

## TECHNICAL INSTRUCTIONS

for installation, use and maintenance  
of stainless steel water heater



Centrometal d.o.o. shall not be responsible for possible incorrect data caused by printing errors or error made in transcription and all figures and diagrams are for explanatory purposes only and relevant adjustment have to be made at the spot. In any case, it reserves the right to modify its products as deemed to be required and useful without any prior notification.

Centrometal d.o.o. Glavna 12, 40306 Macinec, Croatia  
central tel: +385 40 372 600, fax: +385 40 372 611  
service tel: +385 40 372 622, fax: +385 40 372 621

www.centrometal.hr  
e-mail: servis@centrometal.hr

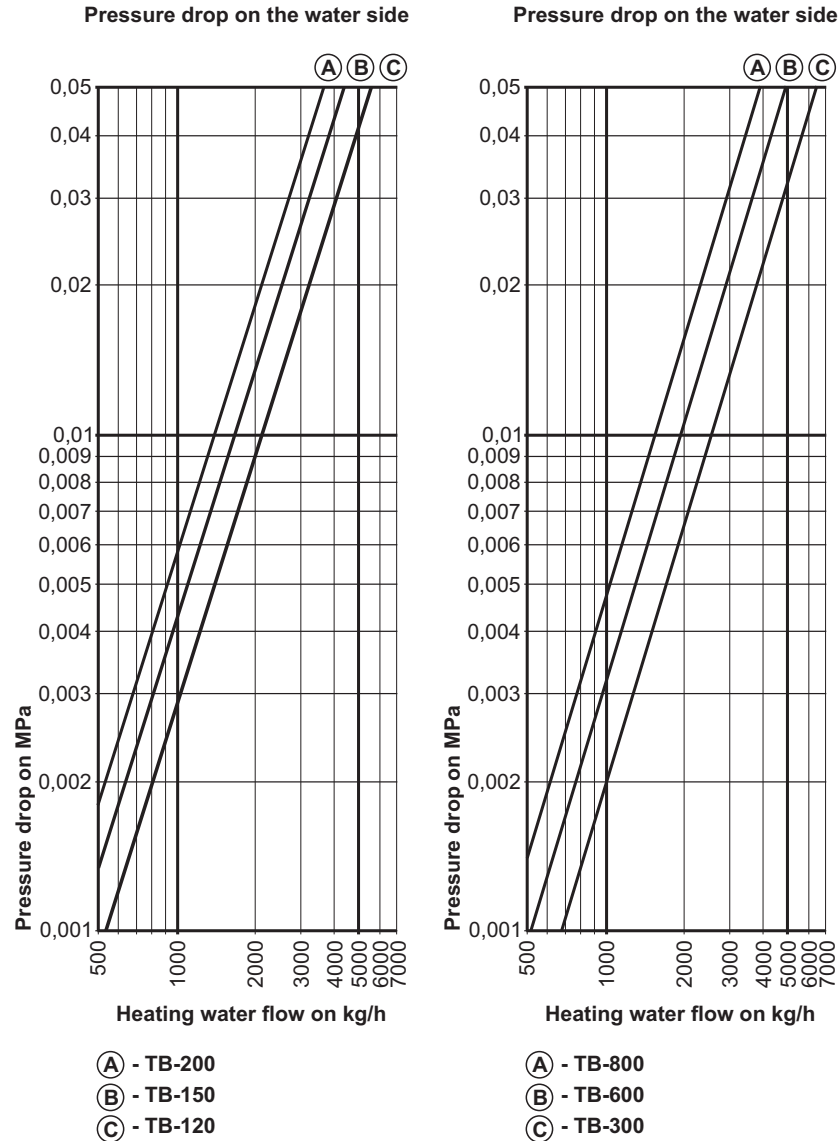
## TECHNICAL DATA

TYPE	TB 120	TB 150	TB 200	TB 300	TB 600	TB 800
Capacity (lit.)	120	150	200	300	600	800
Nominal heat output <sup>(1)</sup> 80 °C (kW)	16,6	21	33,1	52,6	82,9	124
(l/h)	408	515	814	1297	2045	3067
70 °C (kW)	13,3	17	26,7	39,5	63,0	94,5
(l/h)	330	417	658	975	1554	2331
60 °C (kW)	8,3	10,5	16,5	24,5	39,0	58,5
(l/h)	204	257	406	604	962	1443
Boiler's water flow (m <sup>3</sup> /h)	1,5	1,5	1,5	5,0	5,0	5,0
Heating surface (m <sup>2</sup> )	0,42	0,53	0,84	1,3	2,1	3,15
Volume of heating water (l)	1,9	2,4	2,8	7,2	11,6	17,5
Water heater mass (kg)	36	48	60	105	210	273
Width of the heater (A) (mm)	560	560	585	685	815	970
Height of the heater (B) (mm)	1020	1210	1450	2000	2005	1995
Length of the heater (C) (mm)	600	600	600	750	900	1035
Heater water inlet / outlet (R)	3/4"	3/4"	3/4"	1"	1"	1"
Cold / hot water (R)	3/4"	3/4"	3/4"	3/4"	5/4"	5/4"
Recirculation (R)	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"
Draining (R)	1/2"	1/2"	1/2"	-	-	-
Max. operating pressure (MPa)	0,6	0,6	0,6	0,6	0,6	0,6
Max. operating pressure (bar)	6	6	6	6	6	6
Supply voltage (V)	230	230	230	230	230	230
Height D (mm)	68	68	87	85	100	135
Height E (mm)	-	-	-	325	355	335
Height F (mm)	-	-	-	975	1010	1335
Height G (mm)	-	-	-	1085	1210	1435
Height H (mm)	-	-	-	1725	1720	1700

<sup>(1)</sup> entering temperature of the boiler hot water 80, 70, 60 °C; domestic hot water 10/45°C



**PRESSURE DROP FOR STAINLESS STEEL WATER HEATER  
TB 120 - 200 | TB 300 - 800**



**8.0. HEATER MAINTENANCE**

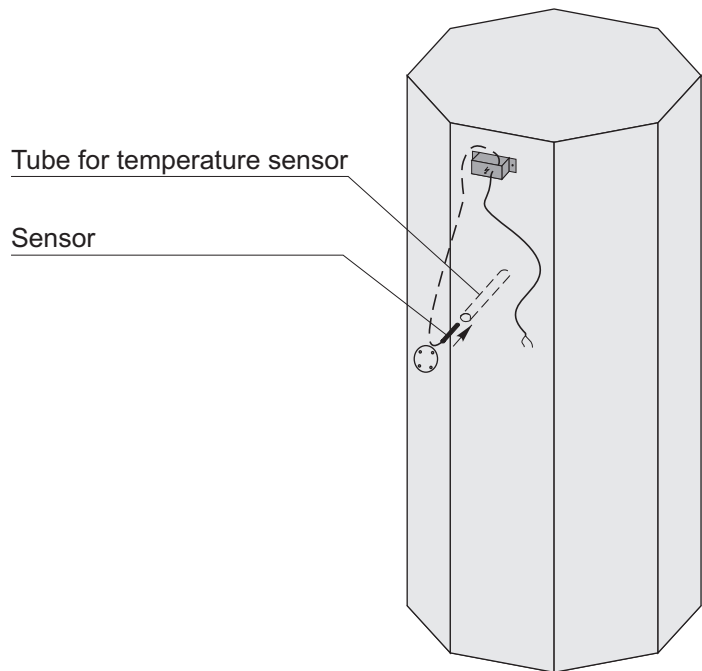
**8.1. HEATER MAINTENANCE TB 120, 150 AND 200**

It must not be used by children or disabled persons (either physically or mentally), as well as by person without knowledge or experience, unless they are under control or trained by s person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. At necessary to check and clean it from the scale and sediment (depend of water quality). Before the cleaning it is obligatory to disconnect the stainless steel water heater from the power supply and discharge it (through the cock for drainage on the cold water installation). After that is necessary tako off the cover of cleaning opening which is bottom of the stainless steel water heater (see Figure 2.). After cleaning cover must be returned to opening for cleaning (Figure 2a).

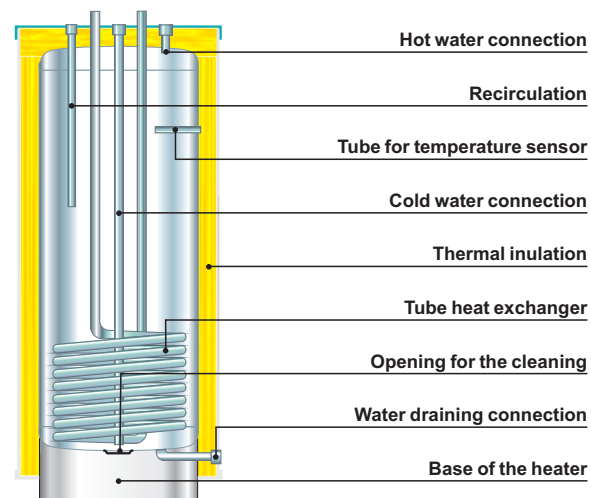
**8.2. HEATER MAINTENANCE TB 300, 600 AND 800**

It must not be used by children or disabled persons (either physically or mentally), as well as by person without knowledge or experience, unless they are under control or trained by s person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. At necessary to check and clean it from the scale and sediment (depend of water quality). Before the cleaning it is obligatory to disconnect the stainless steel water heater from the power supply and discharge it (through the cock for drainage on the cold water installation). After that is necessary tako off the cover of cleaning opening which is bottom of the stainless steel water heaterTB 300 ili or front bottom side of the stainless steel water heater TB 600 and 800 (Figure 2b). After cleaning cover must be returned to opening for cleaning (Figure 2a).

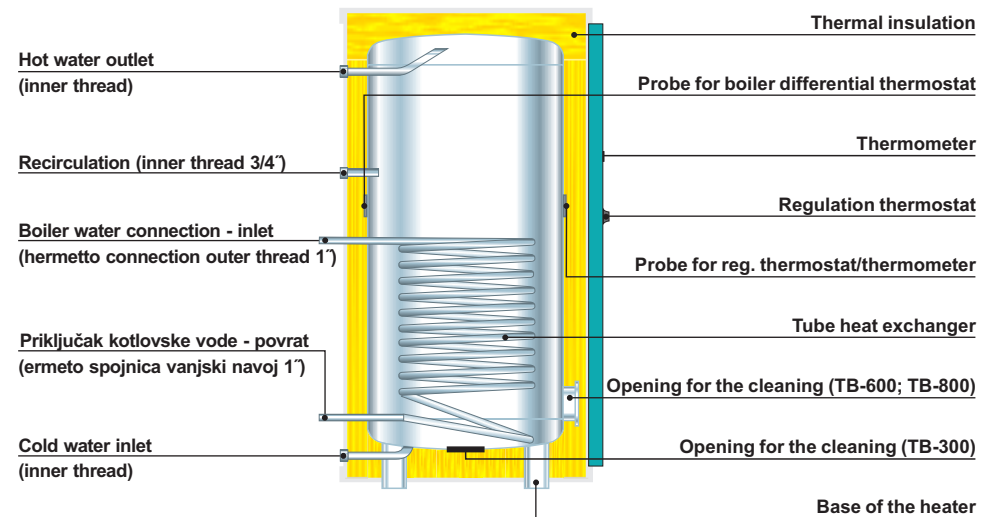
**Figure 4b.** Insert the sensor on DHW tank of boiler control unit for TB 300, 600, 800



**Image 2a.** Basic parts of stainless steel water heater TB 120, 150 i 200



**Image 2b.** Basic parts of the stainless steel water heater TB 300, 600 i 800



## 1.0. PRESENTATION

The solar water heater **TB** is manufactured with most modern welding technology, made from materials of great quality which assures high efficiency when using and guarantees the product quality.

Boilers **TB** are made in sizes from **120, 150, 200** liters with connections on the top side and boilers TB in sizes **300, 600 i 800** liters with connections on the back side.

The water heater is manufactured from stainless steel and was tested under the probe pressure of 1,2 Mpa (12 bar), with inbuilt thermometer and regulation thermostat. It is delivered together with thermal isolation of the mineral wool in thickness 50 mm on TB 120 - 200 and mineral wool in thickness 80 mm on TB 300 - 800.

This instructions have to be carefully studied, to learn about correct assembling, handling, use and maintainance. This is necessary in order to enable your combined hot water boiler to operate according to its purpose and produce heat for your home for many years.

## 2.0. PURPOSE

Water heaters **TB**, volume 120-800 litres, are engineered for heating and accumulating of domestic hot water with the connection to the boiler circuit or to another heat source being part of some technological process. Often they are connected to solar systems for additional accumulation with solar water heaters STEB. Water heaters are made of stainless steel, which guarantees a high hygienic level. Wide application of modern technologies and the quality of the material as well as double-checked technical solutions, allows grade of heat exchange and minimal loss of temperature. Produced in compliance with ISO 9001/2000 norm.

## 3.0. MOUNTING

Stainless steel water heater **TB** is anticipated for installation on boiler room next to the boiler. The stainless steel water heater TB is delivered with mounted casing, wrapped into the foil by wooden pallete.

We recommend that the installation of stainless water heater perform professional.

## 6.0 . HEATER USE, TEMPERATURE REGULATION

It must not be used by children or disabled persons (either physically or mentally), as well as by person without knowledge or experience, unless they are under control or trained by s person responsible for their safety.

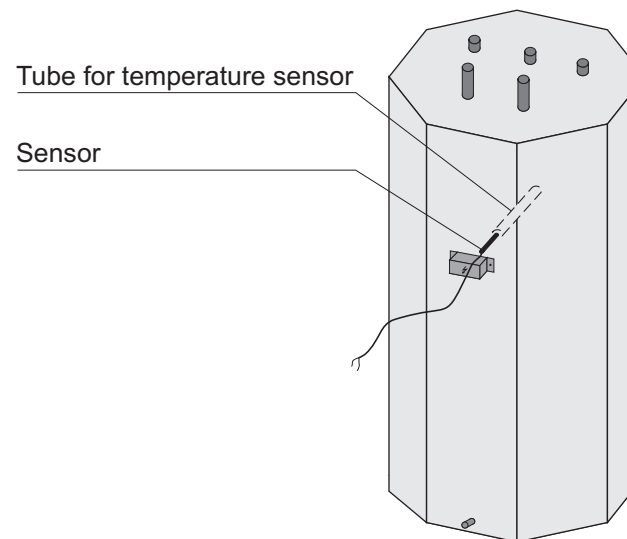
Children should be supervised to ensure that they do not play with the appliance.

Temperature regulation on stainless steel water heater TB preformed using regulation thermostat or boiler regulation.

Regulation is operating in that way that it measure instantaneous temperature in the combined hot water heater and compare with the desired (propound) temperature. Regulation thermostat has adjustment 30-90°C. Example, if the propound temperature is 55 °C, electric heater or circulation pump will operate as long as the hot water heater achieve propound temperature i.e. at the 55°C the electric heater or circulation pump will shut down.

If we want to make temperature control with regulation which is not factory mounter, we must built temperature sensor of domestic hot water boiler according Figure 4a and 4b.

**Slika 4a.** Insert the sensor on DHW tank of boiler control unit for TB 120, 150 and 200



## 5.0. ELECTRICAL CONNECTION

All electrical work has to be done under valid technical norms by a qualified person. A complete electrical installation of the stainless steel water heater itself was made by the manufacturer. A device for switching of all power supply poles must be installed in electrical installation in accordance with the national regulations on electrical installations.

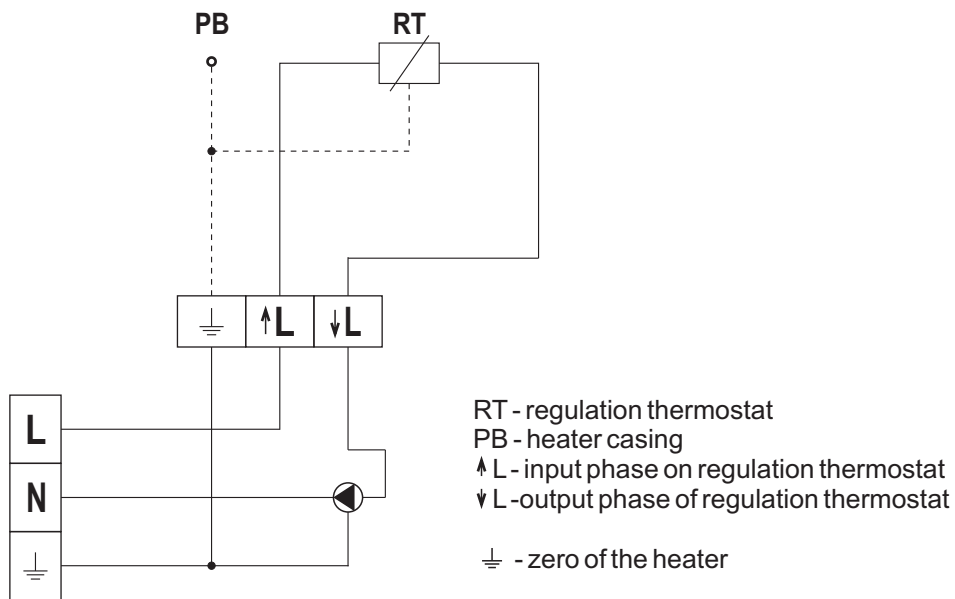
How to tube heat exchanger could heated cold sanitary water, circulation pump must be mounted which manage regulation thermostat or boiler regulation.

If the boiler regulation manage circulation pump is was not necessary to make electrical connection on stainless steel water heater.

Hot domestic water sensor of boiler regulation is necessary to mount in tube for temperature sensor by regulation thermostat sensor which is mounted on back side of the boiler below ordinary terminal cover (see Figure 4a and 4b).

If the regulation thermostat manage circulation pump, circulation pump should be connected to the 3 - pole ordinary terminal according Figure 3. which is mounted on back side of the boiler.

Figure 3. - Electrical connection



## 4.0. CONNECTION TO THE WATER SUPPLY AND HEATING SYSTEM

The connection of the combined hot water heater to the water supply system must be done with respect to valid technical norms by a qualified person (scheme 1a and 1b.).

On water supply is recommended a installation reducing valve 0,4 Mpa (4 bar), (see scheme 1a and 1b.).

### TB 120, 150, 200

The cold water supply has to be connected with the pipe tube (nipple 3/4") marked with blue sticker, the hot sanitary water drain has to be connected with the pipe tube (nipple 3/4") marked with red sticker. The circulation tube outlet (nipple 1/2"), marked with red sticker. Connections of the tube heat exchanger has to be connected with hermetto connections and marked is with red and blue stickers. All connections except drainage are on top side of the heater. Drainage connection are on back side of the heater.

### TB 300, 600 i 800

The cold water supply has to be connected with the pipe tube (TB 300 - nipple 3/4", TB 600, 800 - 5/4") marked with blue sticker, a connection pipe (TB 300 - nipple 3/4", TB 600,800 - nipple 5/4") marked with red sticker serves to hot sanitary water drain. The circulation tube outlet (nipple 1/2"), marked with red sticker. All connection are on back side of the boiler.

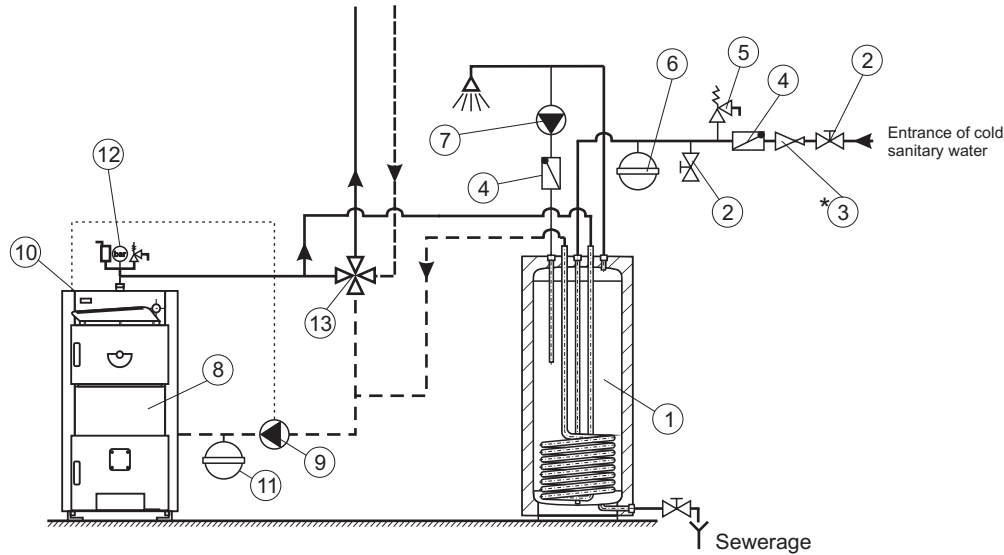
It is **obligatory to install** on the cold water supply tube entrance of the hot water heater:

- Safety valve with opening pressure 0,6 MPa (6 bars);
- Expansion vessel for sanitary water;
- Irreversible valve;
- Reducing valve which lowers the pressure of cold water supply pipe on the 0,4 Mpa (4 Bar) (if the pressure is higher than this value);
- Water drainage cock (obligatory connect through T-piece);

The safety valve must be regularly checked, it must be removed limescale that can accumulate and should verify that the safety valve is not blocked. The water may drip from discharge pipe of the pressure-relief device. This pipe must be left open to the atmosphere.

A discharge pipe connected to the pressure-relief device is to be installed in a continuously downward direction and in a frost-free environment.

**Scheme 1a.** Connection stainless steel water heater TB 120, 150 and 200 to the water supply and heating system

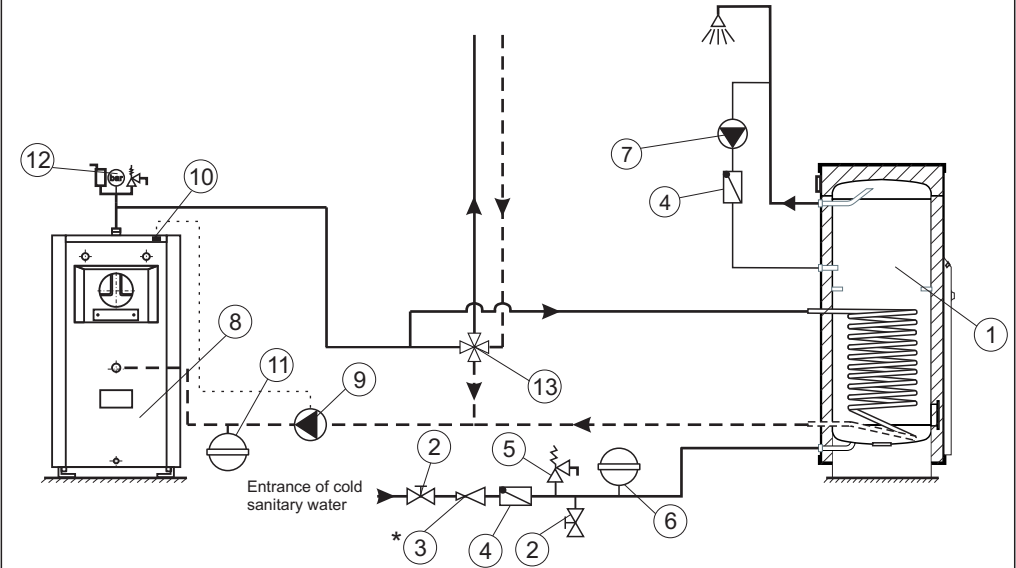


- 1 - stainless steel water heater TB 120, 150, 200
- 2 - drainage cock - obligatory throughtr the T - piece
- 3 - \*pressure regulator
- 4 - irreversible valve
- 5 - safety valve
- 6 - expansion vessel for sanitary water
- 7 - recirculation pump
- 8 - solid fuel fireing boiler (EKO - CK P)
- 9 - heating system pump
- 10 - factory mounted pump thermostat
- 11 - expansion vessel for heating system
- 12 - air-self venting group
- 13 - manual 4-way mixing valve

\*installation is obligatory if pressure of the water supply system is bigger then 4 bars

Drainage of stainless steel water heater TB 120, 150, 200 is done trough drainage connection which have inbuilt tap for drantage and is connected into sewerage.

**Shema 1b.** Connection stainless steel water heater TB 300, 600 i 800 to the water supply and heating system



- 1 - stainless steel water heater TB 120, 150, 200
- 2 - drainage cock - obligatory throughtr the T - piece
- 3 - \*pressure regulator
- 4 - irreversible valve
- 5 - safety valve
- 6 - expansion vessel for sanitary water
- 7 - recirculation pump
- 8 - solid fuel fireing boiler (EKO - CK P)
- 9 - heating system pump
- 10 - factory mounted pump thermostat
- 11 - expansion vessel for heating system
- 12 - air-self venting group
- 13 - manual 4-way mixing valve

\*installation is obligatory if pressure of the water supply system is bigger then 4 bars