



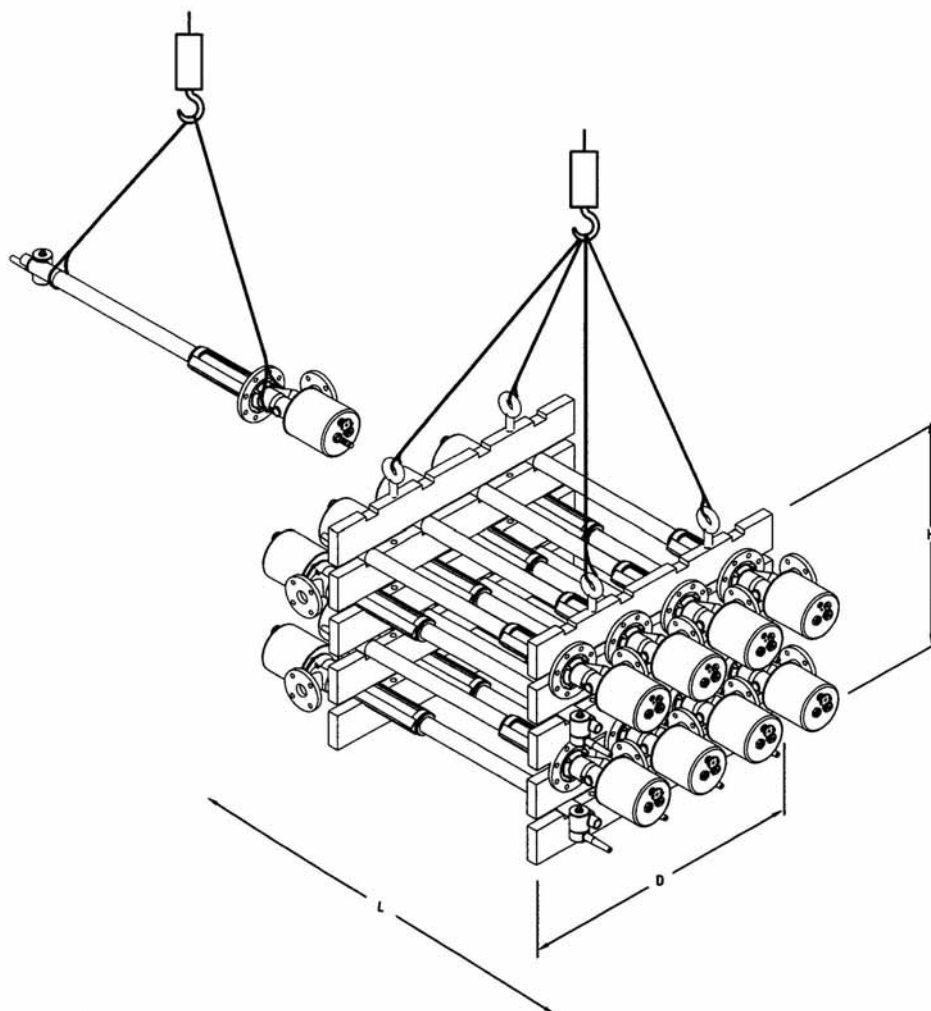
Instruction Manual

Gunclean Toftejorg i65 S

Cleaner Unit TE65S353 for nozzle size $\varnothing 6 - \varnothing 19$

IM-TE91A871-EN1
Date of issue: July 1, 2009

Handling of loads



Back position of the centre of gravity: $L/2$ $H/2$ $D/2$

Warning: Do not walk under hanging loads!



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Introduction

This manual is intended to assist in the handling and operation of the Gunclean Toftejorg i65 S tank cleaning system and has been prepared as a guide for the persons who will be operating and maintaining your tank cleaning machine. The key to long life for your tank cleaning machine will always be a system of carefully planned maintenance; you will appreciate that a tank cleaning machine which has a rough and dirty job to do will need more frequent attention than one working in ideal conditions.

Note: Get the best and most economical performance from your tank cleaning machine. Insufficient preventive maintenance means poor performance, unscheduled stops, shorter lifetime and extra costs. Good preventive maintenance on the contrary means good performance, no unscheduled stops and superior total economy.

You will find the information contained in this manual simple to follow, but should you require further assistance, our Customer Service Department and world-wide net of Distributors will be pleased to help you. Please quote the type and serial number with all your enquiries; this will help us to help you. The type and serial number are placed on the gear house of the tank cleaning machine.

Note: The illustrations and specifications contained in this manual were effective at the date of printing. However, as continuous improvements are our policy, we reserve the right to alter or modify any unit specification on any product without prior notice or any obligation.

Warning: Service must be made by trained or authorised staff.



Caution: Before operation the cover must be put back.



Danger: Tank cleaning must be made according to IMO and/or owners instructions.



Patents and trademarks

This Instruction Manual is published by Alfa Laval Tank Equipment A/S without any warranty. Improvements and changes to this Instruction Manual may at any time be made by Alfa Laval Tank Equipment A/S without prior notice. Such changes will, however, be incorporated in new editions of this Instruction Manual.

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The Alfa Laval logotype is a trademark or a registered trademark of Alfa Laval Corporate AB. "Gunclean Toftejorg" is a trademark or registered trademark of Alfa Laval Tank Equipment A/S. The Gunclean Toftejorg™ i65S product has a new patent pending. Other products or company names mentioned herein may be the trademarks of their respective owners. Any rights not expressly granted herein are reserved.

Rating plate

The Rating plate is placed at the gear box and is accessed by removing the Top cover.

The Rating plate contains all identifications for the machine. The information is very useful, e.g. when ordering service or spare parts.

Gunclean Toftejorg i65 S - Rating plate

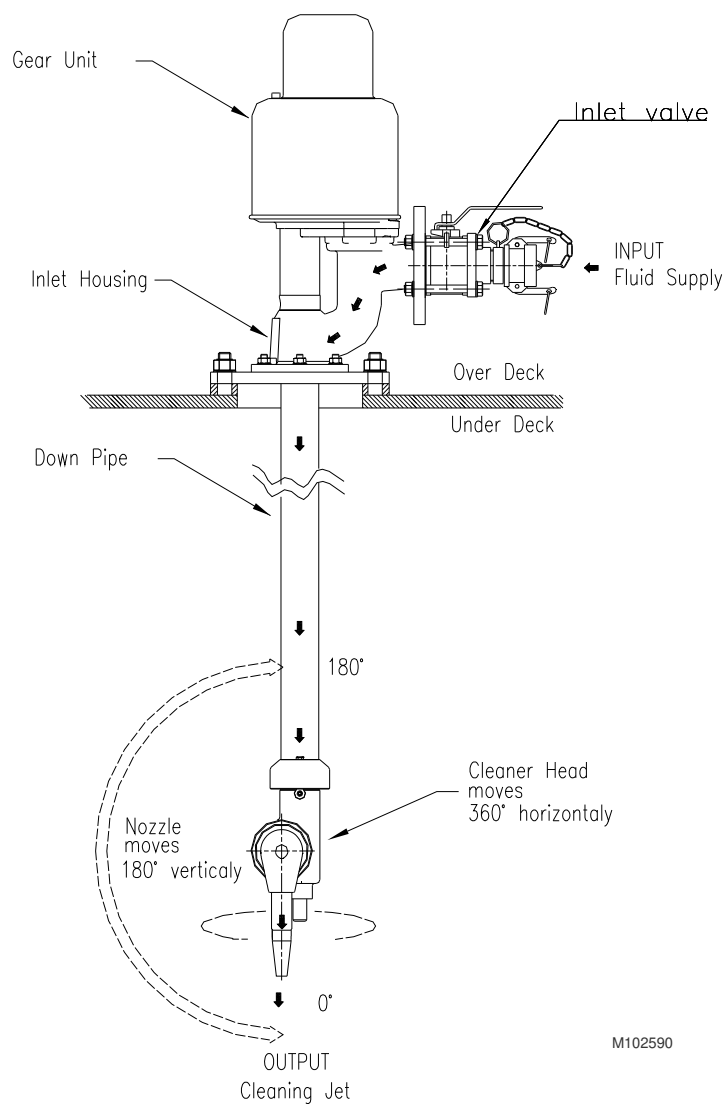
	Alfa Laval Tank Equipment COPENHAGEN – DENMARK	
Type: i65S X.Xm XxØX		
Art No.: 65Sxxxxxxxxxxxxxx-D		
Survey No.: XXXXXXXXXXXXXXXX		
	Serial No.: XXXX-XXX	

General description

Four main parts

1. [Gear unit](#)
2. [Inlet housing](#)
3. Down pipe
4. Cleaner head

Gunclean Toftejorg i65 S - Main parts



Flow of the cleaning fluid

The fluid comes from the tank cleaning supply line, passes through the inlet shut-off valve, proceeds into the inlet housing, passes through the turbine, turns downwards through the deck into the main pipe and finally exits through the nozzle.

General description (continued)

The Gunclean Toftejorg i65 S tank cleaning machine consists of two main parts, a Cleaner Unit and a Gear Unit.

Gear Unit

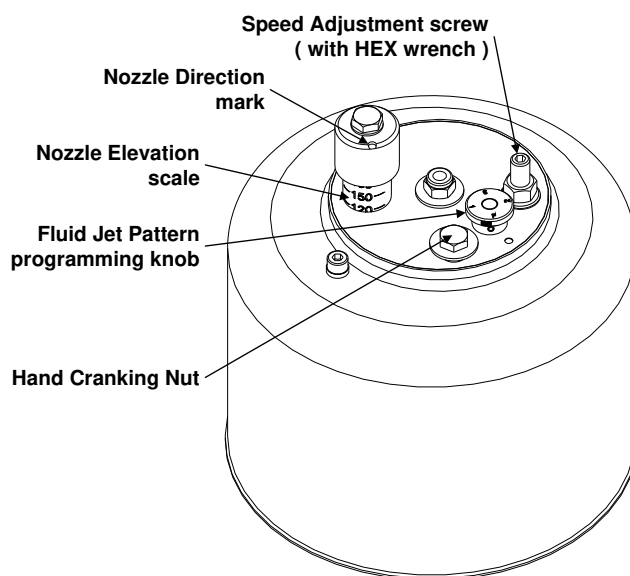
The programmable Gear Unit is the drive and operation unit and is mounted on the inlet housing.

Inlet Housing

Above deck the inlet housing with the turbine is fitted to the deck flange. The down pipe is fitted to the deck flange. The down pipe protrudes into the tank and thereby it allows the cleaner head with the nozzle to spray cleaning fluid on all the inner surfaces of the tank. The rotation speed normally varies between 1-2 rpm, depending on the nozzle diameter and the line pressure at the inlet. The nozzle unit consists of a swivel housing, a nozzle and a flow guide.

The vertical and horizontal rotation of the nozzle is transferred by an elevation rod.

Gunclean Toftejorg i65 S - Gear Unit

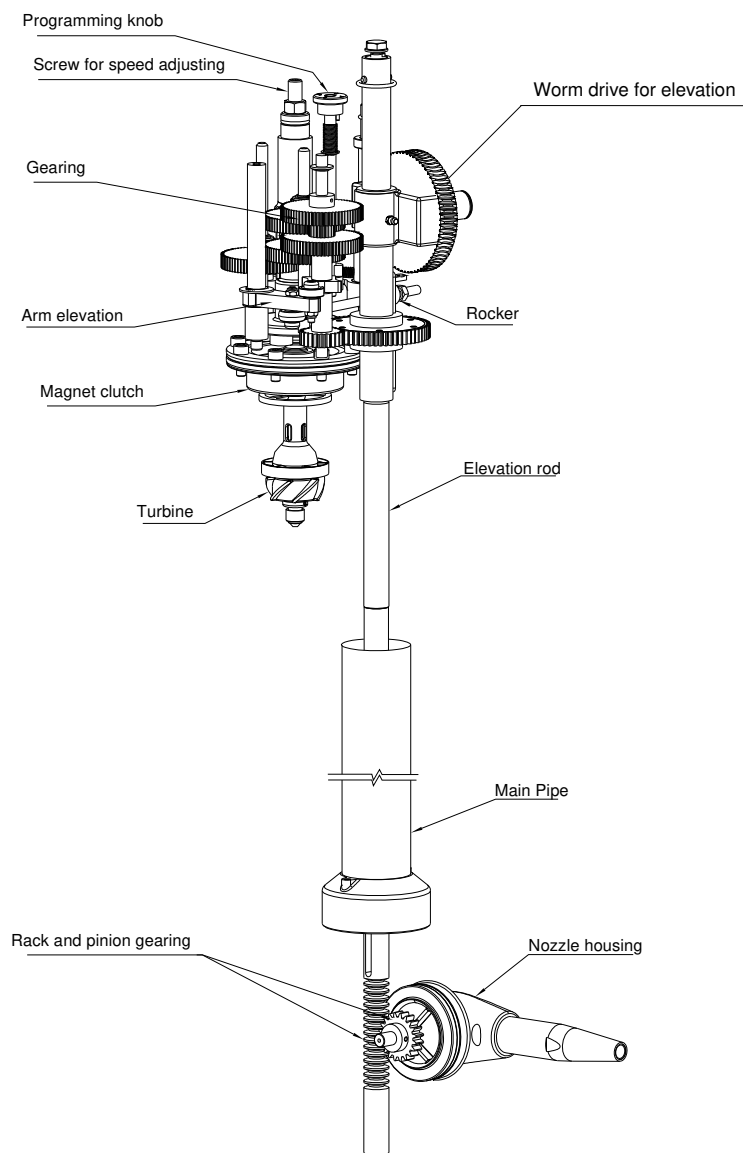


03-i65_S_Power_Unit_top

The elevation angle of the nozzle is shown by a scale on the extension of the elevation rod. The rotation of the nozzle is identical to the rotation of the elevation rod. The nozzle direction is shown by the mark on the top of the elevation rod.

General Description (continued)

Gunclean Toftejorg i65 S – Cleaner head and nozzle lift mechanism



Technical Description

General Data

Weight	:	Machine with 1 m length of main pipe	:	66 kg
		Per additional meter of Main pipe	:	8,2 kg
Servicing space	:	Minimum radius from centre of deck flange	:	R = 250 mm valve not incl.
		Height above deck min	:	900 mm
Material (std. version)	:	Spare part	Material	
		Inlet housing	AISI 316L	
		Main pipe	AISI 316L	
		Lower assembly	AISI 316L	
		Cover	AISI 316L	
		Sealings		

Supply Data

Gunclean Toftejorg i65 S is operated with a supply of cleaning fluid at a flow of approximately 8-43 m³/hour and at an inlet pressure of 0.6-1.2 Mpa.

Programming

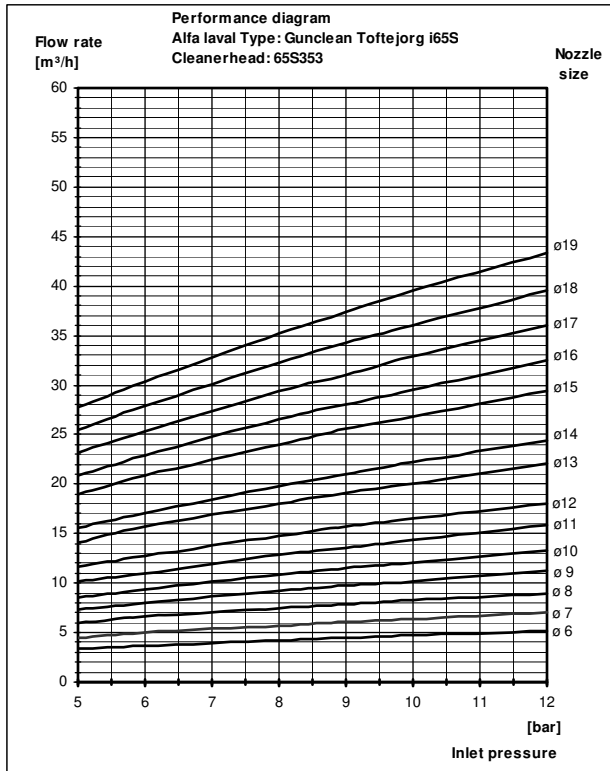
The integrated Gear unit has four different cleaning programmes, including pre-wash.

Rotating Speed

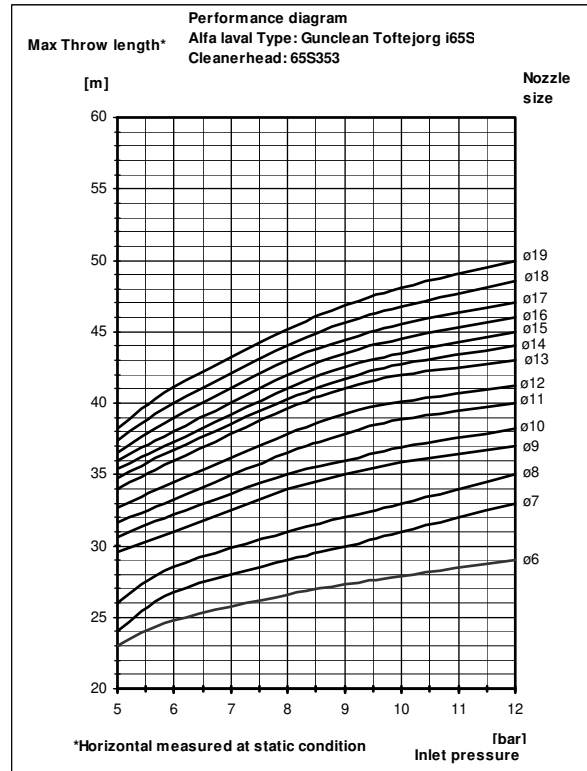
The rotating speed can vary between 0 - 2 rpm.

Technical Description (continued)

Performance Data



Flow rate



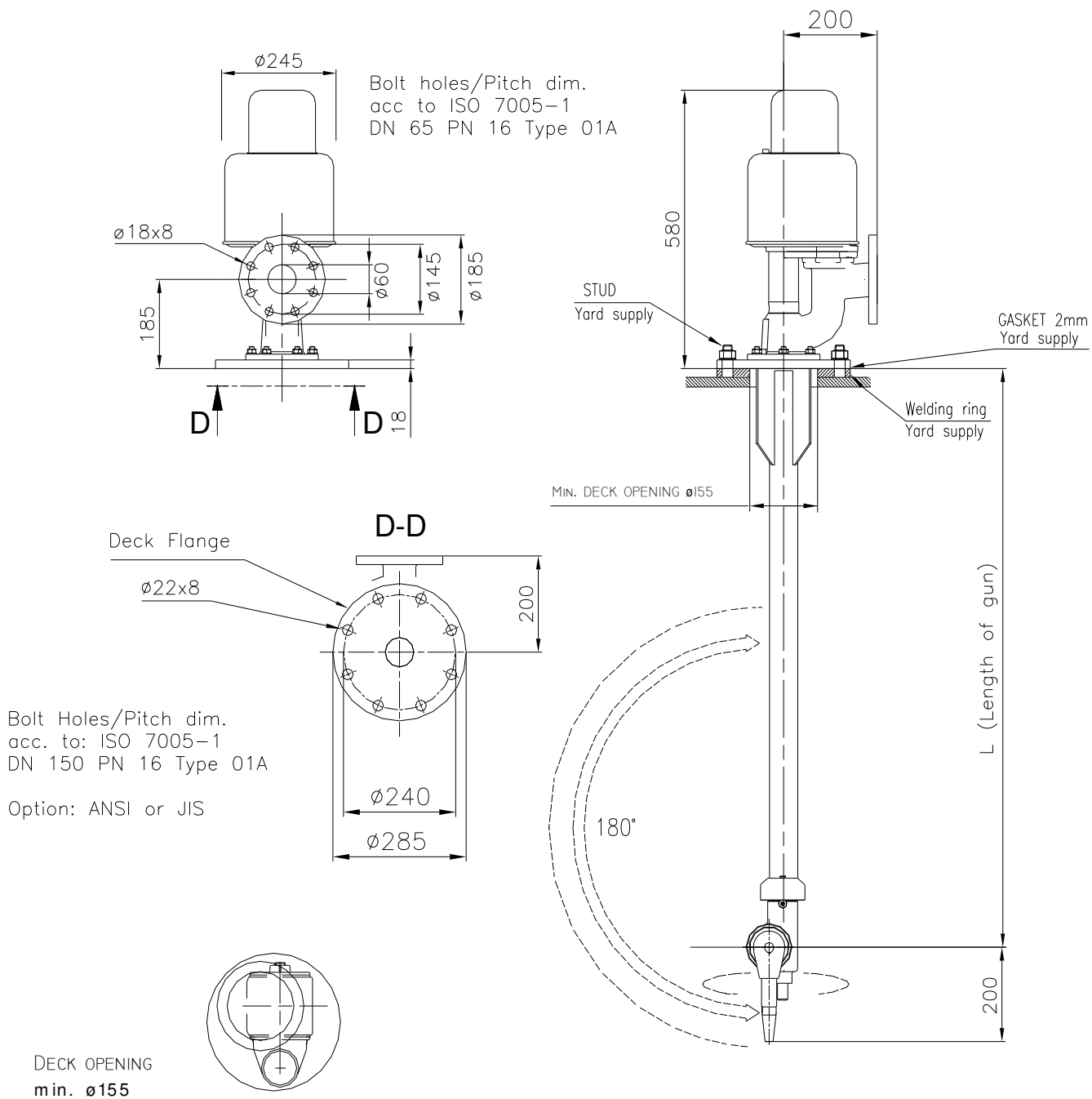
Max. Throw Length

Note: Throw lengths are measured as max. horizontal throw length at static condition.

Effective throw length varies depending on jet transverse speed over surface, substance to be removed, cleaning procedure and agent.

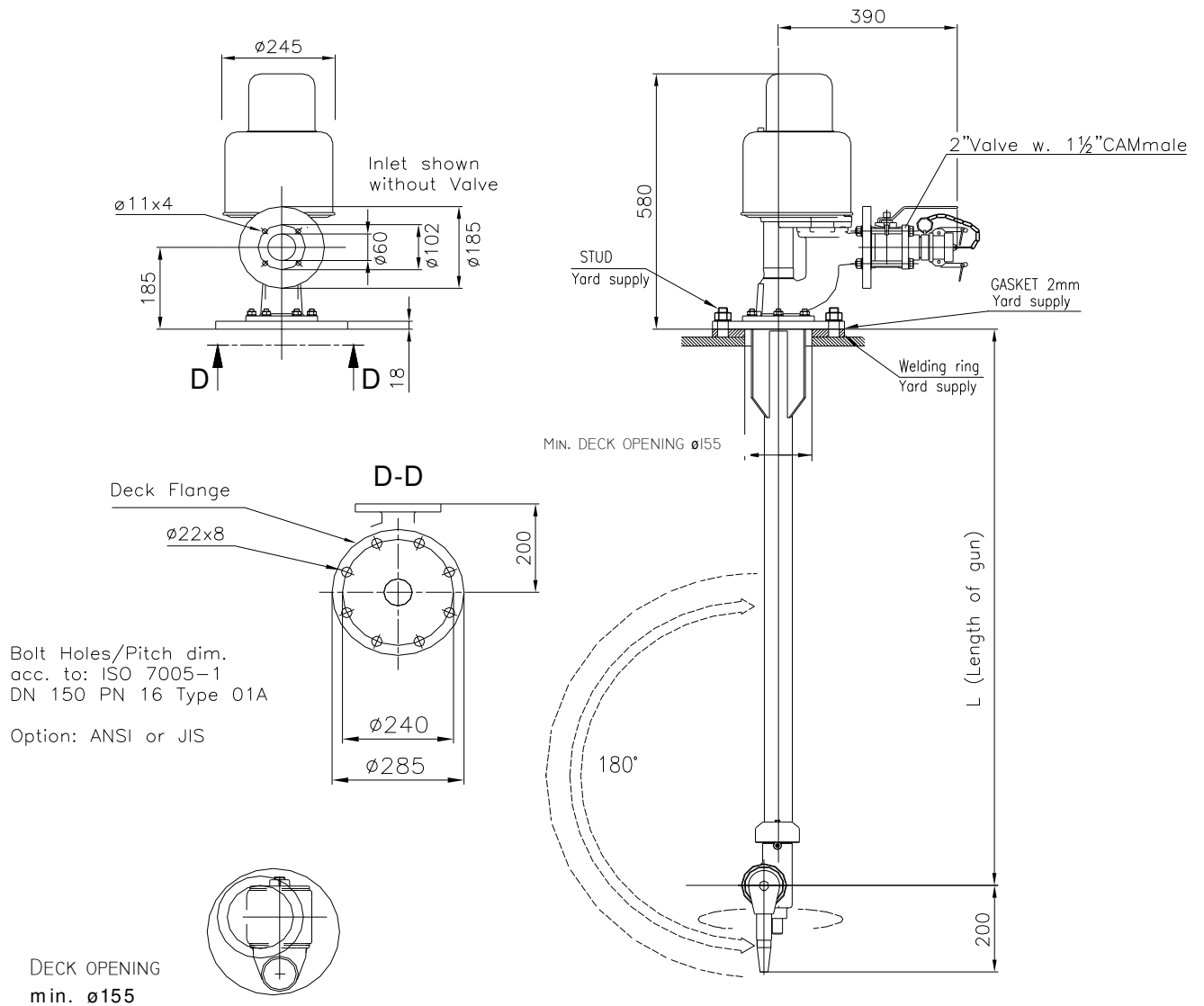
The inlet pressure has been taken immediately before the machine inlet. In order to achieve the performance indicated in the curves, the pressure drop in the supply lines between pump and machine must be taken into consideration.

Technical Description (continued)



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Technical Description (continued)



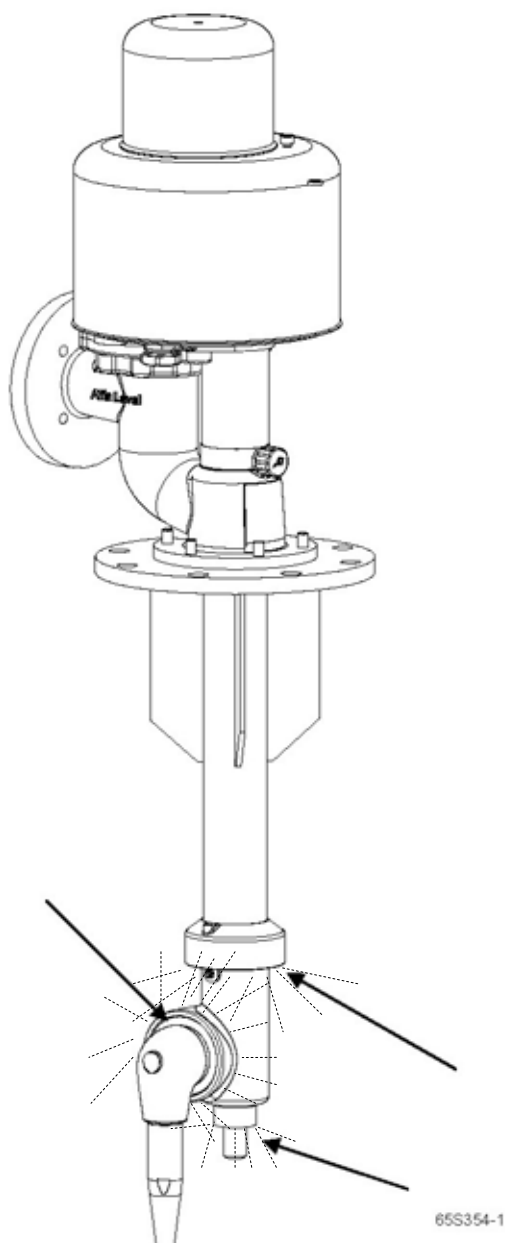
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Technical Description (continued)

Leakage

Leakage flow will appear at the places shown below in order to provide the Teflon bearing with water for lubrication and cleaning.



Installation and Normal Operation

Before Installation

Make sure that the pipes have been properly flushed before installation. We know from experience that welding rods, plastic bags, rags and other debris will block the turbine. This may result in damage and poor performance.

Start up

Speed is set at factory at 1 rev./min.

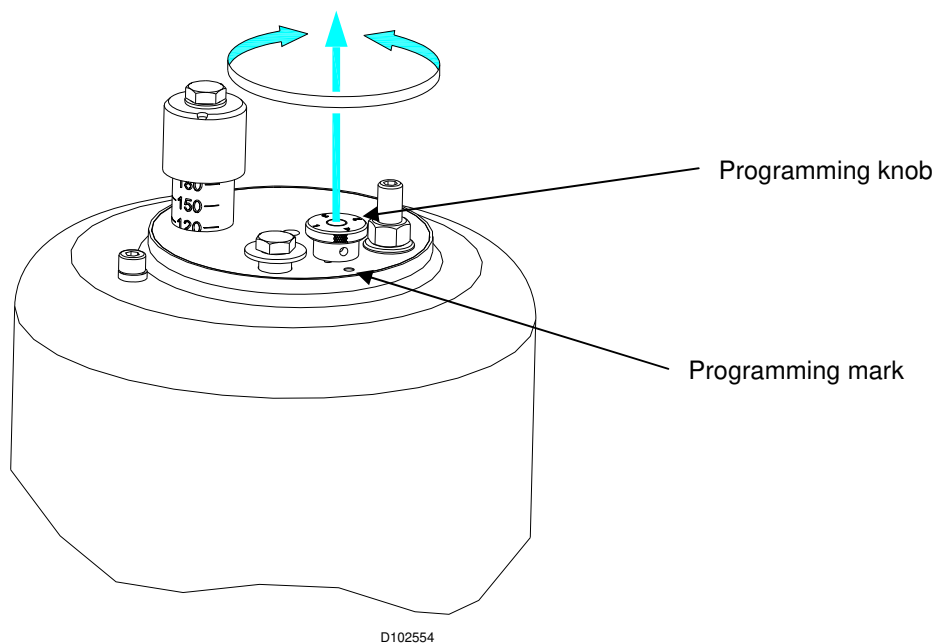
Starting procedure

Pressurize the supply line up to the inlet valve closest to the machine. Then slowly open the valve.

Installation and Normal Operation (continued)

Changing the Cleaning Programme

Lift and turn the programming knob to the required programme. The programme number should be aligned with the mark on the cover. Four pre-set programmes can be selected. This can be done at any stage during the cleaning operation.



The following pitch angles¹ are available:

- Programme 1: Approximately 1.5°
- Programme 2: Approximately 3°
- Programme 3: Approximately 7°
- Programme F*: Approximately 30°

*F = prewash

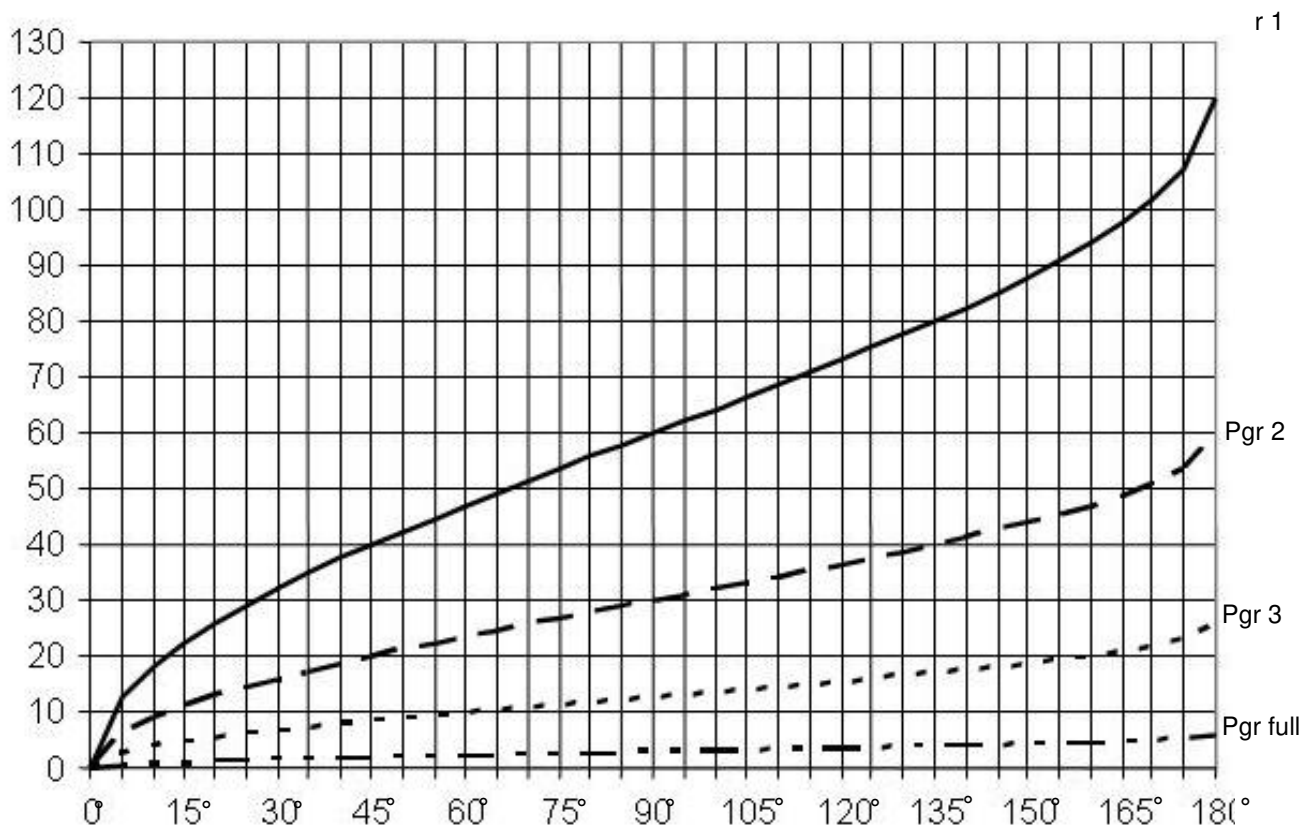
Note: The pitch angle can vary with approximately $\pm 0.5^\circ$.

Installation and Normal Operation (continued)

How to calculate cleaning time

Diagram based on rotating time = 60 sec./rev.

Min.



0° = Nozzle position directed straight down

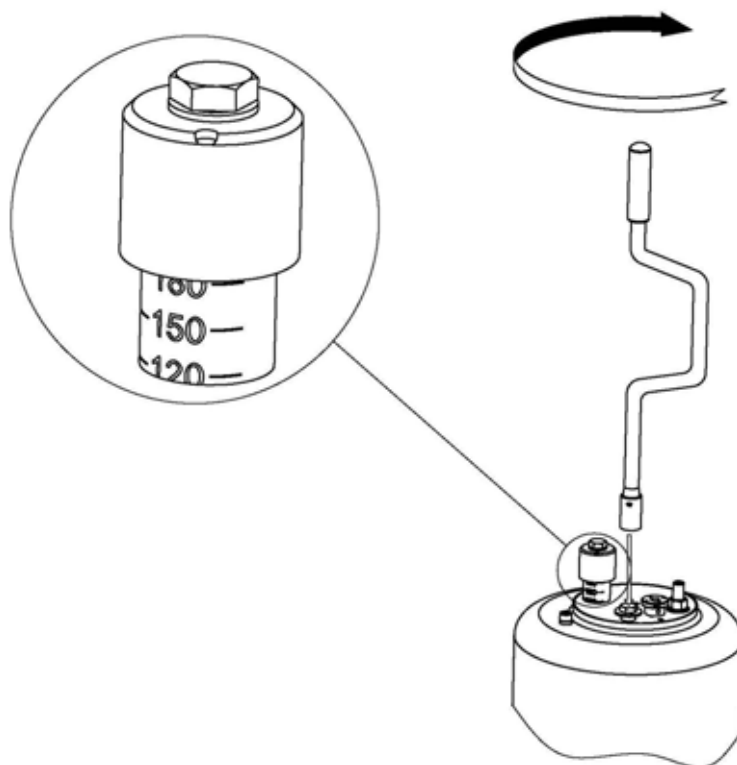
Explanations

Starting cleaning angle	=	A	=	X minutes	$D = \frac{(Y - X) \times C}{60}$
Finnish cleaning angle	=	B	=	Y minutes	
Rotation time (sec./rev.)	=	C			
Cleaning time (minutes)	=	D			

Example 1	Example 2	Example 3
Programme 2 A = 20° X = 13 B = 85° Y = 29 C = 60 sec./rev. $D = \frac{(29-13) \times 60}{60} = 16 \text{ min.}$	Programme 1 A = 180° X = 120 B = 90° Y = 60 C = 60 sec./rev. $D = \frac{(60-120) \times 60}{60} = 60 \text{ min.}$	Programme 3 A = 0° X = 0 B = (cleaning angle 0°-180°-105°) B ₁ =0° - 180° Y ₁ = 26 B ₂ =180°-105° Y ₂ =26-14=12 C = 60 sec./rev. $D = \frac{(26 + 12 - 0) \times 60}{60} = 38 \text{ min.}$

Installation and Normal Operation (continued)

Operation



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How to start operation

1. Choose programme by lifting and turning the programming knob.
2. Hand crank clockwise to desired angle.
3. Pressurize the supply line up to the inlet valve closest to the machine.
4. Open the valve slowly to start the machine.

How to stop the machine after cleaning

1. Close valve.
2. Hand crank nozzle clockwise to zero (0°) angle for draining.

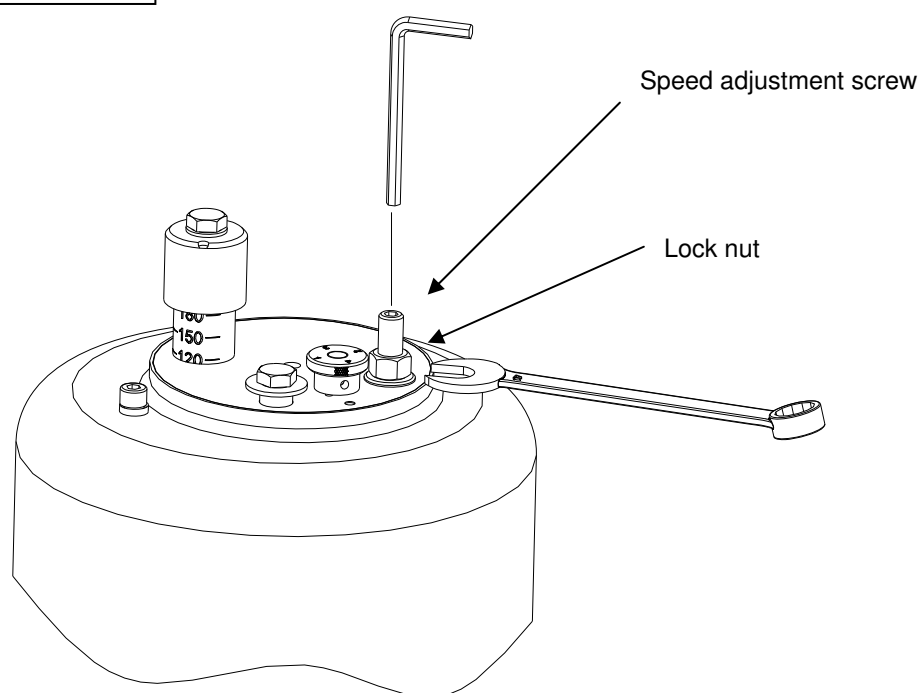
Note: Zero angle is the angle when the jet nozzle is directed straight down.

Installation and Normal Operation (continued)

Speed Adjustment

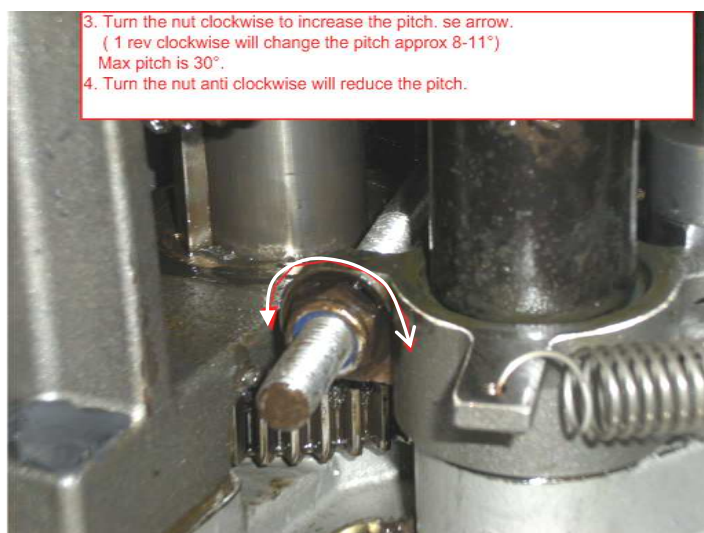
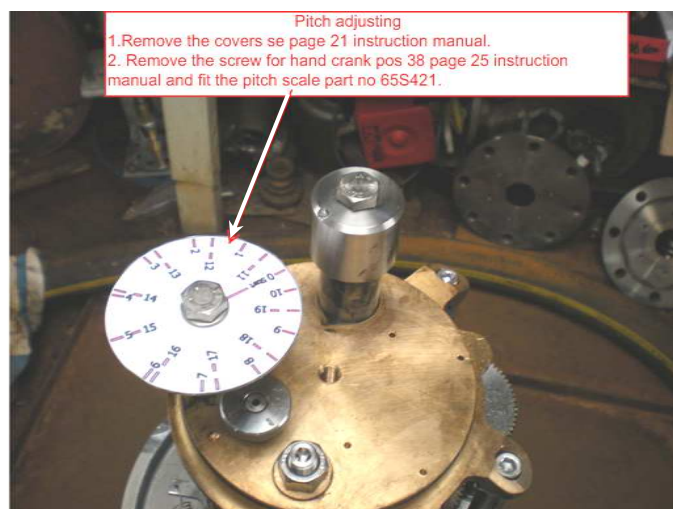
The rotation speed of the cleaner can be regulated by turning the adjusting screw. To do so, slack off the lock nut counter clockwise and turn the allen screw clockwise in order to increase the speed, or counter clockwise to decrease it.

Recommended speed:
1 – 2 rpm

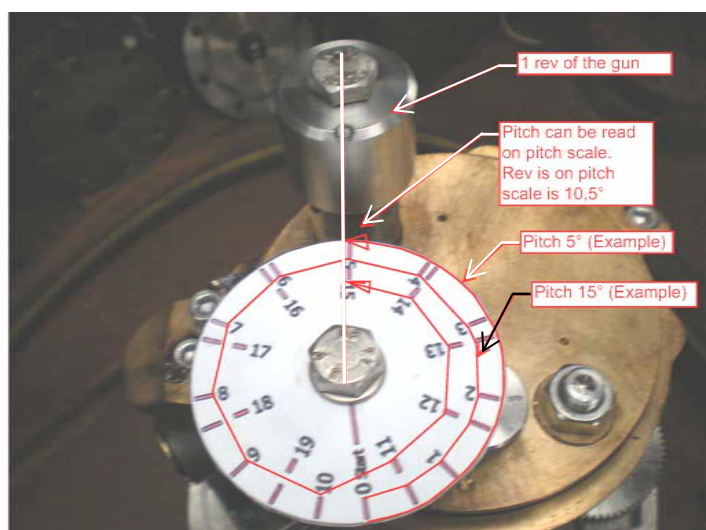
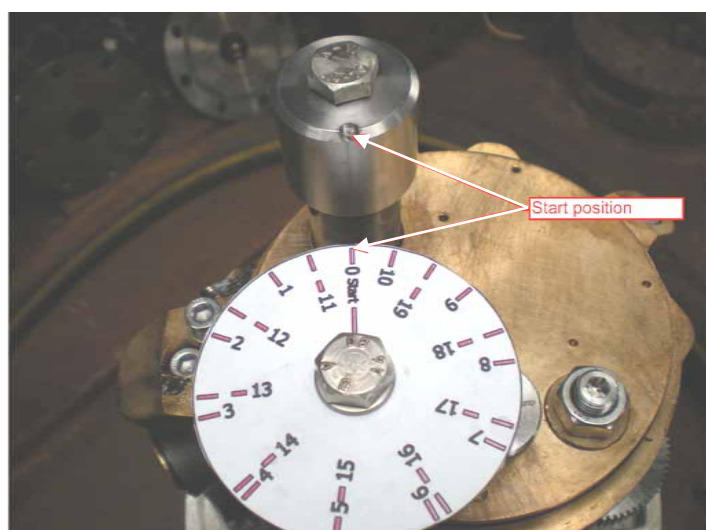
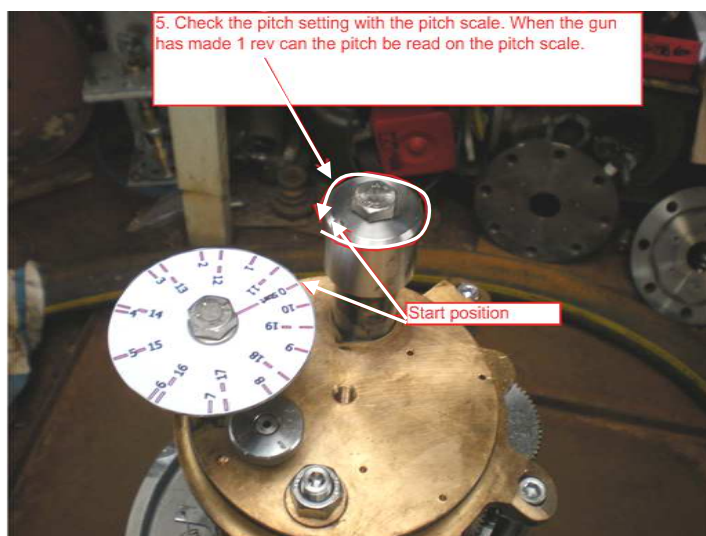


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Pitch Adjusting Scale Instruction



Pitch Adjusting Scale Instruction (continued)



Maintenance and Repair

Preventive Maintenance Guidelines and Service Kits

By using Alfa Laval Tank Equipment Preventive Maintenance Guidelines and Service Kits you are enabled to ensure the availability of your equipment at all times. You are able to plan your operating budget and your downtime. The risk of breakdowns due to component failure is virtually eliminated and in the long term your operating costs are reduced.

Alfa Laval Tank Cleaning Equipment Service Kits contain All you need. They comprise genuine Alfa Laval spare parts, manufactured to the original specifications.

Maintenance intervals and Service Kits selection

Alfa Laval Service Kits for Tank Cleaning Machine type, Gunclean Toftejorg i65 S are available in two levels for the Drive- and Turbine Unit: Minor Service and Major Service and in one level for the Cleaner Unit.

Minor Service kit for Drive unit (above deck) is recommended to be replaced every 300 working hours or 3 years, whichever comes first. Major Service kit for Drive unit (above deck) is recommended to be replaced every 600 working hours or 6 years, whichever comes first.

i65 all versions. Minor Service Kit for Drive Unit, ref. TE55T600 contains

Qty. x Part no.	Description	See placement
2 x TE916319	O-Ring	TE65S311
1 x TE916312	O-Ring ¹	TE65S311
1 x TE916306	O-Ring ¹	TE65S311
3 x TE65S581	Bushing for turbine	TE65S310
1 x TE65S560	Gasket for packing box	TE65S310
1 x TE918179	O-Ring (Red)	TE65S310
1 x TE51T027	O-Ring	TE65S310
1 x TE918227	O-Ring (white)	TE65S310
1 x TE918221	Lip seal	TE65S310

¹Only for i65S, not required for i65D.

i65 all versions. Major Service Kit for Drive Unit, ref. TE55T610 contains

Qty. x Part no.	Description	See placement
1 x TE51T213	O-Ring	TE65S311
1 x TE916410	O-Ring	TE65S311
1 x TE918335	Seal	TE65S311
2 x TE51L142	Bearing	TE65S311
1 x TE51T126	O-Ring	TE65S311
1 x TE916397	O-Ring	TE65S311
2 x TE900542-M8	Washer	TE65S311
1 x TE916315	O-Ring	TE65S311
1 x TE914304	O-Ring	TE65S325
1 x TE65S520	Gasket for turbine cover	TE65S310
1 x TE51T214	O-Ring	TE65S310
1 x TE55T600	Minor Service Kit for drive unit	Minor Service Kit

Maintenance and Repair (continued)

All Major Service kits includes the corresponding Minor Service Kits parts. Each kit contains a maintenance guide.

Service kit for Gunclean Toftejorg i65 S Cleaner Unit (below deck) is recommended to be replaced every 1200 working hours.

Gunclean Toftejorg i65 S, Service Kit for Cleaner Unit, ref. TE55T630 contains

Qty. x Part no.	Description	See placement
1 x TE65S581	Bushing for Turbine	TE65S353
1 x TE65S736	Bearing for rack	TE65S353
1 x TE65S746	Lip seal	TE65S353
1 x TE65S738	Bearing vertical upper	TE65S353

General recommendations

- Always read the instruction and maintenance manuals before undertaking the service.
- Some kit contains a small quantity of parts not need for each tank cleaning machine model. These are not included in the price and may be disregarded.
- Always replace all parts included in the Service Kit.

Additional maintenance recommendations

Cleaner Unit

Bearings and bushings to be cleaned or replaced if necessary, see [reference list for Cleaner Unit](#).

Inlet Housing

Check Plates TE65S583 and Balls TE51F017 for wear regularly, see placement TE65S310 Inlet Housing. Replace if wear is visible, see wear kits available on page 49.

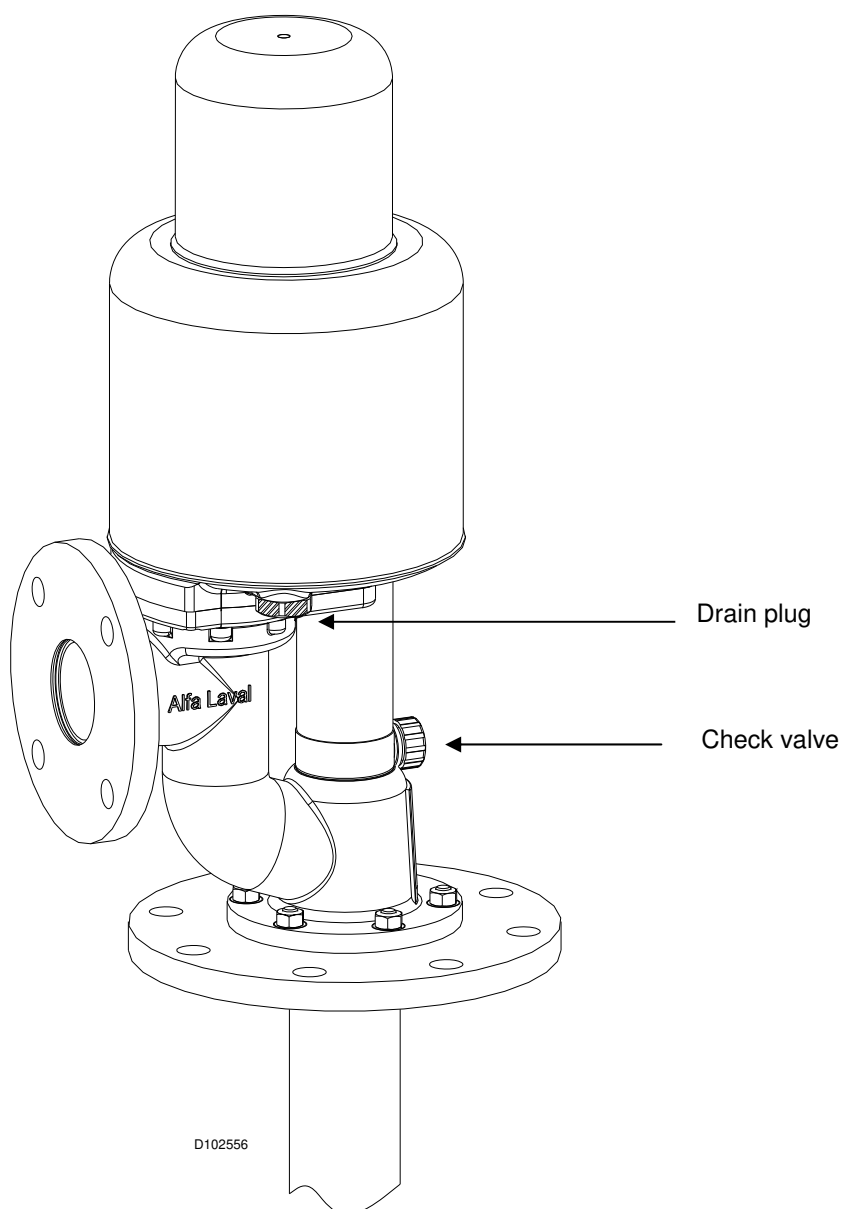
Gear Unit

Check the function of the positions Magnet unit assy TE65S325, Roller clutch TE51L035 and One-way clutch TE51L045 regularly, see placement TE65S311. Replace if required, see wear kits available on page 49. Rust protected and greased for six months after delivery from our factory (see recommended grease page 24).

Maintenance and Repair (continued)

Every month

- Loosen drain plug and check for the presence of water. Drain if necessary.
- Check that all the moving parts are well-greased.
- Check rust protection. All parts inside the Gear Unit must be greased.
- Check for leakage during operation.



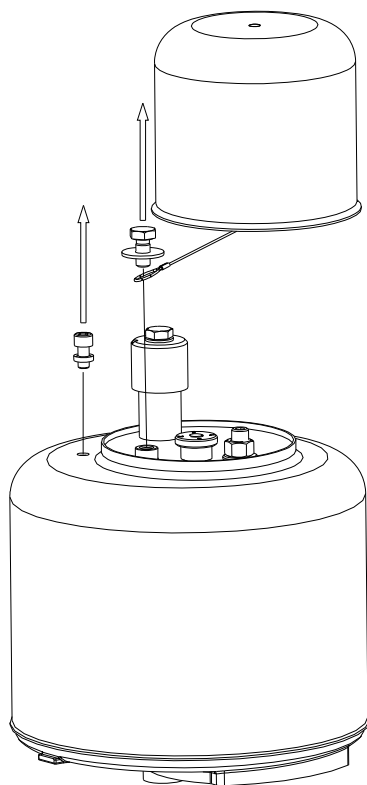
Maintenance and Repair (continued)

To Remove Cover

For service and maintenance the cover has to be removed.

1. Unscrew the hand crank screw and the screw for cover and remove the upper cover.
2. Lift the lower cover.

Warning: Service must be made by trained or authorised staff.

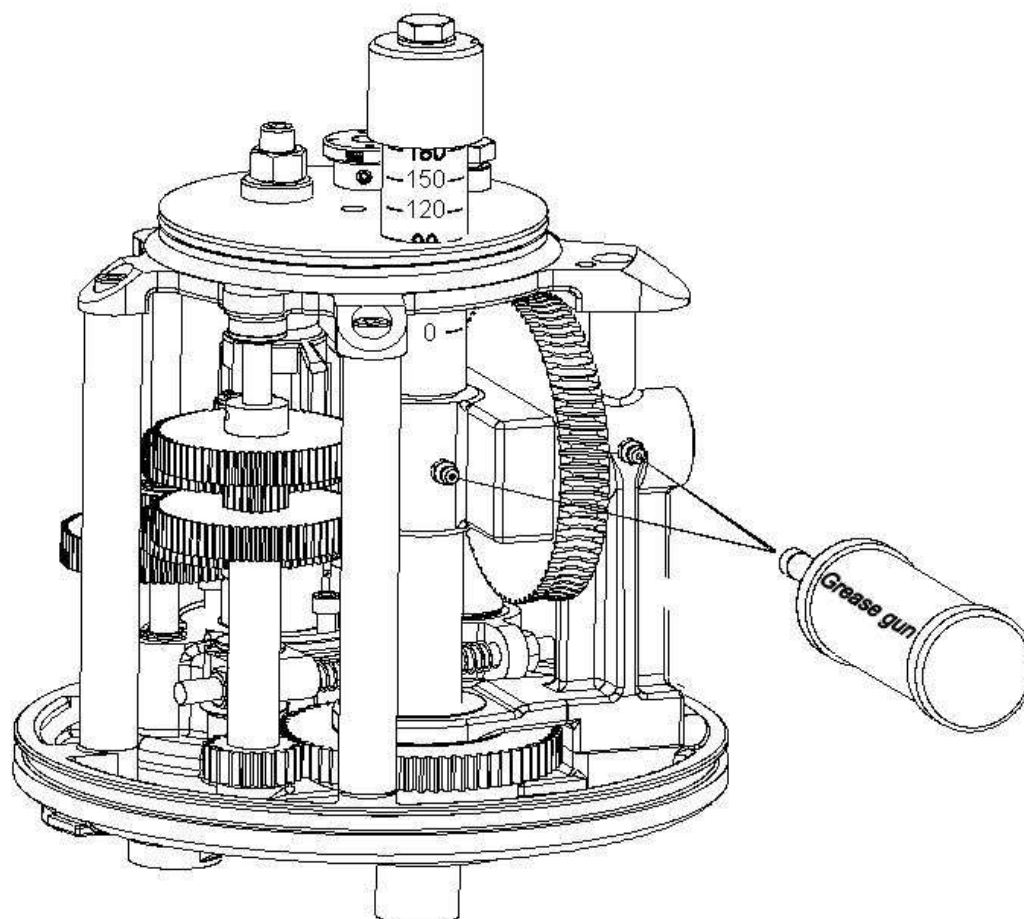


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Caution: Before operation the cover must be put back.



Maintenance and Repair (continued)



Recommended grease

Make	Grease
Mobil	Mobilith SHC 460
Texaco	Hitex 1P2
Shell	Rhodina EP 2
BP	Super Grease
Statoil	Grease way CaH92

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Gunclean Toftejorg I65 S, Gear unit

Spare part list

Article no. TE65S311

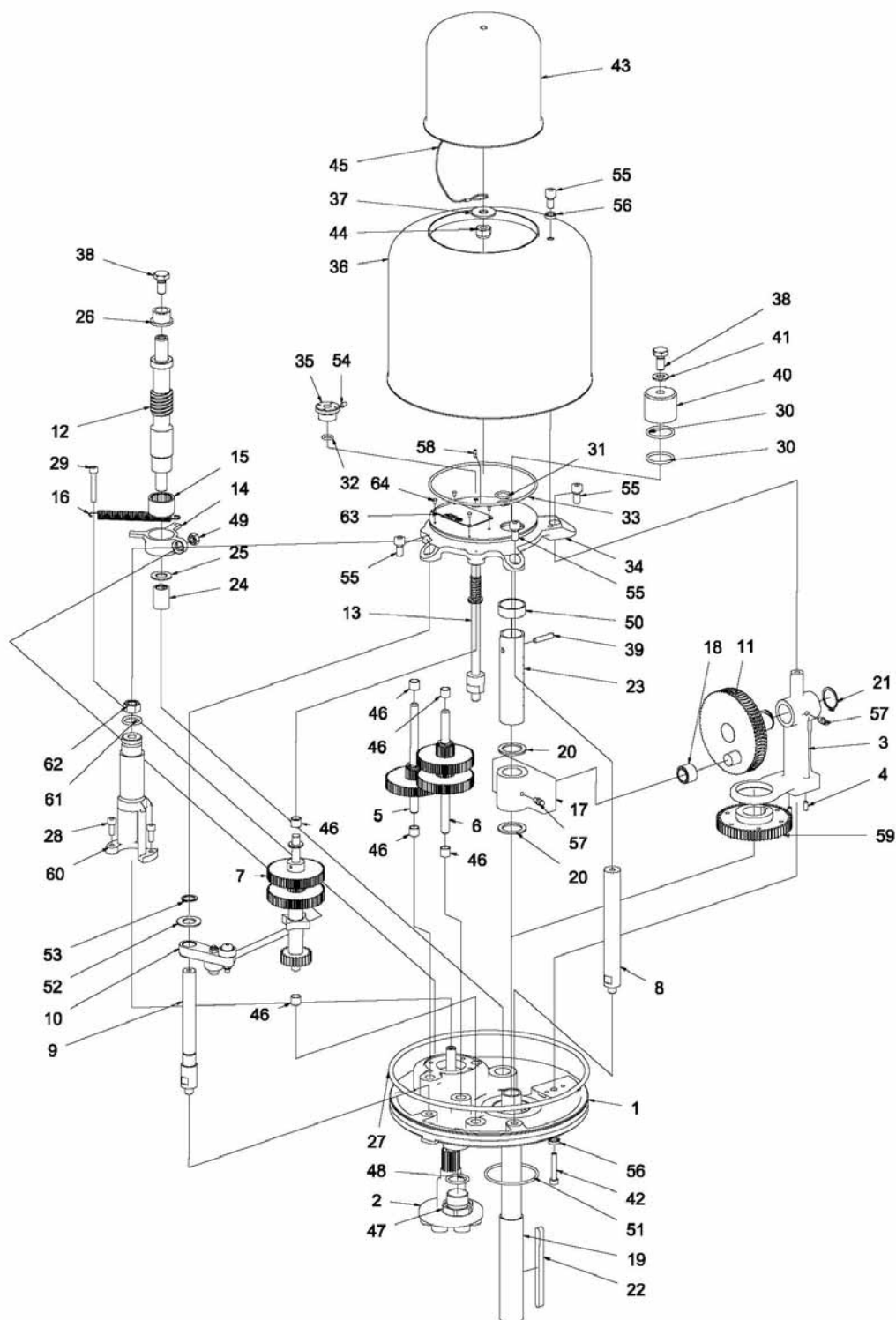
Pos	Drwg.No	Description	Pcs.	Material
1	TE65S542	Gear platform lower/machined	1	Stainless steel
2	TE65S325	Magnet unit assy	1	
3	TE65S591	Stand for elevation	1	Steel
4	TE912051	Cyl. pin	2	Stainless steel
5	TE65S327	Gear shaft No.1	1	
6	TE65S326	Gear shaft No. 2	1	
7	TE65S333	Gear shaft No. 3 with elevation cam	1	
8	TE65S546	Stand support for gear box	1	Stainless steel
9	TE65S599	Stand support gear box cam	1	Stainless steel
10	TE65S344	Arm elevation assy	1	
11	TE65S337	Worm wheel for elevation, assy	1	
12	TE65S338	Wormscrew Assy	1	
13	TE65S328	Programme shaft assy	1	
14	TE65S606	Rocker arm elevation elevation	1	Steel
15	TE51L035	Roller clutch	1	
16	TE65S609	Extension Spring	1	
17	TE65S533	Yoke for elevation/machined	1	Bronze
18	TE65S335	Wheel assy	1	
19	TE65S526	Outer lifting rod upper	1	Steel
20	TE900480	Washer	2	Stainless steel
21	TE913042	Circlip	1	Stainless steel
22	TE65S507	Key for lifting rotating rod	1	Stainless steel
23	TE65S528	Scale for elevation	1	Stainless steel
24	TE51L045	One way clutch	1	
25	TE51L143	Washer	1	Bronze
26	TE914565	Bearing	1	Oil impregnated
27	TE51T213	O-ring	1	Elastomer
28	TE910558	Screw	3	
29	TE910565	Screw	1	Stainless steel
30	TE916319	O-ring	2	Elastomer
31	TE916312	O-ring	1	Elastomer
32	TE916306	O-ring	1	Elastomer
33	TE916410	O-ring	1	Elastomer
34	TE65S524	Gear platform upper machined	1	Stainless steel
35	TE651056	Programming knob	1	Stainless steel
36	TE65S569	Gear box cover, lower	1	Stainless steel
37	TE104224	Washer	1	Stainless steel
38	TE910250	Screw	2	Stainless steel
39	TE51C232	Pin	1	Stainless steel
40	TE65S514	Top hat for lifting/rotating rod	1	Stainless steel

Continued page 28

Gunclean Toftejorg I65 S, Gear unit (continued)

Assembly drawing

Article no. TE65S311



65S311-ISO-manual

Gunclean Toftejorg I65 S, Gear unit (continued)

Spare part list

Article no. TE65S311

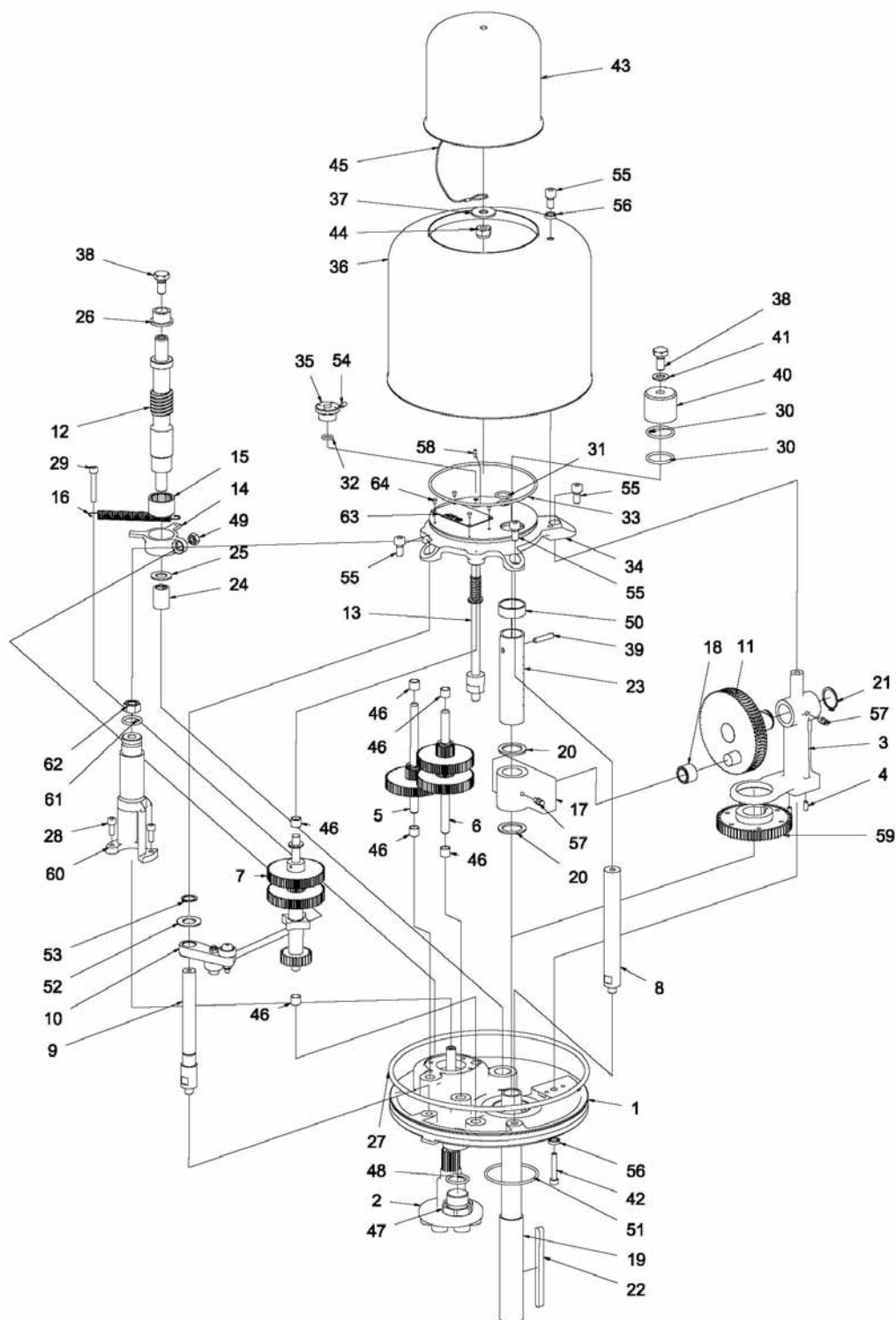
Continued from page 26

Pos	Drwg.No	Description	Pcs.	Material
41	TE918335	Seal	1	Stainless steel
42	TE910573	Screw	1	
43	TE65S324	Upper cover assy	1	
44	TE914047	Lock nut	1	Stainless steel
45	TE900181	Wire	1	Stainless steel
46	TE51L142	Bearing	6	Bronze
47	TE65S610	Plug	1	Stainless steel
48	TE51T126	O-ring	1	Elastomer
49	TE914046	Lock nut	1	Stainless steel
50	TE51L145	Bearing	1	Bronze
51	TE916397	O-ring	1	
52	TE51B060	Washer	1	Bronze
53	TE913034	Retaining ring	1	Spring steel
54	TE910855	Lock screw	1	Stainless steel
55	TE910568	Screw	4	Stainless steel
56	TE900542-M8	Washer	2	Stainless steel
57	TE900007	Grease Nipple	2	
58	TE912227	Pin	1	
59	TE65S342	Gear 61 assy	1	
60	TE65S547	Support for magnet system	1	Bronze
61	TE916315	O-ring	1	Elastomer
62	TE51A509	Nut	1	Stainless steel
63	TE65S700	Rating plate for i65 S	1	Stainless steel
64	TE51C151	Drive rivet	4	Stainless steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Assembly drawing

Article no. TE65S311



65S311-ISO-manual

Gunclean Toftejorg I65 S, Gear unit (continued)

Gears, spare part list

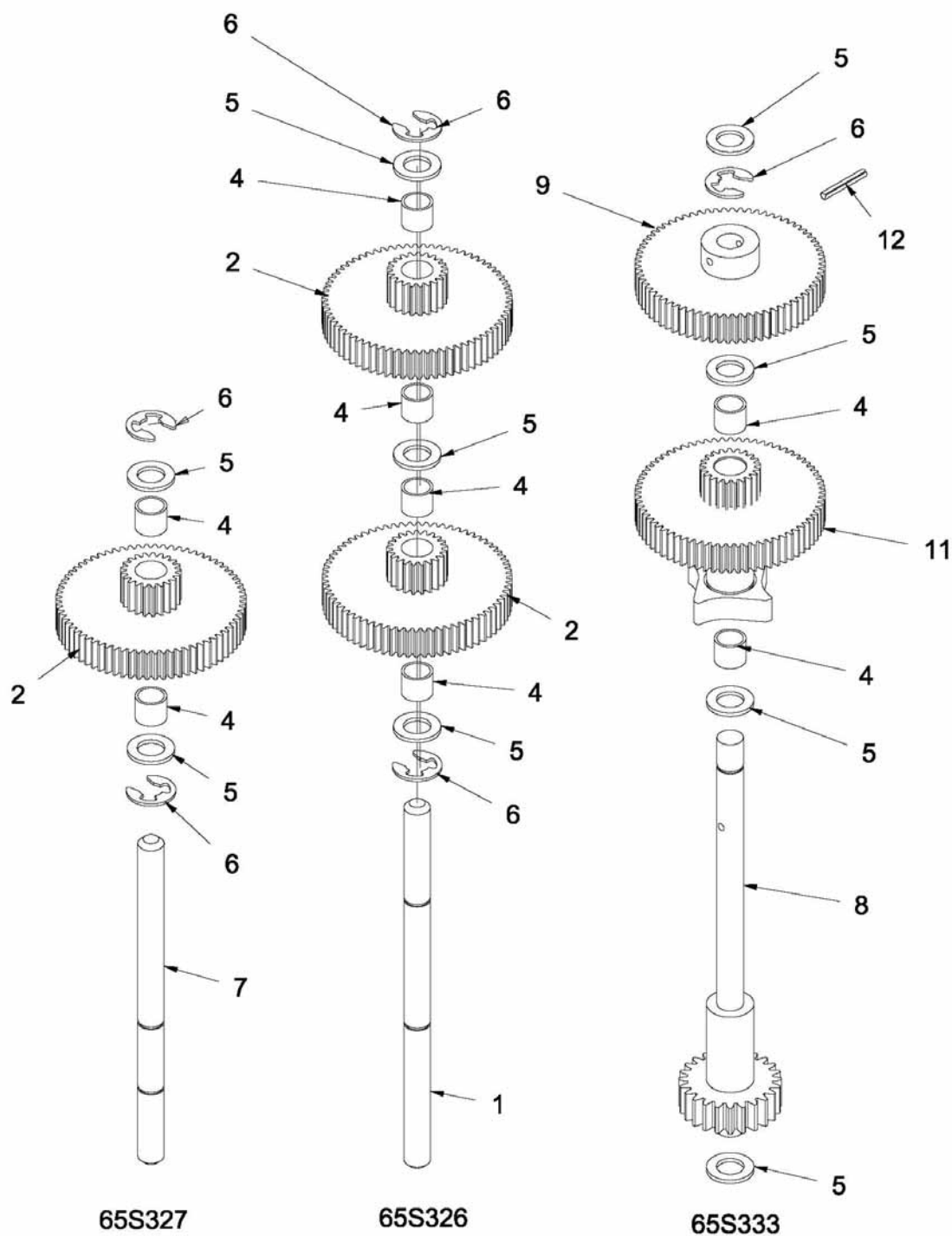
Article no. TED102560

Pos	Drwg.No	Description	Pcs.	Material
1	TE65S523	Gear shaft No. 2	1	Stainless steel
2	TE65S332	Gear 70 complete	5	
4	TE51L142	Bearing	8	Bronze
5	TE51B061	Star washer	9	Stainless steel
6	TE51C233	Retaining washer	5	Spring steel
7	TE65S554	Gear shaft No. 1	1	Stainless steel
8	TE65S534	Gear shaft No. 3 for gear 24	1	
9	TE65S336	Gear 70 with driver	1	Stainless steel
11	TE65S343	Gear 70 assy with cam	1	
12	TE51C059	Tubular rivet	1	Stainless steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Gears, assembly drawing

Article no. TED102560



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Gunclean Toftejorg I65 S, Gear unit (continued)

Magnet unit, spare part list

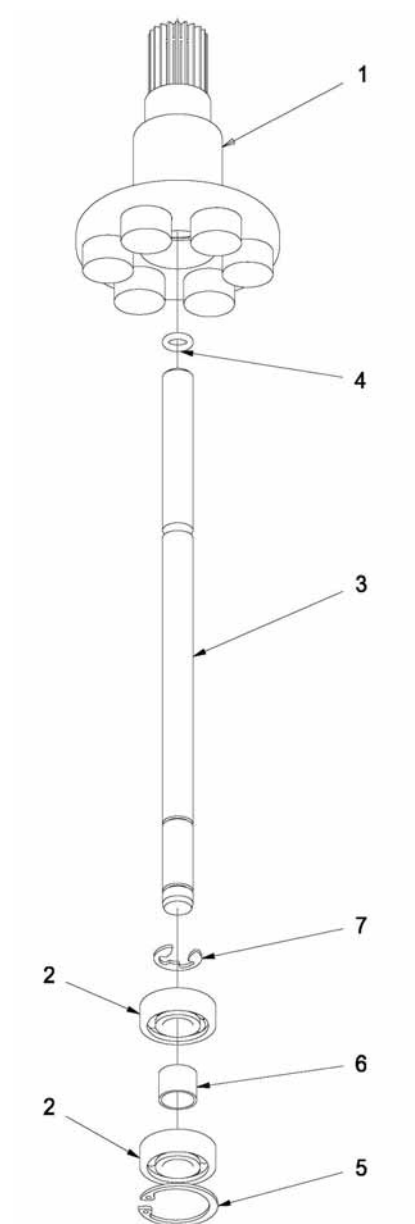
Article no. TE65S325

Pos	Drwg.No	Description	Pcs.	Material
1	TE65S330	Magnet dish assy	1	
2	TE915024	Ball bearing	2	
3	TE65S548	Shaft for magnet system	1	Stainless steel
4	TE914304	O-ring	1	Elastomer
5	TE913169	Circlip	1	Spring Steel
6	TE65S629	Distance magnet bearings	1	Steel
7	TE51C233	Retaining washer	2	Spring Steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Magnet unit, assembly drawing

Article no. TE65S325



M65S325-iso

Gunclean Toftejorg I65 S, Gear unit (continued)

Programme shaft, spare part list

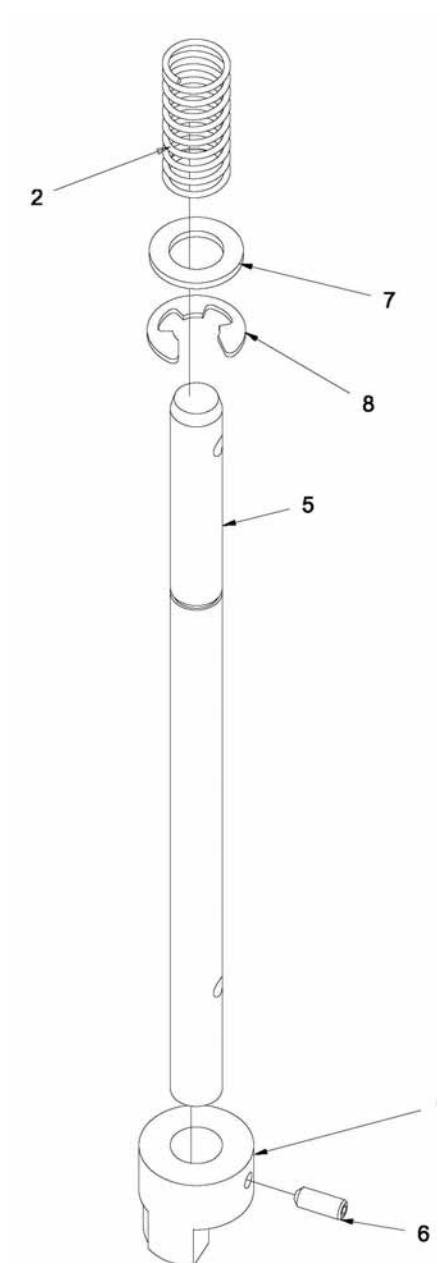
Article no. TE65S328

Pos	Drwg.No	Description	Pcs.	Material
1	TE65S553	Programming cam for elevation	1	Stainless steel
2	TE65S566	Spring for program shaft	1	Stainless steel
5	TE65S568	Programming shaft	1	Stainless steel
6	TE910852	Set screw	1	Stainless steel
7	TE51B061	Washer	1	Bronze
8	TE51C233	Retaining washer	1	Spring Steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Programme shaft, assembly drawing

Article no. TE65S328



M65S328-iso

Gunclean Toftejorg I65 S, Gear unit (continued)

Arm elevation, spare part list

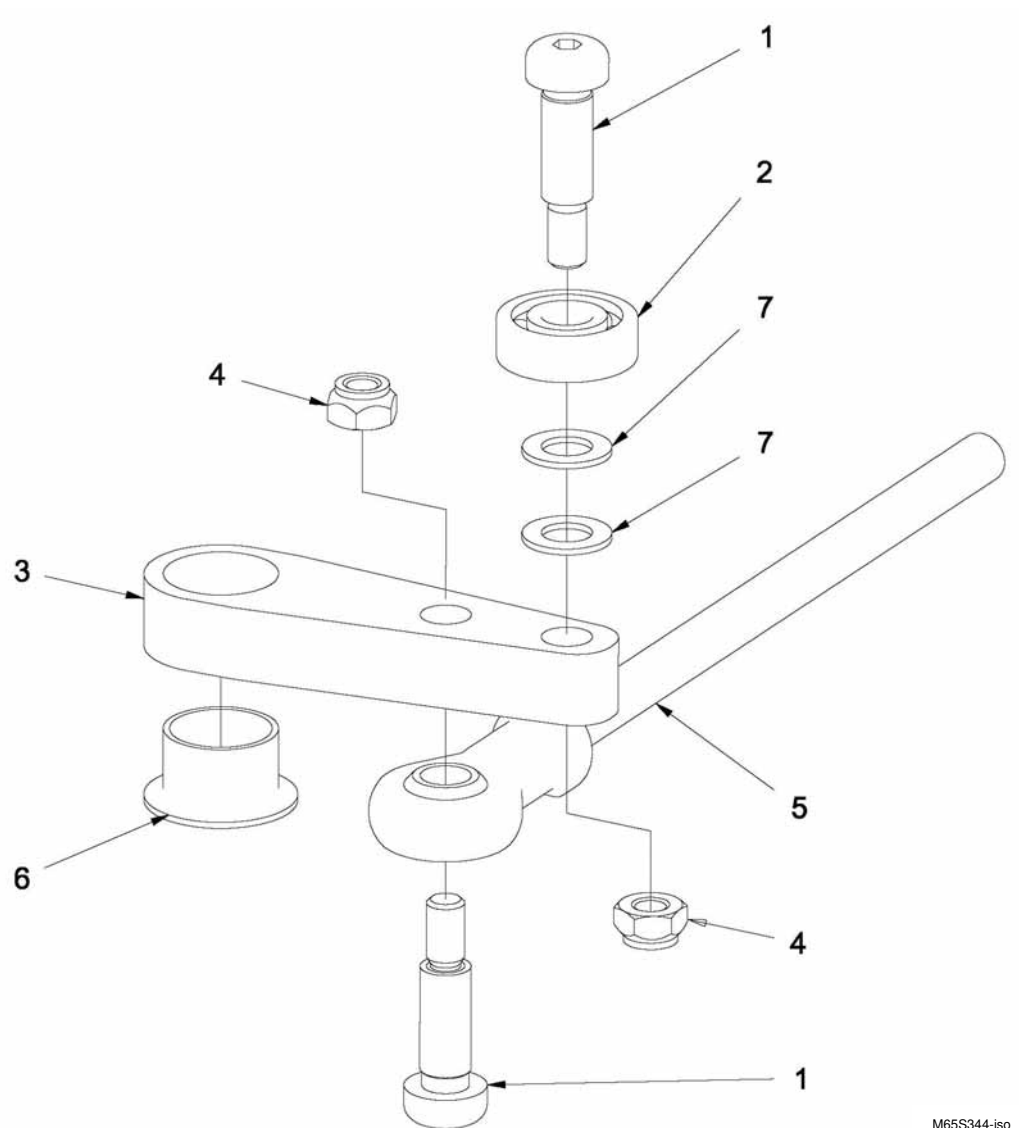
Article no. TE65S344

Pos	Drwg.No	Description	Pcs.	Material
1	TE918355	Shoulder screw	2	Steel
2	TE915013	Ball Bearing	1	
3	TE65S604	Arm elevation machined	1	Steel
4	TE914045	Lock nut	2	Stainless steel
5	TE65S345	Feed rod elevation assy	1	
6	TE51L146	Bearing journal	1	Bronze
7	TE51B059	Washer	2	Steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Arm elevation, assembly drawing

Article no. TE65S344



Gunclean Toftejorg I65 S, Gear unit (continued)

Gear 61, spare part list

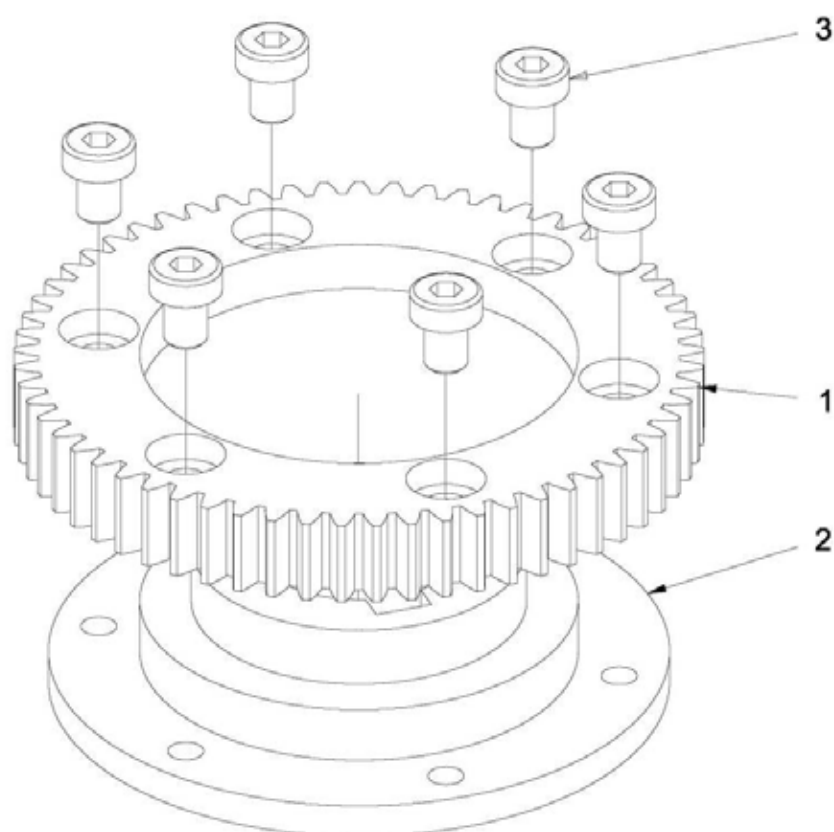
Article no. TE65S342

Pos	Drwg.No	Description	Pcs.	Material
1	TE65S555	Gear 61 for gear box	1	Stainless steel
2	TE65S559	Hub	1	Bronze
3	TE51A549	Screw	6	Steel

Gunclean Toftejorg I65 S, Gear unit (continued)

Gear 61, assembly drawing

Article no. TE65S342



M65S342-iso

Gunclean Toftejorg i65 S, Inlet Housing Assembly

Spare part list

Article no. TE65S310-XX, 65S308-XX, 65S309-XX, 65S313-XX, 65S314-XX, 65S315-XX, 65S317-XX

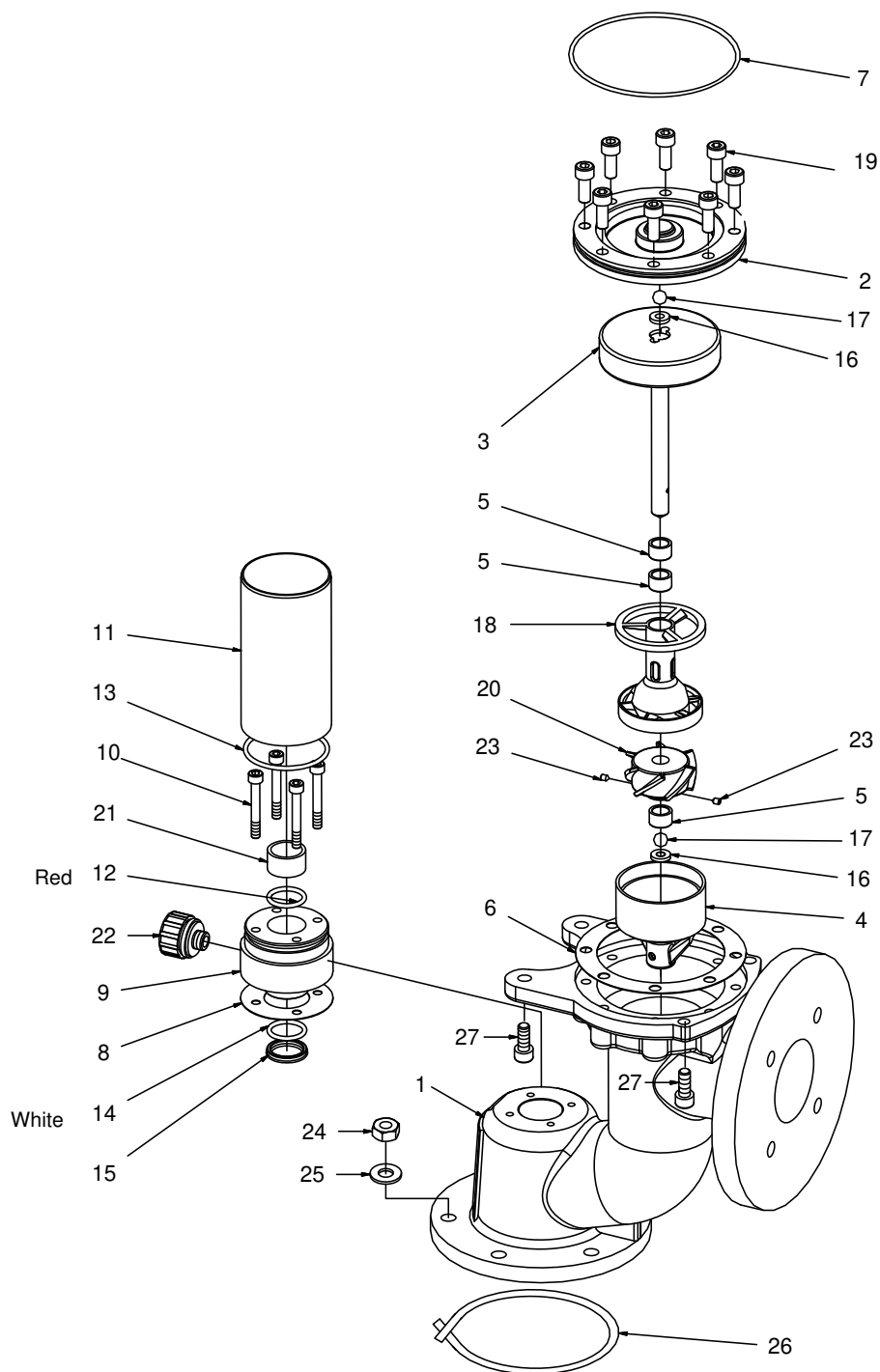
XX = nozzle size

Pos		Drwg.No	Description	Pcs.	Material
1	<input type="checkbox"/>	TE65S503	Inlet housing for Valve	1	Stainless steel
	<input type="checkbox"/>	TE65S786	Inlet housing w. JIS 5K-50A	1	Stainless steel
	<input type="checkbox"/>	TE65S785	Inlet housing w. JIS 16K-80A	1	Stainless steel
	<input type="checkbox"/>	TE65S652	Inlet housing w. JIS 16K-65A	1	Stainless steel
	<input type="checkbox"/>	TE65S653	Inlet housing w. JIS 16K-40A	1	Stainless steel
	<input type="checkbox"/>	TE65S651	Inlet housing w. JIS 16K-50A	1	Stainless steel
	<input type="checkbox"/>	TE65S655	Inlet housing w. ISO 7005-DN65 PN16		
2		TE65S525	Turbine Cover	1	Stainless steel
3		TE65S331	Hysteresis w. Turbine shaft	1	
4		TE65S576	Inset for Turbine	1	Stainless steel
5		TE65S581	Carbon bushing for turbine	3	Carbon
6		TE65S520	Gasket for Turbine Cover	1	Polymer
7		TE51T214	O-ring	1	Elastomer
8		TE65S560	Gasket for Packing Box	1	Polymer
9		TE65S552	Packing box for lift & rotating rod	1	Stainless steel
10		TE910566	Screw	4	Stainless steel
11		TE65S550	Connect. pipe - Gear/Packing Box	1	Stainless steel
12		TE918179	O-ring	1	Elastomer
13		TE51T027	O-ring	1	Elastomer
14		TE918227	O-ring	1	Elastomer
15		TE918221	Lipseal Furon	1	Polymer
16		TE65S583	Plate	2	Alloyed steel
17		TE51F017	Ball	2	Ceramic
18	<input type="checkbox"/>	TE65S630	Guide – big hub	1	Stainless steel
	<input type="checkbox"/>	TE65S631	Guide – small hub	1	Stainless steel
	<input type="checkbox"/>	TE65S631-2	No Guide – small hub	1	Stainless steel
19		TE51A141	Screw	8	Stainless steel
20	<input type="checkbox"/>	TE65S618	Turbine - 6 vanes hub 40	1	Stainless steel
	<input type="checkbox"/>	TE65S623	Turbine - 6 vanes hub 28	1	Stainless steel
	<input type="checkbox"/>	TE65S628	Turbine - 3 vanes hub 28	1	Stainless steel
21		TE918178	Bearing	1	Bronze
22		TE51U229	Prop/Plug w. valve	1	Technopolymer
23		TE51A013	Set Screw	2	Stainless steel
24		TE914016	Nut	6	Stainless steel
25		TE914130	Washer	6	Stainless steel
26		TE51T180	Expand. Gasket	1	Polymer
27		TE910569	Screw	4	Stainless steel

Gunclean Toftejorg i65 S, Inlet Housing Assembly

Assembly drawing

Article no. TE65S310-XX, 65S308-XX, 65S309-XX, 65S313-XX, 65S314-XX, 65S315-XX, 65S317-XX



Gunclean Toftejorg i65 S, Inlet Housing Assembly

Valve Unit Assy P, spare part list

Ref. no. TE52F067

Pos.	Part No.	Q'ty	Description	Material
225	TE000136	1	2" Valve assy	11/2 ASA
229	TE52F067	1	2" Valve assy	Camlock 11/2
209	TE59A024	1	Oxygen	Plastic
232	TE52D008	1	Filter 11/2"	Stainless
233	TE000137	1	Male Adapter 11/2 ASA	Stainless
233	TE51Y164	1	Male Adapter Camlock	Stainless
236	TE51Y041	1	2" Valve flange not incl.	Stainless
237	TE000138	1	Dust Cap 11/2 ASA	Stainless
237	TE51Y033	1	Dust Cap 11/2" Camlock	Stainless
238	TE51K001	1	Chain	Stainless
241	TE000306	1	Gasket 11/2 ASA	Elastomer
241	TE000305	1	Gasket 11/2 ASA	Plastic
241	TE51T202	1	Gasket 11/2" Camlock	Plastic
242	TE51A517	4	Nut	Stainless
243	TE51B014	4	Washer	Stainless
244	TE51A223	4	Bolt	Stainless
246	TE51Y163	1	Adapter flange 11/2"	Stainless
247	TE51K031	2	Key ring	Stainless

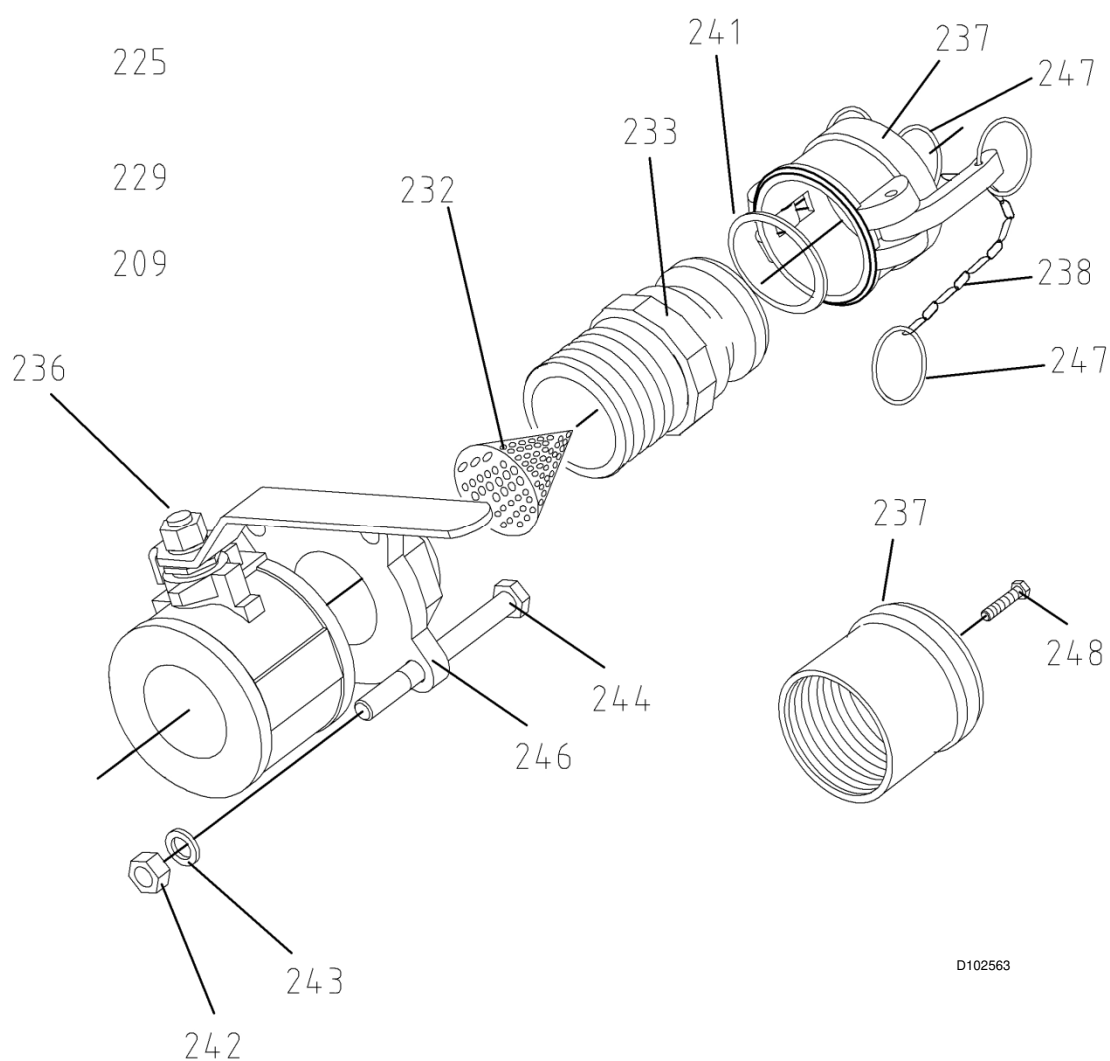
Warning:

When carrying out assembly or repair please note that the valve must be closed. Otherwise, the PTFE-sealing can be damaged.



Gunclean Toftejorg i65 S, Inlet Housing Assembly

Valve Unit, assembly drawing



D102563

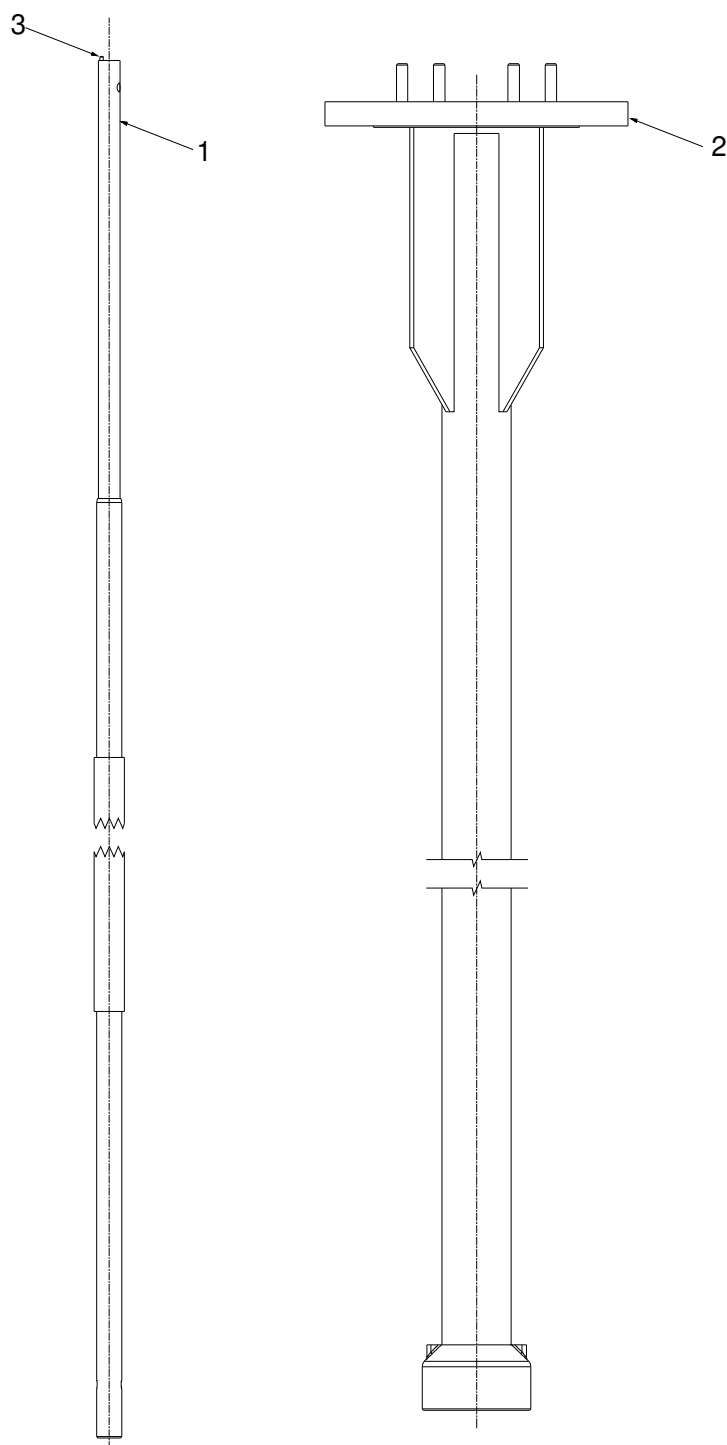
Gunclean Toftejorg i65 S, Down Pipe and Lifting Rod

Spare part list

Pos	Drwg.No	Description	Pcs.	Remarks
1	TE40S318-XX	Drive shaft	1	XX = Cleaner length
2	<input type="checkbox"/> TE40S370-XX	Down Pipe for Xm w. JIS 5K 200A flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S371-XX	Down Pipe for Xm w. Onomischi standard flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S372-XX	Down Pipe for Xm w. ISO DN150 PN16 flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S373-XX	Down Pipe for Xm w. JIS 5K-250A flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S374-XX	Down Pipe for Xm w. JIS 5K-150A flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S375-XX	Down Pipe for Xm w. JIS 5K-300A flange	1	XX = Cleaner length
	<input type="checkbox"/> TE40S376-XX	Down Pipe for Xm w. JIS 5K-550A flange	1	XX = Cleaner length
3	TE912227	Pin		

Gunclean Toftejorg i65 S, Down Pipe and Lifting Rod

Assembly drawing



M65S355

Gunclean Toftejorg i65 S, Cleaner Unit

Spare part list

Article no. TE65S353

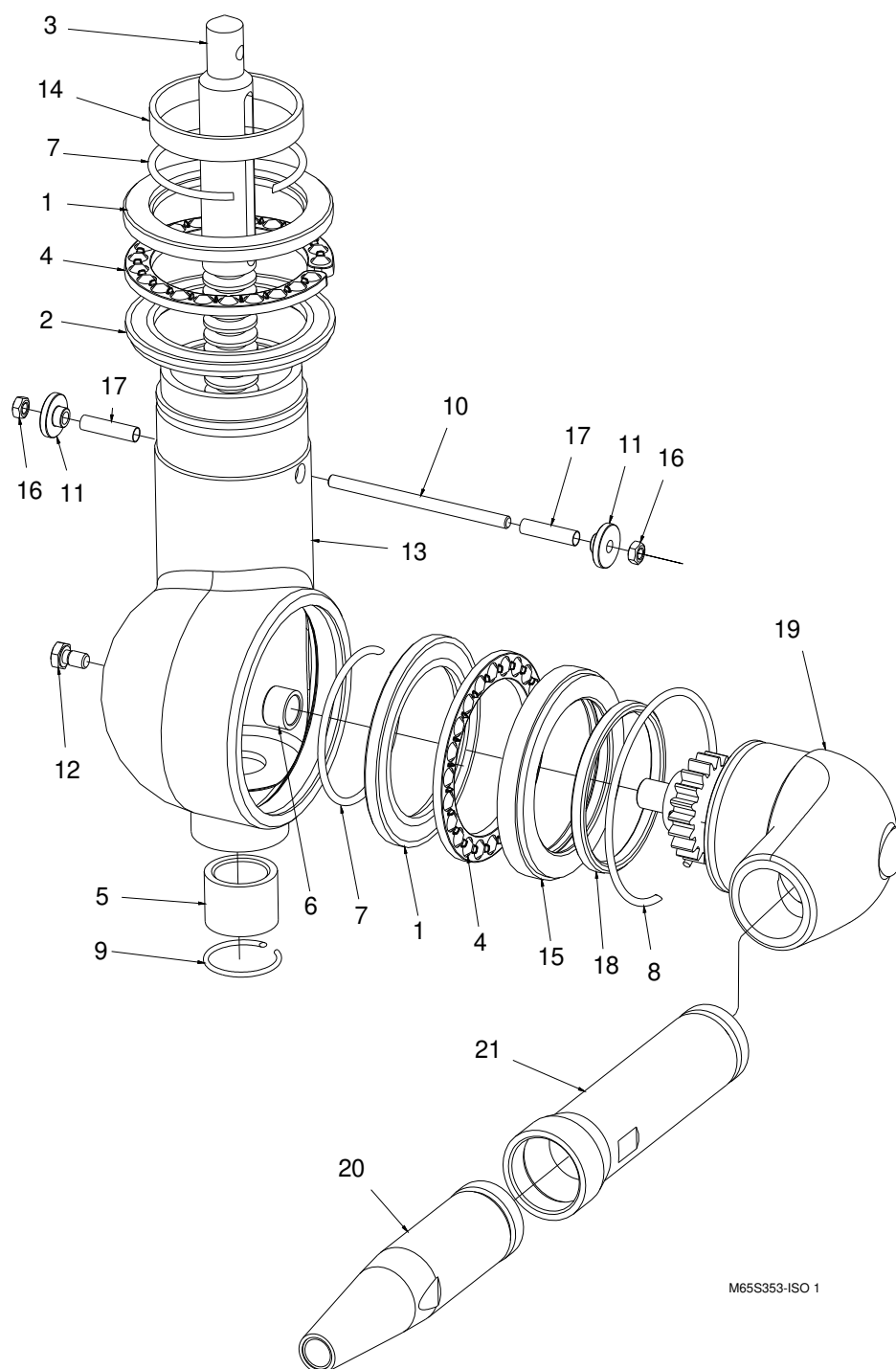
Pos	Drwg.No	Description	Pcs.	Material
1	TE65S733	Ball race inside vertical	2	Stainless steel
2	TE65S734	Ball race outside vertical	1	Stainless steel
3	TE65S735	Rack	1	Stainless steel
4	TE20G318	Ball retainer w balls	2	Stainless steel/polymer
5	TE65S736	Bearing for rack	1	Carbon
6	TE65S581	Carbon bushing	1	Carbon
7	TE65S737	Lock ring inside	2	Stainless steel
8	TE65S739	Lock ring outside	1	Stainless steel
9	TE65S740	Lock ring bottom	1	Stainless steel
10	TE65S741	Turning pin	1	Stainless steel
11	TE 65S742	Lock washer	2	Stainless steel
12	TE910214	Bolt	1	Stainless steel
13	TE65S722	Vertical housing	1	Stainless steel
14	TE65S738	Bearing	1	Polymer
15	TE65S745	Ball race for lip seal	1	Stainless steel
15	TE65S722	Vertical housing machined	1	Stainless steel
16	TE51A525	Lock nut M5	2	Stainless steel
17	TE65S721	Roll for turning pin	2	Stainless steel
18	TE65S746	Lip seal	1	Stainless steel
19	TE65S350	Horizontal housing w gear	1	Stainless steel
20	TE50C5xx	Nozzle assy xx = 08-22	1	Stainless steel
21	TE50C101	Nozzle ext. 1"	Option	Stainless steel
	TE65S353	Cleaner unit pos 1 - 19		

xx = Nozzle diameter

Gunclean Toftejorg i65 S, Cleaner Unit

Assembly drawing

Article no. TE65S353



M65S353-ISO 1

Service Kits

i65 all versions. Minor Service Kit for Drive Unit, ref. TE55T600 contains

Qty. x Part no.	Description	See placement
2 x TE916319	O-Ring	TE65S311
1 x TE916312	O-Ring ¹	TE65S311
1 x TE916306	O-Ring ¹	TE65S311
3 x TE65S581	Bushing for turbine	TE65S310
1 x TE65S560	Gasket for packing box	TE65S310
1 x TE918179	O-Ring (Red)	TE65S310
1 x TE51T027	O-Ring	TE65S310
1 x TE918227	O-Ring (White)	TE65S310
1 x TE918221	Lip seal	TE65S310

¹Only for i65S, not required for i65D.

i65 all versions. Major Service Kit for Drive Unit, ref. TE55T610 contains

Qty. x Part no.	Description	See placement
1 x TE51T213	O-Ring	TE65S311
1 x TE916410	O-Ring	TE65S311
1 x TE918335	Seal	TE65S311
2 x TE51L142	Bearing	TE65S311
1 x TE51T126	O-Ring	TE65S311
1 x TE916397	O-Ring	TE65S311
2 x TE900542-M8	Washer	TE65S311
1 x TE916315	O-Ring	TE65S311
1 x TE914304	O-Ring	TE65S325
1 x TE65S520	Gasket for turbine cover	TE65S310
1 x TE51T214	O-Ring	TE65S310
1 x TE55T600	Minor Service Kit for drive unit	Minor Service Kit

Gunclean Toftejorg i65 S, Service Kit for Cleaner Unit, ref. TE55T630 contains

Qty. x Part no.	Description	See placement
1 x TE65S581	Bushing for Turbine	TE65S353
1 x TE65S736	Bearing for rack	TE65S353
1 x TE65S746	Lip seal	TE65S353
1 x TE65S738	Bearing vertical upper	TE65S353

Wear Kits

I65 all versions. For Gear Unit, Article no. TE55T805

Qty. x Part no.	Description	See placement
1 x TE51L035	Roller clutch	TE65S311
1 x TE51L045	One way clutch	TE65S311
2 x TE51B061	Washer	TE65S311
2 x TE51C233	Retaining washer	TE65S311
2 x TE51C059	Tubular rivet	TE65S311
2 x TE915024	Ball bearing	TE65S325

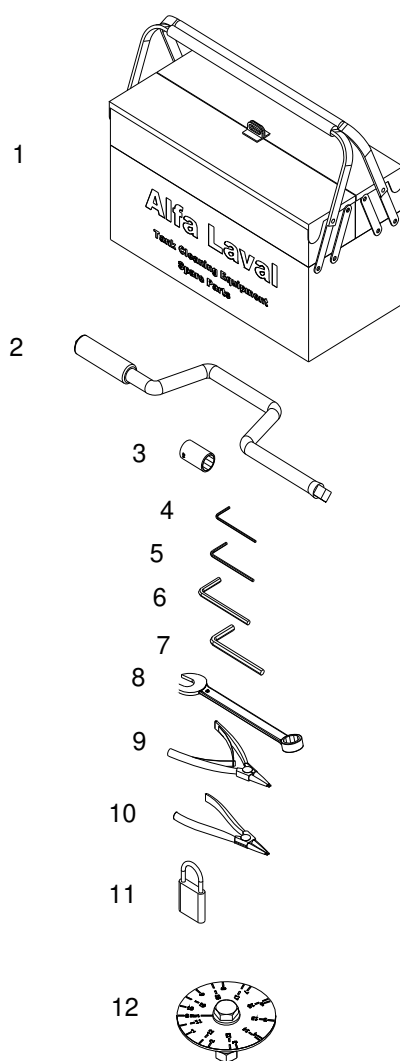
I65 all versions. For Inlet Housing, Article no. TE55T810 contains

Qty. x Part no.	Description	See placement
2 x TE65S583	Plate	TE65S310
2 x TE51F017	Ball	TE65S310

Tool Kit

Article no. TE55T900

Pos.	Part No.	Quantity	Description
1	TE900080	1	Tool Box 400x200x160
2	TE900529	1	Crank Handle
3	TE900600	1	17mm Sleeve
4	TE900081	1	Hexagon bar wrench 2 mm
5	TE900082	1	Hexagon bar wrench 2.5 mm
6	TE900085	1	Hexagon bar wrench 5 mm
7	TE900086	1	Hexagon bar wrench 6 mm
8	TE918207	1	17mm Box wrench
9	TE900090	1	Retaining ring plier
10	TE81B111	1	Retaining ring plier
11	TE59A230	1	Padlock Ø25 for Tool Box
12	TE65S421	1	Pitch scale



How to order Spare Parts and Claim Procedure

How to Order Spare Parts

On the Cross Sectional Drawing as well as on all instruction drawings, the individual parts have a pos. No., which is the same on all drawings. From the pos. No. the part is easily identified in the Reference Lists of Parts, page 26 - 50.

Individual parts should always be ordered from the Reference Lists of Parts, page 26 - 50. Ref. No. and Description should be clearly stated.

Please also quote the type of machine and serial No. This will help us to help you. The type and serial Nos. are stamped on the Gear house of the tank cleaning machine.

Claim Procedure

In case of failure that needs assistance from Alfa Laval Tank Equipment A/S, it is essential for our evaluation that the problem as well as the working conditions of the machine is described as detailed as possible.

For description of the working conditions, fill in copy of Claim Report - Working Conditions, which you will find at the back of this manual.

How to contact Alfa Laval Tank Equipment A/S

For further information please feel free to contact:

Alfa Laval Tank Equipment A/S
Baldershoej 19
P.O. Box 1149
2635 Ishoej
Denmark

Phone no.: +45 43 55 86 00
Fax no.: +45 43 55 86 01
www.alfalaval.com
www.toftejorg.com

Contact details for all countries are continually updated on our websites.

Service Card

Type of Machine : _____

Serial No. : _____

Configuration : Nozzle diameter : _____ mm
 Impeller : _____ %
 Guide : _____ %

Date	No. of Working Hours	Maintenance Actions/ Exchanged Parts	Remarks	Sign.
	0	Machine put into operation		

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Claim Report - Working Conditions

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Ref. Claim Case : _____

Machine/Cleaner Type : _____ **Serial No.:** _____

Configuration

- Nozzles : _____ x \varnothing _____ mm
- Turbine/Inlet Guide : _____ % _____

Working Conditions

Inlet pressure at machine/cleaner : _____
Type of Valve in inlet line : _____
Can hydraulic shock be disregarded: : ☐ Yes ☐ No
Inlet line flushed before installation of tank cleaner? : ☐ Yes ☐ No
Working hours before failure : _____ hours

Cleaning Programme

Cleaning media and conc.	Temperature	Time	Recirculation?

Is sterilising being used? : ☐ Yes ☐ No
Procedure (media/temp.)? : _____
Is steam injection being used for heating? : ☐ Yes ☐ No
Time: _____
Temperature: _____

Claim Report - Working Conditions

Page 2/2

Condition of Cleaning Media

- | | |
|---|---|
| <input type="checkbox"/> Clean | |
| <input type="checkbox"/> Contaminated with (nature and description) | |
| <input type="checkbox"/> Chemicals/Solvents _____ | <input type="checkbox"/> High viscous |
| <input type="checkbox"/> Soluble | <input type="checkbox"/> Sticky/tenacious |
| <input type="checkbox"/> Low viscous | <input type="checkbox"/> Solidifying |
| <input type="checkbox"/> Hard particles/size _____ | <input type="checkbox"/> Crystallizing |
| <input type="checkbox"/> Soft particles/size _____ | |

Has filter been installed in inlet line?

- | | |
|------------------------------|----------|
| <input type="checkbox"/> Yes | |
| Mesh size: | _____ mm |
| <input type="checkbox"/> No | |

Is tank cleaner flushed with clean water after tank cleaning?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

Type of Soilage/Tank Contents to be removed

Name, formula/concentration of material to be removed from tank : _____

What is material soluble in : _____

Nature of material:

- | | | |
|---|---|---|
| <input type="checkbox"/> Volatile/explosive | <input type="checkbox"/> Sticky/tenacious | <input type="checkbox"/> Contains soft particles |
| <input type="checkbox"/> Low viscous | <input type="checkbox"/> Solidifying | <input type="checkbox"/> Contains hard particles/fibres |
| <input type="checkbox"/> High viscous | <input type="checkbox"/> Crystallizing | |

Is tank cleaner submerged in material?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

Other information/Remarks

Date: _____	Sign.: _____
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