

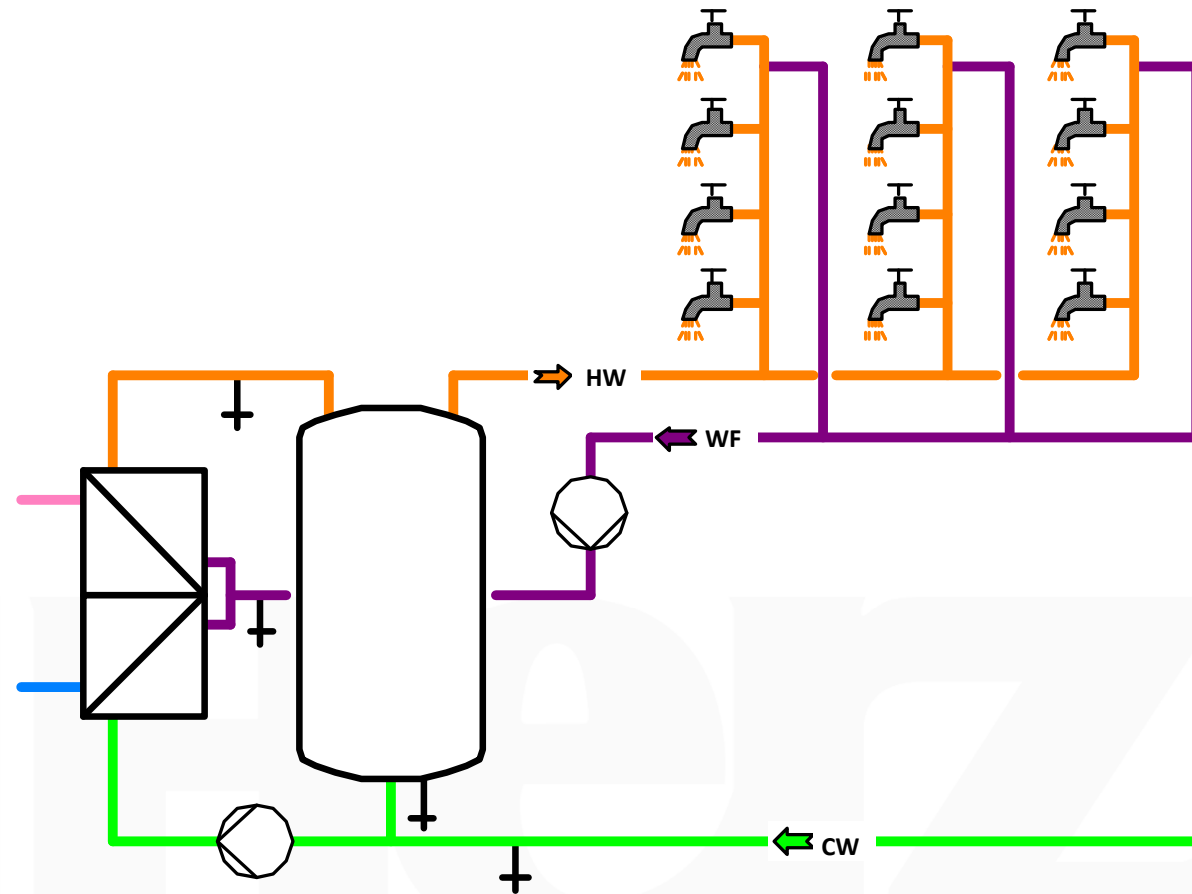


HIU hydraulic interface units and hot potable water heater

HERZ HIU

- The heating system in appartements is divided into central und distributed
- The central system is usually installed in multi-storey residential buildings
- Distributed system is installed in retrofit buildings and terraced houses

Hot water circulation system with lower distribution



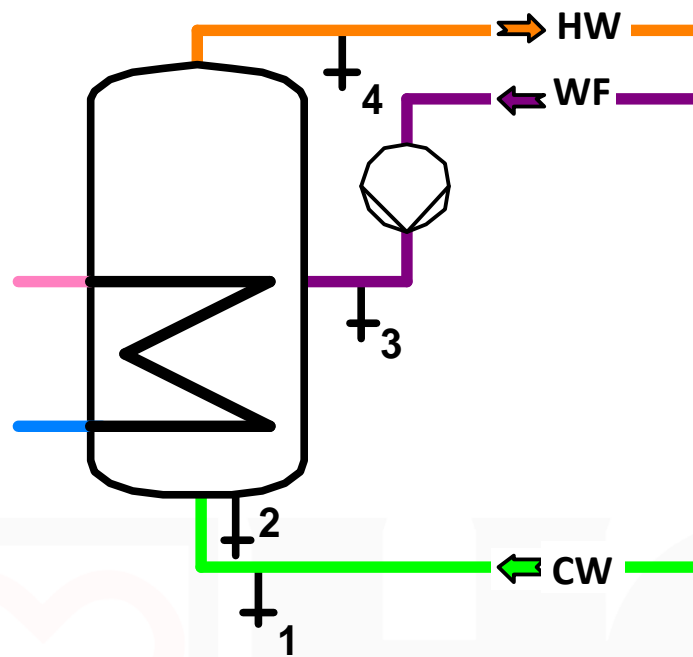
HW – hot water
WF – water flow
CW- cold water

Central water heating

Requirements:

- Big storage of hot water,
- Charging circuit and pre-control,
- Free space in the basement,
- Separate supply lines in a building, e.g. at a plant,
- Circulation pipes,
- Monitoring of cleaning and disinfection,
- Regular check-ups.

Central water storage heater (Boiler)



HW – hot water
WF – water flow
CW- cold water

Advantages:

Low intestments

Disadvantages:

Large space requirements

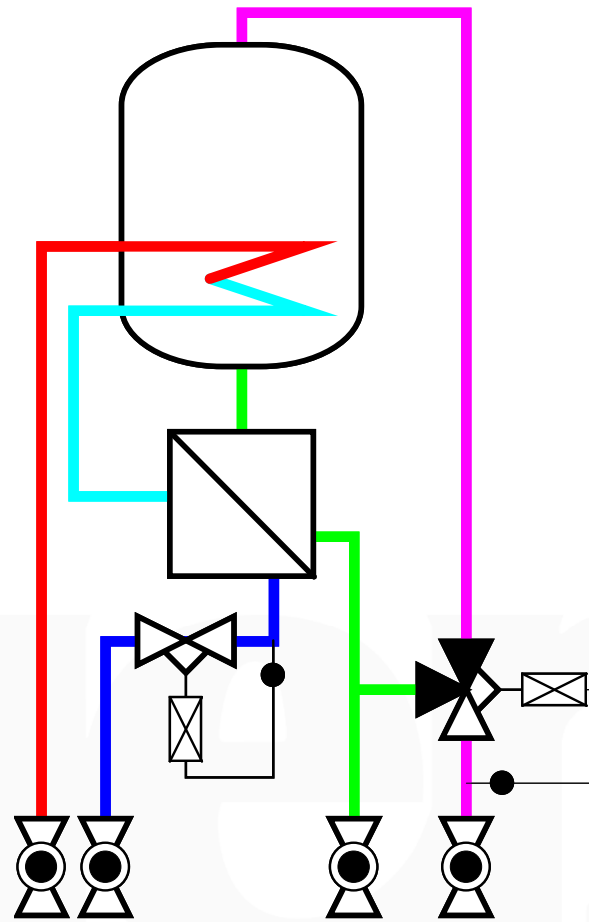
Large storage requirements

Problems with legionella

Sampling

1. Cold water inlet
2. Water tank draining
3. Circulation flow in the continuous flow heater
4. Hot water pipes are connected to a storage heater

Drinking water heater for distributed water heating



HERZ water heaters

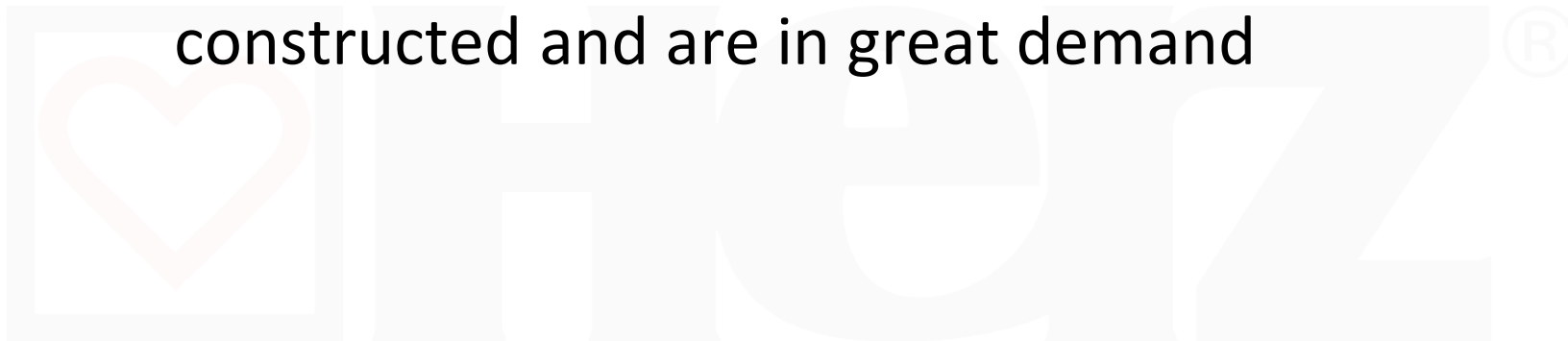
- Distributed hot water requires:
 - Apartments with central heating connection
 - Place in a kitchen or a bathroom
 - “always available unless the hot water tank is empty “

General

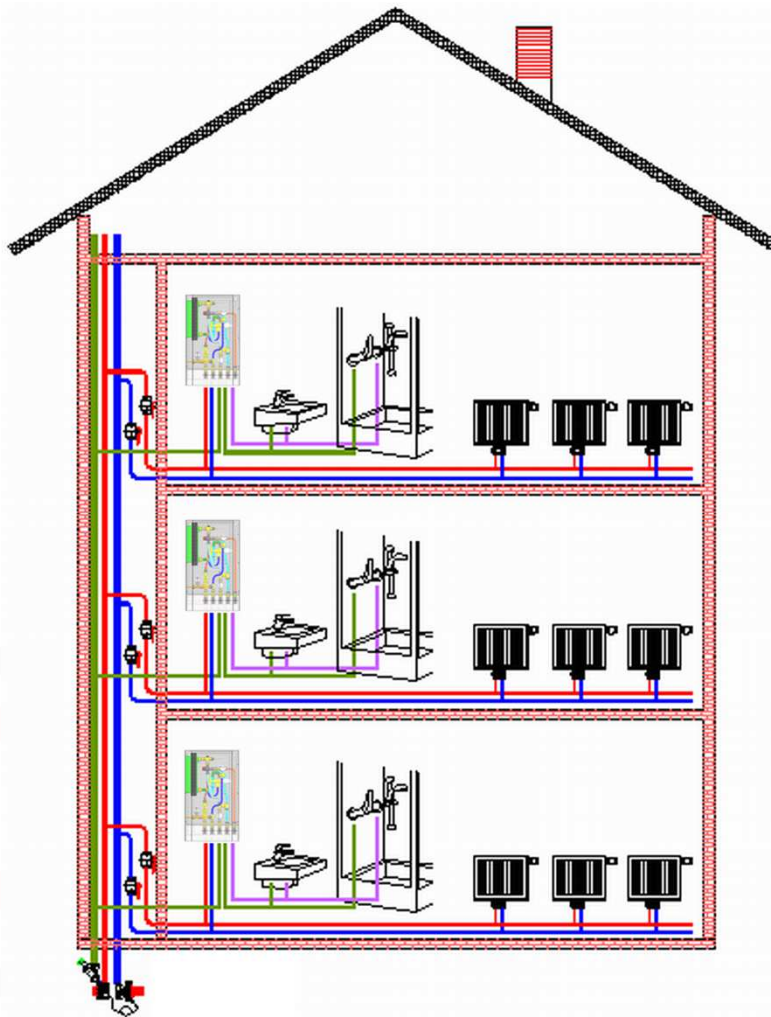
- permanently installed equipment for hot water
- works only when hot water is needed
- ensures constant temperature and volume of hot water, even at varying water consumption or several tapping intervals

HERZ portable water heaters

- are only for standard apartments without luxury items
- the hot water capacity is sufficient for a typical single-family household (2 adults, 2 children) living in a multi-storey building
- are efficient to purchase and install, economical in operation, easy and quick to assembly, simply constructed and are in great demand



Network Connection



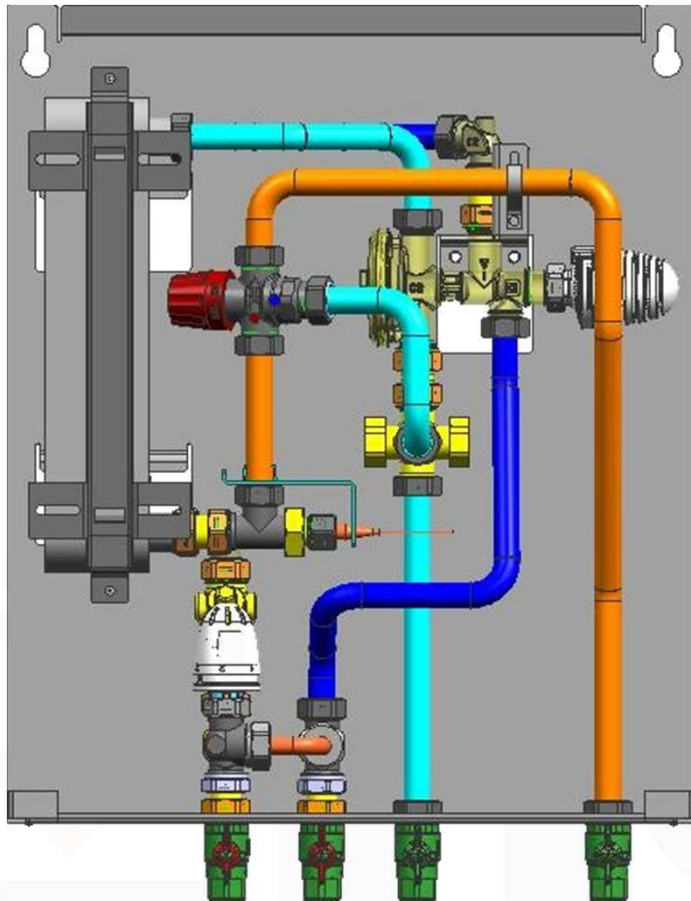
- HERZ portable water heaters are parallelly connected to the hot water system loop.
- If possible, a heater should be connected before the first user (Radiator).

HIU's

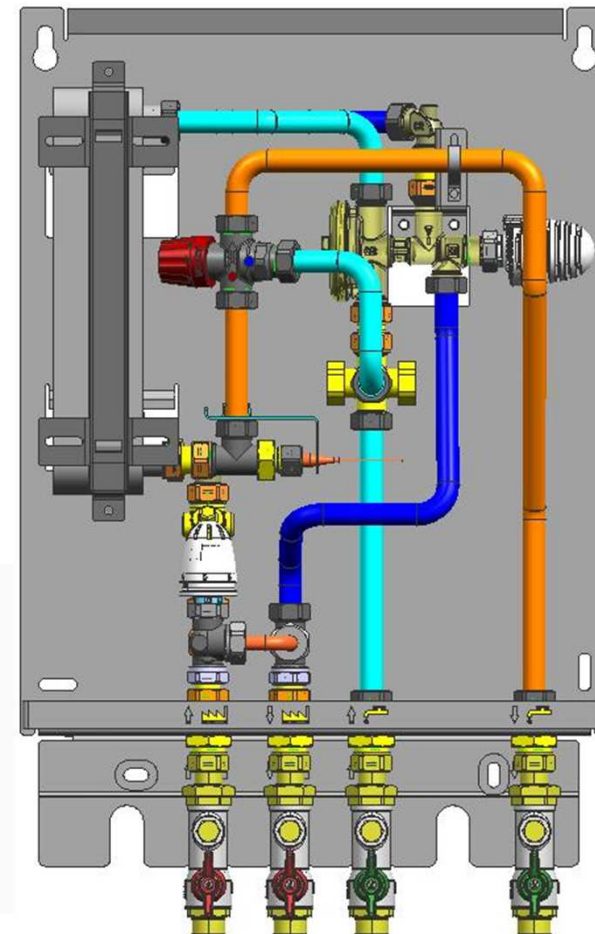
- PROJEKT
- STANDARD
- DELUXE

HIU's models

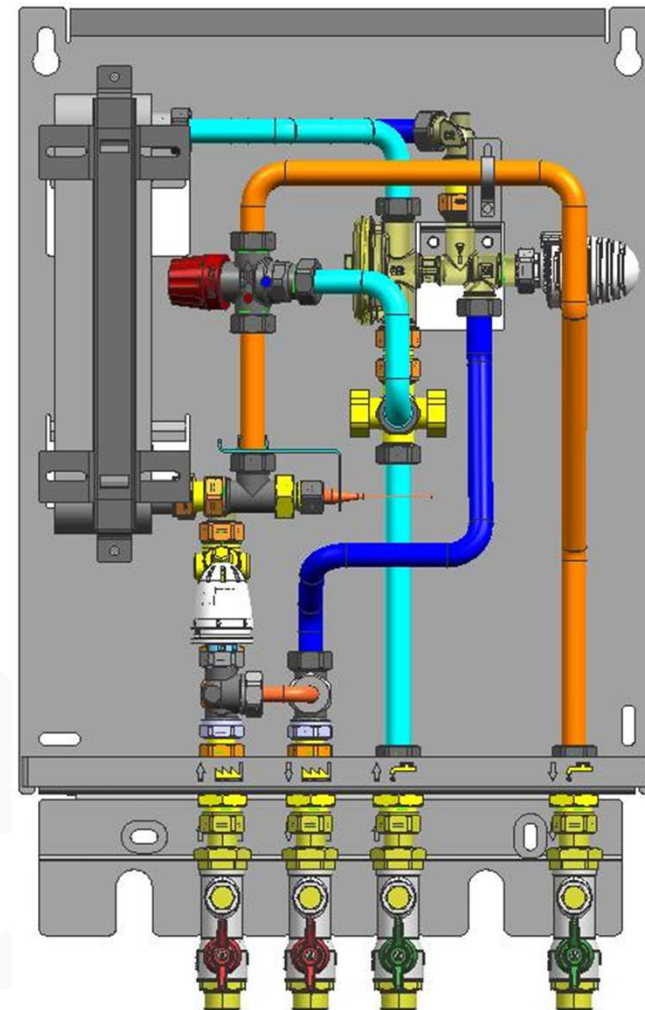
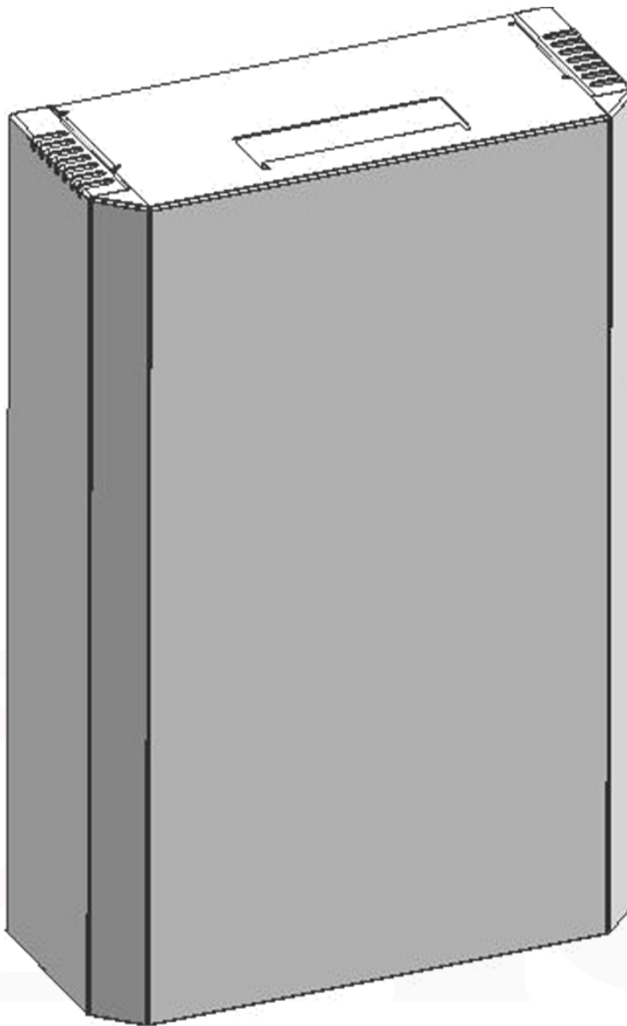
Modell: STANDARD, without pre-mounting strip



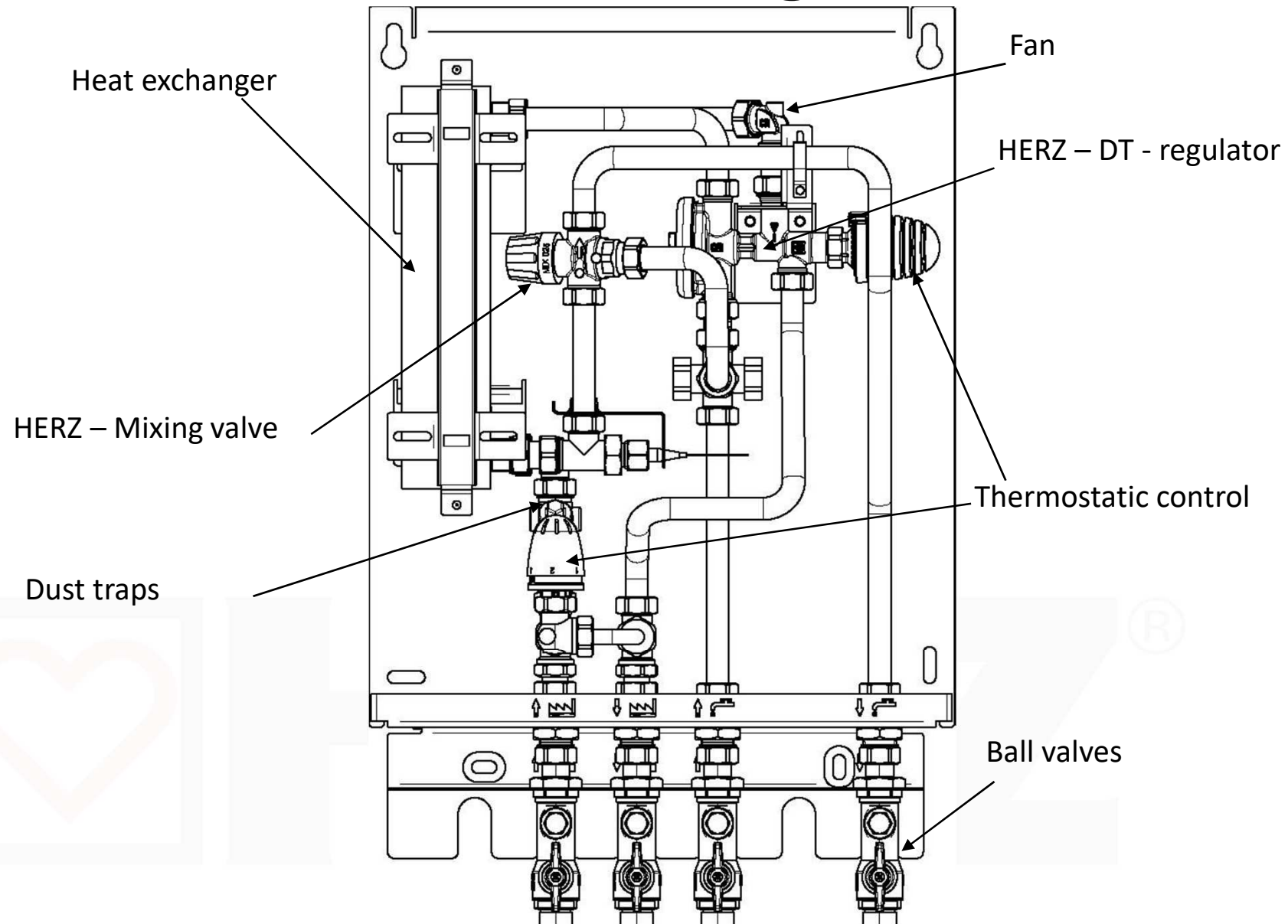
Modell: DELUXE, with pre-mounting strip



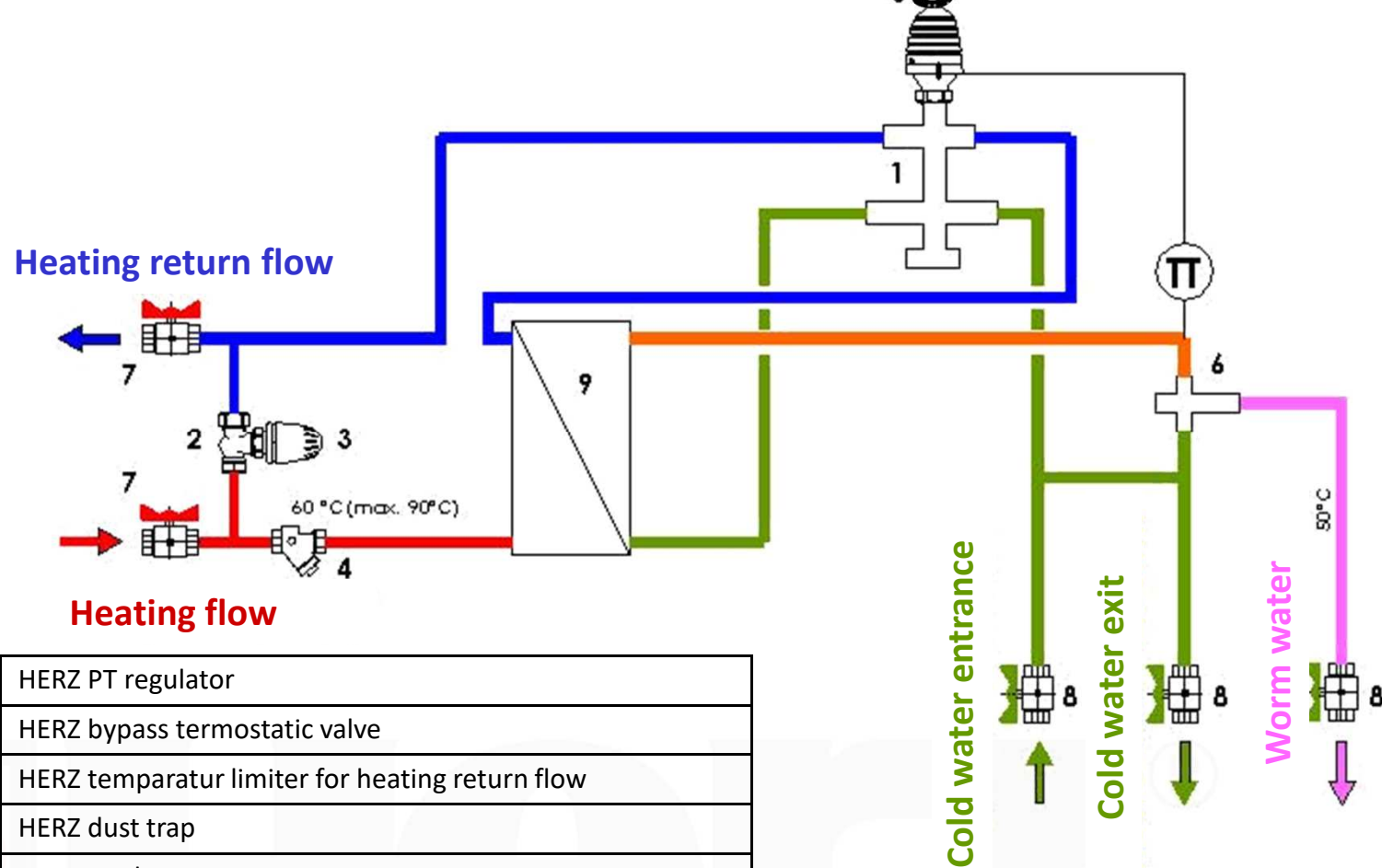
Surface mount variant



HIU Design



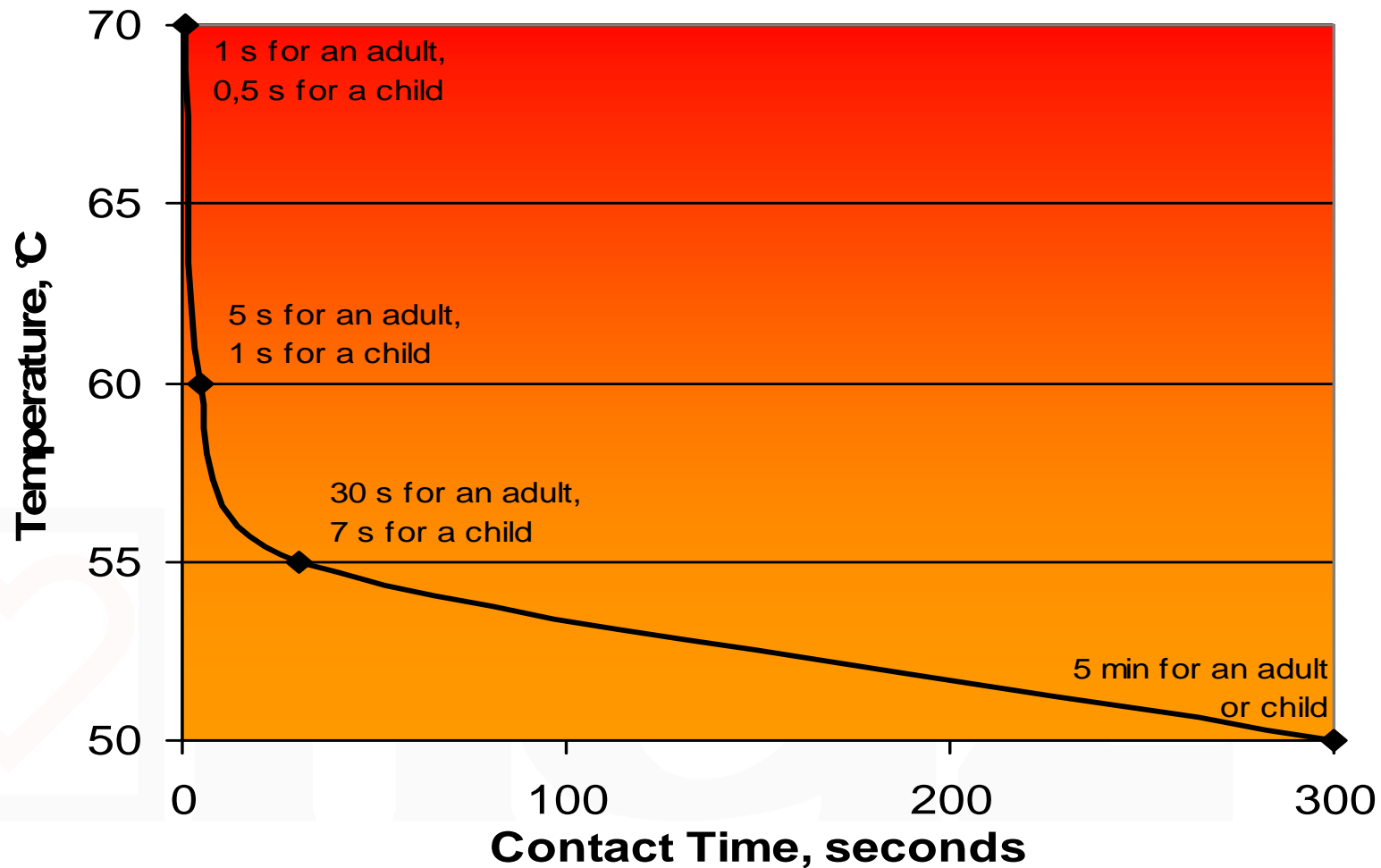
HIU's Functioning



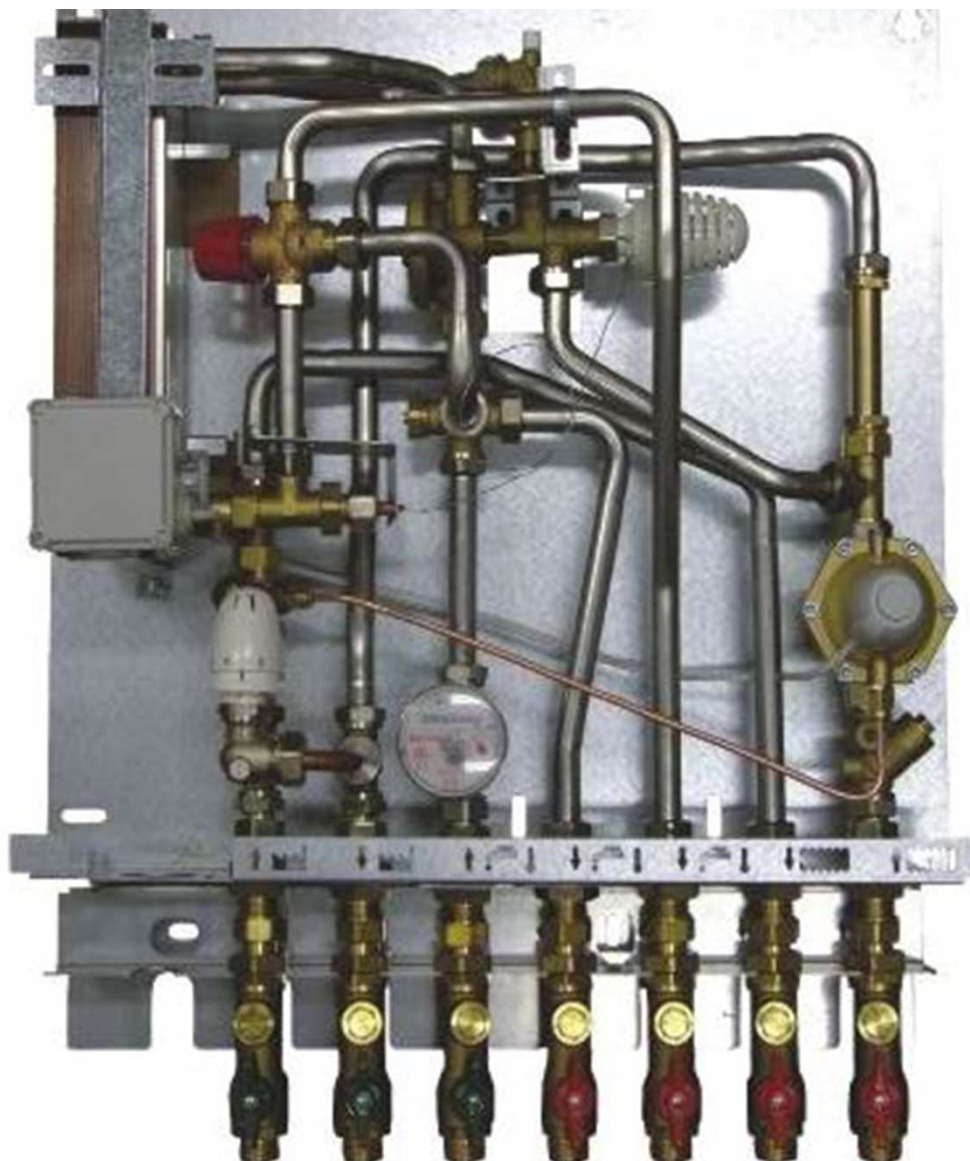
1	1 4008 01	HERZ PT regulator
2	1 7758 91	HERZ bypass thermostatic valve
3	1 9201 00	HERZ temperatur limiter for heating return flow
4	1 4111 51	HERZ dust trap
5	1 9421 26	HERZ PT thermostat
6	2 7766 52	HERZ mixing valve for drinking water
7	1 2100 12	HERZ PT ball valve
8	2 2100 02	HERZ PT ball valve for drinking water
9		Heat exchanger

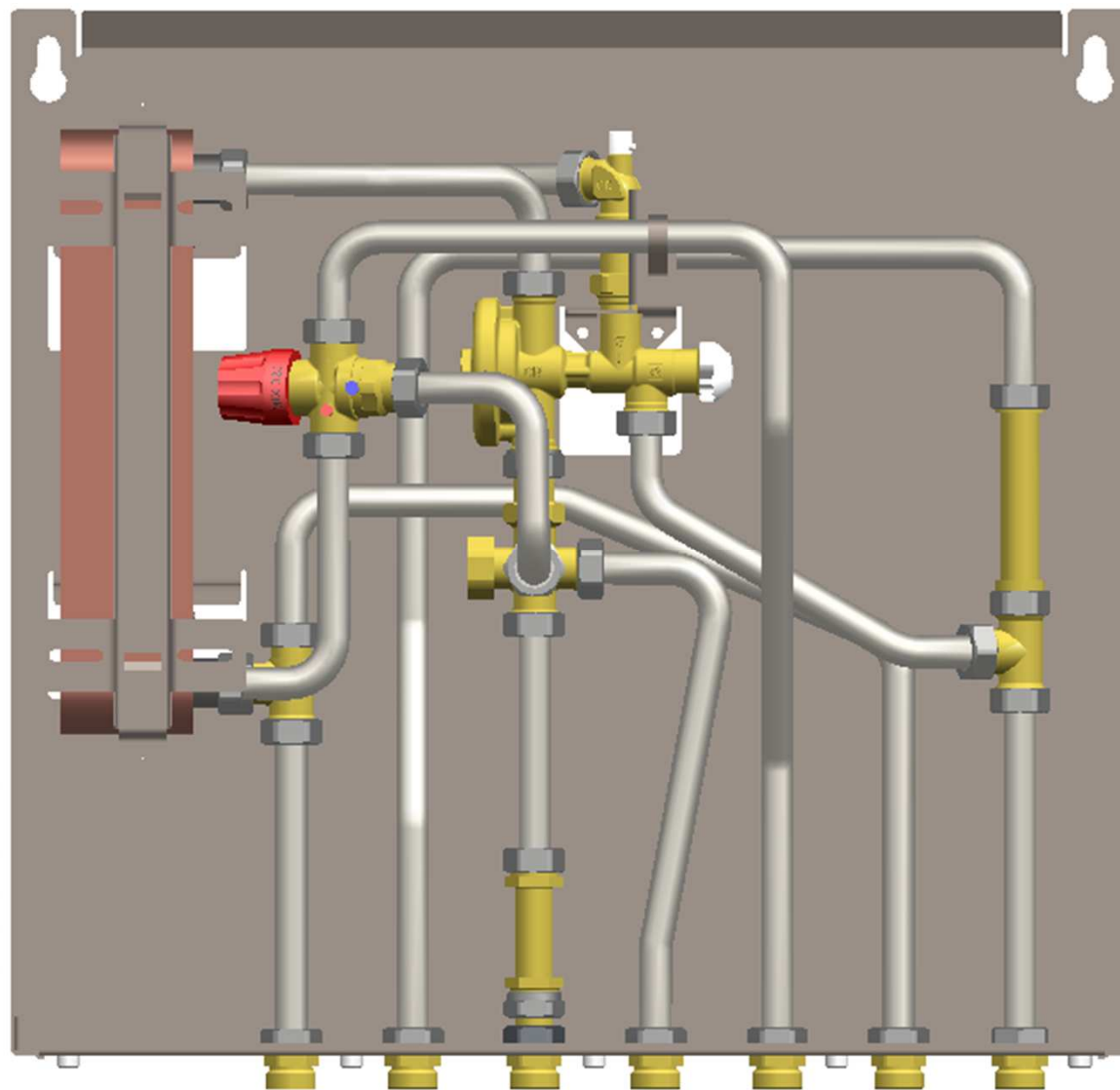
Why safety valve ?

Third Degree Burns: Contact Time with Hot Water

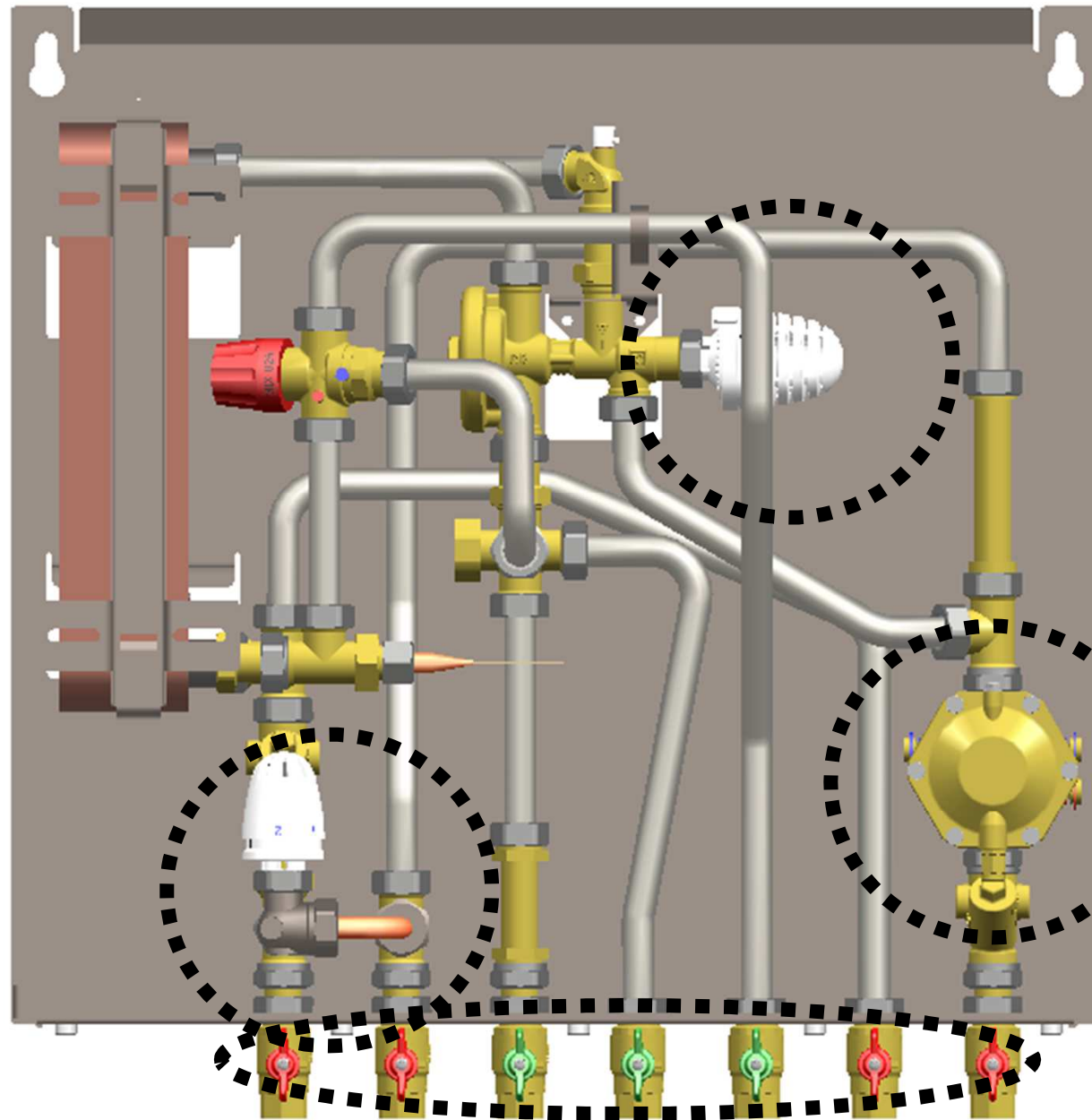


HIU

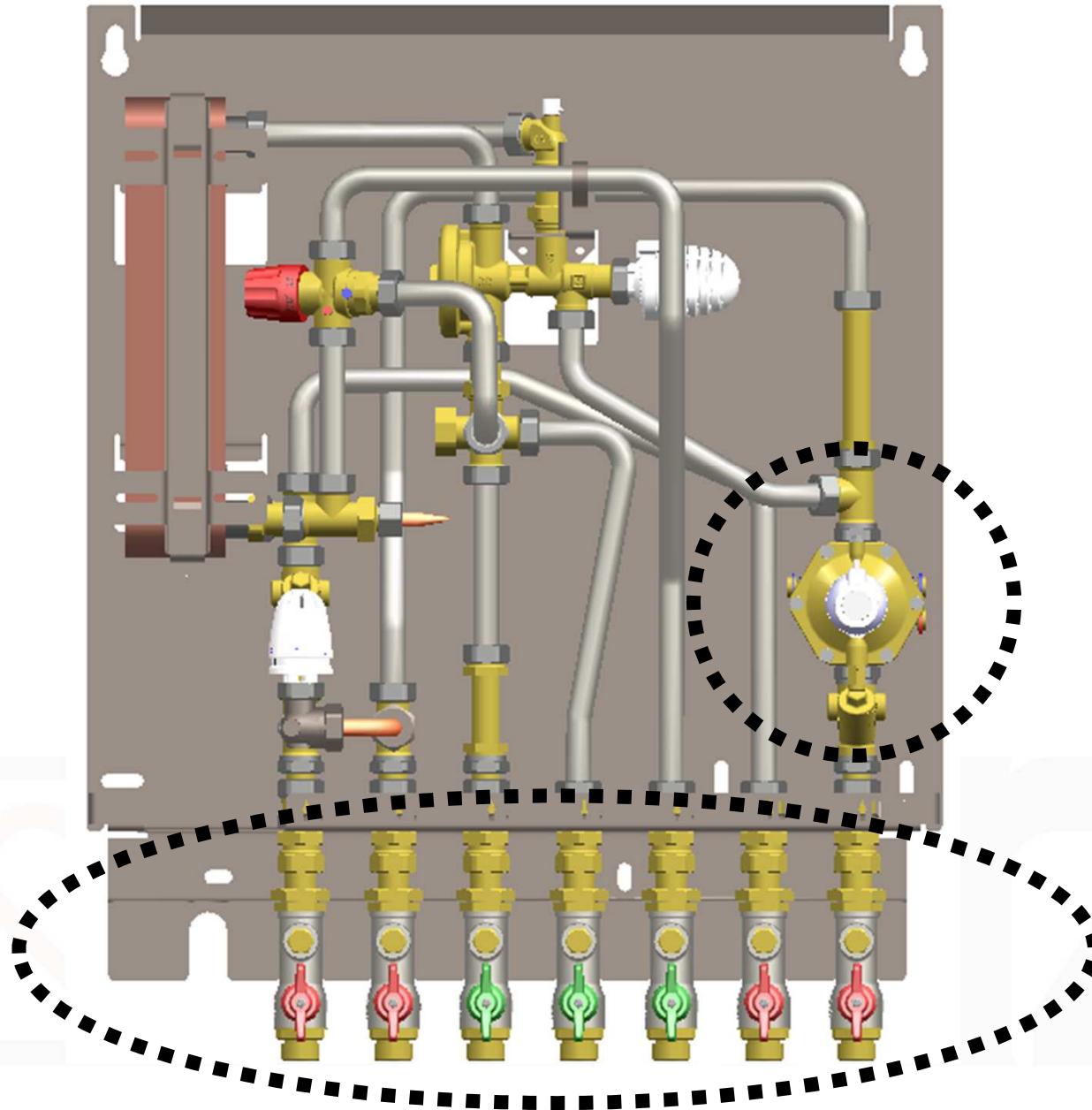




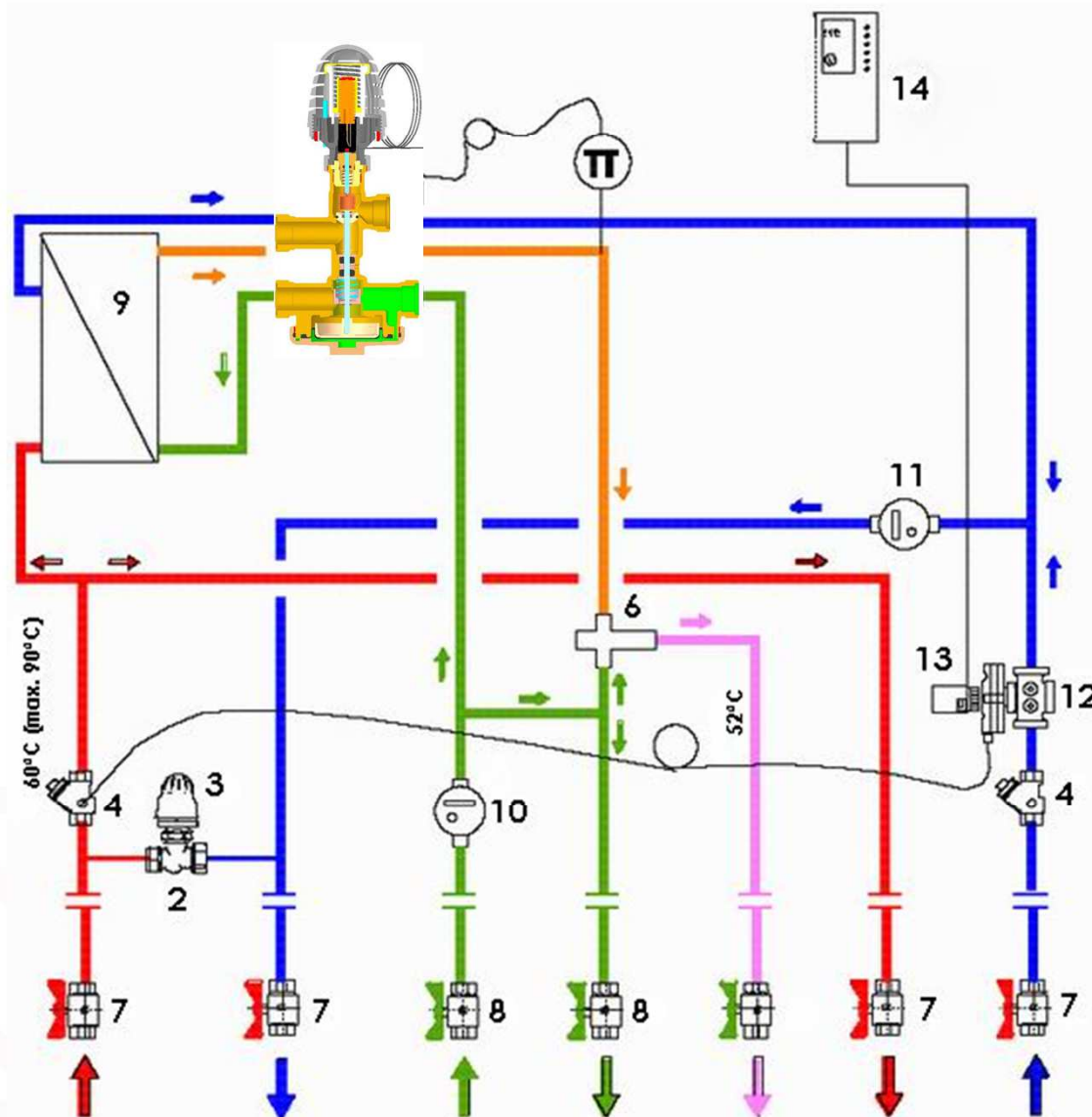
PROJEKT



STANDARD

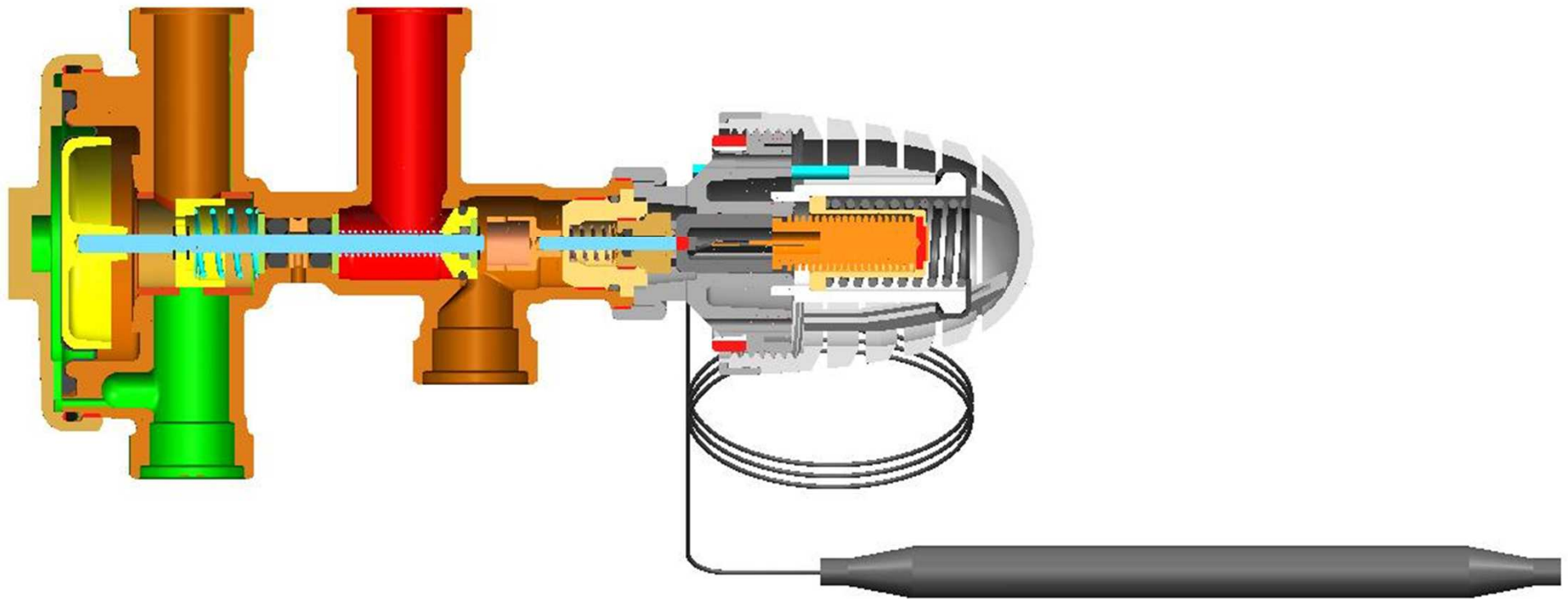


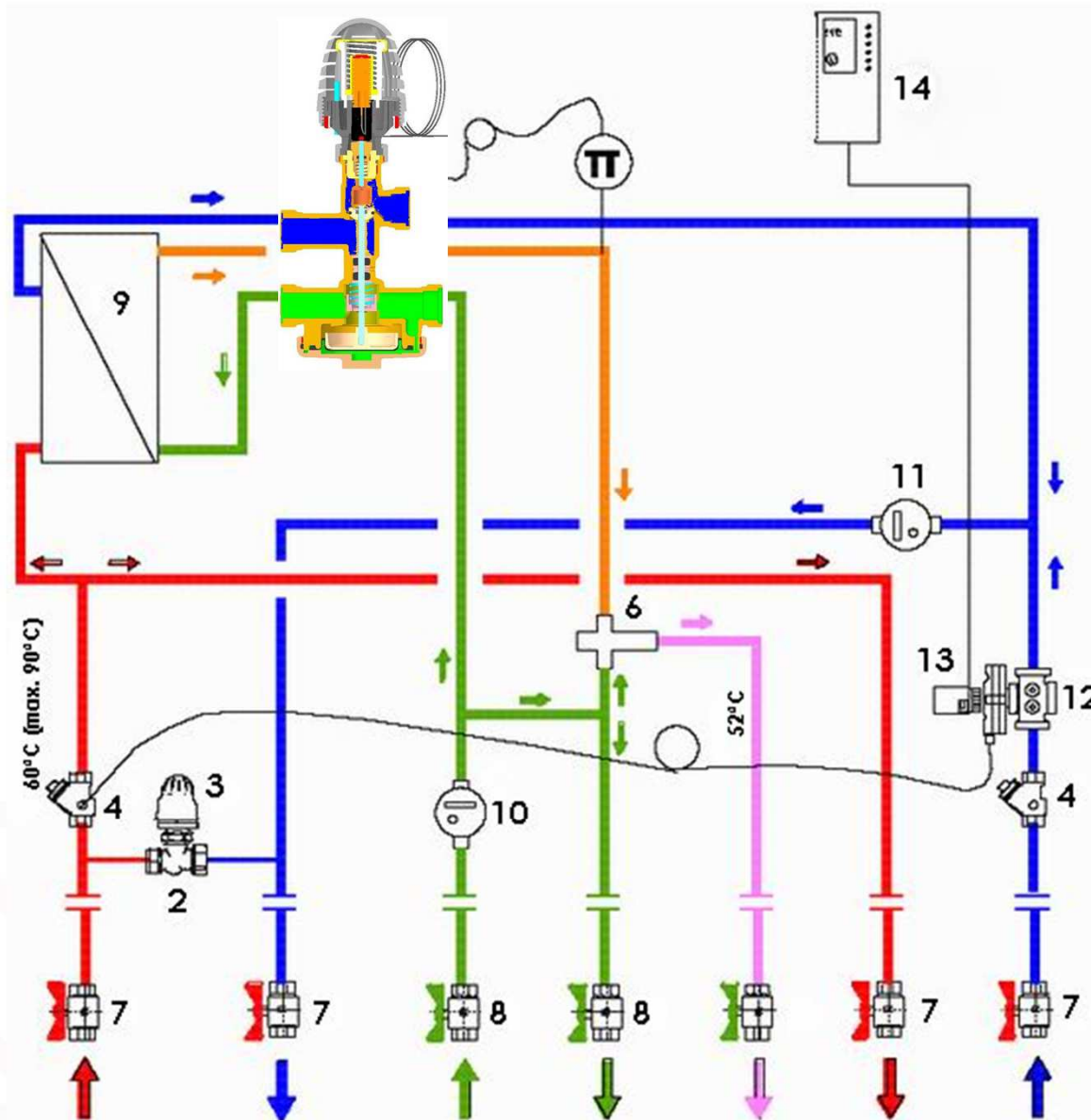
DELUXE



Ready to use
Heating system in
operation

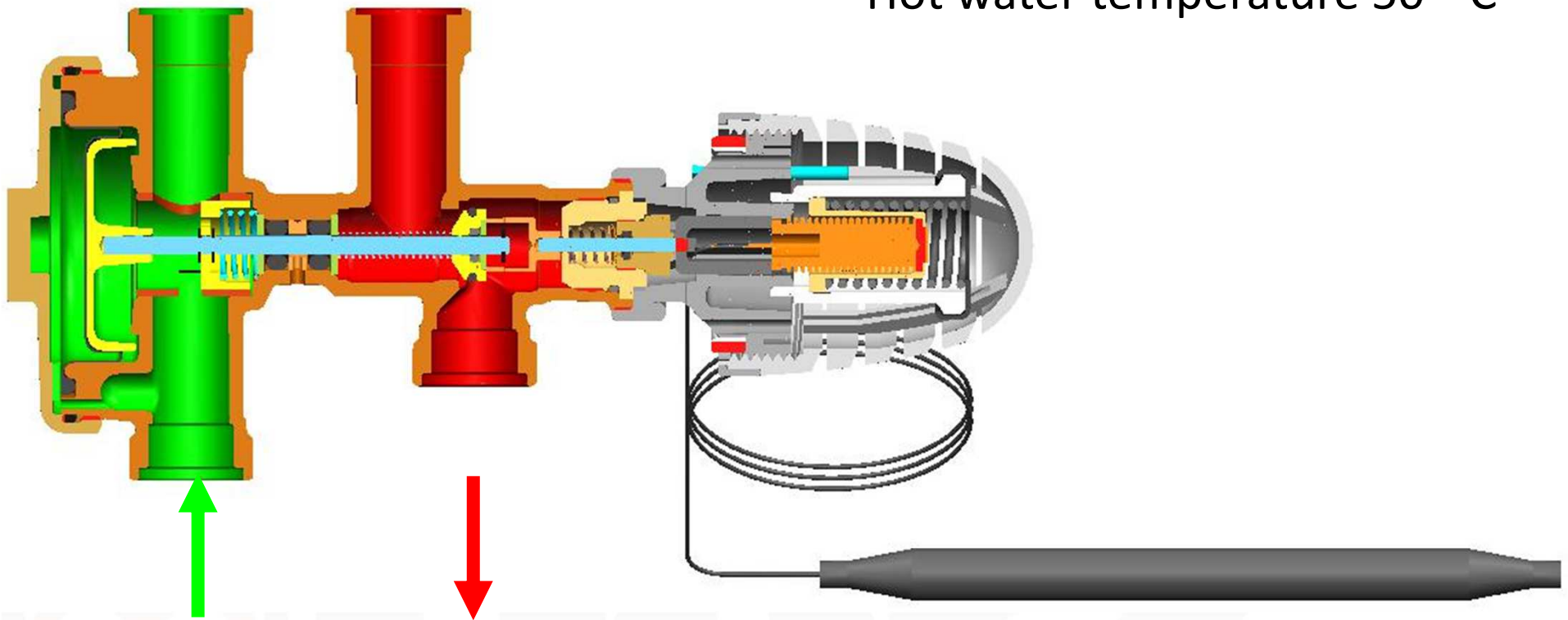
Control of the readiness to use,
no hot water consumption
< 50° C

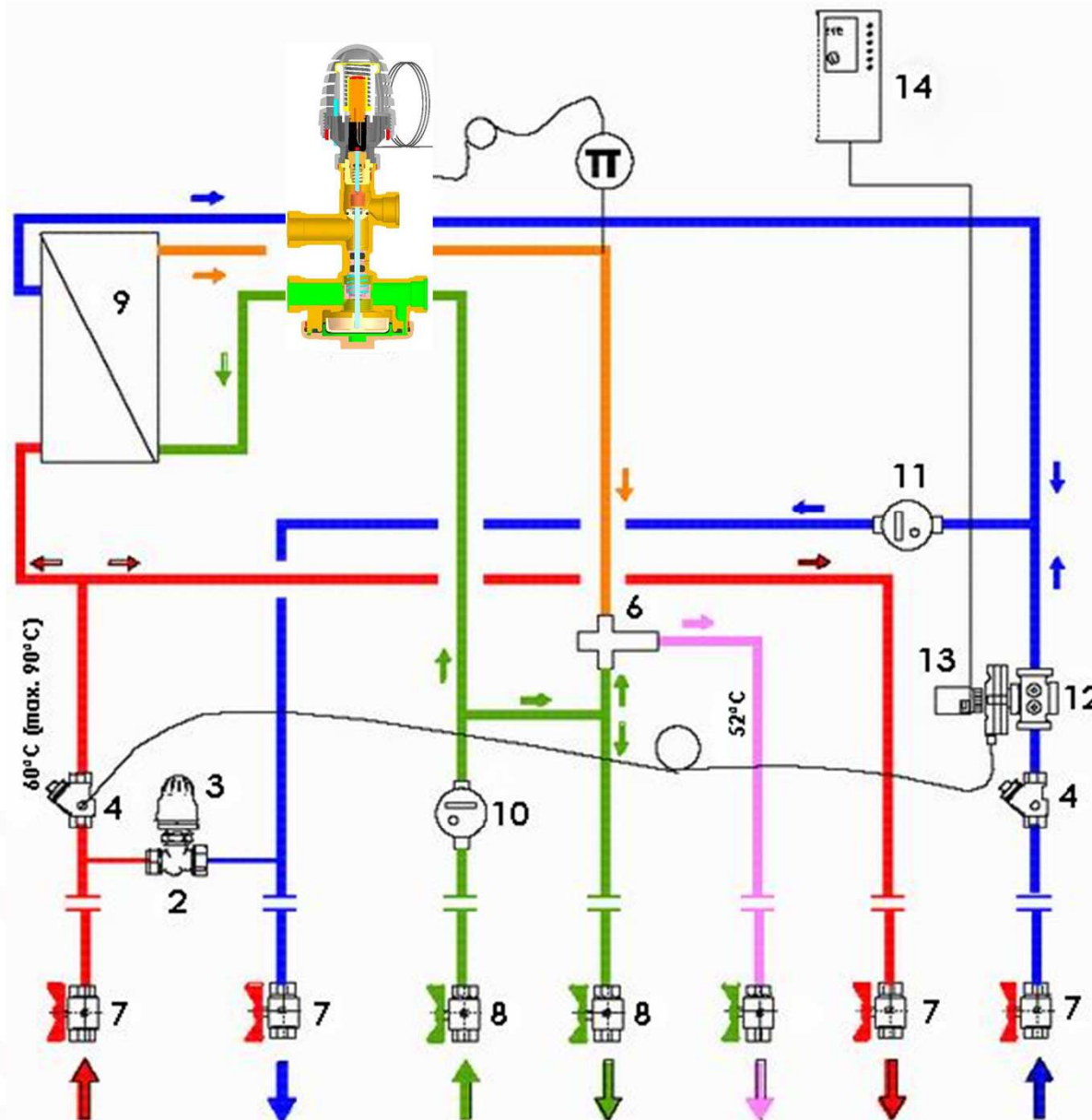




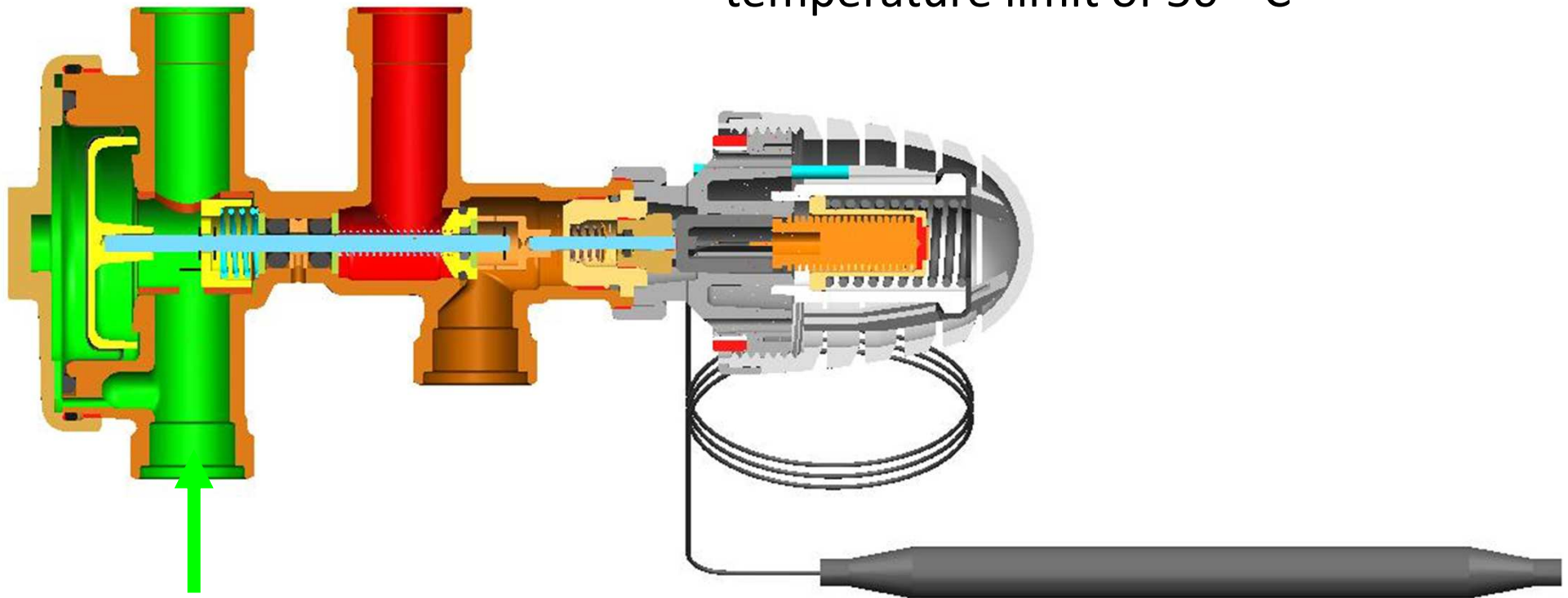
HW Tapping
starts, $t < 50^{\circ}\text{C}$

Normal operation
Cold water flow
Hot water temperature 50 ° C

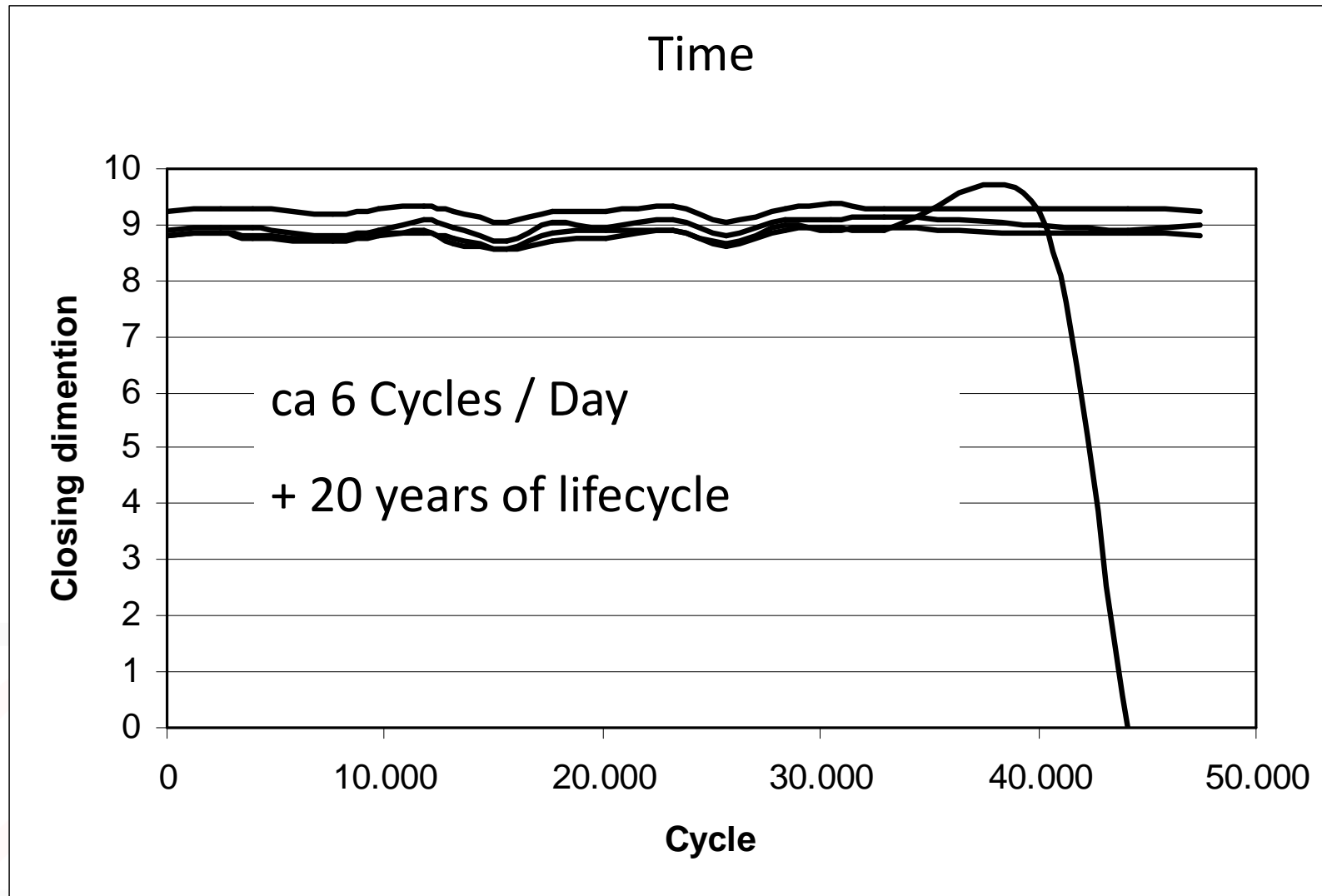




Normal operation, cold water flow control
Heating the water until the temperature limit of 50 ° C



HERZ proportional temperature control, Sensor Lifetime



Heat exchanger

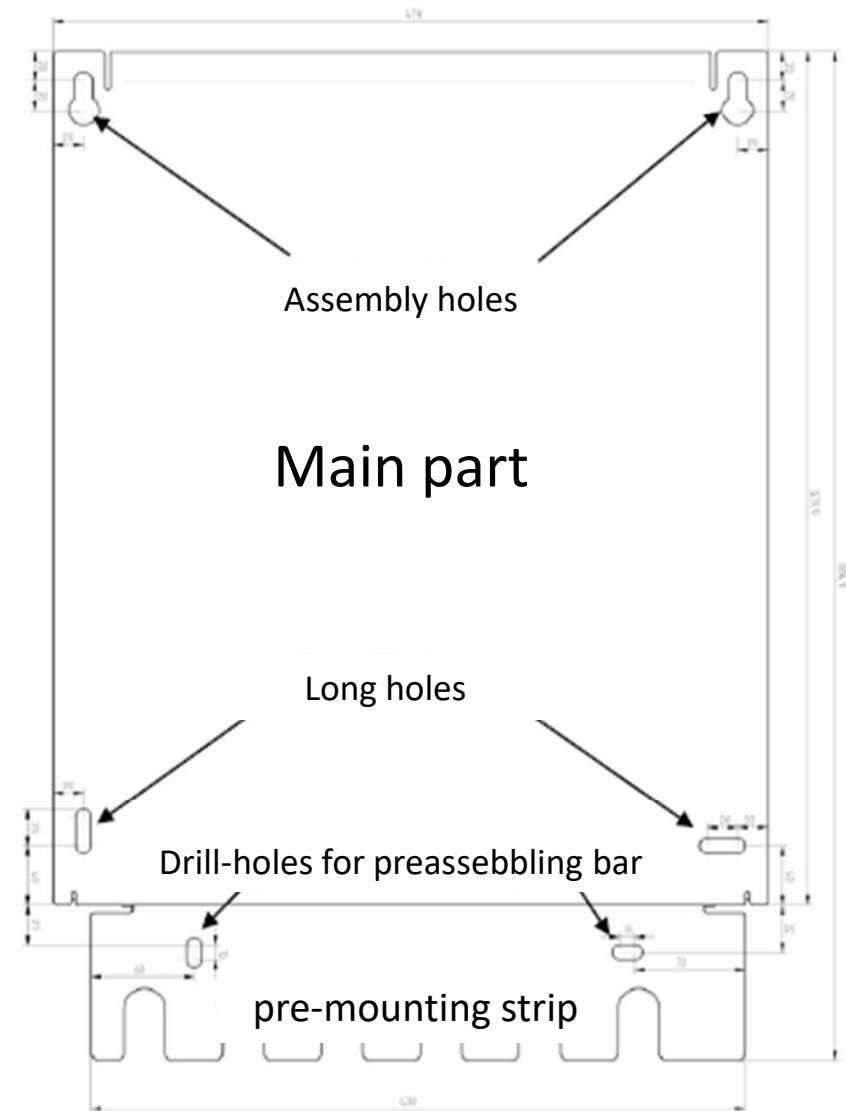
Parameter	Recommended limits for the quality of the tap water on the secondary sites
Temperatur	Depending on the composition of the water, but below 60°C, in order to avoid the risks of stress-corrosion cracking of stainless steel and pitting corrosion of copper because of hot water
pH-value	7-9
Alkalinity	60 mg/L < [HCO ₃ ⁻] < 300 mg/L
Conductivity	< 500 µS/cm
Hardness	[Ca ²⁺ , Mg ²⁺]/[HCO ₃ ⁻] > 0,5
Chlorine	1.000mg/L bei 25°C 300 mg/L bei 50°C 100 mg/L bei 80°C 0 mg/L bei T>100°C
Sulfate	[So ₄ ²⁻] < 100 mg/L und [HOC ₃ ⁻]/[So ₄ ²⁻] > 1
Nitrate	[NO ₃ ⁻] < 100 mg/L
Free chlorine	< 0,5 mg/L

Assembly concept

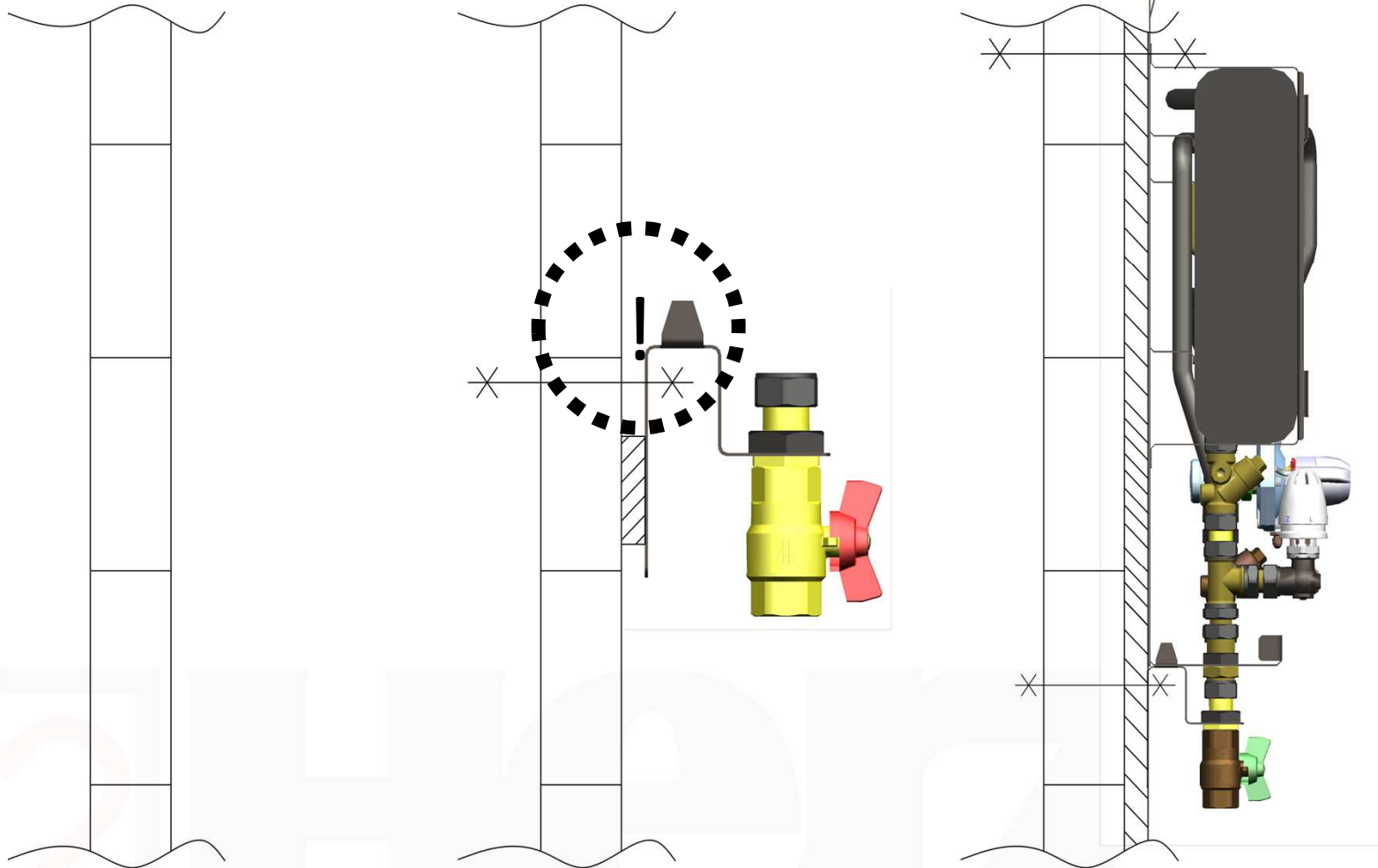
- Surface mounting
- Flush-mounting in a box
- Direct mounting
- Mounting by using pre-mounting strip

Assembling

- First mount an appropriate pre-mounting strip
- Main part is mounted through plug-in system by attaching to the pre-mounting strip
- Advantages: main part can be retrofitted
- Flush-mounting box
- Advantages: small, unnotisable

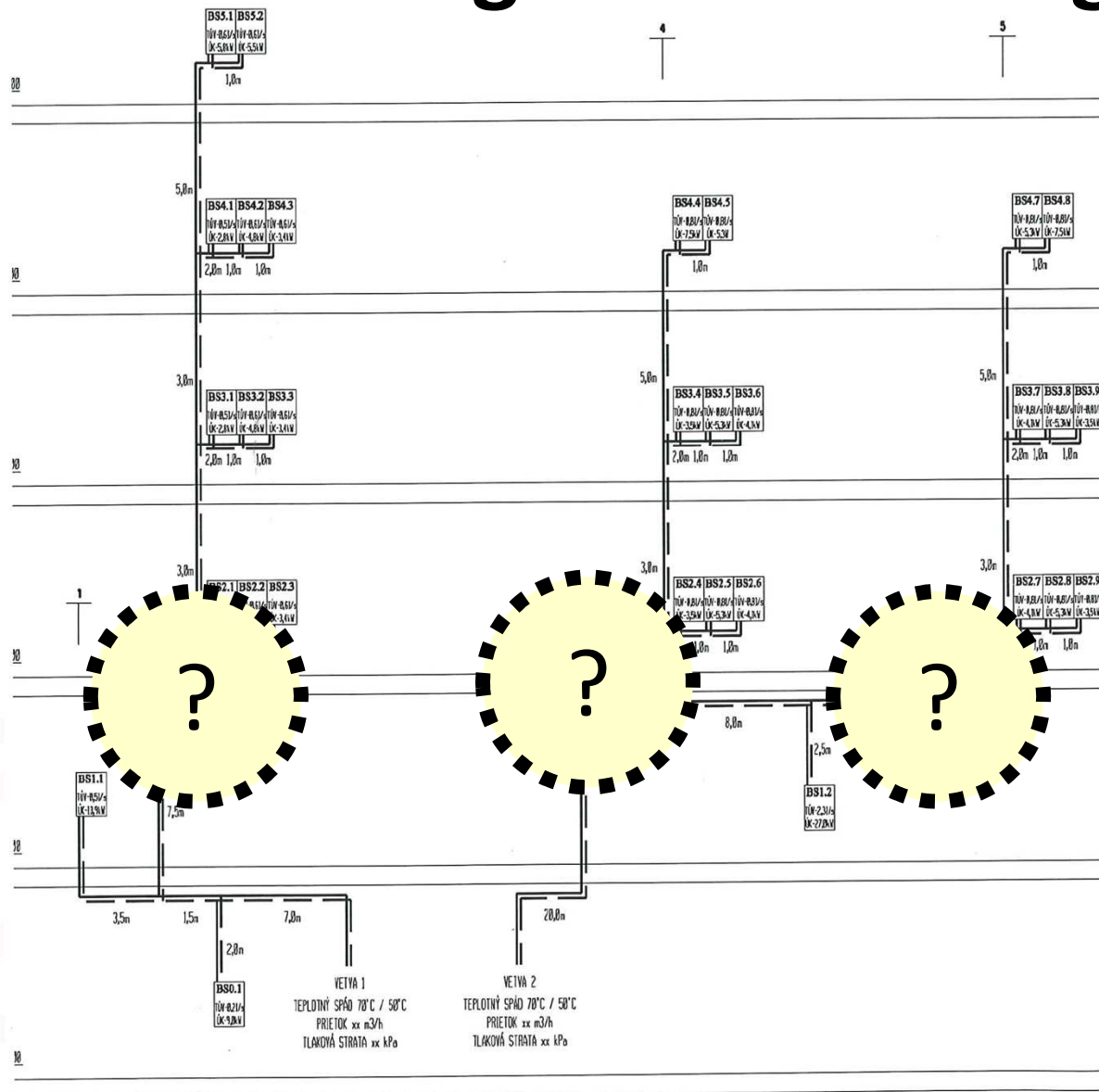


Assembly sequence



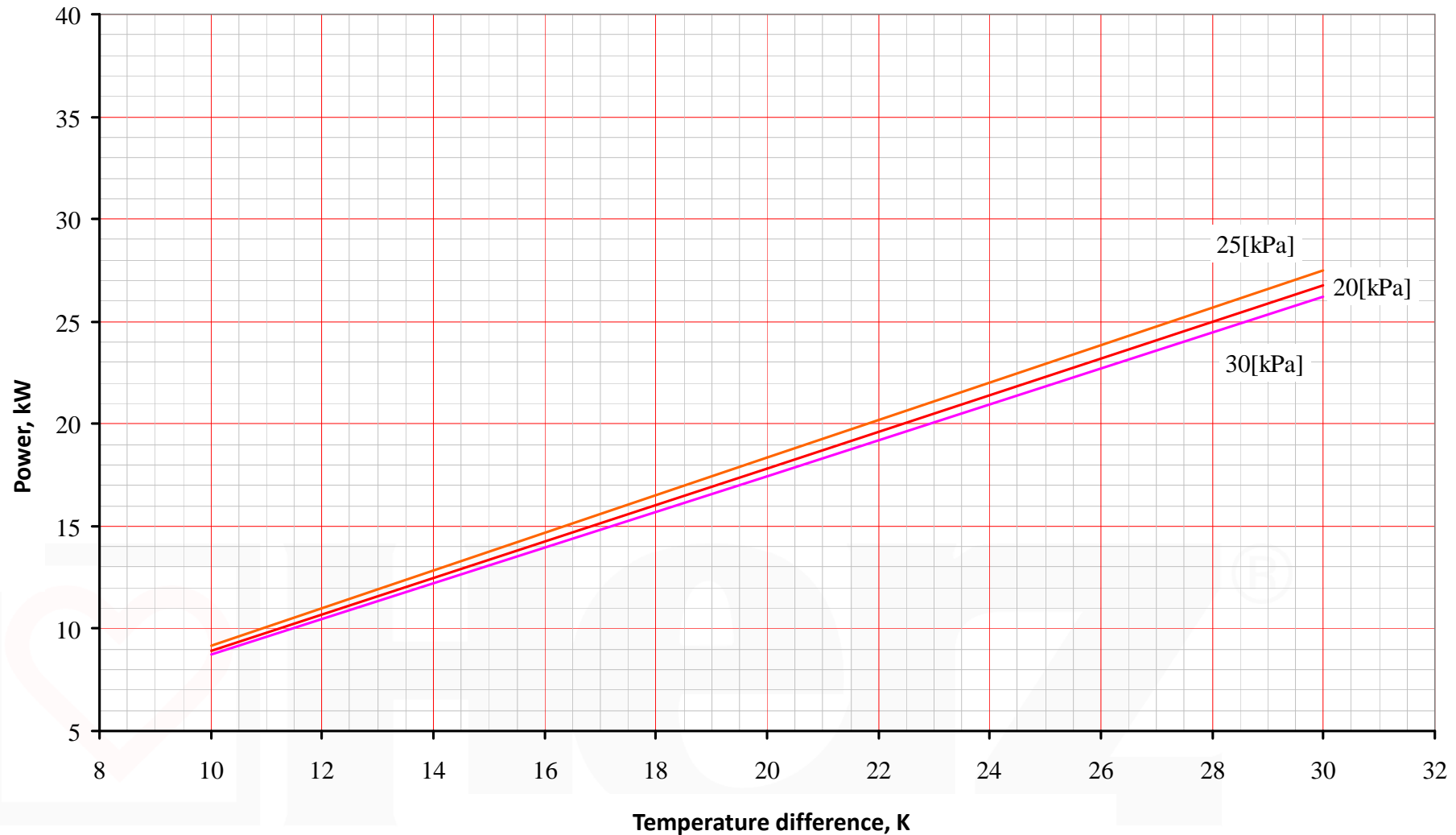
with HERZ mounting bracket there are no connecting hoses are required

Dimensioning of the heating system

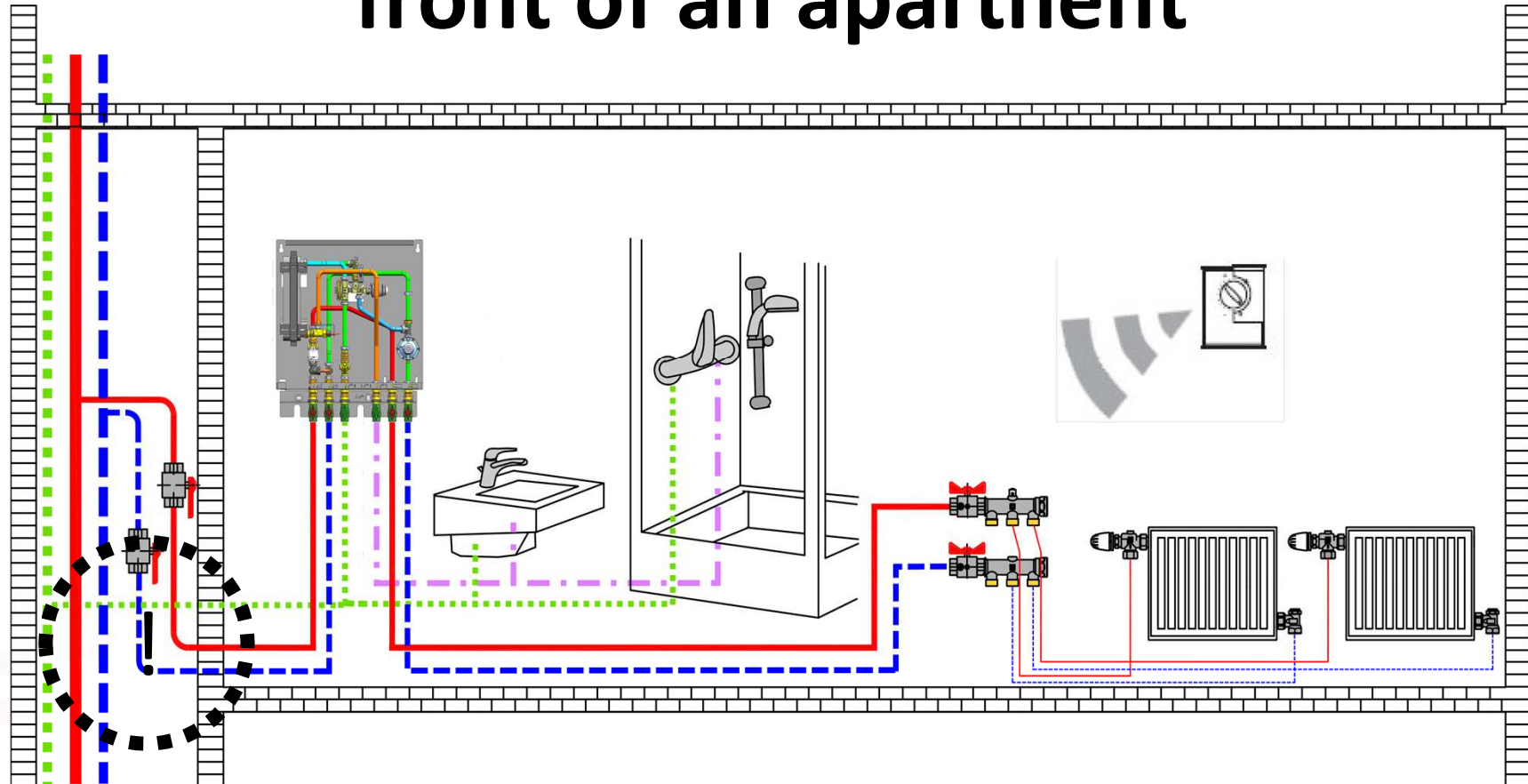


Difference of temperature

Heating, dp-regulator fixed 23 kPa



Differential pressure regulators in front of an apartment



approx.40 KPa to an apartment

approx.10 KPa inside an apartment

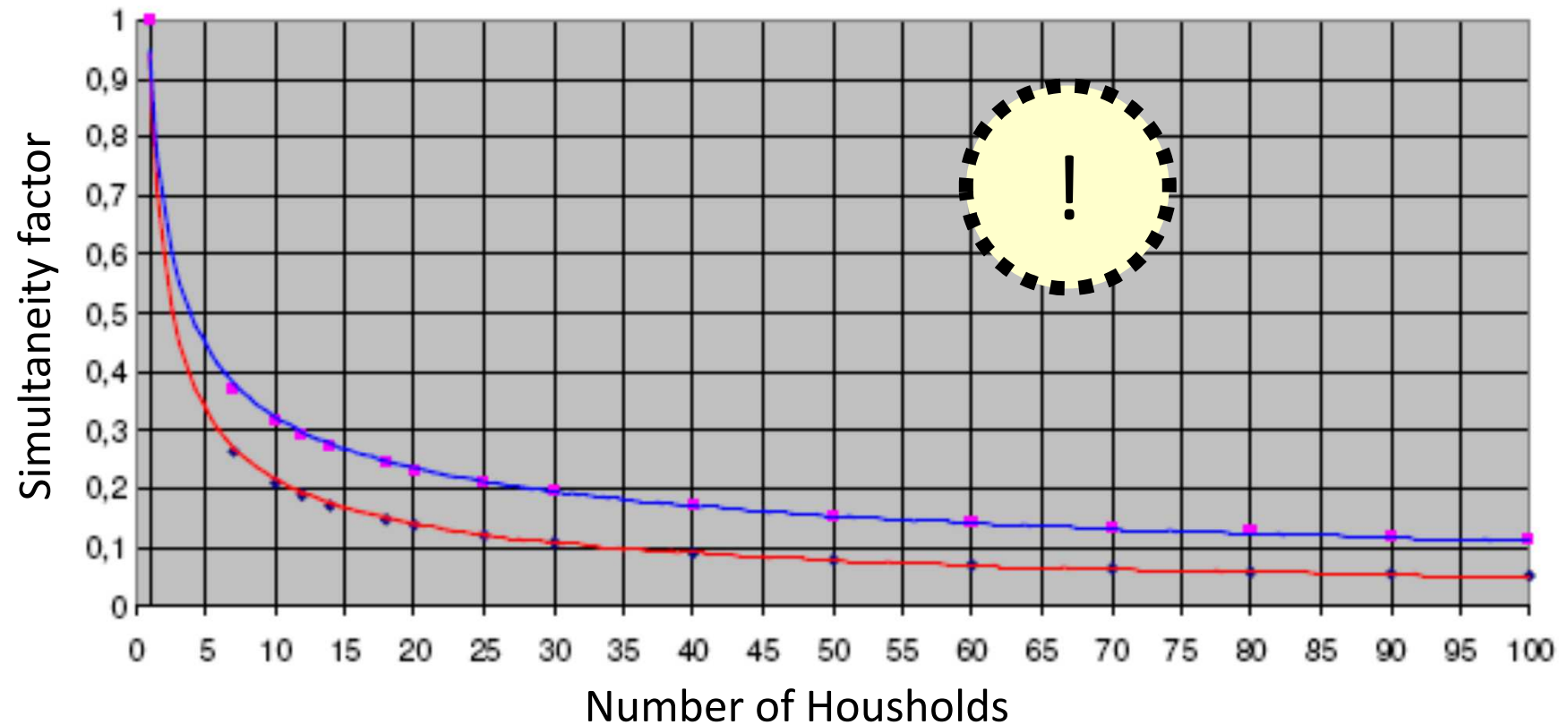
Automatic control valve



- **HERZ 4002**
- Differential pressure control
- DN 15 – DN 50
- 5 - 30 KPa
- 25 – 60 KPa
- Pressure balancing plug
- brass CR
- Port 2 x AG, HERZ PIPEFIX
- Suitable to measuring valves

Simultaneity for Residence Houses

Simultaneity of DIN 4708 is marked with **blue line** and wide range of the measurement data is marked with **red line**

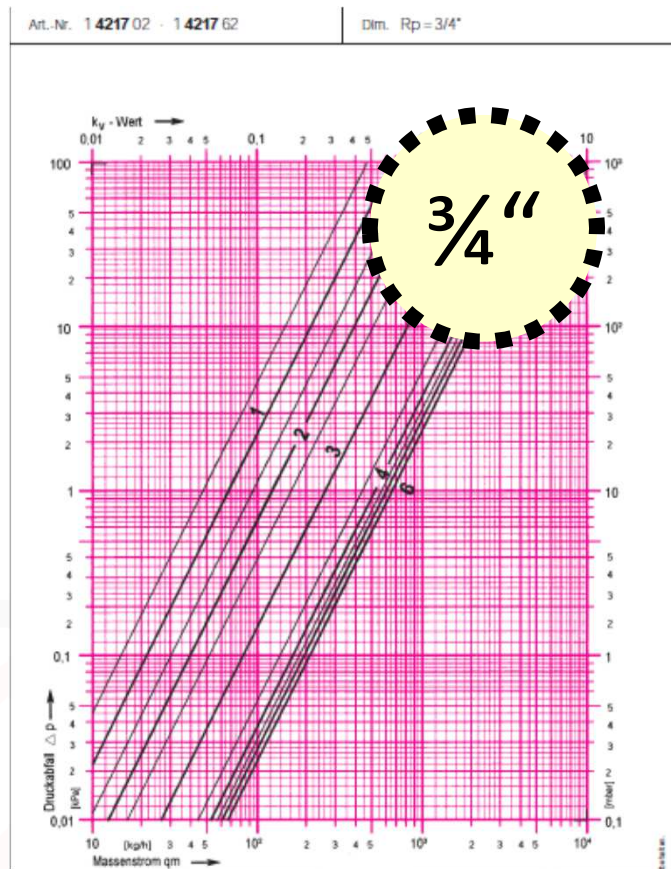


Example of dimensioning

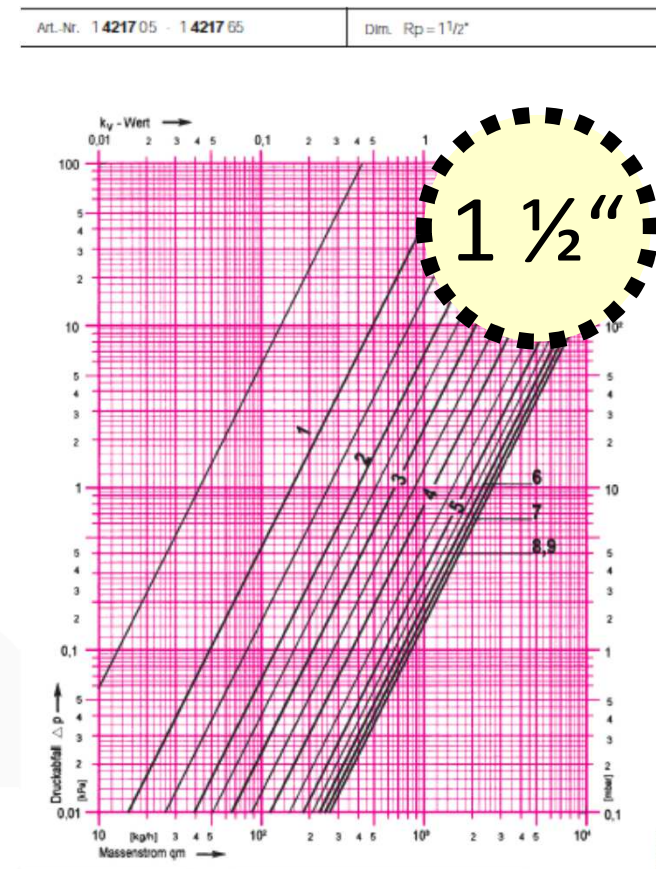
- Room heating 5 KW, temperature difference 20 K = 215 l/h
- Hot water 40 KW, temperature difference 45 K = 764 l/h
- Line; 16 Apartments = 3,439 l/h heating
- Line; 16 Apartments = 12,229 l/h hot water
- Simultaneity 30 % = 3,669 l/h hot water
- Sum 7,108 l/h Strand

Dimensioning of the line

Heating

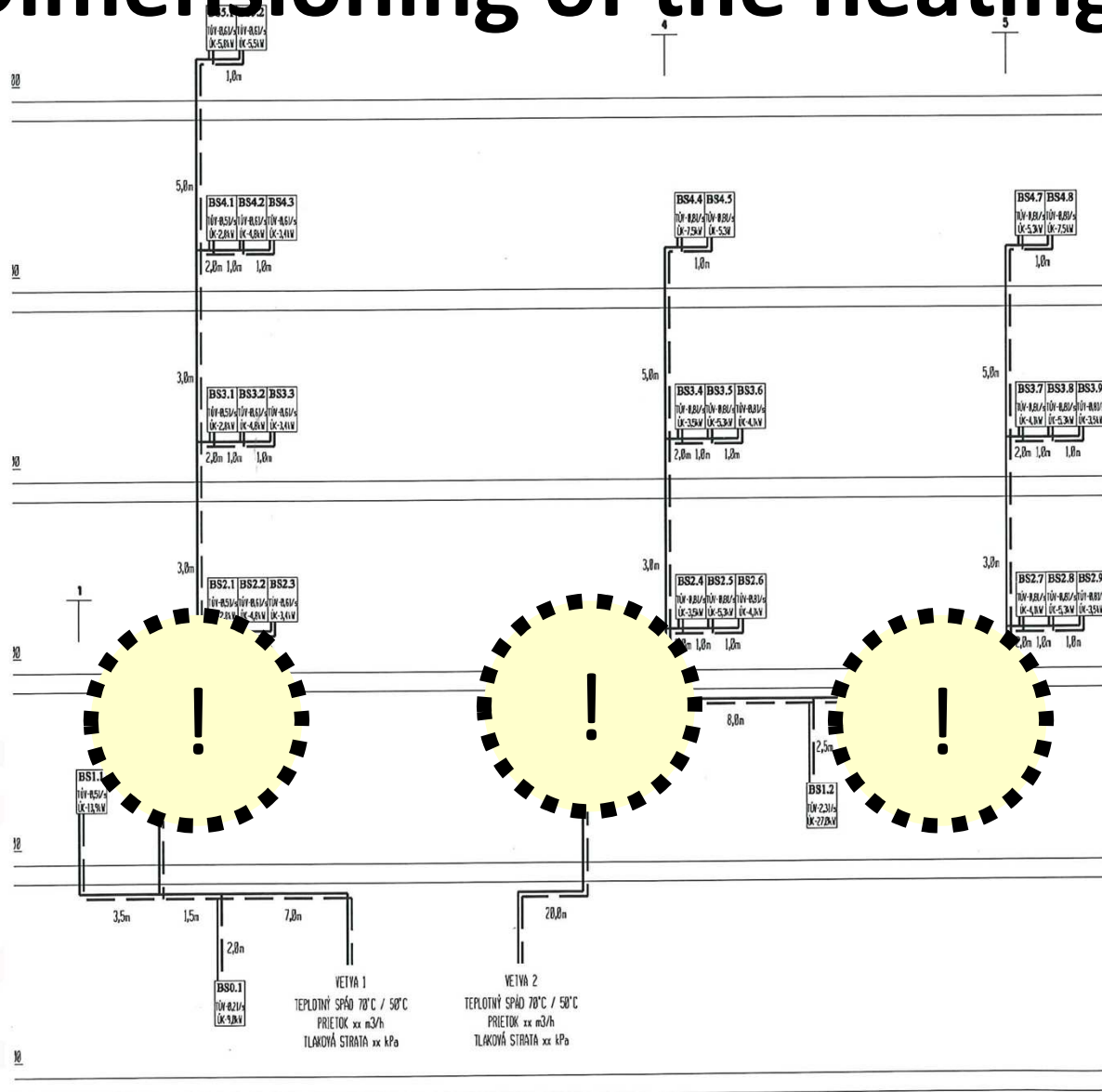


Hot water, 30% simultaneity



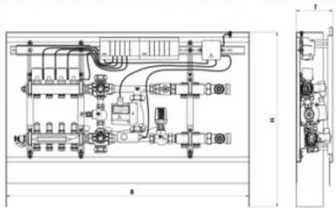
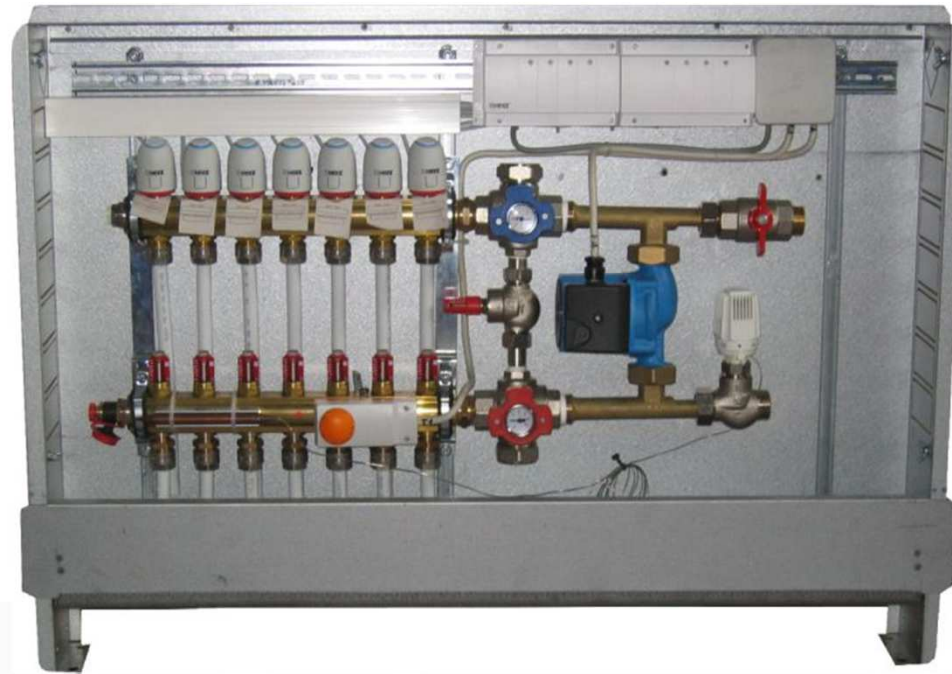
100% = 2 1/2"

Dimensioning of the heating system

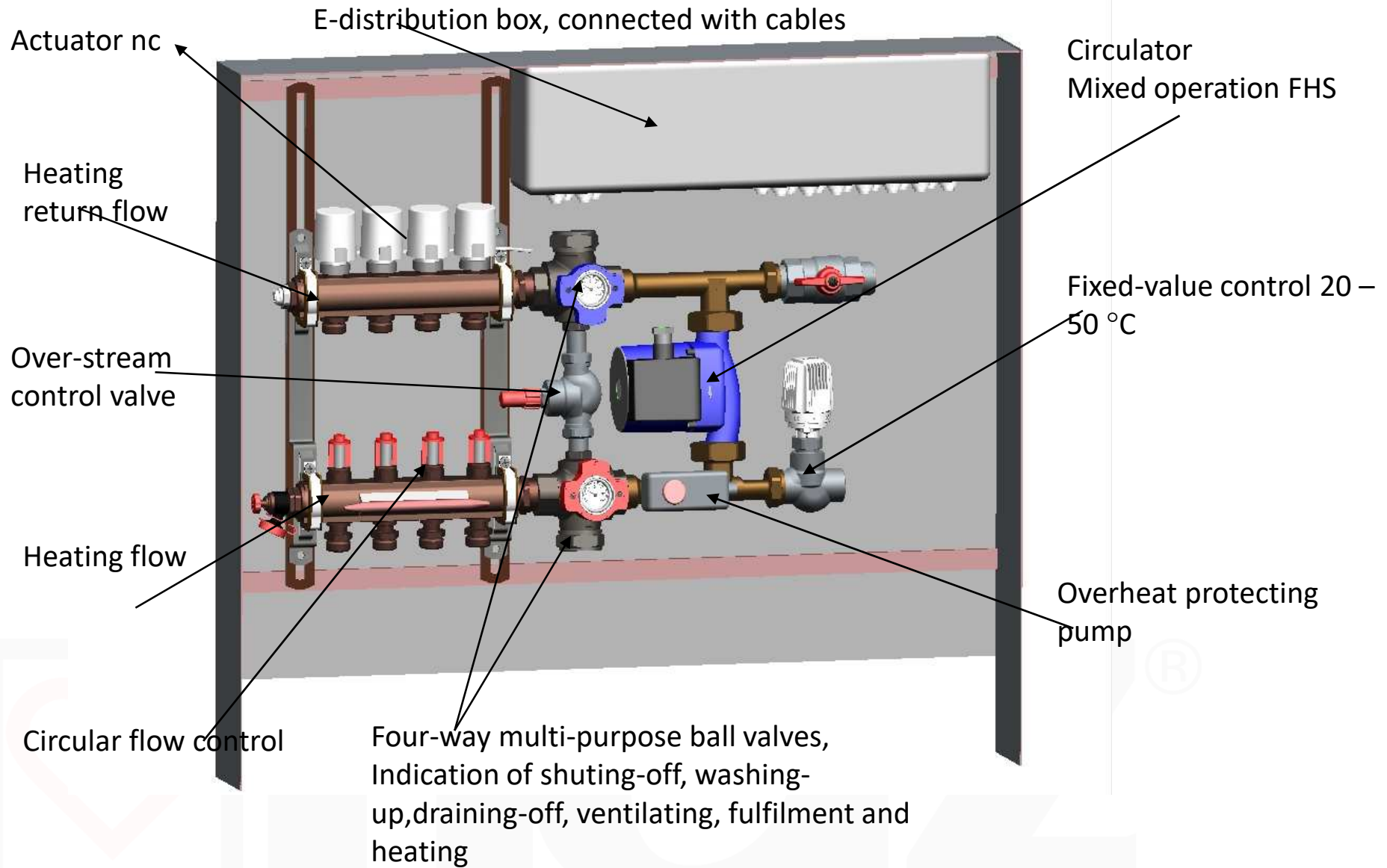


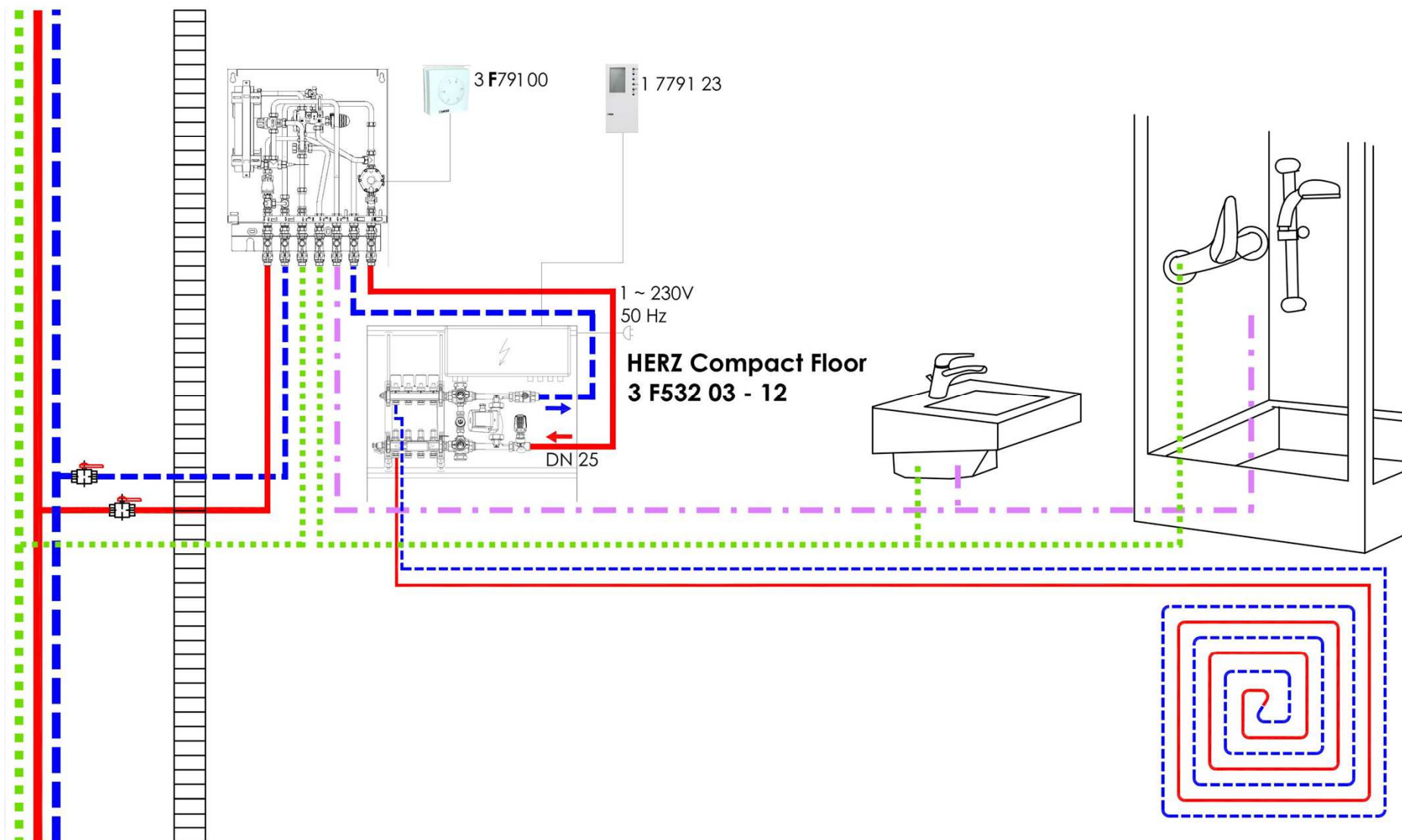
HIU combination vor floor heating system (FHS)

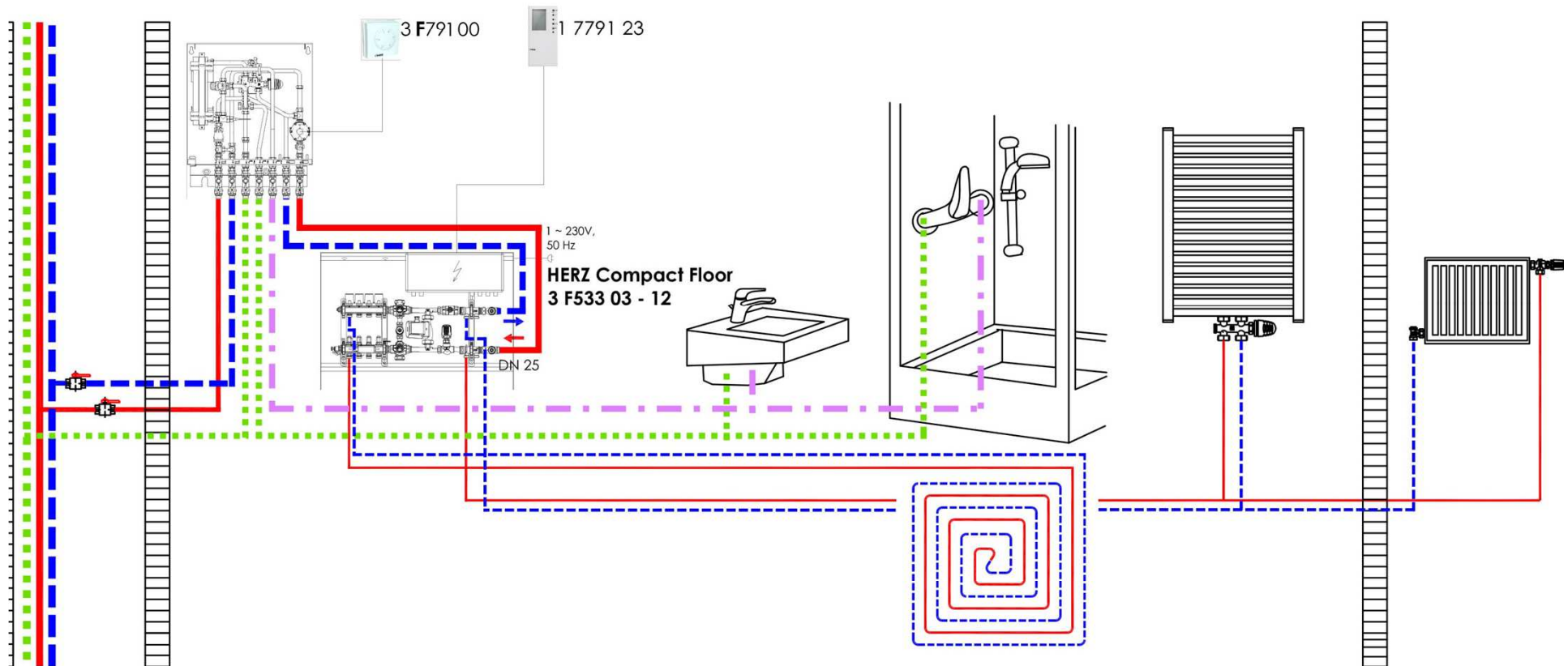
- Factory-set pre-installed control station for floor heating systems
- No necessity in pre-control of temperature
- „plug & play“



The fully wired control system HERZ-COMPACT FLOOR for panel heating enables the connection of three to twelve heating circuits. Two unregulated heating circuits for additional radiators can be connected.







Advantages

- Individual heating of rooms and tapping of hot water
- Individually suitable for different consumer behaviors
- Does not require a storage (tank) for hot water
- Low return-flow temperature
- Minimum space requirements
- Simple in operation
- Optimal thermal comfort

Instruments

- Basic unit with all necessary components for technological control
- Optional additional equipment, such as:
 - counter
 - circulation pump
 - motorized zone valve
 - additional heat exchanger
 - additional dust trap
 - internal power supply
 - additional connection of a floor heating system