Centrometal
HEATING TECHNIQUE

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ENG

TECHNICAL INSTRUCTIONS

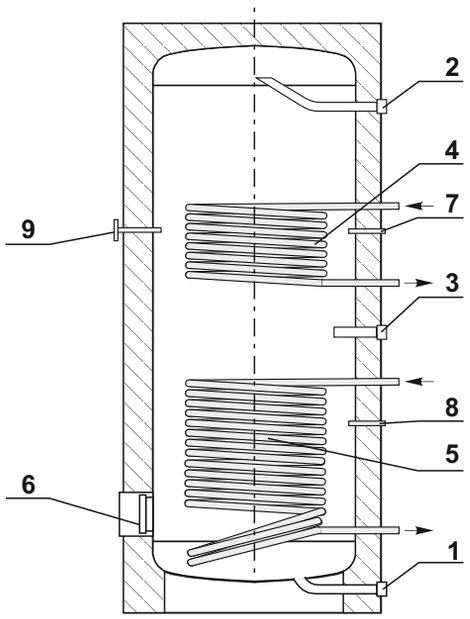
Installation, use and maintenance
of solar water heater

CE

STB 200 - 850

TU-STB-02-2022-ENG

Picture 1. - STB - Basic parts

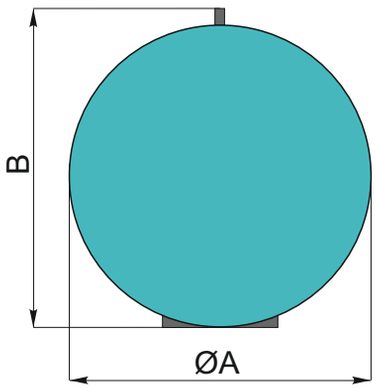


1. Cold domestic water inlet
2. Hot domestic water outlet
3. Recirculation
4. Top **(boiler)** heat exchanger
5. Bottom **(solar)** heat exchanger
6. Opening for cleaning
7. Temperature sensor sleeve – heating with boiler
8. Temperature sensor sleeve – solar heating
9. Thermometar

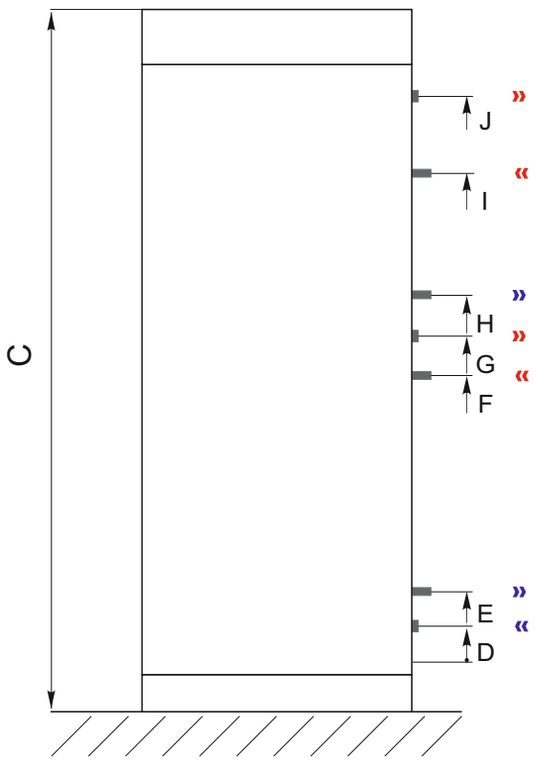
TECHNICAL DATA

STB		**200**		**300**		**600**		**850**	
Volume	(l)	198		283		537		850	
Height C	(mm)	1420		1900		1995		1940	
Boiler diameter Ø A	(mm)	640		640		810		960	
Diameter without insulation	(mm)	480		480		650		800	
Depth B	(mm)	690		690		860		1000	
Heat exchanger		top	bottom	top	bottom	top	bottom	top	bottom
Rated thermal output [(1)] 80°C	(kW)	16,1	33,1	19,5	37,4	37,6	63,7	53,1	83,8
	(l/h)	395	814	479	916	922	1561	1299	2053
70°C	(kW)	13,3	26,7	16,0	28,5	28,9	49,7	40,7	66,3
	(l/h)	325	658	391	697	707	1216	997	1624
60°C	(kW)	8,0	16,5	10,1	18,1	18,4	32,5	26,4	44,5
	(l/h)	195	406	391	443	450	796	646	1090
Heating fluid flow	(m^3/h)	1,5	1,5	3	1,5	3	1,5	3	1,5
Heat exchanger surface	(m^2)	0,42	0,83	0,53	1,06	1,06	2,12	1,59	3,17
Cold domestic water inlet*¹	(R")	3/4		3/4		5/4		5/4	
Hot domestic water outlet*¹	(R")	3/4		3/4		5/4		5/4	
Recirculation*¹	(R")	3/4		3/4		3/4		3/4	
Heat exchanger*²	(R")	3/4		1		1		1	
Maximum working pressure	(bar/MPa)	6 / 0,6		6 / 0,6		6 / 0,6		6 / 0,6	
Mass	(kg)	49		66		125		162	

*¹ Internal thread
*² External thread to ermeto fitting Ø 22-3/4" for STB-200 and Ø 28-1" for STB-300, STB-600 and STB-850

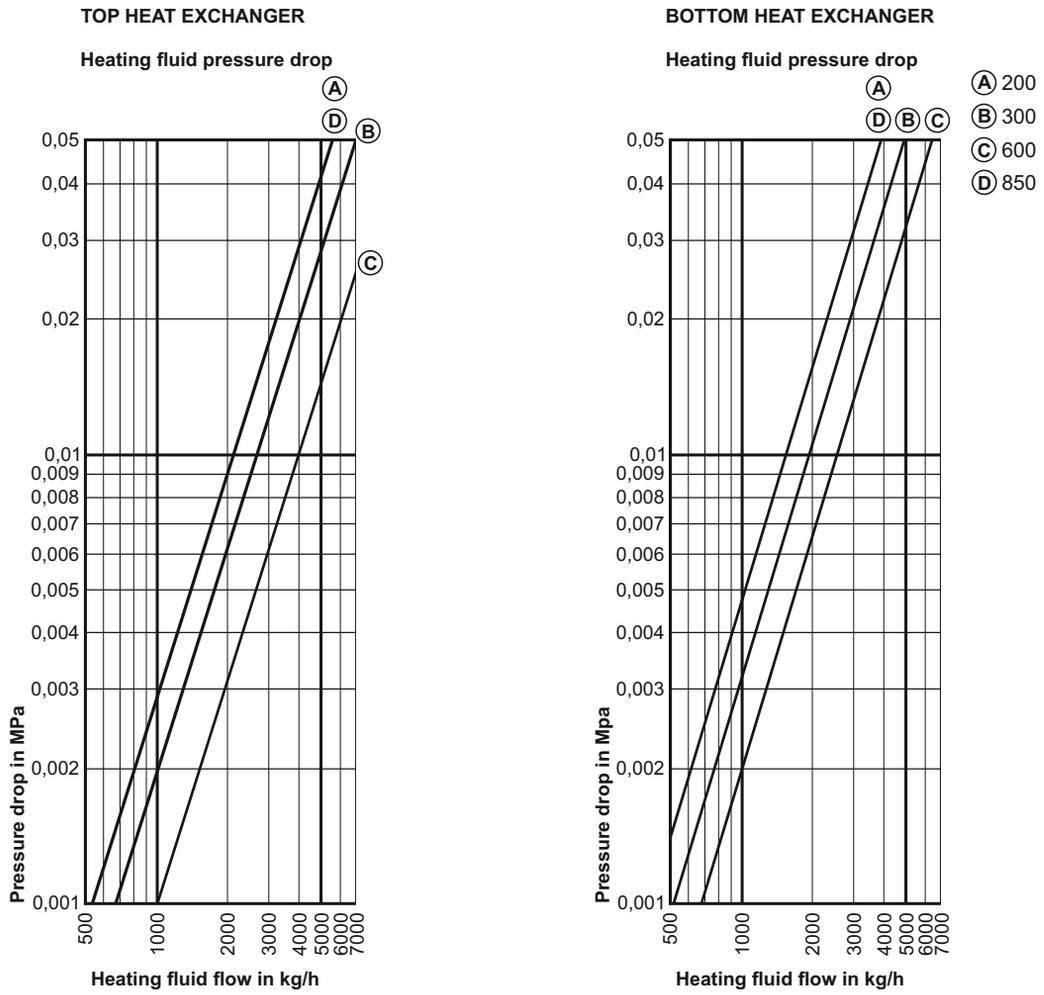


Slika 2. Solar domestic hot water heater dimensions



	STB 200	STB 300	STB 600	STB 850
Height D (mm)	90	90	75	70
Height E (mm)	295	295	330	320
Height F (mm)	695	865	985	1075
Height G (mm)	775	965	1085	1375
Height H (mm)	855	1065	1185	1270
Height I (mm)	1055	1345	1585	1540
Height J (mm)	1145	1645	1725	1635

HEAT EXCHANGER PRESSURE DROP FOR STB 200, 300, 600, 850



1.0. INTRODUCTION

The solar domestic hot water heater **STB**, by company Centrometal d.o.o., is produced with latest welding technology, made from quality materials, which ensures high efficiency and the overall product quality. It is made of stainless steel (INOX) and tested under air pressure of 12 bars. It has two stainless steel coil heat exchangers. It is delivered factory insulated by 80mm of foam covered with PS jacket.

The technical manual provides information regarding construction, operation, installation and maintenance, so following to this manual will ensure economic and undisturbed heater operation.

2.0. PURPOSE

Solar water heater is intended for production of the domestic hot water in households, restaurants, hotels and other area where larger water amount is needed.

The advantage of **STB** is in using the different energy sources (sun, oil, gas, solid fuel, electrical...), possibility of producing larger DHW amount, racional consumption of energy sources (oil, gas, solid fuel, el. energy), excellent insulation and modern effecient construction, which combined results in lower costs of energy input per produced DHW unit.

Solar heating circuit is connected to the bottom heat exchanger and boiler heating circuit is connected to the top heat exchangers.

3.0. MONTAGE

The water heater is factory insulated, with thermometer and ermeto fittings on heat exchanger connections, and it is delivered on the palette. If it cannot pass through a door, insulation can be taken off and put on in the room afterwads.

STB is intended for mounting on the flat surface in the room for such application (boiler room, energy station,…).

4.0. CONNECTION TO A WATER SUPPLY

The water heater connection to a water supply system must be done with accordance with valid technical standards by a qualified person (Scheme 1). The cold water inlet is the lowest connection on the heater, marked with a blue rosette, and the hot water outlet is the highest connection, marked with a red rosette.

On the cold water inlet is **obligatory to install** following elements:

- domestic hot water expansion vessel
- water heater drain cock (obligatory install it with the T-piece)
- the safety valve (certified to open at 6 bar)
- check valve
- pressure reduction valve to decrease a cold water inlet pressure to the 4 bar (if the pressure is higher).

The safety valve must be regulary conterolled, limescale must be removed becauce it can block the flow to the safety valve. The safety valve outlet must be installed in barometric pressure enviroment that never freezes.

In order to have a longer operation life it is recommend to install a water softener, especially if the heater is connected to a municipal water supply system (hard water and water with chlorine), and if galvanized water tubes are used, which can harm stainless steel materials. Recirculation connection is placed between the top and bottom heat exchanger, marked with red rosette.

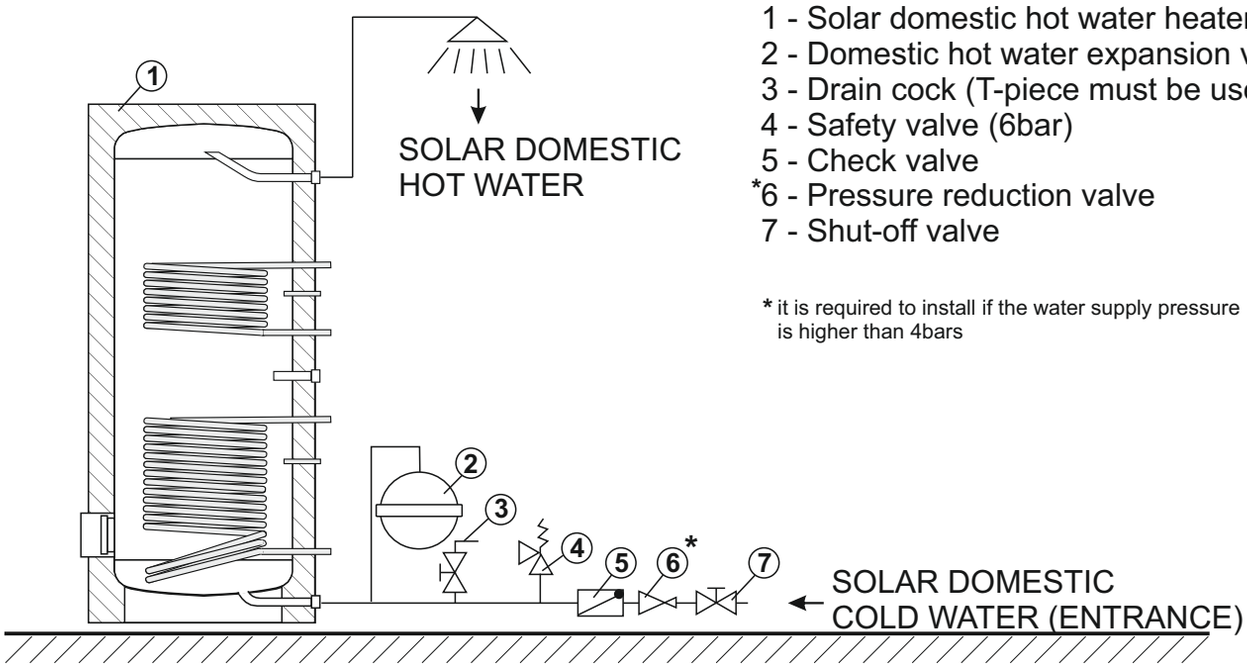
A thermostatic 3-way valve and recirculation pump installation must be done upon one of two ways, depending on the purpose or position of taps.

Scheme 2. shows the recirculation pump installation in the system with two or more thermostatic 3-way valves. Different temperature can be set for certain group of taps that are placed after the thermostatic 3-way valve. Smaller valve can be selected depending on the number of taps.

Scheme 3. shows the thermostatic 3-way valve installation for all taps, right on the heater hot water outlet. If even one of the shown elements in the scheme is missing, the recirculation will not work properly.

The schemes 2. And 3. do not show required elements for connection to the municipal water supply system, but those elements must be installed as it is shown in Scheme 1.

Scheme 1. Connection to the municipal water supply system

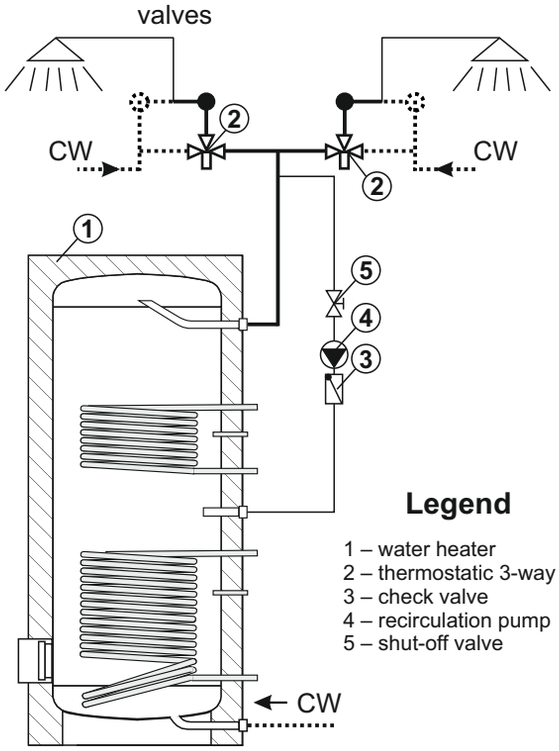


Legend

1 - Solar domestic hot water heater STB
2 - Domestic hot water expansion vessel
3 - Drain cock (T-piece must be used)
4 - Safety valve (6bar)
5 - Check valve
*6 - Pressure reduction valve
7 - Shut-off valve

* it is required to install if the water supply pressure is higher than 4bars

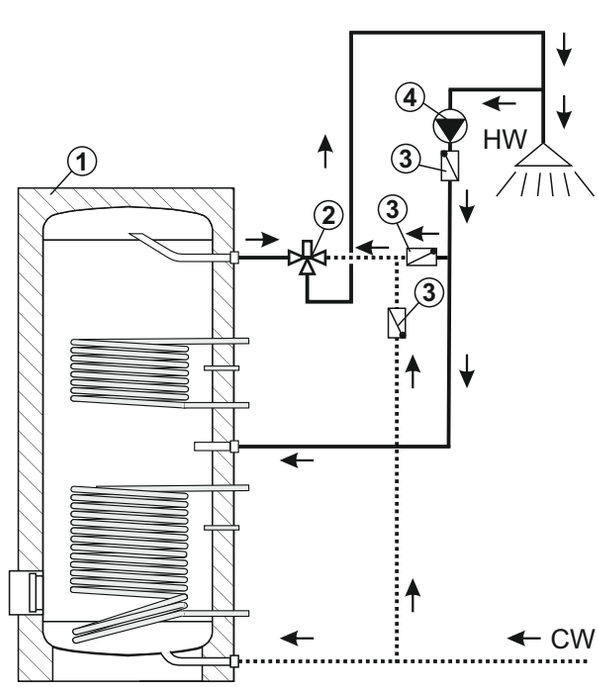
Scheme 2. Recirculation pump installation to the system with two or more thermostatic 3-way mixing valves



Legend

1 – water heater
2 – thermostatic 3-way mixing valve
3 – check valve
4 – recirculation pump
5 – shut-off valve

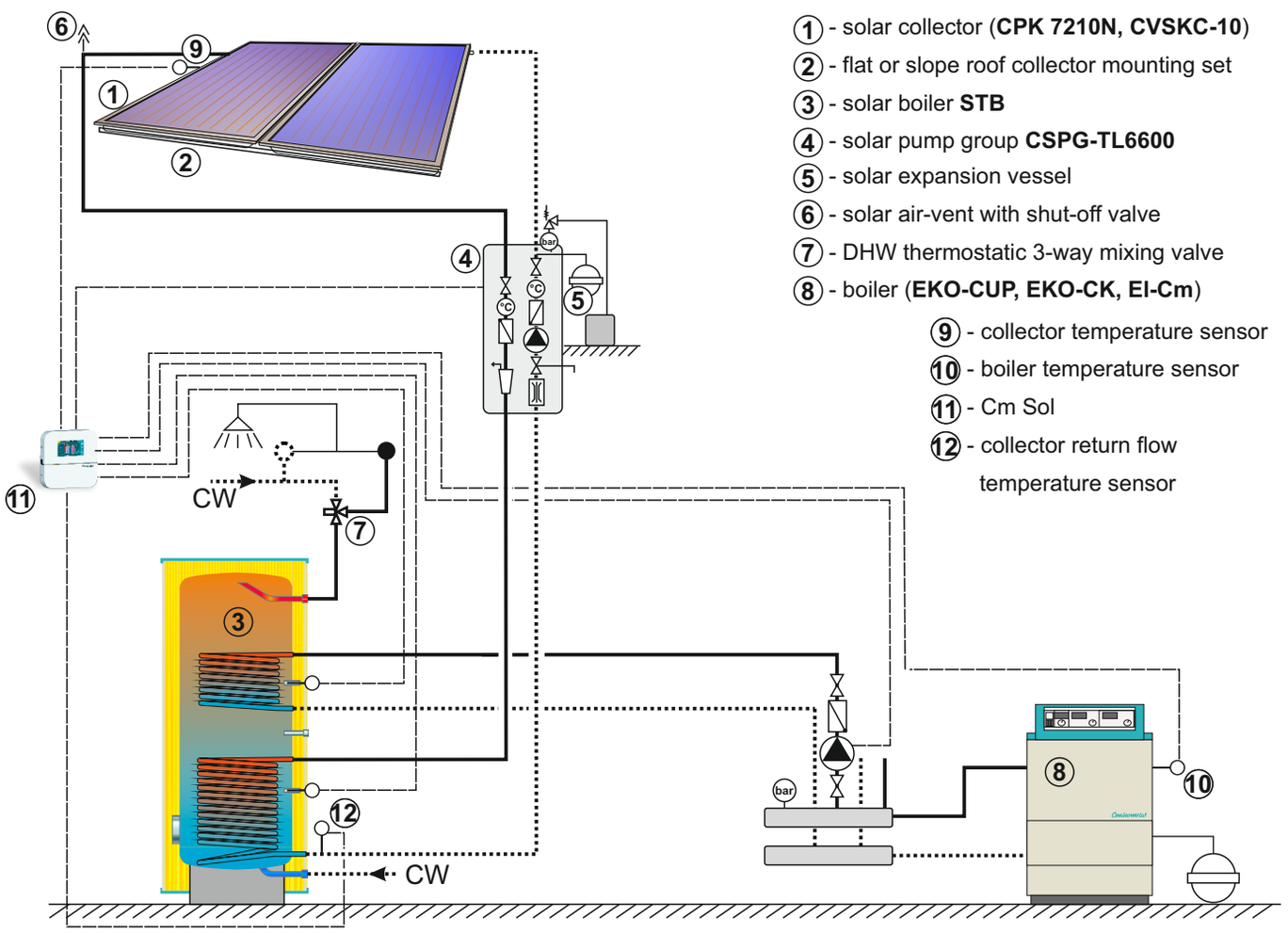
Scheme 3. Thermostatic 3-way mixing valve installation for all taps, right on the heater hot water outlet, with recirculation pump



5.0. CONNECTION TO THE SOLAR AND BOILER INSTALLATION

On scheme 4. is shown an example of solar domestic hot water heater to the solar and boiler heating circuit. Connections on the heat exchangers are marked with rosettes (red ones on the inlets and blue ones on the outlets). Connection must be done with ermeto fittings that are factory mounted at the heat exchanger ends. Before commissioning, air-vent must be done in both systems (solar and boiler).

Schema 4. - example of connection to the solar and boiler installation



6.0. MAINTENANCE, CLEANING, WARRANTY AND SERVICE

As required (depending on the water quality) the hot water heater has to be checked and cleaned from limescale and the sediment. The opening for cleaning is placed on the lower part of the hot water heater, at the front, behind the a plastic cover. It is recommended that the cleaning and servicing is carried out by an authorised technician.

Warranty rights are described in the warranty. Failures and damages of the heater should be reported to an authorized Centrometal service at the telephone number: +385 (0) 40 372 622

Centrometal
TEHNIKA GRIJANJA

EC IZJAVA O SUKLADNOSTI
EC DECLARATION OF CONFORMITY

Proizvođač Manufacturer: Naziv i adresa Name and address:	**Centrometal d.o.o.** HR-40306 Macinec, Glavna 12, Croatia

punom odgovornošću izjavljuje, da
We declare under our sole responsibility that

Proizvod Product designation:	*Solarni bojler* *Solar water heater*
Tip / model Type / model:	**STB - 200, STB - 300, STB - 600, STB - 850**

odgovara zahtjevima sljedećih propisa
is in conformity with the provisions of the following regulations

1.	*Direktiva 2009/125/EC* Directive 2009/125/EC
2.	*Direktiva 2010/30/EC* Directive 2010/30/EC

i također zadovoljava zahtjeve sljedećih standardi
and also complies with the following standards

Directive 2009/125/EC	Commission Regulation (EU) No 814/2013
Directive 2010/30/EC	Commission Regulation (EU) No 812/2013

Godina izdavanja CE oznake
Year of affixing of CE marking

2007.

Mjesto i vrijeme izdavanja
Place and date of issue

Macinec, 20. 06. 2019.

Ime, prezime i potpis
ovlaštene osobe
Name, surname and signature
of authorized person

Davor Zidarić

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Notes

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