMSS**	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
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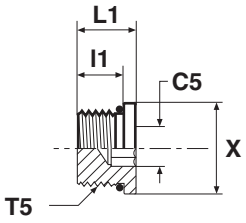
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

N

HP5ON Hexagon socket plug

Male UN/UNF thread – O-ring (ISO 11926)
SAE 090109B



Thread UN/UNF-2A T5	C5 mm	I1 mm	L1 mm	X mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
5/16-24	1/8	8	10	11	3	**2 HP5ON-S**	**2 HP5ON-SS**	420	420
3/8-24	1/8	8	10	13	5	**3 HP5ON-S**	**3 HP5ON-SS**	420	420
7/16-20	3/16	9	12	14	7	**4 HP5ON-S**	**4 HP5ON-SS**	420	420
1/2-20	3/16	9	12	16	10	**5 HP5ON-S**	**5 HP5ON-SS**	420	420
9/16-18	1/4	10	13	18	12	**6 HP5ON-S**	**6 HP5ON-SS**	420	420
3/4-16	5/16	11	15	22	26	**8 HP5ON-S**	**8 HP5ON-SS**	420	420
7/8-14	3/8	13	16	25	39	**10 HP5ON-S**	**10 HP5ON-SS**	420	420
1 1/16-12	9/16	15	19	32	64	**12 HP5ON-S**	**12 HP5ON-SS**	420	420
1 3/16-12	9/16	15	19	35	85	**14 HP5ON-S**	**14 HP5ON-SS**	380	380
1 5/16-12	5/8	15	19	38	103	**16 HP5ON-S**	**16 HP5ON-SS**	380	380
1 5/8-12	3/4	15	19	48	165	**20 HP5ON-S**	**20 HP5ON-SS**	280	280
1 7/8-12	3/4	15	20	54	238	**24 HP5ON-S**	**24 HP5ON-SS**	210	210

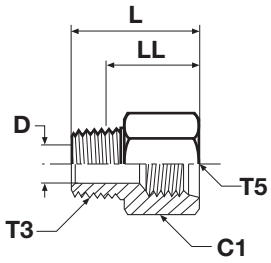
Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
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$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

F3HMG5 Male female thread adapter

Male BSPT thread (ISO 7) / Female UN/UNF thread – O-ring (ISO 11926-1)



Thread BSPT T3	Thread UN/UNF-2B T5	C1 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-28	7/16-20	18	5	28	22	27	**1/8-4F3HG5S**	**1/8-4F3HMG5SS**	350	350
1/8-28	1/2-20	19	5	28	22	32	**1/8-5F3HG5S**	**1/8-5F3HMG5SS**	350	350
1/4-19	9/16-18	21	7	35	26	45	**1/4-6F3HG5S**	**1/4-6F3HMG5SS**	350	350
3-8/19	3/4-16	25	10	37	28	73	**3/8-8F3HG5S**	**3/8-8F3HMG5SS**	315	315
1/2-14	7/8-14	29	14	45	34	111	**1/2-10F3HG5S**	**1/2-10F3HMG5SS**	210	210
3/4-14	1 1/16-12	35	18	49	36	177	**3/4-12F3HG5S**	**3/4-12F3HMG5SS**	210	210
1-11	1 5/16-12	41	24	54	39	272	**1-16F3HG5S**	**1-16F3HMG5SS**	120	120

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

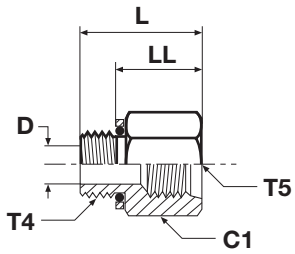
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

F4OHMG5 Male female thread adapter

Male BSPP thread O-ring + retaining ring (ISO 1179) /
Female UN/UNF thread – O-ring (ISO 11926-1)



Thread BSPP T4	Thread UN/UNF-2B T5	C1 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-28	7/16-20	18	4	25	19	27	**1/8-4F4OHG5S**	**1/8-4F4OHMG5SS**	350	315
1/4-19	9/16-18	21	8	32	23	45	**1/4-6F4OHG5S**	**1/4-6F4OHMG5SS**	350	315
3/8-19	9/16-18	22	8	32	23	70	**3/8-6F4OHG5S**	**3/8-6F4OHMG5SS**	350	315
3/8-19	3/4-16	25	10	34	25	73	**3/8-8F4OHG5S**	**3/8-8F4OHMG5SS**	350	280
1/2-14	7/8-14	29	12	41	29	111	**1/2-10F4OHG5S**	**1/2-10F4OHMG5SS**	240	240
3/4-14	1 1/16-12	35	16	44	33	177	**3/4-12F4OHG5S**	**3/4-12F4OHMG5SS**	240	240
1-11	1 5/16-12	45	21	49	34	272	**1-16F4OHG5S**	**1-16F4OHMG5SS**	240	210
1 1/4-11	1 5/8-12	51	27	48	35	320	**1 1/4-20F4OHG5S**	**11/4-20F4OHMG5SS**	140	140

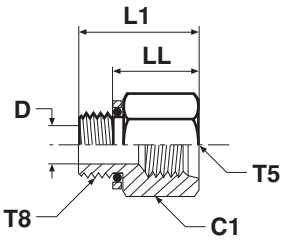
Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

F8OHMG5 Male female thread adapter

Male metric thread O-ring + retaining ring / Female UN/UNF thread – O-ring (ISO 11926-1)



Thread Metric T8	Thread UN/UNF-2B T5	C1 mm	D mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
M10×1	7/16-20	18	4	27	20	27	**M10-4F8OHG5S**	**M10-4F8OHG5SS**	350	315
M14×1.5	9/16-18	21	7	30	23	45	**M14-6F8OHG5S**	**M14-6F8OHG5SS**	350	315
M16×1.5	3/4-16	25	9	33	24	73	**M16-8F8OHG5S**	**M16-8F8OHG5SS**	350	280
M22×1.5	7/8-14	29	13	38	26	111	**M22-10F8OHG5S**	**M22-10F8OHG5SS**	240	210
M27×2	1 1/16-12	32	16	48	34	170	**M27-12F8OHG5S**	**M27-12F8OHG5SS**	240	210
M33×2	1 5/16-12	41	22	49	35	250	**M33-16F8OHG5S**	**M33-16F8OHG5SS**	140	140
M42×2	1 5/8-12	51	28	49	34	320	**M42-20F8OHG5S**	**M42-20F8OHG5SS**	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

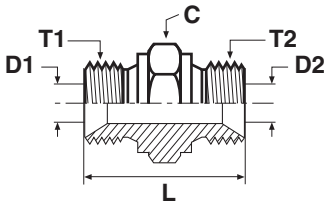
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

N

HMK4 Union

BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	C mm	D1 mm	D2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	1/8	14	4	4	24	15	**2HMK4S**	**2HMK4SS**	350	350
1/4	1/8	19	5	4	28	29	**4-2HMK4S**	**4-2HMK4SS**	350	350
1/4	1/4	19	5	5	32	35	**4HMK4S**	**4HMK4SS**	350	350
3/8	1/4	22	8	5	33	46	**6-4HMK4S**	**6-4HMK4SS**	350	350
3/8	3/8	22	8	8	35	51	**6HMK4S**	**6HMK4SS**	350	350
1/2	1/4	27	11	5	37	70	**8-4HMK4S**	**8-4HMK4SS**	200	200
1/2	3/8	27	11	8	38	76	**8-6HMK4S**	**8-6HMK4SS**	200	200
1/2	1/2	27	11	11	41	85	**8HMK4S**	**8HMK4SS**	200	200
5/8	1/2	30	14	11	43	106	**10-8HMK4S**	**10-8HMK4SS**	200	200
5/8	5/8	30	14	14	45	112	**10HMK4S**	**10HMK4SS**	200	200
3/4	1/4	32	17	5	39	92	**12-4HMK4S**	**12-4HMK4SS**	200	200
3/4	3/8	32	17	8	41	107	**12-6HMK4S**	**12-6HMK4SS**	200	200
3/4	1/2	32	17	11	43	111	**12-8HMK4S**	**12-8HMK4SS**	200	200
3/4	5/8	32	17	14	45	106	**12-10HMK4S**	**12-10HMK4SS**	200	200
3/4	3/4	32	17	17	45	124	**12HMK4S**	**12HMK4SS**	200	200
1	1/2	41	22	11	47	175	**16-8HMK4S**	**16-8HMK4SS**	120	120
1	5/8	41	22	14	49	188	**16-10HMK4S**	**16-10HMK4SS**	120	120
1	3/4	41	22	17	49	190	**16-12HMK4S**	**16-12HMK4SS**	120	120
1	1	41	22	22	52	199	**16HMK4S**	**16HMK4SS**	120	120
1 1/4	3/4	50	29	17	57	259	**20-12HMK4S**	**20-12HMK4SS**	105	105
1 1/4	1	50	29	22	60	383	**20-16HMK4S**	**20-16HMK4SS**	105	105
1 1/4	1 1/4	50	29	29	61	405	**20HMK4S**	**20HMK4SS**	105	105
1 1/2	1	55	33	22	64	417	**24-16HMK4S**	**24-16HMK4SS**	105	105
1 1/2	1 1/4	55	33	29	65	410	**24-20HMK4S**	**24-20HMK4SS**	105	105
1 1/2	1 1/2	55	33	33	67	534	**24HMK4S**	**24HMK4SS**	105	105
2	1 1/2	70	46	33	73	660	**32-24HMK4S**	**32-24HMK4SS**	70	70
2	2	70	46	46	76	719	**32HMK4S**	**32HMK4SS**	70	70

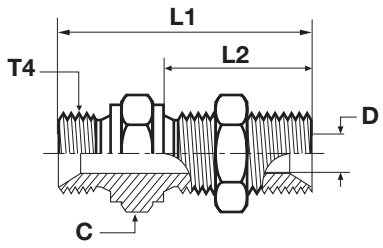
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

WMK4WL4NM Bulkhead union

BSPP 60° Cone end (ISO 8434-6)
* Supplied with locknut



Thread BSPP T4	L1 mm	L2 mm	C mm	D mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	49	28	19	5	57	**4WMK4WL4NMS**	**4WMK4WL4NMSS**	350	350
3/8	55	32	22	8	84	**6WMK4WL4NMS**	**6WMK4WL4NMSS**	350	350
1/2	62	35	27	11	122	**8WMK4WL4NMS**	**8WMK4WL4NMSS**	200	200
5/8	64	35	30	14	146	**10WMK4WL4NMS**	**10WMK4WL4NMSS**	200	200
3/4	67	38	32	17	209	**12WMK4WL4NMS**	**12WMK4WL4NMSS**	200	200
1	74	41	41	22	328	**16WMK4WL4NMS**	**16WMK4WL4NMSS**	120	120
1 1/4	85	44	50	29	507	**20WMK4WL4NMS**	**20WMK4WL4NMSS**	105	105
1 1/2	93	48	55	33	609	**24WMK4WL4NMS**	**24WMK4WL4NMSS**	105	105

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.
For the version without locknut, please delete “WL4NM” (e.g. 16WMK4)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

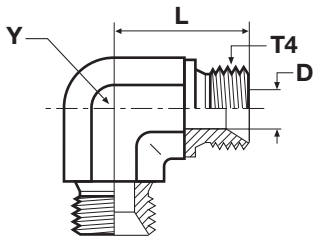
N

Maximum bulkhead wall thickness

Thread BSPP	Bulkhead union Max. thickness mm
1/4	9.5
3/8	12.5
1/2	12.4
5/8	10.8
3/4	13.4
1	10.1
1 1/4	12.1
1 1/2	14.1

EMK4 Union elbow

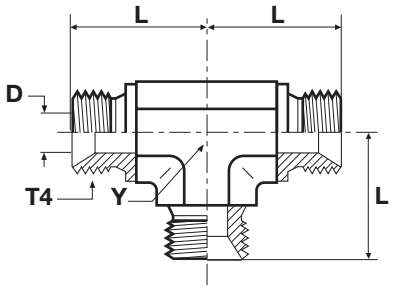
BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T4	D mm	L mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	4	17	11	21	**2EMK4S**	**2EMK4SS**	350	350
1/4	5	24	14	45	**4EMK4S**	**4EMK4SS**	350	350
3/8	8	27	19	85	**6EMK4S**	**6EMK4SS**	350	350
1/2	11	32	22	123	**8EMK4S**	**8EMK4SS**	200	200
5/8	14	34	22	109	**10EMK4S**	**10EMK4SS**	200	200
3/4	17	36	27	178	**12EMK4S**	**12EMK4SS**	200	200
1	22	42	33	288	**16EMK4S**	**16EMK4SS**	120	120
1 1/4	29	48	41	512	**20EMK4S**	**20EMK4SS**	105	105
1 1/2	33	54	48	824	**24EMK4S**	**24EMK4SS**	105	105

JMK4 Union tee

BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T4	D mm	L mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	4	17	11	33	**2JMK4S**	**2JMK4SS**	350	350
1/4	5	24	14	61	**4JMK4S**	**4JMK4SS**	350	350
3/8	8	27	19	105	**6JMK4S**	**6JMK4SS**	350	350
1/2	11	32	22	157	**8JMK4S**	**8JMK4SS**	200	200
5/8	14	34	22	145	**10JMK4S**	**10JMK4SS**	200	200
3/4	17	36	27	258	**12JMK4S**	**12JMK4SS**	200	200
1	22	42	33	591	**16JMK4S**	**16JMK4SS**	120	120
1 1/4	29	48	41	646	**20JMK4S**	**20JMK4SS**	105	105
1 1/2	33	54	48	940	**24JMK4S**	**24JMK4SS**	105	105

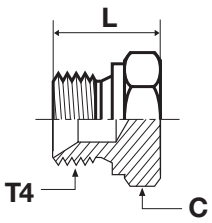
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

PNMK4 Plug

BSPP 60° Cone plug (ISO 8434-6)



Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	14	11	**2PNMK4S**	**2PNMK4SS**	350	350
1/4	19	19	22	**4PNMK4S**	**4PNMK4SS**	350	350
3/8	22	21	38	**6PNMK4S**	**6PNMK4SS**	350	350
1/2	27	24	66	**8PNMK4S**	**8PNMK4SS**	200	200
5/8	30	27	76	**10PNMK4S**	**10PNMK4SS**	200	200
3/4	32	27	106	**12PNMK4S**	**12PNMK4SS**	200	200
1	41	30	170	**16PNMK4S**	**16PNMK4SS**	120	120
1 1/4	50	39	316	**20PNMK4S**	**20PNMK4SS**	105	105
1 1/2	55	43	386	**24PNMK4S**	**24PNMK4SS**	105	105
2	70	48	650	**32PNMK4S**	**32PNMK4SS**	70	70

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

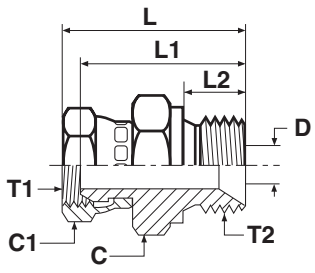
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

F6MK4 Swivel male stud

BSPP 60° cone end (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	C mm	C1 mm	D mm	L mm	L1 mm	L2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/4	19	19	5	37	31	11	44	**4-4F6MK4S**	**4-4F6MK4SS**	350	350
1/4	3/8	22	19	5	39	33	12	61	**4-6F6MK4S**	**4-6F6MK4SS**	350	350
1/4	1/2	27	19	5	42	36	14	75	**4-8F6MK4S**	**4-8F6MK4SS**	200	200
3/8	1/4	19	22	5	38	32	11	59	**6-4F6MK4S**	**6-4F6MK4SS**	350	350
3/8	3/8	22	22	8	40	34	12	71	**6-6F6MK4S**	**6-6F6MK4SS**	350	350
3/8	1/2	27	22	8	44	37	14	92	**6-8F6MK4S**	**6-8F6MK4SS**	200	200
1/2	3/8	22	27	8	44	37	12	102	**8-6F6MK4S**	**8-6F6MK4SS**	200	200
1/2	1/2	27	27	11	46	39	14	143	**8-8F6MK4S**	**8-8F6MK4SS**	200	200
1/2	3/4	32	27	11	50	42	16	157	**8-12F6MK4S**	**8-12F6MK4SS**	200	200
3/4	1/2	27	32	11	47	39	14	171	**12-8F6MK4S**	**12-8F6MK4SS**	200	200
3/4	3/4	32	32	17	50	41	16	165	**12-12F6MK4S**	**12-12F6MK4SS**	200	200
3/4	1	41	32	17	55	45	19	261	**12-16F6MK4S**	**12-16F6MK4SS**	120	120
1	1	41	41	22	57	46	19	300	**16-16F6MK4S**	**16-16F6MK4SS**	120	120

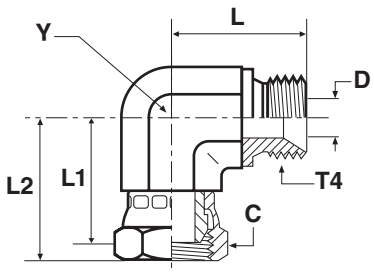
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

C6MK4 Swivel nut elbow

BSPP 60° cone end (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	4	17	18	22	11	26	**2C6MK4S**	**2C6MK4SS**	350	350
1/4	19	5	24	25	31	14	62	**4C6MK4S**	**4C6MK4SS**	350	350
3/8	22	8	27	26	33	19	104	**6C6MK4S**	**6C6MK4SS**	350	350
1/2	27	11	32	32	39	22	159	**8C6MK4S**	**8C6MK4SS**	200	200
5/8	30	14	34	30	40	22	158	**10C6MK4S**	**10C6MK4SS**	200	200
3/4	32	17	36	33	42	27	226	**12C6MK4S**	**12C6MK4SS**	200	200
1	41	22	42	38	49	33	377	**16C6MK4S**	**16C6MK4SS**	120	120
1 1/4	50	29	48	48	58	41	650	**20C6MK4S**	**20C6MK4SS**	105	105
1 1/2	60	33	54	50	63	48	999	**24C6MK4S**	**24C6MK4SS**	105	105

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

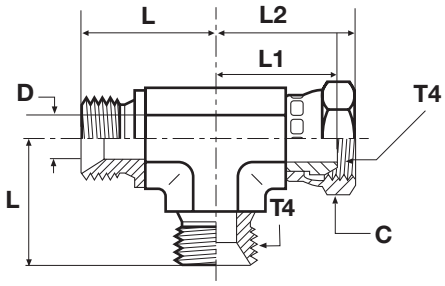
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

R6MK4 Swivel nut run tee

BSPP 60° Cone ends (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	4	17	18	22	11	29	**2R6MK4S**	**2R6MK4SS**	350	350
1/4	19	5	24	25	31	14	77	**4R6MK4S**	**4R6MK4SS**	350	350
3/8	22	8	27	26	32	19	128	**6R6MK4S**	**6R6MK4SS**	350	350
1/2	27	11	32	32	39	22	203	**8R6MK4S**	**8R6MK4SS**	200	200
5/8	30	14	34	30	40	22	274	**10R6MK4S**	**10R6MK4SS**	200	200
3/4	32	17	36	33	42	27	274	**12R6MK4S**	**12R6MK4SS**	200	200
1	41	22	42	38	48	33	456	**16R6MK4S**	**16R6MK4SS**	120	120
1 1/4	50	29	48	48	58	41	801	**20R6MK4S**	**20R6MK4SS**	105	105

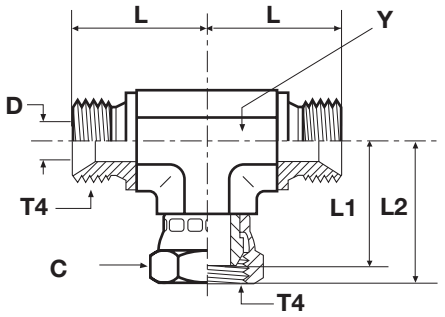
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

S6MK4 Swivel nut branch tee

BSPP 60° Cone ends (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	4	17	18	22	11	33	**2S6MK4S**	**2S6MK4SS**	350	350
1/4	19	5	24	25	31	14	77	**4S6MK4S**	**4S6MK4SS**	350	350
3/8	22	8	27	26	32	19	126	**6S6MK4S**	**6S6MK4SS**	350	350
1/2	27	11	32	32	39	22	191	**8S6MK4S**	**8S6MK4SS**	200	200
5/8	30	14	34	30	40	22	209	**10S6MK4S**	**10S6MK4SS**	200	200
3/4	32	17	36	33	42	27	286	**12S6MK4S**	**12S6MK4SS**	200	200
1	41	22	42	38	48	33	493	**16S6MK4S**	**16S6MK4SS**	120	120
1 1/4	50	29	48	48	58	41	796	**20S6MK4S**	**20S6MK4SS**	105	105

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

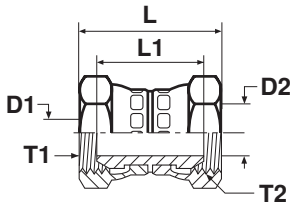
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

H6MK4 Swivel nut union

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	D1 mm	D2 mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/4	5	5	38	27	50	**4H6MK4S**	**4H6MK4SS**	350	350
3/8	1/4	8	5	40	28	61	**6-4H6MK4S**	**6-4H6MK4SS**	350	350
3/8	3/8	8	8	42	29	73	**6H6MK4S**	**6H6MK4SS**	350	350
1/2	1/4	11	5	43	30	85	**8-4H6MK4S**	**8-4H6MK4SS**	200	200
1/2	3/8	11	8	44	31	96	**8-6H6MK4S**	**8-6H6MK4SS**	200	200
1/2	1/2	11	11	47	33	107	**8H6MK4S**	**8H6MK4SS**	200	200
5/8	5/8	14	14	48	29	130	**10H6MK4S**	**10H6MK4SS**	200	200
3/4	1/2	17	11	49	33	152	**12-8H6MK4S**	**12-8H6MK4SS**	200	200
3/4	3/4	17	17	50	32	167	**12H6MK4S**	**12H6MK4SS**	200	200
1	1	22	22	58	35	201	**16H6MK4S**	**16H6MK4SS**	120	120
1 1/4	11/4	29	29	66	45	340	**20H6MK4S**	**20H6MK4SS**	105	105
1 1/2	11/2	33	33	70	43	583	**24H6MK4S**	**24H6MK4SS**	105	105

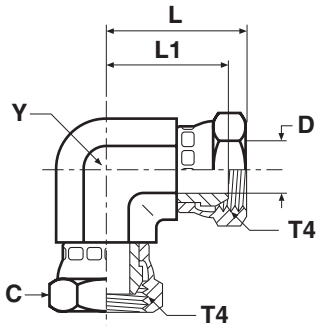
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

E6MK4 Swivel nut elbow

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	19	5	31	25	14	90	**4E6MK4S**	**4E6MK4SS**	350	350
3/8	22	8	33	26	19	127	**6E6MK4S**	**6E6MK4SS**	350	350
1/2	27	11	39	32	22	225	**8E6MK4S**	**8E6MK4SS**	200	200
5/8	30	14	39	30	22	203	**10E6MK4S**	**10E6MK4SS**	200	200
3/4	32	17	42	33	27	263	**12E6MK4S**	**12E6MK4SS**	200	200
1	41	22	49	38	33	667	**16E6MK4S**	**16E6MK4SS**	120	120
1 1/4	50	29	58	48	41	795	**20E6MK4S**	**20E6MK4SS**	105	105
1 1/2	60	33	63	50	48	1219	**24E6MK4S**	**24E6MK4SS**	105	105

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

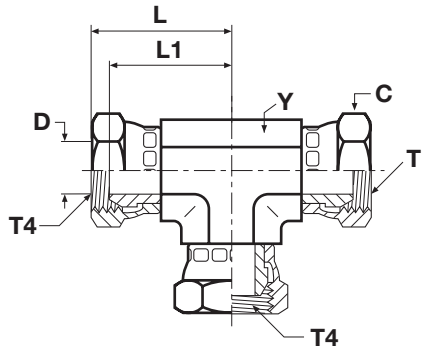
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

J6MK4 Swivel nut tee

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	19	5	31	25	14	119	**4J6MK4S**	**4J6MK4SS**	350	350
3/8	22	8	36	30	19	195	**6J6MK4S**	**6J6MK4SS**	350	350
1/2	27	11	39	32	22	267	**8J6MK4S**	**8J6MK4SS**	200	200
5/8	30	14	39	30	22	300	**10J6MK4S**	**10J6MK4SS**	200	200
3/4	32	17	42	33	27	398	**12J6MK4S**	**12J6MK4SS**	200	200
1	41	22	49	38	33	620	**16J6MK4S**	**16J6MK4SS**	120	120
1 1/4	50	29	58	48	41	1050	**20J6MK4S**	**20J6MK4SS**	105	105

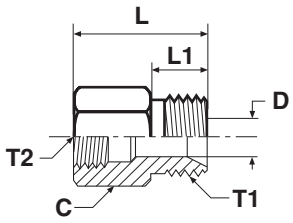
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

G4MK4 Female connector

BSPP 60° Cone end (ISO8434-6) / Female BSPP thread (ISO1179-1)



Thread BSPP T1	Thread BSPP T2	C mm	D mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
3/8	1/4	22	8	36	12	74	**6G4MK4S**	**6G4MK4SS**	350	350
1/2	1/4	27	11	38	14	77	**8-4G4MK4S**	**8-4G4MK4SS**	200	200
1/2	3/8	22	11	40	14	102	**8G4MK4S**	**8G4MK4SS**	200	200
3/4	1/4	32	17	40	16	180	**12-4G4MK4S**	**12-4G4MK4SS**	200	200
3/4	3/8	32	17	42	16	167	**12-6G4MK4S**	**12-6G4MK4SS**	200	200
3/4	1/2	32	17	48	16	209	**12-8G4MK4S**	**12-8G4MK4SS**	200	200
1	1/4	41	22	43	19	298	**16-4G4MK4S**	**16-4G4MK4SS**	120	120
1	3/8	41	22	45	19	287	**16-6G4MK4S**	**16-6G4MK4SS**	120	120
1	1/2	41	22	51	19	275	**16-8G4MK4S**	**16-8G4MK4SS**	120	120
1	3/4	41	22	52	19	360	**16-12G4MK4S**	**16-12G4MK4SS**	120	120

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

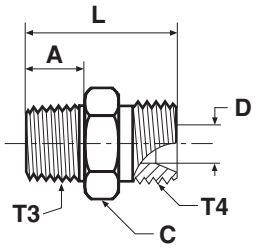
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

F3MK4 Male stud connector

BSPP 60° Cone end (ISO 8434-6) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	A mm	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	1/8	10	14	4	24	15	**2F3MK4S**	**2F3MK4SS**	315	315
1/8	1/4	15	14	4	29	28	**2-4F3MK4S**	**2-4F3MK4SS**	315	315
1/4	1/4	15	19	5	33	31	**4-4F3MK4S**	**4-4F3MK4SS**	315	315
1/4	1/8	10	19	5	29	27	**4F3MK4S**	**4F3MK4SS**	315	315
1/4	3/8	15	19	5	33	44	**4-6F3MK4S**	**4-6F3MK4SS**	315	315
3/8	3/8	15	22	8	35	52	**6-6F3MK4S**	**6-6F3MK4SS**	315	315
3/8	1/2	19	22	8	40	68	**6-8F3MK4S**	**6-8F3MK4SS**	160	160
3/8	1/4	15	22	7	35	48	**6F3MK4S**	**6F3MK4SS**	315	315
1/2	1/2	19	27	11	43	79	**8-8F3MK4S**	**8-8F3MK4SS**	160	160
1/2	3/8	15	27	11	39	68	**8F3MK4S**	**8F3MK4SS**	200	200
5/8	1/2	19	30	14	46	101	**10F3MK4S**	**10F3MK4SS**	200	200
5/8	3/4	19	30	14	46	102	**10-12F3MK4S**	**10-12F3MK4SS**	160	160
3/4	1/2	19	32	17	46	111	**12-8F3MK4S**	**12-8F3MK4SS**	315	315
3/4	3/4	19	32	17	46	126	**12F3MK4S**	**12F3MK4SS**	160	160
3/4	1	24	36	17	51	242	**12-16F3MK4S**	**12-16F3MK4SS**	120	120
1	3/4	19	41	22	50	173	**16-12F3MK4S**	**16-12F3MK4SS**	120	120
1	1	24	41	22	55	219	**16F3MK4S**	**16F3MK4SS**	120	120
1 1/4	1 1/4	25	50	29	64	337	**20F3MK4S**	**20F3MK4SS**	105	105
1 1/2	1 1/2	26	55	33	69	497	**24F3MK4S**	**24F3MK4SS**	105	105

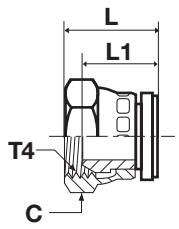
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FNMK4 Cap

BSPP 60° Cone female swivel cap end



Thread BSPP T4	C mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	15	11	19	**2FNMK4S**	**2FNMK4SS**	350	350
1/4	19	20	15	23	**4FNMK4S**	**4FNMK4SS**	350	350
3/8	22	22	15	43	**6FNMK4S**	**6FNMK4SS**	350	350
1/2	27	22	18	64	**8FNMK4S**	**8FNMK4SS**	200	200
5/8	30	25	16	80	**10FNMK4S**	**10FNMK4SS**	200	200
3/4	32	26	17	115	**12FNMK4S**	**12FNMK4SS**	200	200
1	41	30	19	154	**16FNMK4S**	**16FNMK4SS**	120	120
1 1/4	50	34	24	345	**20FNMK4S**	**20FNMK4SS**	105	105
1 1/2	60	36	23	500	**24FNMK4S**	**24FNMK4SS**	105	105

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

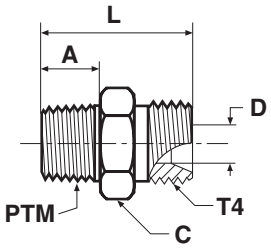
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

FMK4 Male stud connector

BSPP 60° Cone end (ISO 8434-6) / Male NPTF* thread (SAE J476)
*Stainless Steel = NPT to prevent galling



Thread BSPP T4	Thread NPT/NPTF PTM	A mm	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	1/8	10	14	4	24	17	**2FMK4S**	**2FMK4SS**	350	350
1/8	1/4	15	19	4	29	21	**2-4FMK4S**	**2-4FMK4SS**	350	350
1/4	1/8	10	19	5	29	24	**4FMK4S**	**4FMK4SS**	350	350
1/4	1/4	15	19	5	33	33	**4-4FMK4S**	**4-4FMK4SS**	350	350
1/4	3/8	15	19	5	34	41	**4-6FMK4S**	**4-6FMK4SS**	350	350
3/8	1/4	15	22	8	35	45	**6FMK4S**	**6FMK4SS**	350	350
3/8	3/8	15	2	8	35	50	**6-6FMK4S**	**6-6FMK4SS**	350	350
3/8	1/2	19	22	8	40	77	**6-8FMK4S**	**6-8FMK4SS**	350	350
1/2	3/8	15	27	11	39	48	**8FMK4S**	**8FMK4SS**	200	200
1/2	1/2	19	27	11	43	93	**8-8FMK4S**	**8-8FMK4SS**	200	200
1/2	3/4	19	27	11	44	95	**8-12FMK4S**	**8-12FMK4SS**	200	200
3/4	1/2	19	32	17	46	112	**12-8FMK4S**	**12-8FMK4SS**	200	200
3/4	3/4	19	32	17	46	124	**12FMK4S**	**12FMK4SS**	200	200
3/4	1	24	36	17	51	150	**12-16FMK4S**	**12-16FMK4SS**	200	200
1	3/4	19	41	22	50	188	**16-12FMK4S**	**16-12FMK4SS**	120	120
1	1	24	41	22	55	234	**16FMK4S**	**16FMK4SS**	120	120

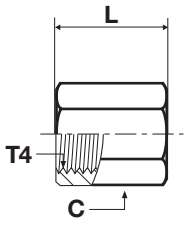
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

GG44M Female thread coupling

Female BSPP thread (ISO 1179-1)



Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	19	16	**1/8GG44MS**	**1/8GG44MSS**	420	420
1/4	17	28	30	**1/4GG44MS**	**1/4GG44MSS**	420	420
3/8	22	28	47	**3/8GG44MS**	**3/8GG44MSS**	420	420
1/2	27	33	78	**1/2GG44MS**	**1/2GG44MSS**	350	350
3/4	32	37	105	**3/4GG44MS**	**3/4GG44MSS**	280	280
1	43	42	341	**1GG44MS**	**1GG44MSS**	210	210

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

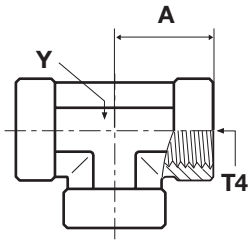
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

MMO444M Female thread tee

Female BSPP threads (ISO 1179-1)



Thread BSPP T4	A mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	22	19	74	**1/4MMO444MS**	350
3/8	26	22	111	**3/8MMO444MS**	315
1/2	31	27	177	**1/2MMO444MS**	210
3/4	40	33	294	**3/4MMO444MS**	210
1	46	41	567	**1MMO444MS**	120

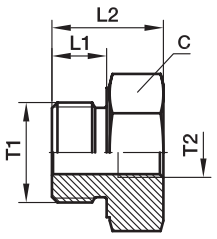
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

PTR44M* Thread reducer

Male BSPP thread O-ring + retaining ring (ISO 1179) / Female BSPP thread (ISO 1179-1)
*To Be Phased out, Replaced by RI-ED Range ** See chapter I



Thread BSPP T1	Thread BSPP T2	C mm	L1 mm	L2 mm	Weight (steel) g/1 piece	Adapter Steel	Equivalent type Replacement (WITH ED SEAL**)	Adapter Stainless Steel	Equivalent type Replacement (WITH ED SEAL**)	PN (bar) S	PN (bar) SS
1/4	1/8	19	11.0	29	35	**1/4X1/8PTR44MS**	**RI1/4EDX1/8A3C**	**1/4X1/8PTR44MSS**	**RI1/4EDX1/871**	400	400
3/8	1/4	22	11.0	36	58	**3/8X1/4PTR44MS**	**RI3/8EDX1/4A3C**	**3/8X1/4PTR44MSS**	**RI3/8EDX1/471**	400	400
1/2	1/4	30	14.5	24	98	**1/2X1/4PTR44MS**	**RI1/2EDX1/4A3C**	**1/2X1/4PTR44MSS**	**RI1/2EDX1/471**	400	400
1/2	3/8	30	14.5	37	118	**1/2X3/8PTR44MS**	**RI1/2EDX3/8A3C**	**1/2X3/8PTR44MSS**	**RI1/2EDX3/871**	400	400
3/4	1/4	36	14.5	26	163	**3/4X1/4PTR44MS**	**RI3/4EDX1/4A3C**	**3/4X1/4PTR44MSS**	**RI3/4EDX1/471**	400	400
3/4	3/8	36	14.5	26	118	**3/4X3/8PTR44MS**	**RI3/4EDX3/8A3C**	**3/4X3/8PTR44MSS**	**RI3/4EDX3/871**	315	315
3/4	1/2	36	14.5	43	146	**3/4X1/2PTR44MS**	**RI3/4EDX1/2A3C**	**3/4X1/2PTR44MSS**	**RI3/4EDX1/271**	315	315
1	1/4	46	18.5	29	245	**1X1/4PTR44MS**	**RI1EDX1/4A3C**	**1X1/4PTR44MSS**	**RI1EDX1/471**	315	315
1	3/8	46	18.5	29	260	**1X3/8PTR44MS**	**RI1EDX3/8A3C**	**1X3/8PTR44MSS**	**RI1EDX3/871**	315	315
1	1/2	46	18.5	29	273	**1X1/2PTR44MS**	**RI1EDX1/2A3C**	**1X1/2PTR44MSS**	**RI1EDX1/271**	315	315
1	3/4	46	18.5	49	240	**1X3/4PTR44MS**	**RI1EDX3/4A3C**	**1X3/4PTR44MSS**	**RI1EDX3/471**	315	315

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

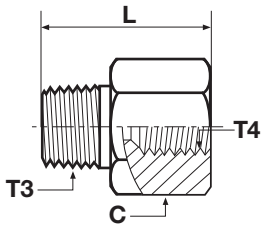
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

N

PTR34M Thread reducer

Male BSPT thread (ISO 7) / Female BSPP thread (ISO 1179-1)



Thread BSPT T3	Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/8	14	28	16	**1/4X1/8PTR34MS**	**1/4X1/8PTR34MSS**	315	315
3/8	1/4	19	33	44	**3/8X1/4PTR34MS**	**3/8X1/4PTR34MSS**	315	315
1/2	1/4	22	39	71	**1/2X1/4PTR34MS**	**1/2X1/4PTR34MSS**	315	315
1/2	3/8	22	39	48	**1/2X3/8PTR34MS**	**1/2X3/8PTR34MSS**	315	315
3/4	1/4	27	39	108	**3/4X1/4PTR34MS**	**3/4X1/4PTR34MSS**	280	280
3/4	3/8	27	39	127	**3/4X3/8PTR34MS**	**3/4X3/8PTR34MSS**	280	280
3/4	1/2	27	42	94	**3/4X1/2PTR34MS**	**3/4X1/2PTR34MSS**	280	280
1	3/8	36	40	185	**1X3/8PTR34MS**	**1X3/8PTR34MSS**	210	210
1	1/2	36	48	224	**1X1/2PTR34MS**	**1X1/2PTR34MSS**	210	210
1	3/4	36	49	186	**1X3/4PTR34MS**	**1X3/4PTR34MSS**	210	210

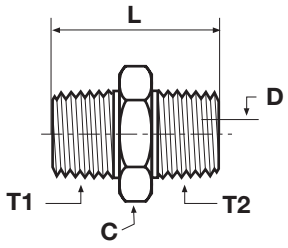
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

FF33M Male nipple

Male BSPT thread (ISO 7)



Thread BSPT T1	Thread BSPT T2	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	1/8	11	5	27	12	**1/8FF33MS**	**1/8FF33MSS**	315	315
1/4	1/8	14	5	32	25	**1/4X1/8FF33MS**	**1/4X1/8FF33MSS**	315	315
1/4	1/4	14	7	37	25	**1/4FF33MS**	**1/4FF33MSS**	315	315
3/8	1/4	17	7	37	42	**3/8X1/4FF33MS**	**3/8X1/4FF33MSS**	315	315
3/8	3/8	17	10	37	30	**3/8FF33MS**	**3/8FF33MSS**	315	315
1/2	1/4	22	7	43	68	**1/2X1/4FF33MS**	**1/2X1/4FF33MSS**	315	315
1/2	3/8	22	10	43	67	**1/2X3/8FF33MS**	**1/2X3/8FF33MSS**	315	315
1/2	1/2	22	14	48	72	**1/2FF33MS**	**1/2FF33MSS**	315	315
3/4	1/2	27	14	50	123	**3/4X1/2FF33MS**	**3/4X1/2FF33MSS**	160	160
3/4	3/4	27	18	50	110	**3/4FF33MS**	**3/4FF33MSS**	160	160
1	3/4	36	18	55	215	**1X3/4FF33MS**	**1X3/4FF33MSS**	160	160

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

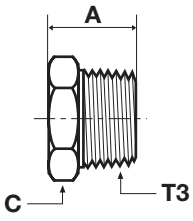
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

HP3M Hexagon head plug

Male BSPT thread (ISO 7)



Thread BSPT T3	A mm	C mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8	14	11	9	**1/8HP3MS**	**1/8HP3MSS**	315	315
1/4	19	14	16	**1/4HP3MS**	**1/4HP3MSS**	315	315
3/8	20	17	35	**3/8HP3MS**	**3/8HP3MSS**	315	315
1/2	25	22	52	**1/2HP3MS**	**1/2HP3MSS**	315	315
3/4	27	27	85	**3/4HP3MS**	**3/4HP3MSS**	160	160
1	32	36	134	**1HP3MS**	**1HP3MSS**	160	160

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

0107 Swivel male stud

Male NPTF* thread (SAE J476) / NPSM Female swivel end (SAE J516)
SAE 140130
*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	L mm	W mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	14	14	4	5	24	28	23	**0107-2-2**	**0107-2-2-SS**	350	350
1/8-27	1/4-18	18	16	6	5	27	32	33	**0107-2-4**	**0107-2-4-SS**	350	350
1/4-18	1/4-18	18	18	6	7	32	36	40	**0107-4-4**	**0107-4-4-SS**	350	350
1/4-18	3/8-18	22	21	9	7	32	37	57	**0107-4-6**	**0107-4-6-SS**	280	280
1/4-18	1/2-14	25	24	12	7	37	44	91	**0107-4-8**	**0107-4-8-SS**	245	245
3/8-18	1/4-18	18	18	6	10	33	38	48	**0107-6-4**	**0107-6-4-SS**	350	350
3/8-18	3/8-18	22	22	9	10	33	38	62	**0107-6-6**	**0107-6-6-SS**	280	280
3/8-18	1/2-14	25	24	12	10	37	44	97	**0107-6-8**	**0107-6-8-SS**	245	245
1/2-14	3/8-18	22	22	9	14	38	43	76	**0107-8-6**	**0107-8-6-SS**	280	280
1/2-14	1/2-14	25	25	12	14	41	49	109	**0107-8-8**	**0107-8-8-SS**	245	245
1/2-14	3/4-14	32	32	16	14	43	52	167	**0107-8-12**	**0107-8-12-SS**	140	140
3/4-14	1/2-14	25	29	12	18	41	49	122	**0107-12-8**	**0107-12-8-SS**	245	245
3/4-14	3/4-14	32	32	16	18	42	52	154	**0107-12-12**	**0107-12-12-SS**	140	140
3/4-14	1-11 1/2	38	38	21	18	46	55	247	**0107-12-16**	**0107-12-16-SS**	120	120
1-11 1/2	3/4-14	38	35	16	24	49	58	217	**0107-16-12**	**0107-16-12-SS**	140	140
1-11 1/2	1-11 1/2	38	38	21	24	51	60	238	**0107-16-16**	**0107-16-16-SS**	120	120
1-11 1/2	1 1/4-11 1/2	48	45	29	24	51	61	298	**0107-16-20**	**0107-16-20-SS**	120	120
1 1/4-11 1/2	1-11 1/2	38	48	21	32	53	63	356	**0107-20-16**	**0107-20-16-SS**	120	120
1 1/4-11 1/2	1 1/4-11 1/2	48	48	29	32	53	63	390	**0107-20-20**	**0107-20-20-SS**	120	120
1 1/2-11 1/2	1 1/2-11 1/2	54	54	35	38	56	66	498	**0107-24-24**	**0107-24-24-SS**	85	85
2-11 1/2	2-11 1/2	67	67	46	49	60	71	749	**0107-32-32**	**0107-32-32-SS**	75	75

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

2107 Swivel male elbow

Male NPTF* thread (SAE J476) / NPSM Female swivel end (SAE J516)
SAE 140230
*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	M1 mm	N1 mm	W3 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	14	11	4	5	18	18	22	28	**2107-2-2**	**2107-2-2-SS**	350	350
1/4-18	1/4-18	18	14	6	7	22	28	27	55	**2107-4-4**	**2107-4-4-SS**	350	350
1/4-18	3/8-1/8	22	19	9	7	25	28	33	94	**2107-4-6**	**2107-4-6-SS**	280	280
3/8-18	1/4-18	18	19	6	10	25	31	30	88	**2107-6-4**	**2107-6-4-SS**	350	350
3/8-18	3/8-1/8	22	19	9	10	25	31	33	90	**2107-6-6**	**2107-6-6-SS**	280	280
3/8-18	1/2-14	25	19	12	10	26	31	34	107	**2107-6-8**	**2107-6-8-SS**	245	245
1/2-14	3/8-1/8	22	22	9	14	27	37	34	130	**2107-8-6**	**2107-8-6-SS**	280	280
1/2-14	1/2-14	25	22	12	14	28	37	36	139	**2107-8-8**	**2107-8-8-SS**	245	245
1/2-14	3/4-14	32	27	16	14	33	37	42	221	**2107-8-12**	**2107-8-12-SS**	140	140
3/4-14	3/8-1/8	22	27	9	18	30	40	38	227	**2107-12-6**	**2107-12-6-SS**	280	280
3/4-14	1/2-14	25	27	12	18	32	40	39	191	**2107-12-8**	**2107-12-8-SS**	245	245
3/4-14	3/4-14	32	27	16	18	33	40	42	225	**2107-12-12**	**2107-12-12-SS**	140	140
1-11 1/2	3/4-14	32	33	16	24	37	50	46	374	**2107-16-12**	**2107-16-12-SS**	140	140
1-11 1/2	1-11 1/2	38	33	21	24	39	50	49	361	**2107-16-16**	**2107-16-16-SS**	120	120
1 1/4-11 1/2	1 1/4-11 1/2	48	41	29	32	44	61	54	794	**2107-20-20**	**2107-20-20-SS**	120	120
1 1/2-11 1/2	1 1/2-11 1/2	54	48	35	38	48	67	59	782	**2107-24-24**	**2107-24-24-SS**	85	85
2-11 1/2	2-11 1/2	67	64	46	49	58	76	69	1910	**2107-32-32**	**2107-32-32-SS**	75	75

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

3107 Swivel male 45° elbow

Male NPTF* thread (SAE J476) / NPSM Female swivel end (SAE J516)
SAE 140330
*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	M mm	N mm	W2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	14	11	4	5	16	13	20	21	**3107-2-2**		350	—
1/4-18	1/4-18	18	14	6	7	19	22	23	44	**3107-4-4**	**3107-4-4-SS**	350	350
3/8-18	3/8-1/8	22	19	9	10	21	24	28	80	**3107-6-6**	**3107-6-6-SS**	280	280
1/2-14	3/8-1/8	22	22	9	14	21	30	28	110	**3107-8-6**	**3107-8-6-SS**	280	280
1/2-14	1/2-14	25	22	12	14	22	30	30	114	**3107-8-8**	**3107-8-8-SS**	245	245
1/2-14	3/4-14	32	27	16	14	22	31	31	144	**3107-8-12**	**3107-8-12-SS**	140	140
3/4-14	1/2-14	25	27	12	18	24	31	31	153	**3107-12-8**	**3107-12-8-SS**	245	245
3/4-14	3/4-14	32	27	16	18	26	31	35	172	**3107-12-12**	**3107-12-12-SS**	140	140
1-11 1/2	3/4-14	32	33	16	24	28	38	37	245	**3107-16-12**	**3107-16-12-SS**	140	140
1-11 1/2	1-11 1/2	38	33	21	24	29	38	39	368	**3107-16-16**	**3107-16-16-SS**	120	120
1 1/4-11 1/2	1 1/4-11 1/2	48	41	29	32	31	42	41	619	**3107-20-20**	**3107-20-20-SS**	120	120
1 1/2-11 1/2	1 1/2-11 1/2	54	48	35	38	34	45	45	719	**3107-24-24**	**3107-24-24-SS**	85	85
2-11 1/2	2-11 1/2	67	64	46	49	37	54	48	1372	**3107-32-32**	**3107-32-32-SS**	75	75

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

0207 Female connector

Female NPTF* thread (SAE J476) / NPSM Female swivel end (SAE J516)
SAE 140131
*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	L1 mm	W1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	14	14	4	22	26	15	**0207-2-2**	**0207-2-2-SS**	350	350
1/4-18	1/4-18	18	18	6	32	36	44	**0207-4-4**	**0207-4-4-SS**	350	350
3/8-18	1/4-18	18	22	6	33	38	52	**0207-6-4**	**0207-6-4-SS**	350	350
3/8-18	3/8-18	22	22	9	33	38	81	**0207-6-6**	**0207-6-6-SS**	280	280
1/2-14	3/8-18	22	25	9	37	42	121	**0207-8-6**	**0207-8-6-SS**	280	280
1/2-14	1/2-14	25	25	12	38	46	119	**0207-8-8**	**0207-8-8-SS**	245	245
3/4-14	3/4-14	32	32	16	41	50	161	**0207-12-12**	**0207-12-12-SS**	140	140
1-11 1/2	1-11 1/2	38	38	21	51	60	162	**0207-16-16**	**0207-16-16-SS**	120	120
1 1/4-11 1/2	1 1/4-11 1/2	48	48	29	51	61	378	**0207-20-20**	**0207-20-20-SS**	120	120
1 1/2-11 1/2	1 1/2-11 1/2	54	54	35	51	62	446	**0207-24-24**	**0207-24-24-SS**	85	85
2-11 1/2	2-11 1/2	67	67	46	54	65	707	**0207-32-32**	**0207-32-32-SS**	75	75

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

2207 Female elbow

Female NPTF* thread (SAE J476) / NPSM Female swivel end (SAE J516)
SAE 140231
*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	M1 mm	W3 mm	N3 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/8-27	1/8-27	14	14	4	20	24	17	37	**2207-2-2**	**2207-2-2-SS**	350	350
1/4-18	1/4-18	18	19	6	25	30	22	98	**2207-4-4**	**2207-4-4-SS**	350	350
3/8-18	3/8-1/8	22	22	9	27	32	26	152	**2207-6-6**	**2207-6-6-SS**	280	280
1/2-14	1/2-14	25	27	12	32	39	31	246	**2207-8-8**	**2207-8-8-SS**	245	245
3/4-14	3/4-14	32	33	16	37	46	35	313	**2207-12-12**	**2207-12-12-SS**	140	140
1-11 1/2	1-11 1/2	38	41	21	44	53	41	530	**2207-16-16**	**2207-16-16-SS**	120	120
1 1/4-11 1/2	1 1/4-11 1/2	48	48	29	47	56	43	1159	**2207-20-20**	**2207-20-20-SS**	120	120
1 1/2-11 1/2	1 1/2-11 1/2	54	64	35	61	72	53	1679	**2207-24-24**	**2207-24-24-SS**	85	85
2-11 1/2	2-11 1/2	67	71	47	65	76	61	2136	**2207-32-32**	**2207-32-32-SS**	75	75

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

0507 Swivel male stud

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)
SAE 140157



Thread UN/UNF-2A B	Thread NPSM A1	C mm	C2 mm	D mm	D1 mm	L2 mm	W4 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	14	6	6	29	34	32	**0507-4-4**	350
9/16-18	1/4-18	18	18	6	6	30	34	45	**0507-6-4**	350
9/16-18	3/8-18	22	18	9	9	30	35	48	**0507-6-6**	280
9/16-18	1/2-14	25	19	8	8	33	40	76	**0507-6-8**	245
3/4-16	1/4-18	18	22	6	10	32	36	65	**0507-8-4**	350
3/4-16	3/8-18	22	22	9	9	32	37	69	**0507-8-6**	280
3/4-16	1/2-14	25	22	10	10	32	40	83	**0507-8-8**	245
3/4-16	3/4-14	32	25	16	10	37	46	137	**0507-8-12**	140
7/8-14	1/2-14	25	25	12	12	37	44	98	**0507-10-8**	245
1 1/16-12	1/2-14	25	32	12	12	40	48	157	**0507-12-8**	245
1 1/16-12	3/4-14	32	32	16	16	41	50	200	**0507-12-12**	140
1 5/16-12	1-11 1/2	38	38	21	21	45	54	317	**0507-16-16**	120
1 5/8-12	1 1/4-11 1/2	48	48	27	27	47	56	398	**0507-20-20**	120
1 7/8-12	1 1/2-11 1/2	54	54	33	33	50	61	498	**0507-24-24**	85
2 1/2-12	2-11 1/2	67	70	45	45	52	63	749	**0507-32-32**	75

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

2507 Swivel male elbow

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)
SAE 140257



Thread UN/UNF-2A B	Thread NPSM A1	C mm	C1 mm	C2 mm	D mm	D1 mm	M1 mm	W3 mm	N5 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	11	14	6	4	20	25	26	42	**2507-4-4**	350
9/16-18	1/4-18	18	14	18	6	8	22	27	32	56	**2507-6-4**	350
9/16-18	3/8-18	22	14	18	9	8	23	28	32	56	**2507-6-6**	280
9/16-18	1/2-14	25	14	18	12	8	26	34	35	65	**2507-6-8**	245
3/4-16	3/8-18	22	19	22	9	10	25	30	37	119	**2507-8-6**	280
3/4-16	1/2-14	25	19	22	12	10	26	34	37	119	**2507-8-8**	245
3/4-16	3/4-14	32	19	22	16	10	33	42	41	174	**2507-8-12**	140
7/8-14	3/8-18	22	22	25	9	12	27	32	43	164	**2507-10-6**	280
7/8-14	1/2-14	25	22	25	12	12	28	36	43	178	**2507-10-8**	245
7/8-14	3/4-14	32	22	25	16	12	32	42	45	243	**2507-10-12**	140
1 1/16-12	1/2-14	25	27	32	12	16	31	38	49	193	**2507-12-8**	245
1 1/16-12	3/4-14	32	27	32	16	16	33	42	49	283	**2507-12-12**	140
1 5/16-12	1-11 1/2	38	33	38	21	21	39	49	52	525	**2507-16-16**	120
1 5/8-12	1 1/4-11 1/2	48	41	48	29	27	45	55	57	530	**2507-20-20**	120
1 7/8-12	1 1/2-11 1/2	54	48	54	35	33	48	59	61	600	**2507-24-24**	85

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

N

3507 Swivel male 45° elbow

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)
SAE 140357



Thread UN/UNF-2A B	Thread NPSM A1	C mm	C1 mm	C2 mm	D mm	D1 mm	M mm	W2 mm	N4 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	11	14	6	4	16	20	27	41	**3507-4-4**	350
9/16-18	3/8-18	22	14	18	9	8	21	26	29	62	**3507-6-6**	280
3/4-16	3/8-18	22	19	22	9	10	21	26	33	106	**3507-8-6**	280
3/4-16	1/2-14	25	19	22	12	10	23	30	33	141	**3507-8-8**	245
3/4-16	3/4-14	32	19	22	16	10	26	35	36	226	**3507-8-12**	140
7/8-14	1/2-14	25	22	25	12	12	22	30	39	154	**3507-10-8**	245
1 1/16-12	3/4-14	32	27	32	16	16	26	35	44	208	**3507-12-12**	140
1 5/16-12	1-11 1/2	38	33	38	21	21	29	39	47	408	**3507-16-16**	120

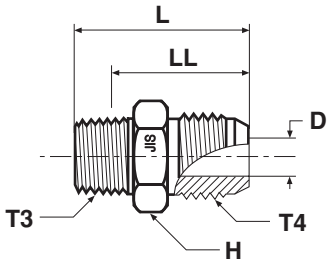
Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N61.
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

F3MT4 Male stud connector

JIS BSPP 60° cone adapters (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	H mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/4	5	19	37	29	41	**4F3T4S**	**4F3MT4SS**	315	315
1/4	3/8	5	22	38	30	61	**4-6F3T4S**	**4-6F3MT4SS**	315	315
3/8	1/4	7	22	40	32	57	**6-4F3T4S**	**6-4F3MT4SS**	315	315
3/8	3/8	7	22	40	32	66	**6F3T4S**	**6F3MT4SS**	315	315
1/2	3/8	10	27	43	35	88	**8-6F3T4S**	**8-6F3MT4SS**	315	315
1/2	1/2	11	27	48	37	105	**8F3T4S**	**8F3MT4SS**	315	200
3/4	3/4	16	37	53	41	334	**12F3T4S**	**12F3MT4SS**	160	160
1	1	21	41	58	45	268	**16F3T4S**	**16F3MT4SS**	120	120

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

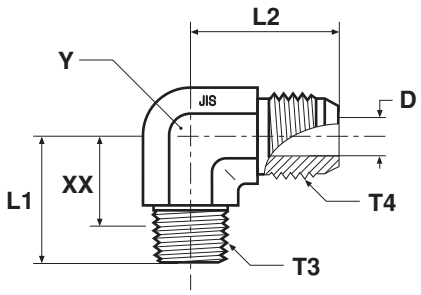
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

C3T4 Male elbow

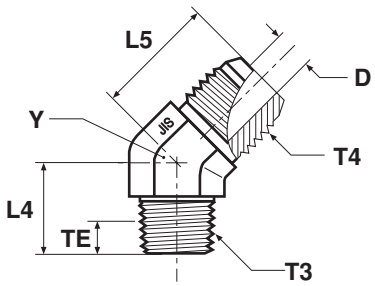
JIS BSPP 60° cone adapters (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L1 mm	L2 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	25	25	18	14	41	**4C3T4S**	315
3/8	3/8	7	30	29	23	19	74	**6C3T4S**	315
1/2	1/2	11	36	34	26	22	131	**8C3T4S**	200
3/4	3/4	16	43	38	29	27	146	**12C3T4S**	160
1	1	21	50	44	37	33	398	**16C3T4S**	120

V3T4 Male 45° elbow

JIS BSPP 30° Flare end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L4 mm	L5 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	19	22	8	14	33	**4V3T4S**	315
3/8	3/8	7	22	25	8	19	64	**6V3T4S**	315
1/2	1/2	11	27	28	11	22	112	**8V3T4S**	200
3/4	3/4	16	30	32	12	27	162	**12V3T4S**	160
1	1	21	35	32	14	33	256	**16V3T4S**	120

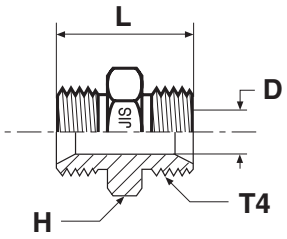
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

HMP4 Union

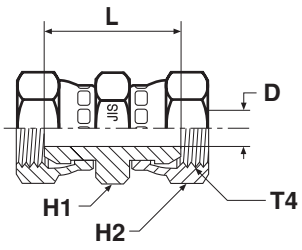
JIS BSPP 60° cone end (JIS B8363)



Thread BSPP T4	D mm	H mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	5	19	34	40	**4HP4S**	**4HMP4SS**	350	350
3/8	7	22	38	91	**6HP4S**	**6HMP4SS**	350	350
1/2	11	27	46	159	**8HP4S**	**8HMP4SS**	200	200
3/4	16	37	52	186	**12HP4S**	**12HMP4SS**	200	200
1	21	41	58	290	**16HP4S**	**16HMP4SS**	120	120

HP46 Swivel female union

JIS BSPP 60° Cone swivel female end (JIS B8363)



Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	5	19	19	31	33	**4HP46S**	350
3/8	7	22	22	35	49	**6HP46S**	350
1/2	11	27	27	38	77	**8HP46S**	200
3/4	16	37	37	40	114	**12HP46S**	200
1	21	41	41	46	180	**16HP46S**	120

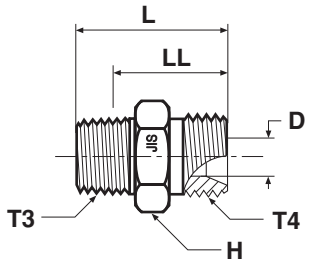
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

F3MP4 Male stud connector

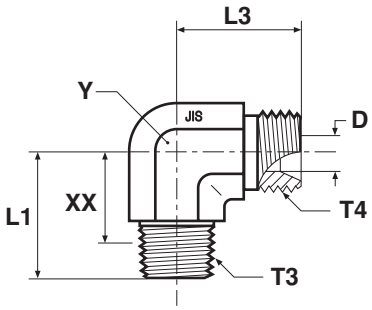
JIS BSPP 60° Cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	H mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/4	5	19	37	28	47	**4F3P4S**	**4F3MP4SS**	315	315
3/8	3/8	7	22	38	30	67	**6F3P4S**	**6F3MP4SS**	315	315
1/2	1/2	11	27	46	35	109	**8F3P4S**	**8F3MP4SS**	200	200
3/4	3/4	16	37	52	40	195	**12F3P4S**	**12F3MP4SS**	160	160
1	1	21	41	58	44	292	**16F3P4S**	**16F3MP4SS**	120	120

C3P4 Male 45° elbow

JIS BSPP 60° cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L1 mm	L3 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	25	24	18	14	49	**4C3P4S**	315
3/8	3/8	7	30	29	23	19	97	**6C3P4S**	315
1/2	1/2	11	36	33	26	22	147	**8C3P4S**	200
3/4	3/4	16	43	40	29	27	206	**12C3P4S**	160
1	1	21	50	44	37	33	434	**16C3P4S**	120

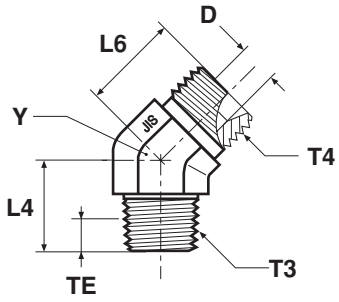
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

V3P4 Male 45° elbow

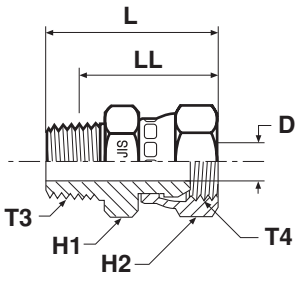
JIS BSPP 60° Cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L4 mm	L6 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	19	21	8	14	36	**4V3P4S**	350
3/8	3/8	7	22	23	8	19	65	**6V3P4S**	350
1/2	1/2	11	27	27	11	22	122	**8V3P4S**	200
3/4	3/4	16	30	30	12	27	159	**12V3P4S**	200
1	1	21	35	33	14	33	412	**16V3P4S**	120

F63MP4 Swivel male stud

JIS BSPP 60° Cone swivel female end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar) S	PN (bar) SS
1/4	1/4	5	19	19	33	24	41	**4F63P4S**	**4F63MP4SS**	315	315
3/8	3/8	7	22	22	37	28	70	**6F63P4S**	**6F63MP4SS**	315	315
1/2	1/2	11	27	27	42	31	122	**8F63P4S**	**8F63MP4SS**	200	200
3/4	3/4	16	37	37	47	35	254	**12F63P4S**	**12F63MP4SS**	160	160
1	1	21	41	41	52	38	367	**16F63P4S**	**16F63MP4SS**	120	120

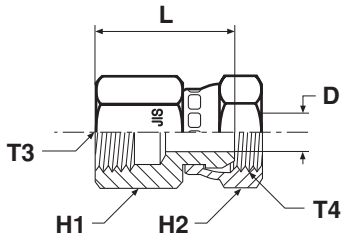
Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

G63P4 Female swivel connector

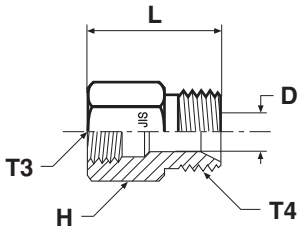
JIS BSPP 30° Flare swivel female end (JIS B8363) / Female BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	19	19	30	36	**4G63P4S**	315
3/8	3/8	7	22	22	33	49	**6G63P4S**	315
1/2	1/2	11	27	27	36	73	**8G63P4S**	200
3/4	3/4	16	37	37	38	163	**12G63P4S**	160
1	1	21	41	41	46	195	**16G63P4S**	120

G3P4 Female stud connector

JIS BSPP 30° Flare end (JIS B8363) / Female BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	1/4	5	19	31	40	**4G3P4S**	315
3/8	3/8	7	22	34	55	**6G3P4S**	315
1/2	1/2	11	27	40	141	**8G3P4S**	200
3/4	3/4	16	37	44	159	**12G3P4S**	160
1	1	21	41	49	225	**16G3P4S**	120

Order codes shown are part of our current manufacturing programme.
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Pressure ratings – PN shown, apply to the Steel version of the product.

Spare parts guide – Adapters retaining rings and seals

BSPP Male threads – ISO 1179

BSPP	ED Seal Order code		O-ring Order code*		O-Ring ID × section	Retainer ring Order code	Retainer ring Order code
Thread	NBR	FKM	NBR	FKM	mm	Steel	Stainless Steel
1/8	**ED10X1X**	**ED10X1VITX**	**6-002-N552-9**	**6-002-V894-9**	8.00 × 2.00	**8207-1/8**	**8207SS1/8**
1/4	**ED14X1.5X**	**ED14X1.5VITX**	**2-111-N552-9**	**2-111-V894-9**	10.77 × 2.62	**8207-1/4**	**8207SS1/4A**
3/8	**ED3/8X**	**ED3/8VITX**	**2-113-N552-9**	**2-113-V894-9**	13.94 × 2.62	**8207-3/8**	**8207SS3/8A**
1/2	**ED1/2X**	**ED1/2VITX**	**5-256-N552-9**	**5-256-V894-9**	17.96 × 2.62	**8207-1/2**	**8207SS1/2**
3/4	**ED26X1.5X**	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**8207-3/4**	**8207SS3/4**
1	**ED33X2X**	**ED33X2VITX**	**2-217-N552-9**	**2-217-V894-9**	29.74 × 3.53	**8207-1**	**8207SS1A**
1 1/4	**ED42X2X**	**ED42X2VITX**	**2-222-N552-9**	**2-222-V894-9**	37.69 × 3.53	**8207-1-1/4**	**8207SS1 1/4**
1 1/2	**ED48X2X**	**ED48X2VITX**	**2-224-N552-9**	**2-224-V894-9**	44.04 × 3.53	**8207-1-1/2**	**8207SS1 1/2**
Typical fittings using these parts: PTR44M / RI-ED / F4OHG5 etc.							

* Must be used with correct retainer ring

Metric male threads – ISO 9974

Metric	ED Seal Order code		O-ring Order code*		O-Ring ID × section	Retainer ring Order code	Retainer ring Order code
Thread	NBR	FKM	NBR	FKM	mm	Steel	Stainless Steel
M10x1	**ED10X1X**	**ED10X1VITX**	**6-074-N552-9**	**6-074-V894-9**	8.00 × 1.50	**M10RR**	**RRM10X1SS**
M12x1.5	**ED12X1.5X**	**ED12x1.5VITX**	**2-012-N552-9**	**2-012-V894-9**	9.25 × 1.78	**M12RR**	**RRM12X1.5SS**
M14x1.5	**ED14X1.5X**	**ED14X1.5VITX**	**2-013-N552-9**	**2-013-V894-9**	10.82 × 1.78	**M14RR**	**RRM14X1.5SS**
M16x1.5	**ED16X1.5X**	**ED16X1.5VITX**	**3-907-N552-9**	**3-907-V894-9**	13.46 × 2.08	**M16RR**	**RRM16X1.5SS**
M18x1.5	**ED18X1.5X**	**ED18X1.5VITX**	**2-114-N552-9**	**2-114-V894-9**	15.54 × 2.62	**M18RR**	**RRM18X1.5SS**
M22x2	**ED22X1.5X**	**ED22X1.5VITX**	**2-018-N552-9**	**2-018-V894-9**	18.77 × 1.78	**M22RR**	**RRM22X1.5SS**
M27x2	**ED26X1.5X****	**ED26X1.5VITX**	**2-119-N552-9**	**2-119-V894-9**	23.47 × 2.62	**M27RR**	**RRM27X2SS**
M33x2	**ED33X2X**	**ED33X2VITX**	**2-122-N552-9**	**2-122-V894-9**	28.24 × 2.62	**M33RR**	**RRM33X2SS**
M42x2	**ED42X2X**	**ED42X2VITX**	**2-128-N552-9**	**2-128-V894-9**	37.77 × 2.62	**M42RR**	**RRM42X2SS**
M48x2	**ED48X2X**	**ED48X2VITX**	**2-132-N552-9**	**2-132-V894-9**	44.12 × 2.62	**M48RR**	**RRM48X2SS**
Typical fittings using these parts: F8OHG5 / VSTI MED etc..							

* Must be used with correct retainer ring
** Same seal used for M26X1.5 and M27X2 Threads

N

UN / UNF male threads – ISO 11926

UN / UNF	Dash	O-ring Order code*		O-Ring ID x section
Thread	size	NBR	FKM	mm
5/16-24	2	**3-902-N552-9**	**3-902-V894-9**	6.07 × 1.63
3/8-24	3	**3-903-N552-9**	**3-903-V894-9**	7.65 × 1.63
7/16-20	4	**3-904-N552-9**	**3-904-V894-9**	8.92 × 1.83
1/2-20	5	**3-905-N552-9**	**3-905-V894-9**	10.52 × 1.83
9/16-18	6	**3-906-N552-9**	**3-906-V894-9**	11.89 × 1.98
3/4-16	8	**3-908-N552-9**	**3-908-V894-9**	16.36 × 2.21
7/8-14	10	**3-910-N552-9**	**3-910-V894-9**	19.18 × 2.46
1 1/16-12	12	**3-912-N552-9**	**3-912-V894-9**	23.47 × 2.95
1 3/16-12	14	**3-914-N552-9**	**3-914-V894-9**	26.59 × 2.95
1 5/16-12	16	**3-916-N552-9**	**3-916-V894-9**	29.74 × 2.95
1 5/8-12	20	**3-920-N552-9**	**3-920-V894-9**	37.47 × 3.00
1 7/8-12	24	**3-924-N552-9**	**3-924-V894-9**	43.69 × 3.00
2 1/2-12	32	**3-932-N552-9**	**3-932-V894-9**	59.36 × 3.00
Typical fittings using these parts: F5OG / P5ON / F5OHAO etc..				

Metric male threads – ISO 6149

Metric	O-ring Order code*		O-Ring ID × section
Thread	NBR	FKM	mm
M10 × 1	**6-345-N552-9**	**6-345-V894-9**	8.20 × 1.50
M12 × 1.5	**6-346-N552-9**	**6-346-V894-9**	9.40 × 2.10
M14 × 1.5	**6-347-N552-9**	**6-347-V894-9**	11.40 × 2.10
M16 × 1.5	**6-348-N552-9**	**6-348-V894-9**	13.40 × 2.10
M18 × 1.5	**6-349-N552-9**	**6-349-V894-9**	15.40 × 2.10
M22 × 1.5	**6-350-N552-9**	**6-350-V894-9**	19.40 × 2.10
M27 × 2	**6-351-N552-9**	**6-351-V894-9**	23.70 × 2.80
M33 × 2	**6-352-N552-9**	**6-352-V894-9**	29.70 × 2.80
M42 × 2	**6-353-N552-9**	**6-353-V894-9**	38.70 × 2.80
M48 × 2	**6-354-N552-9**	**6-354-V894-9**	46.70 × 2.80
Typical fittings using these parts: VSTI-OR etc.			

Other seal compounds available on request for alternative applications

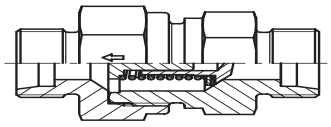
Parker

Ermeto Original
Valves



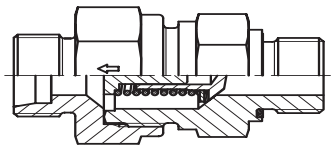
Visual index Non return valves

RHD / p. O11



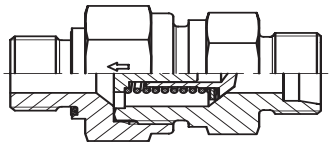
EO 24° cone end / EO 24° cone end

RHV-R-ED / p. O12



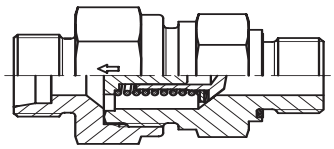
EO 24° cone end /
Male BSPP thread – ED-seal (ISO 1179)

RHZ-R-ED / p. O13



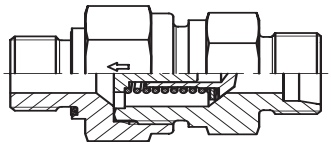
Male BSPP thread – ED-seal (ISO 1179) /
EO 24° cone end

RHV-M-ED / p. O14



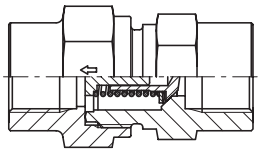
EO 24° cone end /
Male metric thread – ED-seal (ISO 9974)

RHZ-M-ED / p. O15



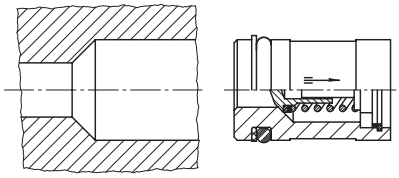
Male metric thread – ED-seal (ISO 9974) /
EO 24° cone end

RHDI / p. O16



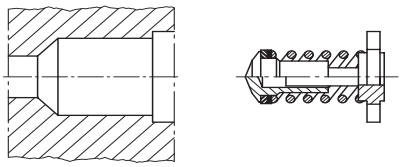
Female BSPP thread (ISO 1179-1) /
Female BSPP thread (ISO 1179-1)

RVP / p. O17



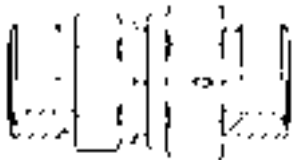
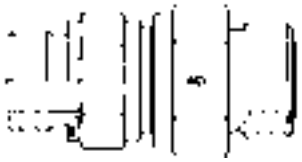
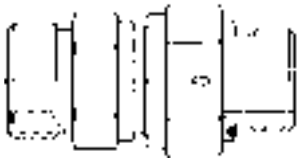
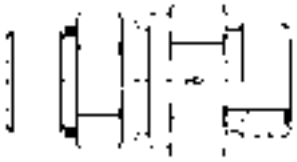
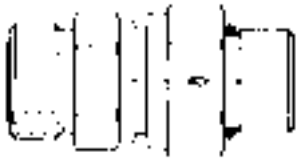
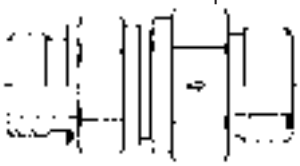
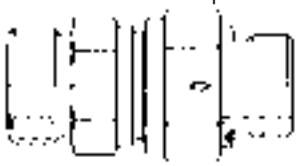
Non return valve cartridge

I-TL / p. O18



Internal parts of non return valve

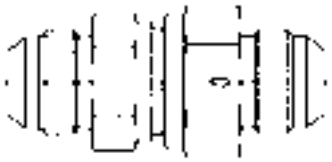
Visual index Non return valves with O-Lok® connections

RHDMLOS / p. O20  O-Lok® ORFS end / O-Lok® ORFS end	
RHV42EDMLOS / p. O21  Male BSPP thread – ED-seal (ISO 1179) / O-Lok® ORFS end	**RHZ42EDMLOS** / p. O22  O-Lok® ORFS end / Male BSPP thread – ED-seal (ISO 1179)
RHV50MLOS / p. O23  Male UN/UNF thread – O-ring (ISO 11926) / O-Lok® ORFS end	**RHZ50MLOS** / p. O24  O-Lok® ORFS end / Male UN/UNF thread – O-ring (ISO 11926)
RHV82EDMLOS / p. O25  Male metric thread – ED-seal (ISO 9974) / O-Lok® ORFS end	**RHZ82EDMLOS** / p. O26  O-Lok® ORFS end / Male metric thread – ED-seal (ISO 9974)

O

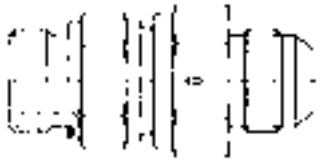
Visual index Non return valves with Triple-Lok® connections

RHDMTXS / p. O27



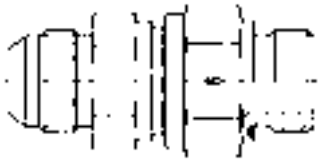
Triple-Lok® 37° flare end / Triple-Lok® 37° flare end

RHV42EDMXS / p. O28



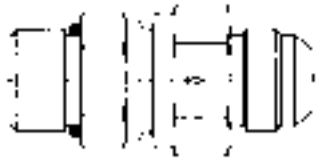
Male BSPP thread – ED-seal (ISO 1179) /
Triple-Lok® 37° flare end

RHZ42EDMXS / p. O29



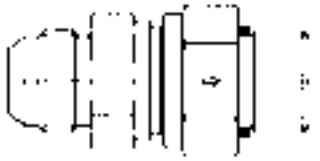
Triple-Lok® 37° flare end /
Male BSPP thread – ED-seal (ISO 1179)

RHV50MXS / p. O30



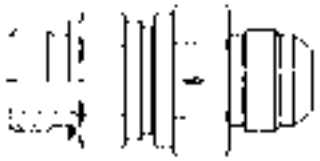
Male UN/UNF thread – O-ring (ISO 11926) /
Triple-Lok® 37° flare end

RHZ50MXS / p. O31



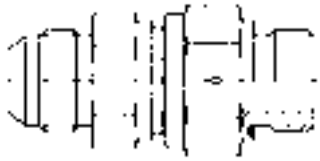
Triple-Lok® 37° flare end /
Male UN/UNF thread – O-ring (ISO 11926)

RHV82EDMXS / p. O32



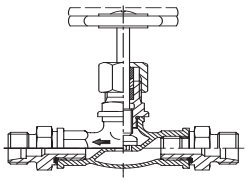
Male metric thread – ED-seal (ISO 9974) /
Triple-Lok® 37° flare end

RHZ82EDMXS / p. O33



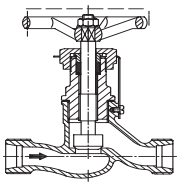
Triple-Lok® 37° flare end /
Male metric thread – ED-seal (ISO 9974)

Visual index shut off valves and ball valves



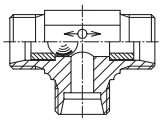
DV
p. O34

EO 24° cone end / EO 24° cone end



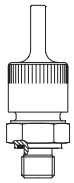
LD
p. O35

EO 24° cone end / EO 24° cone end



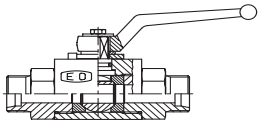
WV
p. O36

EO 24° cone end / EO 24° cone end / EO 24° cone end



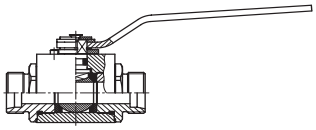
ELA/ELAE
p. O46

Air-bleed valves



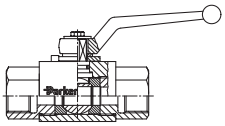
KH (S)
p. O37

EO 24° cone end / EO 24° cone end



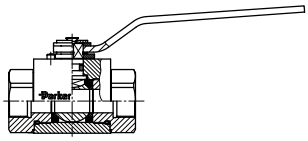
KH (71)
p. O38

EO 24° cone end / EO 24° cone end



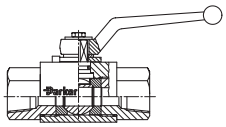
KH-BSPP (S)
p. O39

Female BSPP thread (ISO 1179-1) /
Female BSPP thread (ISO 1179-1)



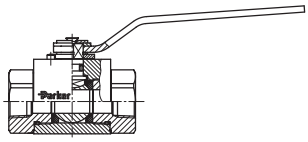
KH-BSPP (71)
p. O40

Female BSPP thread (ISO 1179-1) /
Female BSPP thread (ISO 1179-1)



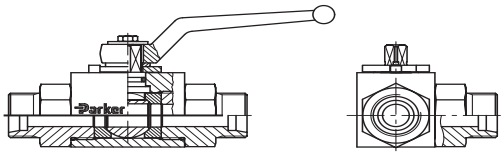
KH-NPT (S)
p. O41

Female NPT thread (SAE 476) /
Female NPT thread (SAE 476)



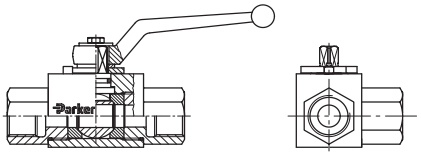
KH-NPT (71)
p. O42

Female NPT thread (SAE 476) /
Female NPT thread (SAE 476)



KH 3/2 (S)
p. O43

EO 24° cone end / EO 24° cone end / EO 24° cone end



KH 3/2-BSPP(S)
p. O44

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)

O

Range of non return valves and alternating valves

Non-return valves with nominal pressure ratings up to PN 420 bar:

– with tube connection both ends: RHD

– with tube connection to male stud: RHV/RHZ

– with female thread both ends: RHDI

– valve cartridges: RVP

– valve internal parts: I-TL

– leakage rate hydraulic testing under test pressure: 1 drop per minute

Alternating valves:

– for nominal pressure ratings up to PN 160 WV

– leakage rate hydraulic testing under test pressure: 20 drops per minute

Hand-operated Shut-off valves:

– for low pressure ratings up to PN 10 bar DV

– for medium pressure ratings up to PN 40 bar LD

Design:

1. For materials, permissible working pressures, temperatures, flow medium torques for male studs etc. see relevant pages of the catalogue.
2. Tube connection ends must be assembled according to the Parker EO/EO 2 assembly instructions.
   The valve bodies must be held rigidly during assembly of the tube connection ends.
3. Test pressures for non return valves:
   PN in conformance with O.D. information see chapter C.
4. Pressure drop values please see p. C12 and diagrams.

Caution!

Please note the admissible pressure ratings for the EO-tube ends.

Range of hand-operated shut off valves and quarter turn ball valves

Quarter turn Hand-operated ball valves:

– for high pressure ratings up to PN 500 bar KH

– leakage rate hydraulic testing under test pressure: 0 drops per minute

The pressure specification PN for hand-operated shut-off valves and quarter turn ball valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

Steel

Materials:
Body made of steel, coating DIN 50938-FE//A/T4, ball of hard chrome plated carbon steel, stem of zinc plated steel.

Seals:
Ball seat of POM (e. g. Delrin), stem seal of NBR (e. g. Perbunan).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For applications suitable up to 100 bar.

Temperature range:
–10 up to +100 °C.

Stainless Steel

Materials:
Body made of stainless steel, ball of stainless steel, stem and connectors of stainless steel.

Seals:
Ball seat of POM (e. g. Delrin), stem seal of NBR (e. g. Perbunan), DOZ from function nut FKM (e. g. Viton®).

Applications:
Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.
For applications suitable up to 100 bar.

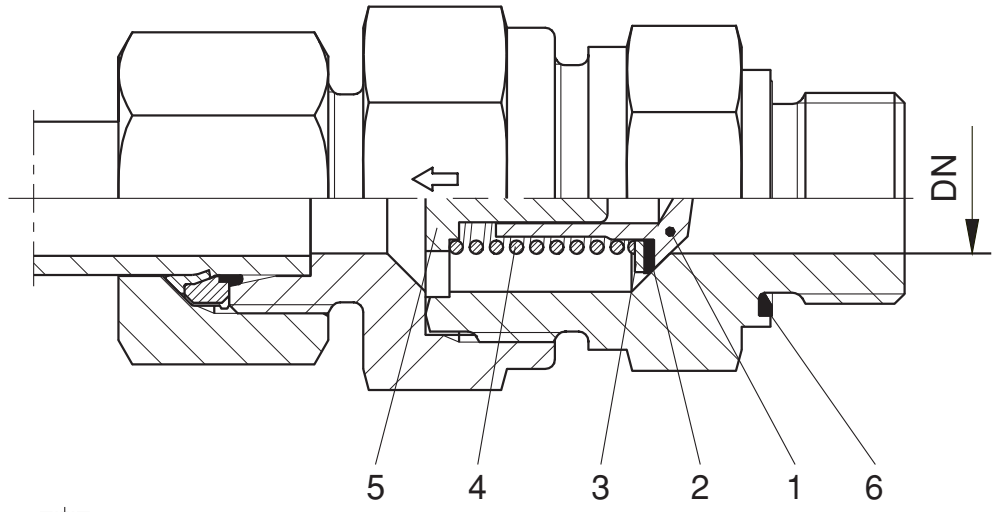
Temperature range:
–30 up to +100 °C.

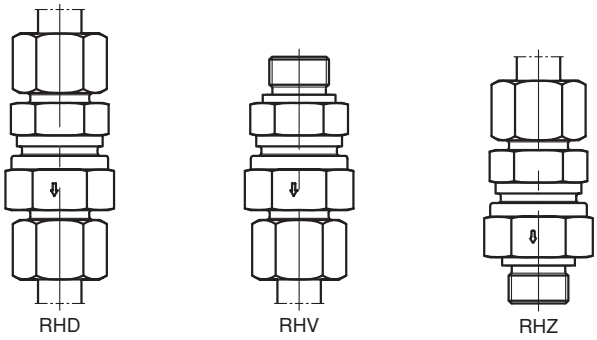
Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont

Notes:

To assess the suitability of valves for specific applications, please advise us of the exact specification of the medium to be used, max. working pressure incl. pressure peaks, temperature and frequency of valve operations. If water is used, indicate type of water or additives, if any.

RHD/V/Z non return valve





1: poppet
2: sealing disc
3: cover disc
4: spring
5: passage disc
6: Eolastic-sealing

DN = Nominal diameter (mm)

Characteristics:

Poppet check valve with a 90° valve seat with an elastomere sealing disc. Poppet stop for controlled valve opening. Damped opening action to minimize shock and noise. No reduction of cross section. Maximum flow velocity not more than 8 m/sec (for higher flow velocities special tests are required). Sealing of male stud thread by Eolastic soft seal with types RHV and RHZ.

Opening pressure:

Standard 1 bar (on request also 0.2, 0.5, 2, 3, 4, 5 and 6 bar are available; please specify on order). For working pressure see appropriate tables. Cracking pressure tolerance: ± 20 %.

Material:

- Steel zinc-plated (A3C) or (CF chromium^6-free), seals in NBR (e.g. Perbunan), or (e.g. Viton®) on request.
- Stainless steel valves have FKM (e.g. Viton®) as standard.
  (Up to 3 bar cracking pressure)
- Brass-valves (CuZn35Ni2 2.0540) with internals (1.4571) available on request.
  (Up to 3 bar cracking pressure)

Assembly:

See assembly instructions for EO/EO 2 connections.
Non-return valves are all packaged against contamination.

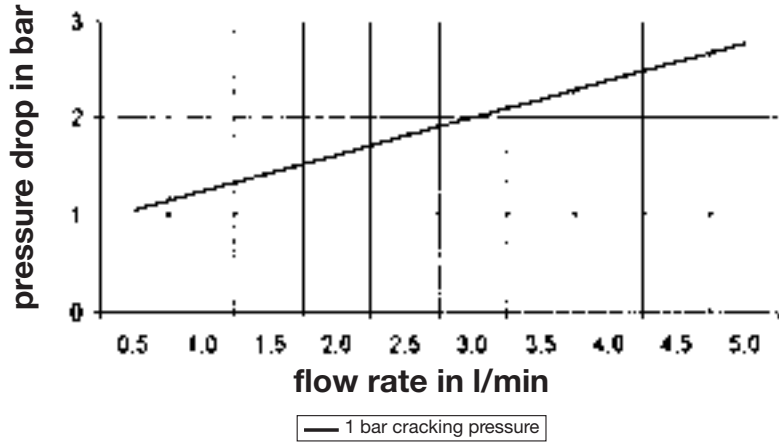
Media:

Hydraulic oil, low flammability hydraulic fluids (excent for types HFC: for HFD types; FKM seals are necessary). Please indicate on order if used with compressed air.
Not suitable for steam, combustible/explosive gases, or oxygen.
For water applications, please consult Parker with details of water and any additives.

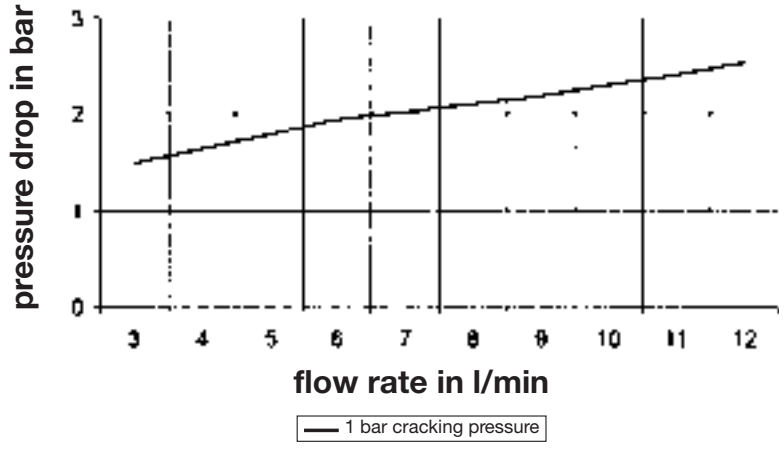
Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont

In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.

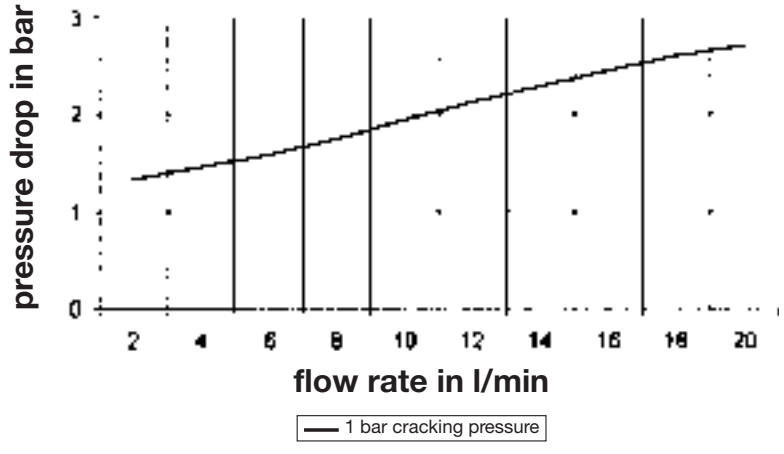
pressure drop tube O.D. 06L/06+08S; size 4;
female BSPP 1/8, 1/4; RVP 13; DN 3.5



pressure drop tube O.D. 8L/10S; size 5;
RVP 16; DN 5.5

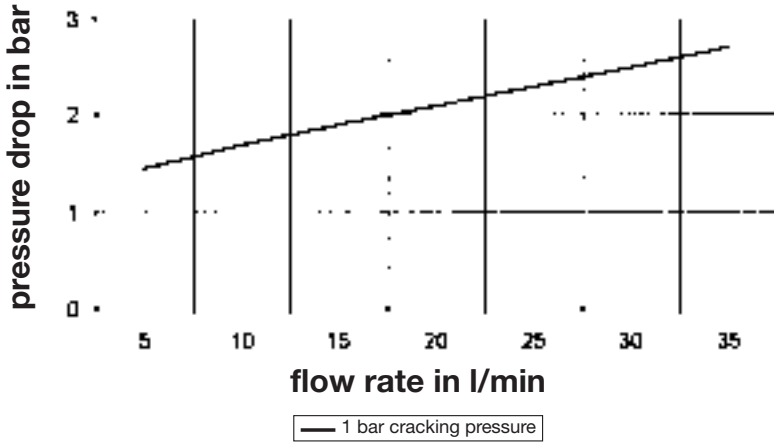


pressure drop tube O.D. 10L/12S; size 6
female BSPP 3/8; RVP 20; DN 7.5

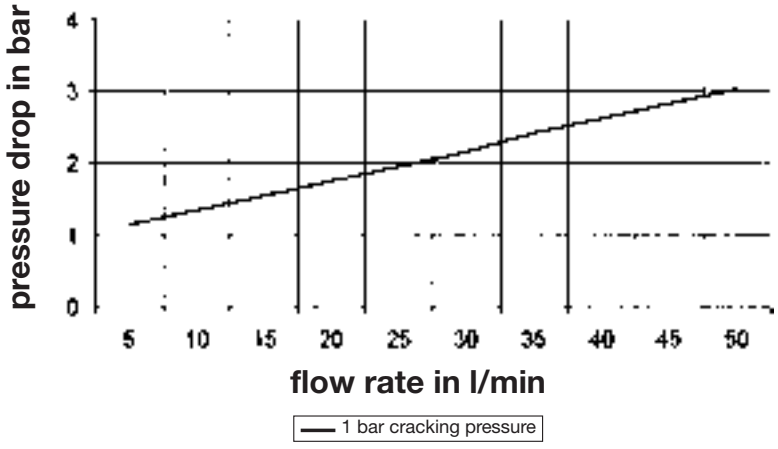


In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.

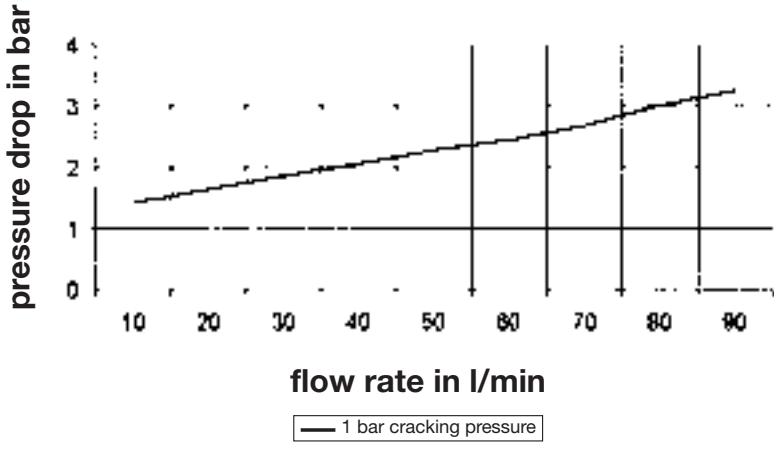
pressure drop tube O.D. 12L/14S; size 8; RVP 24; DN 9.5



pressure drop tube O.D. 15L/16S; size 10; female BSPP 1/2; RVP 27; DN 11.5



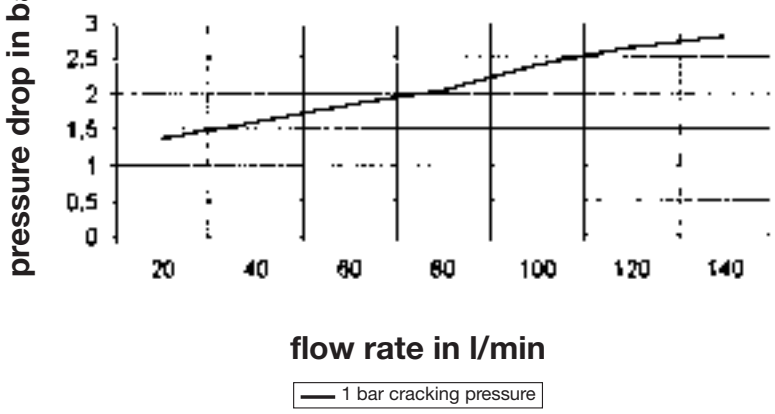
pressure drop tube O.D. 18L/20S; size 12; female BSPP 3/4; RVP 35; DN 15.0



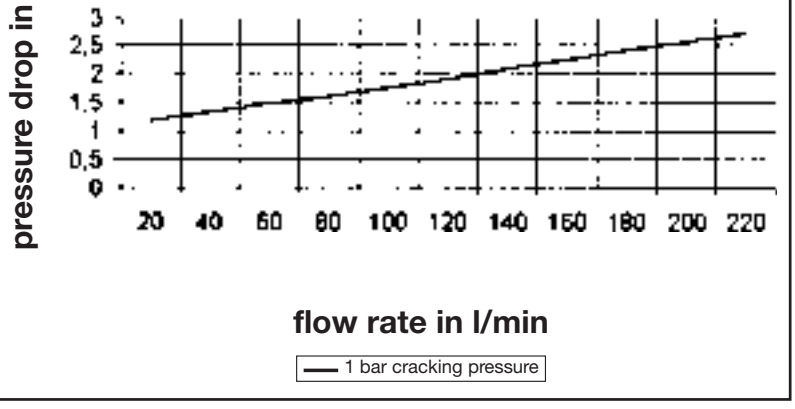
O

In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.

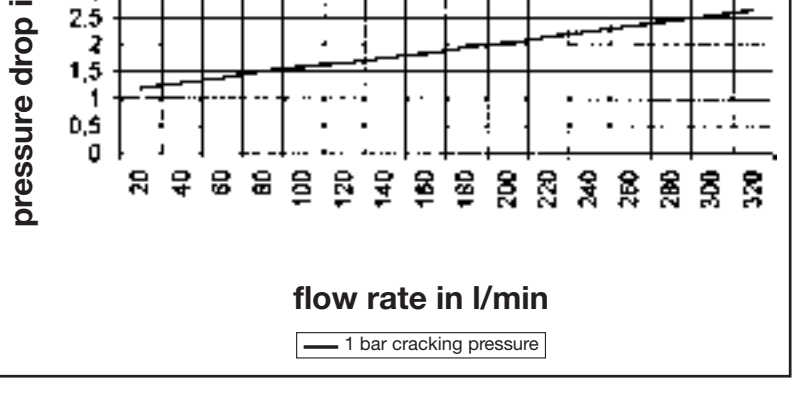
pressure drop tube O.D. 22L/25S; size 16; female BSPP 1; RVP 40; DN 19



pressure drop tube O.D. 28L/30S; size 20; female BSPP 1¹/₄; RVP 47; DN 24

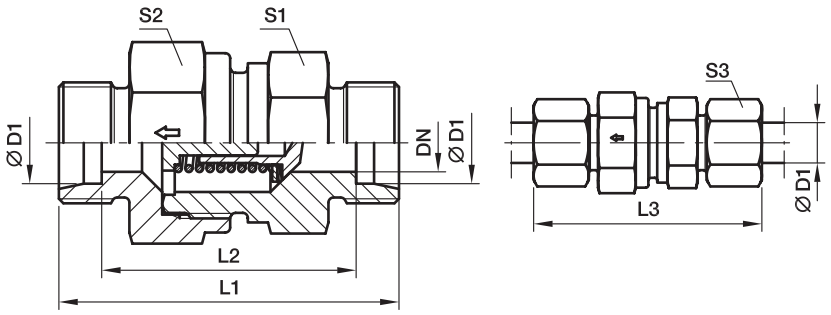


pressure drop tube O.D. 35+42L/38S; size 24; female BSPP 1¹/₂; RVP 55; DN 29



RHD Non return valve

EO 24° cone end / EO 24° cone end



Series	D1	DN	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	3.5	43	29.0	58.0	17	17	14	46	**RHD06LOMD**	400	250	250
	08	5.5	44	30.0	59.0	19	19	17	61	**RHD08LOMD**	400	250	250
	10	7.5	54.5	40.5	69.5	22	24	19	104	**RHD10LOMD**	400	250	250
	12	9.5	57.5	43.5	72.5	27	30	22	166	**RHD12LOMD**	400	250	250
	15	11.5	61.5	47.5	77.5	27	32	27	192	**RHD15LOMD**	400	250	250
	18	14.0	66.5	51.5	83.5	36	36	32	292	**RHD18LOMD**	400	160	160
	22	18.0	76.5	61.5	93.5	41	46	36	472	**RHD22LOMD**	250	160	160
	28	23.0	84.5	69.5	102.5	50	55	41	746	**RHD28LOMD**	250	100	100
	35	29.0	95.5	74.5	117.5	60	60	50	1062	**RHD35LOMD**	250	100	100
	42	29.0	96	74.0	119.0	65	70	60	1518	**RHD42LOMD**	250	100	100
S[4])	06	3.5	48.5	34.5	63.5	19	19	17	70	**RHD06SOMD**	420	400	400
	08	3.5	48.5	34.5	63.5	19	19	19	74	**RHD08SOMD**	420	400	400
	10	5.5	55.5	40.5	72.5	22	24	22	121	**RHD10SOMD**	420	400	400
	12	7.5	57.5	42.5	74.5	24	27	24	148	**RHD12SOMD**	420	400	400
	14	9.5	63.5	47.5	82.5	27	32	27	218	**RHD14SOMD**	420	315	315
	16	11.5	67.5	50.5	86.5	32	36	30	286	**RHD16SOMD**	420	315	315
	20	15.0	75.5	54.5	97.5	41	46	36	506	**RHD20SOMD**	420	250	250
	25	19.0	82.5	58.5	106.5	46	50	46	639	**RHD25SOMD**	420	250	250
	30	24.0	96.5	69.5	122.5	60	60	50	1157	**RHD30SOMD**	250	250	250
	38	29.0	107.5	75.5	136.5	65	70	60	1650	**RHD38SOMD**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

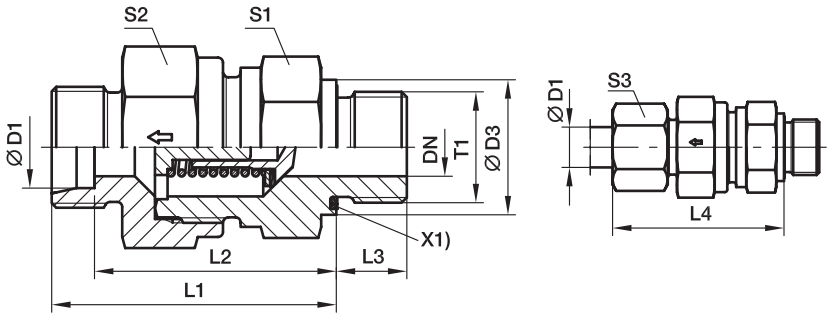
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHD06LOMDCF	NBR
Steel, zinc yellow plated	A3C	RHD06LOMDA3C	NBR
Stainless steel	71	RHD06LOMD71	VIT

RHV-R-ED Non return valve

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



X1) Eolastic sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	3.5	14	35	28.0	8	42.5	17	17	14	47	**RHV06LREDOMD**	400	250	250
	08	G 1/4 A	5.5	19	37	30.0	12	44.5	19	19	17	62	**RHV08LREDOMD**	400	250	250
	10	G 1/4 A	7.5	19	45.5	38.5	12	53.0	22	24	19	105	**RHV10LREDOMD**	400	250	250
	12	G 3/8 A	9.5	22	49.5	42.5	12	57.0	27	30	22	175	**RHV12LREDOMD**	400	250	250
	15	G 1/2 A	11.5	27	52.5	45.5	14	60.5	27	32	27	205	**RHV15LREDOMD**	400	250	250
	18	G 1/2 A	14.0	27	57.5	50.0	14	66.0	36	36	32	294	**RHV18LREDOMD**	400	160	160
	22	G 3/4 A	18.0	32	62.5	55.0	16	71.0	41	46	36	450	**RHV22LREDOMD**	250	160	160
	28	G 1 A	23.0	40	70.5	63.0	18	79.5	50	55	41	720	**RHV28LREDOMD**	250	100	100
	35	G 1 1/4 A	29.0	50	79.5	69.0	20	90.5	60	60	50	1050	**RHV35LREDOMD**	250	100	100
	42	G 1 1/2 A	29.0	55	79.5	68.5	22	91.0	65	70	60	1560	**RHV42LREDOMD**	250	100	100
S[4])	06	G 1/4 A	3.5	19	38.5	31.5	12	46.0	19	19	17	73	**RHV06SREDOMD**	420	400	400
	08	G 1/4 A	3.5	19	38.5	31.5	12	46.0	19	19	19	79	**RHV08SREDOMD**	420	400	400
	10	G 3/8 A	5.5	22	45.5	38.0	12	54.0	22	24	22	132	**RHV10SREDOMD**	420	400	400
	12	G 3/8 A	7.5	22	48.5	41.0	12	57.0	24	27	24	153	**RHV12SREDOMD**	420	400	400
	14	G 1/2 A	9.5	27	52.5	44.5	14	62.0	27	32	27	230	**RHV14SREDOMD**	420	315	315
	16	G 1/2 A	11.5	27	56.5	48.0	14	66.0	32	36	30	293	**RHV16SREDOMD**	420	315	315
	20	G 3/4 A	15.0	32	62.5	52.0	16	73.5	41	46	36	511	**RHV20SREDOMD**	420	250	250
	25	G 1 A	19.0	40	66.5	54.5	18	78.5	46	50	46	648	**RHV25SREDOMD**	420	250	250
	30	G 1 1/4 A	24.0	50	77.5	64.0	20	90.5	60	60	50	1176	**RHV30SREDOMD**	250	250	250
	38	G 1 1/2 A	29.0	55	85.5	69.5	22	100.0	65	70	60	1624	**RHV38SREDOMD**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

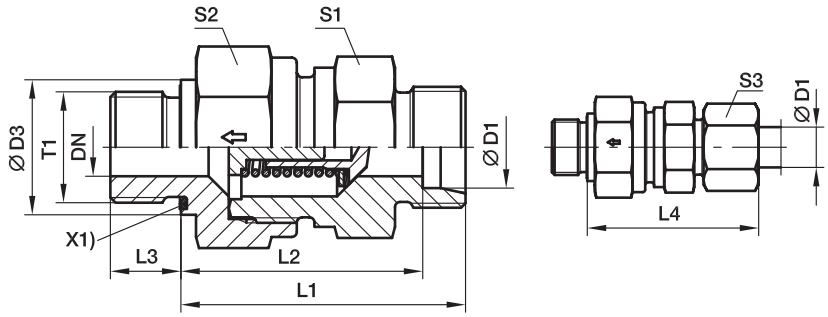
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHV06LREDOMDCF	NBR
Steel, zinc yellow plated	A3C	RHV06LREDOMDA3C	NBR
Stainless steel	71	RHV06LREDOMD71	VIT

RHZ-R-ED Non return valve

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	G 1/8 A	3.5	14	33.5	26.5	8	41.0	17	17	14	44	**RHZ06LREDOMD**	400	250	250
	08	G 1/4 A	5.5	19	35.5	28.5	12	43.0	19	19	17	59	**RHZ08LREDOMD**	400	250	250
	10	G 1/4 A	7.5	19	45.5	38.5	12	53.0	22	24	19	125	**RHZ10LREDOMD**	400	250	250
	12	G 3/8 A	9.5	22	47.5	40.5	12	55.0	27	30	22	161	**RHZ12LREDOMD**	400	250	250
	15	G 1/2 A	11.5	27	49.5	42.5	14	57.5	27	32	27	186	**RHZ15LREDOMD**	400	250	250
	18	G 1/2 A	14.0	27	55.5	48.0	14	64.0	36	36	32	275	**RHZ18LREDOMD**	400	160	160
	22	G 3/4 A	18.0	32	63.5	56.0	16	72.0	41	46	36	463	**RHZ22LREDOMD**	250	160	160
	28	G 1 A	23.0	40	71.5	64.0	18	80.5	50	55	41	721	**RHZ28LREDOMD**	250	100	100
	35	G 1 1/4 A	29.0	50	80.5	70.0	20	91.5	60	60	50	1073	**RHZ35LREDOMD**	250	100	100
	42	G 1 1/2 A	29.0	55	81.5	70.5	22	93.0	65	70	60	1602	**RHZ42LREDOMD**	250	100	100
S[4])	06	G 1/4 A	3.5	19	38.5	31.5	12	46.0	19	19	17	71	**RHZ06SREDOMD**	420	400	400
	08	G 1/4 A	3.5	19	38.5	31.5	12	46.0	19	19	19	74	**RHZ08SREDOMD**	420	400	400
	10	G 3/8 A	5.5	22	45.5	38.0	12	54.0	22	24	22	128	**RHZ10SREDOMD**	420	400	400
	12	G 3/8 A	7.5	22	48.5	41.0	12	57.0	24	27	24	152	**RHZ12SREDOMD**	420	400	400
	14	G 1/2 A	9.5	27	51.5	43.5	14	61.0	27	32	27	223	**RHZ14SREDOMD**	420	315	315
	16	G 1/2 A	11.5	27	54.5	46.0	14	64.0	32	36	30	275	**RHZ16SREDOMD**	420	315	315
	20	G 3/4 A	15.0	32	60.5	50.0	16	71.5	41	46	36	490	**RHZ20SREDOMD**	420	250	250
	25	G 1 A	19.0	40	66.5	54.5	18	78.5	46	50	46	647	**RHZ25SREDOMD**	420	250	250
	30	G 1 1/4 A	24.0	50	77.5	64.0	20	90.5	60	60	50	1180	**RHZ30SREDOMD**	250	250	250
	38	G 1 1/2 A	29.0	55	87.5	71.5	22	102.0	65	70	60	1670	**RHZ38SREDOMD**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

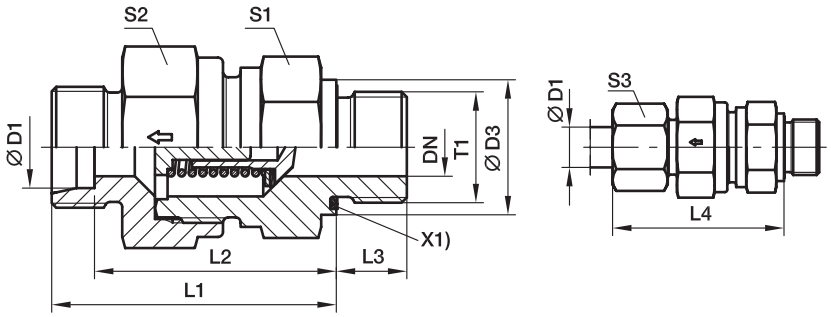
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHZ06LREDOMDCF	NBR
Steel, zinc yellow plated	A3C	RHZ06LREDOMDA3C	NBR

RHV-M-ED Non return valve

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



X1) Eolastic sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×	3.5	14	35	28.0	8	42.5	17	17	14	46	**RHV06LMEDOMD**	400	250	250
	08	M 12×1.5	5.5	17	36	29.0	12	43.5	19	19	17	58	**RHV08LMEDOMD**	400	250	250
	10	M 14×1.5	7.5	19	45.5	38.5	12	53.0	22	24	19	108	**RHV10LMEDOMD**	400	250	250
	12	M 16×1.5	9.5	22	49.5	42.5	12	57.0	27	30	22	173	**RHV12LMEDOMD**	400	250	250
	15	M 18×1.5	11.5	24	52.5	45.5	12	60.5	27	32	27	192	**RHV15LMEDOMD**	400	250	250
	18	M 22×1.5	14.0	27	57.5	50.0	14	66.0	36	36	32	298	**RHV18LMEDOMD**	400	160	160
	22	M 26×1.5	18.0	32	62.5	55.0	16	71.0	41	46	36	446	**RHV22LMEDOMD**	250	160	160
	28	M 33×2	23.0	40	70.5	63.0	18	79.5	50	55	41	722	**RHV28LMEDOMD**	250	100	100
	35	M 42×2	29.0	50	79.5	69.0	20	90.5	60	60	50	1053	**RHV35LMEDOMD**	250	100	100
	42	M 48×2	29.0	55	79.5	68.5	22	91.0	65	70	60	1563	**RHV42LMEDOMD**	250	100	100
S[4])	06	M 12×1.5	3.5	17	38.5	31.5	12	46.0	19	19	17	70	**RHV06SMEDOMD**	420	400	400
	08	M 14×1.5	3.5	19	38.5	31.5	12	46.0	19	19	19	76	**RHV08SMEDOMD**	420	400	400
	10	M 16×1.5	5.5	22	45.5	38.0	12	54.0	22	24	22	124	**RHV10SMEDOMD**	420	400	400
	12	M 18×1.5	7.5	24	48.5	41.0	12	57.0	24	27	24	157	**RHV12SMEDOMD**	420	400	400
	14	M 20×1.5	9.5	26	52.5	44.5	14	62.0	27	32	27	215	**RHV14SMEDOMD**	420	315	315
	16	M 22×1.5	11.5	27	56.5	48.0	14	66.0	32	36	30	296	**RHV16SMEDOMD**	420	315	315
	20	M 27×2	15.0	32	62.5	52.0	16	73.5	41	46	36	521	**RHV20SMEDOMD**	420	250	250
	25	M 33×2	19.0	40	66.5	54.5	18	78.5	46	50	46	648	**RHV25SMEDOMD**	420	250	250
	30	M 42×2	24.0	50	77.5	64.0	20	90.5	60	60	50	1178	**RHV30SMEDOMD**	250	250	250
	38	M 48×2	29.0	55	85.5	69.5	22	100.0	65	70	60	1627	**RHV38SMEDOMD**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

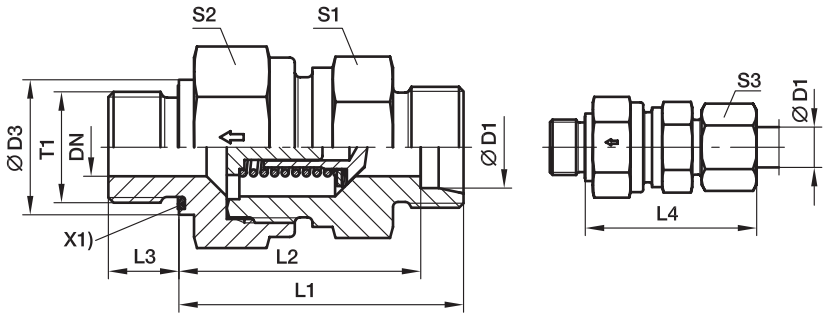
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHV06LMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	RHV06LMEDOMDA3C	NBR
Stainless steel	71	RHV06LMEDOMD71	VIT

RHZ-M-ED Non return valve

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Eolastic sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
L[3])	06	M 10×1	3.5	14	33.5	26.5	8	41.0	17	17	14	44	**RHZ06LMEDOMD**	400	250	250
	08	M 12×1.5	5.5	17	35.5	28.5	12	43.0	19	19	17	58	**RHZ08LMEDOMD**	400	250	250
	10	M 14×1.5	7.5	19	45.5	38.5	12	53.0	22	24	19	104	**RHZ10LMEDOMD**	400	250	250
	12	M 16×1.5	9.5	22	47.5	40.5	12	55.0	27	30	22	169	**RHZ12LMEDOMD**	400	250	250
	15	M 18×1.5	11.5	24	49.5	42.5	12	57.5	27	32	27	174	**RHZ15LMEDOMD**	400	250	250
	18	M 22×1.5	14.0	27	55.5	48.0	14	64.0	36	36	32	279	**RHZ18LMEDOMD**	400	160	160
	22	M 26×1.5	18.0	32	63.5	56.0	16	72.0	41	46	36	459	**RHZ22LMEDOMD**	250	160	160
	28	M 33×2	23.0	40	71.5	64.0	18	80.5	50	55	41	721	**RHZ28LMEDOMD**	250	100	100
	35	M 42×2	29.0	50	80.5	70.0	20	91.5	60	60	50	1078	**RHZ35LMEDOMD**	250	100	100
	42	M 48×2	29.0	55	81.5	70.5	22	93.0	65	70	60	1601	**RHZ42LMEDOMD**	250	100	100
S[4])	06	M 12×1.5	3.5	17	38.5	31.5	12	46.0	19	19	17	70	**RHZ06SMEDOMD**	420	400	400
	08	M 14×1.5	3.5	19	38.5	31.5	12	46.0	19	19	19	75	**RHZ08SMEDOMD**	420	400	400
	10	M 16×1.5	5.5	22	45.5	38.0	12	54.0	22	24	22	123	**RHZ10SMEDOMD**	420	400	400
	12	M 18×1.5	7.5	24	48.5	41.0	12	57.0	24	27	24	157	**RHZ12SMEDOMD**	420	400	400
	14	M 20×1.5	9.5	26	51.5	43.5	14	61.0	27	32	27	214	**RHZ14SMEDOMD**	420	315	315
	16	M 22×1.5	11.5	27	54.5	46.0	14	64.0	32	36	30	279	**RHZ16SMEDOMD**	420	315	315
	20	M 27×2	15.0	32	60.5	50.0	16	71.5	41	46	36	487	**RHZ20SMEDOMD**	420	250	250
	25	M 33×2	19.0	40	66.5	54.5	18	78.5	46	50	46	647	**RHZ25SMEDOMD**	420	250	250
	30	M 42×2	24.0	50	77.5	64.0	20	90.5	60	60	50	1180	**RHZ30SMEDOMD**	250	250	250
	38	M 48×2	29.0	55	87.5	71.5	22	102.0	65	70	60	1669	**RHZ38SMEDOMD**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

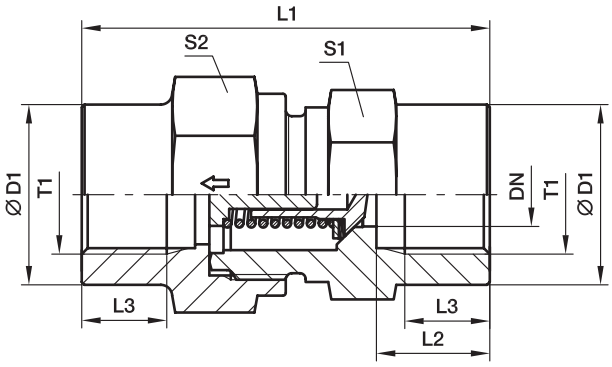
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHZ06LMEDOMDCF	NBR
Steel, zinc yellow plated	A3C	RHZ06LMEDOMDA3C	NBR
Stainless steel	71	RHZ06LMEDOMD71	VIT

RHDI Non return valve

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)



Series	T1	DN	D1	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	CF	A3C[1])	71
L[3])	G11/18	3.5	19	42.5	12.0	8.0	19	19	76	**RHDI1/8**	400	400	400
	G 1/4	3.5	19	51.0	16.0	12.0	19	19	82	**RHDI1/4**	400	400	400
	G 3/8	7.5	24	60.0	17.0	12.0	24	27	157	**RHDI3/8**	400	400	400
	G 1/2	11.5	32	72.0	20.0	15.0	32	36	344	**RHDI1/2**	315	315	315
	G 3/4	15.0	41	84.0	22.0	16.5	41	46	664	**RHDI3/4**	250	250	250
	G 1	19.0	46	95.0	25.5	19.0	46	50	821	**RHDI1**	250	250	250
	G 11/4	24.0	60	110.0	28.0	21.5	60	60	1581	**RHDI11/4**	250	250	250
	G 11/2	29.0	65	114.0	28.5	22.0	65	70	1919	**RHDI11/2**	250	250	250

[1]) Pressure shown = item deliverable

[3]) L = light series

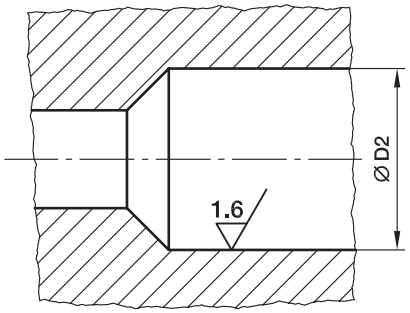
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

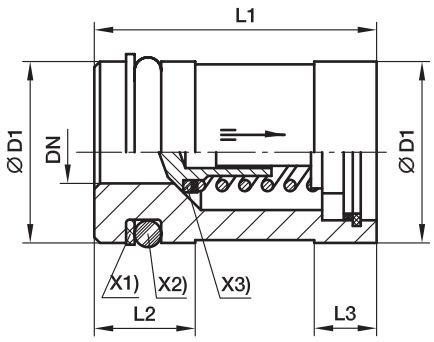
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHDI1/8CF	NBR
Steel, zinc yellow plated	A3C	RHDI1/8A3C	NBR
Stainless steel	71	RHDI1/871	VIT

RVP Non return valve cartridge





X1) Supporting ring PTFE
X2) O-ring NBR
X3) Sealing disc NBR

Valve ITL	DN	D1	D2	L1 ±0,15	L2	L3	O-ring	Supporting ring	Weight g/1 piece	Order code*	PN (bar)[1] CF	A3C	71
6-L/6u.8-S	3.5	12.945 ±0.055	13 +0.12 +0.05	23.15	9.5	6.0	8.3×2.4	SRA 13-2.05-1.0	21	**RVP13**	420	400	400
8-L/10-S	5.5	15.945 ±0.055	16 +0.12 +0.05	26.65	9.5	6.5	11.3×2.4	SRA 16-2.05-1.0	32	**RVP16**	420	400	400
10-L/12-S	7.5	19.935 ±0.065	20 +0.142 +0.065	30.15	9.5	6.5	15.3×2.4	SRA 20-2.05-1.0	54	**RVP20**	420	400	400
12-L/14-S	9.5	23.935 ±0.065	24 +0.149 +0.065	35.15	12.0	7.5	18.2×3	SRA 24-2.6-1.0	80	**RVP24**	420	315	315
15-L/16-S	11.5	26.935 ±0.065	27 +0.149 +0.065	38.15	12.0	7.5	21.2×3	SRA 27-2.6-1.0	105	**RVP27**	420	315	315
18-L/20-S	15.0	34.92 ±0.08	35 +0.18 +0.08	44.65	12.0	9.5	29.2×3	SRA 35-2.5-1.0	204	**RVP35**	420	250	250
22-L/25-S	19.0	39.92 ±0.08	40 +0.18 +0.08	50.65	12.0	11.0	34.2×3	SRA 40-2.5-1.0	275	**RVP40**	420	250	250
28-L/30-S	24.0	46.92 ±0.08	47 +0.18 +0.08	60.15	13.0	13.0	41.2×3	SRA 47-2.6-1.5	412	**RVP47**	250	250	250
35-L/38-S	29.0	54.905 ±0.095	55 +0.22 +0.1	70.15	16.0	13.0	44.2×5.7	SRA 55-5.1-1.5	607	**RVP55**	250	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

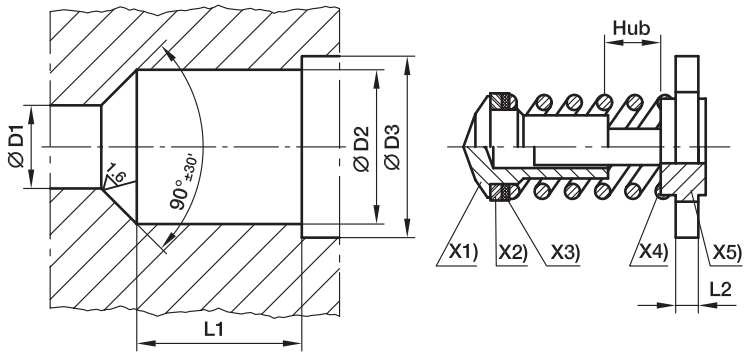
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHP13CF	NBR
Steel, zinc yellow plated	A3C	RHP13A3C	NBR
Stainless steel	71	RHP1371	VIT

*Please add the **suffixes** below according to the material/ surface required.

I-TL Internal parts of non return valve

X1) poppet
X2) sealing disc (smooth side to the poppet)
X3) cover disc
X4) spring
X5) passage disc



Series	Tube O.D.	D1 +0.1	D2 +0.1	D3 +0.1	L1 ±0.1	L2	Hub	Weight g/1 piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] 71
L/S/S	06/06/08	3.5	7.5	8.6	8.2	2.0	1.0	2	**ITL06L/06+08S**	*	*
L/S	08/10	5.5	10.2	11.6	11.0	2.0	1.7	4	**ITL08L/10S**	*	*
L/S	10/12	7.5	13.0	14.1	14.0	2.0	2.3	7	**ITL10L/12S**	*	*
L/S	12/14	9.5	16.7	18.1	16.5	2.5	2.9	13	**ITL12L/14S**	*	*
L/S	15/16	11.5	19.5	20.6	19.0	2.5	3.5	18	**ITL15L/16S**	*	*
L/S	18/20	15.0	25.2	27.1	22.5	3.0	4.4	37	**ITL18L/20S**	*	*
L/S	22/25	19.0	30.8	32.6	27.0	3.0	5.5	54	**ITL22L/25S**	*	*
L/S	28/30	24.0	38.6	40.6	32.5	3.5	7.3	107	**ITL28L/30S**	*	*
L/L/S	35/38/42	29.0	45.7	48.1	37.5	3.5	8.9	144	**ITL35L+42I/38S**	*	*

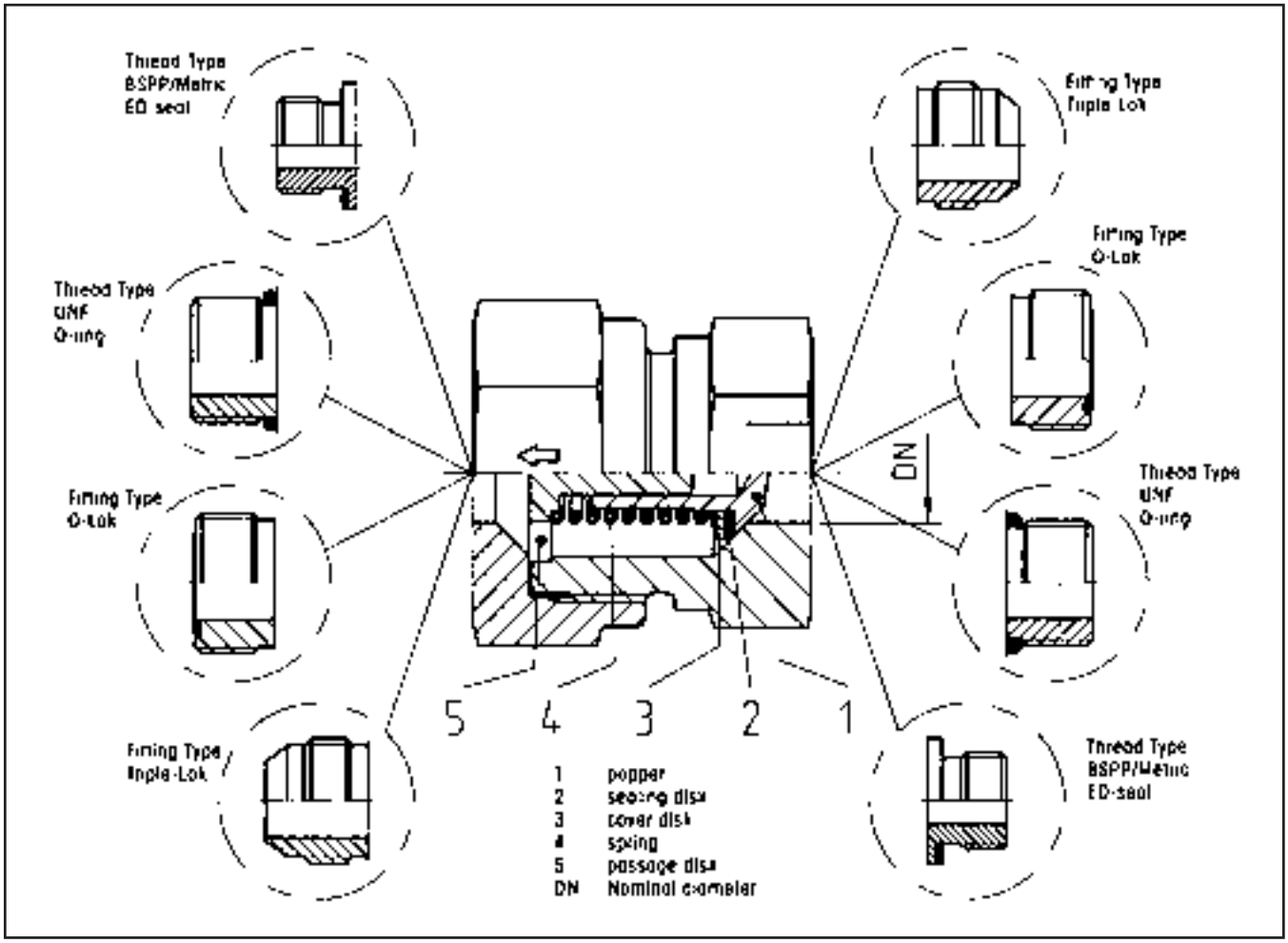
* = item deliverable

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc yellow plated	A3C	ITL06L/06+008S	NBR
Stainless steel	71	ITL06L71/06+008S	VIT

RHD/V/Z Non return valves with O-Lok® or Triple-Lok® connections



Material:

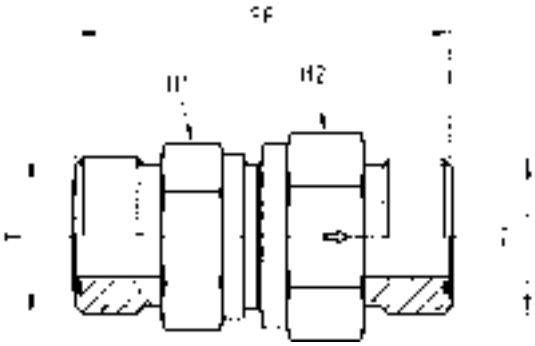
- Steel zinc-plated (A3C) or (CF chromium^{6}-free), seals in NBR (e.g. Perbunan)
- Internal parts in stainless steel with FKM (Viton®) also available on request.

Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont

O

RHDMLOS Non return valve

O-Lok® ORFS end / O-Lok® ORFS end



Tube 1 O.D.		Tube 2 O.D.		ORFS (UN/UNF thread	ORFS (UN/UNF) thread				DN (Nom.	Weight		PN (bar)[1])	
mm	Inch	mm	Inch	T	T1	H1	H2	FF	diam.)	g/1 piece	Order code*	CF	A3C
6	1/4	6	1/4	9/16-18UNF	9/16-18UNF	19	19	44.5	3.5	108	**4RHDMLOS**	420	400
8, 10	5/16, 3/8	8, 10	5/16, 3/8	11/16-16UNF	11/16-16UNF	22	24	53.5	5.5	188	**6RHDMLOS**	420	400
12	1/2	12	1/2	13/16-16UNF	13/16-16UNF	24	27	59.5	7.5	223	**8RHDMLOS**	420	400
14, 15, 16	5/8	14, 15, 16	5/8	1-14UNF	1-14UNF	32	36	70.5	11.5	428	**10RHDMLOS**	420	315
18, 20	3/4	18, 20	3/4	1 3/16-12UNF	1 3/16-12UNF	41	46	77.5	15.0	731	**12RHDMLOS**	420	250
22, 25	1	22, 25	1	1 7/16-12UNF	1 7/16-12UNF	46	50	81.5	19.0	1076	**16RHDMLOS**	420	250
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 11/16-12UNF	1 11/16-12UNF	60	60	91.5	24.0	1630	**20RHDMLOS**	250	250
35, 38	1 1/2	35, 38	1 1/2	2-12UNF	2-12UNF	65	70	98.5	29.0	2362	**24RHDMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

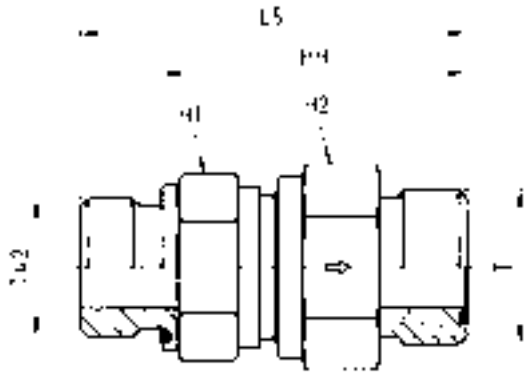
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4RHDMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHDMLOS	NBR

RHV42EDMLOS Non return valve

Male BSPP thread – ED-seal (ISO 1179) / O-Lok® ORFS end



Tube O.D. mm	Tube O.D. Inch	BSPP thread T42	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	G 1/8	9/16-18UNF	19	19	44.5	36.5	3.5	92	**4RHV42EDMLOS**	420	400
8, 10	5/16, 3/8	G 1/4	11/16-16UNF	22	24	56.5	44.5	6.5	165	**6RHV42EDMLOS**	420	400
12	1/2	G 3/8	13/16-16UNF	24	27	61.5	49.5	7.5	191	**8RHV42EDMLOS**	420	400
14, 15, 16	5/8	G 1/2	1-14UNF	32	36	70.0	56.0	11.5	366	**10RHV42EDMLOS**	420	315
18, 20	3/4	G 3/4	1 3/16-12UNF	41	46	77.5	63.5	15.0	631	**12RHV42EDMLOS**	420	250
22, 25	1	G 1	1 7/16-12UNF	46	50	84.0	66.0	19.0	863	**16RHV42EDMLOS**	420	250
28, 30, 32	1 1/4	G 1 1/4	1 11/16-12UNF	60	60	95.0	75.0	24.0	1403	**20RHV42EDMLOS**	250	250
35, 38	1 1/2	G 1 1/2	2-12UNF	65	70	105.0	83.0	29.0	1969	**24RHV42EDMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

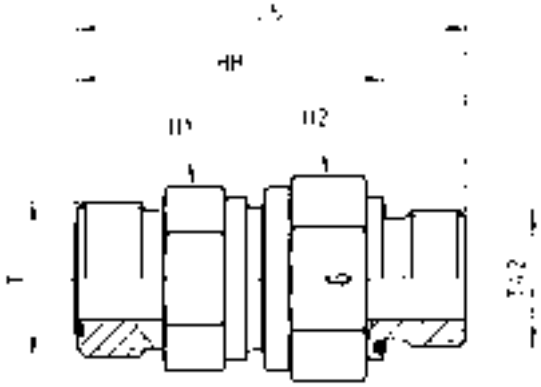
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome^6-free	CF	4RHV42EDMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHV42EDMLOS	NBR

RHZ42EDMLOS Non return valve

O-Lok® ORFS end / Male BSPP thread – ED-seal (ISO 1179)



Tube O.D. mm	Tube O.D. Inch	BSPP thread T42	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	G 1/8	9/16-18UNF	19	19	44.5	36.5	3.5	91	**4RHZ42EDMLOS**	420	400
8, 10	5/16, 3/8	G 1/4	11/16-16UNF	22	24	56.5	44.5	6.5	161	**6RHZ42EDMLOS**	420	400
12	1/2	G 3/8	13/16-16UNF	24	27	61.5	49.5	7.5	190	**8RHZ42EDMLOS**	420	400
14, 15, 16	5/8	G 1/2	1-14UNF	32	36	70.0	56.0	11.5	348	**10RHZ42EDMLOS**	420	315
18, 20	3/4	G 3/4	1 3/16-12UNF	41	46	77.5	53.5	15.0	634	**12RHZ42EDMLOS**	420	250
22, 25	1	G 1	1 7/16-12UNF	46	50	84.0	66.0	19.0	863	**16RHZ42EDMLOS**	420	250
28, 30, 32	1 1/4	G 1 1/4	1 11/16-12UNF	60	60	95.0	75.0	24.0	1397	**20RHZ42EDMLOS**	250	250
35, 38	1 1/2	G 1 1/2	2-12UNF	65	70	105.0	83.0	29.0	2001	**24RHZ42EDMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

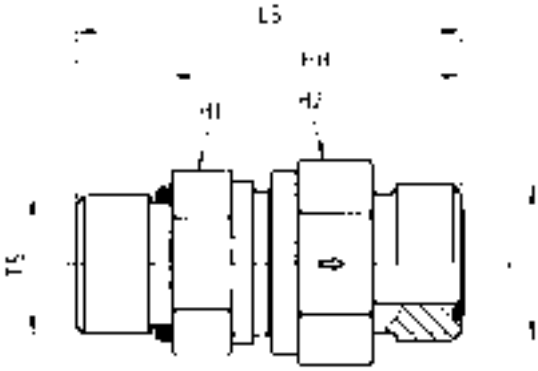
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome^6-free	CF	4RHZ42EDMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHZ42EDMLOS	NBR

RHV5OMLOS Non return valve

Male UN/UNF thread – O-ring (ISO 11926) / O-Lok® ORFS end



Tube O.D. mm	Tube O.D. Inch	UNF male thread T5	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	7/16-20UNF	9/16-18UNF	19	19	45.5	34.5	3.5	92	**4RHV5OMLOS**	420	400
8, 10	5/16, 3/8	9/16-18UNF	11/16-16UNF	22	24	54.5	42.5	5.5	165	**6RHV5OMLOS**	420	400
12	1/2	3/4-16UNF	13/16-16UNF	24	27	60.5	46.5	5.5	165	**8RHV5OMLOS**	420	400
14, 15, 16	5/8	7/8-14UNS	1-14UNF	32	36	71.0	55.0	11.5	366	**10RHV5OMLOS**	420	315
18, 20	3/4	1 1/16-12UN	1 3/16-12UNF	41	46	79.0	60.5	15.0	631	**12RHV5OMLOS**	420	250
22, 25	1	1 5/16-12UN	1 7/16-12UNF	46	50	82.5	64.0	19.0	863	**16RHV5OMLOS**	420	250
28, 30, 32	1 1/4	1 5/8-12UN	1 11/16-12UNF	60	60	92.5	74.0	24.0	1403	**20RHV5OMLOS**	250	250
35, 38	1 1/2	1 7/8-12UN	2-12UNF	65	70	99.5	81.0	29.0	1969	**24RHV5OMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

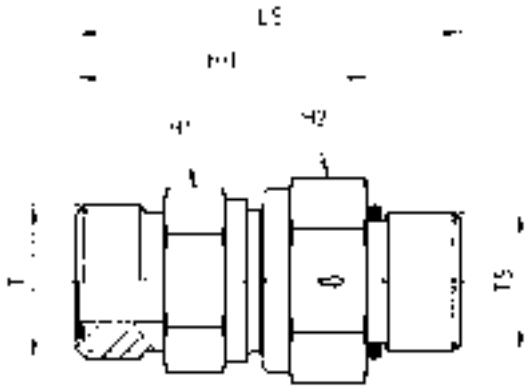
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHV5OMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHV5OMLOS	NBR

RHZ5OMLOS Non return valve

O-Lok® ORFS end / Male UN/UNF thread – O-ring (ISO 11926)



Tube O.D. mm	Tube O.D. Inch	UNF male thread T5	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
6	1/4	7/16-20UNF	9/16-18UNF	19	19	45.5	34.5	3.5	91	**4RHZ5OMLOS**	420	400
8, 10	5/16, 3/8	9/16-18UNF	11/16-16UNF	22	24	54.5	42.5	5.5	161	**6RHZ5OMLOS**	420	400
12	1/2	3/4-16UNF	13/16-16UNF	24	27	60.5	46.5	5.5	161	**8RHZ5OMLOS**	420	400
14, 15, 16	5/8	7/8-14UNS	1-14UNF	32	36	71.0	55.0	11.5	348	**10RHZ5OMLOS**	420	315
18, 20	3/4	1 1/16-12UN	1 3/16-12UNF	41	46	79.0	60.5	15.0	634	**12RHZ5OMLOS**	420	250
22, 25	1	1 5/16-12UN	1 7/16-12UNF	46	50	82.5	64.0	19.0	863	**16RHZ5OMLOS**	420	250
28, 30, 32	1 1/4	1 5/8-12UN	1 11/16-12UNF	60	60	92.5	74.0	24.0	1397	**20RHZ5OMLOS**	250	250
35, 38	1 1/2	1 7/8-12UN	2-12UNF	65	70	99.5	81.0	29.0	2001	**24RHZ5OMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

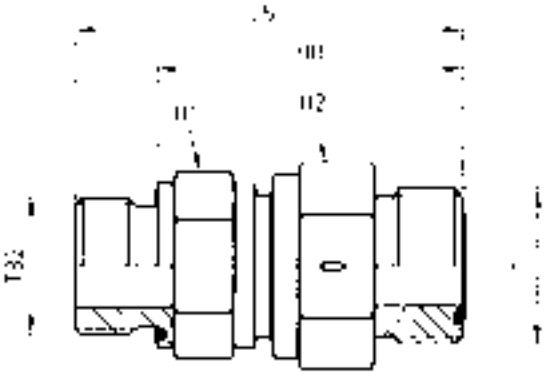
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4RHZ5OMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHZ5OMLOS	NBR

RHV82EDMLOS Non return valve

Male metric thread – ED-seal (ISO 9974) / O-Lok® ORFS end



Tube O.D. mm	Tube O.D. Inch	metric thread T82	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	M12×1.5	9/16-18UNF	19	19	48.5	36.5	3.5	89	**4M12RHV82EDMLOS**	420	400
8, 10	5/16, 3/8	M16×1.5	11/16-16UNF	22	24	56.5	44.5	5.5	157	**6M16RHV82EDMLOS**	420	400
12	1/2	M18×1.5	13/16-16UNF	24	27	61.5	49.5	7.5	195	**8M18RHV82EDMLOS**	420	400
14, 15, 16	5/8	M22×1.5	1-14UNF	32	36	72.0	58.0	11.5	369	**10M22RHV82EDMLOS**	420	315
18, 20	3/4	M27×2.0	1 3/16-12UNF	41	46	79.5	63.5	15.0	628	**12M27RHV82EDMLOS**	420	250
22, 25	1	M33×2.0	1 7/16-12UNF	46	50	84.0	66.0	19.0	867	**16M33RHV82EDMLOS**	420	250
28, 30, 32	1 1/4	M42×2.0	1 11/16-12UNF	60	60	95.0	75.0	24.0	1409	**20M42RHV82EDMLOS**	250	250
35, 38	1 1/2	M48×2.0	2-12UNF	65	70	103.0	81.0	29.0	1970	**24M48RHV82EDMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

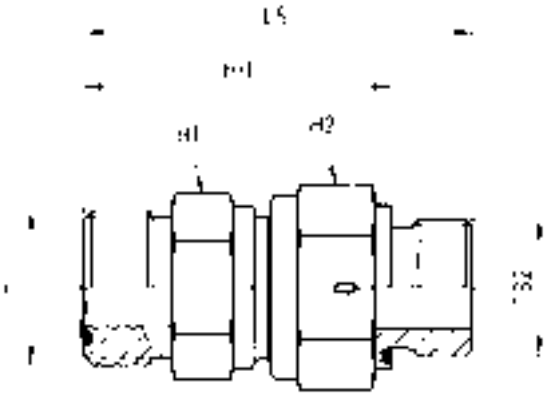
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome^6-free	CF	4M12RHV82EDMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4M12RHV82EDMLOS	NBR

RHZ82EDMLOS Non return valve

O-Lok® ORFS end / Male metric thread – ED-seal (ISO 9974)



Tube O.D. mm	Tube O.D. Inch	metric thread T82	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
6	1/4	M12×1.5	9/16-18UNF	19	19	48.5	36.5	3.5	89	**4M12RHZ82EDMLOS**	420	400
8, 10	5/16, 3/8	M16×1.5	11/16-16UNF	22	24	56.5	44.5	5.5	156	**6M16RHZ82EDMLOS**	420	400
12	1/2	M18×1.5	13/16-16UNF	24	27	61.5	49.5	7.5	195	**8M18RHZ82EDMLOS**	420	400
14, 15, 16	5/8	M22×1.5	1-14UNF	32	36	70.0	56.0	11.5	352	**10M22RHZ82EDMLOS**	420	315
18, 20	3/4	M27×2.0	1 3/16-12UNF	41	46	77.5	61.5	15.0	608	**12M27RHZ82EDMLOS**	420	250
22, 25	1	M33×2.0	1 7/16-12UNF	46	50	84.0	66.0	19.0	965	**16M33RHZ82EDMLOS**	420	250
28, 30, 32	1 1/4	M42×2.0	1 11/16-12UNF	60	60	95.0	75.0	24.0	1396	**20M42RHZ82EDMLOS**	250	250
35, 38	1 1/2	M48×2.0	2-12UNF	65	70	115.0	93.0	29.0	1978	**24M48RHZ82EDMLOS**	250	250

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

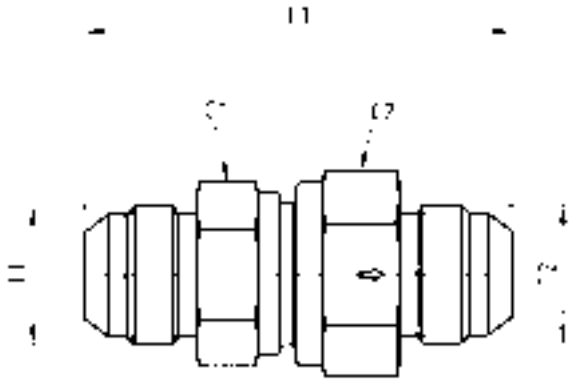
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4M12RHZ82EDMLOSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4M12RHZ82EDMLOS	NBR

RHDMTXS Non return valve

Triple-Lok® 37° flare end / Triple-Lok® 37° flare end



Tube 1 O.D.		Tube 2 O.D.		Thread JIC SAE	Thread JIC SAE				DN (Nom.	Weight		PN (bar)[1])	
mm	Inch	mm	Inch	T1	T2	C1	C2	L1	diam.)	g/1 piece	Order code*	CF	A3C
6	1/4	6	1/4	7/16-20UNF	7/16-20UNF	19	19	52.5	3.5	108	**4RHDMTXS**	420	350
8	5/16	8	5/16	1/2-20UNF	1/2-20UNF	22	24	59.5	5.5	188	**5RHDMTXS**	420	350
10	3/8	10	3/8	9/16-18UNF	9/16-18UNF	24	27	61.5	7.5	223	**6RHDMTXS**	420	350
12	1/2	12	1/2	3/4-16UNF	3/4-16UNF	27	32	69.5	9.5	324	**8RHDMTXS**	420	315
14, 15, 16	5/8	14, 15, 16	5/8	7/8-14UNF	7/8-14UNF	32	36	78.5	11.5	428	**10RHDMTXS**	350	315
18, 20	3/4	18, 20	3/4	1 1/16-12UN	1 1/16-12UN	41	46	87.5	15.0	731	**12RHDMTXS**	350	250
25	1	25	1	1 5/16-12UN	1 5/16-12UN	46	50	92.5	19.0	1076	**16RHDMTXS**	280	250
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 5/8-12UN	1 5/8-12UN	60	60	105.5	24.0	1630	**20RHDMTXS**	250	210
35, 38	1 1/2	35, 38	1 1/2	1 7/8-12UN	1 7/8-12UN	65	70	118.5	29.0	2362	**24RHDMTXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

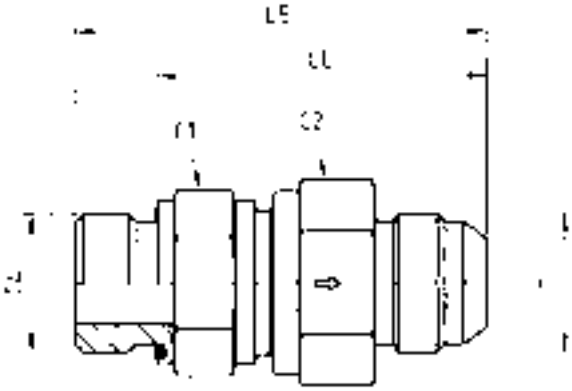
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4RHDMTXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHDMTXS	NBR

RHV42EDMXS Non return valve

Male BSPP thread – ED-seal (ISO 1179) / Triple-Lok® 37° flare end



Tube O.D. mm	Tube O.D. Inch	BSPP thread T4	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	G 1/8	7/16-20UNF	19	19	48.0	40.0	3.5	92	**4RHV42EDMXS**	420	350
8	5/16	G 1/4	1/2-20UNF	22	24	59.5	47.5	5.5	165	**5-4RHV42EDMXS**	420	350
10	3/8	G 1/4	9/16-18UNF	24	27	62.0	50.0	7.5	191	**6RHV42EDMXS**	420	350
12	1/2	G 3/8	3/4-16UNF	27	32	67.0	55.0	9.5	277	**8RHV42EDMXS**	420	315
14, 15, 16	5/8	G 1/2	7/8-14UNS	32	36	76.0	62.0	11.5	366	**10RHV42EDMXS**	350	315
18, 20	3/4	G 3/4	1 1/16-12UN	41	46	84.5	68.5	15.0	631	**12RHV42EDMXS**	350	250
25	1	G 1	1 5/16-12UN	46	50	89.5	71.5	19.0	863	**16RHV42EDMXS**	280	250
28, 30, 32	1 1/4	G 1 1/4	1 5/8-12UN	60	60	102.0	82.0	24.0	1403	**20RHV42EDMXS**	250	210
35, 38	1 1/2	G 1 1/2	1 7/8-12UN	65	70	113.0	91.0	29.0	1969	**24RHV42EDMXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

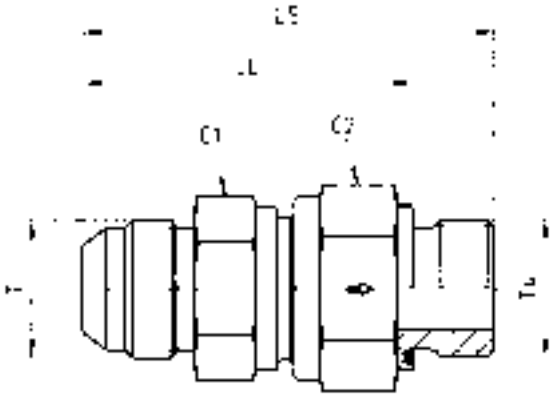
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4RHV42EDMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHV42EDMXS	NBR

RHZ42EDMXS Non return valve

Triple-Lok® 37° flare end / Male BSPP thread – ED-seal (ISO 1179)



Tube O.D. mm	Tube O.D. Inch	BSPP thread T4	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	G 1/8	7/16-20UNF	19	19	48.0	40.0	3.5	89	**4RHZ42EDMXS**	420	350
8	5/16	G 1/4	1/2-20UNF	22	24	59.0	47.0	5.5	156	**5-4RHZ42EDMXS**	420	350
10	3/8	G 1/4	9/16-18UNF	24	27	62.0	50.0	7.5	190	**6RHZ42EDMXS**	420	350
12	1/2	G 3/8	3/4-16UNF	27	32	66.0	54.0	9.5	278	**8RHZ42EDMXS**	420	315
14, 15, 16	5/8	G 1/2	7/8-14UNS	32	36	74.0	60.0	11.5	348	**10RHZ42EDMXS**	350	315
18, 20	3/4	G 3/4	1 1/16-12UN	41	46	82.5	66.5	15.0	634	**12RHZ42EDMXS**	350	250
25	1	G 1	1 5/16-12UN	46	50	89.5	71.5	19.0	863	**16RHZ42EDMXS**	280	250
28, 30, 32	1 1/4	G 1 1/4	1 5/8-12UN	60	60	102.0	82.0	24.0	1397	**20RHZ42EDMXS**	250	210
35, 38	1 1/2	G 1 1/2	1 7/8-12UN	65	70	115.0	93.0	29.0	2001	**24RHZ42EDMXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

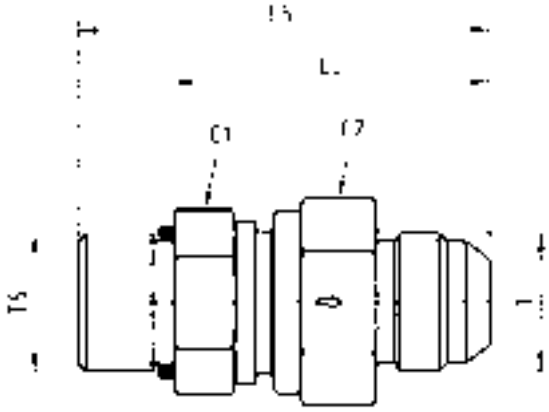
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome^6-free	CF	4RHZ42EDMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHZ42EDMXS	NBR

RHV5OMXS Non return valve

Male UN/UNF thread – O-ring (ISO 11926) / Triple-Lok® 37° flare end



Tube O.D. mm	Tube O.D. Inch	Thread UNF T5	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
6	1/4	7/16-20UNF	7/16-18UNF	19	19	49.5	38.5	3.5	92	**4RHV5OMXS**	420	350
8	5/16	1/2-20UNF	1/2-20UNF	22	24	56.5	45.5	5.5	165	**5RHV5OMXS**	420	350
10	3/8	9/16-18UNF	9/16-18UNF	24	27	59.5	47.5	7.5	191	**6RHV5OMXS**	420	350
12	1/2	3/4-16UNF	3/4-16UNF	27	32	66.5	52.5	9.5	277	**8RHV5OMXS**	420	315
14, 15, 16	5/8	7/8-14UNS	7/8-14UNS	32	36	75.0	59.0	11.5	366	**10RHV5OMXS**	350	315
18, 20	3/4	1 1/16-12UN	1 1/16-12UN	41	46	84.0	65.5	15.0	631	**12RHV5OMXS**	350	250
25	1	1 5/16-12UN	1 5/16-12UN	46	50	88.0	69.5	19.0	863	**16RHV5OMXS**	280	250
28, 30, 32	1 1/4	1 5/8-12UN	1 5/8-12UN	60	60	99.5	81.0	24.0	1403	**20RHV5OMXS**	250	210
35, 38	1 1/2	1 7/8-12UN	1 7/8-12UN	65	70	109.5	91.0	29.0	1969	**24RHV5OMXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

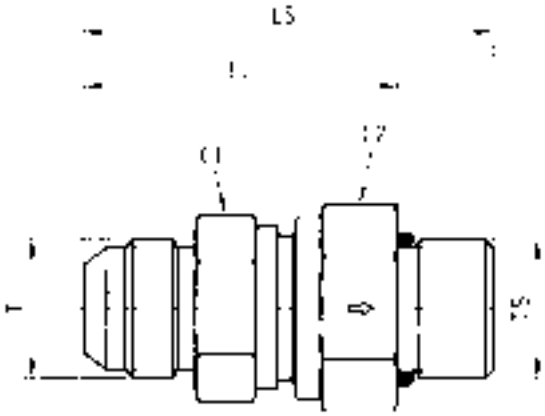
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	RHV5OMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHV5OMXS	NBR

RHZ5OMXS Non return valve

Triple-Lok® 37° flare end / Male UN/UNF thread – O-ring (ISO 11926)



Tube O.D. mm	Tube O.D. Inch	Thread UNF T5	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
6	1/4	7/16-20UNF	7/16-18UNF	19	19	49.5	38.5	3.5	91	**4RHZ5OMXS**	420	350
8	5/16	1/2-20UNF	1/2-20UNF	22	24	56.5	45.5	5.5	161	**5RHZ5OMXS**	420	350
10	3/8	9/16-18UNF	9/16-18UNF	24	27	59.5	47.5	7.5	190	**6RHZ5OMXS**	420	350
12	1/2	3/4-16UNF	3/4-16UNF	27	32	66.5	52.5	9.5	278	**8RHZ5OMXS**	420	315
14, 15, 16	5/8	7/8-14UNS	7/8-14UNS	32	36	75.0	59.0	11.5	348	**10RHZ5OMXS**	350	315
18, 20	3/4	1 1/16-12UN	1 1/16-12UN	41	46	84.0	65.5	15.0	634	**12RHZ5OMXS**	350	250
25	1	1 5/16-12UN	1 5/16-12UN	46	50	88.0	69.5	19.0	863	**16RHZ5OMXS**	280	250
28, 30, 32	1 1/4	1 5/8-12UN	1 5/8-12UN	60	60	99.5	81.0	24.0	1397	**20RHZ5OMXS**	250	210
35, 38	1 1/2	1 7/8-12UN	1 7/8-12UN	65	70	109.5	91.0	29.0	2001	**24RHZ5OMXS**	210	240

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

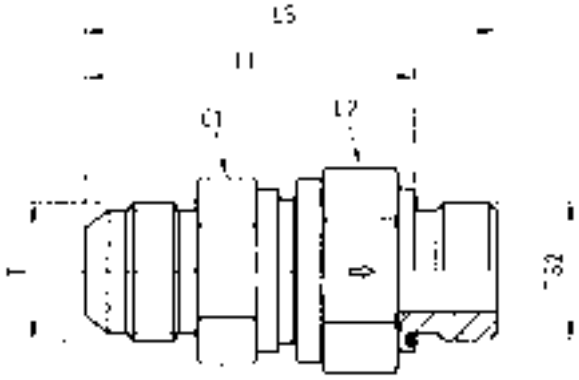
O

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome^6-free	CF	4RHZ5OMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4RHZ5OMXS	NBR

RHV82EDMXS Non return valve

Male metric thread – ED-seal (ISO 9974) / Triple-Lok® 37° flare end



Tube O.D. mm	Tube O.D. Inch	Metric thread T82	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
6	1/4	M10×1.0	7/16-20UNF	19	19	48.0	40.0	3.5	89	**4M10RHV82EDMXS**	420	350
8	5/16	M12×1.5	1/2-20UNF	22	24	59.5	47.5	5.5	157	**5M12RHV82EDMXS**	420	350
10	3/8	M14×1.5	9/16-18UNF	24	27	62.0	50.0	7.5	195	**6M14RHV82EDMXS**	420	350
12	1/2	M16×1.5	3/4-16UNF	27	32	67.0	55.0	9.5	274	**8M16RHV82EDMXS**	420	315
14, 15, 16	5/8	M18×1.5	7/8-14UNS	32	36	73.5	61.5	11.5	369	**10M18RHV82EDMXS**	350	315
18, 20	3/4	M27×2.0	1 1/16-12UN	41	46	84.5	68.5	15.0	628	**12M27RHV82EDMXS**	350	160
25	1	M33×2.0	1 5/16-12UN	46	50	89.5	71.5	19.0	867	**16M33RHV82EDMXS**	280	250
28, 30, 32	1 1/4	M42×2.0	1 5/8-12UN	60	60	102.0	82.0	24.0	1409	**20M42RHV82EDMXS**	250	210
35, 38	1 1/2	M48×2.0	1 7/8-12UN	65	70	113.0	91.0	29.0	1970	**24M48RHV82EDMXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

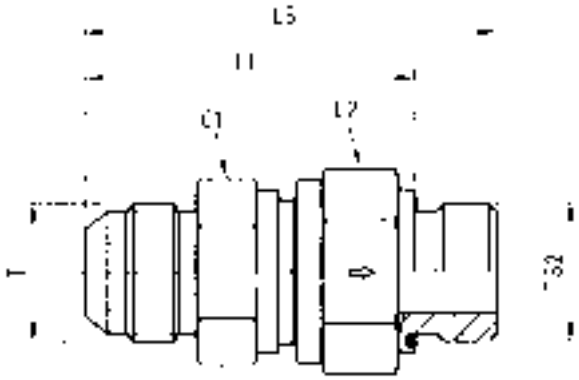
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4M10RHV82EDMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4M10RHV82EDMXS	NBR

RHZ82EDMXS Non return valve

Triple-Lok® 37° flare end / Male metric thread – ED-seal (ISO 9974)



Tube O.D. mm	Tube O.D. Inch	Metric thread T82	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar)[1]) CF	PN (bar)[1]) A3C
6	1/4	M10×1.0	7/16-20UNF	19	19	48.0	40.0	3.5	89	**4M10RHZ82EDMXS**	420	350
8	5/16	M12×1.5	1/2-20UNF	22	24	59.5	47.5	5.5	156	**5M12RHZ82EDMXS**	420	350
10	3/8	M14×1.5	9/16-18UNF	24	27	62.0	50.0	7.5	195	**6M14RHZ82EDMXS**	420	350
12	1/2	M16×1.5	3/4-16UNF	27	32	66.0	54.0	9.5	272	**8M16RHZ82EDMXS**	420	315
14, 15, 16	5/8	M18×1.5	7/8-14UNS	32	36	71.5	59.5	11.5	352	**10M18RHZ82EDMXS**	350	315
18, 20	3/4	M27×2.0	1 1/16-12UN	41	46	82.5	66.5	15.0	608	**12M27RHZ82EDMXS**	350	250
25	1	M33×2.0	1 5/16-12UN	46	50	89.5	71.5	19.0	965	**16M33RHZ82EDMXS**	280	250
28, 30, 32	1 1/4	M42×2.0	1 5/8-12UN	60	60	102.0	82.0	24.0	1396	**20M42RHZ82EDMXS**	250	210
35, 38	1 1/2	M48×2.0	1 7/8-12UN	65	70	115.0	93.0	29.0	1807	**24M48RHZ82EDMXS**	210	140

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	4M10RHZ82EDMXSCF	NBR
Steel, zinc yellow plated	A3C (no suffix needed)	4M10RHZ82EDMXS	NBR

DV Shut-off valve PN 10 – Casing DIN 3512

EO 24° cone end / EO 24° cone end

(with internal threaded spindle)
For cold and warm water* up to 80°C, compressed air, mineral oils and fuel oils types EL and L, 6 bar and up to 80°C.
The pressure specification PN for hand-operated shut-off valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

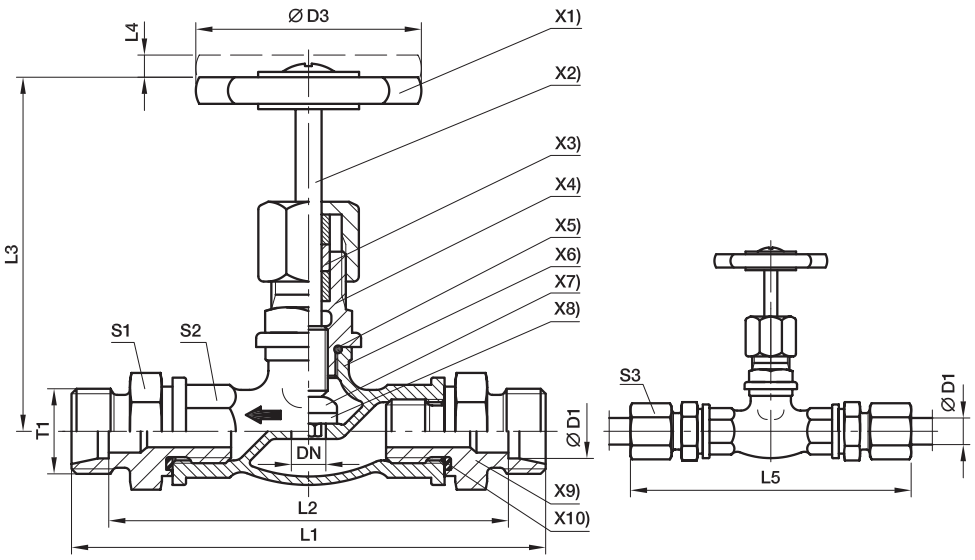
Caution!
Please note the admissible pressure ratings for the EO-tube ends.

DVAE
EO tube end ⇐ male BSPP

DVAA
male BSPP ⇐ EO tube end

DV-valves with male BSPP thread on request.

*Indicate type of water or additive if any



X1) **Hand wheel:** material: Polyamid
X2) **Spindle:** material: Brass 2.0401
X3) **Stuffing boxpacking:** PTFE Compound
X4) **Haed piece:** material: Brass 2.0401
X5) **Sealing:** O-ring NBR (e. g. Perbunan)
X6) **Casing:** material: Brass 2.0340.02
X7) **Valve cone:** material: Brass 2.0401
X8) **Shut-off sealing:** NBR (e. g. Perbunan)
X9) **Male stud fitting:** material: Brass 2.0540
X10) **Sealing:** Eolastic-sealing NBR (e. g. Perbunan)

Series	D1	T1	DN	D3	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] without surface
L[3]	06	M 12×1.5	5	50	102	88	63	7	117	22	21	14	313	**DV06LX**	10
	08	M 14×1.5	6	50	102	88	63	7	117	22	21	17	305	**DV08LX**	10
	10	M 16×1.5	8	50	104	90	63	7	119	22	21	19	308	**DV10LX**	10
	12	M 18×1.5	10	50	104	90	63	7	119	22	21	22	304	**DV12LX**	10
	15	M 22×1.5	12	50	107	93	65	8	123	27	25	27	426	**DV15LX**	10
	18	M 26×1.5	16	50	109	94	67	8	126	27	25	32	434	**DV18LX**	10
	22	M 30×2	20	60	123	108	67	8	140	32	32	36	670	**DV22LX**	10
	28	M 36×2	25	60	140	125	95	10	158	41	38	41	1030	**DV28LX**	10
	35	M 45×2	32	70	166	145	102	10	188	50	47	50	1640	**DV35LX**	10

[1]) Pressure shown = item deliverable

[3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Brass 2.0340.02	without	DV06LX	PTFE / NBR

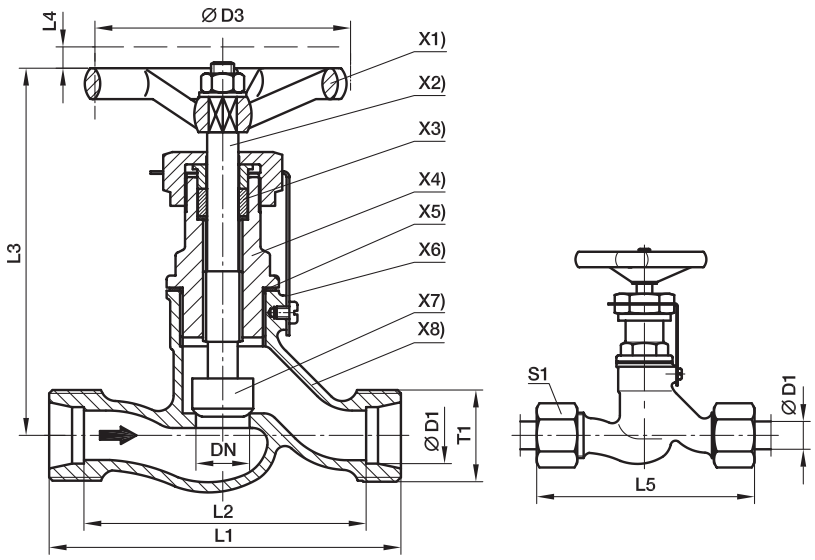
LD Shut-off valve PN 40

EO 24° cone end / EO 24° cone end

(with internal threaded spindle)
For hydraulic oil, mineral, oil, fuel oil, Diesel, water* etc. Temperature up to 150°C. For steam up to 10 bar.
For compressed air up to 35 bar on request. CS DIN 86501 Rg.-N.

The pressure specification PN for hand-operated shut-off valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

Caution!
Please note the admissible pressure ratings for the EO-tube ends.



X1) **Hand wheel:** Plastic material typ 74 according to DIN 388 Form C
X2) **Spindle:** with internal thread. Material: Cu Zn 35 Ni 2
X3) **Stuffing box packing:** Graphite
X4) **Head piece:** material: Cu Zn 39 Pb 3
X5) **Sealing:** Copper ring
X6) **Locking plates:** material: St. 37/zinc plated
X7) **Valve cone:** loose tip material: Cu Zn 35 Ni 2
X8) **Casing:** material: G-Cu Sn 5Zn Pb (Rg 5 according to DIN 1705)

EO-tube connection:
for **copper** tubes nuts, cutting and locking rings of brass

Attention:
for **steel** tubes: nuts, progressive rings of steel
specify when ordering
We recommend pre-installation in hardened pre-installation body (see assembly instructions)

Series	D1	T1	DN	D3	L1	L2	L3	L4	L5	S1	Weight g/1 piece	Order code*	PN (bar)[1] without surface
S[4]	10	M18×1.5	6	63	60	45	98	7	77	22	383	**LD10SX**	40
	12	M20×1.5	8	63	64	49	98	7	81	24	401	**LD12SX**	40
	14	M22×1,5	10	63	70	54	98	7	89	27	417	**LD14SX**	40
	16	M24×1.5	12	80	84	67	110	9	103	30	631	**LD16SX**	40
	20	M30×2	16	80	90	69	110	9	112	36	688	**LD20SX**	40
	25	M36×2	20	100	110	86	129	12	134	46	1191	**LD25SX**	40
	30	M42×2	25	100	120	93	129	12	146	50	1322	**LD30SX**	40
	38	M52×2	32	100	140	108	158	12	169	60	2268	**LD38SX**	40

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

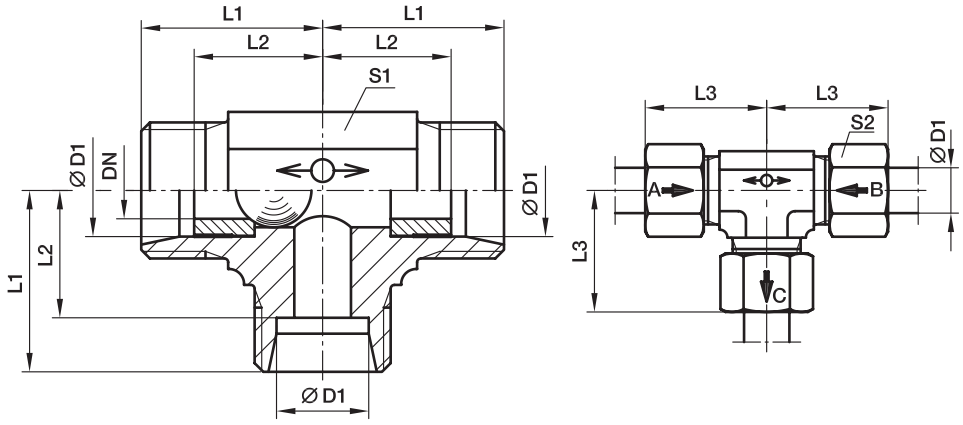
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Gunmetal (Rg 5) 2.1096	without	LD10SX	Graphit / Metal

WV Alternating valve

EO 24° cone end / EO 24° cone end / EQ 24° cone end

These valves permit the passage of flow from either inlet 1 or 2 to the outlet port whilst shutting of the inlet port not in use.
The shutting off, of an inlet is achieved by a floating ball bearing which moves by the pressure of the flow.



Material: steel
Surface finish: Zinc plated and yellow chromated (A3C).

Valves are not recommended for cmpressed air and gases.
WV-valves are not to be used in connection with weld nipples, swivel nuts etc. where there is no contact with a shoulder stop in the inner cone.

Temperature range without pressure reductions: –40°C up to +120°C.

Recommended fitting position as shown in the picture.

Leakage rate for alternating valves (hydraulic test with test pressure = P_{max}: approx. 20 drops (test period of 1 minute).

Directions of flow:

$D_1 \rightarrow D_3 = D_2$ closed
$D_2 \rightarrow D_3 = D_1$ closed

Series	D1	T1	DN	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] A3C
L[3])	8	M 14×1.5	4,5	21	14	29	14	17	53	**WV08LOMD**	160	160
	10	M 16×1.5	6,0	22	15	30	17	19	73	**WV10LOMD**	160	160
	12	M 18×1.5	7,5	24	17	32	19	22	96	**WV12LOMD**	160	160
	15	M 22×1.5	10,0	28	21	36	19	27	134	**WV15LOMD**	160	160

[1]) Pressure shown = item deliverable

[3]) L = light series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

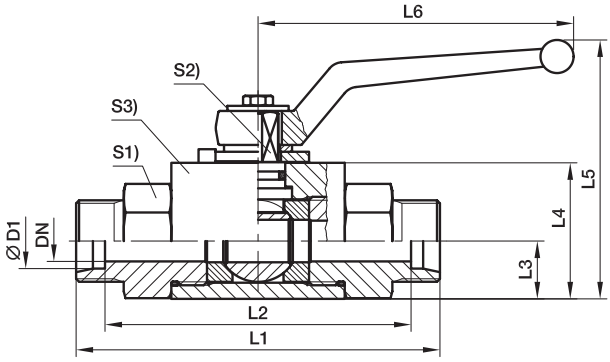
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

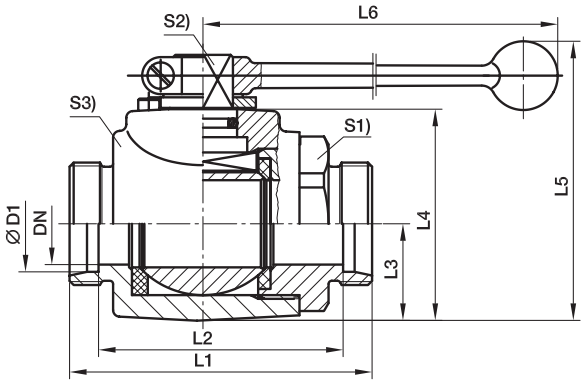
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated., chrome[6]-free	CF	WV08LOMDCF	Steel ball
Steel, zinc yellow plated	A3C	WV08LOMDA3C	Steel ball

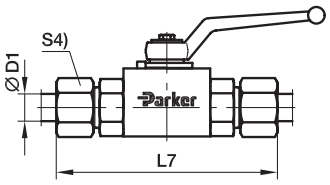
KH 2-way ball valve steel

EO 24° cone end / EO 24° cone end

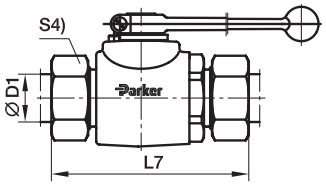




DN 4-25



DN 32-40



Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar)[1] bronzed
L[3]	06	4	67	53	10.0	25	55.0	76	82	19	7	20	14	195	**KH06LX**	500
	08	6	67	53	10.0	25	55.0	76	82	19	7	20	17	190	**KH08LX**	500
	10	8	75	61	14.5	35	68.0	100	90	24	8	30	19	420	**KH10LX**	500
	12	10	75	61	14.5	35	68.0	100	90	24	8	30	22	410	**KH12LX**	500
	15	12	83	69	17.0	40	92.0	112	99	30	10	35	27	631	**KH15LX**	500
	18	16	82	67	20.0	45	105.0	166	99	36	11	45	32	850	**KH18LX**	400
	22	20	99	84	24.0	55	113.0	187	116	41	14	45	36	1210	**KH22LX**	400
	28	25	108	93	26.0	60	118.0	187	126	50	14	55	41	1750	**KH28LX**	400
	35	25	116	95	26.0	60	118.0	187	138	50	14	55	50	1820	**KH35LXDN25**	400
	35	32	121	100	36.5	80	180.5	320	143	60	17	73	50	3158	**KH35LX**	315
	42	25	121	99	26.0	60	118.0	187	144	55	14	55	60	1940	**KH42LXDN25**	400
	42	40	118	96	42.5	90	190.5	320	141	70	17	85	60	3788	**KH42LX**	315
S[4]	08	4	73	59	10.0	25	55.0	76	88	19	7	20	19	214	**KH08SX**	500
	10	6	73	58	10.0	25	55.0	76	90	19	7	20	22	220	**KH10SX**	500
	12	8	77	62	14.5	35	68.0	100	94	24	8	30	24	430	**KH12SX**	500
	14	10	81	65	14.5	35	68.0	100	100	24	8	30	27	440	**KH14SX**	500
	16	12	87	70	17.0	40	92.0	112	106	30	10	35	30	649	**KH16SX**	500
	20	16	90	69	20.0	45	105.0	166	112	36	11	45	36	900	**KH20SX**	400
	25	20	107	83	24.0	55	113.0	187	131	41	14	45	46	1290	**KH25SX**	400
	30	25	120	93	26.0	60	118.0	187	146	50	14	55	50	1880	**KH30SX**	400
	38	25	134	102	26.0	60	118.0	187	163	55	14	55	60	1950	**KH38SXDN25**	400
	38	32	127	95	36.5	80	180.5	320	156	60	17	73	60	3266	**KH38SX**	315

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

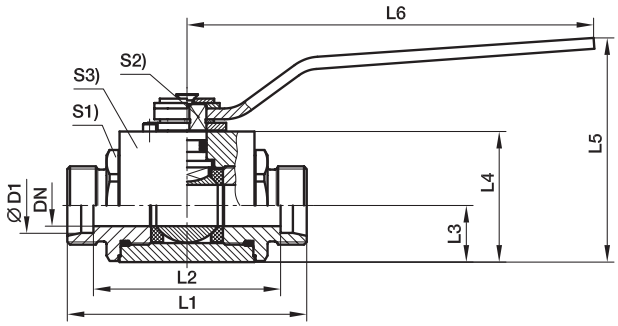
*Please add the **suffixes** below according to the material/ surface required.

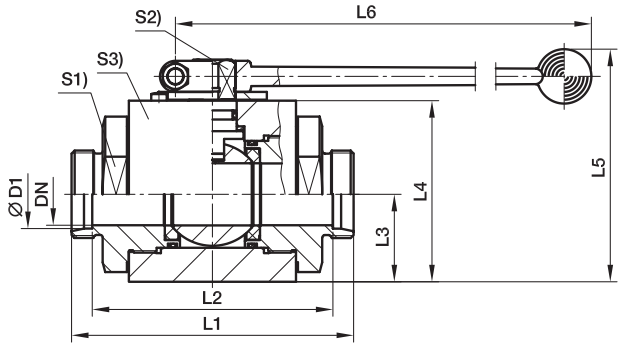
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH06LX	POM / NBR

O

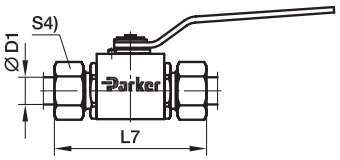
KH 2-way ball valve stainless steel

EO 24° cone end / EO 24° cone end

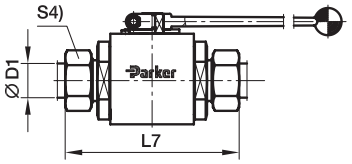




DN 4-25



DN 32-40



Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar)[1] 71
L[3])	06	4	73	59	13.7	30.0	56.5	76	88	22	7	30	14	383	**KH06L71X**	500
	08	6	73	59	13.7	30.0	56.5	76	88	22	7	30	17	381	**KH08L71X**	500
	10	8	87	73	18.0	40.0	84.5	130	102	30	8	40	19	809	**KH10L71X**	500
	12	10	87	73	18.0	40.0	84.5	130	102	30	8	40	22	821	**KH12L71X**	500
	15	12	91	77	21.0	45.0	90.0	130	107	32	10	45	27	1020	**KH15L71X**	500
	18	16/12	91	76	21.0	45.0	90.0	130	108	32	10	45	32	1037	**KH18L71X**	500
	22	20	105	87	31.0	65.0	115.0	185	119	46	14	65	36	1610	**KH22L71X**	420
	28	25	112	92	38.0	75.0	125.0	185	125	50	14	75	41	2032	**KH28L71X**	420
	35	32	145	105	45.0	93.2	175.0	320	148	70	19	100	50	4780	**KH35L71X**	420
	42	40	150	114	52.2	104.4	186.0	320	159	80	19	110	60	7754	**KH42L71X**	420
S[4])	08	4	76	62	13.7	30.0	56.5	76	91	22	7	30	19	392	**KH08S71X**	500
	10	6	76	61	13.7	30.0	56.5	76	93	22	7	30	22	460	**KH10S71X**	500
	12	8	89	74	18.0	40.0	84.5	130	106	30	8	40	24	840	**KH12S71X**	500
	14	10	93	77	18.0	40.0	84.5	130	112	30	8	40	27	847	**KH14S71X**	500
	16	12	96	79	21.0	45.0	90.0	130	115	32	10	45	30	1055	**KH16S71X**	500
	20	16/12	99	78	21.0	45.0	90.0	130	121	32	10	45	36	1079	**KH20S71X**	500
	25	20	113	86	31.0	65.0	115.0	185	134	46	14	65	46	1720	**KH25S71X**	420
	30	25	124	93	38.0	75.0	125.0	185	146	50	14	75	50	2150	**KH30S71X**	420
	38	32	145	100	45.0	93.2	175.0	320	161	70	19	100	60	6066	**KH38S71X**	420

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

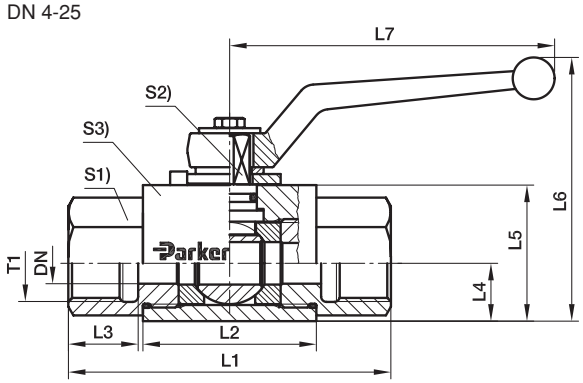
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Stainless Steel	without	KH06L71X	POM / NBR

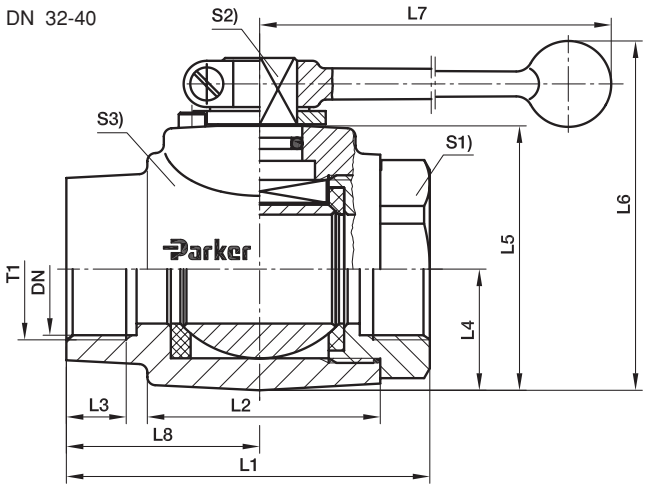
KH 2-way BSPP ball valve steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1])
G 1/8	4	69	36	12	10.0	25	55.0	76	–	19	7	20	220	**KH1/8X**	500
G 1/4	6	69	36	12	10.0	25	55.0	76	–	19	7	20	210	**KH1/4X**	500
G 3/8	10	73	45	14	14.5	35	68.0	100	–	24	8	30	430	**KH3/8X**	500
G 1/2	12	82	51	15	17.0	40	92.0	112	–	30	10	35	670	**KH1/2X**	500
G 5/8	16	88	50	18	20.0	45	105.0	166	–	36	11	45	973	**KH5/8X**	400
G 3/4	20	93	60	18	24.0	55	113.0	187	–	41	14	45	1280	**KH3/4X**	400
G 1	25	113	70	20	26.0	60	118.0	187	–	50	14	55	1982	**KH1X**	400
G 1 1/4	32	110	70	20	36.5	80	180.5	320	58.5	60	17	73	2620	**KH11/4X**	315
G 1 1/4	25	134	70	20	26.0	60	118.0	187	–	50	14	55	2066	**KH11/4DN25X**	400
G 1 1/2	40	114	75	22	42.5	90	190.5	320	57.0	70	17	85	3989	**KH11/2X**	315
G 1 1/2	25	139	70	22	26.0	60	118.0	187	–	55	14	55	2200	**KH11/2DN25X**	400

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

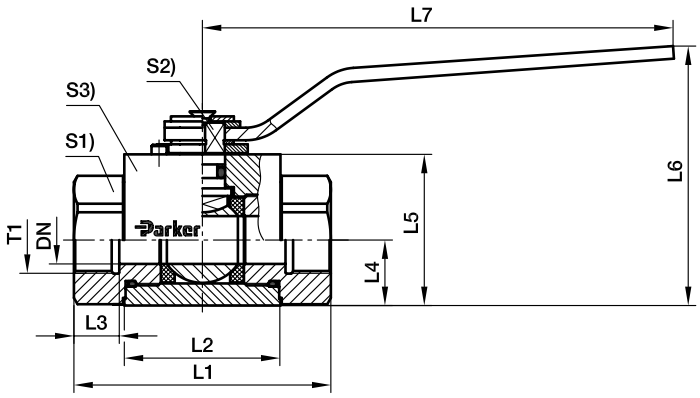
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH1/8X	POM / NBR

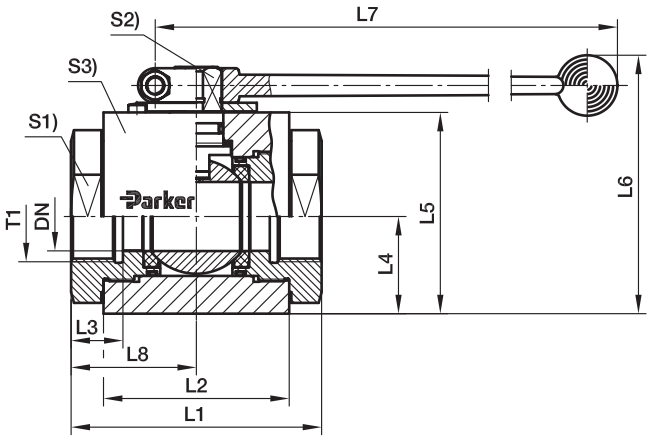
KH 2-way BSPP ball valve stainless steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] 71
G 1/8	4	69	41	11	13.7	30.0	56.5	76	–	22	7	30	421	**KH1/871X**	500
G 1/4	6	75	41	14	13.7	30.0	56.5	76	–	22	7	30	422	**KH1/471X**	500
G 3/8	10	86	53	14	18.0	40.0	84.5	130	–	30	8	40	891	**KH3/871X**	500
G 1/2	12	92	55	16	21.0	45.0	90.0	130	–	32	10	45	1093	**KH1/271X**	500
G 3/4	20	111	65	18	31.0	65.0	115.0	185	–	46	14	65	1944	**KH3/471X**	420
G 1	25	122	71	20	38.0	75.0	125.0	185	–	50	14	75	2200	**KH171X**	420
G 1 1/4	32	110	86	24	45.0	93.2	175.0	320	55	70	19	100	5300	**KH11/471X**	420
G 1 1/2	40	120	92	26	52.2	104.4	186.0	320	60	80	19	110	7230	**KH11/271X**	420

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

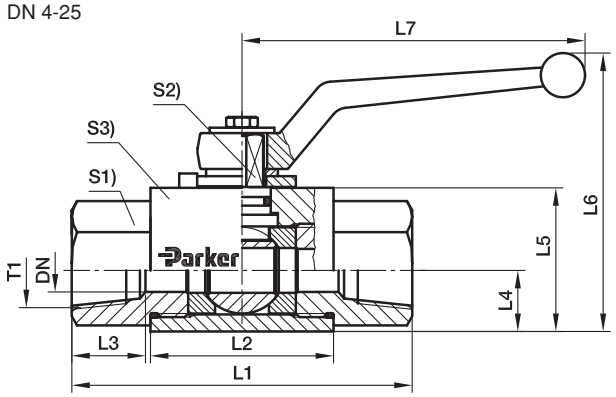
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Stainless Steel	without	KH1/871X	POM / NBR

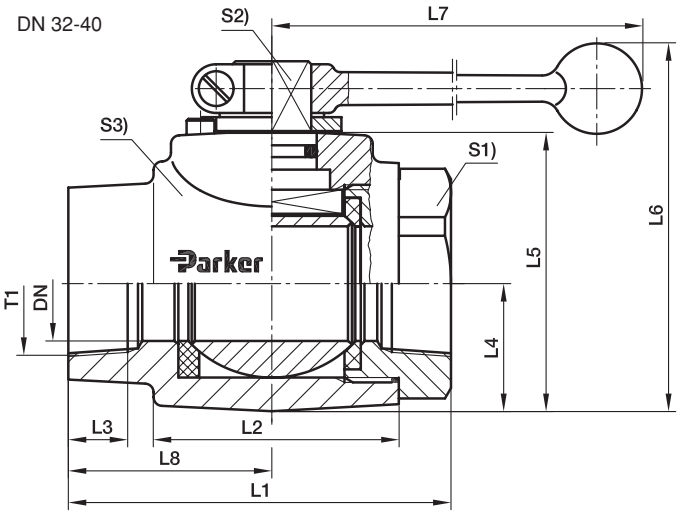
KH 2-way NPT ball valve steel

Female NPT thread (SAE 476) / Female NPT thread (SAE 476)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) bronzed
1/8-27 NPT	4	69	36	7.0	10.0	25	55.0	76		19	7	20	225	**KH1/8NPTX**	500
1/4-18 NPT	6	69	36	10.0	10.0	25	55.0	76		19	7	20	210	**KH1/4NPTX**	500
3/8-18 NPT	10	73	45	10.4	14.5	35	68.0	100		24	8	30	430	**KH3/8NPTX**	500
1/2-14 NPT	12	82	51	13.6	17.0	40	92.0	112		30	10	35	670	**KH1/2NPTX**	500
3/4-14 NPT	20	93	60	14.0	24.0	55	113.0	187		41	14	45	1280	**KH3/4NPTX**	400
1-11 1/2 NPT	25	113	70	16.8	26.0	60	118.0	187		50	14	55	1970	**KH1NPTX**	400
1 1/4-11 1/2 NPT	32	110	70	17.3	36.5	80	180.5	320	58.5	60	17	73	3074	**KH11/4NPTX**	315
1 1/2-11 1/2 NPT	40	114	75	17.3	42.5	90	190.5	320	57.0	70	17	85	3976	**KH11/2NPTX**	315

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

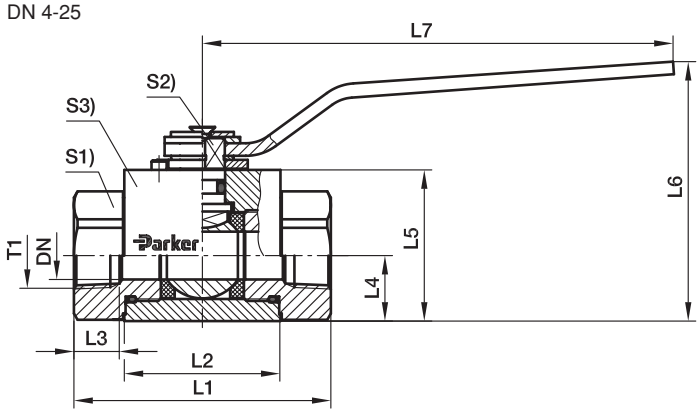
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH1/8NPTX	POM / NBR

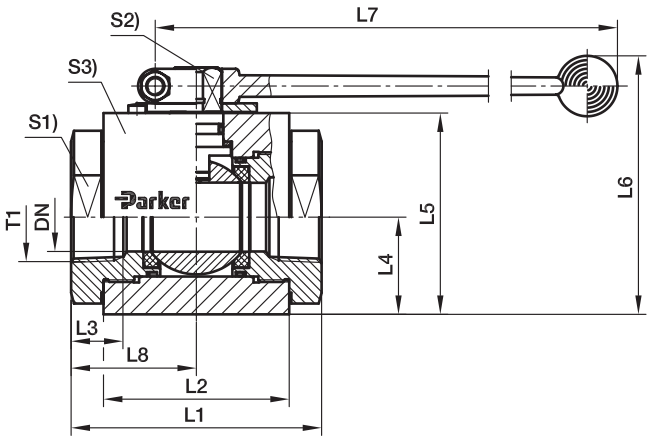
KH 2-way NPT ball valve stainless steel

Female NPT thread (SAE 476) / Female NPT thread (SAE 476)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] bronzed
1/8-27 NPT	4	82	41	6.9	13.7	30.0	56.5	76		22	7	30	461	**KH1/8NPT71X**	500
1/4-18 NPT	6	82	41	10.0	13.7	30.0	56.5	76		22	7	30	441	**KH1/4NPT71X**	500
3/8-18 NPT	10	95	53	10.3	18.0	40.0	84.5	130		30	8	40	943	**KH3/8NPT71X**	500
1/2-14 NPT	12	108	55	13.6	21.0	45.0	90.0	130		32	10	45	1177	**KH1/2NPT71X**	500
3/4-14 NPT	20	111	65	14.1	31.0	65.0	115.0	185		46	14	65	2054	**KH3/4NPT71X**	420
1-11 1/2 NPT	25	122	71	16.8	38.0	75.0	125.0	185		50	14	75	2451	**KH1NPT71X**	420
11/4-11 1/2 NPT	32	110	86	17.3	45.0	93.2	175.0	320	55	70	19	100	5300	**KH11/4NPT71X**	420
11/2-11 1/2 NPT	40	120	92	17.7	52.2	104.4	186.0	320	60	80	19	110	7230	**KH11/2NPT71X**	420

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

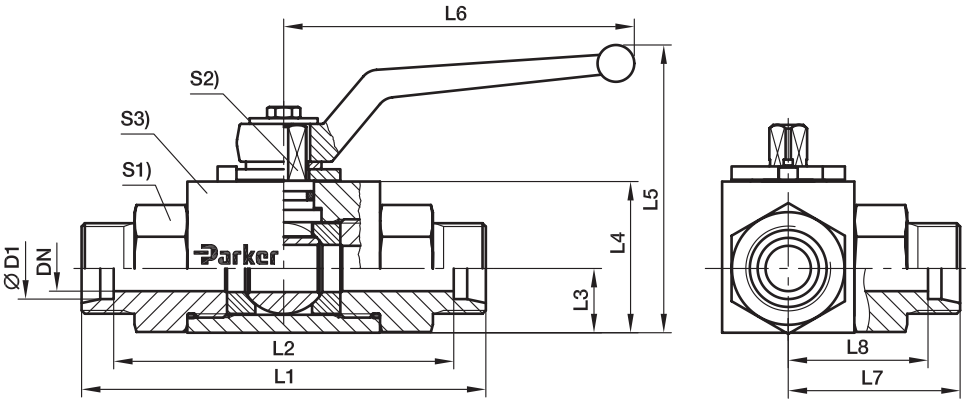
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

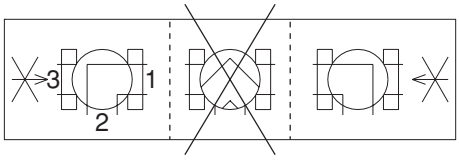
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH1/8NPT71X	POM / NBR

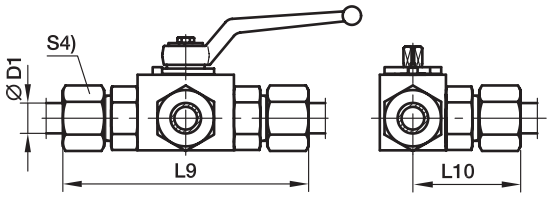
KH 3-way compact ball valve steel

EO 24° cone end / EO 24° cone end / EO 24° cone end





L-Version



Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar)[1] bronzed
L[3])	06	4	67	53	15,0	30	59,5	76	33,5	26,5	82	41,0	19	7	30	14	317	**KH3/2-06LX**	500
	08	6	67	53	15,0	30	59,5	76	33,5	26,5	82	41,0	19	7	30	17	214	**KH3/2-08LX**	500
	10	8	75	61	14,5	35	67,5	100	37,5	30,5	90	45,0	24	8	40	19	445	**KH3/2-10LX**	500
	12	10	75	61	14,5	35	67,5	100	37,5	30,5	90	45,0	24	8	40	22	537	**KH3/2-12LX**	500
	15	12	83	69	22,0	45	96,5	112	41,5	34,5	99	49,5	30	10	45	27	678	**KH3/2-15LX**	500
	18	16	82	67	25,0	50	110,0	166	41	33,5	99	49,5	36	11	50	32	850	**KH3/2-18LX**	400
	22	20	99	84	29,0	60	126,0	187	49,5	42,0	116	58,0	41	14	55	36	1340	**KH3/2-22LX**	400
	28	25	108	93	31,0	65	131,0	187	54	46,5	126	63,0	50	14	65	41	2274	**KH3/2-28LX**	400
S[4])	08	4	73	59	15,0	30	59,5	76	36,5	29,5	88	44,0	19	7	30	19	350	**KH3/2-08SX**	500
	10	6	73	58	15,0	30	59,5	76	36,5	29,0	90	45,0	19	7	30	22	300	**KH3/2-10SX**	500
	12	8	77	62	14,5	35	67,5	100	38,5	31,0	94	47,0	24	8	40	24	469	**KH3/2-12SX**	500
	14	10	81	65	14,5	35	67,5	100	40,5	32,5	100	50,0	24	8	40	27	500	**KH3/2-14SX**	500
	16	12	87	70	22,0	45	96,5	112	43,5	35,0	106	53,0	30	10	45	30	909	**KH3/2-16SX**	500
	20	16	90	69	25,0	50	110,0	166	45	34,5	112	56,0	36	11	50	36	949	**KH3/2-20SX**	400
	25	20	107	83	29,0	60	126,0	187	53,5	41,5	131	65,5	41	14	55	46	1714	**KH3/2-25SX**	400
	30	25	120	93	31,0	65	131,0	187	60	46,5	146	73,0	50	14	65	50	2462	**KH3/2-30SX**	400

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

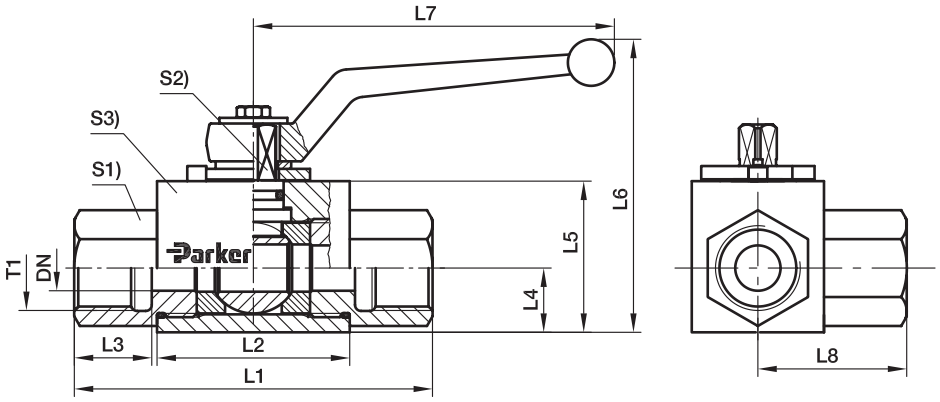
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surfa ce and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH3/2-06LX	POM / NBR

O

KH 3-way compact BSPP ball valve steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1) /
Female BSPP thread (ISO 1179-1)

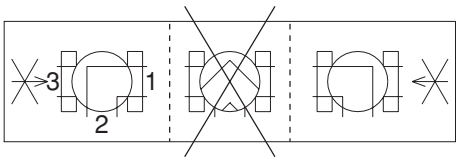


T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1]) bronzed
G 1/8	4	69	36	12	15.0	30	55	76	34.5	19	7	30	270	**KH3/2-1/8X**	500
G 1/4	6	69	36	12	15.0	30	55	76	34.5	19	7	30	342	**KH3/2-1/4X**	500
G 3/8	10	73	45	14	14.5	35	68	100	36.5	24	8	40	563	**KH3/2-3/8X**	500
G 1/2	12	82	51	15	22.0	45	92	112	41.0	30	10	45	932	**KH3/2-1/2X**	500
G 3/4	20	93	60	18	29.0	60	113	187	48.0	41	14	55	1724	**KH3/2-3/4X**	400
G 1	25	118	70	20	31.0	65	118	187	56.5	50	14	65	2643	**KH3/2-1X**	400

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.



L-Version

*Please add the **suffixes** below according to the material/ surface required.

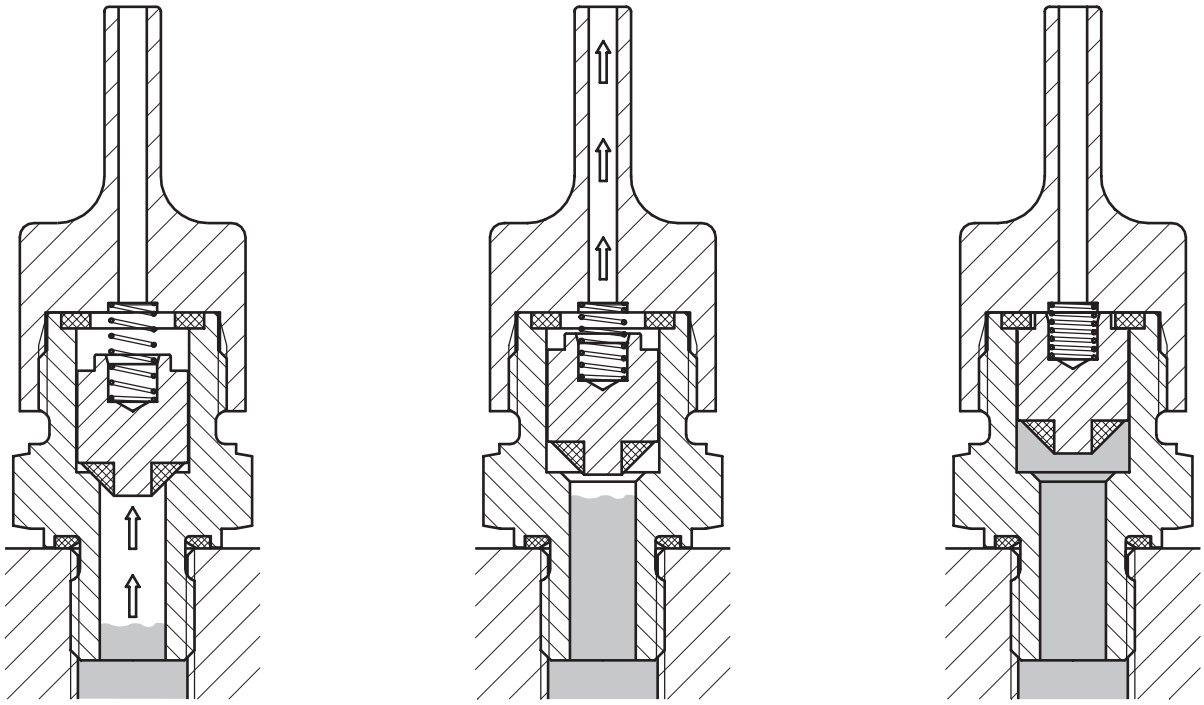
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, bronzed	DIN 50938-FE//A/T4	KH3/2-1/8X	POM / NBR

ELA air-bleed valves

Hydraulic systems can effectively be bled with ELA air-bleed valves.

Easily installed – maintenance-free – almost unlimited service life – simple – safe – reliable – efficient. The system can be operated immediately. No control irregularities due to air contamination of the pressure medium. Cost saving, as non-productive de-aeration time is saved.

Air bleed between: – opening pressure 0.05 bar
– closing pressure ≧ 0.5 bar



BEFORE BLEEDING
System without pressure

AIR ESCAPES
System operated
(0,05 bar)

AIR REMOVED
System under pressure
(≧ 0,5 bar)

The principle of the air-bleed valve is based on the difference in behaviour of gases and liquids under pressure because of their dependence on viscosity. A piston, housed in the bore of the body with defined clearance, effects the opening and closing of the valve on start-up or shut-down of the system. On setting the system in operation, the accumulated air escapes until the liquid column of the pressure medium reaches the piston. The pressure of the liquid lifts the piston against the upper, high pressure seal, securely closing the air-vent (slight oil discharge may occur). When pressure is released the spring releases the piston reopening the air-vent, whereupon the procedure may be repeated. The special piston design prevents any intake of air in case of partial vacuum.

The air bleed valve should be connected vertical, at the highest point of the hydraulic system or in places where air accumulation may occur.

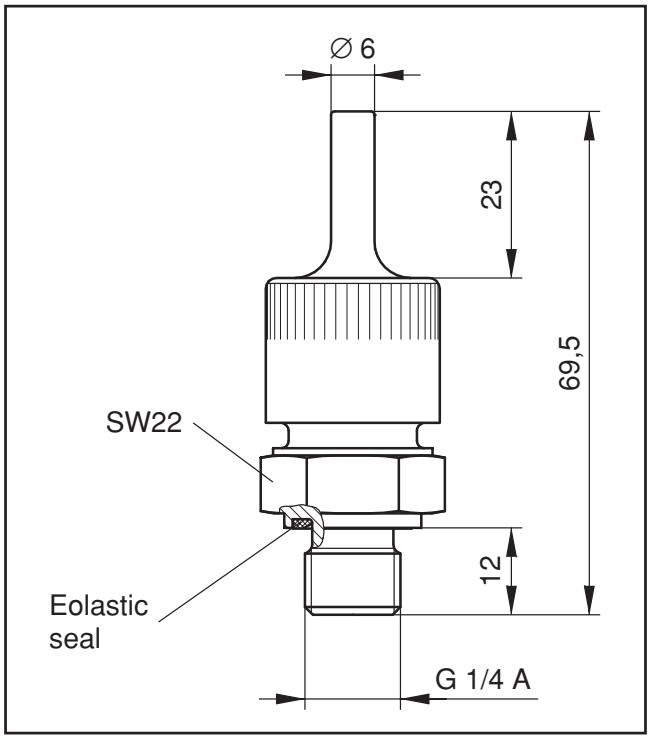
ELA air-bleed valves are available only for mineral oil based fluids, and within the temperature limits of –20 °C to +90 °C.

O

ELA Air-bleed valves

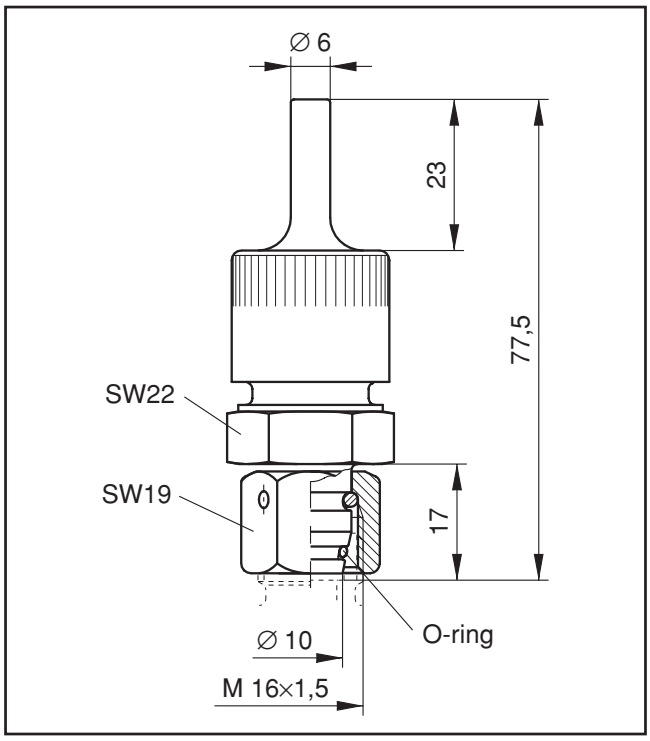
Male BSPP thread with Eolastic seal

PN (bar)	*Dry Technology* Steel	Weight g/1 piece
400	**ELA1/4EDA3C**	109



EO Swivel

PN (bar)	*Dry Technology* Steel	Weight g/1 piece
315	**ELAE10LA3C**	125



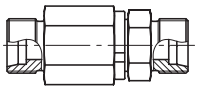
Parker

Ermeto Original
Rotary fittings



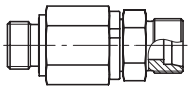
Visual index EO rotary fittings

DG 101
p. P6



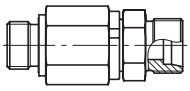
EO 24° cone end /
EO 24° cone end

DG 102-R
p. P7



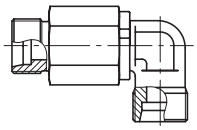
Male BSPP thread –
ED-seal (ISO 1179) / EO 24° cone end

DG 102-M
p. P8



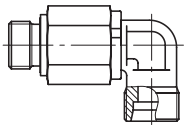
Male metric thread –
ED-seal (ISO 9974) / EO 24° cone end

DG 103
p. P9



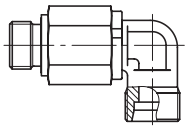
EO 24° cone end /
EO 24° cone end

DG 104-R
p. P10



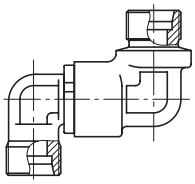
Male BSPP thread –
ED-seal (ISO 1179) / EO 24° cone end

DG 104-M
p. P11



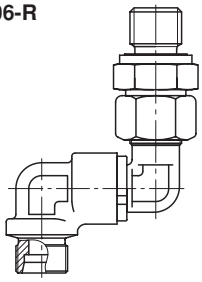
Male metric thread –
ED-seal (ISO 9974) / EO 24° cone end

DG 105
p. P12



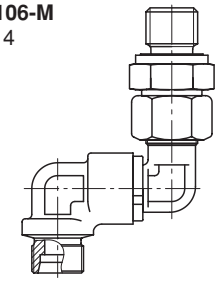
EO 24° cone end /
EO 24° cone end

DG 106-R
p. P13



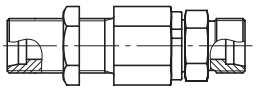
Male BSPP thread –
ED-seal (ISO 1179) / EO 24° cone end

DG 106-M
p. P14



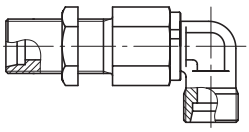
Male metric thread –
ED-seal (ISO 9974) / EO 24° cone end

DG 107
p. P15



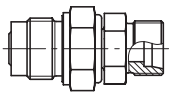
EO 24° cone end /
EO 24° cone end

DG 108
p. P16



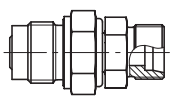
EO 24° cone end /
EO 24° cone end

DVGE-R
p. P17



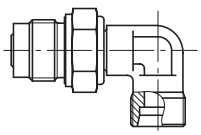
Male BSPP thread –
ED-seal / EO 24° cone end

DVGE-M
p. P18



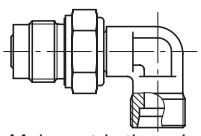
Male metric thread –
ED-seal / EO 24° cone end

DVWE-R
p. P19



Male BSPP thread –
ED-seal / EO 24° cone end

DVWE-M
p. P20



Male metric thread –
ED-seal / EO 24° cone end

DG Ball bearing rotary fittings

for working pressures up to 250 bar. Low starting torque. Favourable pressure/RPM ratio

Application:

Connecting a fixed point to a rotating, swinging or moving machine part via hoses.
To prevent torsion and to avoid small hose radius.

Flow media:

Hydraulic oils and lubricants on mineral oil base.
Also for hydraulic fluids HETG and HEES.
Not suitable for corrosive and HFC-fluids or gases.

Construction:

Compact, maintenance-free construction, service-proved. Combined ball and plain bearing with constant lubrication. Low starting torque. Wear-resistant annular piston sealings.

Materials:

Casing, body nut of steel, annular piston sealing: POM (e. g. Delrin)/FKM (e. g. Viton®). Eolastic sealing: NBR (e. g. Perbunan), also available in FKM.

Surface:

Zinc-plated with yellow chromated (A3C).

Nominal temperatures:

–25° C up to +80° C.

Warehousing:

Ball bearing rotary fittings can be stocked for 6 months. Warehousing up to 1 year is possible with storage conditions acc. to DIN 7716.

Viton® = registered trademark of DuPont
Perbunan = registered trademark of Bayer

Construction systems:

8 different versions with one rotational axis. Multiaxial rotary couplings on request. Tube connections according to DIN 2353, series S.
Maximum working pressure 250 bar (peak pressure)
Male stud sealing by Eolastic seals of NBR.
Male stud with metric parallel or BSPP thread.

Assembly instructions:

The life of a rotary fitting depends considerably on a stress-free line connection. Therefore the direct connection with tubes is to be avoided.
For connection of hoses the use of swivel nut fittings (DIN 3865) is recommended.
We recommend short, straight hose lines (free hose length approx. 5 x hose O.D.). Thus shocks, vibrations etc. are absorbed.

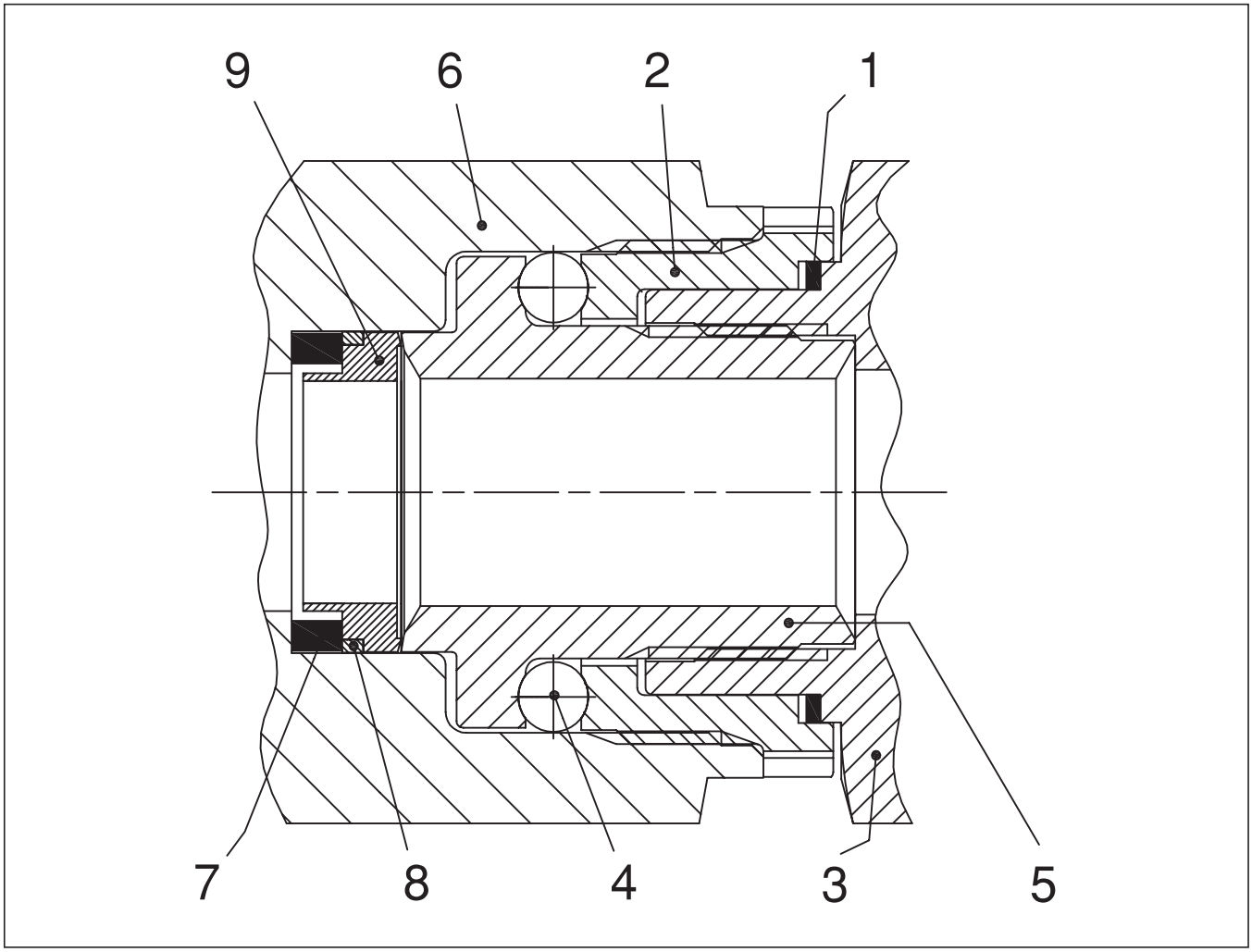
P

Number of revolutions and starting torques:

Chart 1

Tube O.D.	DN Nominal diameter (mm)	Permissible number of revolutios (rpm.) under a working pressure of 25 bar	64 bar	100 bar	160 bar	250 bar	Initial torque at 250 bar/Nm
6 8	5,0	1500	750	400	200	85	0.08
12 16	9,5	800	400	200	100	45	0.24
20 25	16,0	300	150	75	38	15	0.8
30 38	26,0	200	100	50	25	10	2.0

DG Ball bearing rotary fittings



position	specification
9	ring piston
8	intermediate ring
7	rubber spring
6	base
5	pivot
4	ball
3	top
2	raceway
1	dust seal

Plain bearing rotary fittings

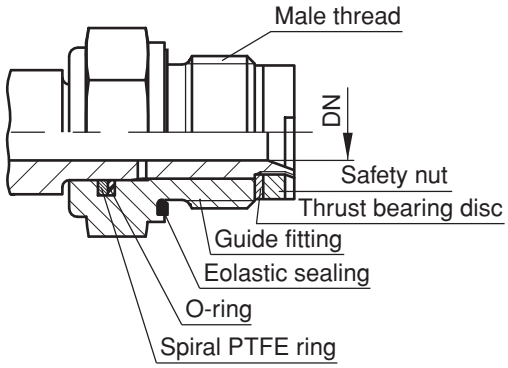
for slow rotating, swinging or moving machine parts up to 40 bar (series L) or up to 100 bar (series S).

Application:

Connecting a fixed point to a rotating, swinging or moving machine part via hoses.
To prevent torsion and to avoid small hose radius.

Flow media:

Hydraulic oils and lubricants on mineral oil base.
Also for hydraulic fluids HETG and HEES.
Not suitable for corrosive and HFC-fluids or gases.



Nominal temperature:

For sealings of NBR:
–35° C up to +100° C.
For sealings of FKM:
–25° C up to +120° C.

Tube O.D.				DN Nominal diameter
06L		06S		**4**
08L		08S		**5**
10L		10S		**6**
12L		12S		**8**
15L		14S	16S	**10**
18L	22L	20S	25S	**16**
28L	30S			**22**
35L	43L	38S		**25**

Construction:

Compact, maintenance-free construction, service-proved.

Materials:

Casing, body nut and progressive ring of steel. Sealing of NBR (Perbunan), on request of FKM (Viton®).
Plain bearing rotary fittings are not available in stainless steel or brass.

Surface:

Zinc-plated with yellow chromate (A3C).

Construction-system:

Series L, tube O. D. 6 to 35 mm, working pressure (PN): 40 bar
Series S, tube O. D. 6 to 38 mm, working pressure (PN): 100 bar
Tube connection according to DIN 2353, ISO 8434-1.
Male stud with metric thread and BSP thread.
Sealing of male stud by Eolastic-seals.

Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont

Number of revolutions:

Series					**L**				
Tube O.D.	6	8	10	12	15	18	22	28	35
Permiss. no. rpm	28	28	21	17	13	10	10	7	7
Series					**S**				
Tube O.D.	6	8	10	12	14	16	20	25	30	38
Permiss. no rpm	11	11	9	7	5	5	4	4	3	3

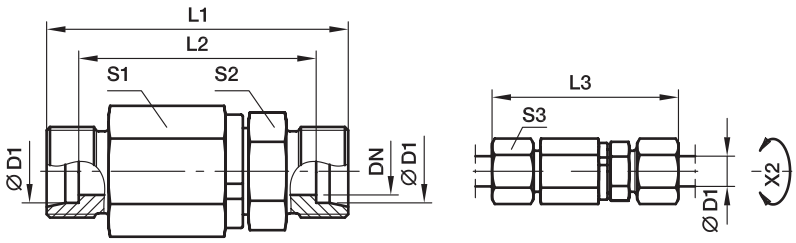
Assembly instruction:

The life of a rotary fitting depends considerably on a stress-free line connection. Therefore the direct connection with tubes is to be avoided.
For connection of hoses use of swivel nut connections (DIN 3865) is recommended.
We recommend short, straight hose lines (free hose length approx. 5 × hose O. D.). Thus shocks, vibrations etc. are absorbed.

P

DG 101 Straight ball bearing rotary union

EO 24° cone end / EO 24° cone end



X2) Axis

Series	D1	DN	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	5.0	61	47	76	22.0	17	17.0	113	**DG101/06SOMD**	Pressure rating see chart 1
	08	5.0	61	47	76	22.0	17	19.0	118	**DG101/08SOMD**	Pressure rating see chart 1
	12	9.5	72	57	89	30.0	24	24.0	258	**DG101/12SOMD**	Pressure rating see chart 1
	16	9.5	74	57	93	30.0	27	30.0	264	**DG101/16SOMD**	Pressure rating see chart 1
	20	16.0	92	71	114	41.0	36	36.0	578	**DG101/20SOMD**	Pressure rating see chart 1
	25	16.0	96	72	120	41.0	41	46.0	652	**DG101/25SOMD**	Pressure rating see chart 1
	30	26.0	109	82	135	60.0	46	50.0	1321	**DG101/30SOMD**	Pressure rating see chart 1
	38	26.0	114	82	143	60.0	55	60.0	1509	**DG101/38SOMD**	Pressure rating see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

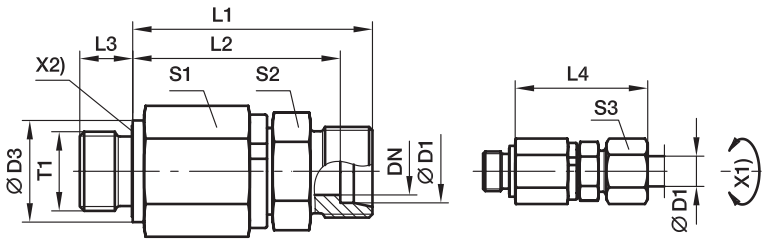
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG101/06SOMDA3C	VIT

DG 102-R Straight male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	G 1/4 A	5.0	19	49	42.0	12	57.0	22	17	17	110	**DG102/06SROMD**	Pressure ratings see chart 1
	08	G 1/4 A	5.0	19	49	42.0	12	57.0	22	17	19	116	**DG102/08SROMD**	Pressure ratings see chart 1
	12	G 3/8 A	9.5	22	60	52.5	12	69.0	30	24	24	243	**DG102/12SROMD**	Pressure ratings see chart 1
	16	G 1/2 A	9.5	27	60	51.5	14	70.0	30	27	30	256	**DG102/16SROMD**	Pressure ratings see chart 1
	20	G 3/4 A	16.0	32	76	65.5	16	87.5	41	36	36	558	**DG102/20SROMD**	Pressure ratings see chart 1
	25	G 1 A	16.0	40	78	66.0	18	90.5	41	41	46	853	**DG102/25SROMD**	Pressure ratings see chart 1
	30	G 1 1/4 A	26.0	50	89	75.5	20	102.0	60	46	50	1312	**DG102/30SROMD**	Pressure ratings see chart 1
	38	G 1 1/2 A	26.0	55	92	76.0	22	107.0	60	55	60	1494	**DG102/38SROMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

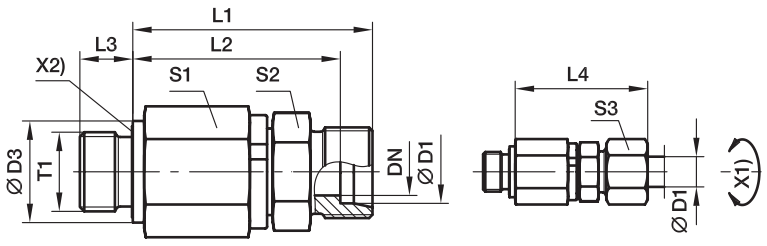
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG102/06SROMDA3C	VIT/NBR

DG 102-M Straight male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	M 14 × 1.5	5.0	19	49	42.0	12	57.0	22	17	17	112	**DG102/06SMOMD**	Pressure ratings see chart 1
	08	M 14 ×1.5	5.0	19	49	42.0	12	57.0	22	17	19	113	**DG102/08SMOMD**	Pressure ratings see chart 1
	12	M 18 × 1.5	9.5	24	60	52.5	12	69.0	30	24	24	245	**DG102/12SMOMD**	Pressure ratings see chart 1
	16	M 22 × 1.5	9.5	27	60	51.5	14	70.0	30	27	30	259	**DG102/16SMOMD**	Pressure ratings see chart 1
	20	M 27 × 2	16.0	32	76	65.5	16	87.5	41	36	36	558	**DG102/20SMOMD**	Pressure ratings see chart 1
	25	M 33 × 2	16.0	40	78	66.0	18	90.5	41	41	46	637	**DG102/25SMOMD**	Pressure ratings see chart 1
	30	M 42 × 2	26.0	50	89	75.5	20	102.0	60	46	50	1316	**DG102/30SMOMD**	Pressure ratings see chart 1
	38	M 48 × 2	26.0	55	92	76.0	22	107.0	60	55	60	1491	**DG102/38SMOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

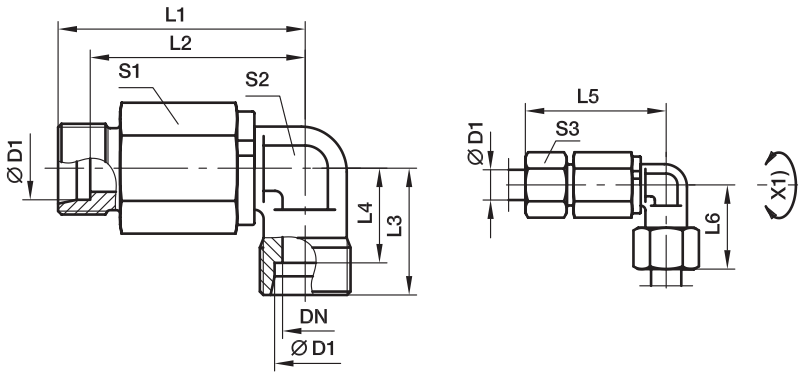
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG102/06SMOMDA3C	VIT/NBR

DG 103 Elbow ball bearing rotary union

EO 24° cone end / EO 24° cone end



X2) Axis

Series	D1	DN	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	5.0	51.5	59.0	23	16.0	44.5	16.0	22	17	17	134	**DG103/06SOMD**	Pressure ratings see chart 1
	08	5.0	51.5	59.0	24	17.0	44.5	17.0	22	17	19	141	**DG103/08SOMD**	Pressure ratings see chart 1
	12	9.5	63.0	72.0	29	21.5	55.5	21.5	30	22	24	296	**DG103/12SOMD**	Pressure ratings see chart 1
	16	9.5	63.0	73.0	33	24.5	54.5	24.5	30	22	30	298	**DG103/16SOMD**	Pressure ratings see chart 1
	20	16.0	83.0	94.5	37	26.5	72.5	26.5	41	36	36	772	**DG103/20SOMD**	Pressure ratings see chart 1
	25	16.0	83.0	95.5	42	30.0	71.0	30.0	41	36	46	803	**DG103/25SOMD**	Pressure ratings see chart 1
	30	26.0	102.5	116.0	49	35.5	89.0	35.5	60	50	50	1722	**DG103/30SOMD**	Pressure ratings see chart 1
	38	26.0	102.5	117.0	57	41.0	86.5	41.0	60	50	60	1931	**DG103/38SOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

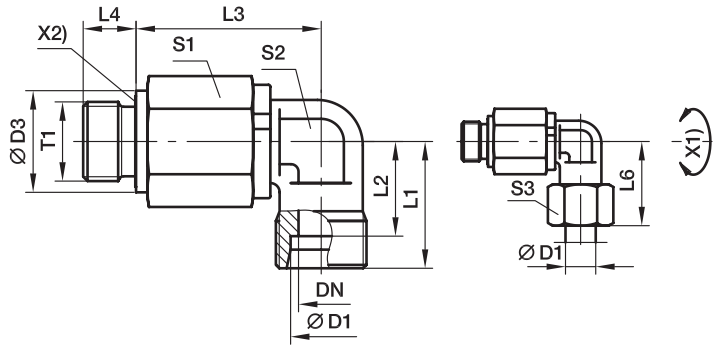
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG101/06SOMDA3C	VIT

P

DG 104-R Elbow male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	L6	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	G 1/4 A	05	19	23	16.0	39.5	12	31	22	17	17	131	**DG104/06SROMD**	Pressure ratings see chart 1
	08	G 1/4 A	05	19	24	17.0	39.5	12	32	22	17	19	135	**DG104/08SROMD**	Pressure ratings see chart 1
	12	G 3/8 A	10	22	29	21.5	51.0	12	38	30	22	24	284	**DG104/12SROMD**	Pressure ratings see chart 1
	16	G 1/2 A	10	27	33	24.5	49.0	14	43	30	22	30	284	**DG104/16SROMD**	Pressure ratings see chart 1
	20	G 3/4 A	16	32	37	26.5	67.0	16	48	41	36	36	752	**DG104/20SROMD**	Pressure ratings see chart 1
	25	G 1 A	16	40	42	30.0	65.0	18	54	41	36	46	789	**DG104/25SROMD**	Pressure ratings see chart 1
	30	G 1 1/4 A	26	50	49	35.5	82.5	20	62	60	50	50	1713	**DG104/30SROMD**	Pressure ratings see chart 1
	38	G 1 1/2 A	26	55	57	41.0	80.5	22	72	60	50	60	1915	**DG104/38SROMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

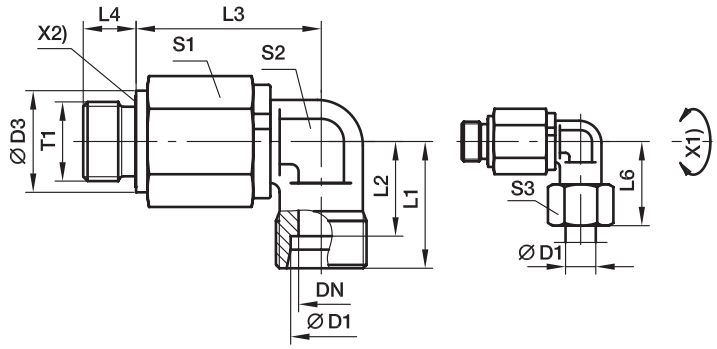
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG104/06SROMDA3C	VIT/NBR

DG 104-M Elbow male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	L6	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	M 14 × 1.5	05	19	23	16.0	39.5	12	31	22	17	17	132	**DG104/06SMOMD**	Pressure ratings see chart 1
	08	M 14 × 1.5	05	19	24	17.0	39.5	12	32	22	17	19	136	**DG104/08SMOMD**	Pressure ratings see chart 1
	12	M 18 × 1.5	10	22	29	21.5	51.0	12	38	30	22	24	286	**DG104/12SMOMD**	Pressure ratings see chart 1
	16	M 22 × 1.5	10	27	33	24.5	49.0	14	43	30	22	30	287	**DG104/16SMOMD**	Pressure ratings see chart 1
	20	M 27 × 2	16	32	37	26.5	67.0	16	48	41	36	36	752	**DG104/20SMOMD**	Pressure ratings see chart 1
	25	M 33 × 2	16	40	42	30.0	65.0	18	54	41	36	46	788	**DG104/25SMOMD**	Pressure ratings see chart 1
	30	M 42 × 2	26	50	49	35.5	82.5	20	62	60	50	50	1717	**DG104/30SMOMD**	Pressure ratings see chart 1
	38	M 48 × 2	26	55	57	41.0	80.5	22	72	60	50	60	1913	**DG104/38SMOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

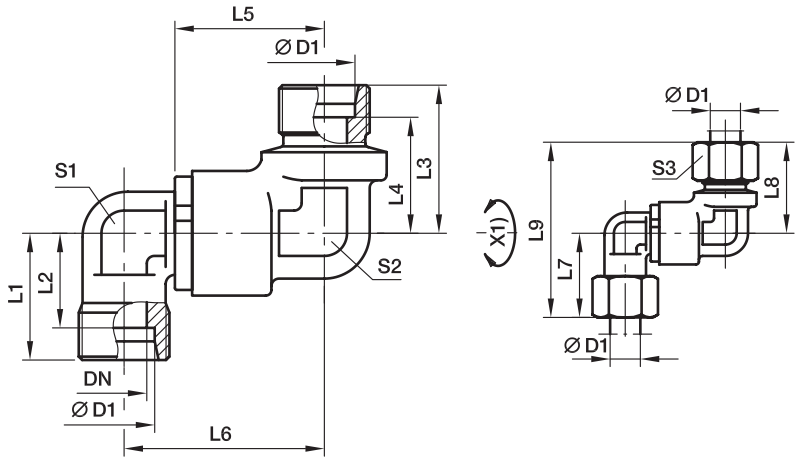
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG104/06SMOMDA3C	VIT/NBR

P

DG 105 Double elbow ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	L8	L9	S1	S2	S3	Weight g/1 piece	Order code*	A3C[1])
S[4])	12	9.5	39.5	26.5	43	21.5	38	81	53.0	24	22	24	29	50.5	384	**DG105/12SOMD**	Pressure ratings see chart 1
	16	9.5	39.5	25.5	44	24.5	43	87	53.0	30	22	24	33	52.5	377	**DG105/16SOMD**	Pressure ratings see chart 1
	20	16.0	56.5	39.5	61	26.5	48	109	76.0	36	36	32	37	71.5	1015	**DG105/20SOMD**	Pressure ratings see chart 1
	25	16.0	56.5	38.0	62	30.0	54	116	76.0	46	36	32	42	74.0	1034	**DG105/25SOMD**	Pressure ratings see chart 1
	30	26.0	65.0	44.5	71	35.5	62	133	92.5	50	50	50	49	84.5	2344	**DG105/30SOMD**	Pressure ratings see chart 1
	38	26.0	65.0	42.0	73	41.0	72	145	92.5	60	50	50	57	89.0	2485	**DG105/38SOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

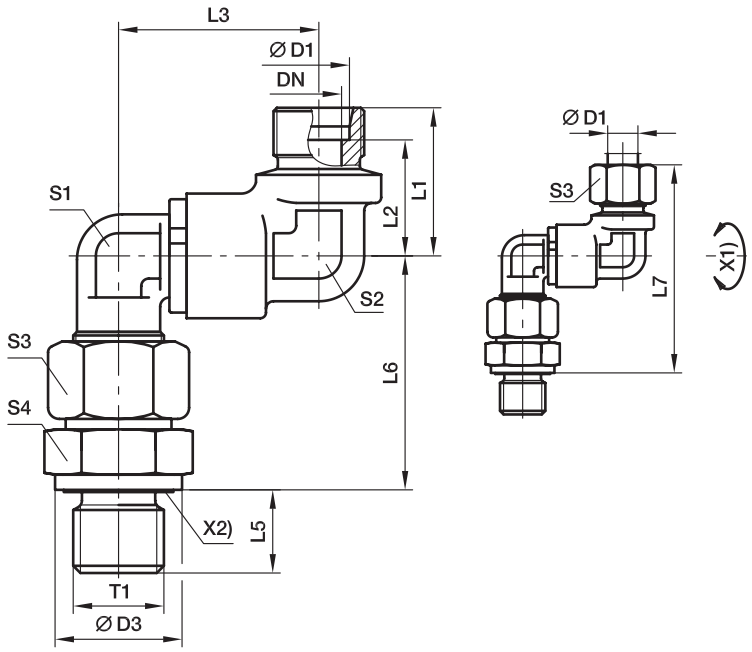
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG105/12SOMDA3C	VIT

DG 106-R Double elbow male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end
(Adjustable at male thread axis, consisting of DG105 + EGE)



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	A3C[1])
S[4])	12	G 3/8 A	9.5	24	34	26.5	53.0	12	55.5	99	24	22	24	22	484	**DG106/12SROMD**	Pressure ratings see chart 1
	16	G 1/2 A	9.5	27	34	25.5	53.0	14	61.5	105	24	24	30	27	547	**DG106/16SROMD**	Pressure ratings see chart 1
	20	G 3/4 A	16.0	32	50	39.5	76.0	16	69.5	131	36	32	36	32	1288	**DG106/20SROMD**	Pressure ratings see chart 1
	25	G 1 A	16.0	40	50	38.0	76.0	18	78.0	140	36	32	46	41	1528	**DG106/25SROMD**	Pressure ratings see chart 1
	30	G 1 1/4 A	26.0	50	58	44.5	92.5	20	86.5	158	50	50	50	50	3004	**DG106/30SROMD**	Pressure ratings see chart 1
	38	G 1 1/2 A	26.0	55	58	42.0	92.5	22	101.0	174	50	50	60	55	3419	**DG106/38SROMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

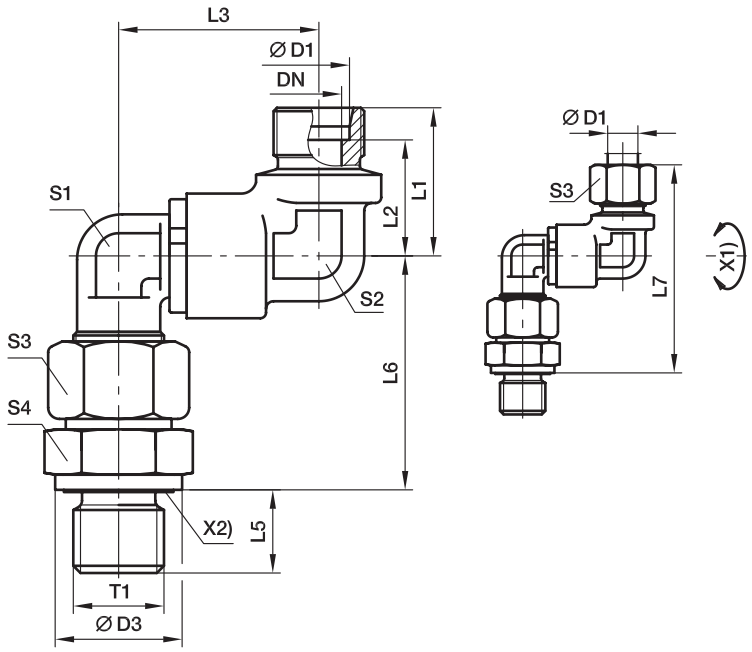
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*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG106/06SROMDA3C	VIT/NBR

DG 106-M Double elbow male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end
(Adjustable at male thread axis, consisting of DG105 + EGE)



X1) Axis
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	A3C[1])
S[4])	12	M 18 × 1.5	5.0	24	34	26.5	53.0	12	55.5	99	24	22	24	24	495	**DG106/12SMOMD**	Pressure ratings see chart 1
	16	M 22 × 1.5	9.5	27	34	25.5	53.0	14	61.5	105	24	24	30	27	551	**DG106/16SMOMD**	Pressure ratings see chart 1
	20	M 27 × 2	16.0	32	50	39.5	76.0	16	69.5	131	36	32	36	32	1289	**DG106/20SMOMD**	Pressure ratings see chart 1
	25	M 33 × 2	16.0	40	50	38.0	76.0	18	78.0	140	36	32	46	41	1532	**DG106/25SMOMD**	Pressure ratings see chart 1
	30	M 42 × 2	26.0	50	58	44.5	92.5	20	86.5	158	50	50	50	50	3007	**DG106/30SMOMD**	Pressure ratings see chart 1
	38	M 48 × 2	26.0	55	58	42.0	92.5	22	101.0	174	50	50	60	55	3441	**DG106/38SMOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

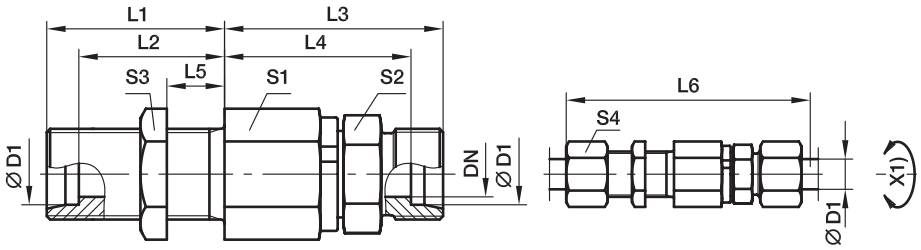
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG106/06SMOMDA3C	VIT/NBR

DG 107 Straight bulkhead ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series	D1	DN	T1	L1	L2	L3	L4	L5	L6	S1	S2	S3	S4	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	5.0	M 14 × 1.5	23	16.0	49	42.0	5	87	22	17	19	17	134	**DG107/06SOMD**	Pressure ratings see chart 1
	08	5.0	M 16 × 1.5	23	16.0	49	42.0	5	87	22	17	22	19	143	**DG107/08SOMD**	Pressure ratings see chart 1
	12	9.5	M 20 × 1.5	23	15.5	60	52.5	5	100	30	24	27	24	291	**DG107/12SOMD**	Pressure ratings see chart 1
	16	9.5	M 24 × 1.5	26	17.5	60	51.5	5	105	30	27	32	30	328	**DG107/16SOMD**	Pressure ratings see chart 1
	20	16.0	M 30 × 2	39	28.5	76	65.5	15	137	41	36	41	36	710	**DG107/20SOMD**	Pressure ratings see chart 1
	25	16.0	M 36 × 2	42	30.0	78	66.0	15	144	41	41	46	46	847	**DG107/25SOMD**	Pressure ratings see chart 1
	30	26.0	M 42 × 2	44	30.5	89	75.5	15	159	60	46	50	50	1533	**DG107/30SOMD**	Pressure ratings see chart 1
	38	26.0	M 52 × 2	47	31.0	92	76.0	15	168	60	55	65	60	1930	**DG107/38SOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

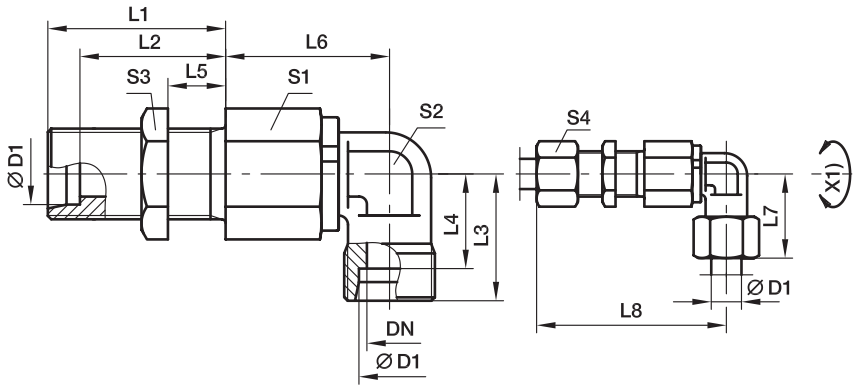
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*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG107/06SOMDA3C	VIT

DG 108 Elbow bulkhead ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series	D1	DN	T1	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	S4	Weight g/1 piece	Order code*	A3C[1])
S[4])	06	5.0	M 14 × 1.5	23	16.0	23	16.0	5	39.5	31	70.0	22	17	19	17	154	**DG108/06SOMD**	Pressure ratings see chart 1
	08	5.0	M 16 × 1.5	23	16.0	23	17.0	5	39.5	32	70.0	22	17	22	19	166	**DG108/08SOMD**	Pressure ratings see chart 1
	12	9.5	M 20 × 1.5	23	15.5	29	21.5	5	51.0	38	83.0	30	22	27	24	333	**DG108/12SOMD**	Pressure ratings see chart 1
	16	9.5	M 24 × 1.5	26	17.5	33	24.5	5	49.0	43	85.0	30	22	32	30	354	**DG108/16SOMD**	Pressure ratings see chart 1
	20	16.0	M 30 × 2	39	28.5	37	26.5	15	67.0	48	117.5	41	36	41	36	904	**DG108/20SOMD**	Pressure ratings see chart 1
	25	16.0	M 36 × 2	42	30.0	42	30.0	15	65.0	54	119.5	41	36	46	46	999	**DG108/25SOMD**	Pressure ratings see chart 1
	30	26.0	M 42 × 2	44	30.5	49	35.5	15	82.5	62	140.0	60	50	50	50	1935	**DG108/30SOMD**	Pressure ratings see chart 1
	38	26.0	M 52 × 2	47	31.0	57	41.0	15	80.5	72	142.0	60	50	65	60	2351	**DG108/38SOMD**	Pressure ratings see chart 1

[1]) Pressure shown = item deliverable

[4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

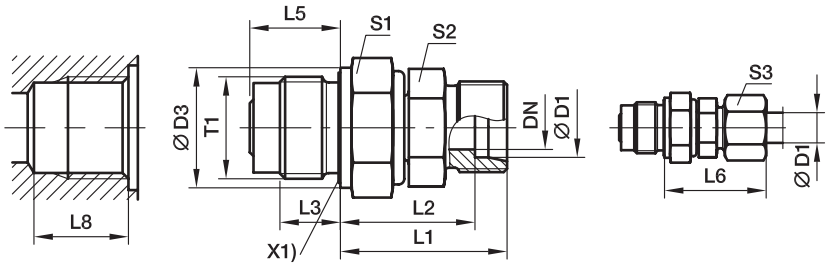
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DG108/06SOMDA3C	VIT

DVGE-R Straight male stud plain bearing rotary union

Male BSPP thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852
chart page P21

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] VIT
L[3])	06	G 1/4 A	4.0	19	28.0	21.0	12	18.0	40	19	12	14	43	**DVGE06LROMD**	40	40
	08	G 1/4 A	5.0	19	28.0	21.0	12	18.0	40	19	14	17	44	**DVGE08LROMD**	40	40
	10	G 3/8 A	6.0	22	32.0	25.0	12	18.0	40	24	17	19	74	**DVGE10LROMD**	40	40
	12	G 1/2 A	8.0	27	34.0	27.0	14	21.0	42	27	19	22	116	**DVGE12LROMD**	40	40
	15	G 3/4 A	10.0	32	39.0	32.0	16	24.0	47	32	24	27	214	**DVGE15LROMD**	40	40
	18	G 1 A	16.0	40	42.5	35.0	18	27.5	51	41	27	32	337	**DVGE18LROMD**	40	40
	22	G 1 A	16.0	40	46.5	39.0	18	27.5	55	41	32	36	376	**DVGE22LROMD**	40	40
	28	G 1 1/4 A	22.0	50	48.0	40.5	20	31.0	57	50	41	41	586	**DVGE28LROMD**	40	40
	35	G 1 1/2 A	25.0	55	55.0	44.5	22	35.0	66	55	46	50	868	**DVGE35LROMD**	40	40
S[4])	06	G 1/4 A	4.0	19	30.0	23.0	12	18.0	38	19	14	17	50	**DVGE06SROMD**	100	100
	08	G 1/4 A	5.0	19	31.0	24.0	12	18.0	39	19	17	19	55	**DVGE08SROMD**	100	100
	10	G 3/8 A	6.0	22	34.0	26.5	12	18.0	43	24	19	22	85	**DVGE10SROMD**	100	100
	12	G 1/2 A	8.0	27	36.0	28.5	14	21.0	45	27	22	24	134	**DVGE12SROMD**	100	100
	14	G 3/4 A	10.0	32	41.0	33.0	16	24.0	51	32	24	27	220	**DVGE14SROMD**	100	100
	16	G 3/4 A	10.0	32	42.0	33.5	16	24.0	52	32	27	30	230	**DVGE16SROMD**	100	100
	20	G 1 A	16.0	40	48.5	38.0	18	27.5	60	41	32	36	385	**DVGE20SROMD**	100	100
	25	G 1 A	16.0	40	52.5	40.5	18	27.5	65	41	41	46	483	**DVGE25SROMD**	100	100
	30	G 1 1/4 A	22.0	50	55.0	41.5	20	31.0	68	50	46	50	691	**DVGE30SROMD**	100	100
	38	G 1 1/2 A	25.0	55	63.0	47.0	22	35.0	78	55	55	60	1080	**DVGE38SROMD**	100	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

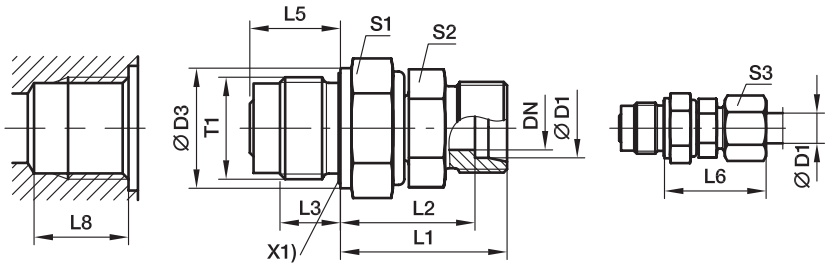
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DVGE06LROMDA3C	NBR
FKM (Viton)	VITA3C	DVGE06LROMDVITA3C	

P

DVGE-M Straight male stud plain bearing rotary union

Male metric thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852
chart page P21

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] VIT
L[3])	06	M 14 × 1.5	4.0	19	27.0	20.0	12	18.0	27	19	12	14	44	**DVGE06LMOMD**	40	40
	08	M 14 × 1.5	5.0	19	28.0	21.0	12	18.0	29	19	12	17	45	**DVGE08LMOMD**	40	40
	10	M 18 × 1.5	6.0	24	33.0	26.0	12	18.0	30	24	14	19	87	**DVGE10LMOMD**	40	40
	12	M 22 × 1.5	8.0	27	34.0	27.0	14	21.0	32	27	17	22	120	**DVGE12LMOMD**	40	40
	15	M 27 × 2	10.0	32	40.0	33.0	16	24.0	36	32	19	27	215	**DVGE15LMOMD**	40	40
	18	M 33 × 2	16.0	40	45.0	37.5	18	27.5	40	41	27	32	349	**DVGE18LMOMD**	40	40
	22	M 33 × 2	16.0	40	47.0	39.5	18	27.5	44	41	27	36	383	**DVGE22LMOMD**	40	40
	28	M 42 × 2	22.0	50	51.5	44.0	20	31.0	47	50	36	41	590	**DVGE28LMOMD**	40	40
	35	M 48 × 2	25.0	55	64.5	54.0	22	35.0	56	55	41	50	876	**DVGE35LMOMD**	40	40
S[4])	06	M 14 × 1.5	4.0	19	28.0	21.0	12	18.0	31	19	12	17	51	**DVGE06SMOMD**	100	100
	08	M 14 × 1.5	5.0	19	29.0	22.0	12	18.0	32	19	14	19	56	**DVGE08SMOMD**	100	100
	10	M 18 × 1.5	6.0	24	34.5	27.0	12	18.0	34	24	17	22	98	**DVGE10SMOMD**	100	100
	12	M 22 × 1.5	8.0	27	35.5	28.0	14	21.0	38	27	17	24	139	**DVGE12SMOMD**	100	100
	16	M 27 × 2	10.0	32	42.5	34.0	16	24.0	43	32	24	30	239	**DVGE16SMOMD**	100	100
	20	M 33 × 2	16.0	40	50.0	39.5	18	27.5	48	41	27	36	385	**DVGE20SMOMD**	100	100
	25	M 33 × 2	16.0	40	54.5	42.5	18	27.5	54	41	36	46	494	**DVGE25SMOMD**	100	100
	30	M 42 × 2	22.0	50	61.5	48.0	20	31.0	62	50	41	50	695	**DVGE30SMOMD**	100	100
	38	M 48 × 2	25.0	55	71.0	55.0	22	35.0	72	55	50	60	1088	**DVGE38SMOMD**	100	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

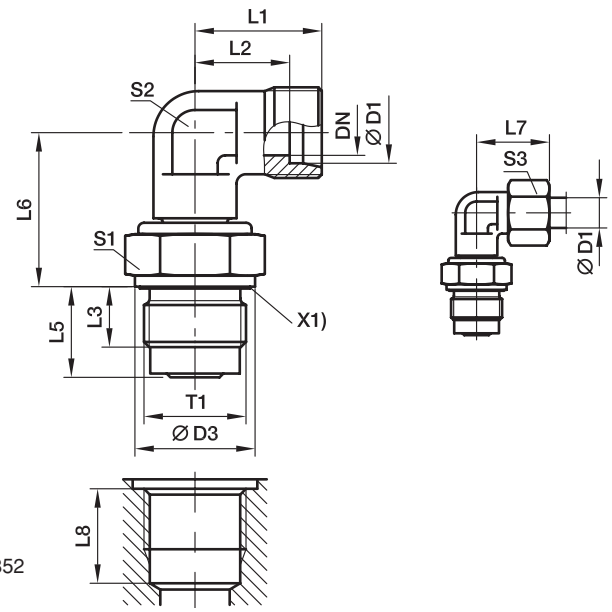
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DVGE06LMOMDA3C	NBR
FKM (Viton)	VITA3C	DVGE06LMOMDVITA3C	

DVWE-R Elbow male stud plain bearing rotary union

Male BSPP thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852
chart page P21

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] VIT
L[3])	06	G 1/4 A	4	19	19	12.0	12	18.0	20.0	27	19	12	14	50	**DVWE06LROMD**	40	40
	08	G 1/4 A	5	19	21	14.0	12	18.0	21.0	29	19	12	17	50	**DVWE08LROMD**	40	40
	10	G 3/8 A	6	22	22	15.0	12	18.0	26.0	30	24	14	19	83	**DVWE10LROMD**	40	40
	12	G 1/2 A	8	27	24	17.0	14	21.0	27.0	32	27	17	22	129	**DVWE12LROMD**	40	40
	15	G 3/4 A	10	32	28	21.0	16	24.0	33.0	36	32	19	27	232	**DVWE15LROMD**	40	40
	18	G 1 A	16	40	31	23.5	18	27.5	37.5	40	41	27	32	393	**DVWE18LROMD**	40	40
	22	G 1 A	16	40	35	27.5	18	27.5	39.5	44	41	27	36	406	**DVWE22LROMD**	40	40
	28	G 1 1/4 A	22	50	38	30.5	20	31.0	44.0	47	50	36	41	664	**DVWE28LROMD**	40	40
	35	G 1 1/2 A	25	55	45	34.5	22	35.0	54.0	56	55	41	50	1005	**DVWE35LROMD**	40	40
S[4])	06	G 1/4 A	4	19	23	16.0	12	18.0	21.0	31	19	12	17	58	**DVWE06SROMD**	100	100
	08	G 1/4 A	5	19	24	17.0	12	18.0	22.0	32	19	14	19	65	**DVWE08SROMD**	100	100
	10	G 3/8 A	6	22	25	17.5	12	18.0	27.0	34	24	17	22	103	**DVWE10SROMD**	100	100
	12	G 1/2 A	8	27	29	21.5	14	21.0	28.0	38	27	17	24	152	**DVWE12SROMD**	100	100
	14	G 3/4 A	10	32	30	22.0	16	24.0	33.0	40	32	19	27	236	**DVWE14SROMD**	100	100
	16	G 3/4 A	10	32	33	24.5	16	24.0	34.0	43	32	24	30	276	**DVWE16SROMD**	100	100
	20	G 1 A	16	40	37	26.5	18	27.5	39.5	48	41	27	36	415	**DVWE20SROMD**	100	100
	25	G 1 A	16	40	42	30.0	18	27.5	42.5	54	41	36	46	569	**DVWE25SROMD**	100	100
	30	G 1 1/4 A	22	50	49	35.5	20	31.0	48.0	62	50	41	50	886	**DVWE30SROMD**	100	100
	38	G 1 1/2 A	25	55	57	41.0	22	35.0	55.0	72	55	50	60	1375	**DVWE38SROMD**	100	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

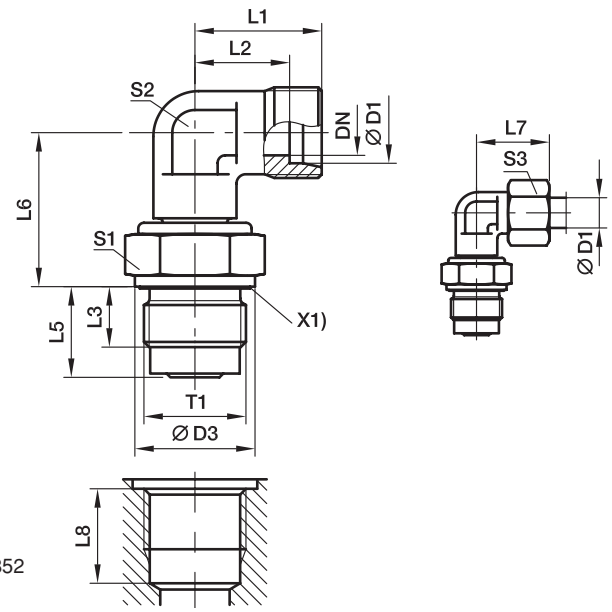
*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DVWE06LROMDA3C	NBR
FKM (Viton)	VIT	DVWE06LROMDVITA3C	

P

DVWE-M Elbow male stud plain bearing rotary union

Male metric thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852 chart page P21

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar)[1] A3C	PN (bar)[1] VIT
L[3])	06	M 14 × 1.5	4.0	19	19	12.0	12	18.0	20.0	27	19	12	14	51	**DVWE06LMOMD**	40	40
	08	M 14 × 1.5	5.0	19	21	14.0	12	18.0	21.0	29	19	12	17	51	**DVWE08LMOMD**	40	40
	10	M 18 × 1.5	6.0	24	22	15.0	12	18.0	26.0	30	24	14	19	92	**DVWE10LMOMD**	40	40
	12	M 22 × 1.5	8.0	27	24	17.0	14	21.0	27.0	32	27	17	22	160	**DVWE12LMOMD**	40	40
	15	M 27 × 2	10.0	32	28	21.0	16	24.0	33.0	36	32	19	27	236	**DVWE15LMOMD**	40	40
	18	M 33 × 2	16.0	40	31	23.5	18	27.5	37.5	40	41	27	32	405	**DVWE18LMOMD**	40	40
	22	M 33 × 2	16.0	40	35	27.5	18	27.5	39.5	44	41	27	36	409	**DVWE22LMOMD**	40	40
	28	M 42 × 2	22.0	50	38	30.5	20	31.0	44.0	47	50	36	41	660	**DVWE28LMOMD**	40	40
	35	M 48 × 2	25.0	55	45	34.5	22	35.0	54.0	56	55	41	50	1012	**DVWE35LMOMD**	40	40
S[4])	06	M 14 × 1.5	4.0	19	23	16.0	12	18.0	21.0	31	19	12	17	59	**DVWE06SMOMD**	100	100
	08	M 14 × 1.5	5.0	19	24	17.0	12	18.0	22.0	32	19	14	19	66	**DVWE08SMOMD**	100	100
	10	M 18 × 1.5	6.0	24	25	17.5	12	18.0	27.0	34	24	17	22	113	**DVWE10SMOMD**	100	100
	12	M 22 × 1.5	8.0	27	29	21.5	14	21.0	28.0	38	27	17	24	153	**DVWE12SMOMD**	100	100
	16	M 27 × 2	10.0	32	33	24.5	16	24.0	34.0	43	32	24	30	284	**DVWE16SMOMD**	100	100
	20	M 33 × 2	16.0	40	37	26.5	18	27.5	39.5	48	41	27	36	427	**DVWE20SMOMD**	100	100
	25	M 33 × 2	16.0	40	42	30.0	18	27.5	42.5	54	41	36	46	581	**DVWE25SMOMD**	100	100
	30	M 42 × 2	22.0	50	49	35.5	20	31.0	48.0	62	50	41	50	898	**DVWE30SMOMD**	100	100
	38	M 48 × 2	25.0	55	57	41.0	22	35.0	55.0	72	55	50	60	1373	**DVWE38SMOMD**	100	100

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

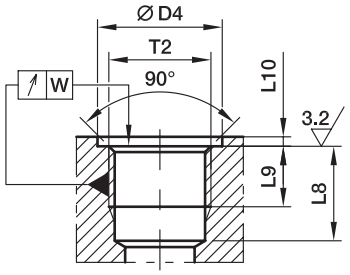
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc yellow plated	A3C	DVWE06LMOMDA3C	NBR
FKM (Viton)	A3C VIT	DVWE06LMOMDVITA3C	

Port tapping for plain bearing rotary fittings DVGE and DVWE



Port tapping form X
according to DIN 3852, part 1 and part 2
(for parallel male studs)

Thread d1	d_4 small +0.4	a_1 max	L9 min	L8 min	W
M 14 × 1.5	20	1.5	12	19.0	0.1
M 18 × 1.5	25[2])	2.0	12	19.0	0.1
M 22 × 1.5	28	2.5	14	22.0	0.1
M 27 × 2	33	2.5	16	25.0	0.2
M 33 × 2	41[2])	2.5	18	28.5	0.2
M 42 × 2	51[2])	2.5	20	32.0	0.2
M 48 × 2	56	2.5	22	36.0	0.2
G 1/4 A	20[2])	1.5	12	19.0	0.1
G 3/8 A	23	2.0	12	19.0	0.1
G 1/2 A	28[2])	2.5	14	22.0	0.1
G 3/4 A	33	2.5	16	25.0	0.2
G 1 A	41[2])	2.5	18	28.5	0.2
G 1 1/4 A	51[2])	2.5	20	32.0	0.2
G 1 1/2 A	56	2.5	22	36.0	0.2

[1]) Not in DIN 3852
[2]) Different from DIN 3852

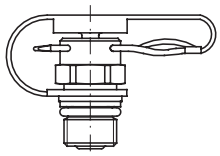
P

SensoControl®
Test Points
Diagnostic-
Test equipment
Industrial Products

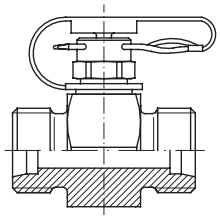


Visual index

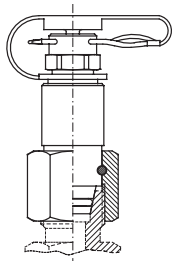
Series 1
Test point fitting with pin-lock



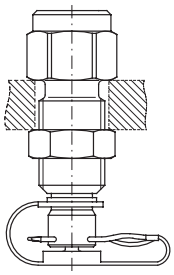
EMA1
p. Q4



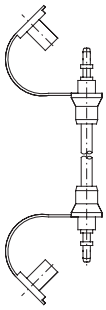
GMA1
p. Q5



VKA1
p. Q6

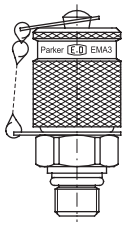


MAV ... MA1
p. Q7

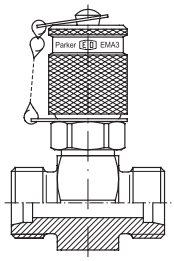


SMA1
P. Q7

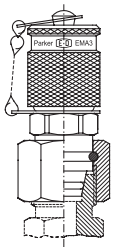
Series 3
Test point with threaded connection
M 16×2



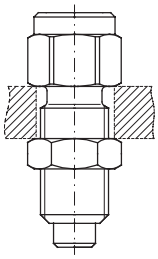
EMA3
p. Q8



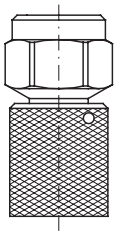
GMA3
p. Q9



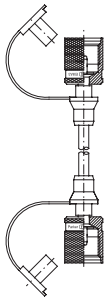
VKA3
p. Q10



MAV ... MA3
p. Q11



MAVMD ... MA3
p. Q11



SMA3
p. Q11

SensoControl®

Product range

Diagnostic/Industrial



p. Q12

EMA1/EMA3-Test Point fitting

- For pressure monitoring and checking on high, low and negative pressure systems.
- For bleeding cylinders and hydraulic systems.
- For taking samples on high, low and negative pressure systems.

Advantages:

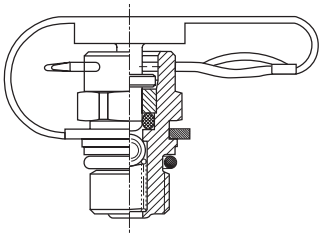
- Leakfree connection before valve is open
- Sturdy, safe constructions for small dimensions
- Easy handling
- Simple connection of measuring, control and switching devices
- Coupling under pressure up to 400 bar is possible with screw couplings
- Nominal pressures up to 630 bar
- Self locking metal guard cap, vibration resistant

Sealing system of the primary seal:

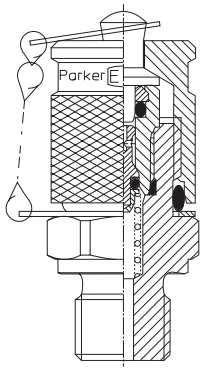
EMA1 by ball non-return valve.
EMA3 by cone seal with O-ring.
The new EMA3 sealing system guarantees minimum leakage rates even for pneumatic and gas applications.

The screw-on Cap (EMA3), and pin lock (EMA1) types both employ an O-ring seal as secondary sealing with the hose attached.

EMA1



EMA3



Differences between EMA1 and EMA3 types

a) sealing system (see previous section)
b) Test hose connection by plug-in coupling in EMA1
Test hose connection by threaded connection in EMA3
c) Working pressures (see section advantages)

Working pressure

- EMA3 types up to 630 bar
- EMA1 types up to 400 bar
- Max. working pressure 630 bar for GMA, VKA and EMA … the recommended working pressure of fitting manufacturer has to be applied
- Joining under pressure up to 400 bar max.
- The allowable nominal pressures of each Test-Point are shown on the product pages.

Materials and Temperatures:

- Steel, zinc plated, chrome^{6}-free
- Stainless Steel, material 1.4571
- Seals:
  NBR Temperature range –20 to +100°C
  (The sealing of the poppet valve for Standard-NBR-version is FKM)
- FKM (Temperature range –20 to +200°C)
- EPDM Ethylene Propylene (for Break Fluid)
  (Temperature range –40 to +150°C)
- Hose:
  Polyamide (Temperature range:
  –35°C … 100°C max.)

Seals:

– Steel Types NBR (Perbunan)
– Stainless Steel FKM (Viton®) only

Media:

- Suitable for hydraulic oils and other mineral oil based fluids (Please pay attention to the sealing materials used!)
- For use in conjunction with other liquid media please consult Parker

Approvals

DVGW for EMA3/8X1OR, EMA3/10X1OR, EMA3 1/8NPT, EMA 3 1/4 NPT

Perbunan = registered trademark of Bayer
Viton® = registered trademark of DuPont

EMA1 Test point fitting with pin-lock — Series 1

Male stud thread: BSP, metric

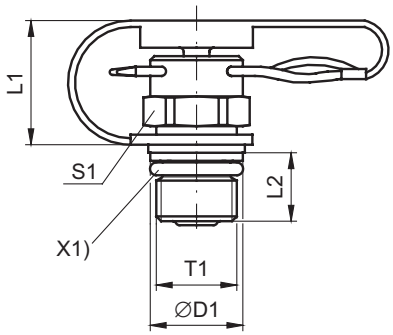


Fig. A

X1) O-ring
X2) Cutting face

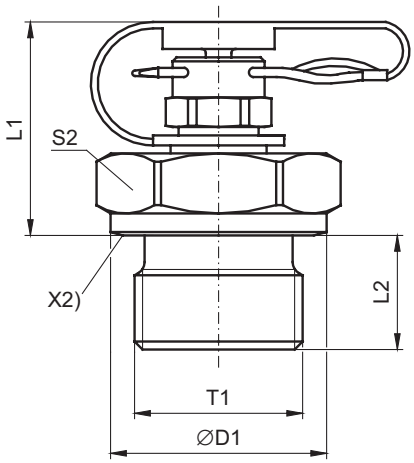


Fig. B

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	DF**
M12×1.5	17.0	32.0	12.0		19	B	53	**EMA1/12X1.5**	400	4
M14×1.5	19.0	32.0	12.0		19	B	56	**EMA1/14X1.5**	400	4
M16×1.5	21.0	25.0	12.0		22	B	47	**EMA1/16X1.5**	400	4
G1/8	14.0	32.5	8.0		17	B	41	**EMA1/1/8**	400	4
G1/4	18.0	32.0	12.0		19	B	54	**EMA1/1/4**	400	4
G3/8	22.0	27.5	12.0		22	B	55	**EMA1/3/8**	400	4
G1/2	26.0	27.5	14.0		27	B	78	**EMA1/1/2**	400	4
M8×1	9.5	17.5	8.4	12		A	16	**EMA1/8X1OR**	400	4
M10×1	11.5	18.0	8.0	12		A	18	**EMA1/10X1OR**	400	4
M10×1	14.0	32.5	8.0		17	B	42	**EMA1/10X1**	400	4

**DF = Design Factor

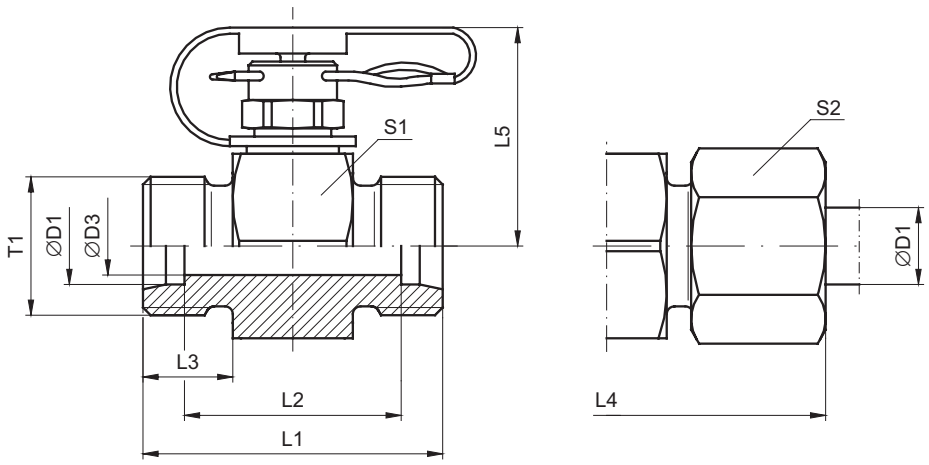
[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EMA1/12X1.5CF	NBR

GMA1 Straight test point fitting with pin-lock — Series 1



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code	PN (bar)[1] CF	DF**
L[3])	06	M12×1.5	4	35	21	10	51	29.0	24	14	73	**GMA1/06LOMD**	315	4
	08	M14×1.5	6	35	21	10	51	29.0	24	17	75	**GMA1/08LOMD**	315	4
	10	M16×1.5	7	37	23	11	53	29.0	24	19	80	**GMA1/10LOMD**	315	4
	12	M18×1.5	8	37	23	11	53	30.5	24	22	96	**GMA1/12LOMD**	315	4
	15	M22×1.5	11	39	25	12	55	32.0	30	27	121	**GMA1/15LOMD**	315	4
	18	M26×1.5	14	39	24	12	57	33.0	32	32	139	**GMA1/18LOMD**	315	4
	22	M30×2	18	43	28	14	61	35.0	36	36	171	**GMA1/22LOMD**	160	4
S[4])	06	M14×1.5	4	39	25	12	55	29.0	24	17	82	**GMA1/06SOMD**	400	4
	08	M16×1.5	5	39	25	12	55	29.0	24	19	88	**GMA1/08SOMD**	400	4
	10	M18×1.5	7	39	24	12	57	29.0	24	22	90	**GMA1/10SOMD**	400	4
	12	M20×1.5	7	39	24	12	57	29.0	24	24	96	**GMA1/12SOMD**	400	4
	14	M22×1.5	10	43	27	14	63	30.5	27	27	121	**GMA1/14SOMD**	400	4
	16	M24×1.5	11	43	26	14	63	32.0	30	30	138	**GMA1/16SOMD**	400	4
	20	M30×2	15	47	26	16	69	35.0	36	36	222	**GMA1/20SOMD**	400	4

**DF = Design Factor

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

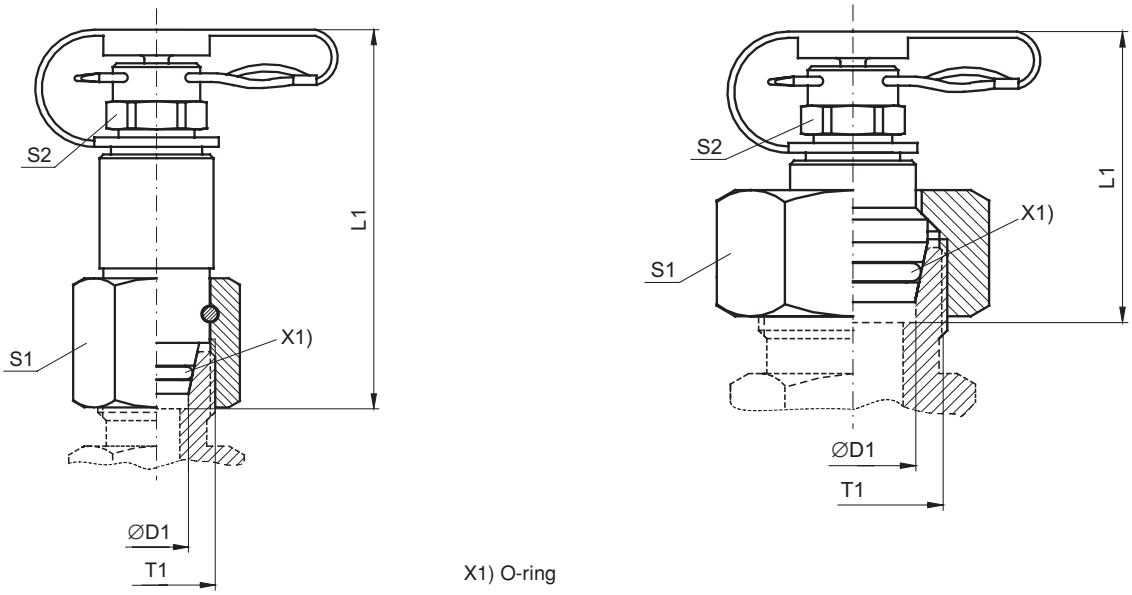
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GMA1/06LOMDCF	NBR

VKA1 Test point fitting with pin lock for cones — Series 1

With 24° cone swivel nut connection



X1) O-ring

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	DF**
L[3])	06	M12×1.5	48	14	12	A	44	**VKA1/06L**	315	4
	08	M14×1.5	49	17	12	A	54	**VKA1/08L**	315	4
	10	M16×1.5	50	19	12	A	68	**VKA1/10L**	315	4
	12	M18×1.5	51	22	12	A	81	**VKA1/12L**	315	4
	15	M22×1.5	39	27	12	B	82	**VKA1/15L**	315	4
	18	M26×1.5	38	32	12	B	112	**VKA1/18L**	315	4
S[4])	06	M14×1.5	48	17	12	A	51	**VKA1/06S**	400	4
	08	M16×1.5	50	19	12	A	62	**VKA1/08S**	400	4
	10	M18×1.5	50	22	12	A	78	**VKA1/10S**	400	4
	12	M20×1.5	51	24	12	A	100	**VKA1/12S**	400	4
	14	M22×1.5	39	27	12	B	88	**VKA1/14S**	400	4
	16	M24×1.5	37	30	12	B	105	**VKA1/16S**	400	4
	20	M30×2	44	36	12	B	174	**VKA1/20S**	400	4

**DF = Design Factor

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

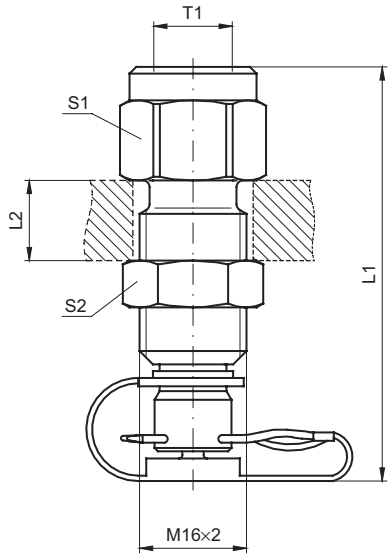
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

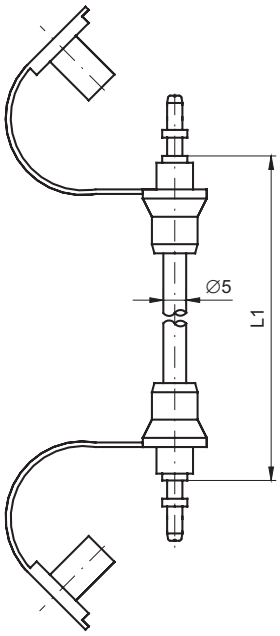
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VKA1/06LCF	NBR

MAV-MA1 Test Point pressure gauge connector with pin-lock
SMA1 Test Point high pressure hose with pin-lock Series 1

Female thread: BSP
Sealing: sealing ring DIN 16258



Pressure gauge connector: MAV-MA1



Test hose: SMA1

T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	DF**
G1/4	61.5	12	19	19	78	**MAV1/4MA1**	400	4.0
G1/2	72.0	12	27	19	135	**MAV1/2MA1**	400	4.0
	400.0				21	**SMA1-400**	400	2.5
	630.0				26	**SMA1-630**	400	2.5
	800.0				26	**SMA1-800**	400	2.5
	1000.0				31	**SMA1-1000**	400	2.5
	1500.0				40	**SMA1-1500**	400	2.5
	2000.0				49	**SMA1-2000**	400	2.5
	2500.0				58	**SMA1-2500**	400	2.5
	3200.0				70	**SMA1-3200**	400	2.5
	4000.0				84	**SMA1-4000**	400	2.5

**DF = Design Factor

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	MAV1/4MA1CF	NBR

Note hoses with small diameter:
- Min. bending radius r = 20 mm
- Working temperature –20°C up to 100°C (short time to +120°C)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

Temperature factor of pressure rating:

up to	0° C	122 %
for	30° C	110 %
for	50° C	100 %
for	80° C	86 %
for	100° C	77 %

For measuring with liquid pressure media please note:
Bleed before connecting tube! By capillary action discharge of the pressure medium is prevented widely.

Q

EMA3 Test Point with threaded connection M 16×2 — Series 3

Male thread: BSP, metric

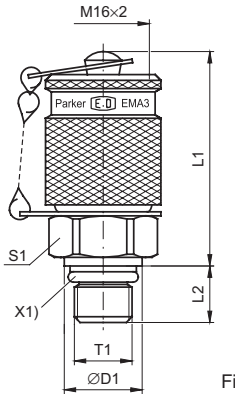


Fig. A

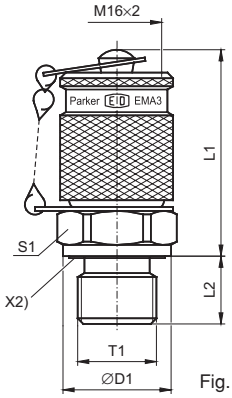


Fig. B

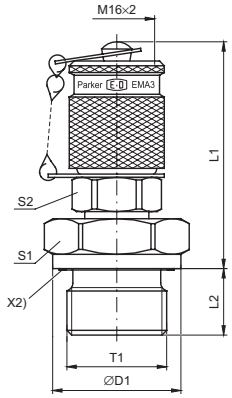
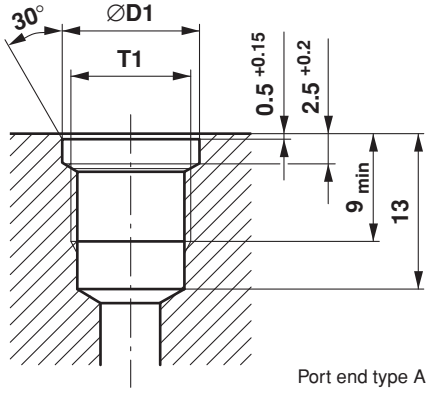
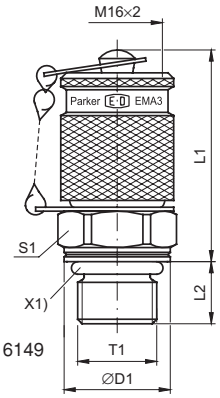


Fig. C



Port end type A



Iso 6149

Fig. F

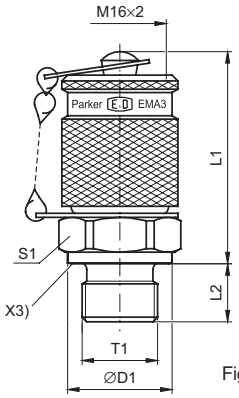


Fig. D

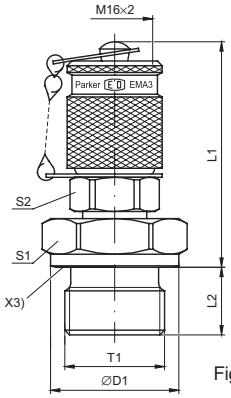


Fig. E

X1) O-ring
X2) Eolastic sealing
X3) Cutting face

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] 71	DF** CF	DF** 71
M8×1	9.5	38.5	7.5	17		A	66	**EMA3/8X1OR**	250		4.0	
M10×1	11.5	37.0	7.5	17		A	70	**EMA3/10X1OR**	630	630	4.0	4
M14×1.5	18.8	39.5	11.0	19		F	79	**EMA3/14X1.5ISO**	630	630	4.0	4
M10×1	14.0	40.0	8.0	17		D	67	**EMA3/10X1**	400		4.0	
M12×1.5	17.0	38.0	12.0	17		D	74	**EMA3/12X1.5**	400		4.0	
M14×1.5	19.0	39.0	12.0	19		D	78	**EMA3/14X1.5**	400		4.0	
M16×1.5	21.0	40.0	12.0	22		D	90	**EMA3/16X1.5**	400		4.0	
G1/8	14.0	37.5	8.0	17		D	70	**EMA3/1/8**	400		4.0	
G1/4	18.0	39.0	12.0	19		D	77	**EMA3/1/4**	400		4.0	
G3/8	22.0	40.5	12.0	22		D	91	**EMA3/3/8**	400		4.0	
G1/2	26.0	46.0	14.0	27	17	E	137	**EMA3/1/2**	400		3.4	
G1/8	14.0	37.5	8.0	17		B	72	**EMA3/1/8ED**	400	400	4.0	4
G1/4	19.0	39.0	12.0	19		B	76	**EMA3/1/4ED**	630	630	4.0	4
G3/8	22.0	40.5	12.0	22		B	93	**EMA3/3/8ED**	630	630	4.0	4
M10×1	14.0	40.0	8.0	17		B	71	**EMA3/10X1ED**	400	400	4.0	4
M12×1.5	17.0	38.0	12.0	17		B	72	**EMA3/12X1.5ED**	630	630	4.0	4
M14×1.5	19.0	39.0	12.0	19		B	77	**EMA3/14X1.5ED**	400	400	4.0	4
G1/2	27.0	46.0	14.0	27	17	C	135	**EMA3/1/2ED**	400	400	4.0	4

**DF = Design Factor

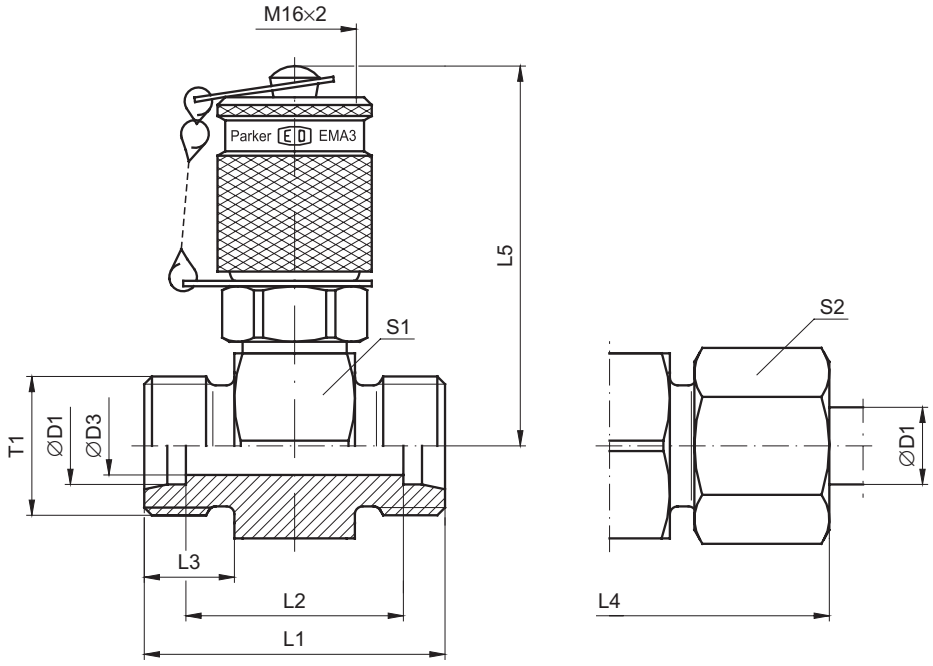
[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	EMA3/10X10ORCF	NBR
Stainless Steel	71	EMA3/10X10OR71	VIT

GMA3 Straight Test Point with threaded connection M 16×2 Series 3



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] 71	DF** CF	DF** 71
L[3])	06	M12×1.5	4	35	21	10	51	49.0	24	14	126	**GMA3/06LOMD**	315	315	4	4
	08	M14×1.5	6	35	21	10	51	49.0	24	17	128	**GMA3/08LOMD**	315	315	4	4
	10	M16×1.5	7	37	23	11	53	49.0	24	19	132	**GMA3/10LOMD**	315	315	4	4
	12	M18×1.5	8	37	23	11	53	50.5	27	22	145	**GMA3/12LOMD**	315	315	4	4
	15	M22×1.5	11	39	25	12	55	52.0	30	27	174	**GMA3/15LOMD**	315	315	4	4
	18	M26×1.5	14	39	24	12	57	53.0	32	32	192	**GMA3/18LOMD**	315	315	4	4
	22	M30×2	18	43	28	14	61	55.0	36	36	220	**GMA3/22LOMD**	160	160	4	4
	28	M36×2	23	43	28	14	61	57.5	41	41	259	**GMA3/28LOMD**	160	160	4	4
	35	M45×2	30	47	26	16	69	60.0	46	50	363	**GMA3/35LOMD**	160	160	4	4
	42	M52×2	36	47	25	16	71	64.5	55	60	419	**GMA3/42LOMD**	160	160	4	4
S[4])	06	M14×1.5	4	39	25	12	55	49.0	24	17	137	**GMA3/06SOMD**	630	630	4	4
	08	M16×1.5	5	39	25	12	55	49.0	24	19	141	**GMA3/08SOMD**	630	630	4	4
	10	M18×1.5	7	39	24	12	57	49.0	24	22	141	**GMA3/10SOMD**	630	630	4	4
	12	M20×1.5	7	39	24	12	57	49.0	24	24	150	**GMA3/12SOMD**	630	630	4	4
	14	M22×1.5	10	43	27	14	63	50.5	27	27	172	**GMA3/14SOMD**	630	630	4	4
	16	M24×1.5	11	43	26	14	63	52.0	30	30	195	**GMA3/16SOMD**	400	400	4	4
	20	M30×2	15	47	26	16	69	55.0	36	36	254	**GMA3/20SOMD**	400	400	4	4
	25	M36×2	20	51	27	18	75	57.5	41	46	329	**GMA3/25SOMD**	400	400	4	4
	30	M42×2	25	55	28	20	81	60.0	46	50	412	**GMA3/30SOMD**	400	400	4	4
	38	M52×2	32	61	29	22	91	64.5	55	60	616	**GMA3/38SOMD**	315	315	4	4

**DF = Design Factor

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

Delivery without nut and ring.
Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	GMA3/06LOMDCF	NBR
Stainless Steel	71	GMA3/06LOMD71	VIT

Q

VKA3 Test Point for cones with threaded connection M 16×2 Series 3

With 24° cone swivel nut connection

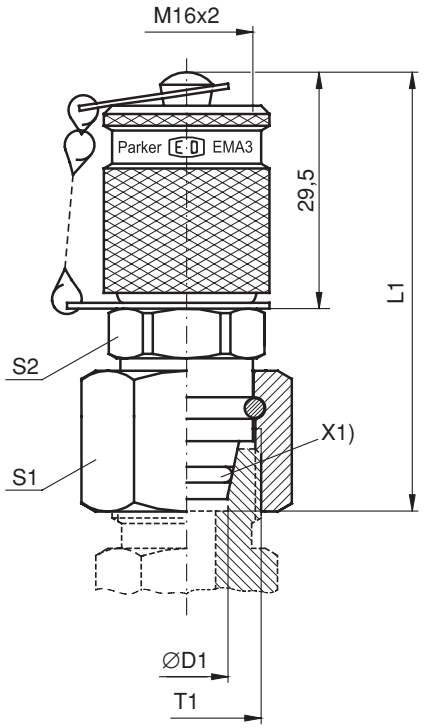


Fig. A

X1) O-ring

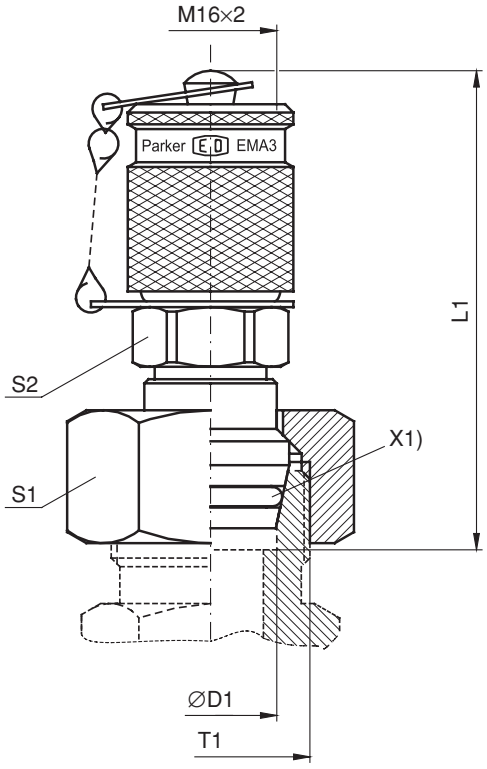


Fig. B

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar)[1] CF	PN (bar)[1] 71	DF** CF	DF** 71
L[3])	06	M12×1.5	55	14	17	A	82	**VKA3/06L**	315	315	4	4
	08	M14×1.5	51	17	17	A	82	**VKA3/08L**	315	315	4	4
	10	M16×1.5	53	19	17	A	93	**VKA3/10L**	315	315	4	4
	12	M18×1.5	53	22	17	A	107	**VKA3/12L**	315	315	4	4
	15	M22×1.5	59	27	17	B	133	**VKA3/15L**	315	315	4	4
	18	M26×1.5	59	32	17	B	163	**VKA3/18L**	315	315	4	4
	22	M30×2	60	36	17	B	205	**VKA3/22L**	160	160	4	4
	28	M36×2	64	41	17	B	269	**VKA3/28L**	160	160	4	4
	35	M45×2	71	50	17	B	411	**VKA3/35L**	160	160	4	4
	42	M52×2	72	60	17	B	592	**VKA3/42L**	160	160	4	4
S[4])	06	M14×1.5	50	17	17	A	81	**VKA3/06S**	630	630	4	4
	08	M16×1.5	52	19	17	A	88	**VKA3/08S**	630	630	4	4
	10	M18×1.5	53	22	17	A	99	**VKA3/10S**	630	630	4	4
	12	M20×1.5	54	24	19	A	121	**VKA3/12S**	630	630	4	4
	14	M22×1.5	59	27	17	B	136	**VKA3/14S**	630	630	4	4
	16	M24×1.5	58	30	17	B	156	**VKA3/16S**	400	400	4	4
	20	M30×2	65	36	17	B	223	**VKA3/20S**	400	400	4	4
	25	M36×2	68	46	17	B	367	**VKA3/25S**	400	400	4	4
	30	M42×2	74	50	17	B	444	**VKA3/30S**	400	400	4	4
	38	M52×2	81	60	17	B	655	**VKA3/38S**	315	315	4	4

**DF = Design Factor

[1]) Pressure shown = item deliverable

[3]) L = light series; [4]) S = heavy series

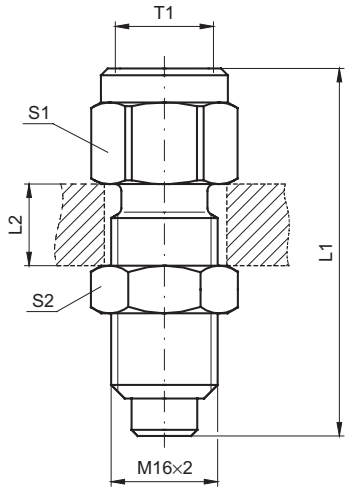
$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

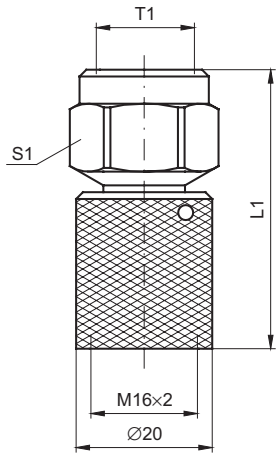
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	VKA3/06LCF	NBR
Stainless Steel	71	VKA3/06L71	VIT

MAV…MA3 Test point pressure gauge connector with threaded connection M 16×2
MAVMD…MA3 Test point with threaded connection M 16×2
SMA3 Test point high pressure hose with threaded connection M 16×2 W Series 3

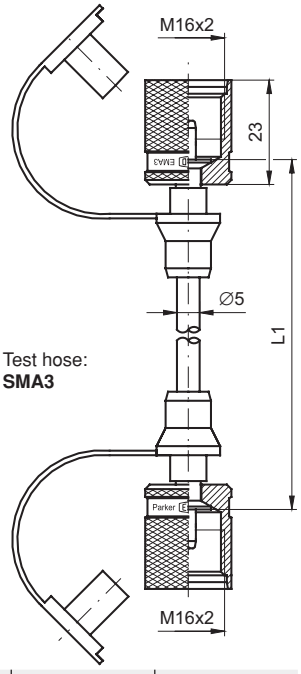
Female thread: BSP
Sealing: sealing ring DIN 16258*



Pressure gauge connector:
MAV…MA3



Gauge-Direct-Connector:
MAVMD…MA3



T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar)[1] CF	DF**
G1/4	54.0	12	19	19	74	**MAV1/4MA3**	630	4.0
G1/2	64.0	12	27	19	129	**MAV1/2MA3**	630	4.0
G1/4	41.0		19		61	**MAVMD1/4MA3**	630	4.0
G1/2	51.5		27		103	**MAVMD1/2MA3**	630	4.0
	200.0				73	**SMA3-200**	630	2.5
	300.0				74	**SMA3-300**	630	2.5
	400.0				74	**SMA3-400**	630	2.5
	630.0				79	**SMA3-630**	630	2.5
	800.0				83	**SMA3-800**	630	2.5
	1000.0				87	**SMA3-1000**	630	2.5
	1500.0				95	**SMA3-1500**	630	2.5
	2000.0				105	**SMA3-2000**	630	2.5
	2500.0				110	**SMA3-2500**	630	2.5
	3200.0				125	**SMA3-3200**	630	2.5
	4000.0				137	**SMA3-4000**	630	2.5

**DF = Design Factor

[1]) Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10}$ = PN (MPa)

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additonal. suffix needed)
Steel, zinc plated, chrome[6]-free	CF	MAV1/4MA3CF	NBR

* Sealing rings according to DIN 16258 for steel design of copper, for stainless steel design of stainless steel.

Note hoses with small diameter:
- Min. bending radius r = 20 mm
- Working temperature –20°C up to 100°C (short time to +120°C)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

For measuring with liquid pressure media please note:
Bleed before connecting tube! By capillary action discharge of the pressure medium is prevented widely.

Temperature factor of pressure rating:

up to	0° C	122 %
for	30° C	110 %
for	50° C	100 %
for	80° C	86 %
for	100° C	77 %

Q

SensoControl®

ServiceJunior



Hand-held measuring devices
ServiceJunior: Perfect and simple measuring. On top of easy operating capturing pressure peaks in hydraulic system can be done immediately.
Measuring and displaying pressure very precised due to 4 digital display. Pressure peaks captured by displaying MAX reading.
ServiceJunior is powered by a battery.

Complete ServiceJunior Kit
- incl. Test Point Adapters and Test Hoses
- Ready to start

Data sheet 4052/D3/UK!

SensoControl®

ServiceJunior wireless



Utilising the ServiceJunior wireless allows to record the pressure values taken from one or several measurement points on the machine or installation.
Stored measurement data is transmitted to a PC across distances of up to 50 metres.



- Digital manometer (battery powered) with backlight display
- Numerical and graphic display of pressure peaks
- Measured data memory for storing pressure sequences
- Read-out data from measured data memory to the PC via a radio interface
- Wireless transmissions up to 50 metres
- Set and evaluate measurement data using PC software “JuniorWin”
- Long-term monitoring
- Network operations (monitor several measurement points)

ServiceJunior wireless-Kit
- Incl. Test Point Adapters and Test Hoses
- Ready to start

Bulletin 4056/UK

SensoControl®

Serviceman Series





The **SensoControl®** Serviceman Kits (SC-500-01, SC-510-01) are basic equipment to measure pressure, temperature, flow and rotational speed in hydraulics. Simple to operate; particularly suitable for on-site use.
All **SensoControl®** handmeters are provided with sensor recognition. The measuring ranges are automatically scaled and shown on the display. This prevents measuring errors and makes time-consuming adjustment work unnecessary.

Please ask for catalogue no. 4054!

SensoControl®

ServiceMaster Series





The **ServiceMaster** is a multi-channel handmeter for the simultaneous measuring of important hydraulic values: **all hydraulic parameters, such as pressure, differential pressure, flow and hydraulic power can be measured, displayed, stored and processed.**

SCKIT-250/350 – Basic and extended Kits in order to measure up to 3 hydraulic datas simultaneously.

Q

SensoControl®

ServiceMaster Series



SensoControl® handmeters and complete measuring systems are perfectly suited measuring tools for every application. Whether they are used in the industrial area, in mobile hydraulics, for service or repair: measuring and processing of hydraulic values is the basis of safe trouble shooting. The systematic search of errors with modern means is something the service engineer simply cannot do without.



To meet the requirements in both modern industrial hydraulics and complex mobile hydraulics, we offer a range of different models.
SCKIT-400/450 – Advanced Kits for complete diagnosis including software and printer. Up to 6 channels can be measured, displayed and anlyzed.

Please ask for cat. no. 4084!

SensoControl®

Pressure Controller SCPSD



Easy handling, high functionality and longterm stability service life are the main characteristics of the electronic Pressure Controller SCPSD.

Features:
- Bar/PSI/MPa
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the pressure is to be displayed, or if rapid switching or analogue signals, which have to be adjusted simply and without additional calibration, are required, then the SCPSD is the ideal solution.

SensoControl®

Temperature Controller SCTSD



Easy operation and high functionality are the main characteristics from the electronic Temperature Controller SCTSD.

Features:
- °C and °F
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the temperature is to be displayed or temperature-dependent switching or analogue signals, which need to be adjusted simply and without additional calibration, are required, then the SCTSD is the ideal solution.

Q

SensoControl®

LevelTempController SCLTSD



Easy handling, high functionality and longterm stability service life are the main characteristics of the electronic LevelTempController SCLTSD.

Features:
- temperature and Level
- compact design
- rotatable
- robust housing (IP67)
- easy to operate
- settings menu-driven
- one sensor
- one input bore
- switch output
- analogue output
- hysteresis/window function
- Password

The LevelTempController makes it possible to set and display temperature and level separately on a common platform. It is in tank monitoring that the integration of level and temperature reveals its possibilities in such a unique way.

Bulletin 4088/UK

SensoControl®

LevelController SCLSD



Easy handling, high functionality and longterm stability service life are the main characteristics of the electronic LevelController SCLSD.

- level display in mm/ich/%
- compact design
- rotatable
- robust housing (IP 67)
- settings menu-driven
- High & Low display
- switch outputs
- analogue output
- tried and tested float measuring system
- easy to operate
- any kind of installation
- hysteresis/window function
- Password

With ist measuring system well-established in hydraulics, the LevelController offer the best solution for monitoring tank levels. With its menu-driven setting of level switching point, a wide variety of applications can be comfortably accommodated. Percentage display can be dialled in so that levels are uniformly represented for the operator independently of the tank design.

Bulletin 4088/UK

SensoControl®

Temperature sensor SCT



Compact design and high working pressure are the characteristics of the electronic temperature sensor SCT.

Features:
- working pressure up to 630 bar
- compact design
- stainless steel housing
- easy set-up
- –50°C to 250°C
- 0/4 … 20 mA

If temperatures are to be measured at higher pressures and if a compact design is needed, then the SCT is used.

SensoControl®

Pressure sensors SCP/SCPT



Longterm stability, robust compact housing and protection from interference are the main characteristics of the electronic pressure sensor SCP.

Features:
- long term stability
- stainless steel housing
- G $^1/_2$ + G $^1/_4$ BSPP
- compact design
- relative and absolute pressure
- combisensor for pressure and temperature

If pressure is to be captured reliably in the long term and if compact dimensions are needed, the SCP is appropriate. if a temperature signal is additionally required, the combisensor is the solution.

Q

SensoControl®

SCE-020 panel instrument



Plenty of connections, flexible display and many outputs are the main characteristics of panel instrument SCE-020.

Features:
- Inputs: Current
  Voltage
  Frequency
- Units freely selectable
- Adjustable display range
- Outputs: Switch
  Analogue output
- Serial interface: RS 232

To display easily and flexibly various measurement values, panel instrument SCE-020 is used.

SensoControl®

Adaptors SCA



Broad range of measuring points and adaptors in galvanized finish for rapid, clean and simple adaption of sensors and measuring equipment to hydraulic systems. Plug and screw designs with various threads and seal forms are available.

Please ask for our SensoControl® catalogue!

Parker

Ermeto Original
Tubes



General recommendations for tubes

1. Steel types, mechanical properties, conditions

Steel types, mechanical properties and conditions of EO steel tubes

Steel type	Tensile strength Rm	Yield point ReH	Ductile yield A5 (longit.)	Condition
Fine grain E235 acc. to EN 10305-4 (St. 37.4 as per DIN 1630, old indication)	340 N/mm² min. 49,000 lb/in²	235 N/mm² min. 34,000 lb/in²	25 % min.	Seamless, cold drawn under inert gas, normal annealed, abbreviation NBK, DIN EN 10305-1, Part 2

Steel types, mechanical properties and conditions of EO stainless steel tubes

Steel type	Tensile strength Rm	Yield point (1 % proof stress)	Ductile yield A5 (longit.)	Condition
Abbreviation 1.4571 X6CrNiMoTi17122	500 N/mm² min. 72,500 lb/in²	245 N/mm² min. 35,500 lb/in²	35 % min.	Seamless, cold drawn free of scale, heat treated in accordance with DIN EN 10216-5 tab. 6
Abbreviation 1.4541 X6CrNiTi1810	500 N/mm² min. 72,500 lb/in²	235 N/mm² min. 35,500 lb/in²	35 % min.	

2. Tests and certifications
All tubes are subjected to a non-destructive leak test and marked accordingly as proof. This marking replaces a works certificate DIN EN 10204-2.2. Test class 1 DIN EN 10216-5 Table 7 applies for tubes made of 1.4571 and 1.4541.

3. Recommended bend radius
A bend radius of 3x the external tube diameter is recommended for cold bending of tubes with tube benders or by hand.

4. Welding suitability and weldability
Tubes of E235 are weldable according to usual techniques. Types made of 1.4571 and 1.4541 (stainless) are suitable for arc welding. The welding filler should be selected in accordance with DIN EN 1600 and DIN EN 12072 part 1 taking into account the type of application and the welding technique.

5. Approximate calculation of the flow resistance in straight tubelines
The flow resistance and thus the tubeline efficiency is influenced by the tube inside diameter, the volume flow (measured or calculated) and the properties of the medium. Laminar flow should be considered in order to keep losses in the system down to a minimum. The transition from laminar to turbulent flow, which brings an increase in the flow resistance is generally defined by the Reynolds number Re 2320. Since the transition cannot be pinpointed exactly, the transition range can only be determined by measuring. If, for simplified calculation, transition at Re 2320 and a "technically smooth" tube inner surface are assumed, the limit speeds w crit. and the laminar to turbulent flow volume flow v crit. when transition takes place, can be estimated according to the following formulas:

$$w_{crit.} = \frac{2.32 \cdot \nu}{d_i} \text{ [m / s]}$$

$$\dot{v}_{crit.} = 0.109 \cdot d_i \cdot \nu \text{ [l / min]}$$

d_i = tube bore ∅ in mm

ν = kinematic viscosity in mm^2 / s.

For approximate calculation of the pressure drop in bar/1 m tube length, the following formulas can be used:

1. Laminar range:

$$\rho_v = \frac{0.32 \cdot w \cdot \nu \cdot \rho}{d_i^2 \cdot 10^3} = \frac{6.79 \cdot \dot{v} \cdot \nu \cdot \rho}{d_i^4 \cdot 10^3} \text{ [bar / 1 m]}$$

2. Turbulent range:

$$\rho_v = \frac{0.281 \cdot w^{1.75} \cdot \nu^{0.25} \cdot \rho}{d_i^{1.25} \cdot 10^3}$$

$$= \frac{59 \cdot \dot{v}^{1.75} \cdot \nu^{0.25} \cdot \rho}{d_i^{4.75} \cdot 10^3} \text{ [bar / 1 m]}$$

w = flow speed in m/s; ν = kinetic viscosity in mm^2/s; $\dot{v}$ = volume flow in l/min.; ρ = density of the medium in kg/m^3; d_i = pipe internal diameter in mm.
Detailed calculations of the flow resistance require an exact knowledge of the tubeline system and the operating conditions. Refer to the relevant literature for other methods of calculations.

R

Seamless EO steel tubes Material St. 37.4

Tolerances DIN EN 10305-1, part 1

Order Code							Design pressure bar			
Phosphated and oiled	Zinc plated yellow	Chromium^{6}-free	Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	DIN EN 13480-3 I Static	DIN EN 13480-3 III Dynamic	Burst pressure bar	Weight kg/m
R04X0.5	**R04X0.5VZ**		4		0.50	3.0	313	273	1160	0.047
	R04X0.75VZ		4	±0.08	0.75	2.5	409	391	1820	0.063
R04X1	**R04X1VZ**	**R04X1CF**	4		1.00	2.0	522	500	2700	0.074
	R05X1VZ		5	±0.08	1.00	3.0	432	416	2120	0.099
	R06X0.75VZ		6		0.75	4.5	333	288	1150	0.103
R06X1	**R06X1VZ**	**R06X1CF**	6		1.00	4.0	389	372	1650	0.123
R06X1.5	**R06X1.5VZ**		6	±0.08	1.50	3.0	549	526	2550	0.166
	R06X2VZ		6		2.00	2.0	692	662	>3500	0.197
	R06X2.25VZ		6		2.25	1.5	757	725	>3500	0.208
R08X1	**R08X1VZ**	**R08X1CF**	8		1.00	6.0	333	288	1175	0.173
R08X1.5	**R08X1.5VZ**	**R08X1.5CF**	8	±0.08	1.50	5.0	431	412	1925	0.240
R08X2	**R08X2VZ**		8		2.00	4.0	549	526	2500	0.296
	R08X2.5VZ		8		2.50	3.0	658	630	2650	0.339
R10X1	**R10X1VZ**	**R10X1CF**	10		1.00	8.0	282	248	900	0.222
R10X1.5	**R10X1.5VZ**	**R10X1.5CF**	10		1.50	7.0	373	357	1450	0.314
R10X2	**R10X2VZ**		10	±0.08	2.00	6.0	478	458	2025	0.395
	R10X2.5VZ		10		2.50	5.0	576	551	2675	0.462
	R10X3VZ		10		3.00	4.0	666	638	>3500	0.518
R12X1	**R12X1VZ**	**R12X1CF**	12		1.00	10.0	235	209	750	0.271
R12X1.5	**R12X1.5VZ**	**R12X1.5CF**	12		1.50	9.0	353	303	1150	0.388
R12X2	**R12X2VZ**	**R12X2CF**	12	±0.08	2.00	8.0	409	391	1600	0.493
	R12X2.5VZ		12		2.50	7.0	495	474	2025	0.586
	R12X3VZ		12		3.00	6.0	576	551	2600	0.666
	R12X3.5VZ		12		3.50	5.0	651	624		0.734
	R14X1.5VZ		14		1.50	11.0	302	264	975	0.462
R14X2	**R14X2VZ**		14		2.00	10.0	357	342	1325	0.592
	R14X2.5VZ		14	±0.08	2.50	9.0	434	415	1650	0.709
R14X3	**R14X3VZ**		14		3.00	8.0	507	485	2200	0.814
			14		3.50	7.0	576	551	2625	0.906
R15X1	**R15X1VZ**		15		1.00	13.0	188	170	575	0.345
R15X1.5	**R15X1.5VZ**	**R15X1.5CF**	15		1.50	12.0	282	248	950	0.499
R15X2	**R15X2VZ**		15	±0.08	2.00	11.0	336	321	1275	0.641
R15X3			15		3.00	9.0	478	458	2000	0.888
R16X1.5	**R16X1.5VZ**		16		1.50	13.0	264	233	850	0.536
R16X2	**R16X2VZ**	**R16X2CF**	16	±0.08	2.00	12.0	353	303	1175	0.691
R16X2.5	**R16X2.5VZ**		16		2.50	11.0	386	370	1500	0.832
R16X3	**R16X3VZ**		16		3.00	10.0	452	433	1850	0.962
R18X1	**R18X1VZ**		18		1.00	16.0	157	143	450	0.419
R18X1.5	**R18X1.5VZ**	**R18X1.5CF**	18		1.50	15.0	235	209	700	0.610
R18X2	**R18X2VZ**		18	±0.08	2.00	14.0	313	273	975	0.789
R18X2.5	**R18X2.5VZ**		18		2.50	13.0	348	333	1300	0.956
	R18X3VZ		18		3.00	12.0	409	391	1575	1.111

Surface finish:
- Phosphated and oiled:
- Tubes with I.D. 1.5–5 mm: outside and inside oiled.
- Tubes from 6 mm I.D.: outside and inside phosphated and oiled.
- Zinc plated yellow:
  These dimensions are externally zinc plated (coating 8–12 µm), inside oiled.
- Chromium^{6}-free:
  These dimensions are externally thick coat passivated (thickness of coat 8–12 µm), inside oiled.

Calculation pressures:

Calculation pressures given are according to DIN EN 13480-3 part I for **static stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot d_a} \text{ (bar)}$$

Material characteristic value K = 235N/mm^2 and DIN EN 13480-3 part III for **dynamic stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot (da + s \cdot c)} \text{ (bar)}$$

Material characteristic value K = 226 N/mm^2
(permanent fatigue strength)

Safety correction value S = 1.5 for static and dynamic stress. Factor c for consideration of wall thickness divergence **for static and dynamic stress** = 0.8 for tube O.D. 4 and 5; 0.85 for tube o.d. 6 and 8; 0.9 for larger tube O.D.

Seamless EO steel tubes (Continued) Material St. 37.4

Tolerances DIN EN 10305-1, part 1

Order Code							Design pressure bar			
Phosphated and oiled	Zinc plated yellow	Chromium[6]-free	Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	DIN EN 13480-3 I Static	DIN EN 13480-3 III Dynamic	Burst pressure bar	Weight kg/m
	R20X1.4VZ		20		1.50	17	212	190	675	0.684
R20X2	**R20X2VZ**	**R20X2CF**	20		2.00	16	282	248	900	0.888
R20X2.5	**R20X2.5VZ**		20	±0.08	2.50	15	353	303	1100	1.079
R20X3	**R20X3VZ**		20		3.00	14	373	357	1400	1.258
R20X3.5	**R20X3.5VZ**		20		3.50	13	426	408	1650	1.424
	R20X4VZ		20		4.00	12	478	458	2000	1.578
R22X1.5	**R22X1.5VZ**		22		1.50	19	192	173	550	0.758
R22X2	**R22X2VZ**	**R22X2CF**	22	±0.08	2.00	18	256	227	775	0.986
R22X2.5	**R22X2.5VZ**		22		2.50	17	320	278	1025	1.202
	R22X3VZ		22		3.00	16	343	328	1175	1.406
R25X2	**R25X2VZ**		25		2.00	21	226	201	725	1.134
R25X2.5	**R25X2.5VZ**		25		2.50	20	282	248	850	1.387
R25X3	**R25X3VZ**	**R25X3CF**	25	±0.08	3.00	19	338	292	1025	1.628
R25X4	**R25X4VZ**		25		4.00	17	394	378	1500	2.072
R25X4.5	**R25X4.5VZ**		25		4.50	16	437	418	1625	2.275
R28X1.5	**R28X1.5VZ**		28		1.50	25	151	138	425	0.980
R28X2	**R28X2VZ**	**R28X2CF**	28		2.00	24	201	181	600	1.282
R28X2.5	**R28X2.5VZ**		28	±0.08	2.50	23	252	223	750	1.572
R28X3	**R28X3VZ**		28		3.00	22	302	264	900	1.850
	R30X2VZ		30		2.00	26	188	170	575	1.381
R30X2.5	**R30X2.5VZ**		30		2.50	25	235	209	725	1.695
R30X3	**R30X3VZ**	**R30X3CF**	30	±0.08	3.00	24	282	248	850	1.998
R30X4	**R30X4VZ**		30		4.00	22	336	321	1175	2.565
R30X5	**R30X5VZ**		30		5.00	20	409	391	1600	3.083
R35X2	**R35X2VZ**	**R35X2CF**	35		2.00	31	161	147	450	1.628
R35X2.5	**R35X2.5VZ**		35		2.50	30	201	181	600	2.004
R35X3	**R35X3VZ**	**R35X3CF**	35	±0.15	3.00	29	242	215	700	2.367
	R35X4VZ		35		4.00	27	322	280	960	3.058
R38X2.5	**R38X2.5VZ**		38		2.50	33	186	168	550	2.189
R38X3	**R38X3VZ**		38		3.00	32	223	199	675	2.589
R38X4	**R38X4VZ**	**R38X4CF**	38	±0.15	4.00	30	297	260	900	3.354
R38X5	**R38X5VZ**		38		5.00	28	332	318	1150	4.069
	R38X6VZ		38		6.00	26	390	373		4.735
	R38X7VZ		38		7.00	24	446	427	1700	5.352
R42X2	**R42X2VZ**	**R42X2CF**	42		2.00	38	134	123	375	1.973
R42X3	**R42X3VZ**	**R42X3CF**	42	±0.2	3.00	36	201	181	575	2.885
R42X4	**R42X4VZ**		42		4.00	34	269	237	850	3.749
R50X6			50	±0.2	6.00	38	338	292		6.511
R65X8			65	±0.3	8.00	49	347	299		11.246

Remarks:

Corrosion – additional allowances are not considered for the calculation of pressures. Tube with a diameter ratio of

$\frac{da}{di_{max.}} \geq 1.35$ are calculated for static stress in

accordance with DIN EN 13480-3 coverage III, but with $K = 235\ N/mm^2$.

When a specific factor of safety is required, calculations should be based upon the burst pressures shown in the above tables.

Temperature range: –40° up to 120°C without pressure reductions.

For increased temperatures:

control calculation according to DIN EN 13480-3 II required (static application above 120 °C).

$$P = \frac{20 \cdot K \cdot s \cdot c}{S\,(da - s \cdot c)}$$

Material strength K for increased temperatures:

Temperature in °C	$K_{(Nmm^2)}$
up to 200	185
up to 250	165

R

Seamless EO stainless steel tubes Material-No.: 1.4571/1.4541

Tolerances DIN EN 10305-1, part 1

Order Code		Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	1.4571 Design pressure bar DIN EN 13480-3 Static	1.4541 Design pressure bar DIN EN 13480-3 Static	1.4571 burst pressure bar	Weight kg/m
1.4571	1.4541								
R04X171		4	±0.08	1.0	2	600	539		0.075
R06X171	**R06X141**	6	±0.08	1.0	4	426	383	1850	0.125
R06X1.571		6	±0.08	1.5	3	600	539	2900	0.169
R08X171	**R08X141**	8	±0.08	1.0	6	368	297	1300	0.175
R08X1.571		8		1.5	5	472	424	2050	0.244
R10X171	**R10X141**	10		1.0	8	294	242	950	0.225
R10X1.571	**R10X1.541**	10	±0.08	1.5	7	389	349	1750	0.319
R10X271		10		2.0	6	498	447	2400	0.401
R12X171	**R12X141**	12		1.0	10	245	205	850	0.275
R12X1.571	**R12X1.541**	12	±0.08	1.5	9	368	297	1400	0.394
R12X271		12		2.0	8	426	383	1900	0.501
R14X1.571		14		1.5	11	315	258	1200	0.469
R14X271		14	±0.08	2.0	10	420	334	1550	0.601
R14X2.571		14		2.5	9	452	406	2100	0.720
R15X171		15		1.0	13	196	166	675	0.351
R15X1.571	**R15X1.541**	15	±0.08	1.5	12	294	242	1100	0.507
R15X271		15		2.0	11	392	314	1400	0.651
R16X1.571		16	±0.08	1.5	13	276	228	950	0.545
R16X271	**R16X241**	16		2.0	12	368	297	1300	0.701
R16X2.571		16	±0.08	2.5	11	403	362	1850	0.845
R16X371		16		3.0	10	472	424	2400	0.977
R18X1.571	**R18X1.541**	18	±0.08	1.5	15	245	205	800	0.620
R18X271		18		2.0	14	327	267	1150	0.801
R20X271		20		2.0	16	294	242	1050	0.901
R20X2.571		20	±0.08	2.5	15	368	297	1400	1.095
R20X371		20		3.0	14	389	349	1800	1.277
R22X1.571		22	±0.08	1.5	19	200	170	650	0.770
R22X271		22		2.0	18	267	222	900	1.002
R25X2.571		25	±0.08	2.5	20	294	242	1050	1.408
R25X371		25		3.0	19	353	286	1275	1.653
R28X1.571		28	±0.08	1.5	25	158	135	550	0.995
R28X271		28		2.0	24	210	177	700	1.302
R30X2.571		30	±0.08	2.5	25	245	205	850	1.722
R30X371		30	±0.08	3.0	24	294	242	1150	2.028
R30X471		30		4.0	22	392	314	1500	2.605
R35X271		35	±0.15	2.0	31	168	143	550	1.653
R38X471		38	±0.15	4.0	30	309	254	1150	3.405
R42X271		42	±0.2	2.0	38	140	121	475	2.003
R42X371		42		3.0	36	210	177	750	2.930

Seamless EO stainless steel tubes (continued) Material-No.: 1.4571/1.4541

Calculation pressure:
Calculation pressures given are according to DIN EN 13480-3 part I for **static stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot d_a} \text{ (bar)}$$

Material characteristic value K=245 N/mm^2 (1.4571), K=235 N/mm^2 (1.4541) (1% proof stress)
Safety factor S = 1.5
Factor c for consideration of wall thickness divergence: 0.9

For range of application for which a certain safety value compared to burst pressure is demanded for tubes of 1.4571 grade stainless steel, the measured burst pressures are contained in tube-tables. Burst pressure values for tubes of 1.4541 grade stainless steel are not available. Calculation pressures according to DIN EN 13480-3 part III for **dynamic stress** are not listed, because in DIN 17458 the permanent fatigue stress is not listed. Until standards will be available for gauge localization of permanent fatigue strength we recommend for calculations to use DIN EN 13480-3 part III with the following characteristic values:

permanent fatigue strength K=190 N/mm^2 for tubes of 1.4571 and 1.4541; S=1.5; C=0.9.

Remarks:
Corrosion: additional allowances are not considered for the calculation of pressures.
Tubes with a diameter proportion da/di ≥ 1.35 are calculated according to DIN EN 13480-3 part III with above characteristic values.

Permissible temperature range and required pressure reductions. This is based on calculated pressures at the elevated temperatures shown, taking into consideration the recommended reduction in proof stress (DIN EN 10216-5).

Temperature		–60° up to +20° C	50°C	100°C	200°C	300°C	400°C
Pressure reductions in %	1.4571	–	5.5	11.5	21.5	29	34
	1.4541	–	4.5	11	20	29	33

Interpolation is acceptable for intermediate temperature levels.

Seamless EO steel tubes Material C-STEEL

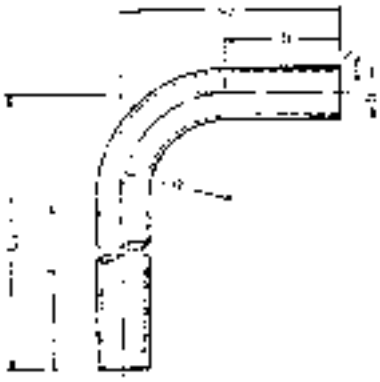
for hydraulic and pneumatic pressure lines.
US Norm SAE J 524, C-Steel.
Test according ASTM A 179-90 A/ASME SA 179.
Quality and leak tested.

Order Code (With Tube O.D. and wall thickness Inch	Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Design pressure bar DIN EN 13480-3 I Static	DIN EN 13480-3 III Dynamic	burst pressure bar	Weight kg/m
R1/4X0.049	6.35	±0.08	1.24	553	450	–	0.157
R3/8X0.049	9.53	±0.08	1.24	368	316	–	0.254
R3/8X0.065	9.53	±0.08	1.65	489	405	–	0.321
R1/2X0.049	12.70	±0.08	1.24	276	243	–	0.352
R1/2X0.065	12.70	±0.08	1.65	367	314	–	0.450
R5/8X0.083	16.00	±0.08	2.11	374	320	–	0.716
R3/4X0.095	19.05	±0.08	2.41	357	307	–	0.990
R3/4X0.104	19.05	±0.08	2.64	391	333	–	1.069
R3/4X0.109	19.05	±0.08	2.67	410	347	–	1.112
R1X0.095	25.40	±0.08	2.41	268	236	–	1.368
R1X0.120	25.40	±0.08	3.05	338	292	–	1.680
R11/4X0.120	31.75	±0.08	3.05	271	239	–	2.157
R11/2X0.156	38.10	±0.15	3.96	293	257	–	3.336

R

Seamless EO tube bends 90° Material St. 37.4 and 1.4571

For minimum flow loss



Order Code		Tube		Wall-	Tube	Bending	Leg length		Length		Weight
St.37.4	1.4571	O.D. D	Tolerance ±	thickness S	I.D. mm	radius R	a	b	L_1	L_2	kg/piece
RB16X2VZ	**RB16X271**	16	0.08	2.0	12	30	200	40	230	70	0.198
RB18X1.5VZ	**RB18X1.571**	18	0.08	1.5	15	36	200	35	236	71	0.178
RB20X2VZ		20	0.08	2.0	16	36	200	45	236	81	0.268
RB20X2.5VZ	**RB20X2.571**	20	0.08	2.5	15	36	200	45	236	81	0.326
RB22X1.5VZ		22	0.08	1.5	19	38	200	40	238	78	0.227
RB22X2VZ	**RB22X271**	22	0.08	2.0	18	38	200	40	238	78	0.296
RB25X2VZ		25	0.08	2.0	21	44	200	50	244	94	0.362
RB25X2.5VZ	**RB25X2.571**	25	0.08	2.5	20	44	200	50	244	94	0.442
RB25X3VZ		25	0.08	3.0	19	44	200	50	244	94	0.519
RB28X1.5VZ		28	0.08	1.5	25	48	200	50	248	98	0.319
RB28X2VZ	**RB28X271**	28	0.08	2.0	24	48	200	50	248	98	0.417
RB28X3VZ		28	0.08	3.0	22	48	200	50	248	98	0.601
RB30X2.5VZ		30	0.08	2.5	25	50	200	60	250	110	0.575
RB30X3VZ	**RB30X371**	30	0.08	3.0	24	50	200	60	250	110	0.677
RB30X4VZ		30	0.08	4.0	22	50	200	60	250	110	0.869
RB35X2VZ	**RB35X271**	35	0.15	2.0	31	60	200	65	260	125	0.586
RB35X3VZ		35	0.15	3.0	29	60	200	65	260	125	0.852
RB38X2.5VZ		38	0.15	2.5	33	65	200	75	265	140	0.827
RB38X3VZ		38	0.15	3.0	32	65	200	75	265	140	0.979
RB38X4VZ	**RB38X471**	38	0.15	4.0	30	65	200	75	265	140	1.268
RB38X5VZ		38	0.15	5.0	28	65	200	75	265	140	1.538
RB42X2VZ	**RB42X271**	42	0.20	2.0	38	80	200	85	280	165	0.809
RB42X3VZ		42	0.20	3.0	36	80	200	85	280	165	1.183
RB50X6*		50	0.20	6.0	38	180	150	150	330	330	3.496
RB65X8*		65	0.30	8.0	49	180	160	160	330	330	6.294

Tolerances for leg length a, b = ±2.5 mm

For tube bends, contrary to straight tubes of the same wall thickness there is a higher stress at the inside of the bend and a reduction of the fatigue strength, because of the out-of-round of tube. Details see DIN EN 13480-3 section 4.7.

Tube bends material St. 37.4 are zinc plated yellow.

*phosphated and oiled

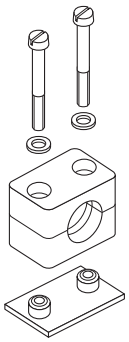
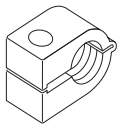
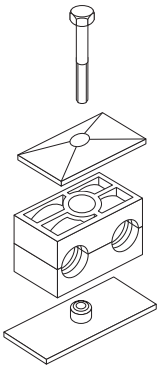
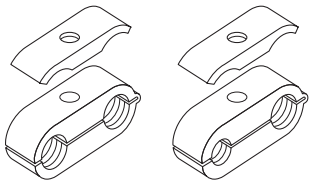
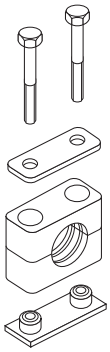
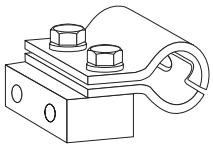
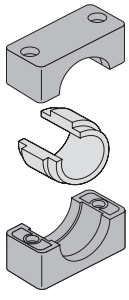
Parker

Ermeto Original
Tube clamps



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Tube clamps

DIN 3015

Programme:
Tube clamps series A (according to DIN 3015 Part 1)
Available in seven standard sizes for normal mechanical requirements.
– Outer tube diameter for the metric series 6 to 57 mm
– Outer tube diameter for the inch-size series R 1/8″ to R 1 1/2″
– Outer tube diameter for the imperial size series 1/4″ to 2 1/2″
The clamp body is available in a round/closed version.
Welding plates, rail-supports, cover plates and construction types.

Tube clamps series B (according to DIN 3015 Part 3)
Available as a twin tube clamp in five standard sizes for normal mechanical requirements.
Outer tube diameter 6 to 42 mm.
The clamp body is available in a square/open design.
Welding plates, rail-supports, cover plates and construction types.
Clamp halves with different diameters are only possible when used together.

Tube clamps series C (according to DIN 3015 Part 2)
Specially designed for high mechanical requirements, and available in eight standard sizes.
– Outer tube diameter 6 to 220 mm.
The clamp body is available in a square/closed design.
Welding plates, rail-supports, cover plates and construction types.

Design:
According to DIN 3015:
Both upper and lower clamp-halves are identical.
Webs inside the bore of the clamps provide an impact and vibration deadening effect, and absorb the forces towards the direction of the tube axis.
When using hoses and cables, we recommand the use of clamp halves with a smooth bore.

Clamp material:

Polypropylene	–30°C up to + 90°C	colour dark green
Polyamide	–40°C up to + 120°C	colour black
Rubber	–50°C up to + 120°C	colour black
Aluminium	up to + 300°C	

All metal parts available also in stainless steel.

Other materials upon request.

Stainless steel qualitities
Stainless steel 1.4401/1.4571 (AISI 316/316 TI), resistent against rust and acid.

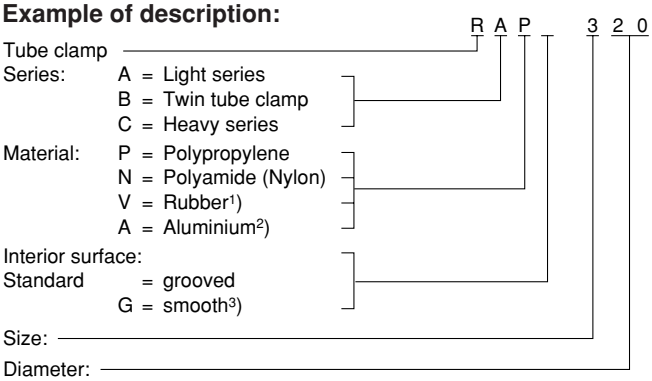
Accessories material:
Steel. Screws as well as cover plates of series A and B are galvanized.

Rail-supports are also available with zinc plated surface.

Resistance to stress:
The remarkable features of **Tube Clamps** are their considerable re-set capability, high tensile strength, as well as their very high output strength and excellent resistance to cold. The choice of design and clamp material depends on the specific demands of the mechanical and thermal requirements.

Order code:
The order code for clamp halves as well as the reference No. for complete tube clamps incorporates the serial indication, material description and interior surface.

Example of description:



1) Rubber only available for series A and B, inside smooth and series C grooved design
2) Aluminium only available for series A size 1 to 6 and series C size 1 to 8
3) Smooth interior surface in series C only to size 4
Aluminium clamps only available in a grooved design
Inside smooth series A only size 1 to 6

Registration:
German Lloyd, Lloyd s Register of Shipping and others.

S

Tube clamps material properties

DIN 3015

Mechanical properties		Polypropylene (PP)	Polyamide 6 (PA 6)	Aluminium	Rubber
Density		0.906 g/cm³	1.12–1.15g/cm³	2.65 g/cm³	0.98 g/cm³
Flexural deflection	DIN 53452	36 N/mm²	130...200 N/mm²	70 N/mm²	–
Impact resistance	DIN 53453	no break	no break	–	
Compressive strength	DIN 53454	90 N/mm²	120 N/mm²	HB 500...600 N/mm²	A and B: 64° shore C: 73° shore
Modulus of elasticity	DIN 53452	1500 N/mm²	3000 N/mm²	70.000 N/mm²	
Tensile strength without breakage	DIN 53454	25–35 N/mm²	80–90 N/mm²	180 N/mm²	A and B: 6.1 N/mm² C: 8.5 N/mm²

Thermal properties				
Temp. resistance	–30 … + 90° C	–40 … + 120°C	300° C	–50 … +120°C

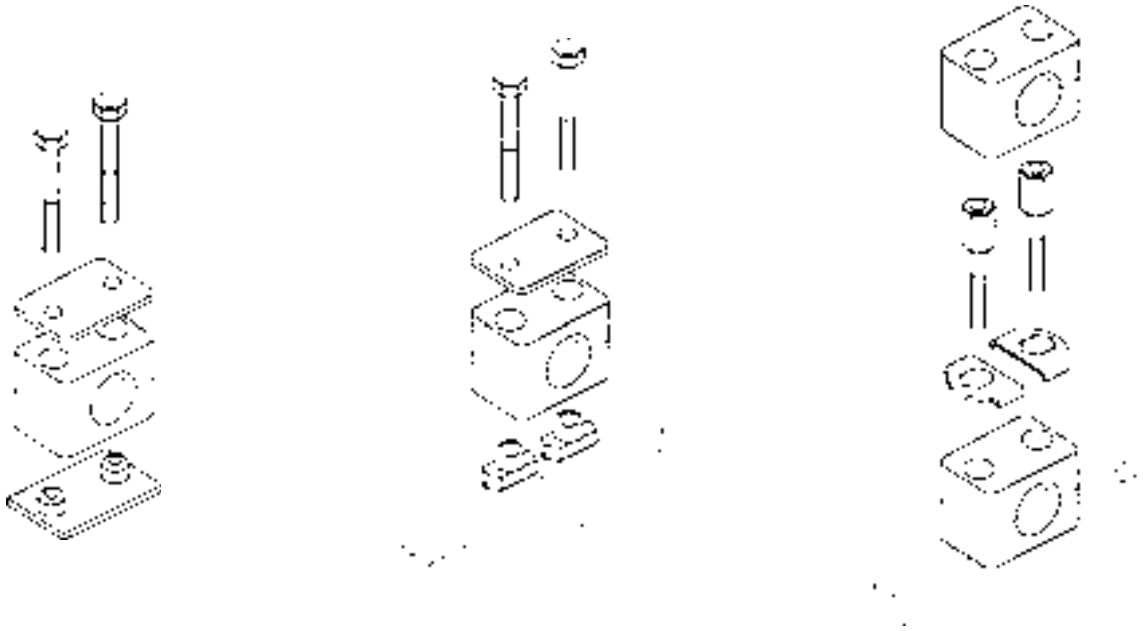
Chemical properties			
Weak acids	limited resistant	limited resistant	resistant
Weak alkalis	limited resistant	limited resistant	resistant
Alcohol	resistant	resistant	resistant
Petrol	limited resistant	resistant	limited resistant
Mineral oils	resistant	resistant	resistant
Other oils	resistant	resistant	resistant

The outlined particulars are approximate values and are only shown for reference, which are not binding, and with regard to possible protection of third parties. They do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in a limited way for guidance only.

The application of the products is carried out outside of our control and, therefore, is exclusively subject to your own area of responsibility. Any claim however would be limited for all damages to the value of the goods supplied by us and in use by you.

It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

Tube clamps assembly instruction



Assembly:

Assembly on to metal welding plates

Place welding plates on a base appropriate for the load. Make sure that the clamps are properly aligned. Clamp lower clamp halve onto welding plate, insert tube, place upper clamp halve onto lower halve and fasten with the screws. Attention must be paid to the bias (after completed assembly, clamp halves may not be in contact)! Do not weld with fitted plastic clamp!
Extended welding plates may be screw-fastened to the base.

Assembly on support rails

Support rails are available in four different heights and come in pieces of 1 m or 2 m length, as required.
Weld on support rail or screw-fasten with fastening angle bracket. Insert support rail nuts in rail and turn until stoppage. For heavy duty construction series, nuts are simply pushed in. Clamp lower clamp half on support rail nuts, insert tube, place upper clamp halve onto lower halve and fasten with the screws. Before fastening the screws the clamp may still be positioned. Attention must be paid to the bias (after completed assembly, the clamp halves may not be in contact)!

Construction assembly

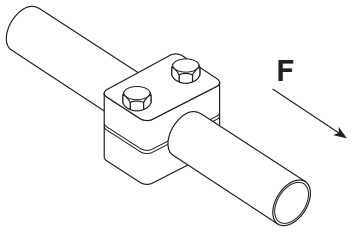
Clamps allow the assembly of multiple clamps of the same construction size and of different tube diameters one above the other. The construction assembly is carried out with special fixing screws that are secured against twisting by applying a locking plate. Clamp lower clamp halve on welding plate or support rail respectively, insert tube, place upper clamp halve on lower halve and fasten with fixing screws. The fixing screw juts out from the upper clamp halve. The application of a locking late scurely fastens the fixing screw and prevents twisting. Clamp on second clamp halve on to the fixing screws etc.

Tube clamps

DIN 3015

Screw tightening torque and axial pipe shearing forces

The indicated srew tightening torque and axial pipe shearing forces refer to the assembly with cover plates and outside hexagon bolts according to DIN 931/933. The axial pipe shearing force (according to DIN 3015, part 10) is an average value, determined by three tests made with a steel pipe according to DIN 2448 of St. 37, for which static friction is assumed (temperature during tests: 23°C). When loading the clamp with the indicated test force (F) in axial pipe direction, the pipe must not slide in the clamp.



Light series (DIN 3015, part 1)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide		Aluminium	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
0	M6	8	0.6	10	0.6		
1	M6	8	1.1	10	0.7	12	4.2
2	M6	8	1.2	10	0.8	12	4.3
3	M6	8	1.4	10	1.6	12	4.8
4	M6	8	1.5	10	1.7	12	5.0
5	M6	8	1.9	10	2.0	12	7.3
6	M6	8	2.0	10	2.5	12	8.9

Heavy series (DIN 3015, part 2)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide		Aluminium	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
1	M10	12	1.6	20	4.2	30	12.1
2	M10	12	2.9	20	4.5	30	15.1
3	M10	15	3.3	25	5.1	35	15.5
4	M12	30	8.2	40	9.3	55	29.4
5	M16	45	11.0	55	15.8	120	34.8
6	M20	80	14.0	150	21.0	220	50.0
7	M24	110	28.0	200	32.0	250	70.6
8	M30	180	40.0	350	48.0	500	84.5

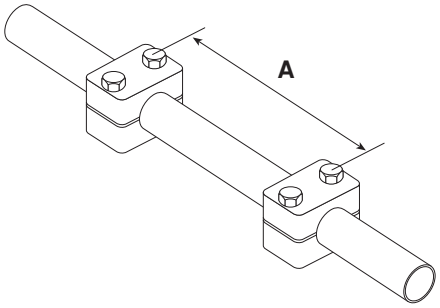
Double series (DIN 3015, part 3)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
1	M6	5	0.9	5	0.9
2	M8	12	2.1	12	2.2
3	M8	12	1.9	12	2.0
4	M8	12	2.7	12	2.9
5	M8	8	1.7	8	2.5

Tube clamps

DIN 3015

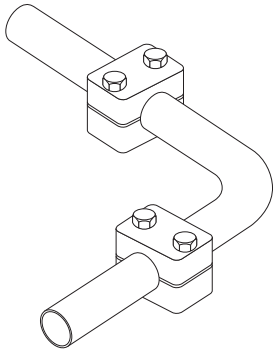
Recommended clamp pitch



The clamp pitches corresponding to respective outside pipe diameters are standard for static loads.

Outside pipe diameter (mm)	Clamp pitch A (m)
6.0 – 12.7	1.0
12.7 – 22.0	1.2
22.0 – 32.0	1.5
32.0 – 38.0	2.0
38.0 – 57.0	2.7
57.0 – 75.0	3.0
75.0 – 76.1	3.5
76.1 – 88.9	3.7
88.9 – 102.0	4.0
102.0 – 114.0	4.5
114.0 – 168.0	5.0
168.0 – 219.0	6.0

Pipe bend assembly



Pipe bends must be fixed with pipe clamps immediately in front of and behind the bend.

Tube clamps series A (Light construction series) – Components

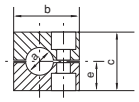
DIN 3015, part 1

Order code for clamp halves:

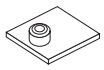
Polypropylene **– RAP**
Inside smooth **– RAPG**
Polyamide 6 **– RAN**
Inside smooth **– RANG**
Rubber **– RAVG**
Aluminium **– RAA[1])**

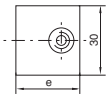
(Please exchange as required standard abbreviation RAP in column for "clamp halves")


size 0

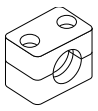


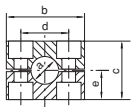
size 0


size 0

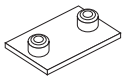


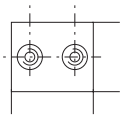
size 0


size 1–6



size 1–6
Width: 30 mm


size 1–6

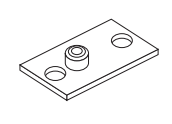

size 1–6
Thickness: 3 mm

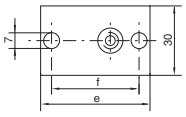
clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part 2 clamp halves **RAP…** Order code	dimensions: b c d e	welding plate, short **APK A…** Order code	dimensions: d e
0	6 6.4 8 9.5 10 12	G 1/8	1/4 5/16 3/8	**RAP006X** **RAP006.4X** **RAP008X** **RAP009.5X** **RAP010X** **RAP012X**	28 27 – 13.5	**APKA0X**	– 30
1	6 6.4 8 9.5 10 12	G 1/8	1/4 5/16 3/8	**RAP106X** **RAP106.4X** **RAP108X** **RAP109.5X** **RAP110X** **RAP112X**	34 27 20 13.5	**APKA1X**	20 36
2	12.7 13.5 14 15 16 17.2 18	G 1/4 G 3/8	1/2 5/8	**RAP212.7X** **RAP213.5X** **RAP214X** **RAP215X** **RAP216X** **RAP217.2X** **RAP218X**	40 33 26 16.5	**APKA2X**	26 42
3	19 20 21.3 22 23 25	G 1/2	3/4 1	**RAP319X** **RAP320X** **RAP321.3X** **RAP322X** **RAP323X** **RAP325X**	48 35 33 17.5	**APKA3X**	33 50
4	26.9 28 30	G 3/4		**RAP426.9X** **RAP428X** **RAP430X**	57 42 40 21	**APKA4X**	40 59
5	32 33.7 35 38 40 42	G1 G 1 1/4	1 1/4 1 1/2	**RAP532X** **RAP533.7X** **RAP535X** **RAP538X** **RAP540X** **RAP542X**	70 58 52 29	**APKA5X**	52 72
6	44.5 45 48 50 50.8 52 55 57	G 1 1/2	1 3/4 2 2 1/4	**RAP644.5X** **RAP645X** **RAP648X** **RAP650X** **RAP650.8X** **RAP652X** **RAP655X** **RAP657X**	86 66 66 33	**APKA6X**	66 88

When assemblying solid rubber clamps, covering plates, hexagon screws and locking washers must be used. All metal parts available in stainless steel.
[1]) Aluminium only sizes 1 to 6.

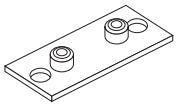
Tube clamps series A (Light construction series) – Components

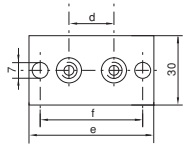
DIN 3015, part 1


size 0

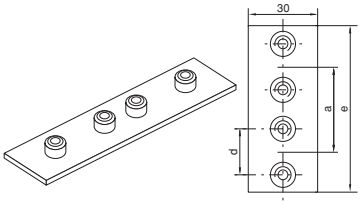


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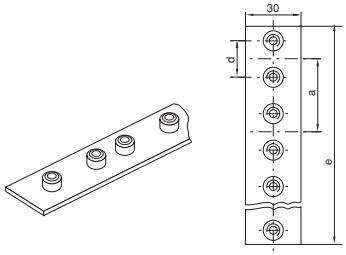

size 1–6



size 1–6
Thickness: 3 mm



Thickness: 3 mm



Thickness: 3 mm

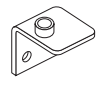
clamp size	weld/screw plate, long				twin welding plate				multiple weld plate			
	APL A… Order code	dimensions: d	e	f	**APD A…** Order code	dimensions: d	a	e	**APR A…** Order code	dimensions: d	a	e
0	**APLA0X**	–	58	44	**APDA0X**	–	30	61	**APRA0X (10 clamps)**	–	30	298
1	**APLA1X**	20	64	50	**APDA1X**	20	35	69	**APRA1X (10 clamps)**	20	35	349
2	**APLA2X**	26	70	56	**APDA2X**	26	43	86	**APRA2X (10 clamps)**	26	43	427
3	**APLA3X**	33	78	64	**APDA3X**	33	52	104	**APRA3X (10 clamps)**	33	52	516
4	**APLA4X**	40	87	73	**APDA4X**	40	60	117	**APRA4X (5 clamps)**	40	60	297
5	**APLA5X**	52	100	86	**APDA5X**	52	75	145	**APRA5X (5 clamps)**	52	75	370
6	**APLA6X**	66	116	100	**APDA6X**	66	90	176	**APRA6X (5 clamps)**	66	90	446

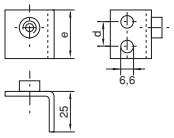
Metal parts also available in stainless steel.

S

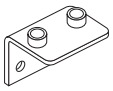
Tube clamps series A (Light construction series) – Components

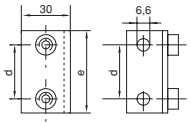
DIN 3015, part 1


size 0

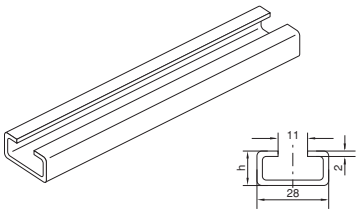


size 0

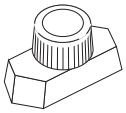

size 1–6

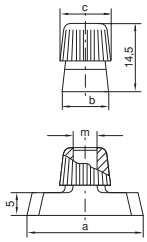


size 1–6
Thickness: 3 mm



1 or 2 mtr



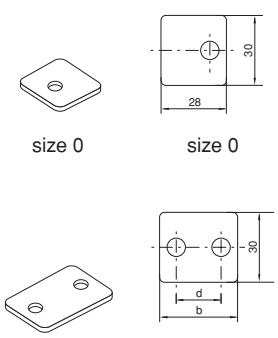


clamp size	weld plate, angled			mounting rail		rail nut				
	APW A… Order code	dimensions: d	e	**TS…A/B** Order code	dimensions: h	**TM…A/B1** Order code	dimensions: a	b	c	m
0	**APWA0X**	14	30	**TS11A/B1X** **TS11A/B2X** **TS14A/B1X** **TS14A/B2X** **TS30A/B1X** **TS30A/B2X**	TS11: 11 TS14: 14 TS30: 30	**TMA/TMB1VERZX**	25.4	10.4	12	M6
1	**APWA1X**	20	36							
2	**APWA2X**	26	42							
3	**APWA3X**	33	50							
4	**APWA4X**	40	59							
5	**APWA5X**	52	72							
6	**APWA6X**	66	88							

Metal parts also available in stainless steel.

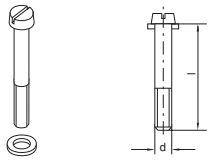
Tube clamps series A (Light construction series) – Components

DIN 3015, part 1

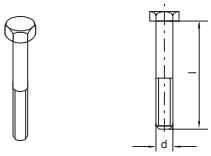


size 0 size 0

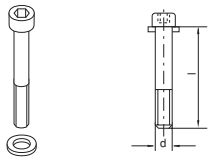
size 1–6 size 1–6
Thickness: 3 mm



DIN 84



DIN 931/933



DIN912

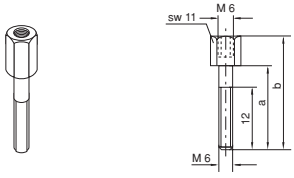
clamp size	cover plate			slot head		hexagon head		socket head	
	DP A… Order code	dimensions: b	d	**SL A…** Order code	dimensions: d x L	**SSL A…** Order code	dimensions: d x L	**IS A…** Order code	dimensions: d x L
0	**DPA0X**	–	–	**SLA0X**	M 6 x 20	**SSL10X**	M 6 x 30	**ISA0X**	M 6 x 20
1	**DPA1X**	34	20	**SLA1X**	M 6 x 20	**SSLAOX**	M 6 x 30	**ISA1X**	M 6 x 20
2	**DPA2X**	40	26	**SLA2X**	M 6 x 25	**SSLA2/SSB1X**	M 6 x 35	**ISA2X**	M 6 x 25
3	**DPA3X**	48	33	**SLA3X**	M 6 x 30	**SSLA3X**	M 6 x 40	**ISA3X**	M 6 x 30
4	**DPA4X**	57	40	**SLA4X**	M 6 x 35	**SSLA4X**	M 6 x 45	**ISA4X**	M 6 x 35
5	**DPA5X**	70	52	**SLA5X**	M 6 x 50	**SSLA5X**	M 6 x 60	**ISA5X**	M 6 x 50
6	**DPA6X**	86	66	**SLA6X**	M 6 x 60	**SSLA6X**	M 6 x 70	**ISA6X**	M 6 x 60

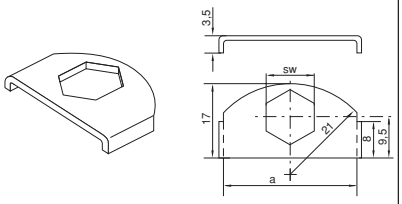
All metal parts available in stainless steel.

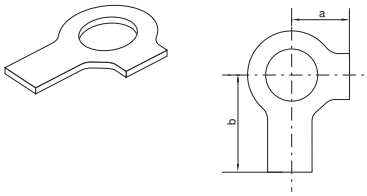
S

Tube clamps series A (Light construction series) – Components

DIN 3015, part 1







clamp size	stacking[1])			locking plate[1])			locking washer[2])		
	AS A… Order code	dimensions: a	b	**SB A** Order code	dimensions: a	SW	**US A** Order code	dimensions: a	b
0	**ASA0X (AS B1X)**	20	34						
1	**ASA0X (ASB1X)**	20	34						
2	**ASA2X**	25	39	**SBAX**	30	11	**USA/USB1X**	9	18
3	**ASA3X**	30	44						
4	**ASA4X**	35	49						
5	**ASA5X**	50	64						
6	**ASA6X**	60	74						

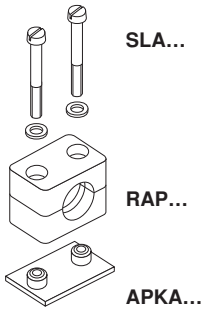
[1]) The use of stacking bolts necessitates the use of locking plates in the construction assembly.
[2]) When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series A (Light construction series) – Complete range

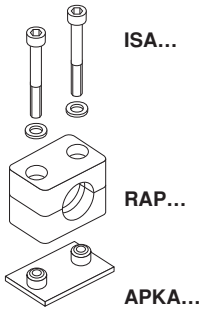
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for "Order code")

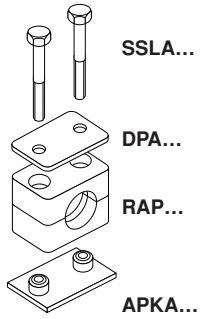
2 clamp halves, weld plate **short,** slot head bolts and bushes



2 clamp halves, weld plate **short,** socket head bolts and bushes



2 clamp halves, weld plate **short,** cover plate hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0[1])	6			**RAP1–006**	**RAP2–006**	**RAP3–006**
	6.4		1/4	**RAP1–006.4**	**RAP2–006.4**	**RAP3–006.4**
	8		5/16	**RAP1–008**	**RAP2–008**	**RAP3–008**
	9.5		3/8	**RAP1–009.5**	**RAP2–009.5**	**RAP3–009.5**
	10	G1/8		**RAP1–010**	**RAP2–010**	**RAP3–010**
	12			**RAP1–012**	**RAP2–012**	**RAP3–012**
1	6			**RAP1–106**	**RAP2–106**	**RAP3–106**
	6.4		1/4	**RAP1–106.4**	**RAP2–106.4**	**RAP3–106.4**
	8		5/16	**RAP1–108**	**RAP2–108**	**RAP3–108**
	9.5		3/8	**RAP1–109.5**	**RAP2–109.5**	**RAP3–109.5**
	10	G1/8		**RAP1–110**	**RAP2–110**	**RAP3–110**
	12			**RAP1–112**	**RAP2–112**	**RAP3–112**
2	12.7		1/2	**RAP1–212.7**	**RAP2–212.7**	**RAP3–212.7**
	13.5	G1/4		**RAP1–213.5**	**RAP2–213.5**	**RAP3–213.5**
	14			**RAP1–214**	**RAP2–214**	**RAP3–214**
	15			**RAP1–215**	**RAP2–215**	**RAP3–215**
	16		5/8	**RAP1–216**	**RAP2–216**	**RAP3–216**
	17.2	G3/8		**RAP1–217.2**	**RAP2–217.2**	**RAP3–217.2**
	18			**RAP1–218**	**RAP2–218**	**RAP3–218**
3	19		3/4	**RAP1–319**	**RAP2–319**	**RAP3–319**
	20			**RAP1–320**	**RAP2–320**	**RAP3–320**
	21.3	G1/2		**RAP1–321.3**	**RAP2–321.3**	**RAP3–321.3**
	22			**RAP1–322**	**RAP2–322**	**RAP3–322**
	23			**RAP1–323**	**RAP2–323**	**RAP3–323**
	25		1	**RAP1–325**	**RAP2–325**	**RAP3–325**
4	26.9	G3/4		**RAP1–426.9**	**RAP2–426.9**	**RAP3–426.9**
	28			**RAP1–428**	**RAP2–428**	**RAP3–428**
	30			**RAP1–430**	**RAP2–430**	**RAP3–430**
5	32		1 1/4	**RAP1–532**	**RAP2–532**	**RAP3–532**
	33.7	G1		**RAP1–533.7**	**RAP2–533.7**	**RAP3–533.7**
	35			**RAP1–535**	**RAP2–535**	**RAP3–535**
	38		1 1/2	**RAP1–538**	**RAP2–538**	**RAP3–538**
	40			**RAP1–540**	**RAP2–540**	**RAP3–540**
	42	G1 1/4		**RAP1–542**	**RAP2–542**	**RAP3–542**
6	44.5		1 3/4	**RAP1–644.5**	**RAP2–644.5**	**RAP3–644.5**
	45			**RAP1–645**	**RAP2–645**	**RAP3–645**
	48	G1 1/2		**RAP1–648**	**RAP2–648**	**RAP3–648**
	50			**RAP1–650**	**RAP2–650**	**RAP3–650**
	50.8		2	**RAP1–650.8**	**RAP2–650.8**	**RAP3–650.8**
	52			**RAP1–652**	**RAP2–652**	**RAP3–652**
	55			**RAP1–655**	**RAP2–655**	**RAP3–655**
	57		2 1/4	**RAP1–657**	**RAP2–657**	**RAP3–657**

Delivery in unassembled individual components.

[1]) Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

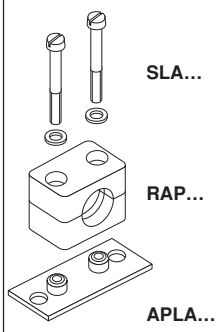
S

Tube clamps series A (Light construction series) – Complete range

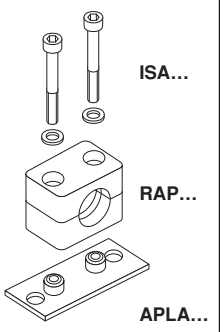
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for "Order code")

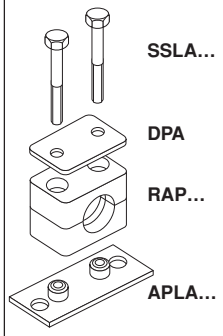
2 clamp halves, weld/ screw plate, slot head bolts and bushes



2 clamp halves, weld/ screw plate, socket head bolts and bushes



2 clamp halves, weld/ screw plate, cover plate and hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0[1])	6			**RAP4–006**	**RAP5–006**	**RAP6–006**
	6.4		1/4	**RAP4–006.4**	**RAP5–006.4**	**RAP6–006.4**
	8		5/16	**RAP4–008**	**RAP5–008**	**RAP6–008**
	9.5		3/8	**RAP4–009.5**	**RAP5–009.5**	**RAP6–009.5**
	10	G1/8		**RAP4–010**	**RAP5–010**	**RAP6–010**
	12			**RAP4–012**	**RAP5–012**	**RAP6–012**
1	6			**RAP4–106**	**RAP5–106**	**RAP6–106**
	6.4		1/4	**RAP4–106.4**	**RAP5–106.4**	**RAP6–106.4**
	8		5/16	**RAP4–108**	**RAP5–108**	**RAP6–108**
	9.5		3/8	**RAP4–109.5**	**RAP5–109.5**	**RAP6–109.5**
	10	G1/8		**RAP4–110**	**RAP5–110**	**RAP6–110**
	12			**RAP4–112**	**RAP5–112**	**RAP6–112**
2	12.7		1/2	**RAP4–212.7**	**RAP5–212.7**	**RAP6–212.7**
	13.5	G1/4		**RAP4–213.5**	**RAP5–213.5**	**RAP6–213.5**
	14			**RAP4–214**	**RAP5–214**	**RAP6–214**
	15			**RAP4–215**	**RAP5–215**	**RAP6–215**
	16		5/8	**RAP4–216**	**RAP5–216**	**RAP6–216**
	17.2	G3/8		**RAP4–217.2**	**RAP5–217.2**	**RAP6–217.2**
	18			**RAP4–218**	**RAP5–218**	**RAP6–218**
3	19		3/4	**RAP4–319**	**RAP5–319**	**RAP6–319**
	20			**RAP4–320**	**RAP5–320**	**RAP6–320**
	21.3	G1/2		**RAP4–321.3**	**RAP5–321.3**	**RAP6–321.3**
	22			**RAP4–322**	**RAP5–322**	**RAP6–322**
	23			**RAP4–323**	**RAP5–323**	**RAP6–323**
	25		1	**RAP4–325**	**RAP5–325**	**RAP6–325**
4	26.9	G3/4		**RAP4–426.9**	**RAP5–426.9**	**RAP6–426.9**
	28			**RAP4–428**	**RAP5–428**	**RAP6–428**
	30			**RAP4–430**	**RAP5–430**	**RAP6–430**
5	32		1 1/4	**RAP4–532**	**RAP5–532**	**RAP6–532**
	33.7	G1		**RAP4–533.7**	**RAP5–533.7**	**RAP6–533.7**
	35			**RAP4–535**	**RAP5–535**	**RAP6–535**
	38		1 1/2	**RAP4–538**	**RAP5–538**	**RAP6–538**
	40			**RAP4–540**	**RAP5–540**	**RAP6–540**
	42	G1 1/4		**RAP4–542**	**RAP5–542**	**RAP6–542**
6	44.5		1 3/4	**RAP4–644.5**	**RAP5–644.5**	**RAP6–644.5**
	45			**RAP4–645**	**RAP5–645**	**RAP6–645**
	48	G1 1/2		**RAP4–648**	**RAP5–648**	**RAP6–648**
	50			**RAP4–650**	**RAP5–650**	**RAP6–650**
	50.8		2	**RAP4–650.8**	**RAP5–650.8**	**RAP6–650.8**
	52			**RAP4–652**	**RAP5–652**	**RAP6–652**
	55			**RAP4–655**	**RAP5–655**	**RAP6–655**
	57		2 1/4	**RAP4–657**	**RAP5–657**	**RAP6–657**

Delivery in unassembled individual components.

[1]) Contrary to the illustration size 0 clamps are secured by only one screw.

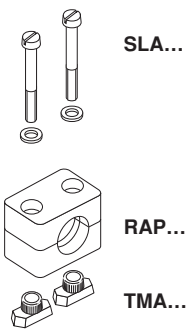
* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A (Light construction series) – Complete range

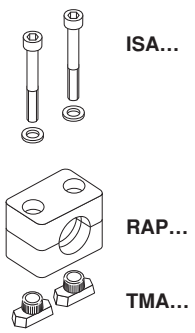
Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for "Order code")

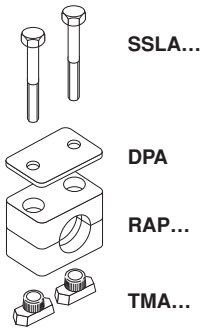
2 clamp halves, rail nuts, slot head bolts and bushes



2 clamp halves, rail nuts, socket head bolts and bushes



2 clamp halves, rail nuts, cover plate and hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0[1])	6			**RAP9–006**	**RAP10–006**	**RAP12–006**
	6.4		1/4	**RAP9–006.4**	**RAP10–006.4**	**RAP12–006.4**
	8		5/16	**RAP9–008**	**RAP10–008**	**RAP12–008**
	9.5		3/8	**RAP9–009.5**	**RAP10–009.5**	**RAP12–009.5**
	10	G1/8		**RAP9–010**	**RAP10–010**	**RAP12–010**
	12			**RAP9–012**	**RAP10–012**	**RAP12–012**
1	6			**RAP9–106**	**RAP10–106**	**RAP12–106**
	6.4		1/4	**RAP9–106.4**	**RAP10–106.4**	**RAP12–106.4**
	8		5/16	**RAP9–108**	**RAP10–108**	**RAP12–108**
	9.5		3/8	**RAP9–109.5**	**RAP10–109.5**	**RAP12–109.5**
	10	G1/8		**RAP9–110**	**RAP10–110**	**RAP12–110**
	12			**RAP9–112**	**RAP10–112**	**RAP12–112**
2	12.7		1/2	**RAP9–212.7**	**RAP10–212.7**	**RAP12–212.7**
	13.5	G1/4		**RAP9–213.5**	**RAP10–213.5**	**RAP12–213.5**
	14			**RAP9–214**	**RAP10–214**	**RAP12–214**
	15			**RAP9–215**	**RAP10–215**	**RAP12–215**
	16		5/8	**RAP9–216**	**RAP10–216**	**RAP12–216**
	17.2	G3/8		**RAP9–217.2**	**RAP10–217.2**	**RAP12–217.2**
	18			**RAP9–218**	**RAP10–218**	**RAP12–218**
3	19		3/4	**RAP9–319**	**RAP10–319**	**RAP12–319**
	20			**RAP9–320**	**RAP10–320**	**RAP12–320**
	21.3	G1/2		**RAP9–321.3**	**RAP10–321.3**	**RAP12–321.3**
	22			**RAP9–322**	**RAP10–322**	**RAP12–322**
	23			**RAP9–323**	**RAP10–323**	**RAP12–323**
	25		1	**RAP9–325**	**RAP10–325**	**RAP12–325**
4	26.9	G3/4		**RAP9–426.9**	**RAP10–426.9**	**RAP12–426.9**
	28			**RAP9–428**	**RAP10–428**	**RAP12–428**
	30			**RAP9–430**	**RAP10–430**	**RAP12–430**
5	32		1 1/4	**RAP9–532**	**RAP10–532**	**RAP12–532**
	33.7	G1		**RAP9–533.7**	**RAP10–533.7**	**RAP12–533.7**
	35			**RAP9–535**	**RAP10–535**	**RAP12–535**
	38		1 1/2	**RAP9–538**	**RAP10–538**	**RAP12–538**
	40			**RAP9–540**	**RAP10–540**	**RAP12–540**
	42	G1 1/4		**RAP9–542**	**RAP10–542**	**RAP12–542**
6	44.5		1 3/4	**RAP9–644.5**	**RAP10–644.5**	**RAP12–644.5**
	45			**RAP9–645**	**RAP10–645**	**RAP12–645**
	48	G1 1/2		**RAP9–648**	**RAP10–648**	**RAP12–648**
	50			**RAP9–650**	**RAP10–650**	**RAP12–650**
	50.8		2	**RAP9–650.8**	**RAP10–650.8**	**RAP12–650.8**
	52			**RAP9–652**	**RAP10–652**	**RAP12–652**
	55			**RAP9–655**	**RAP10–655**	**RAP12–655**
	57		2 1/4	**RAP9–657**	**RAP10–657**	**RAP12–657**

Delivery in unassembled individual components.

[1]) Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

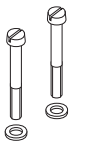
S

Tube clamps series A – Complete range

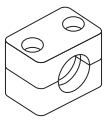
Polypropylene **– RAP**
Inside smooth **– RAPG**
Polyamide 6 **– RAN**
Inside smooth **– RANG**
Rubber **– RAVG***
Aluminium **– RAA**

(As required please exchange standard abbreviation RAP in column for "Order code")

2 clamp halves, slot heads and bushes

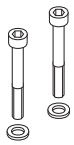


SLA…

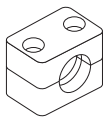


RAP…

2 clamp halves, socket head bolts and bushes



ISA…



RAP…

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0[1])	6			**RAP13–006**	**RAP14–006**
	6.4		1/4	**RAP13–006.4**	**RAP14–006.4**
	8		5/16	**RAP13–008**	**RAP14–008**
	9.5		3/8	**RAP13–009.5**	**RAP14–009.5**
	10	G1/8		**RAP13–010**	**RAP14–010**
	12			**RAP13–012**	**RAP14–012**
1	6			**RAP13–106**	**RAP14–106**
	6.4		1/4	**RAP13–106.4**	**RAP14–106.4**
	8		5/16	**RAP13–108**	**RAP14–108**
	9.5		3/8	**RAP13–109.5**	**RAP14–109.5**
	10	G1/8		**RAP13–110**	**RAP14–110**
	12			**RAP13–112**	**RAP14–112**
2	12.7		1/2	**RAP13–212.7**	**RAP14–212.7**
	13.5	G1/4		**RAP13–213.5**	**RAP14–213.5**
	14			**RAP13–214**	**RAP14–214**
	15			**RAP13–215**	**RAP14–215**
	16		5/8	**RAP13–216**	**RAP14–216**
	17.2	G3/8		**RAP13–217.2**	**RAP14–217.2**
	18			**RAP13–218**	**RAP14–218**
3	19		3/4	**RAP13–319**	**RAP14–319**
	20			**RAP13–320**	**RAP14–320**
	21.3	G1/2		**RAP13–321.3**	**RAP14–321.3**
	22			**RAP13–322**	**RAP14–322**
	23			**RAP13–323**	**RAP14–323**
	25		1	**RAP13–325**	**RAP14–325**
4	26.9	G3/4		**RAP13–426.9**	**RAP14–426.9**
	28			**RAP13–428**	**RAP14–428**
	30			**RAP13–430**	**RAP14–430**
5	32		1 1/4	**RAP13–532**	**RAP14–532**
	33.7	G1		**RAP13–533.7**	**RAP14–533.7**
	35			**RAP13–535**	**RAP14–535**
	38		1 1/2	**RAP13–538**	**RAP14–538**
	40			**RAP13–540**	**RAP14–540**
	42	G1 1/4		**RAP13–542**	**RAP14–542**
6	44.5		1 3/4	**RAP13–644.5**	**RAP14–644.5**
	45			**RAP13–645**	**RAP14–645**
	48	G1 1/2		**RAP13–648**	**RAP14–648**
	50			**RAP13–650**	**RAP14–650**
	50.8		2	**RAP13–650.8**	**RAP14–650.8**
	52			**RAP13–652**	**RAP14–652**
	55			**RAP13–655**	**RAP14–655**
	57		2 1/4	**RAP13–657**	**RAP14–657**

Delivery in unassembled individual components.

[1]) Contrary to the illustration size 0 clamps are secured by only one screw.

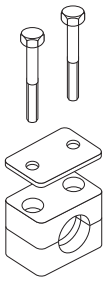
* Only with cover plate, hexagon screws and locking washers.

Tube clamps series A – Complete range

Polypropylene – **RAP**
Inside smooth – **RAPG**
Polyamide 6 – **RAN**
Inside smooth – **RANG**
Rubber – **RAVG***
Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for "Order code")

2 clamp halves, cover plate and hex. head bolts

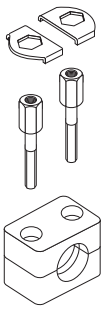


SSLA…

DPA…

RAP…

2 clamp halves, stacking bolts and locking plate



SBA…

ASA…

RAP…

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0[1])	6			**RAP16–006**	**RAP18–006**
	6.4		1/4	**RAP16–006.4**	**RAP18–006.4**
	8		5/16	**RAP16–008**	**RAP18–008**
	9.5		3/8	**RAP16–009.5**	**RAP18–009.5**
	10	G1/8		**RAP16–010**	**RAP18–010**
	12			**RAP16–012**	**RAP18–012**
1	6			**RAP16–106**	**RAP18–106**
	6.4		1/4	**RAP16–106.4**	**RAP18–106.4**
	8		5/16	**RAP16–108**	**RAP18–108**
	9.5		3/8	**RAP16–109.5**	**RAP18–109.5**
	10	G1/8		**RAP16–110**	**RAP18–110**
	12			**RAP16–112**	**RAP18–112**
2	12.7		1/2	**RAP16–212.7**	**RAP18–212.7**
	13.5	G1/4		**RAP16–213.5**	**RAP18–213.5**
	14			**RAP16–214**	**RAP18–214**
	15			**RAP16–215**	**RAP18–215**
	16		5/8	**RAP16–216**	**RAP18–216**
	17.2	G3/8		**RAP16–217.2**	**RAP18–217.2**
	18			**RAP16–218**	**RAP18–218**
3	19		3/4	**RAP16–319**	**RAP18–319**
	20			**RAP16–320**	**RAP18–320**
	21.3	G1/2		**RAP16–321.3**	**RAP18–321.3**
	22			**RAP16–322**	**RAP18–322**
	23			**RAP16–323**	**RAP18–323**
	25		1	**RAP16–325**	**RAP18–325**
4	26.9	G3/4		**RAP16–426.9**	**RAP18–426.9**
	28			**RAP16–428**	**RAP18–428**
	30			**RAP16–430**	**RAP18–430**
5	32		1 1/4	**RAP16–532**	**RAP18–532**
	33.7	G1		**RAP16–533.7**	**RAP18–533.7**
	35			**RAP16–535**	**RAP18–535**
	38		1 1/2	**RAP16–538**	**RAP18–538**
	40			**RAP16–540**	**RAP18–540**
	42	G1 1/4		**RAP16–542**	**RAP18–542**
6	44.5		1 3/4	**RAP16–644.5**	**RAP18–644.5**
	45			**RAP16–645**	**RAP18–645**
	48	G1 1/2		**RAP16–648**	**RAP18–648**
	50			**RAP16–650**	**RAP18–650**
	50.8		2	**RAP16–650.8**	**RAP18–650.8**
	52			**RAP16–652**	**RAP18–652**
	55			**RAP16–655**	**RAP18–655**
	57		2 1/4	**RAP16–657**	**RAP18–657**

Delivery in unassembled individual components.

[1]) Contrary to the illustration size 0 clamps are secured by only one screw.

* Only with cover plate, hexagon screws and locking washers.

S

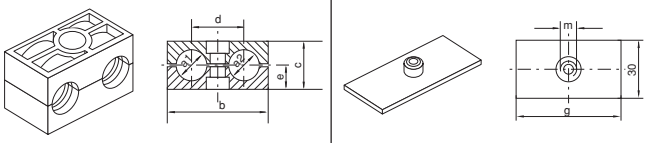
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

Order code for clamp halves:

Polypropylene **– RBP**
Inside smooth **– RBPG**
Polyamide 6 **– RBN**
Rubber **– RBVG**

(Please exchange standard abbreviation RBP in column for "clamp halves" as required.)



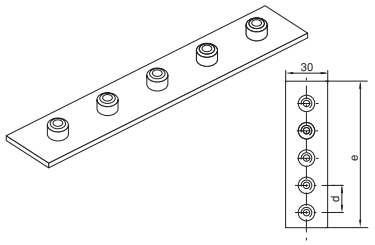
Width: 30 mm

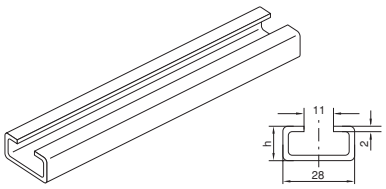
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves[1]) RBP… Order code	dimensions: b	c	d	e	weld plate APB… Order code	dimensions: g	m
1	6 6.4 8 9.5 10 12	G 1/8	1/4 5/16 3/8	**RBP106X** **RBP106.4X** **RBP108X** **RBP109.5X** **RBP110X** **RBP112X**	36	27	20	13.5	**APB1X**	37 Thickness: 3 mm	M 6
2	12.7 13.5 14 15 16 17.2 18	G 1/4 G 3/8	1/2 5/8	**RBP212.7X** **RBP213.5X** **RBP214X** **RBP215X** **RBP216X** **RBP217.2X** **RBP218X**	53	26	29	13	**APB2X**	55 Thickness: 5 mm	M 8
3	19 20 21.3 22 25	G 1/2	3/4 1	**RBP319X** **RBP320X** **RBP321.3X** **RBP322X** **RBP325X**	67	37	36	18.5	**APB3X**	70 Thickness: 5 mm	M 8
4	26.9 28 30	G 3/4		**RBP426.9X** **RBP428X** **RBP430X**	82	42	45	21	**APB4X**	85 Thickness: 5 mm	M 8
5	32 33.7 35 38 42	G1 G1 1/4	1 1/4 1 1/2	**RBP532X** **RBP533.7X** **RBP535X** **RBP538X** **RBP542X**	106	54	56	27	**APB5X**	110 Thickness: 5 mm	M 8

Metal parts also available in stainless steel.
[1]) Twin-tube clamps with different outer tube diameters upon request.

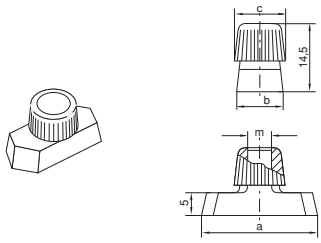
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3





1 or 2 mtr

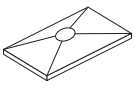


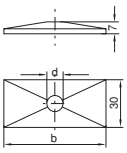
clamp size	multiple weld plate			mounting rail		rail nut				
	APRB… Order code	dimensions: d	e	**TS… A/B** Order code	dimensions: h	**TM…** Order code	dimensions: a	b	c	m
1	**APRB1X (5 clamps)**	40	196	**TS11A/B1X** **TS11A/B2X** **TS14A/B1X** **TS14A/B2X** **TS30A/B1X** **TS30A/B2X**	TS11: 11 TS14: 14 TS30: 30	**TMA/TMB1VERZX**	25.4	10.4	12	M 6
2	**APRB2X (5 clamps)**	58	288			**TMB2X**	25.4	10.4	12	M8
3	**APRB3X (5 clamps)**	72	358							
4	**APRB4X (5 clamps)**	90	446							
5	**APRB5X (5 clamps)**	112	558							

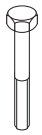
Thickness: 3 mm / Thickness: 5 mm

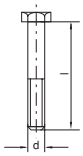
Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3









DIN 931/933

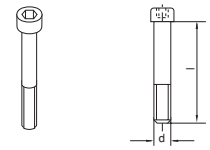
clamp size	cover plate			hexagonal head	
	DP B… Order code	dimensions: b	d	**SS B…** Order code	dimensions: d x L
1	**DPB1X**	34	6.6	**SSLA2/SSB1X**	M 6 x 35
2	**DPB2X**	51	8.6	**SSB2X**	M 8 x 35
3	**DPB3X**	64	8.6	**SSB3X**	M 8 x 45
4	**DPB4X**	78	8.6	**SSB4X**	M 8 x 50
5	**DPB5X**	102	8.6	**SSB5X**	M 8 x 60

Metal parts also available in stainless steel.

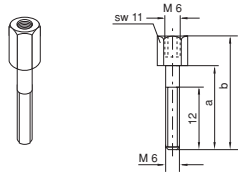
S

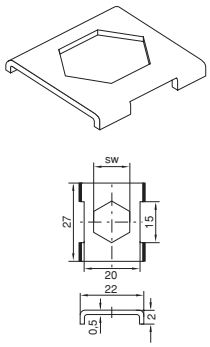
Tube clamps series B (Twin-tube clamps) – Components

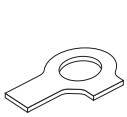
DIN 3015, part 3

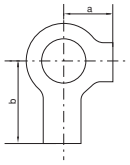


DIN 912









clamp size	socket head		stacking					locking plate[1])		locking washer[2])		
	IS B… Order code	dimensions: d x L	**AS B…** Order code	dimensions: a	b	m	SW	**SB B…** Order code	dimensions: SW	**US…** Order code	dimensions: a	b
1	**ISA4X (ISB1X)**	M 6 x 35	**ASA0X (ASB1X)**	20	34	M 6	11	**SBB1X**	11	**USA/USB1X**	9	18
2	**ISB2X**	M 8 x 35	**ASB2X**	20	33	M 8	12	**SBB2X**	12	**USB2X**	11	20
3	**ISB3X**	M 8 x 45	**ASB3X**	29	44	M 8	12					
4	**ISB4X**	M 8 x 50	**ASB4X**	34	49	M 8	12					
5	**ISB5X**	M 8 x 60	**ASB5X**	47	62	M 8	12					

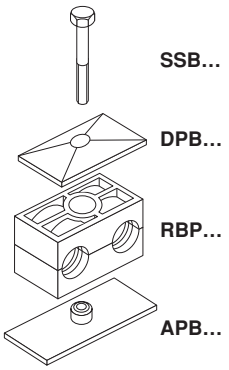
[1]) The use of stacking screws necessitates the use of locking plates in the construction assembly!
[2]) When assemblying solid rubber clamps, covering plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

Tube clamps series B – Complete range

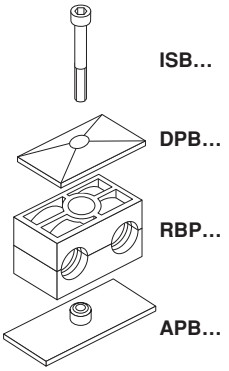
Polypropylene **– RBP**
Inside smooth **– RBPG**
Polyamide 6 **– RBN**
Rubber **– RBVG***

(As required please exchange standard abbreviation RBP in column for "Order code")

2 clamp halves, weld plate, cover plate, hex. head bolt



2 clamp halves, weld plate, cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6			**RBP1–106**	**RBP3–106**
	6.4		1/4	**RBP1–106.4**	**RBP3–106.4**
	8		5/16	**RBP1–108**	**RBP3–108**
	9.5		3/8	**RBP1–109.5**	**RBP3–109.5**
	10	G1/8		**RBP1–110**	**RBP3–110**
	12			**RBP1–112**	**RBP3–112**
2	12.7		1/2	**RBP1–212.7**	**RBP3–212.7**
	13.5	G1/4		**RBP1–213.5**	**RBP3–213.5**
	14			**RBP1–214**	**RBP3–214**
	15			**RBP1–215**	**RBP3–215**
	16		5/8	**RBP1–216**	**RBP3–216**
	17.2	G3/8		**RBP1–217.2**	**RBP3–217.2**
	18			**RBP1–218**	**RBP3–218**
3	19		3/4	**RBP1–319**	**RBP3–319**
	20			**RBP1–320**	**RBP3–320**
	21.3	G1/2		**RBP1–321.3**	**RBP3–321.3**
	22			**RBP1–322**	**RBP3–322**
	25		1	**RBP1–325**	**RBP3–325**
4	26.9	G3/4		**RBP1–426.9**	**RBP3–426.9**
	28			**RBP1–428**	**RBP3–428**
	30			**RBP1–430**	**RBP3–430**
5	32		1 1/4	**RBP1–532**	**RBP3–532**
	33.7	G1		**RBP1–533.7**	**RBP3–533.7**
	35			**RBP1–535**	**RBP3–535**
	38		1 1/2	**RBP1–538**	**RBP3–538**
	42	G1 1/4		**RBP1–542**	**RBP3–542**

Delivery in unassembled individual components.
*Only with cover plate, hexagon screws and locking washers.

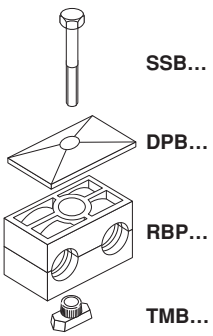
S

Tube clamps series B – Complete range

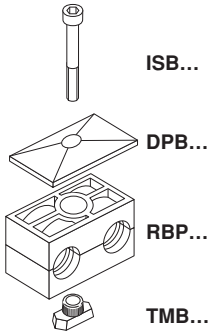
Polypropylene **– RBP**
Inside smooth **– RBPG**
Polyamide 6 **– RBN**
Rubber **– RBVG***

(As required please exchange standard abbreviation RBP in column for "Order code")

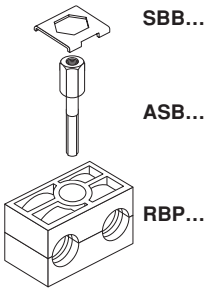
2 clamp halves, rail nut, cover plate, hex. head bolt



2 clamp halves, rail nut, cover plate, socket head bolt



2 clamp halves, locking plate, stacking bolt



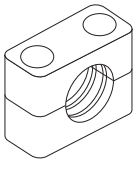
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
1	6			**RBP4–106**	**RBP5–106**	**RBP8–106**
	6.4		1/4	**RBP4–106.4**	**RBP5–106.4**	**RBP8–106.4**
	8		5/16	**RBP4–108**	**RBP5–108**	**RBP8–108**
	9.5		3/8	**RBP4–109.5**	**RBP5–109.5**	**RBP8–109.5**
	10	G1/8		**RBP4–110**	**RBP5–110**	**RBP8–110**
	12			**RBP4–112**	**RBP5–112**	**RBP8–112**
2	12.7		1/2	**RBP4–212.7**	**RBP5–212.7**	**RBP8–212.7**
	13.5	G1/4		**RBP4–213.5**	**RBP5–213.5**	**RBP8–213.5**
	14			**RBP4–214**	**RBP5–214**	**RBP8–214**
	15			**RBP4–215**	**RBP5–215**	**RBP8–215**
	16		5/8	**RBP4–216**	**RBP5–216**	**RBP8–216**
	17.2	G3/8		**RBP4–217.2**	**RBP5–217.2**	**RBP8–217.2**
	18			**RBP4–218**	**RBP5–218**	**RBP8–218**
3	19		3/4	**RBP4–319**	**RBP5–319**	**RBP8–319**
	20			**RBP4–320**	**RBP5–320**	**RBP8–320**
	21.3	G1/2		**RBP4–321.3**	**RBP5–321.3**	**RBP8–321.3**
	22			**RBP4–322**	**RBP5–322**	**RBP8–322**
	25		1	**RBP4–325**	**RBP5–325**	**RBP8–325**
4	26.9	G3/4		**RBP4–426.9**	**RBP5–426.9**	**RBP8–426.9**
	28			**RBP4–428**	**RBP5–428**	**RBP8–428**
	30			**RBP4–430**	**RBP5–430**	**RBP8–430**
5	32		1 1/4	**RBP4–532**	**RBP5–532**	**RBP8–532**
	33.7	G1		**RBP4–533.7**	**RBP5–533.7**	**RBP8–533.7**
	35			**RBP4–535**	**RBP5–535**	**RBP8–535**
	38		1 1/2	**RBP4–538**	**RBP5–538**	**RBP8–538**
	42	G1 1/4		**RBP4–542**	**RBP5–542**	**RBP8–542**

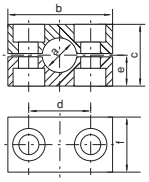
Delivery in unassembled individual components.
*Only with cover plate, hexagon screws and locking washers.

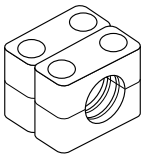
Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

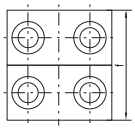
Order code for clamp halves:
Polypropylene **– RCP**
Inside smooth **– RCPG[1])**
Polyamide 6 **– RCN[1])**
Rubber **– RCVR**
Aluminium **– RCA**
(Please exchange as required standard abbreviation RCP in column for "clamp halves")







RCPD
(= 2XRCP…)



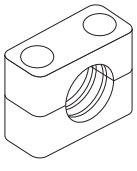
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves RCP… Order code	b	c	d	e	f	1 part 4 clamp halves RCPD… Order code	b	c	d	e	f
	6			**RCP106X**						**RCPD106**					
	8		5/16	**RCP108X**						**RCPD108**					
	10	G 1/8		**RCP110X**						**RCPD110**					
	12			**RCP112X**						**RCPD112**					
	12.7		1/2	**RCP112.7X**						**RCPD112.7**					
1	13.5	G 1/4		**RCP113.5X**	55	32	33	16	30	**RCPD113.5**	55	32	33	16	60
	14			**RCP114X**						**RCPD114**					
	15			**RCP115X**						**RCPD115**					
	16		5/8	**RCP116X**						**RCPD116**					
	17.2	G 3/8		**RCP117.2X**						**RCPD117.2**					
	18			**RCP118X**						**RCPD118**					
	19		3/4	**RCP219X**						**RCPD219**					
	20			**RCP220X**						**RCPD220**					
	21.3	G 1/2		**RCP221.3X**						**RCPD221.3**					
	22			**RCP222X**						**RCPD222**					
2	23			**RCP223X**	70	48	45	24	30	**RCPD223**	70	48	45	24	60
	25		1	**RCP225X**						**RCPD225**					
	26.9	G 3/4		**RCP226.9X**						**RCPD226.9**					
	28			**RCP228X**						**RCPD228**					
	30			**RCP230X**						**RCPD230**					
	30			**RCP330X**						**RCPD330**					
	32		1 1/4	**RCP332X**						**RCPD332**					
	33.7	G 1		**RCP333.7X**						**RCPD333.7**					
3	35			**RCP335X**	85	60	60	30	30	**RCPD335**	85	60	60	30	60
	38		1 1/2	**RCP338X**						**RCPD338**					
	40			**RCP340X**						**RCPD340**					
	42	G 1 1/4		**RCP342X**						**RCPD342**					
	38		1 1/2	**RCP438X**						**RCPD428**					
	40			**RCP440X**						**RCPD440**					
	42	G 1 1/4		**RCP442X**						**RCPD442**					
	45			**RCP445X**						**RCPD445**					
	48.3	G 1 1/2		**RCP448.3X**						**RCPD448.3**					
	50			**RCP450X**						**RCPD450**					
4	51		2	**RCP451X**	115	90	90	45	45	**RCPD451**	115	90	90	45	90
	52			**RCP452X**						**RCPD452**					
	55			**RCP455X**						**RCPD455**					
	57		2 1/4	**RCP457X**						**RCPD457**					
	60.3	G 2		**RCP460.3X**						**RCPD460.3**					
	63		2 1/2	**RCP463X**						**RCPD463**					
	65			**RCP465X**						**RCPD465**					
	70			**RCP470X**						**RCPD470**					

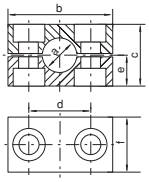
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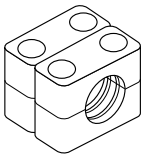
Tube clamps series C (Heavy series) – Components (Continued)

DIN 3015, part 2

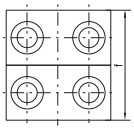
Order code for clamp halves:
Polypropylene **– RCP**
Inside smooth **– RCPG[1])**
Polyamide 6 **– RCN[1])**
Rubber **– RCVR**
Aluminium **– RCA**
(Please exchange as required standard abbreviation RCP in column for "clamp halves")







RCPD
(= 2XRCP…)

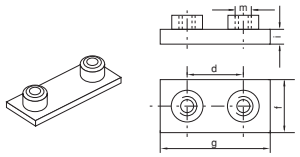
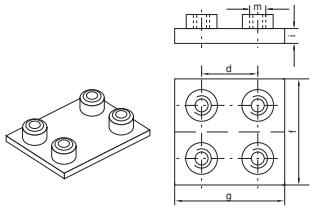
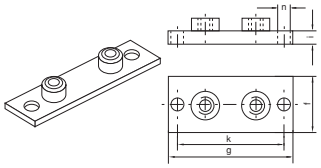
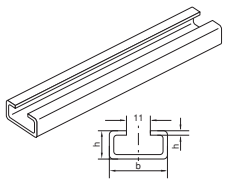


clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves RCP… Order code	dimensions: b	c	d	e	f	1 part 4 clamp halves RCPD… Order code	dimensions: b	c	d	e	f
5	70			**RCP570X**	152	120	122	60	60	**RCPD570**	152	120	122	60	120
	73			**RCP573X**						**RCPD573**					
	75			**RCP575X**						**RCPD575**					
	76.1	G 2 1/2	3	**RCP576.1X**						**RCPD576.1**					
	80			**RCP580X**						**RCPD580**					
	82.5		3 1/4	**RCP582.5X**						**RCPD582.5**					
	88.9	G 3	3 1/2	**RCP588.9X**						**RCPD588.9**					
	90			**RCP590X**						**RCPD590**					
6	90			**RCP690X**	205	170	168	85	80	**RCPD690**	205	170	168	85	160
	97			**RCP697X**						**RCPD697**					
	100			**RCP6100X**						**RCPD6100**					
	101.6	G 3 1/2	4	**RCP6101.6X**						**RCPD6101.6**					
	108		4 1/4	**RCP6108X**						**RCPD6108**					
	114.3	G 4	4 1/2	**RCP6114.3X**						**RCPD6114.3**					
	127		5	**RCP6127X**						**RCPD6127**					
7	127		5	**RCP7127X**	250	200	205	100	90	**RCPD7127**	250	200	205	100	180
	133		5 1/4	**RCP7133X**						**RCPD7133**					
	140	G 5	5 1/2	**RCP7140X**						**RCPD7140**					
	150			**RCP7150X**						**RCPD7150**					
	152.4	G 5 1/2	6	**RCP7152.4X**						**RCPD7152.4**					
	159		6 1/4	**RCP7159X**						**RCPD7159**					
	165.1	G 6	6 1/2	**RCP7165.1X**						**RCPD7165.1**					
	168.3		6 5/8	**RCP7168.3X**						**RCPD7168.3**					
8	168.3		6 5/8	**RCP8168.3X**	320	270	265	135	120	**RCPD8168.3**	320	270	265	135	240
	177.8		7	**RCP8177.8X**						**RCPD8177.8**					
	193.7		7 5/8	**RCP8193.7X**						**RCPD8193.7**					
	203			**RCP8203X**						**RCPD8203**					
	219.1	G 8	8 5/8	**RCP8219.1X**						**RCPD8219.1**					
	220			**RCP8220X**						**RCPD8220**					

Metal parts also available in stainless steel.
[1]) Only sizes 1–4

Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

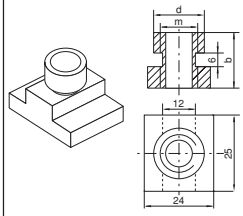
clamp size	weld plate						double weld plate						weld/screw plate					mounting rail		
	AP C…	dimensions:					**APD C…**	dimensions:					**APL C…**	dimensions:				**TS C…**	dim.:	
	Order code	d	f	g	i	m	Order code	d	f	g	i	m	Order code	g	f	i	k	n	Order code	b	h
1	**APC1X**	33	30	73	8	M10	**APDC1X**	33	60	73	8	M10	**APLC1X**	113	30	8	85	11			
2	**APC2X**	45	30	85	8	M10	**APDC2X**	45	60	85	8	M10	**APLC2X**	125	30	8	97	11	**TSC1X (1 meter)**		
3	**APC3X**	60	30	100	8	M10	**APDC3X**	60	60	100	8	M10	**APLC3X**	140	30	8	112	11	**TSC2X (2 meter)**	40	22
4	**APC4X**	90	45	140	10	M12	**APDC4X**	90	90	140	10	M12	**APLC4X**	190	45	10	160	14			
5	**APC5X**	122	60	180	10	M16	**APDC5X**	122	120	180	10	M16	**APLC5X**	240	60	10	205	18			
6	**APC6X**	168	80	225	15	M20	**APDC6X**	168	160	225	15	M20	**APLC6X**	310	80	15	270	22			
7	**APC7X**	205	90	270	15	M24	**APDC7X**	205	180	270	15	M24	**APLC7X**	370	90	15	320	26			
8	**APC8X**	265	120	340	25	M30	**APDC8X**	265	240	340	25	M30	**APLC8X**	450	120	25	390	33			

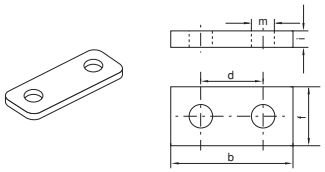
Metal parts also available in stainless steel.

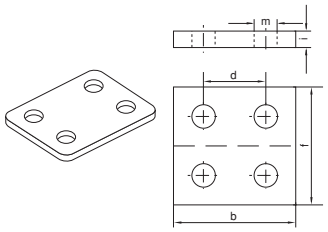
Complete programme range please refer to page S28.

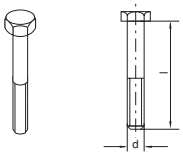
Tube clamps series C (Heavy series) – Components

DIN 3015, part 2









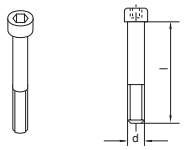
DIN 931/933

clamp size	rail nut			cover plate						double cover plate						hexagon head	
	TM C… Order code	dimensions: b	d	m	**DP C…** Order code	dimensions: b	d	f	i	m	**DPD C…** Order code	dimensions: b	d	f	i	m	**SS C…** Order code	dimensions: d x L
1					**DPC1X**	55	33	30	8	11	**DPDC1X**	55	33	60	8	11	**SSC1X**	M 10 x 45
2	**TMC1X**	20	17.8	M 10	**DPC2X**	70	45	30	8	11	**DPDC2X**	70	45	60	8	11	**SSC2X**	M 10 x 60
3					**DPC3X**	85	60	30	8	11	**DPDC3X**	85	60	60	8	11	**SSC3X**	M 10 x 70
4	**TMC4X**	23	19.8	M 12	**DPC4X**	115	90	45	10	14	**DPDC4X**	115	90	90	10	14	**SSC4X**	M 12 x 100
5					**DPC5X**	152	122	60	10	18	**DPDC5X**	152	122	120	10	18	**SSC5X**	M 16 x 130
6					**DPC6X**	205	168	80	15	22	**DPDC6X**	205	168	160	15	22	**SSC6X**	M 20 x 190
7					**DPC7X**	250	205	90	15	26	**DPDC7X**	250	205	180	15	26	**SSC7X**	M 24 x 220
8					**DPC8X**	320	265	120	25	33	**DPDC8X**	320	265	240	25	33	**SSC8X**	M 30 x 300

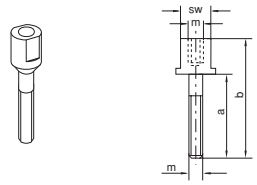
Metal parts also available in stainless steel.

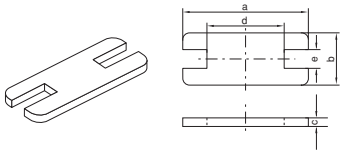
Tube clamps series C (Heavy series) – Components

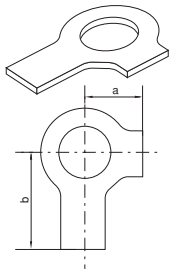
DIN 3015, part 2



DIN 912







clamp size	socket head **IS C…**		stacking **AS C…**					locking plate[1]) **SP C…**						locking washer[2]) **US C…**		
	Order code	dimensions: d x L	Order code	dimensions: a	b	m	SW	Order code	dimensions: a	b	c	d	e	Order code	dimensions: a	b
1	**ISC1X**	M 10 x 45	**ASC1X**	25	51	M 10	15	**SPC1X**	55	30	8	14	15.5			
2	**ISC2X**	M 10 x 60	**ASC2X**	40	66	M 10	15	**SPC2X**	70	30	8	26	15.5	**USC1X**	13	22
3	**ISC3X**	M 10 x 70	**ASC3X**	50	76	M 10	15	**SPC3X**	85	30	8	41	15.5			
4	**ISC4X**	M 12 x 100	**ASC4X**	85	112	M 12	17	**SPC4X**	115	45	10	69	17.5	**USC4X**	15	28
5	**ISC5X**	M 16 x 130	**ASC5X**	110	146	M 16	21	**SPC5X**	152	60	10	97	21.5	**USC5X**	18	32
6	**ISC6X**	M 20 x 190	**ASC6X**	155	206	M 20	27	**SPC6X**	205	80	15	137	27.5	**USC6X**	21	36
7	**ISC7X**	M 24 x 220	**ASC7X**	185	245	M 24	30	**SPC7X**	250	90	15	169	30.5	**USC7X**	25	42
8	**ISC8X**	M 30 x 300	**ASC8X**	250	330	M 30	36	**SPC8X**	320	120	25	219	36.5	**USC8X**	32	52

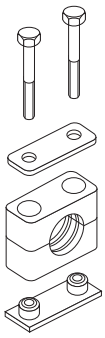
[1]) The use of stacking screws necessitates the use of locking plates in the construction assembly!
[2]) When assemblying solid rubber clamps, covering plates, hexagon screws and locking washers must be used.
Metal parts also available in stainless steel.

S

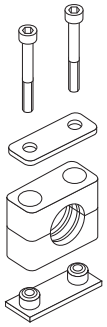
Tube clamps series C – Complete range

Polypropylene – **RCP**
Inside smooth – **RCPG**[1])
Polyamide 6 – **RCN**
Rubber – **RCVR***
Aluminium – **RCA**
(As required please exchange standard abbreviation RCP in column for "Order code")

2 clamp halves, weld plate, cover plate, hex. head bolt



2 clamp halves, weld plate, cover plate, socket head bolt



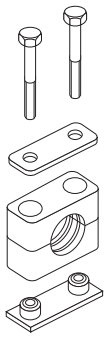
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
	6			**RCP1–106**	**RCP2–106**
	8		5/16	**RCP1–108**	**RCP2–108**
	10	G 1/8		**RCP1–110**	**RCP2–110**
	12			**RCP1–112**	**RCP2–112**
	12.7		1/2	**RCP1–112.7**	**RCP2–112.7**
1	13.5	G 1/4		**RCP1–113.5**	**RCP2–113.5**
	14			**RCP1–114**	**RCP2–114**
	15			**RCP1–115**	**RCP2–115**
	16		5/8	**RCP1–116**	**RCP2–116**
	17.2	G 3/8		**RCP1–117.2**	**RCP2–117.2**
	18			**RCP1–118**	**RCP2–118**
	19		3/4	**RCP1–219**	**RCP2–219**
	20			**RCP1–220**	**RCP2–220**
	21.3	G 1/2		**RCP1–221.3**	**RCP2–221.3**
	22			**RCP1–222**	**RCP2–222**
2	23			**RCP1–223**	**RCP2–223**
	25		1	**RCP1–225**	**RCP2–225**
	26.9	G 3/4		**RCP1–226.9**	**RCP2–226.9**
	28			**RCP1–228**	**RCP2–228**
	30			**RCP1–230**	**RCP2–230**
	30			**RCP1–330**	**RCP2–330**
	32		1 1/4	**RCP1–332**	**RCP2–332**
	33.7	G 1		**RCP1–333.7**	**RCP2–333.7**
3	35			**RCP1–335**	**RCP2–335**
	38		1 1/2	**RCP1–338**	**RCP2–338**
	40			**RCP1–340**	**RCP2–340**
	42	G 1 1/4		**RCP1–342**	**RCP2–342**
	38		1 1/2	**RCP1–438**	**RCP2–438**
	40			**RCP1–440**	**RCP2–440**
	42	G 1 1/4		**RCP1–442**	**RCP2–442**
	45			**RCP1–445**	**RCP2–445**
	48.3	G 1 1/2		**RCP1–448.3**	**RCP2–448.3**
	50			**RCP1–450**	**RCP2–450**
4	51		2	**RCP1–451**	**RCP2–451**
	52			**RCP1–452**	**RCP2–452**
	55			**RCP1–455**	**RCP2–455**
	57		2 1/4	**RCP1–457**	**RCP2–457**
	60.3	G 2		**RCP1–460.3**	**RCP2–460.3**
	63		2 1/2	**RCP1–463**	**RCP2–463**
	65			**RCP1–465**	**RCP2–465**
	70			**RCP1–470**	**RCP2–470**

Continuation see next page …

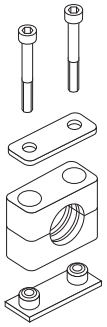
Tube clamps series C – Complete range (Continued)

Polypropylene **– RCP**
Inside smooth **– RCPG[1])**
Polyamide 6 **– RCN**
Rubber **– RCVR***
Aluminium **– RCA**
(As required please exchange standard abbreviation RCP in column for "Order code")

2 clamp halves, weld plate, cover plate, hex. head bolt



2 clamp halves, weld plate, cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70			**RCP1–570**	**RCP2–570**
	73			**RCP1–573**	**RCP2–573**
	75			**RCP1–575**	**RCP2–575**
	76.1	G 2 1/2	3	**RCP1–576.1**	**RCP2–576.1**
	80			**RCP1–580**	**RCP2–580**
	82.5		3 1/4	**RCP1–582.5**	**RCP2–582.5**
	88.9	G 3	3 1/2	**RCP1–588.9**	**RCP2–588.9**
	90			**RCP1–590**	**RCP2–590**
6	90			**RCP1–690**	**RCP2–690**
	97			**RCP1–697**	**RCP2–697**
	100			**RCP1–6100**	**RCP2–6100**
	101.6	G 3 1/2	4	**RCP1–6101.6**	**RCP2–6101.6**
	108		4 1/4	**RCP1–6108**	**RCP2–6108**
	114.3	G 4	4 1/2	**RCP1–6114.3**	**RCP2–6114.3**
	127		5	**RCP1–6127**	**RCP2–6127**
7	127		5	**RCP1–7127**	**RCP2–7127**
	133		5 1/4	**RCP1–7133**	**RCP2–7133**
	140	G 5	5 1/2	**RCP1–7140**	**RCP2–7140**
	150			**RCP1–7150**	**RCP2–7150**
	152.4	G 5 1/2	6	**RCP1–7152.4**	**RCP2–7152.4**
	159		6 1/4	**RCP1–7159**	**RCP2–7159**
	165.1	G 6	6 1/2	**RCP1–7165.1**	**RCP2–7165.1**
	168.3		6 5/8	**RCP1–7168.3**	**RCP2–7168.3**
8	168.3		6 5/8	**RCP1–8168.3**	**RCP2–8168.3**
	177.8		7	**RCP1–8177.8**	**RCP2–8177.8**
	193.7		7 5/8	**RCP1–8193.7**	**RCP2–8193.7**
	203			**RCP1–8203**	**RCP2–8203**
	219.1	G 8	8 5/8	**RCP1–8219.1**	**RCP2–8219.1**
	220			**RCP1–8220**	**RCP2–8220**

Delivery in unassembled individual components.

[1]) Only sizes 1–4

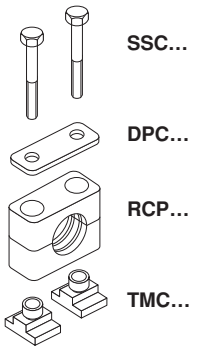
* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

S

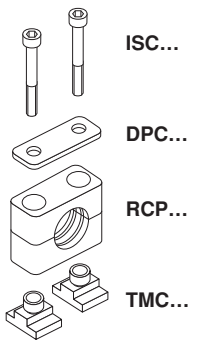
Tube clamps series C – Complete range

Polypropylene – **RCP**
Inside smooth – **RCPG[1])**
Polyamide 6 – **RCN**
Rubber – **RCVR***
Aluminium – **RCA**
(As required please exchange standard abbreviation RCP in column for "Order code")

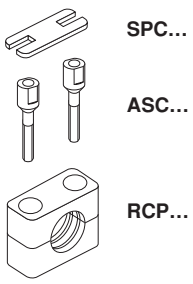
2 clamp halves, rail nuts, cover plate, hex. head bolts



2 clamp halves, rail nuts, cover plate, socket head bolts



2 clamp halves, locking plate, stacking bolts

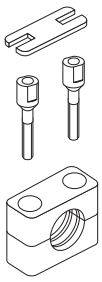


clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
	6			**RCP3–106**	**RCP4–106**	**RCP5–106**
	8		5/16	**RCP3–108**	**RCP4–108**	**RCP5–108**
	10	G 1/8		**RCP3–110**	**RCP4–110**	**RCP5–110**
	12			**RCP3–112**	**RCP4–112**	**RCP5–112**
	12.7		1/2	**RCP3–112.7**	**RCP4–112.7**	**RCP5–112.7**
1	13.5	G 1/4		**RCP3–113.5**	**RCP4–113.5**	**RCP5–113.5**
	14			**RCP3–114**	**RCP4–114**	**RCP5–114**
	15			**RCP3–115**	**RCP4–115**	**RCP5–115**
	16		5/8	**RCP3–116**	**RCP4–116**	**RCP5–116**
	17.2	G 3/8		**RCP3–117.2**	**RCP4–117.2**	**RCP5–117.2**
	18			**RCP3–118**	**RCP4–118**	**RCP5–118**
	19		3/4	**RCP3–219**	**RCP4–219**	**RCP5–219**
	20			**RCP3–220**	**RCP4–220**	**RCP5–220**
	21.3	G 1/2		**RCP3–221.3**	**RCP4–221.3**	**RCP5–221.3**
	22			**RCP3–222**	**RCP4–222**	**RCP5–222**
2	23			**RCP3–223**	**RCP4–223**	**RCP5–223**
	25		1	**RCP3–225**	**RCP4–225**	**RCP5–225**
	26.9	G 3/4		**RCP3–226.9**	**RCP4–226.9**	**RCP5–226.9**
	28			**RCP3–228**	**RCP4–228**	**RCP5–228**
	30			**RCP3–230**	**RCP4–230**	**RCP5–230**
	30			**RCP3–330**	**RCP4–330**	**RCP5–330**
	32		1 1/4	**RCP3–332**	**RCP4–332**	**RCP5–332**
	33.7	G 1		**RCP3–333.7**	**RCP4–333.7**	**RCP5–333.7**
3	35			**RCP3–335**	**RCP4–335**	**RCP5–335**
	38		1 1/2	**RCP3–338**	**RCP4–338**	**RCP5–338**
	40			**RCP3–340**	**RCP4–340**	**RCP5–340**
	42	G 1 1/4		**RCP3–342**	**RCP4–342**	**RCP5–342**
	38		1 1/2	**RCP3–438**	**RCP4–438**	**RCP5–438**
	40			**RCP3–440**	**RCP4–440**	**RCP5–440**
	42	G 1 1/4		**RCP3–442**	**RCP4–442**	**RCP5–442**
	45			**RCP3–445**	**RCP4–445**	**RCP5–445**
	48.3	G 1 1/2		**RCP3–448.3**	**RCP4–448.3**	**RCP5–448.3**
	50			**RCP3–450**	**RCP4–450**	**RCP5–450**
4	51		2	**RCP3–451**	**RCP4–451**	**RCP5–451**
	52			**RCP3–452**	**RCP4–452**	**RCP5–452**
	55			**RCP3–455**	**RCP4–455**	**RCP5–455**
	57		2 1/4	**RCP3–457**	**RCP4–457**	**RCP5–457**
	60.3	G 2		**RCP3–460.3**	**RCP4–460.3**	**RCP5–460.3**
	63		2 1/2	**RCP3–463**	**RCP4–463**	**RCP5–463**
	65			**RCP3–465**	**RCP4–465**	**RCP5–465**
	70			**RCP3–470**	**RCP4–470**	**RCP5–470**

Continuation see next page …

Tube clamps series C – Complete range (Continued)

2 clamp halves, locking plate, stacking bolts



SPC…

ASC…

RCP…

Polypropylene **– RCP**
Inside smooth **– RCPG[1])**
Polyamide 6 **– RCN**
Rubber **– RCVR***
Aluminium **– RCA**

(As required please exchange standard abbreviation RCP in column for "Order code")

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code
5	70			**RCP5–570**
	73			**RCP5–573**
	75			**RCP5–575**
	76.1	G 2 1/2	3	**RCP5–576.1**
	80			**RCP5–580**
	82.5		3 1/4	**RCP5–582.5**
	88.9	G 3	3 1/2	**RCP5–588.9**
	90			**RCP5–590**
6	90			**RCP5–690**
	97			**RCP5–697**
	100			**RCP5–6100**
	101.6	G 3 1/2	4	**RCP5–6101.6**
	108		4 1/4	**RCP5–6108**
	114.3	G 4	4 1/2	**RCP5–6114.3**
	127		5	**RCP5–6127**
7	127		5	**RCP5–7127**
	133		5 1/4	**RCP5–7133**
	140	G 5	5 1/2	**RCP5–7140**
	150			**RCP5–7150**
	152.4	G 5 1/2	6	**RCP5–7152.4**
	159		6 1/4	**RCP5–7159**
	165.1	G 6	6 1/2	**RCP5–7165.1**
	168.3		6 5/8	**RCP5–7168.3**
8	168.3		6 5/8	**RCP5–8168.3**
	177.8		7	**RCP5–8177.8**
	193.7		7 5/8	**RCP5–8193.7**
	203			**RCP5–8203**
	219.1	G 8	8 5/8	**RCP5–8219.1**
	220			**RCP5–8220**

Delivery in unassembled individual components.

[1]) Only sizes 1–4

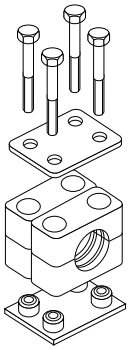
* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

S

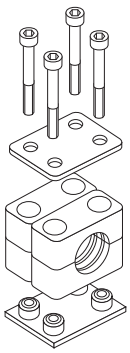
Tube clamps series C – Complete range

Polypropylene – **RCPD**
Inside smooth – **RCPDG[1])**
Polyamide 6 – **RCND**
Rubber – **RCVDR***
Aluminium – **RCAD**
(As required please exchange standard abbreviation RCP in column for "Order code")

4 clamp halves, double weld plate, double cover plate, hex. head bolts



4 clamp halves, double weld plate, double cover plate, socket head bolts



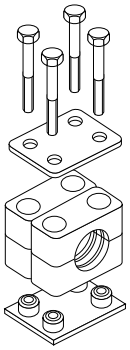
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
	6			**RCPD1–106**	**RCPD2–106**
	8		5/16	**RCPD1–108**	**RCPD2–108**
	10	G 1/8		**RCPD1–110**	**RCPD2–110**
	12			**RCPD1–112**	**RCPD2–112**
	12.7		1/2	**RCPD1–112.7**	**RCPD2–112.7**
1	13.5	G 1/4		**RCPD1–113.5**	**RCPD2–113.5**
	14			**RCPD1–114**	**RCPD2–114**
	15			**RCPD1–115**	**RCPD2–115**
	16		5/8	**RCPD1–116**	**RCPD2–116**
	17.2	G 3/8		**RCPD1–117.2**	**RCPD2–117.2**
	18			**RCPD1–118**	**RCPD2–118**
	19		3/4	**RCPD1–219**	**RCPD2–219**
	20			**RCPD1–220**	**RCPD2–220**
	21.3	G 1/2		**RCPD1–221.3**	**RCPD2–221.3**
	22			**RCPD1–222**	**RCPD2–222**
2	23			**RCPD1–223**	**RCPD2–223**
	25		1	**RCPD1–225**	**RCPD2–225**
	26.9	G 3/4		**RCPD1–226.9**	**RCPD2–226.9**
	28			**RCPD1–228**	**RCPD2–228**
	30			**RCPD1–230**	**RCPD2–230**
	30			**RCPD1–330**	**RCPD2–330**
	32		1 1/4	**RCPD1–332**	**RCPD2–332**
	33.7	G 1		**RCPD1–333.7**	**RCPD2–333.7**
3	35			**RCPD1–335**	**RCPD2–335**
	38		1 1/2	**RCPD1–338**	**RCPD2–338**
	40			**RCPD1–340**	**RCPD2–340**
	42	G 1 1/4		**RCPD1–342**	**RCPD2–342**
	38		1 1/2	**RCPD1–438**	**RCPD2–438**
	40			**RCPD1–440**	**RCPD2–440**
	42	G 1 1/4		**RCPD1–442**	**RCPD2–442**
	45			**RCPD1–445**	**RCPD2–445**
	48.3	G 1 1/2		**RCPD1–448.3**	**RCPD2–448.3**
	50			**RCPD1–450**	**RCPD2–450**
4	51		2	**RCPD1–451**	**RCPD2–451**
	52			**RCPD1–452**	**RCPD2–452**
	55			**RCPD1–455**	**RCPD2–455**
	57		2 1/4	**RCPD1–457**	**RCPD2–457**
	60.3	G 2		**RCPD1–460.3**	**RCPD2–460.3**
	63		2 1/2	**RCPD1–463**	**RCPD2–463**
	65			**RCPD1–465**	**RCPD2–465**
	70			**RCPD1–470**	**RCPD2–470**

Continuation see next page …

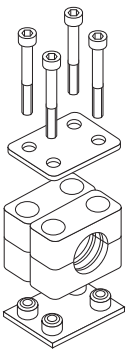
Tube clamps series C – Complete range (Continued)

Polypropylene **– RCPD**
Inside smooth **– RCPDG[1])**
Polyamide 6 **– RCND**
Rubber **– RCVDR***
Aluminium **– RCAD**
(As required please exchange standard abbreviation RCP in column for "Order code")

4 clamp halves, double weld plate, double cover plate, hex. head bolts



4 clamp halves, double weld plate, double cover plate, socket head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70	G 2 1/2	3	**RCPD1–570**	**RCPD2–570**
	73			**RCPD1–573**	**RCPD2–573**
	75			**RCPD1–575**	**RCPD2–575**
	76.1			**RCPD1–576.1**	**RCPD2–576.1**
	80			**RCPD1–580**	**RCPD2–580**
	82.5		3 1/4	**RCPD1–582.5**	**RCPD2–582.5**
	88.9	G 3	3 1/2	**RCPD1–588.9**	**RCPD2–588.9**
	90			**RCPD1–590**	**RCPD2–590**
6	90	G 3 1/2	4	**RCPD1–690**	**RCPD2–690**
	97			**RCPD1–697**	**RCPD2–697**
	100			**RCPD1–6100**	**RCPD2–6100**
	101.6			**RCPD1–6101.6**	**RCPD2–6101.6**
	108		4 1/4	**RCPD1–6108**	**RCPD2–6108**
	114.3	G 4	4 1/2	**RCPD1–6114.3**	**RCPD2–6114.3**
	127		5	**RCPD1–6127**	**RCPD2–6127**
7	127	G 5	5	**RCPD1–7127**	**RCPD2–7127**
	133		5 1/4	**RCPD1–7133**	**RCPD2–7133**
	140		5 1/2	**RCPD1–7140**	**RCPD2–7140**
	150			**RCPD1–7150**	**RCPD2–7150**
	152.4	G 5 1/2	6	**RCPD1–7152.4**	**RCPD2–7152.4**
	159		6 1/4	**RCPD1–7159**	**RCPD2–7159**
	165.1	G 6	6 1/2	**RCPD1–7165.1**	**RCPD2–7165.1**
	168.3		6 5/8	**RCPD1–7168.3**	**RCPD2–7168.3**
8	168.3	G 8	6 5/8	**RCPD1–8168.3**	**RCPD2–8168.3**
	177.8		7	**RCPD1–8177.8**	**RCPD2–8177.8**
	193.7		7 5/8	**RCPD1–8193.7**	**RCPD2–8193.7**
	203			**RCPD1–8203**	**RCPD2–8203**
	219.1		8 5/8	**RCPD1–8219.1**	**RCPD2–8219.1**
	220			**RCPD1–8220**	**RCPD2–8220**

Delivery in unassembled individual components.

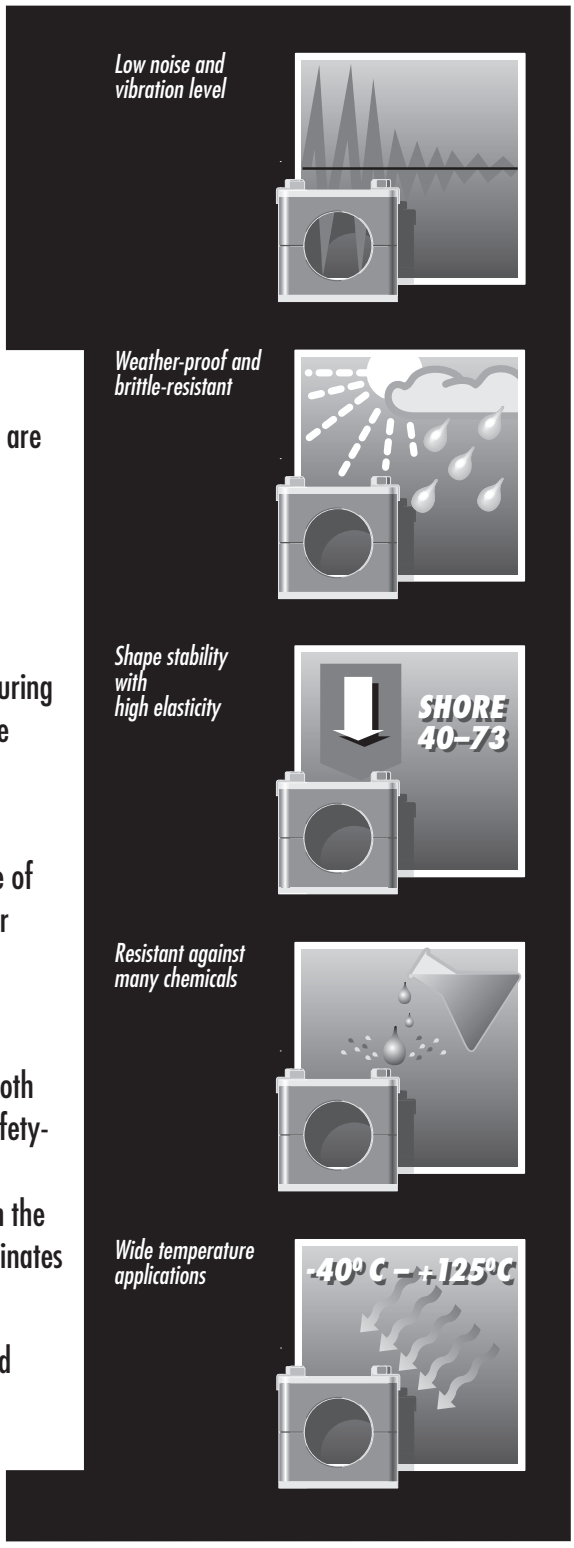
[1]) Only sizes 1–4

* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

S

The fully flexible tube clamp.

Optimum insulation against noise and vibration.



The Primary Material
The fully flexible tube clamps are made out of thermoplastic caoutchouc.

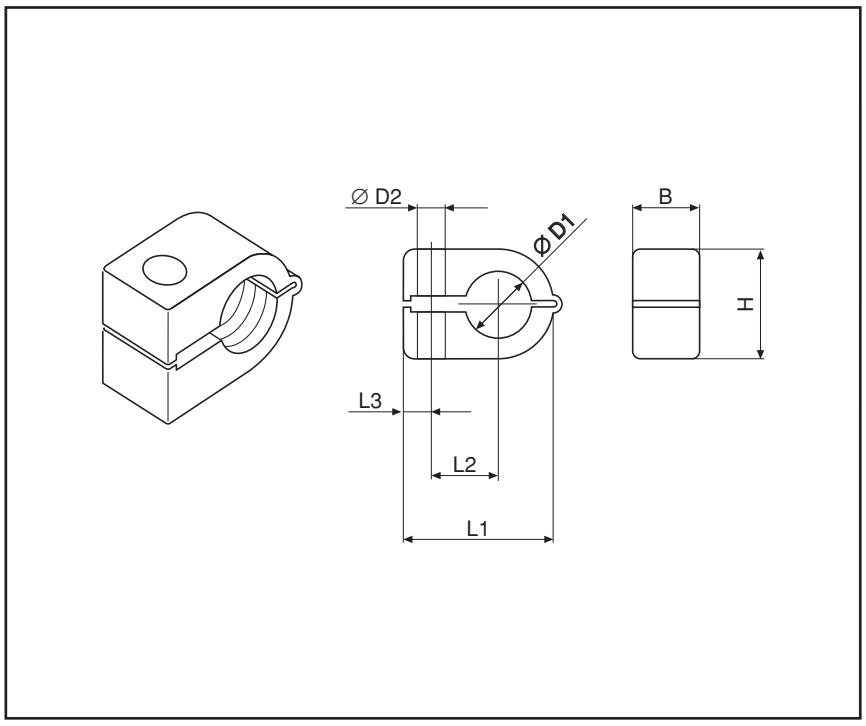
The advantages
Excellent noise insulation and vibration properties. Easy securing also of sensitive tube and pipe installations.

The material properties are appreciably higher than those of comparable vulcanized rubber products.

The Construction Details
The internal surfaces are smooth or grooved. A useful screw safety-device guarantees perfect connections and together with the solid rubber construction eliminates self loosening!

The welding plates, covers and screws are also available in stainless steel.

Tube clamps series O



Order code for tube clamps:
Polypropylene **ROP***
Polyamide **RON***
* Supplement with size and tube ∅ mm.
(e. g. ROP 106X)

Packing standard 200 pieces.

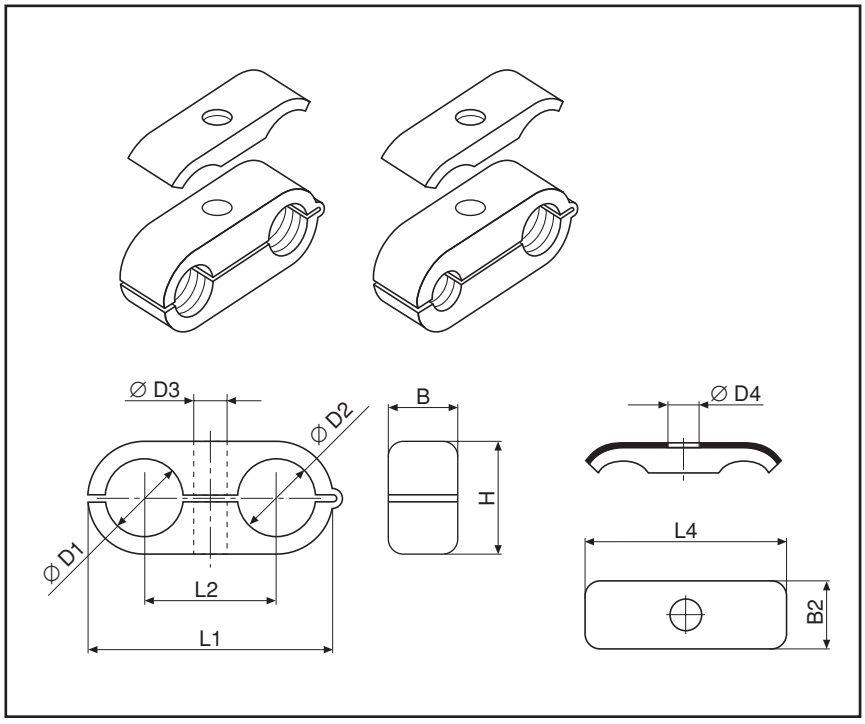
Areas of Application:
- pneumatics
- automotive technology
- machine tool industry
- lubrication
- naval technologie

also suitable for cables and hoses.

Clamp-size	Tube ∅ D1 O.D. mm	Tube NB	Inch	Order code Polypropylene ROP	Order code Polyamide RON	L1	L2	L3	B	H	∅ D2
1	6			**ROP 106X**	**RON 106X**	22	9	7	14.5	13.5	6.5
	6.4		1/4	**ROP 106.4X**	**RON 106.4X**						
	8			**ROP 108X**	**RON 108X**						
2	8			**ROP 208X**	**RON 208X**	27	11	7	14.5	18.5	6.5
	9.5		3/8	**ROP 209.5X**	**RON 209.5X**						
	10	1/8		**ROP 210X**	**RON 210X**						
	12			**ROP 212X**	**RON 212X**						
	12.7		1/2	**ROP 212.7X**	**RON 212.7X**						
3	10	1/8		**ROP 310X**	**RON 310X**	33	15	7	14.5	23.5	6.5
	12			**ROP 312X**	**RON 312X**						
	12.7		1/2	**ROP 312.7X**	**RON 312.7X**						
	13.5	1/4		**ROP 313.5X**	**RON 313.5X**						
	14			**ROP 314X**	**RON 314X**						
	15			**ROP 315X**	**RON 315X**						
	16		5/8	**ROP 316X**	**ROP 316X**						
4	14			**ROP 414X**	**RON 414X**	40	19	6	14.5	30.5	6.5
	15			**ROP 415X**	**RON 415X**						
	16		5/8	**ROP 416X**	**RON 416X**						
	17.2	3/8		**ROP 417.2X**	**RON 417.2X**						
	18			**ROP 418X**	**RON 418X**						
	19		3/4	**ROP 419X**	**RON 419X**						
	20			**ROP 420X**	**RON 420X**						
	21.3	1/2		**ROP 421.3X**	**RON 421.3X**						
	22			**ROP 422X**	**RON 422X**						

S

Double-Tube clamps series O



Order code for tube clamps:
Polypropylen **ROPD***
Polyamid **ROND***
*Supplement with size and tube ∅ mm.
(e. g. ROPD 106X)
*Different diameter on request

Order code for cover plate:
DPO*
*Supplement with size.
Material: Galvanized steel
Stainless steel upon request

Areas of Application:
- pneumatics
- automotive technology
- machine tool industry
- lubrication
- naval technologie

also suitable for cables and hoses.

Clamp-size	Tube ∅ D1/D2 O.D. mm	Tube NB	Inch	Order code Polypropylene ROPD	Order Code Cover plate DPO	L1	L2	B	H	∅ D3	L4	B2	∅ D4
1	6			**ROPD 106X**	**DPO1X**	32	18	14.5	13.5	6.5	29	16.3	6.5
	6.4		1/4	**ROPD 106.4X**	**DPO1X**								
	8			**ROPD 108X**	**DPO1X**								
2	8			**ROPD 208X**	**DPO2X**	41	22	14.5	18.5	6.5	40	16.3	6.5
	9.5		3/8	**ROPD 209.5X**	**DPO2X**								
	10	1/8		**ROPD 210X**	**DPO2X**								
	12			**ROPD 212X**	**DPO2X**								
	12.7		1/2	**ROPD 212.7X**	**DPO2X**								
3	10	1/8		**ROPD 310X**	**DPO3X**	54	30	14.5	23.5	6.5	50.5	16.5	6.5
	12			**ROPD 312X**	**DPO3X**								
	12.7		1/2	**ROPD 312.7X**	**DPO3X**								
	13.5	1/4		**ROPD 313.5X**	**DPO3X**								
	14			**ROPD 314X**	**DPO3X**								
	15			**ROPD 315X**	**DPO3X**								
	16		5/8	**ROPD 316X**	**DPO3X**								
4	14			**ROPD 414X**	**DPO4X**	69	38	14.5	30.5	6.5	63	16.5	6.5
	15			**ROPD 415X**	**DPO4X**								
	16		5/8	**ROPD 416X**	**DPO4X**								
	17.2	3/8		**ROPD 417.2X**	**DPO4X**								
	18			**ROPD 418X**	**DPO4X**								
	19		3/4	**ROPD 419X**	**DPO4X**								
	20			**ROPD 420X**	**DPO4X**								
	21.3	1/2		**ROPD 421.3X**	**DPO4X**								
	22			**ROPD 422X**	**DPO4X**								

Hydraulic steel-clamps

Hydraulic steel-clamps

Order code **HSRS-∗**

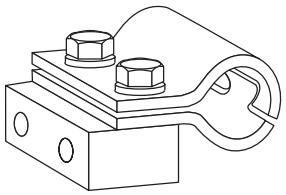
W1: steel coating ZN

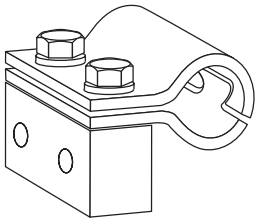
∗ please add. ∅ D

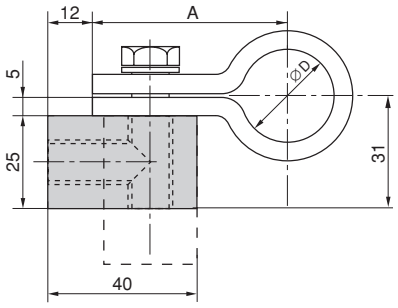
HSRS hydraulic steel-clamps are mainly used in the field of building machinery.

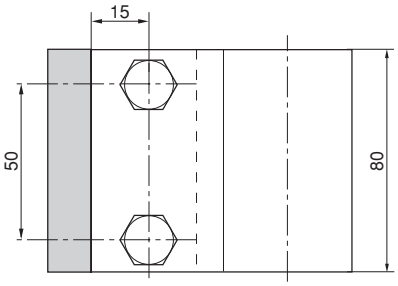
The support-block is welded to the machine body or another component either in upend or flat position. The tube-clamp is screwed on.

The robust construction of the clamp has an impact- and vibrationabsorbing effect. The small dimension/ height of the clamp allows hydraulic cables to be fitted later on – e. g. for installing additional equipment to building machinery.

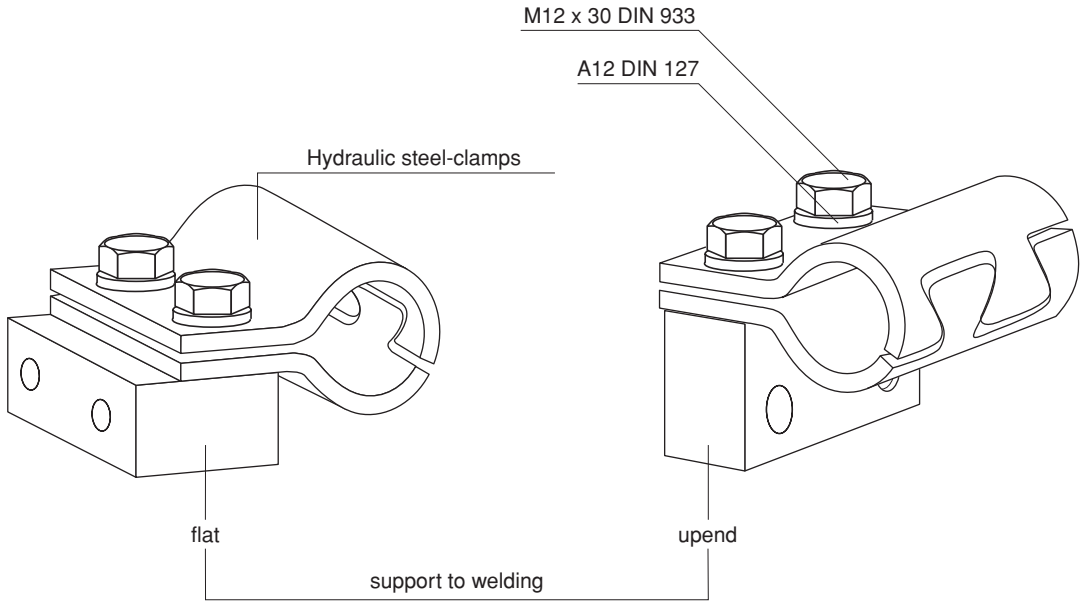








Order code	Measurement ∅ D	A
HSRS25	25	52.5
HSRS30	30	55
HSRS35	35	57.5
HSRS38	38	59
HSRS42	42	61
HSRS50	50	65



S

Hydraulic steel-clamps

Elastomere Inlay for HSRS

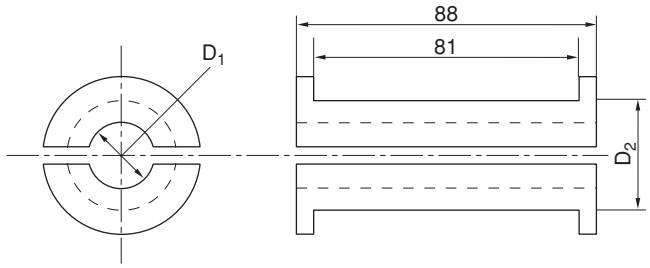
Order code **EE-∗**

∗ complete outside tube diameter

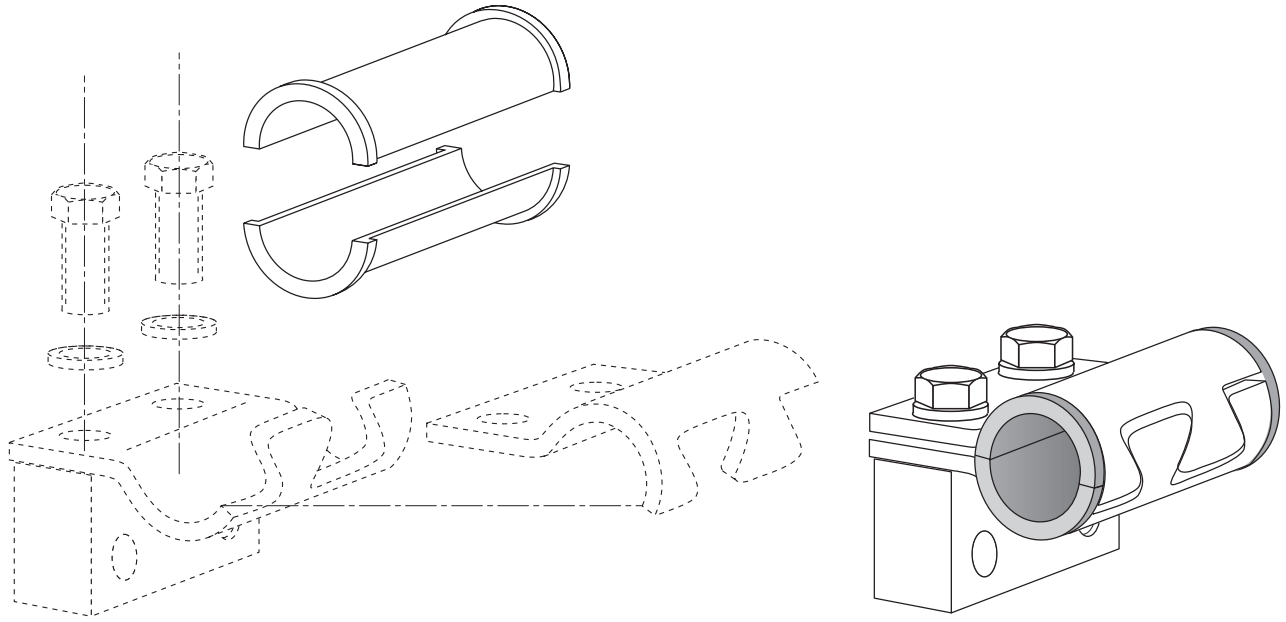
Hydraulic steel tube clamp HSRS also available with Elastomere inlay

The advantages:
- complete outside tube diameter
- Safe fastening method even for very sensitive tube and hoses lines
- Only one clamp for different tube diameters

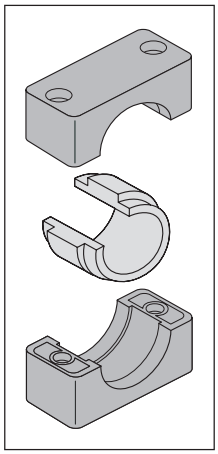
Material:
Santoprene 64 Shore
- high oil and weathering resistance
- temperature stability between –40 °C and +125 °C



Order code	Nominal size D_2	mm O.D. D_1
EE12X	HSRS25	12
EE15X		15
EE20X	HSRS30	20
EE25X	HSRS35	25
EE30X	HSRS42	30
EE35X	HSRS50	35
EE38X		38
EE42X		42



Tube Clamps with Elastomer Inlay



Light Constr. Series

Order codes for clamp-halves:

Polypropylene – **RAPE**
Polyamide 6 – **RANE**

Heavy Series

Order codes for clamp-halves:

Polypropylene – **RCPE**
Polyamide 6 – **RCNE**

Elastomer Inlay

Order code: EE-∗

∗ complete with clamp size and outside tube diameter

Clamp size		Tube O.D.	Series A		Series C		Elastomer inlay
Serie A	Serie C	mm	Clamp body	Clamp body with elastomer inlay	Clamp body	Clamp body with elastomer inlay	
		6		**RAPE406X**		**RCPE206X**	**EE206/406X**
		8		**RAPE408X**		**RCPE208X**	**EE208/408X**
		10		**RAPE410X**		**RCPE210X**	**EE210/410X**
		12		**RAPE412X**		**RCPE212X**	**EE212/412X**
		12.7		**RAPE412.7X**		**RCPE212.7X**	**EE212.7/412.7X**
4	2	14	**RAPE4X**	**RAPE414X**	**RCPE2X**	**RCPE214X**	**EE214/414X**
		15		**RAPE415X**		**RCPE215X**	**EE215/415X**
		16		**RAPE416X**		**RCPE216X**	**EE216/416X**
		17.2		**RAPE417.2X**		**RCPE217.2X**	**EE217.2/417.2X**
		18		**RAPE418X**		**RCPE218X**	**EE218/418X**
		19		**RAPE419X**		**RCPE219X**	**EE219/419X**
		20		**RAPE620X**		**RCPE320X**	**EE320/620X**
		21.3		**RAPE621.3X**		**RCPE321.3X**	**EE321.3/621.3X**
		22		**RAPE622X**		**RCPE322X**	**EE322/622X**
		23		**RAPE623X**		**RCPE323X**	**EE323/623X**
6	3	25	**RAPE6X**	**RAPE625X**	**RCPE3X**	**RCPE325X**	**EE325/625X**
		26.9		**RAPE626.9X**		**RCPE326.9X**	**EE326.9/626.9X**
		28		**RAPE628X**		**RCPE328X**	**EE328/628X**
		30		**RAPE630X**		**RCPE330X**	**EE330/630X**
		32		**RAPE632X**		**RCPE332X**	**EE332/632X**
		32				**RCPE432X**	**EE432X**
		33.7				**RCPE433.7X**	**EE433.7X**
		35				**RCPE435X**	**EE435X**
		38				**RCPE438X**	**EE438X**
		40				**RCPE440X**	**EE440X**
	4	42			**RCPE4X**	**RCPE442X**	**EE442X**
		45.5				**RCPE445.5X**	**EE445.5X**
		48				**RCPE448X**	**EE448X**
		51				**RCPE451X**	**EE451X**
		53.4				**RCPE453.4**	**EE453.4X**
		56.4				**RCPE456.4X**	**EE456.4X**

Attention! For clamps with elastomer inlay, the relation of diameter and size is not identical with the profile design or smooth design.

S

Custom Products



What are Custom Products?

Parker—supplier of your wishes—your special is our standard!

Your idea is our Know-How!

Profit of the advantages of our Custom Products:

- Slogans like “single source“ or “vendor-reduction“ are getting more and more important in industry.
- worldwide availibility
- Parker TFDE Custom Products is able to offer almost every type of connector, which is not to be found in our catalogues or price-lists.
- We produce one piece and upwards.

Following examples could be a suggestion, how your problems could be solved in the future.

Jump sizes



One connector can replace several combinations.

- to shorten assembly-time
- to reduce possible leaks and their costs
- to reduce stock

Extra-long connectors



to avoid long tubes
or adapter-combinations

Unconventional configuration of ends



tube and port end

eg: to connect metric and inch tube …

Restricted orifice



orifice ≥ 0,3 mm

(technical clarification about length of reduced bore in accordance to material necessary)

Re-Work of standard connectors



according to customer-instructions and drawings

(shorter threads, bleed adapter, female thread port for test-points gauge connectors)

Brazed parts



for most unusual variations

procedure: silver-brazing

T

Manifolds



with fixing bores according
to customer instructions

Filter Fitting



Also possible with your filters.
(We would ask you to let us know required dimensions
of your filter)

Milled parts



for narrow spaces

Flange connectors



ISO 6162 (SAE J 518),
according to customer instructions, drawings, etc.

Tubes and tube bends according to your specification possible on your request (incl. preassembled ends)—please let us know length, bend radia, etc.

Industrial Tube Fittings Europe – Alphanumerical index

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0107	N47	C6MX	K20	EGE-NPT	I62
0207	N50	C87OMLO	J37	EGE-R-ED	I59
0507	N52	C87OMX	K46	EGEO	I57
1004	H29	C8OMLO	J42	EL	I27
1004/210A	H28	C8OMX	K50	EL-M-ED	I69
2107	N48	CC5OLO	J40	EL-R-ED	I70
210A	H28	CC5OX	K48	ELA/ELAE	O45
2207	N51	CC87OMLO	J38	EMA1	Q4
226	H45	CCCTX	K53	EMA3	Q8
226 BLADES	H45	CCTX	K52	EMK4	N28
2507	N53	CD45M	N10	EMLO	J10
3107	N49	CDM	N9	EMTX	K10
3507	N54	CLO	J43	EO-KARRYMAT	H10
8207	J73	CMTX	K51	EO2-FORM F3	H24
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AS	M34	DDM	N14	ET	I26
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ASR	M33	DG 103	P9	EV-M-ED	I65
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BAV 6/12	H45	DG 104-R	P10	EVGE-M-ED	I60
BBMTX	K24	DG 105	P12	EVGE-R-ED	I61
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BFW	M79	DG 106-R	P13	EVL-M	I75
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BFW3-G	M86	DG 108	P16	EVT	I29
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F63MP4	N59	GAI-M	I118	KH (71)	O38
F63MX	K45	GAI-NPT	I120	KH (S)	O37
F642EDMLO	J35	GAI-R	I119	KH 3/2 (S)	O43
F642EDMX	K40	GE-M	I52	KH 3/2-BSPP(S)	O44
F64OMX	K41	GE-M(KEG)	I53	KH-A-S	M102
F65OL	J34	GE-M-ED	I46	KH-B1V-S	M99
F65OMX	K39	GE-NPT	I55	KH-B2V-S	M100
F682EDMLO	J36	GE-R	I49	KH-B3V-S	M101
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Dry Technology

For your notes

Dry Technology

Dry Technology

For your notes

Dry Technology

Dry Technology

For your notes

Dry Technology

About Parker Hannifin Corporation

Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service.

A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 1,400 product lines that control motion in some 1,000 industrial and aerospace markets.

Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our Company has the largest distribution network in its field, with over 7,500 distributors serving nearly 400,000 customers worldwide.

Parker's Charter

To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods.

More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

Customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Centre.

The Centre can be called toll free from France, Germany, Austria, Switzerland or the United Kingdom. You will be answered by a Parker employee in your own language.

Call Freephone: 00800-2727-5374 (00800 C PARKER H).

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.





The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.

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The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.

The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.





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CAT/4100-7/UK
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