Freshwater stations

Reflex Hydroflow

Thermostatically controlled		Electronically controlled							
XS		S		M		L		XL	
CU	SST	CU	SST	CU	SST	CU	SST	CU	SST



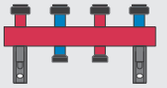




CU = single-wall heat exchanger—copper-brazed
SST = single-wall heat exchanger—stainless steel-brazed

Combination matrix

Freshwater system

Reflex Hydroflow	Storaflow	Manifold
		

+ Accessories

Theoretical principles

Potable water hygiene

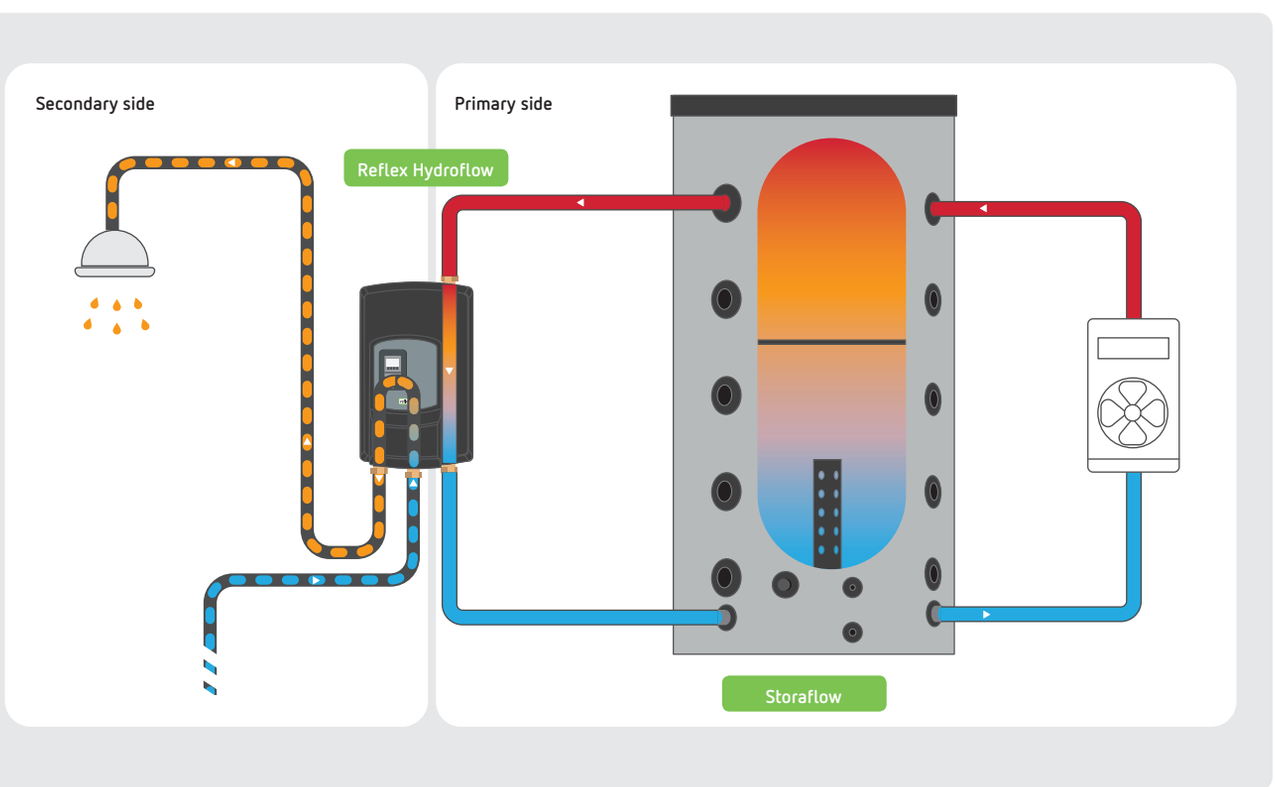
Hot potable water must be available quickly for everyday use, whether for showering, washing hands or preparing food. A potable water storage tank can be used to provide potable water but this is an energy-intensive solution.

Any standing water can lead to proliferation of bacteria, even if advanced heating technology is in use. This is the perfect application for freshwater stations as they offer ideal setup and conditions for the rapid and hygienic provision of potable water — without having to store it beforehand.

General information on freshwater stations

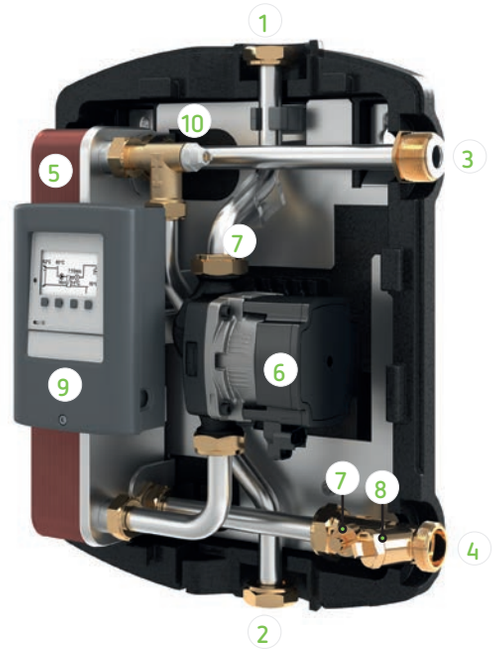
A freshwater station consists of a heat exchanger, a pump, temperature sensors, a regulator and the relevant hot water storage tank. The station provides hot potable water on demand by heating potable water to the required temperature in the heat exchanger using heating water flowing from the hot water storage tank in the opposite direction.

The physical separation of potable water and heating water ensures high hygiene standards are maintained against bacteria such as legionella. Depending on the size, freshwater stations can be used in residential properties as well as in larger public buildings where there are high hygiene demands, such as in hospitals or schools.

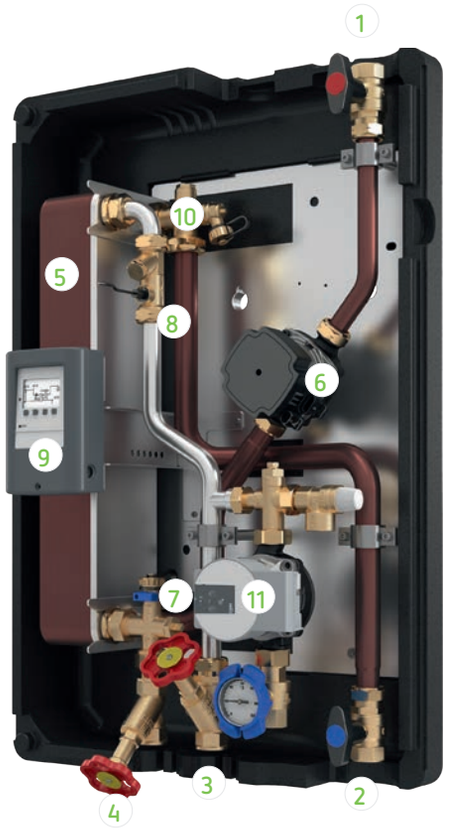


Theoretical principles

Reflex Hydroflow construction



Reflex Hydroflow S–M freshwater station models

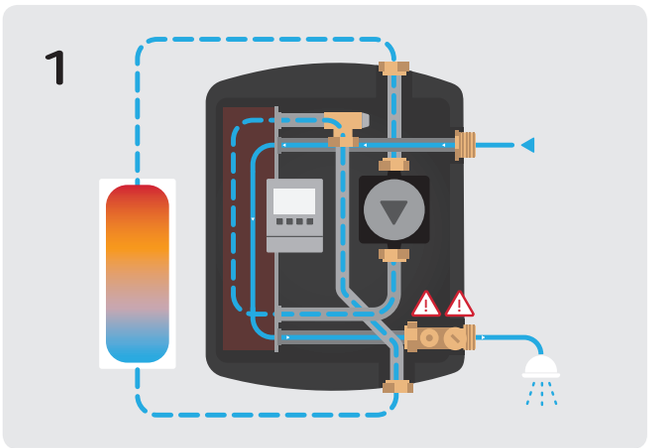


Reflex Hydroflow L–XL freshwater station models

1. Heating system flow
   The heated water is pumped out of the hot water storage tank into the freshwater station here.
2. Heating system return
   The heating water that has cooled down in the heat exchanger is stratified back into the Storaflow buffer cylinder via the pipework.
3. Cold water feed
   Potable water from the municipal supply is transported into the freshwater station by tapping.
4. Hot water outlet
   The hot water outlet pipework is connected here. The heated potable water is fed into the system from here.
5. Heat exchanger
   The high temperature of the heating water is transferred to the potable water using the counterflow principle.
6. Pump
   The pump circulates the heated water between the buffer tank and the heat exchanger. It is controlled by the regulator.
7. Temperature sensor
   The two temperature sensors measure the water temperature in the pipes—once at the heating system flow and once at the heating system outlet. This registers the transfer of the heating water temperature to the potable water.
8. Volume flow sensor
   The flow rate of the water is determined via the volume flow sensor and transferred to the regulator as information.
9. Regulator
   The regulator is the central control unit of the freshwater station. All the data from the temperature sensors are collated here. They indicate whether the water is being moved to the hot water outlet at the required temperature. The information from the volume flow sensor is also processed here and used to control the pump.
10. Vent
    The vent is used during maintenance work and commissioning. It eliminates air inclusions from the system.
11. Circulation set*
    This pre-assembled unit serves to maintain the temperature at every point in the hot water system.

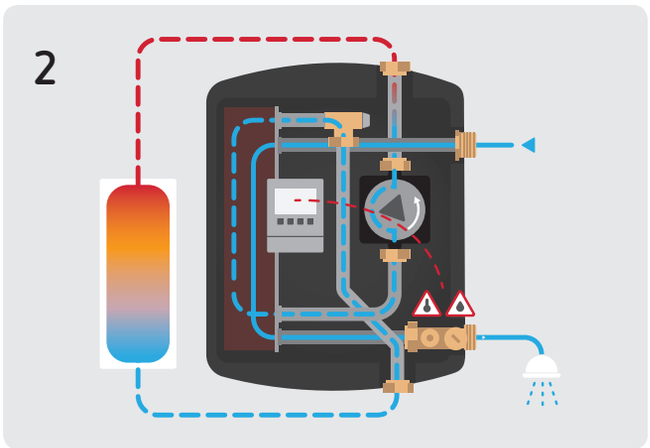
* Accessories such as the circulation set must be ordered separately.

How it works



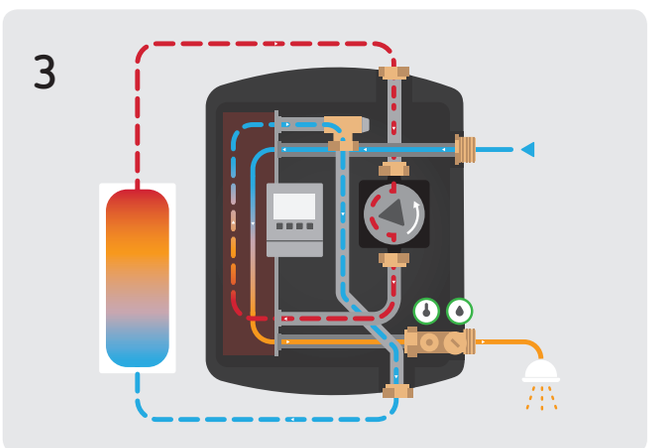
1. Tapping starts

The Reflex Hydroflow freshwater station only makes hot water available when hot water is tapped and avoids storing quantities of water. This tapping signal occurs when a user requests heated potable water. The integral volume flow sensor registers the flow of water while the connected temperature sensor indicates if the temperature is still too low.



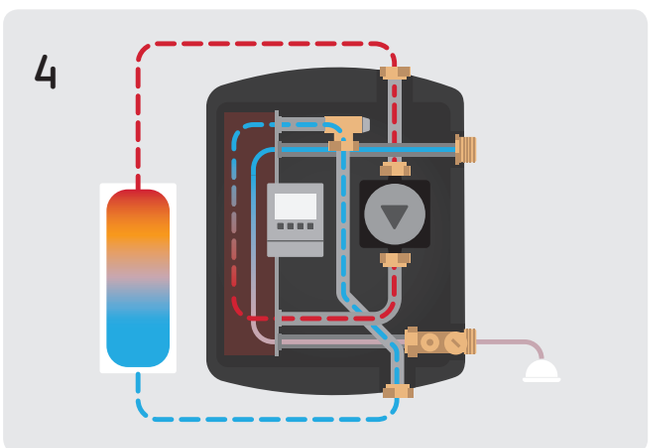
2. Pump is activated

This information is provided as a bundle to the regulator on the freshwater station which then activates the pump to direct hot water from the Storaflow buffer tank to the station. It flows through the Reflex Hydroflow freshwater station's heat exchanger in the opposite direction and transfers the heat to the potable water. The large surface area of the heat exchanger plates ensures maximum heat exchange to the potable water.



3. Potable water heating and regulation

The potable water at the appropriate temperature is supplied via the heat exchanger and passes through both the volume flow sensor and the temperature sensor. Both send the relevant data to the regulator which adjusts the volume flow steplessly by altering the pump speed.



4. Tapping ends

The cooled heating water is returned to the Storaflow buffer tank and stratified in the cold layer of the buffer tank. This water is heated again in the next iteration and is once again made available to the Reflex Hydroflow freshwater station for subsequent requirements.

Theoretische Grundlagen

Possible combinations

Reflex Hydroflow with Storaflow Heat Solar, manifold and accessories

		Storaflow Heat Solar				
		500 H/F 7938000	800 H/F 7938100	1.000 H/F 7938200	1.500 H/F 7938300	2.000 H/F 7938400
Reflex Hydroflow	XS—CU 9583531	✓	✓	✓	✓	✓
	XS—SST 9583532	✓	✓	✓	✓	✓
	S—CU 9583533	✓	✓	✓	✓	✓
	S—SST 9583534	✓	✓	✓	✓	✓
	M—CU 9583535	✓	✓	✓	✓	✓
	M—SST 9583536	✓	✓	✓	✓	✓
	L—CU 9583538	×	✓	✓	✓	✓
	L—SST 9583539	×	✓	✓	✓	✓
	XL—CU 9583541	×	✓	✓	✓	✓
	XL—SST 9583542	×	✓	✓	✓	✓
	Cascade					
	Single station					
80/60 small manifolds	2 heating circuits 4208563	✓	✓	✓	✓	✓
	3 heating circuits 4208565	×	✓	✓	✓	✓
	4 heating circuits 4208851	×	×	✓	✓	✓
	5 heating circuits 4208852	×	×	×	✓	✓

Accessories												
Circulation unit		Cascade pipework		Return stratification		Ball valve set		Cascade ball valve		Free-flow valve	Heating water mixer	BMS Module
S / M 9583553	L / XL 9583556	M 9583554	L 9583558	DN 32 M 9583555	DN 32 L 9583559	XS / S / M 9583551	Cascade pipework M 9583552	L 9583557	DN 32 5/4" XL 9583562	DN 32 5/4" XL 9583561	9583563	9583608
×	×	×	×	×	×	√	×	×	×	×	√	×
×	×	×	×	×	×	√	×	×	×	×	√	×
√	×	(√)	×	√	×	√	√	×	×	×	√	√
√	×	(√)	×	√	×	√	√	×	×	×	√	√
√	×	√	×	√	×	√	√	×	×	×	√	√
√	×	√	×	√	×	√	√	×	×	×	√	√
×	√	×	√	×	√	×	×	√	×	×	×	√
×	√	×	√	×	√	×	×	√	×	×	×	√
×	√	×	×	×	√	×	×	×	√	√	×	√
×	√	×	×	×	√	×	×	×	√	√	×	√
√	×	√	√	√	√	×	√	√	√	×	×	√
√	√	×	×	√	√	√	×	×	×	√	√	√

√	can be combined
×	cannot be combined
(√)	limited possible combinations

Freshwater system

Reflex Hydroflow



Reflex Hydroflow XS



Reflex Hydroflow S / M



Reflex Hydroflow L



Reflex Hydroflow XL

Technical Features

- electronically controlled mains water station with mains water regulator, can be cascaded several times for large tap capacities
- compact modular design
- hygiene programme and thermal disinfection for maximum protection
- completely pre-assembled for connection to the storage tank circuit and potable water system
- with built-in controller, prewired
- power supply 230 V / 50 Hz
- comfort function for keeping the pipework on the primary side warm
- floating target value, reduction of the hot water target temperature if the buffer temperature is insufficient
- circulation pump set for integration into the Reflex Hydroflow L or modularly expandable with Reflex Hydroflow S, M and XL
- control of time, temperature and demand possible
- max. permissible operating overpressure 10 bar
- max. permissible operating temperature 95 °C

Type	Art. No.	DG	Nominal width	Connection heating side	Connection potable water side	Nominal capacity 10-45 °C / 65 °C [kW]	Tap capacity 10-45 °C / 65 °C [l / min]	NL number	Weight [kg]
XS – CU	9583531	0066	DN 20	G1"	G1"	60,0	25	3,47	8,31
XS – SST	9583532	0066	DN 20	G1"	G1"	60,0	25	3,47	8,40
S – CU	9583533	0066	DN 20	G1"	G1"	70,0	29	4,76	7,89
S – SST	9583534	0066	DN 20	G1"	G1"	70,0	29	4,76	7,57
M – CU	9583535	0066	DN 20	G1"	G1"	110,0	41	9,59	9,18
M – SST	9583536	0066	DN 20	G1"	G1"	110,0	41	9,59	8,92
L – CU	9583538	0066	DN 25	G1"	Rp ¾"	132,0	52	15,04	23,23
L – SST	9583539	0066	DN 25	G1"	Rp ¾"	132,0	52	15,04	21,31
XL – CU	9583541	0066	DN 32	G 1 ½"	G 1 ¼"	190,0	80	32,11	27,11
XL – SST	9583542	0066	DN 32	G 1 ½"	G 1 ¼"	190,0	80	32,11	24,55

Reflex Hydroflow Accessories

CE

Commissioning



- **7945725**: Reflex commissioning Cat. 3 for Reflexomat Silent Compact/Reflexomat XS/Servitec Mini/Servitec S with one compressor/ one pump or Reflex Hydroflow freshwater station and Reflex Greenbox
- **7945726**: Reflex commissioning add. Cat. 3 for each additional system at the same location and on the same day – one compressor/one pump

BMS module



- extension module for the controller to indicate a group fault to an external building management system

Cascade ball valve



- For switching individual stations off or on as required for parallel circuit arrangements
- including actuator

Ball valve set individual station



- enables ball valves to be fitted to shut off the system during maintenance work or replacement
- heating side VL/RL Rp ¾" – male thread 1"
- hot water Rp ¾" – ÜWM G 1"

Ball valve set cascade



- enables the ball valves to be fitted and connects the cascade pipework of the mains water station
- For switching individual stations off or on as required for parallel circuit arrangements
- including actuator

Free-flow valve



- minimises pressure surges on the potable water installation
- installation on the potable water inlet side

Heating water mixer



- regulates the temperature of the heating water at high temperatures, e.g. 90 °C in the flow to the mains water station, downwards to a lower level by adding cooler service water to the buffer flow – cold water is on the secondary side (potable water) to additionally increase hot water comfort
- **note**: the heating water mixer reduces the tap capacity or tap volume by up to approx. 25 %!
- suitable for Reflex Hydroflow XS, S, M

Cascade piping



- space-saving installation
- consisting of pipes for the heating-water and potable-water side
- factory-implemented insulation of the pipe elements

Installation set



- installation set for L & XL stations as single station on Storaflow hot water storage tank including screws and nuts
- enables direct installation on the Storaflow hot water storage tank via the 2" sleeves

Reflex Hydroflow Accessories

CE

Return flow stratification M

- controls the energy-efficient stratification of the return water in the hot water storage tank
- for hot water storage tanks without stratified charging pipe
- 3-way DN 32 valve with two sensors



Return flow stratification L

- controls the energy-efficient stratification of the return water in the hot water storage tank
- for hot water storage tanks without stratified charging pipe



Connection cable set

- connection cable set for mains water cascade with matching plugs and terminating resistors



Circulation unit S / M

- ensures a continuous supply of hot water to the end consumer circuits
- contains circulation pump, gravity brake and temperature sensor
- circulation unit S/M with 2 shut-off ball valves



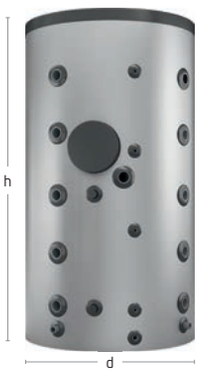
Circulation unit L / XL

- ensures a continuous supply of hot water to the end consumer circuits
- contains circulation pump, gravity brake and temperature sensor
- circulation unit L/XL with one shut-off ball valve and thermometer

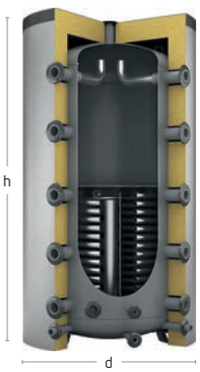


Type	Art. No.	DG	Weight [kg]
Commissioning Cat. 3	7945725	0095	–
Commissioning add. Cat. 3	7945726	0095	–
Free-flow valve XL	9583561	0085	0,75
BMS module	9583608	0091	0,10
Heating water mixer	9583563	0091	1,17
Cascade ball valve L	9583557	0085	1,01
Cascade ball valve XL	9583562	0085	2,08
Cascade piping M	9583554	0091	5,14
Cascade piping L	9583558	0091	13,43
Ball valve set individual station XS/S/M	9583551	0085	1,06
Ball valve set cascade M	9583552	0085	2,63
Installation set L/XL	7938480	0091	4,20
Return flow stratification M	9583555	0091	1,68
Return flow stratification L/XL	9583559	0091	2,61
Connection cable set	9583609	0091	0,03
Circulation unit S/M	9583553	0091	3,02
Circulation unit L/XL	9583556	0091	2,74

Storaflow Buffer tank for Reflex Hydroflow



SH 500 H/F/1_C – SH 2000 H/F/1_C

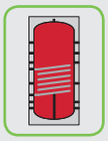


SH 500 H/F/1_C – SH 2000 H/F/1_C
cut-away model

Technical Features

- Storaflow hot water storage tank for storing heating water and central heating backup
- potable water heating using the continuous flow principle with a Reflex Hydroflow mains water station
- tank not treated inside, plastic-coated outside
- insulation preinstalled
- fleece insulation with foil jacket
- max. permissible operating overpressure:
  → 500 – 1.000 l 3 bar
  → 1.500 – 2.000 l 7 bar
  → solar or solid fuel support by means of internal heat exchanger 10 bar
- max. permissible operating temperature:
  → tank 95 °C
  → internal heat exchanger 110 °C

Type overview



SH...H/F/1
buffer tank with one bare-tube heat exchanger and a flange for the installation of an electric heater

insulation
up to 800 l: 120 mm fleece insulation with foil jacket, removable
from 1000 l: 150 mm fleece insulation with foil jacket, removable

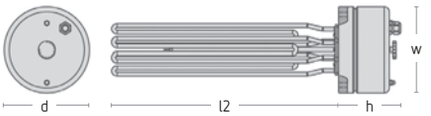
Type	Art. No. silver	DG	EEC[1]	Volume [l]	Connection c	Heating surface top|solar [m²]	Ø d without|with insulation [mm]	Height h [mm]	Weight [kg]
SH 500 H/F/1_C	7938000	0066	C	500	Rp 2"	– | 1,90	597 | 840	1.986	136,00
SH 800 H/F/1_C	7938100	0066	C	800	Rp 2"	– | 2,60	790 | 1.010	1.859	168,00
SH 1000 H/F/1_C	7938200	0066	C	1.000	Rp 2"	– | 3,20	790 | 1.090	2.149	190,00
SH 1500 H/F/1_C	7938300	0066	C	1.500	Rp 2"	– | 3,80	1.000 | 1.300	2.140	276,00
SH 2000 H/F/1_C	7938400	0066	C	2.000	Rp 2"	– | 4,40	1.200 | 1.500	2.161	394,00

[1] Energy efficiency class

Storaflow Accessories

EFHR

- electrical auxiliary heating
- approved for continuous operation
- suitable for these types:
  → Storatherm Aqua
  → Storatherm Aqua Solar
  → Storatherm Aqua Load
  → Storatherm Aqua Heat Pump
  → Storatherm Heat HF .../R
  → Storaflow
- easy integration via the tank's maintenance opening
- up to 10,0 kW LK 150 mm
  → ≤ 500 litres storage volume for potable water → buffer tank of type HF .../R and H.../R
- from 16,0 kW LK 225 mm
  → > 500 litres tank volume for potable water
- 3 power levels, reversible connections
- with temperature controller – 85 °C
- safety temperature limiter 110 °C
- on-site electrical connection
  → 2,5 kW 230 V
  → from 4,0 kW 400 V
- incl. flange and seal





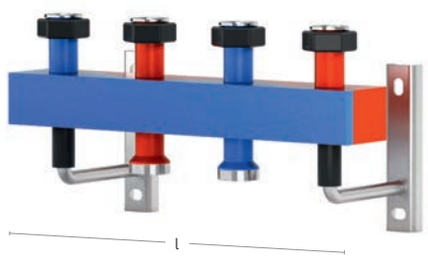
Pipe connection set

- Plug & Play installation of single Reflex Hydroflow stations on Storaflow hot water storage tank with pre-assembled pipe connection set
- incl. shut-off valves and drain valve
- incl. seals and insulation material



Type	Art. No.	DG	Weight [kg]
EFHR flange-type electric heating element			
EFHR 2,5	9118710	0068	2,94
EFHR 4,0	9116314	0068	3,54
EFHR 6,0	9116315	0068	4,80
EFHR 8,0	9116316	0068	5,00
EFHR 10,0	9116317	0068	5,00
EFHR 16,0	9116501	0068	10,50
EFHR 19,0	9116502	0068	11,00
EFHR 25,0	9115569	0068	11,00
EFHR 35,0	9126720	0068	13,44
Pipe connection set			
XS/S/M	9583602	0085	3,60
L	9583603	0085	2,50
flange adapter			
DN 110/DN 180	5402400	SXXX	4,00

Small manifolds



Small manifolds 80/60

Technical Features

- combined flow and return manifold, consisting rectangular tube with adjoining chambers divided by sinusoidal dividing wall made from mild steel sheet S235
- 100 % factory-checked for leak tightness and primed
- with thread or union nuts
- packed as a set
- type 80/60: with EPP insulation and wall mount
- type 120/80: with EPP insulation
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 4 bar
- ideal for use with: maintenance box

Type	Art. No.	DG	Heating circuits [pcs.]	Connection generator	Connection heating circuit	V_{max} [m^3/h]	Output at ΔT 20 °K [kW]	Length l [mm]
Nozzle spacing 125 mm								
80/60	4208563	0001	2	G 1½"	G 1½" coupling nut	3,0	70,00	475
80/60	4208565	0001	3	G 1½"	G 1½" coupling nut	3,0	70,00	725
80/60	4208851	0001	4	G 1½"	G 1½" coupling nut	3,0	70,00	975
80/60	4208852	0001	5	G 1½"	G 1½" coupling nut	3,0	70,00	1.225

The accessories for the small distributors can be found in the chapter Distributors & Hydraulic Separators