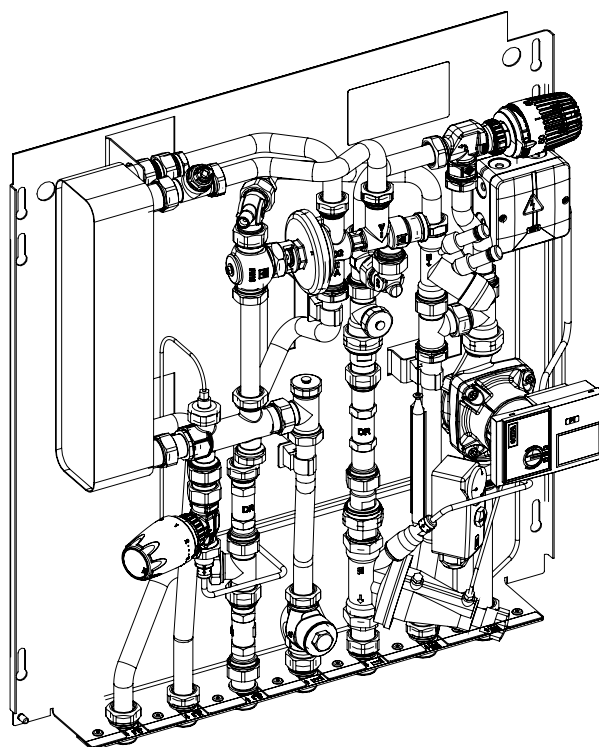
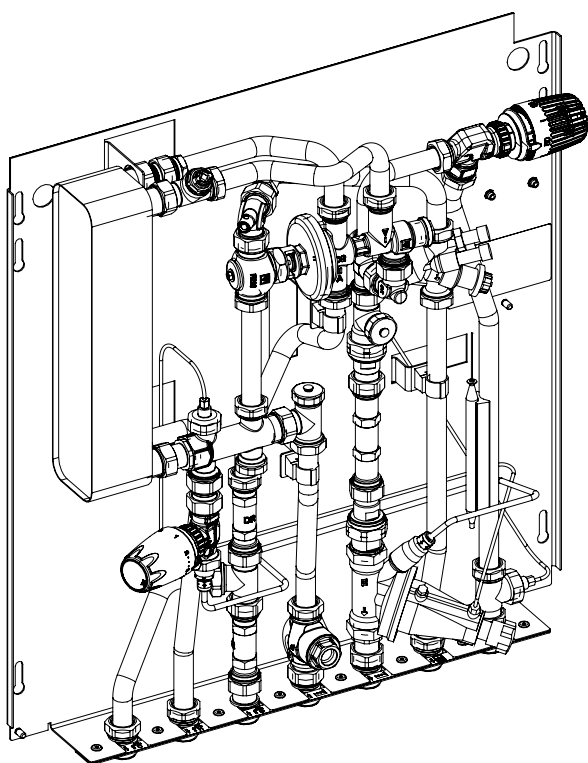


IMI TA

TA-COMFORT-R / -S

Heating interface units

Installation | Operation



Safety instructions

To reduce risk and avoid accidents and injuries, please follow the safety instructions carefully.

Target group

These instructions are intended for authorised service personnel only.

Work on the heating system and the drinking water, gas and electricity networks may only be carried out by skilled service personnel or installation engineers who have been authorised by the relevant authorities.

Regulations

Work on the system is covered by the following regulations

Statutory accident prevention rules.

Statutory environmental protection rules.

Accident prevention regulations issued by the Employer's Liability Insurance Association.

The applicable safety provisions contained in the following standards and norms:

DIN, EN, DVGW, TRGI, TRF, VDE and ACS standards.
ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE
SEV, SUVA, SVGW, SVTI, SWKI and VKF.

All new regulations and standards applicable at regional/national level.

Rules when working on the system and network parameters

Isolate the system from the power supply and verify the absence of power (e.g. at the separate fuse or a main switch).

Ensure that the system cannot be switched back on.

IMPORTANT: Risk of scalding: Temperature of medium > 60°C

Network parameters for heating:	Max. operating temperature:	90°C
Network parameters for potable water:	Max. operating temperature:	90°C
Pressure class:	PN 10	

The equipment must be installed in enclosed rooms that are protected from frost in compliance with EN 60529. Compliant protection zones must be observed during the planning and installation process EN 60520 IP rating – IP42.

NOTE: Nickel soldered heat exchanger can be delivered on request for tap water with higher conductivity as 500 µS or pH >9,0. It is not allowed to use copper soldered heat exchangers under those conditions.

Table of contents

Page	Description of functions
4	Principle of operation
4	Notes
	Hydraulic diagram
5 - 6	TA-COMFORT-R / -S
	Installation
7	Installation
8 - 9	Installation of cabinet
	Flushing and filling
10	Flushing and filling
	Connections
11	Heat meter installation
12	Cold water meter installation (optional)
	Equipment and components
13	Zone valve - TBV-C
14 - 15	Combined Δp controller, balancing and control valve - TA-COMPACT-DP
16	Differential pressure controller - STAP
17	RTL TRV thermostatic circulation bypass
17	Return temperature limiter (TA-COMFORT-R)
17	Control of the supply temperature for surface heating (TA-COMFORT-S)
	Optional components
18	Thermostatic hot water mixing valve – scald protection (optional)
18	Heating circuit manifold for domestic heating circuit (additional equipment for TA-COMFORT-S)
	TA-COMFORT-S for surface heating
19	Control loop for surface heating
	Charts
20 - 21	Available differential pressure, pressure drop and temperatures
22	Available differential pressure for the surface heating with standard pump
	Connection of direct heating circuit
23	Additional connection for a direct domestic heating circuit
	Mounting rail TA-COMFORT-R / -S
24	Mounting and dimensions

Description of functions

TA-COMFORT heating interface units supply a home with domestic hot water and heating. The domestic hot water is heated instantaneously using a stainless steel plate heat exchanger and a pressure-controlled proportional flow controller with an antibacterial coating.

Principle of operation

The proportional flow controller only allows the domestic hot water and heating water to flow over the plate heat exchangers while domestic hot water is being drawn off. When the draw-off ends, the valve closes to stop the flow through the heat exchanger. The proportional flow controller regulates the flow to the heating circuit (priority circuit). It closes the heating circuit completely if the draw-off is at maximum. This means that all the heating energy is made available to heat the domestic hot water.

Notes

If the heating supply temperature is kept constant, proportional flow control means that the same hot water temperature is reached regardless of the volumes being drawn off.

If the heating water temperature is very high or fluctuates widely, producing an expected domestic hot water temperature exceeding 60°C, scald protection should be added by installing a temperature mixing valve module (optional).

In order to guarantee thermal stability and to reduce the time taken to reach the desired domestic hot water temperature, a thermostatic circulation bypass is included in the heating interface unit.

The valve TBV-C or TA-COMPACT-DP installed in front of the home interface unit provides a stable available differential pressure for water heating.

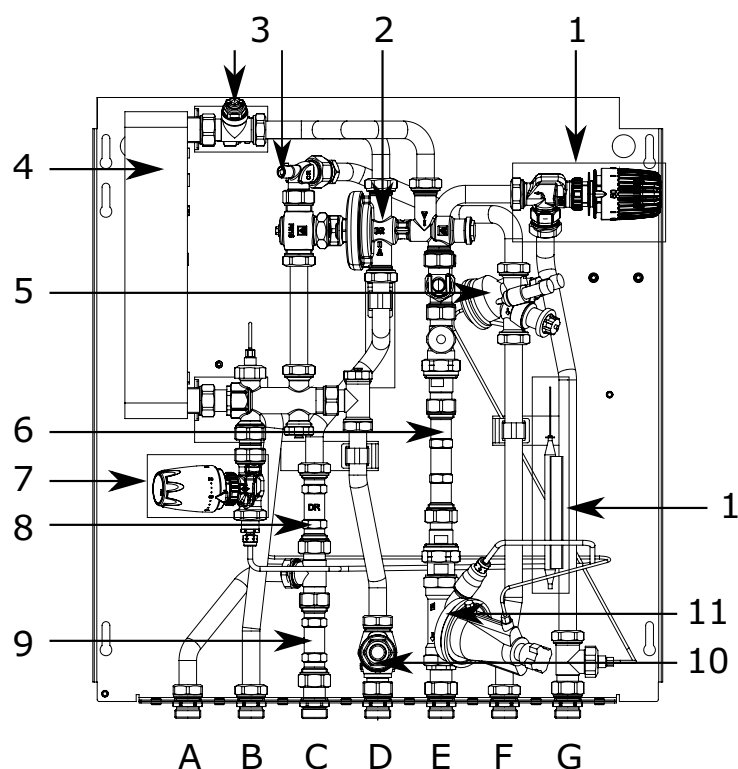
Each unit has an integrated zone valve for hydraulic control.

A (reference) room controller (optional) and thermal actuator (optional) can be installed to allow the domestic heating circuit to be operated separately.

Designated pipe sections for water and heat meter installation are provided in every home unit.

See our catalogues and price list for other accessories and further options.

Hydraulic diagram

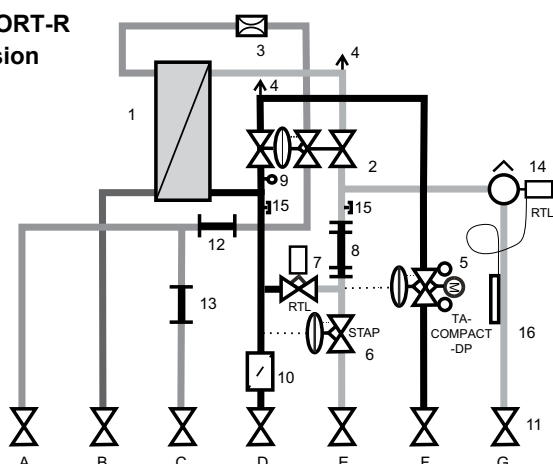


- | | | | |
|----|---------------------------|-----|--|
| A. | Cold water outlet | 1. | RTL: return temperature limiter with contact sensor |
| B. | Hot water outlet | 2. | Proportional controller |
| C. | Cold water inlet | 3. | Air vent |
| D. | Heating supply, primary | 4. | Stainless steel plate heat exchanger |
| E. | Heating return, primary | 5. | TA-COMPACT-DP control and balancing valve |
| F. | Heating supply, secondary | 6. | Dummy piece for heat meter sensor |
| G. | Heating return, secondary | 7. | RTL TRV thermal circulation bypass |
| | | 8. | Dummy piece for hot water meter |
| | | 9. | Dummy piece for cold water meter |
| | | 10. | Strainer |
| | | 11. | Internal Δp controller, setting range 10 - 60 kPa, presetting 35 kPa |

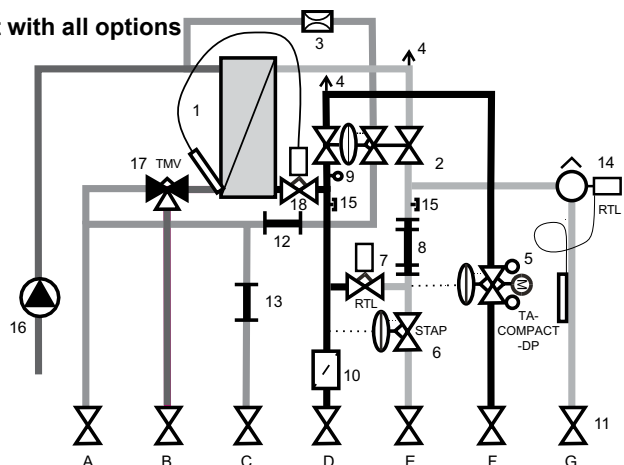
! Not all the options are available for every heating interface unit type or may not be available in combination.

Hydraulic diagram

TA-COMFORT-R
Basic version



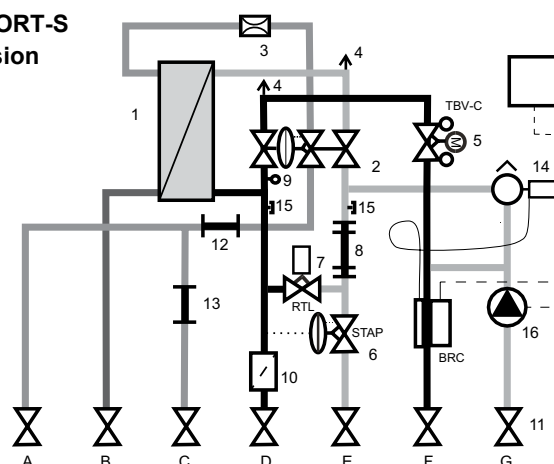
Unit with all options



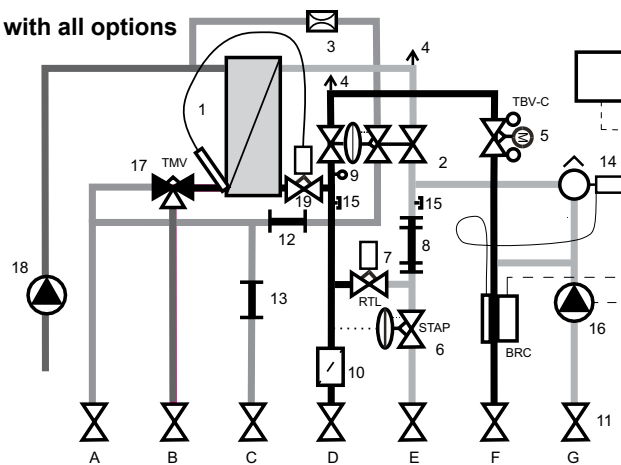
- A. Cold water outlet
- B. Hot water outlet
- C. Cold water inlet
- D. Heating supply, primary
- E. Heating return, primary
- F. Heating supply, secondary
- G. Heating return, secondary

- 1. Heat exchanger
- 2. PM controller
- 3. Flow limiter
- 4. Vent
- 5. TA-COMFORT-DP: Zone valve and Δp controller
- 6. STAP: Internal Δp controller, setting range 10 - 60 kPa, presetting 35 kPa
- 7. RTL TRV thermal circulation summer bypass
- 8. Dummy piece for heat meter
- 9. 3/4" connection for heat meter sensor
- 10. Strainer
- 11. Shut-off valves 3/4" (on bracket)
- 12. Dummy piece for hot water meter
- 13. Dummy piece for cold water meter
- 14. RTL: Return temperature limiter
- 15. Connection for external heating circuit (for example bathroom radiators)
- 16. Circulation circuit for hot tap water (optional)
- 17. Thermostatic mixing valve (optional)
- 18. Thermostatic temperature control valve with immersion sensor (optional)

TA-COMFORT-S
Basic version



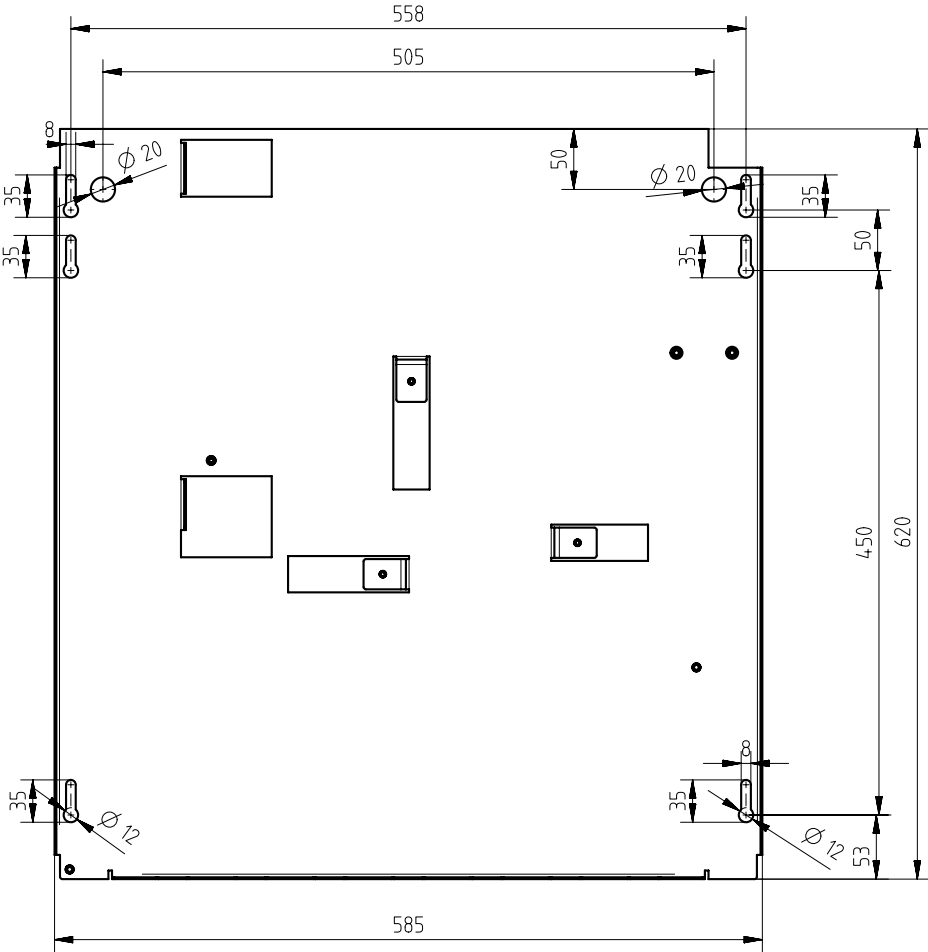
Unit with all options



- A. Cold water outlet
- B. Hot water outlet
- C. Cold water inlet
- D. Heating supply, primary
- E. Heating return, primary
- F. Heating supply, secondary
- G. Heating return, secondary

- 1. Heat exchanger
- 2. PM controller
- 3. Flow limiter
- 4. Vent
- 5. Zone valve TBV-C
- 6. STAP: Internal Δp controller, setting range 10 - 60 kPa, presetting 35 kPa
- 7. RTL TRV thermal circulation summer bypass
- 8. Dummy piece for heat meter
- 9. 3/4" connection for heat meter sensor
- 10. Strainer
- 11. Shut-off valves 3/4" (on bracket)
- 12. Dummy piece for hot water meter
- 13. Dummy piece for cold water meter
- 14. Floor heating supply temperature limiter
- 15. Connection for external heating circuit (for example bathroom radiators)
- 16. Floor heating pump
- 17. Thermostatic mixing valve (optional)
- 18. Circulation circuit for hot tap water (optional)
- 19. Thermostatic temperature control valve with immersion sensor (optional)

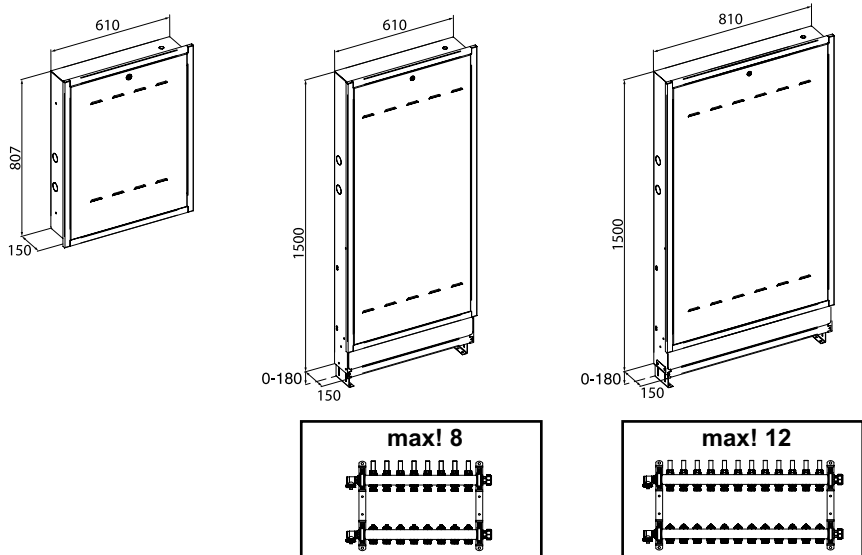
! Not all the options are available for every heating interface unit type or may not be available in combination.



Installation

Installation of cabinet

Dimensions [mm]:
The total height of the heating interface unit is 1519 mm including the cover for surface mounting.

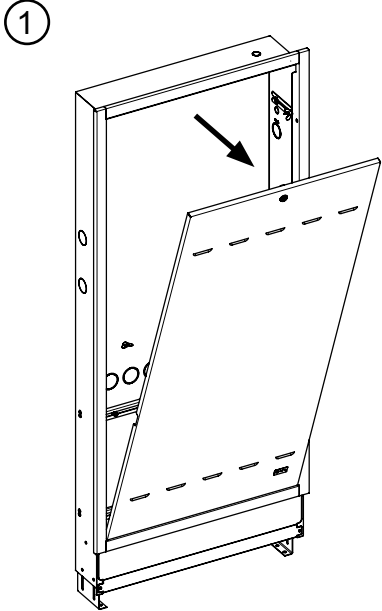


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344 030 400 31
344 030 400 34

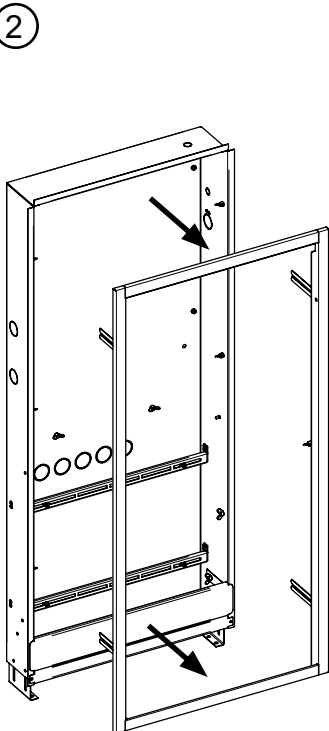
344 030 400 32
344 030 400 33
344 030 400 37

344 030 400 38

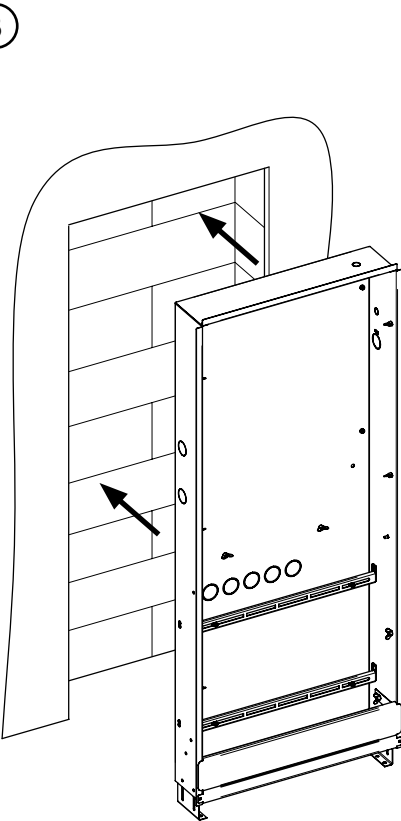
1





2

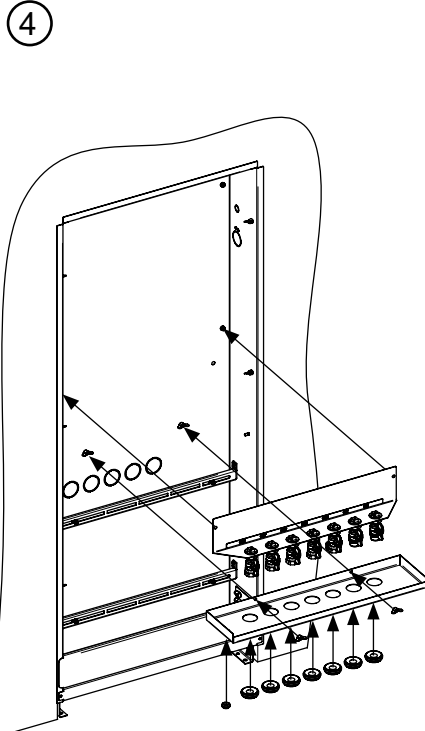


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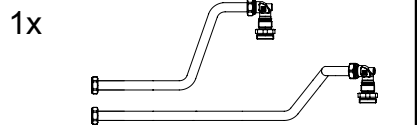




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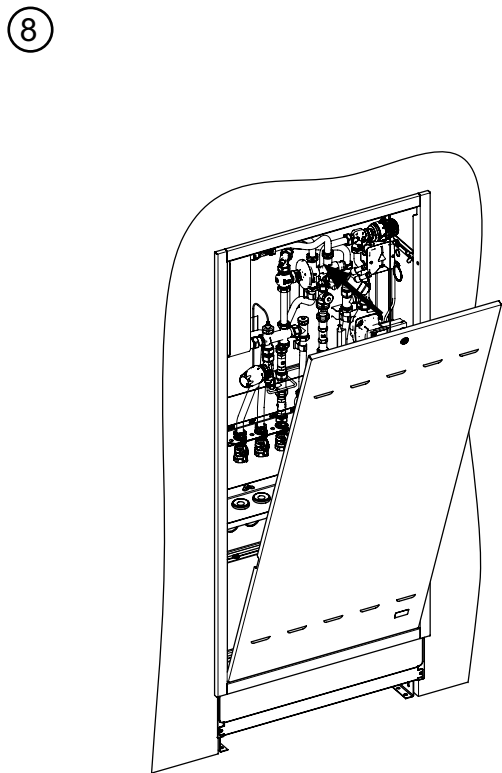
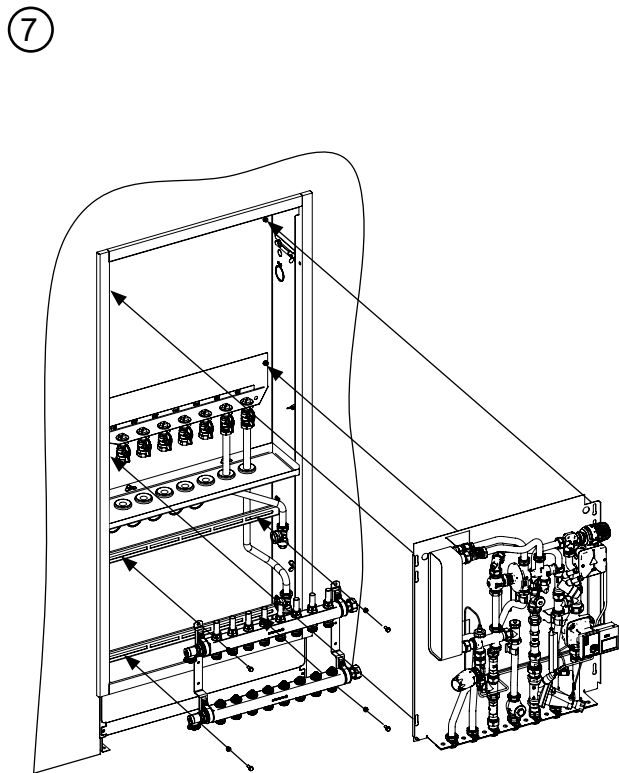
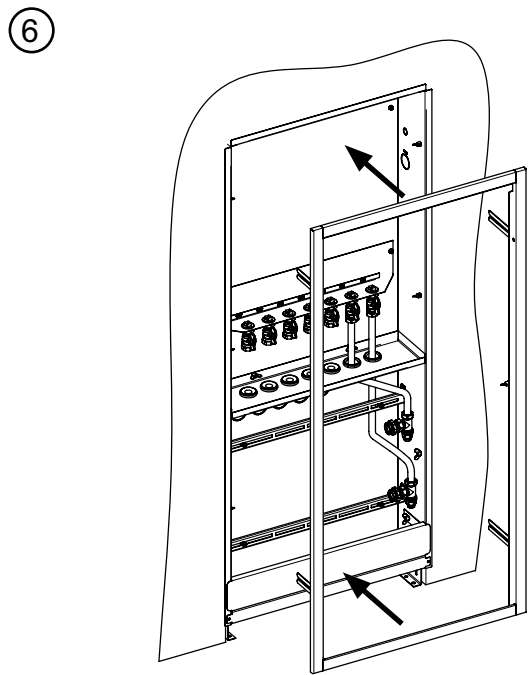
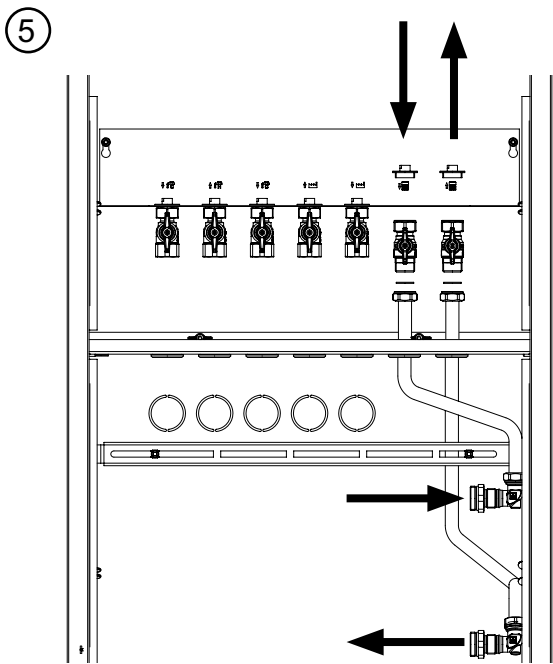


1x



8

Installation



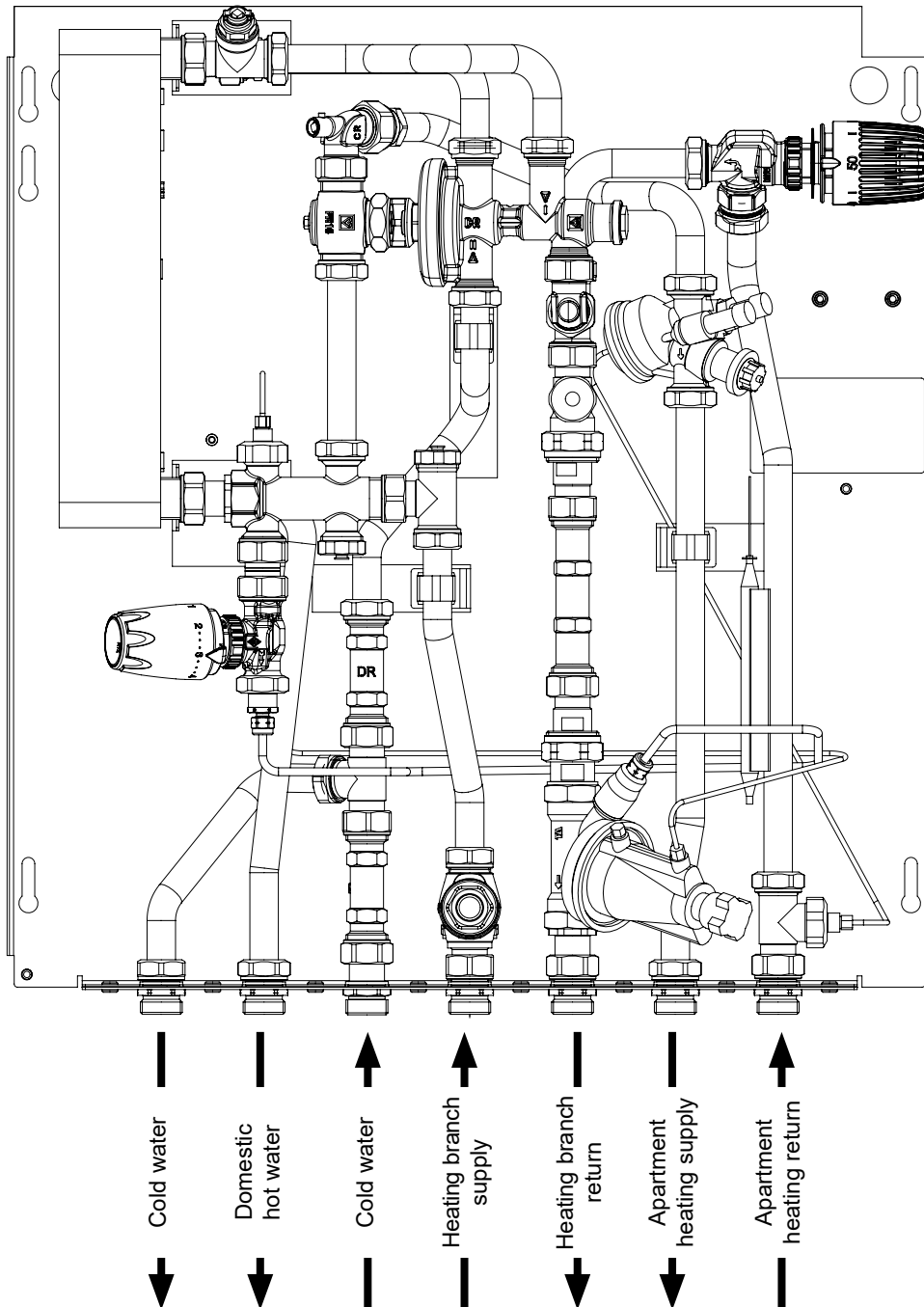
Flushing and filling

Before being filled, the system must be carefully flushed.

All connections must be checked and tightened if necessary.

After tightening, screwed joints must be securely locked with a counter nut.

When the system has been filled, the heating interface unit must be vented and the heating system topped up if necessary.



Connections

Heat meter installation

The heat meter must not be installed until the overall heating system has been flushed. TA-COMFORT heating interface units are supplied with a dummy pipe section for the heat meter, which must be removed before the heat meter can be installed. Due to the universal dummy piece heat meters with 1" thread and 190 mm length, as well as those with 110 mm and 3/4" connection, can be installed.

Procedure

Close all shut-off valves "A" (on mounting bracket).
Reduce the system pressure by opening the vents "B".
Undo the screwed joints on pipe section "C".



Water may escape.

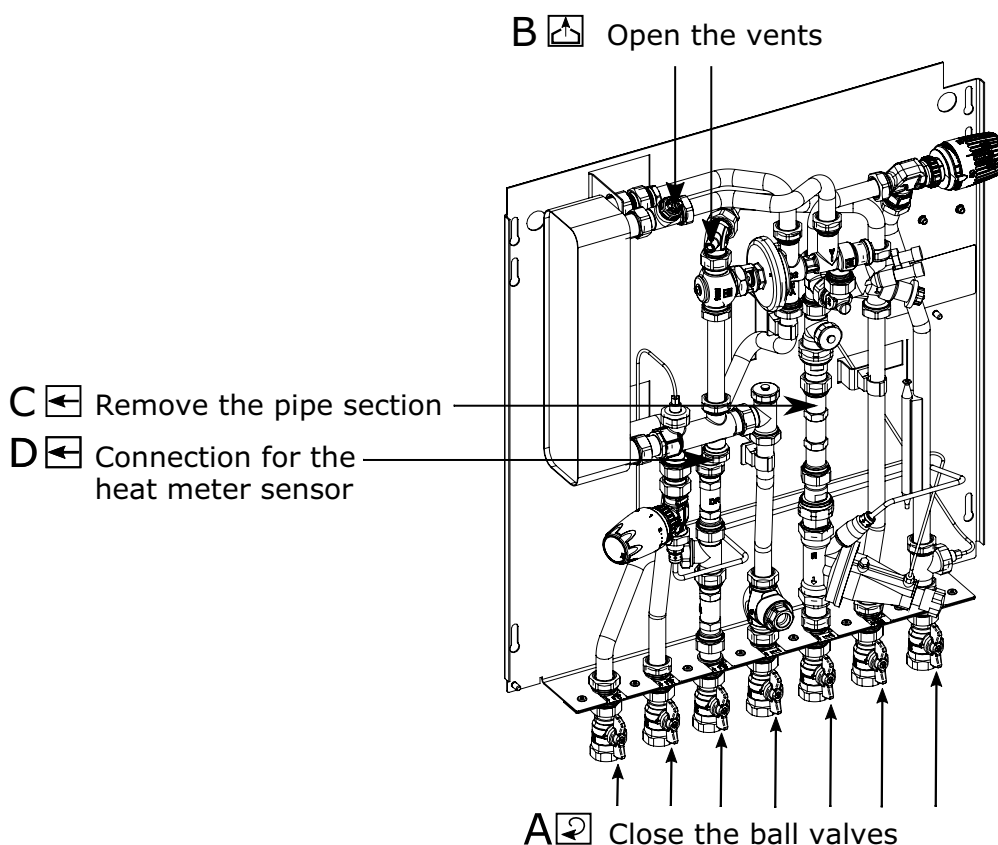
Remove the pipe section, position the heat meter and tighten.



Observe the direction of the flow. (Do not forget the seals.)

Remove the brass plug "D" and screw in and seal the supply sensor for the heat meter.

When finished with the previous step, open the shut-off valves and use the vents to vent the system. Check for leaks.



Connections

Cold and hot water meter installation (optional)

TA-COMFORT home units are supplied with two dummy pipe sections for the cold and, if necessary hot water meter, which must be removed before the water meter can be installed.

Procedure

Close all shut-off valves "A" (optional) in the home unit.

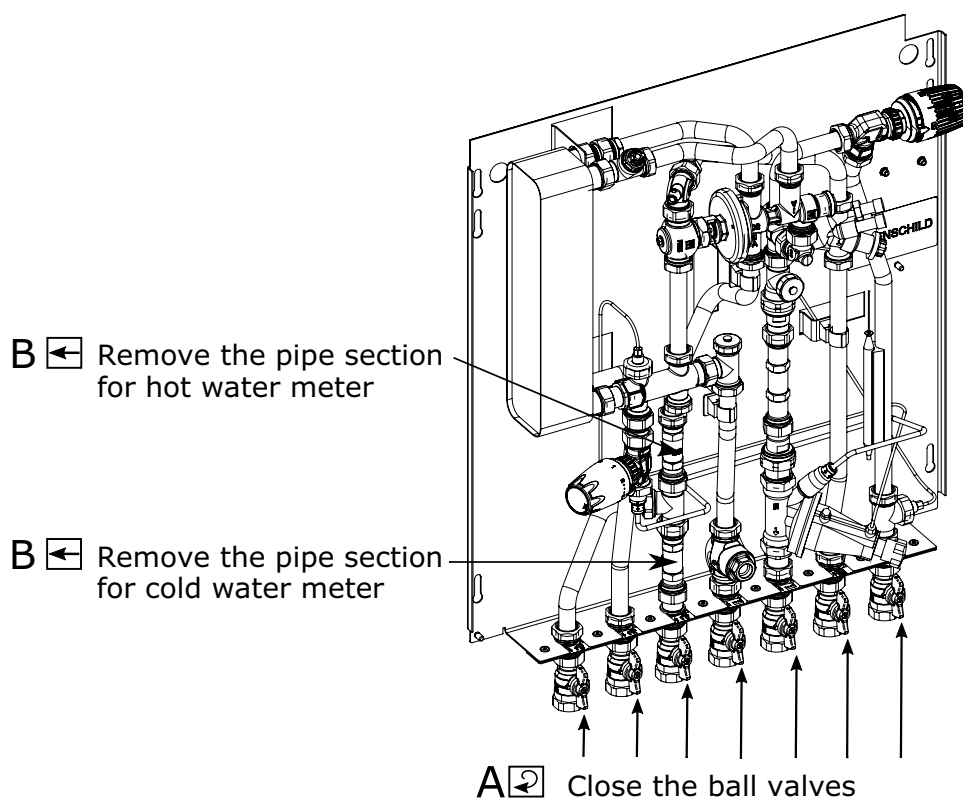
Undo the screwed joints on pipe section "B".

! Water may escape.

Remove the pipe section, position the water meter and tighten.

! Observe the direction of the flow. (Do not forget the seals.)

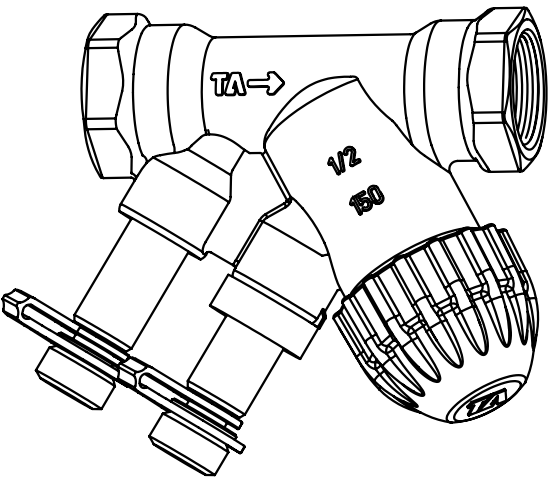
When finished with the previous step, open the shut-off valves and check the screwed joints for leaks.




Equipment and components

Zone valve - TBV-C

(Surface heating version)

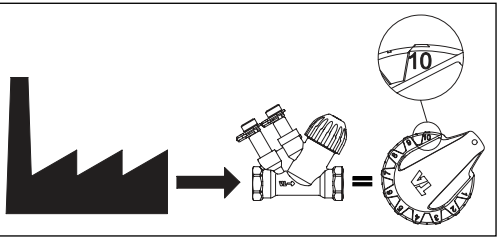



<div>  </div> <div>Position</div>	Kv
	TBV-C NF DN 15
1	0,22
2	0,33
3	0,45
4	0,50
5	0,60
6	0,82
7	0,99
8	1,1
9	1,4
10	1,8


-20°C – +120°C

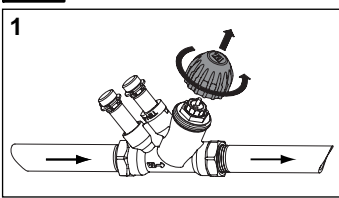
 PN 16
(max. 16 bar)

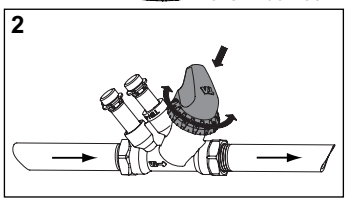
 Max Δp:
 30 kPa = 0,3 bar





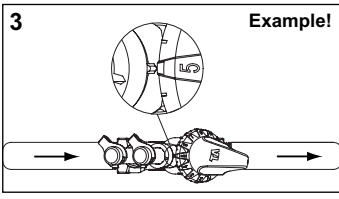

 No. 52 133-100

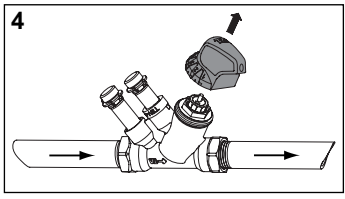
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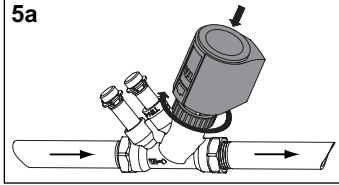
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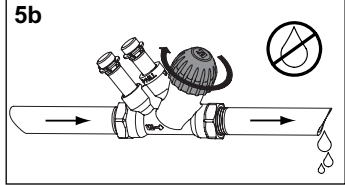
3

Example!

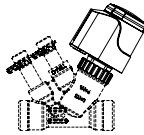


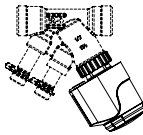
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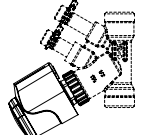
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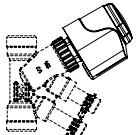
5b
 

TBV-C + EMO T:


 IP54


 IP54

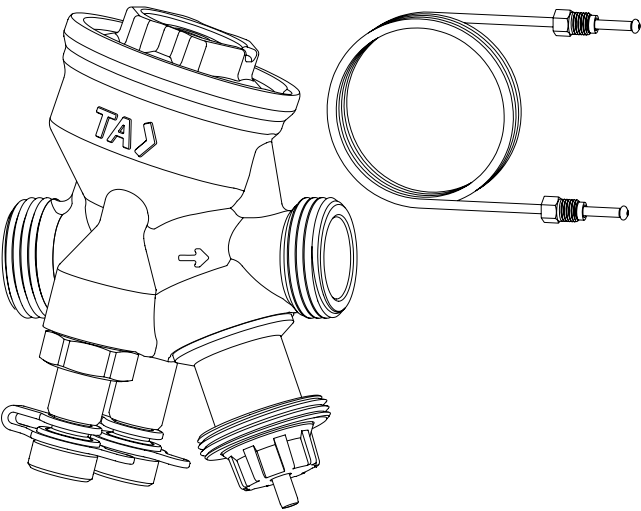

 IP54


 IP54

Equipment and components

Combined Δp controller, balancing and control valve - TA-COMPACT-DP

(Radiator version)



Pos	q _{max} [l/h]		
	Δp_L [kPa]	Δp_L [kPa]	Δp_L [kPa]
	5	10	14
1	76	59	42
2	129	98	67
3	166	127	84
4	209	158	103
5	251	189	122
6	288	216	138
7	324	243	153
8	353	265	166
9	379	284	177
10*	397	298	185

*) Delivery setting

-20°C – +120°C

PN 16

ΔH_{max} : 400 kPa = 4 bar

ΔH_{min} : 18 kPa = 0,18 bar

= 10.0

1

2

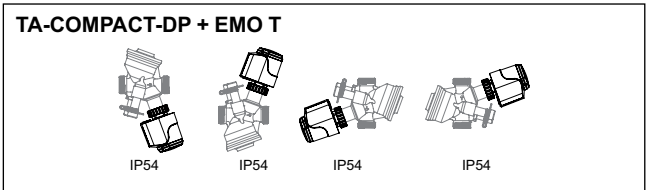
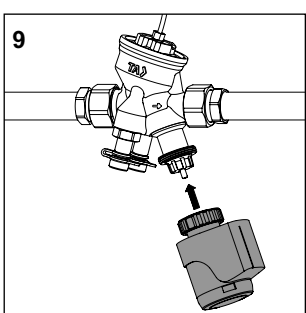
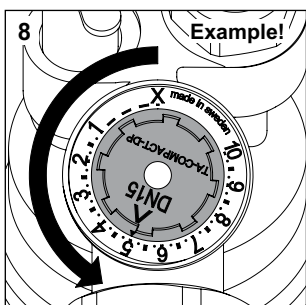
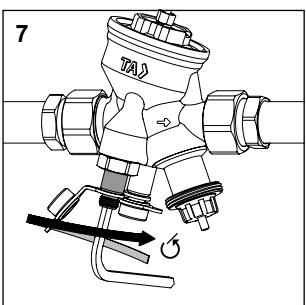
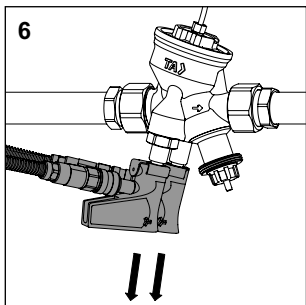
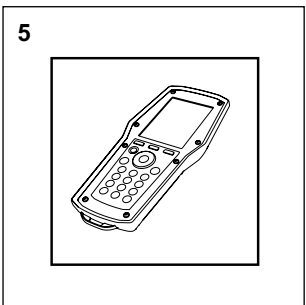
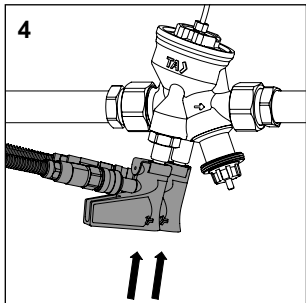
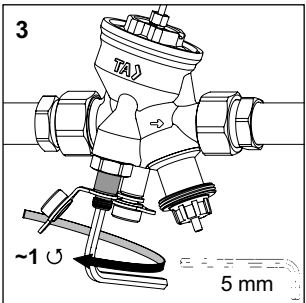
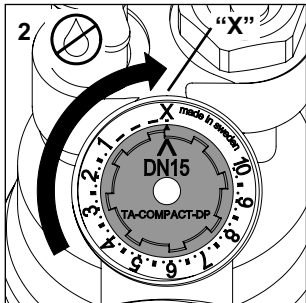
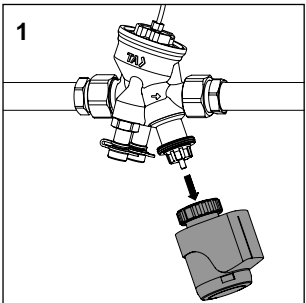
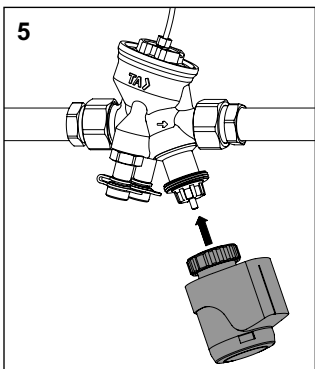
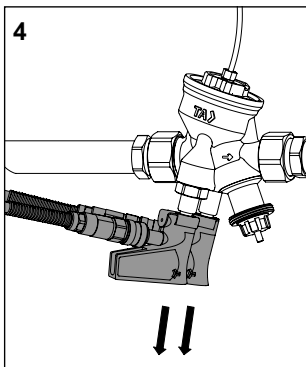
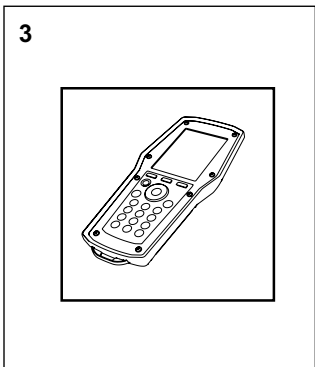
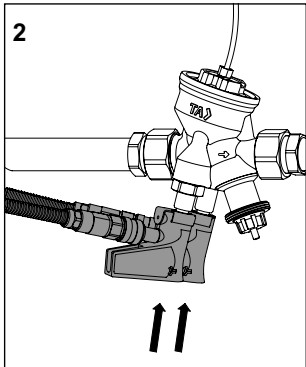
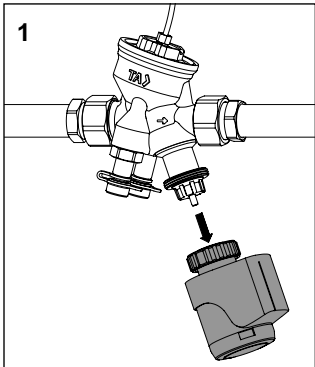
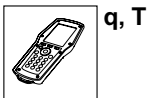
8 mm

Example!

Equipment and components

Combined Δp controller, balancing and control valve - TA-COMPACT-DP

(Radiator version)



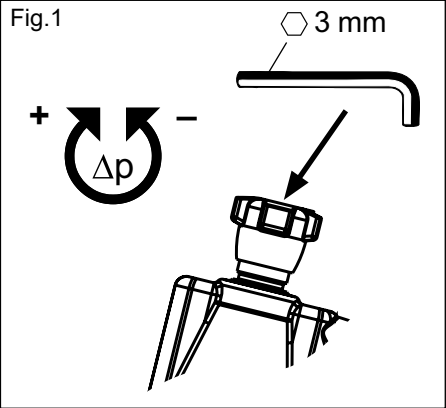
Equipment and components


Differential pressure controller – STAP

! When pressure-testing the system, the maximum static test pressure is 0,6 MPa (6 bar). The valve is preset to 35 kPa differential pressure.

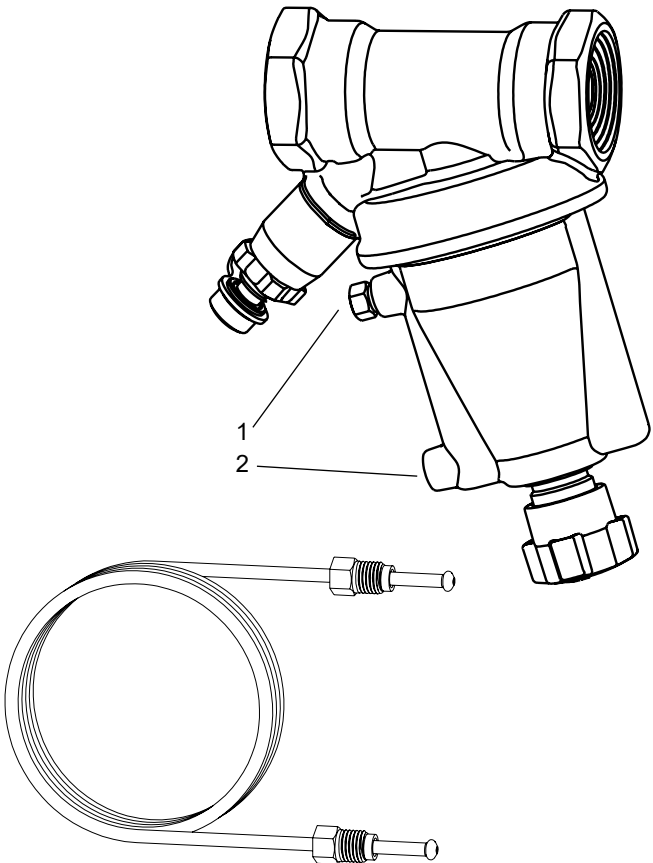
Balancing procedure

1. Fully open all control valves.
2. Adjust all terminals to give the design flow.
3. Deaerate the system and then deaerate the capillary pipe by opening (1) or (2) (depending on which is uppermost) until only water emerges.
4. Measure the flow through the TBV-C or TA-COMPACT-DP using a TA-SCOPE measuring instrument attached to the measuring points (see page 13 or 15).
Re-open the valve after measuring to avoid an unnecessary pressure drop.
5. If the design flow cannot be achieved, it may be due to:
 - a) Blockages in the system. Find and rectify the fault and measure again.
 - b) The circuit requires higher Δp_L than the delivery setting. Adjust the differential pressure using a 3 mm allen key in the shut-off handwheel (fig. 1). For the variation of differential pressure corresponding to the number turns, see the table below. Measure the flow again, as above, or measure Δp_L . Wait 2 – 3 minutes before reading the value.



Δp_L [kPa]	 [Δp_{Lmin}] DN 20 (10-60 kPa)
5	-
10	5
15	13
20	19
25	23
30	27
35	30
40	33
45	35 *
50	37
55	39
60	41

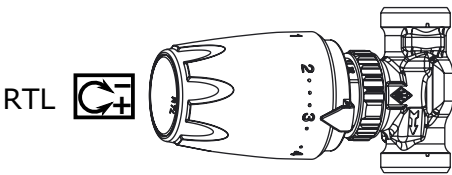
*) Delivery setting



Equipment and components

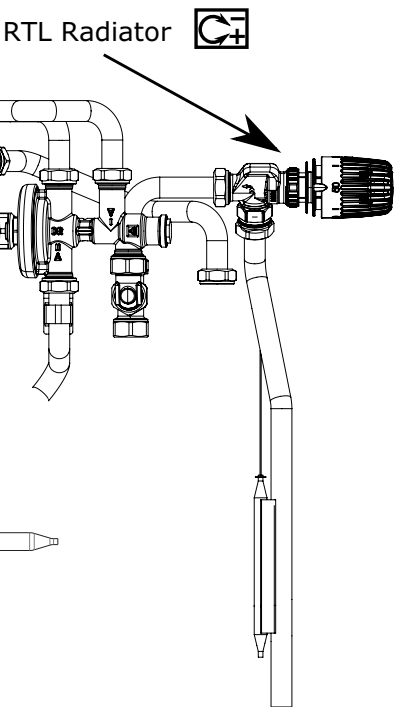
RTL TRV thermostatic circulation bypass

The thermostatic circulation bypass ensures that heated tap water can be provided without any delay. The reserve temperature is infinitely adjustable using the temperature scale of 0 - 50°C.



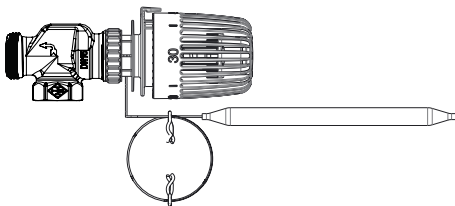
Return temperature limiter (for TA-COMFORT-R only)

The return temperature limiter with contact sensor limits the return temperature of the domestic heating circuit. The desired value is infinitely adjustable using the temperature scale of 0 - 50°C. The return temperature limiter with contact sensor does not replace hydraulic balancing of the domestic heating circuit and the heating interface unit.



Setting RTL

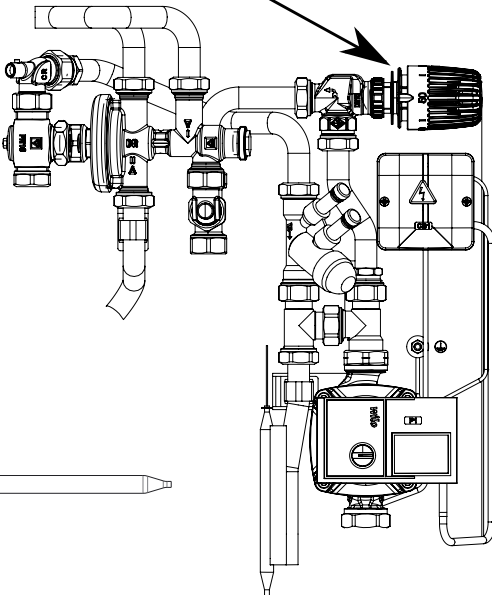
Number	0	1	2	3	4	5
Return temperature t_r [°C]	0	10	20	30	40	50



Control of the supply temperature for surface heating (for TA-COMFORT-S only)

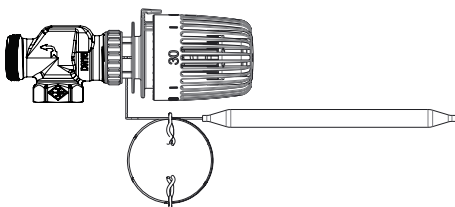
The thermostatic head K with contact sensor regulates the supply temperature for the floor heating. The desired value is infinitely adjustable using the temperature scale of 0 - 50°C. This control valve does not replace hydraulic balancing of the domestic heating circuit and the heating interface unit.

RTL Floor heating



Setting thermostatic head K with contact sensor

Thermostatic head setting	Supply temperature of mixed heating circuit
20	~ 20°C
30	~ 30°C
40	~ 40°C
50	~ 50°C



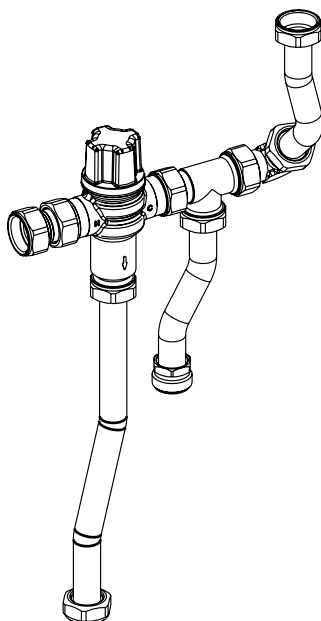
Optional components

Thermostatic hot water mixing valve – scald protection (optional)

The thermostatic mixing valve limits the output temperature and provides protection from scalding in the hot water system.

Adjustment range: 35°C to 60°C

Adjust the value by turning the handwheel.



Heating circuit manifold for domestic heating circuit (additional equipment for TA-COMFORT-S)

A heating circuit manifold is used in combination with a bigger cover. Manifolds are available for 2-12 domestic heating circuits. A volume flow limiter with a display, return adjustment cap and manual vent plug 1/2" is supplied as standard.

Settings

Supply volume flow limiter: 30 - 300 l/h

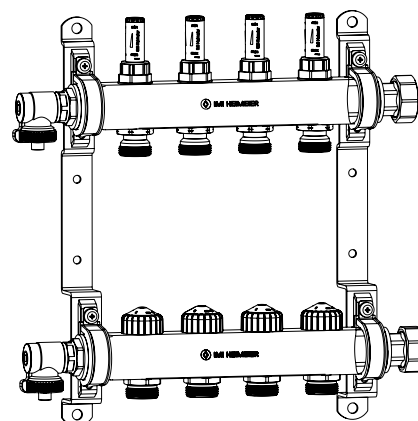
Integration

with the domestic heating circuits: G3/4 Eurocone

with an actuator: M30x1,5

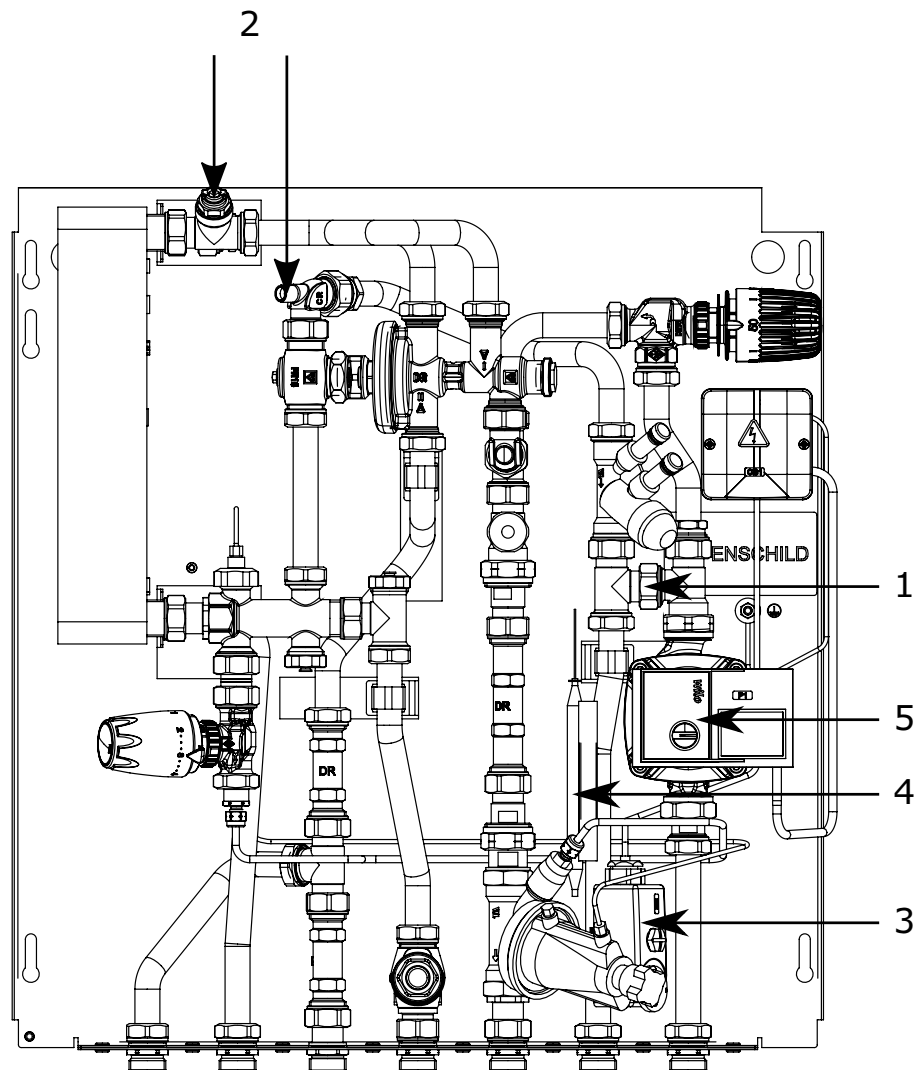
Axial dimension of the connections: 50 mm

! See page 22 charts showing residual head and pressure drop.



TA-COMFORT-S for surface heating

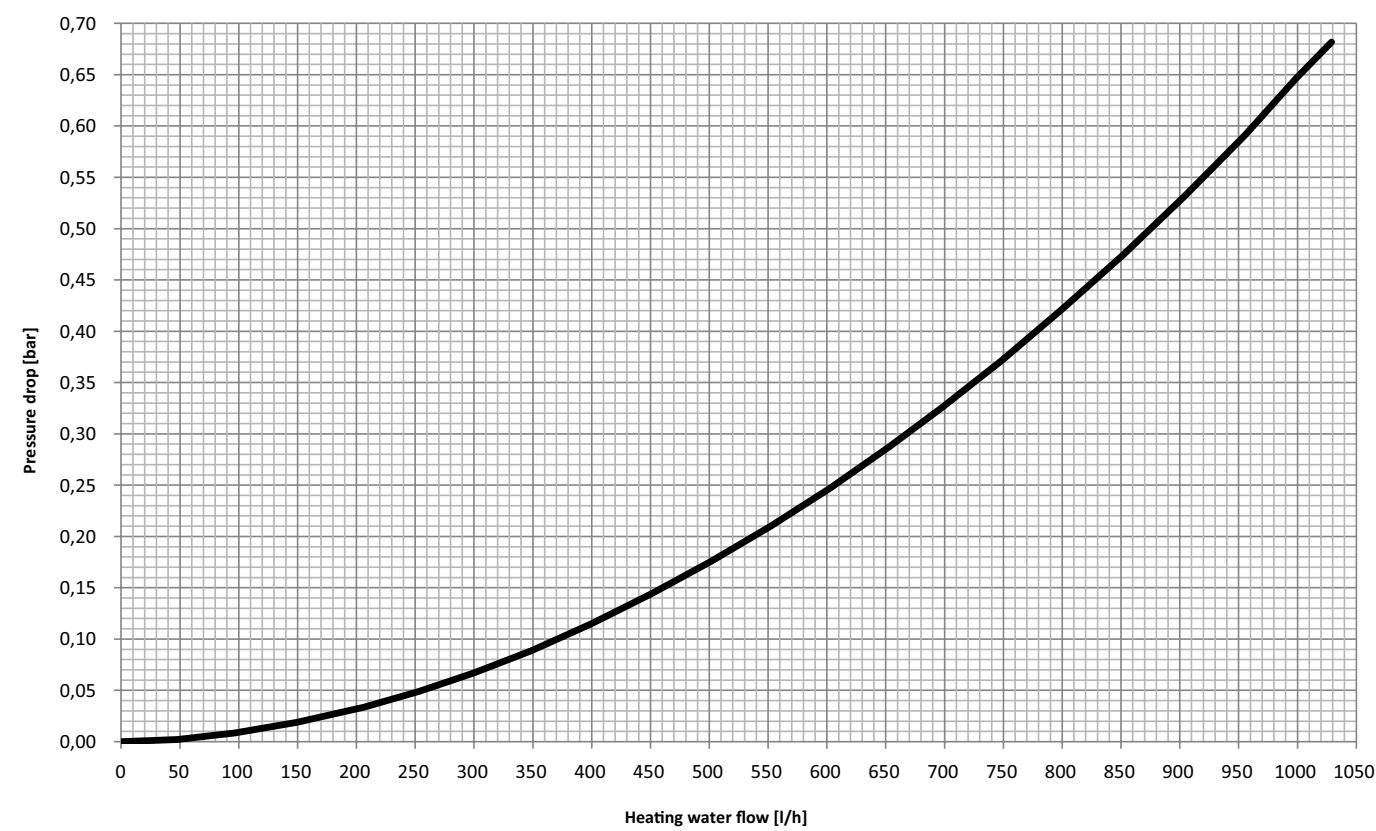
Control loop for surface heating



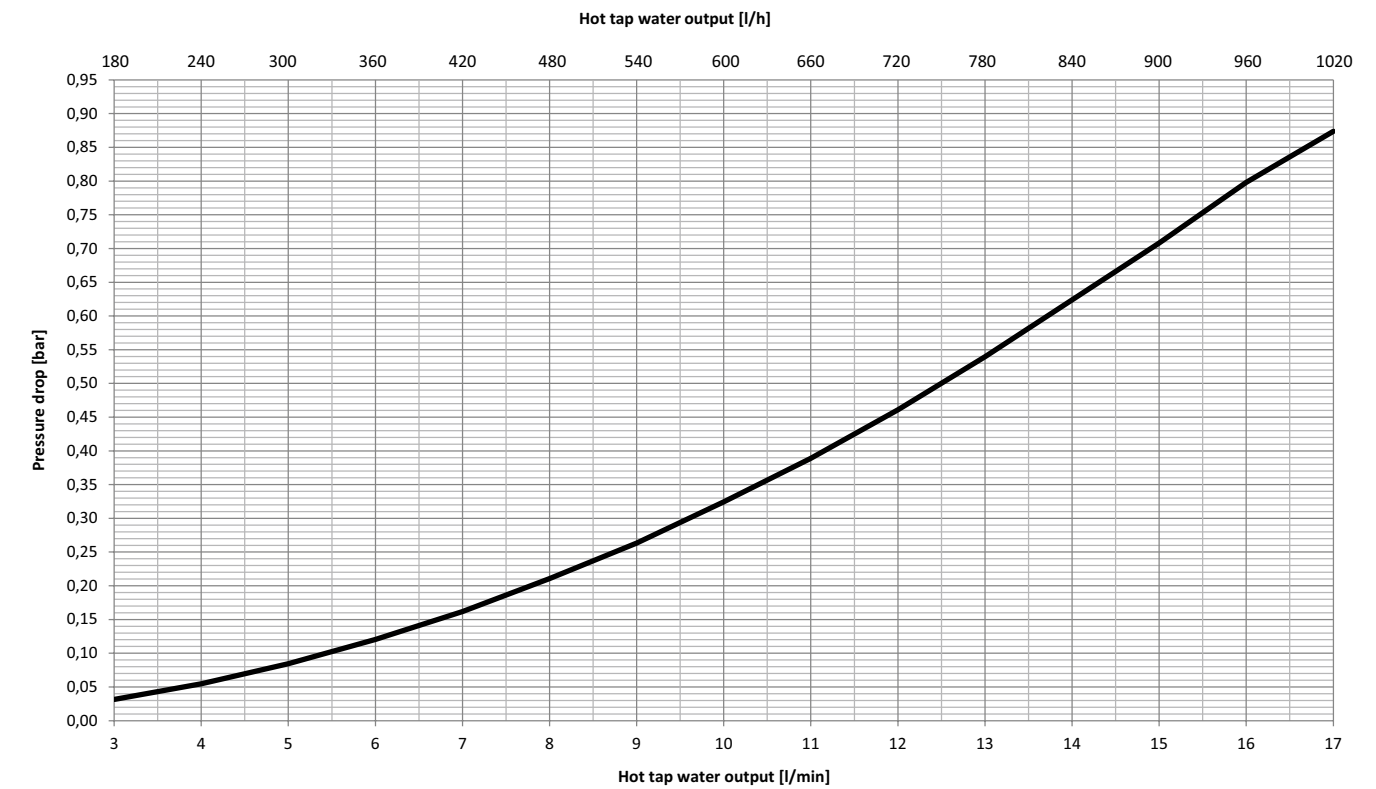
Available differential pressure, pressure drop and temperatures

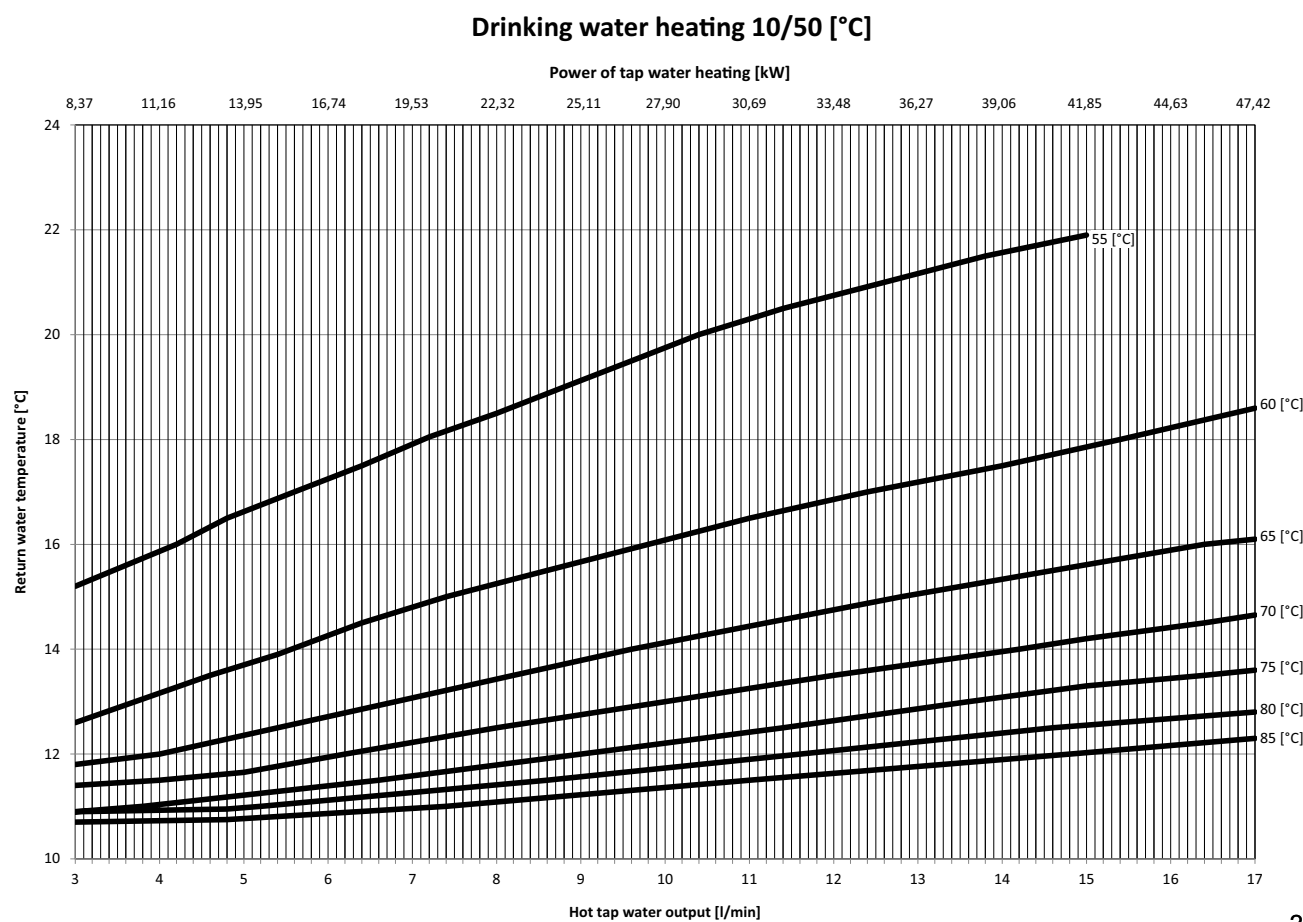
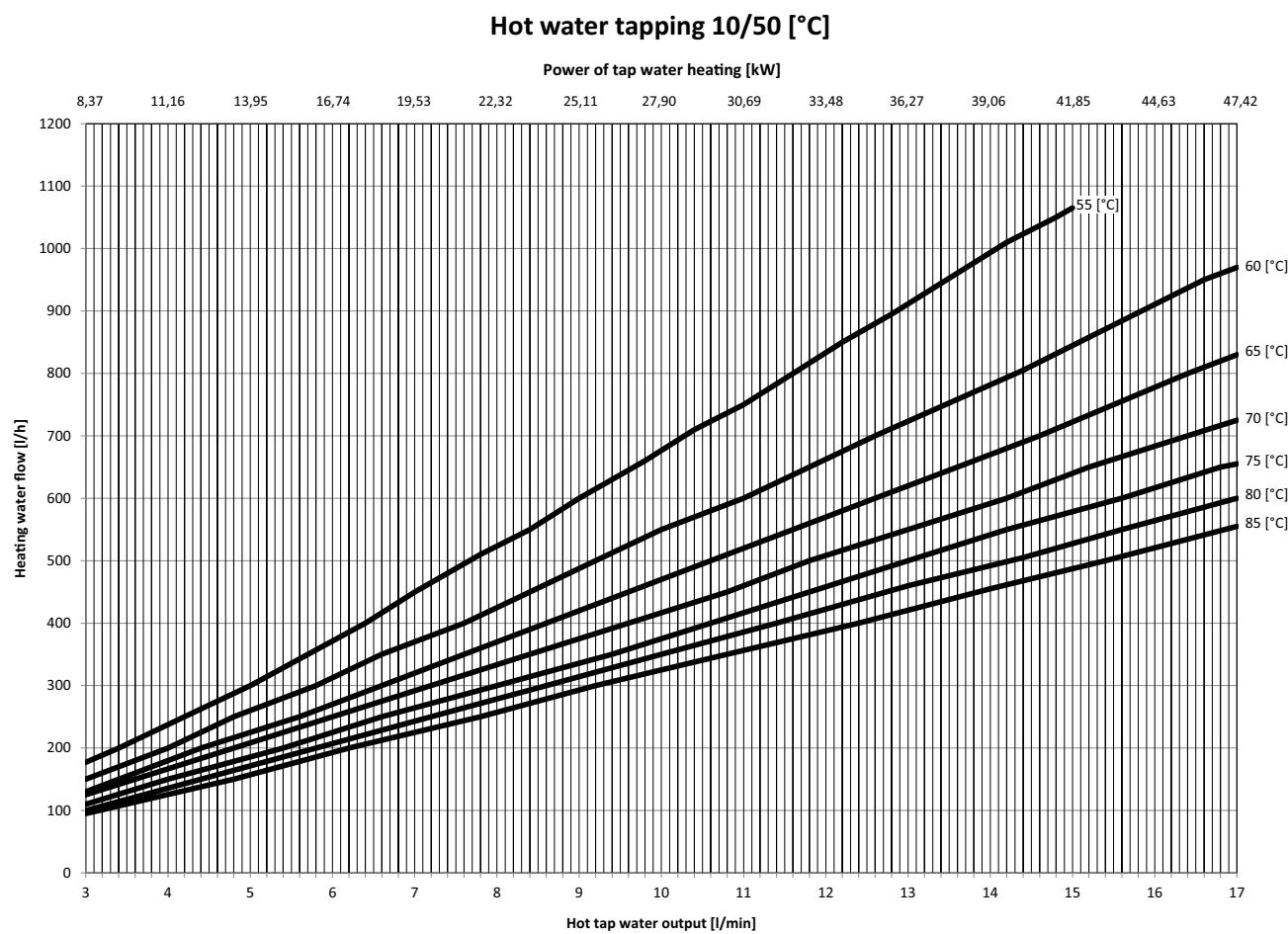
Must be taken into account when sizing the domestic heating circuits.

Pressure drop heating side during draw off



Pressure drop tap water side during draw off



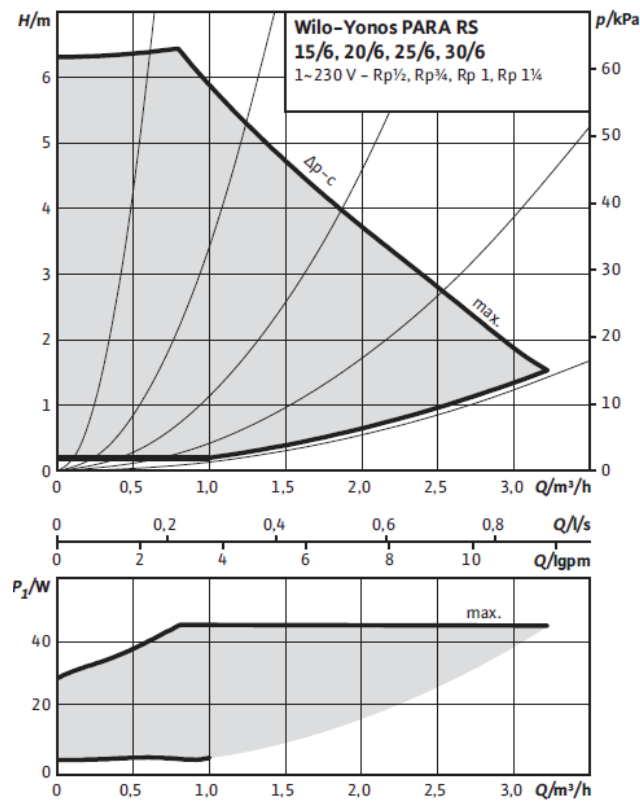


Charts

Available differential pressure for the surface heating with standard pump

Must be taken into account when sizing the surface heating circuits.

Tolerances of each curve according to EN 1151-1:2006



Connection of direct heating circuit

Additional connection for a direct domestic heating circuit

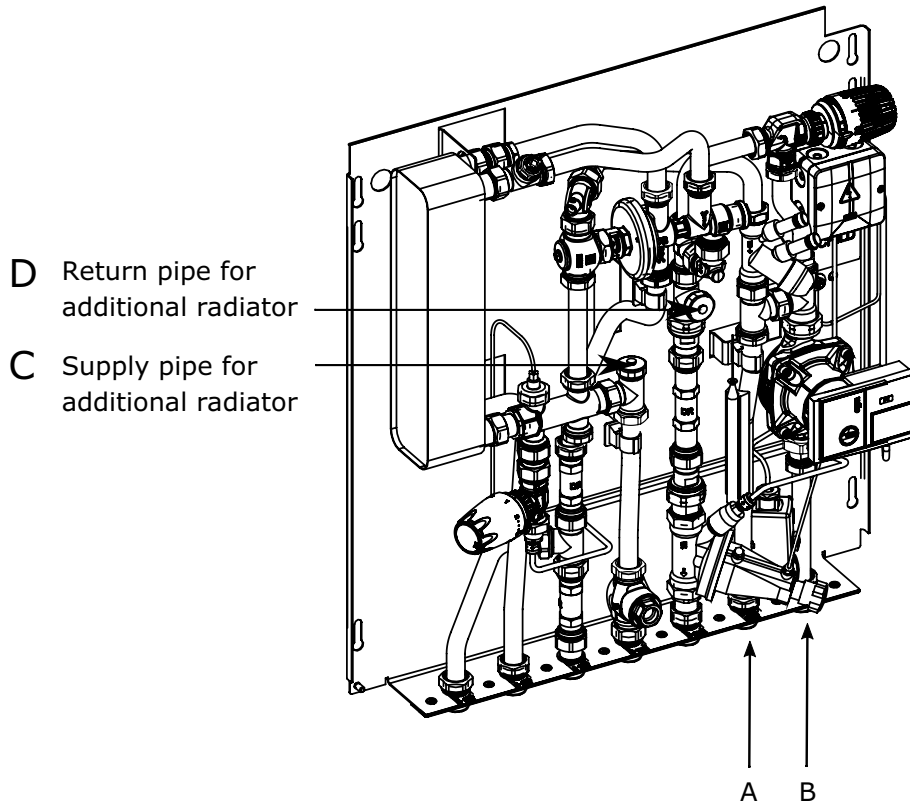
In the TA-COMFORT-S heating interface unit, a direct heating circuit can be used alongside a mixing circuit. The connections to the direct heating circuit are positioned before and after the mixing circuit as seen in the picture.

- A) Heating supply to the surface heating circuit (mixed)
- B) Heating return from the surface heating circuit (mixed)
- C) Heating supply to the direct heating circuit
- D) Heating return from the direct heating circuit

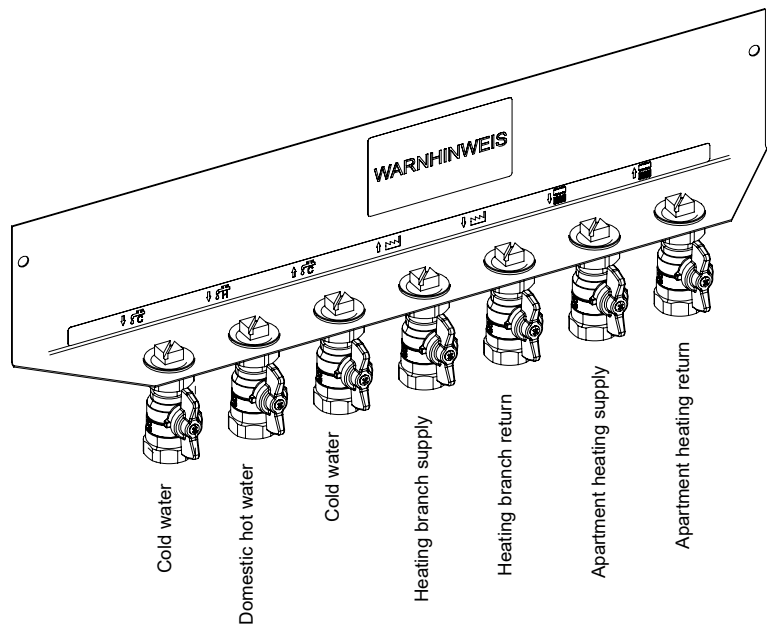
For more information, please contact your nearest IMI Hydronic Engineering office.

Please note that the connection for the direct heating circuit has the same differential pressure as the setting of the STAP. If there is any risk of noise with the connected thermostatic valve please use a TA-COMPACT-DP valve in addition.

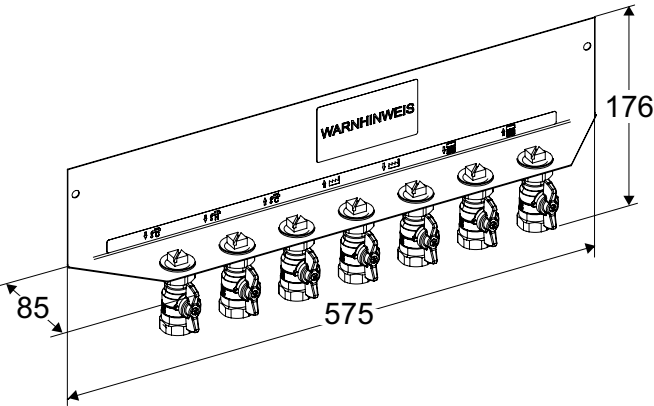
The connection for the domestic heating circuit can also be used in the radiator version (TA-COMFORT-R) when the heating is shut off and a bathroom radiator should be in operation independent from the main heating system.



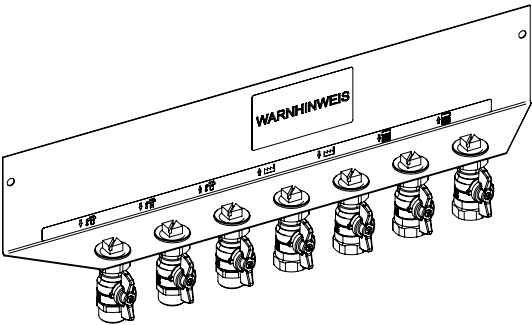
Mounting rail TA-COMFORT-R / -S



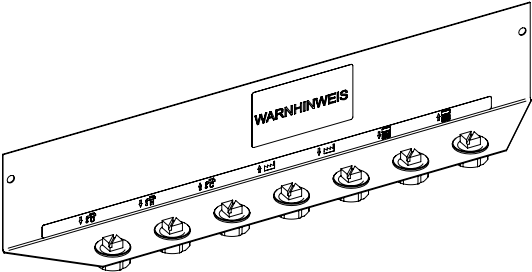
Dimensions of mounting rail



7 x Rp3/4



3 x G3/4 + 4 x Rp3/4



7 x plugs



We reserve the right to introduce technical alterations without prior notice.