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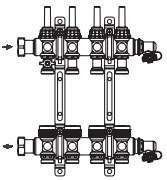
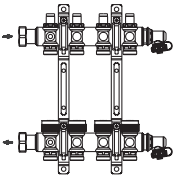
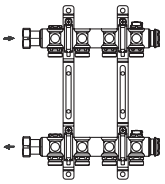
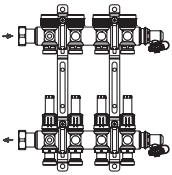
# Stainless steel distributor/collector “Multidis SF” for surface heating and cooling systems
# Stainless steel distributor/collector “Multidis SH” for radiator connection
# (2 to 12 heating circuits)

Installation and operating instructions for the specialised installer

**Read installation and operating instructions in their entirety before installing the stainless steel distributor/collector!**
**Installation, initial operation, service and maintenance must only be carried out by qualified tradesmen!**
**The installation and operating instructions, as well as other valid documents must remain with the user of the system!**

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| Article | Item No. | Circuits | Performance data |
|---|---|---|---|
|  **“Multidis SF”** Stainless steel distributor/collector for surface heating and cooling systems, **with flow measuring and regulating devices 0 – 5 l/min in the flow distributor** | 1405352<br>1405353<br>1405354<br>1405355<br>1405356<br>1405357<br>1405358<br>1405359<br>1405360<br>1405361<br>1405362 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | Max. operating temperature $t_S$: +80°C<br>Min. operating temperature $t_S$: –10°C<br>Max. operating pressure $p_S$: 600 kPa (6 bar)<br>Max. differential pressure: 100 kPa (1 bar)<br>kvs value: 1.1 m³/h<br>Measuring range: 0 – 5 l/min |
|  **“Multidis SF”** Stainless steel distributor/collector for surface heating and cooling systems, **with regulating inserts in the flow distributor** | 1405552<br>1405553<br>1405554<br>1405555<br>1405556<br>1405557<br>1405558<br>1405559<br>1405560<br>1405561<br>1405562 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | Max. operating temperature $t_S$: +80°C<br>Min. operating temperature $t_S$: –10°C<br>Max. operating pressure $p_S$: 600 kPa (6 bar)<br>Max. differential pressure: 100 kPa (1 bar)<br>kvs value: 1.9 m³/h |
|  **“Multidis SH”** Stainless steel distributor/collector for radiator connection | 1407152<br>1407153<br>1407154<br>1407155<br>1407156<br>1407157<br>1407158<br>1407159<br>1407160<br>1407161<br>1407162 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | Max. operating temperature $t_S$: +100°C<br>Min. operating temperature $t_S$: –10°C<br>Max. operating pressure $p_S$: 1000 kPa (10 bar)<br>kvs value: 1.5 m³/h |
|  **“Multidis SF”** Stainless steel distributor/collector for surface heating and cooling systems, **with flow measuring and regulating devices 1 – 4 l/min in the return collector** | 1405152<br>1405153<br>1405154<br>1405155<br>1405156<br>1405157<br>1405158<br>1405159<br>1405160<br>1405161<br>1405162 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | Max. operating temperature $t_S$: +70°C<br>Min. operating temperature $t_S$: –10°C<br>Max. operating pressure $p_S$: 600 kPa (6 bar)<br>Max. differential pressure: 100 kPa (1 bar)<br>kvs value: 1.2 m³/h<br>Measuring range: 1 – 4 l/min |

Illustr. 1.1 Summary stainless steel distributors/collectors “Multidis SF” and “Multidis SH”

# 1 General information

### 1.1 Information regarding installation and operating instructions

These installation and operating instructions serve the installer to install the stainless steel distributor/collector “Multidis” professionally and to put it into operation.
Other valid documents – manuals of all system components as well as technical rules – must be observed.

### 1.2 Keeping of documents

These installation and operating instructions should be kept by the user of the system for later reference.

### 1.3 Copyright

The installation and operating instructions are copyrighted.

### 1.4 Symbol explanation

Safety guidelines are displayed by symbols. These guidelines are to be observed to avoid accidents, damage to property and malfunctions.

**DANGER**

DANGER indicates an imminent dangerous situation which will lead to death or serious injury if the safety guidelines are not observed.

**WARNING**

WARNING indicates a possible dangerous situation which may lead to death or serious injury if the safety guidelines are not observed.

**CAUTION**

CAUTION indicates a possible dangerous situation which may lead to minor or moderate injury if the safety guidelines are not observed.

***NOTICE***

NOTICE indicates a possible damage to property which may occur if the safety guidelines are not observed.

# 2 Safety notes

### 2.1 Correct use

Safety in operation is only guaranteed if the stainless steel distributor/collector “Multidis” is used correctly.
The stainless steel distributor/collector “Multidis SF” is used in hot water central heating and/or cooling systems for individual room temperature control in surface heating and cooling systems.
The stainless steel distributor/collector “Multidis SH” is used in hot water central heating and/or cooling systems for the distribution of the heating/cooling water in installations with radiators.
Any use of the stainless steel distributor/collector “Multidis” outside the above applications will be considered as non-compliant and misuse. Claims of any kind against the manufacturer and/or his authorised representatives due to damages caused by incorrect use cannot be accepted.
The observance of the installation and operating instructions is part of the compliance terms.

### 2.2 Possible dangers at the installation location and during transport

The case of an external fire has not been taken into consideration when constructing the stainless steel distributor/collector “Multidis”.

**WARNING**

**Hot or cold surfaces!**
**Risk of injury!** Do not touch without safety gloves. The stainless steel distributor/collector “Multidis” may get very hot or cold during operation.

**Sharp edges!**
**Risk of injury!** Only touch with safety gloves. Threads, bore holes and edges are sharp.

**Small components!**
**Risk of ingestion!** Store and install the stainless steel distributor/collector “Multidis” out of reach of children.

**Allergies!**
**Health hazard!** Do not touch the stainless steel distributor/collector “Multidis” and avoid any contact if allergies against the used materials are known.

# 3 Transport, storage and packaging

### 3.1 Transport inspection

Upon receipt, check delivery for any damages caused during transit and completeness.
Any damage must be reported immediately upon receipt.

### 3.2 Storage

The stainless steel distributor/collector “Multidis” must only be stored under the following conditions:
– Do not store in open air, keep dry and free from dust.
– Do not expose to aggressive fluids or heat sources.
– Protect from direct sunlight and mechanical agitation.
– Storage temperature: -20 °C up to +60 °C
– Max. relative humidity of air: 95%

### 3.3 Packaging

Packaging material is to be disposed of in an environmentally friendly manner.

# 4 Technical data

### 4.1 Performance data

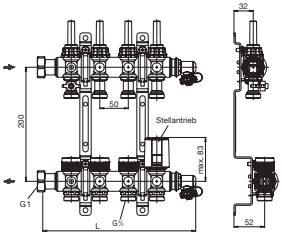
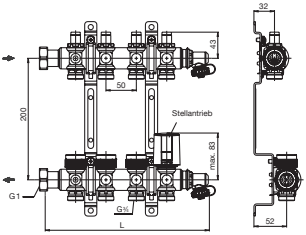
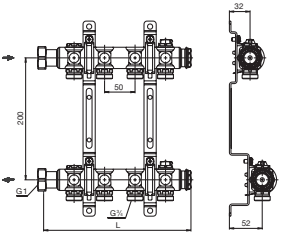
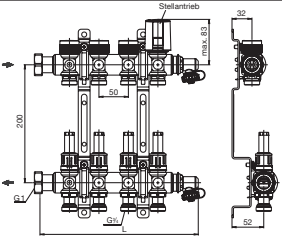
See summary, illustr. 1.1

**Fluid:** Non aggressive fluids (e.g. water and suitable water and glycol mixtures according to VDI 2035). Not suitable for steam, oily and aggressive fluids.

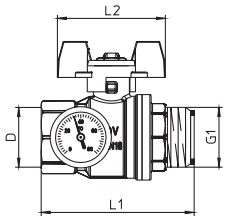
**DANGER**

Suitable measures (e.g. safety valves) have to be taken to ensure that the maximum operating pressures and maximum and minimum operating temperatures are not exceeded or undercut.

## 4.2 Dimensions/Connection sizes

| Stainless steel distributor/collector Multidis SF / SH | Item no. | Circuits | Length (L) | Length (L) with ball valve 1406383 | Length (L) with ball valve 1406384 |
|---|---|---|---|---|---|
|  | 1405352<br>1405353<br>1405354<br>1405355<br>1405356<br>1405357<br>1405358<br>1405359<br>1405360<br>1405361<br>1405362 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | 168 mm<br>218 mm<br>268 mm<br>318 mm<br>368 mm<br>418 mm<br>468 mm<br>518 mm<br>568 mm<br>618 mm<br>668 mm | 223 mm<br>273 mm<br>323 mm<br>373 mm<br>423 mm<br>473 mm<br>523 mm<br>573 mm<br>623 mm<br>673 mm<br>723 mm | 248 mm<br>298 mm<br>348 mm<br>398 mm<br>448 mm<br>498 mm<br>548 mm<br>598 mm<br>648 mm<br>698 mm<br>748 mm |
|  | 1405552<br>1405553<br>1405554<br>1405555<br>1405556<br>1405557<br>1405558<br>1405559<br>1405560<br>1405561<br>1405562 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | 168 mm<br>218 mm<br>268 mm<br>318 mm<br>368 mm<br>418 mm<br>468 mm<br>518 mm<br>568 mm<br>618 mm<br>668 mm | 223 mm<br>273 mm<br>323 mm<br>373 mm<br>423 mm<br>473 mm<br>523 mm<br>573 mm<br>623 mm<br>673 mm<br>723 mm | 248 mm<br>298 mm<br>348 mm<br>398 mm<br>448 mm<br>498 mm<br>548 mm<br>598 mm<br>648 mm<br>698 mm<br>748 mm |
|  | 1407152<br>1407153<br>1407154<br>1407155<br>1407156<br>1407157<br>1407158<br>1407159<br>1407160<br>1407161<br>1407162 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | 142 mm<br>192 mm<br>242 mm<br>292 mm<br>342 mm<br>392 mm<br>442 mm<br>492 mm<br>542 mm<br>592 mm<br>642 mm | 197 mm<br>247 mm<br>297 mm<br>347 mm<br>397 mm<br>447 mm<br>497 mm<br>547 mm<br>597 mm<br>647 mm<br>697 mm | 222 mm<br>272 mm<br>322 mm<br>372 mm<br>422 mm<br>472 mm<br>522 mm<br>572 mm<br>622 mm<br>672 mm<br>722 mm |
|  | 1405152<br>1405153<br>1405154<br>1405155<br>1405156<br>1405157<br>1405158<br>1405159<br>1405160<br>1405161<br>1405162 | 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12 | 168 mm<br>218 mm<br>268 mm<br>318 mm<br>368 mm<br>418 mm<br>468 mm<br>518 mm<br>568 mm<br>618 mm<br>668 mm | 223 mm<br>273 mm<br>323 mm<br>373 mm<br>423 mm<br>473 mm<br>523 mm<br>573 mm<br>623 mm<br>673 mm<br>723 mm | 248 mm<br>298 mm<br>348 mm<br>398 mm<br>448 mm<br>498 mm<br>548 mm<br>598 mm<br>648 mm<br>698 mm<br>748 mm |

Illustr. 4.1 Dimensions/connection sizes stainless steel distributors/collectors “Multidis SF” and “Multidis SH” (see also summary, illustr. 1.1)

| Ball valves | Item no. | Size | D | L1 | L2 |
|---|---|---|---|---|---|
|  | 1406383<br>1406384<br>1406483<br>(with thermometer and red T-handle)<br>1406583<br>(with thermometer and blue T-handle)<br>1406484<br>(with thermometer and red T-handle)<br>1406584<br>(with thermometer and blue T-handle) | DN 20<br>DN 25<br>DN 20<br>DN 20<br>DN 25<br>DN 25 | G ¾<br>G 1<br>G ¾<br>G ¾<br>G 1<br>G 1 | 55 mm<br>80 mm<br>73 mm<br>73 mm<br>85 mm<br>85 mm | 57 mm<br>60 mm<br>60 mm<br>60 mm<br>60 mm<br>60 mm |

Illustr. 4.2 Dimensions ball valves

# 5 Construction and function

### 5.1 Summary and functional description

The stainless steel distributors/collectors “Multidis SF” are designed for use in surface heating and cooling systems with circulation pump. The stainless steel distributors/collectors “Multidis SH” are used in hot water heating and cooling systems with radiators.
The risers can be connected to the distributor/collector from either the left or right hand side.
The brackets allow for the fixing of the distributor/collector in the cabinet or directly onto the wall. The flat sealing ball valves are directly connected to the collar nut (G 1 female thread) of the distributors/collectors. The surface heating/cooling circuit connections have a G ¾ male thread according to DIN EN 16313 (cone “Euro”) (illustr. 4.1).
Printed tags for marking the surface heating/cooling circuit connections are supplied with the distributors/collectors.
For filling, flushing and bleeding of the surface heating/cooling circuits, the stainless steel distributors/collectors “Multidis SF” are equipped with fill and drain valves with connection for a DN 15 hose connection.
For the stainless steel distributors/collectors “Multidis SH”, the vent plug allows for bleeding during filling and, if required, during operation of the heating/cooling system.

### 5.2 Application

The stainless steel distributors/collectors “Multidis SF” allow for the central distribution of the heating/cooling water to the different circuits of each dwelling unit. Together with electrothermal actuators and room thermostats which are available as accessories, the valve inserts M 30 x 1.5 in the return collector which are convertible to thermostatic operation, can be used for individual room temperature control. Hydronic balance is carried out using the integrated flow measuring and regulating devices.
The stainless steel distributors/collectors “Multidis SH” for radiator connection allow for the central distribution of the heating/cooling water to the different radiators of each dwelling unit.
It is recommended to equip the stainless steel distributors/collectors “Multidis” with ball valves (illustr. 4.2). They allow for the isolation of the supply and return pipe, e.g. for maintenance work.

# 6 Installation

### 6.1 Extent of supply

Before installation, check the delivery for completeness and any damages caused during transit.

### 6.2 Installation

The flow distributor and return collector are pre-assembled and leak tested. Mount the flow distributor (at the top) and the return collector (at the bottom) into the sound-absorbing brackets (illustr. 4.1).

**NOTICE**

The flow distributor always has to be installed at the top and the return collector at the bottom of the bracket.

The ball valves which are available as accessories (see illustr 4.2), are mounted with the help of the collar nuts (G 1 female thread with flat seal). The risers are, for instance, connected to the female threads of the ball valves by use of the Oventrop “Combi-System”:
- “Copipe” Composition pipe
- “Cofit P” Press fittings
- “Cofit PD” Press fittings
- “Cofit S” Screwed fittings

A thermal and sound insulation of the pipework according to the valid rules, decrees, standards and guidelines has to be carried out.
The surface heating/cooling circuits are connected to the G ¾ compression connections at the flow distributor and return collector of the stainless steel distributor/collector “Multidis SF”.
The pipework to the radiators is also connected to the G ¾ compression connections at the stainless steel distributor/collector “Multidis SH”.

**⚠ Observe warning advice under paragraph 2 (safety notes)!**

**⚠ CAUTION**

- Do not use any greasing agents or oil for the installation, as these can destroy the seals. Any dirt particles or grease or oil residues must be flushed out of the pipework before installation.
- When choosing the operating fluid, the latest technical development has to be considered (e.g. VDI 2035).
- A strainer must be installed in front of the stainless steel distributor/collector.
- Please protect against external forces (e.g. impacts, vibrations etc.).

After installation, check all installation points for leaks.

# 7 Operation

## 7.1 Floor construction

Regarding thermal and sound insulation, the floor construction must comply with the valid rules, standards and regulations.

## 7.2 Filling, bleeding, leak testing

Before initial operation, the installation has to be filled and bled with due consideration of the permissible operating pressures.

**Stainless steel distributor/collector "Multidis SF" for surface heating and cooling systems**

The installation is filled up to the stainless steel distributor/collector "Multidis SF" via the risers with the ball valves in the open position. The fill and drain valves can be used for bleeding the system even during heating/cooling operation. The surface heating/cooling circuits are filled via the fill and drain valve at the end of the flow distributor with the ball valves being closed. The G ¾ connection is suitable for standard DN 15 hose connections. The surface heating/cooling circuits are flushed separately, so that the pipework is completely filled with water.

***NOTICE***

Carry out leakage test according to DIN EN 1264. The test results have to be recorded.

**Stainless steel distributor/collector "Multidis SH" for radiator connection**

The installation is filled up to the stainless steel distributor/collector "Multidis SH" via the risers with the ball valves in the open position. The vent plugs can be used for bleeding the system even during heating/cooling operation.

***NOTICE***

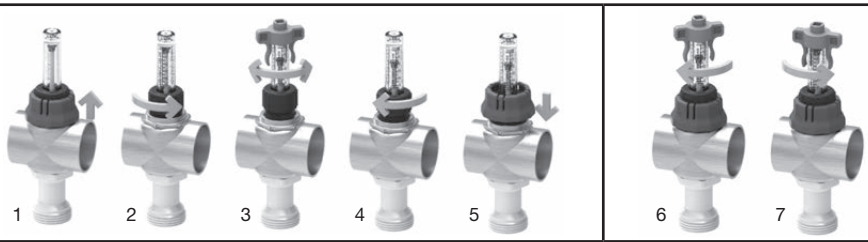
Carry out leakage test according to DIN 18380 (VOB part C). The rest results have to be recorded.

## 7.3 Regulation

The risers of the heating/cooling system have to be hydraulically balanced.
Regulation of the surface heating/cooling circuits is carried out at the stainless steel distributor/collector "Multidis SF".

### 7.4 Setting of the flow measuring and regulating devices ("Multidis SF" - 14053.. and 14051..)

**Stainless steel distributors/collectors "Multidis SF" with flow measuring and regulating devices item no. 1405352 to 1405362**
**Setting of the flow measuring and regulating devices 0 – 5 l/min in the flow distributor**




**Setting of the flow rate:**
Setting is carried out whilst the circulation pump is in operation.

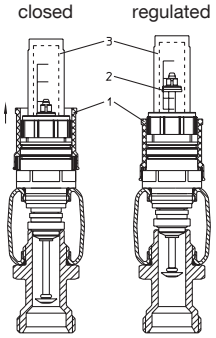
1. Open all valves in the surface heating/cooling circuit completely.
2. Remove the red cap by pulling it upward (1).
3. Loosen the black collar nut by turning it anticlockwise (2).
4. Set the flow rate at the sight glass with the help of the enclosed key (3)
   clockwise = flow rate is reduced
   anticlockwise = flow rate is increased
   The set value can be read off at the red indicator ring inside the sight glass.
   The scale shows values between 0 and 5 l/min.
5. Carry out setting of all surface heating/cooling circuits.
6. Check the first values and readjust if required.
7. Turn the black collar nut clockwise until stop (4).
8. Refit the red cap (5).

**Isolation:**
Turn the enclosed key clockwise until stop (6).

**Opening:**
Turn the enclosed key anticlockwise until stop = open up to presetting (7).

Illustr. 7.1 Setting of the flow measuring and regulating devices (0 – 5 l/min)

**Stainless steel distributors/collectors "Multidis SF" with flow measuring and regulating devices item no. 1405152 to 1405162**
**Setting of the flow measuring and regulating devices 1 – 4 l/min in the return collector**



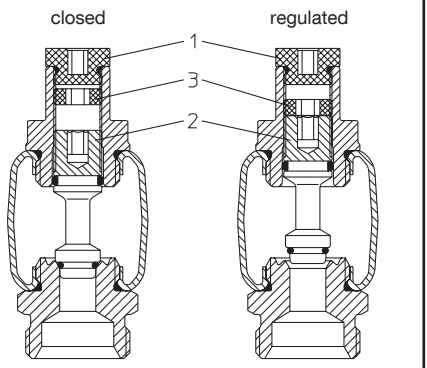

Setting is carried out whilst the circulation pump is in operation.

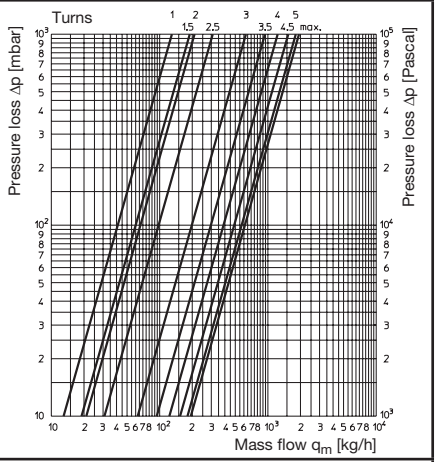
1. Open all valves in the surface heating/cooling circuit completely.
2. Lift the locking sleeve (1) until it clicks into position.
3. Set the calculated flow rate by turning the locking sleeve (1) for the first flow measuring and regulating device.
4. The set value can be read off at the red indicator ring (2) inside the sight glass (3).
   The scale shows values between 1 and 4 l/min.
5. Carry out setting of all surface heating/cooling circuits.
6. Check the first values and readjust if required.
7. Secure the setting of the flow measuring and regulating devices by pushing the locking sleeve (1) down.

Illustr. 7.2 Setting of the flow measuring and regulating devices (1 – 4 l/min)

### 7.5 Setting of the regulating inserts (“Multidis SF” – 14055..)

**Stainless steel distributors/collectors “Multidis SF” with regulating inserts item no. 1405552 to 1405562**
**Setting of the regulating inserts**




1. Open the black screw plug (1) with the help a 5 mm spanner.
2. Close the valve stem (2) by turning a 5 mm spanner clockwise.
3. Now open the valve stem (2) by turning it anticlockwise according to the calculated presetting value (example: presetting 2.5 = 2.5 turns).
4. Turn the black setting screw (3) clockwise against the valve stem (2) by using a 6 mm spanner. This way, the set value can easily be located again, if, for instance, the surface heating/cooling circuit is closed later with the help of the valve stem (2).
5. Close the screw plug (1) with the help of the 5 mm spanner. Repeat operation for all surface heating/cooling circuits.

Illustr. 7.3 Setting of the regulating inserts

### 7.6 Incremental heating test (only “Multidis SF”)

**NOTICE**

- Incremental heating of concrete and calcium sulphate screed has to be carried out according to DIN EN 1264.
- The instructions of the screed manufacturers have to be observed.

Start incremental heating at the earliest:
- 21 days after laying of concrete screed
- 7 days after laying of calcium sulphate screed

Heat up slowly with a flow temperature between 20 °C and 25 °C for at least 3 days, then at the maximum design temperature for at least 4 days. The flow temperature is controlled via the heat generator control.
Open the valve inserts of the stainless steel distributor/ collector “Multidis SF” with the help of the protection caps.
Before setting the system into operation, the valve inserts have to be equipped with automatic devices for room temperature control.

### 7.7 Initial operation (only “Multidis SF”)

**NOTICE**

The flow temperature must be co-ordinated with the surface heating/cooling system.

Near the heating pipes, the maximum permissible screed temperatures according to DIN must not be exceeded. In cooling systems, the temperature near the cooling pipes must not reach the dew point. The general instructions of the manufacturers must be observed.

### 7.8 Correction factors for mixtures of water and glycol

The correction factors of the manufacturers of the antifreeze liquids have to be considered when setting the flow rate.

## 8 Maintenance

The stainless steel distributors/collectors “Multidis” are maintenance-free.
Tightness and function of the distributors/collectors and its connection points have to be checked regularly during maintenance. The stainless steel distributors/ collectors “Multidis” must be easily accessible.

## 9 General conditions of sales and delivery

Oventrops general conditions of sales and delivery valid at the time of supply are applicable.