

CATALOGUE THERMOHYDRAULICS

STORAGE
HEATING
COOLING
SOLAR

BLADDER AUTOCLAVES FOR SANITARY WATER

MULTI-FUNCTIONAL TANKS

EXPANSION TANKS FOR HEATING

TANKS FOR SOLAR SYSTEMS

PLASTO - POLYETHYLENE STORAGE TANKS
FOR ABOVE GROUND

PLASTO - POLYETHYLENE STORAGE TANKS
FOR UNDERGROUND & WASTEWATER TREATMENT

GALVANIZED/GLASSLINED TANKS

HOT WATER TANKS

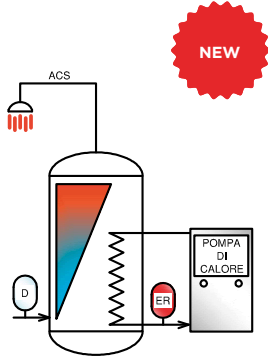
ASME TANKS



APPLICATIONS

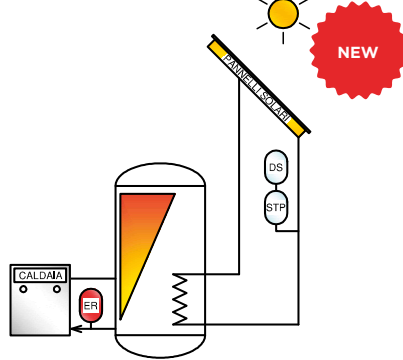
GLASSLINED CYLINDER FOR HEAT PUMP

BSP



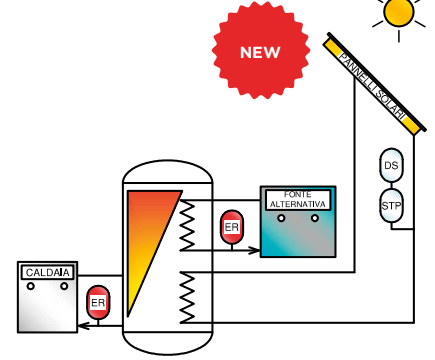
THERMAL FLYWHEEL WITH SINGLE HEAT EXCHANGER

PUFFER S1



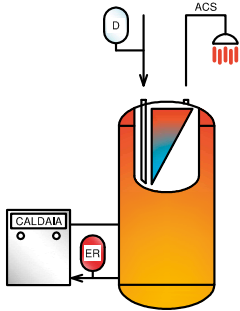
THERMAL FLYWHEEL WITH 2 HEAT EXCHANGERS

PUFFER S2

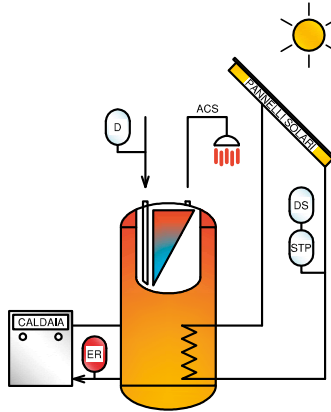


COMBI

CMS - STANDARD

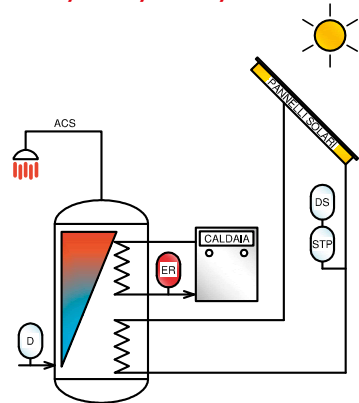


CMP - PLUS



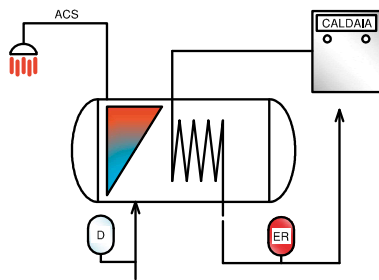
DHW CYLINDER WITH 2 HEAT EXCHANGERS

BST / BXT / BF-2 / BG

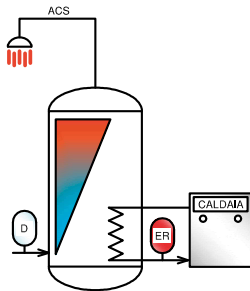


DHW CYLINDER WITH 1 HEAT EXCHANGER

BSH HORIZONTAL

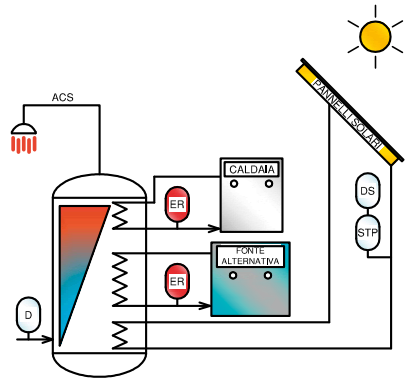


BSV / BSM / BXV / BF-1 / BG



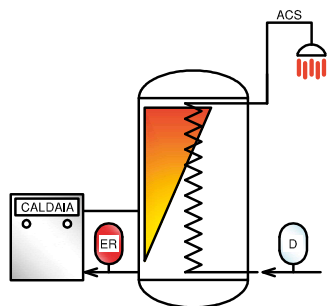
DHW CYLINDER WITH 3 HEAT EXCHANGERS

BF-3 / BG

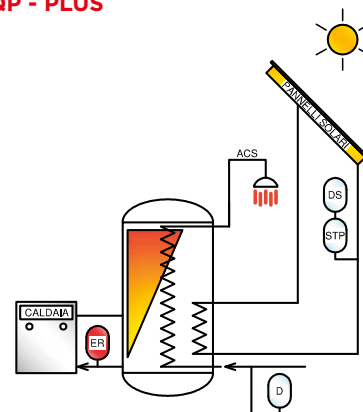


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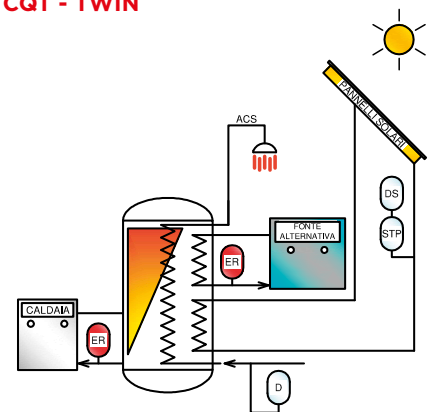
CQS - STANDARD



CQP - PLUS



CQT - TWIN

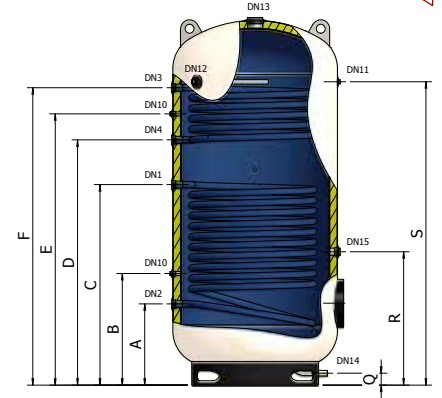
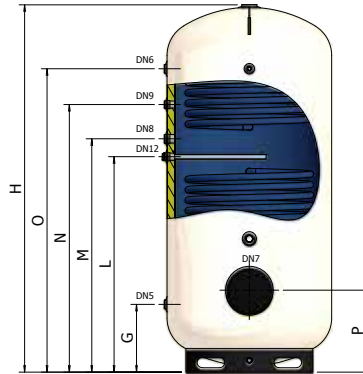
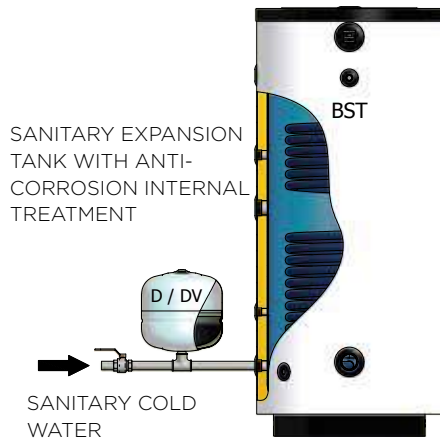




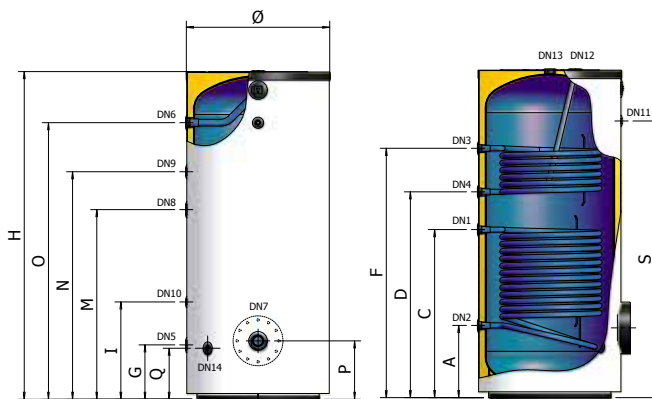
BST

GLASSLINED CYLINDER FOR SOLAR THERMAL USE WITH TWO FIXED EXCHANGERS (200 - 2.000 LITRES)

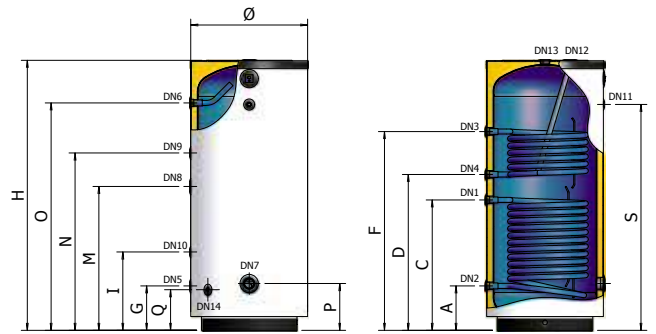
BST 1500 - 2000



BST 800 - 1000



BST 200 - 300 - 400 - 500



KEYWORD

DN1: Solar exchanger inlet; **DN2:** Solar exchanger outlet; **DN3:** Boiler exchanger inlet; **DN4:** Boiler exchanger outlet;
DN5: Sanitary cold water inlet; **DN6:** Sanitary hot water outlet; **DN7:** Heating element / Visual indicator light; **DN8:** Heating element;
DN9: Recirculation; **DN10:** Thermostat; **DN11:** Thermometer; **DN12:** Magnesium anode; **DN13:** Sanitary hot water outlet; **DN14:** Drain;
DN15: Sanitary expansion tank;



CYLINDER



FOR SANITARY HOT WATER



SUITABLE FOR SOLAR SYSTEMS



ANODE WITH TESTER (200 - 1000)



2 MAGNESIUM ANODES (1500 - 2000)



INTERNAL, ANTI-CORROSION GLASSLINING TREATMENT



POLYURETHANE INSULATION



+ 95°C
CYLINDER
MAX TEMPERATURE



+ 110°C
MAX TEMPERATURE OF
EXCHANGER

P_{MAX} 10 bar (200 - 1000)
MAX WORKING PRESSURE

P_{MAX} 6 bar (1500 - 2000)
MAX WORKING PRESSURE

P_{SCA} 12 bar
MAX PRESSURE
OF EXCHANGER

WARRANTY: 5 YEARS

REFERENCE STANDARDS

CYLINDER:

2014/68/UE Directive - ART. 4.3, without CE marking
Standard EN 12897:2016

Designed and built in accordance with the requirements of the
2009/125/EC.

Labeling in accordance with the requirements of the 2010/30/EU.

INTERNAL GLASS LINING:

DIN 4753

The glasslining treatment makes the cylinder suitable to contain
hot water for sanitary and hygienic use and resistant to corrosive
phenomena.

INSULATION:

Expanded polyurethane without CFC and HCFC

HEAT EXCHANGER:

fixed double coil

INSTALLATION:

- traditional boilers (wall-hung and/or floor-standing)
- condensing boilers
- solar thermal systems

DIMENSIONS

MODEL	CODE	ENERGY LABEL		EXCHANGER								NOTES
				LOWER				UPPER				
				CL	LITRES	m ²	LITRES	m ²	LITRES	mm	mm	
BST-200	A3E0L47 PGP40	C		200	0,70	5	0,50	4	600	1170		
BST-300	A3E0L51 PGP40	C		300	1,20	8	0,75	5	650	1395		
BST-400	A3E0L53 PGP40	D		400	1,40	9	0,90	6	750	1445		
BST-500	A3E0L55 PGP40	D		500	1,80	12	0,90	6	750	1695		
BST-800	A3E0L60 PGP40	/		800	2,00	13	1,20	8	900	1795		
BST-1000	A3E0L62 PGP40	/		1000	2,40	15	1,20	8	900	2045		
BST-800+FL.	A3E1L60 SWS50	/		800	2,00	13	1,20	8	900	1795		
BST-1000+FL.	A3E1L62 SWS50	/		1000	2,40	15	1,20	8	900	2045		
BST-1500+FL.	A3E1H67 VW050	/		1500	3,60	36	1,60	16	1100	2465		
BST-2000+FL.	A3E1H70 VW050	/		2000	4,30	43	2,10	21	1200	2445		

MODEL	A mm	C mm	D mm	F mm	G mm	I mm	M mm	N mm	O mm	P mm	Q mm	S mm
BST-200	235	585	680	930	235	350	635	760	935	250	220	935
BST-300	255	710	815	1085	255	405	760	950	1165	270	240	1155
BST-400	280	685	805	1075	280	470	745	940	1190	295	265	1170
BST-500	280	820	980	1250	280	495	905	1115	1430	295	265	1420
BST-800	450	910	1060	1330	340	610	985	1195	1470	365	320	1470
BST-1000	450	1045	1280	1550	340	610	1180	1415	1720	365	320	1720
BST-800+FL.	450	910	1060	1330	340	610	985	1195	1470	435	320	1470
BST-1000+FL.	450	1045	1280	1550	340	610	1180	1415	1720	435	320	1720
BST-1500+FL.	545	1345	1645	1995	455	-	1565	1795	2035	550	80	2035
BST-2000+FL.	515	1405	1605	2025	445	-	1565	1785	2025	540	80	2025

MODEL	ANODE ø x ø conn. x L	DN 1	DN 2	DN 3	DN 4	DN 5	DN 6	DN 7	DN 8	DN 9	DN 10	DN 11	DN 12	DN 13	DN 14
		BST-200	32 x 1.1/4" x 350	1"	1"	1"	1"	1"	1"	2"	1.1/2"	3/4"	1/2"	1/2"	1.1/4"
BST-300	32 x 1.1/4" x 550	1"	1"	1"	1"	1"	1"	2"	1.1/2"	3/4"	1/2"	1/2"	1.1/4"	1.1/4"	1/2"
BST-400	32 x 1.1/4" x 550	1"	1"	1"	1"	1"	1"	2"	1.1/2"	3/4"	1/2"	1/2"	1.1/4"	1.1/4"	1/2"
BST-500	32 x 1.1/4" x 700	1"	1"	1"	1"	1"	1"	2"	1.1/2"	3/4"	1/2"	1/2"	1.1/4"	1.1/4"	1/2"
BST-800	32 x 1.1/4" x 700	1"1/4	1"1/4	1"1/4	1"1/4	1.1/4"	1.1/4"	2"	1.1/2"	1"	1/2"	1/2"	1.1/4"	1.1/4"	3/4"
BST-1000	32 x 1.1/4" x 700	1"1/4	1"1/4	1"1/4	1"1/4	1.1/4"	1.1/4"	2"	1.1/2"	1"	1/2"	1/2"	1.1/4"	1.1/4"	3/4"
BST-800+FL.	32 x 1.1/4" x 700	1"1/4	1"1/4	1"1/4	1"1/4	1.1/4"	1.1/4"	Øi 220	1.1/2"	1"	1/2"	1/2"	1.1/4"	1.1/4"	3/4"
BST-1000+FL.	32 x 1.1/4" x 700	1"1/4	1"1/4	1"1/4	1"1/4	1.1/4"	1.1/4"	Øi 220	1.1/2"	1"	1/2"	1/2"	1.1/4"	1.1/4"	3/4"
BST-1500+FL.	32 x 1.1/4" x 670	1.1/4"	1.1/4"	1.1/4"	1.1/4"	1.1/4"	1.1/4"	Øi 220	1.1/2"	1.1/4"	1/2"	1/2"	1.1/4"	3"	1"
BST-2000+FL.	32 x 1.1/4" x 670	1.1/4"	1.1/4"	1.1/4"	1.1/4"	1.1/4"	1.1/4"	Øi 220	1.1/2"	1.1/4"	1/2"	1/2"	1.1/4"	3"	1"

MODEL	B mm	E mm	L mm	R mm	DN 15
BST-1500+FL.	750	1820	1445	895	1.1/4"
BST-2000+FL.	740	1780	1455	885	1.1/4"

TECHNICAL CHARACTERISTICS

MODEL	MAX WORKING PRESSURE CYLINDER (Secondary circuit)	MAX. WORKING PRESSURE HEAT EXCHANGER (Primary circuit)	HEAT EXCHANGERS PRESSURE DROP	
			LOWER HEAT EXCHANGER	UPPER HEAT EXCHANGER
BST 200	10 bar	12 bar	20 mbar	10 mbar
BST 300			80 mbar	25 mbar
BST 400			120 mbar	35 mbar
BST 500			265 mbar	35 mbar
BST 800			55 mbar	15 mbar
BST 1000			90 mbar	15 mbar
BST 1500	6 bar		265 mbar	30 mbar
BST 2000			425 mbar	60 mbar

MODEL	INSULATION TYPE	INSULATION THICKNESS	INSULATION DENSITY	INITIAL THERMAL CONDUCTIVITY	(*) INSULATION THERMAL LOSS	EXTERNAL COVER
BST 200	95% closed cells rigid expanded polyurethane, CFC - HCFC free	50 mm	40 kg/m ³	23,5 mW/m K	1,992 kWh / 24h	Grey polystyrene RAL 9006
BST 300					2,208 kWh / 24h	
BST 400					2,856 kWh / 24h	
BST 500					3,192 kWh / 24h	
BST 800					3,958 kWh / 24h	
BST 1000					4,449 kWh / 24h	
BST 1500	Open cells flexible expanded polyurethane	50 mm	15 kg/m ³	39,0 mW/m K	9,969 kWh / 24h	Skay bianco RAL 9001
BST 2000					10,865 kWh / 24h	

(*) Thermal loss calculated with an accumulation temperature equal to 65 °C and with an external temperature equal to 20 °C.

STANDARD EQUIPMENT

- Anode tester (200 - 1000)

SAFETY DEVICES

The cylinders must be protected from the effects of over pressure by installing:

- **SAFETY VALVE** calibrated to pressure lower than the max. cylinder pressure
- **SANITARY EXPANSION TANK** mod. ELBI **D - DV series**
- **SOLAR EXPANSION TANK** mod. ELBI **DS - DSV series**

RECOMMENDED EXPANSION TANK

MODEL	SANITARY CIRCUIT (mod. ELBI D-DV series)	LOWER COIL (mod. ELBI DS-DSV series)
BST 200	D - 18	DS - 18
BST 300	D - 24	DS - 18
BST 400	D - 35	DS - 24
BST 500	D - 35	DS - 24
BST 800	DV - 50	DS - 35
BST 1000	DV - 80	DSV - 50
BST 1500	DV - 150	DSV - 80
BST 2000	DV - 150	DSV - 100

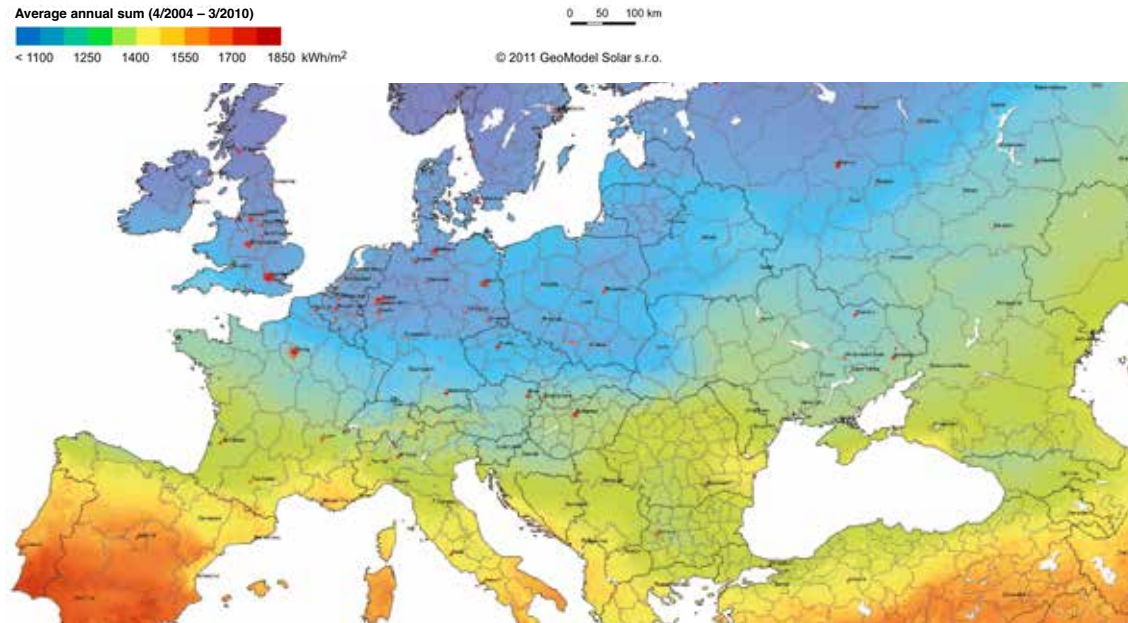
Dimensioning carried out with the following parameters: T. accumulation = 85 °C / T. inlet = 15 °C / P. pre-charge = 3 bar / P. max = 6 bar
The recommended capacities must be verified on the basis of the actual dimensions of the system implemented.

MODEL	MAGNESIUM ANODE SUPPLIED	CATHODIC PROTECTION APPLICABLE
BST 200	1,1/4" x 350 / Cod.8560046	Cathodic protection for cylinders 100/400 l. Code 8560170
BST 300	1,1/4" x 550 / Cod.8560066	
BST 400	1,1/4" x 550 / Cod.8560066	
BST 500	1,1/4" x 700 / Cod.8560086	Cathodic protection for cylinders 500/1000 l. Code 8560175
BST 800	1,1/4" x 700 / Cod.8560086	
BST 1000	1,1/4" x 700 / Cod.8560086	
BST 1500	n.2 x 1,1/4" x 670 / Cod. 8560070	Cathodic protection for cylinders 1500/2500 l. Code 8560180
BST 2000	n.2 x 1,1/4" x 670 / Cod. 8560070	

BST CYLINDERS ARE SELECTED BASED ON MULTIPLE FACTORS THAT CAN BE BRIEFLY SUMMARISED AS FOLLOWS:

- SANITARY HOT WATER REQUIRED
- SUNLIGHT
- CYLINDER CAPACITY FOR THE NUMBER OF PEOPLE
- SOLAR COLLECTOR SURFACE FOR CYLINDER CAPACITY

SOLAR LIGHT:
LEVEL OF SUNLIGHT PER YEAR IN EUROPE (kWh/m²)



CYLINDER MODELS PER NUMBER OF PEOPLE:

MODEL	Number of people
BST 200	1 - 2
BST 300	2 - 4
BST 400	3 - 5
BST 500	5 - 7
BST 800	max. 10
BST 1000	max. 18
BST 1500	max. 22
BST 2000	max. 38

SOLAR COLLECTOR SURFACE TO COMBINE WITH THE SELECTED MODEL:

MODEL	Solar collector surface (m ²)
BST 200	2.5
BST 300	5
BST 400	7.5
BST 500	10
BST 800	12.5
BST 1000	15
BST 1500	17,5
BST 2000	20

TABLE OF HEATING ELEMENT APPLICABILITY TO CYLINDERS

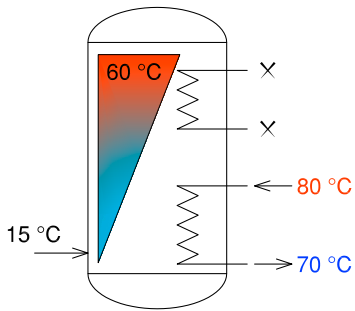
Heating element model					Water heating time from 15° C to 60 °C (expressed in minutes) <i>The heating times outlined are approximate</i>							
CODE	Power (kW)	Voltage (Volt)	Connection	Length (mm)	BST-200	BST-300	BST-400	BST-500	BST-800	BST-1000	BST-1500	BST-2000
8601000	1	220 V / MF	G 1.1/4"	295	630 min.	960 min.	1270 min.	1580 min.	2520 min.	3150 min.	4720 min.	6300 min.
8601650	1.65	220 V / MF	G 1.1/4"	450	380 min.	580 min.	770 min.	970 min.	1550 min.	1920 min.	2870 min.	3820 min.
8602000	2	220 V / MF	G 1.1/4"	515	n.a.	n.a.	640 min.	800 min.	1270 min.	1580 min.	2370 min.	3150 min.
8602600	2.6	220 V / MF	G 1.1/4"	675	n.a.	n.a.	n.a.	n.a.	980 min.	1230 min.	1830 min.	2450 min.
8602601	2.6	220 V / MF	G 1.1/4"	360	250 min.	370 min.	490 min.	630 min.	980 min.	1220 min.	1830 min.	2450 min.
8603300	3.3	220 V / MF	G 1.1/4"	825	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1450 min.	1940 min.
8603301	3.3	220 V / MF	G 1.1/4"	435	200 min.	295 min.	390 min.	490 min.	780 min.	980 min.	1450 min.	1940 min.
8604001	4	220 V / MF	G 1.1/4"	510	n.a.	n.a.	320 min.	410 min.	640 min.	800 min.	1200 min.	1600 min.
8705000	5	380 V / TF	G 1.1/2"	445	140 min.	200 min.	260 min.	330 min.	520 min.	640 min.	950 min.	1300 min.
8706000	6	380 V / TF	G 1.1/2"	510	n.a.	n.a.	220 min.	280 min.	430 min.	540 min.	800 min.	1060 min.
8708000	8	380 V / TF	G 1.1/2"	670	n.a.	n.a.	n.a.	n.a.	330 min.	420 min.	610 min.	800 min.
8710000	10	380 V / TF	G 1.1/2"	820	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	490 min.	640 min.
8712000	12	380 V / TF	G 1.1/2"	970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	410 min.	540 min.

n.a.= Heating element not applicable

ACCUMULATION AT 60 °C

LOW HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 60^{\circ}C$



MODEL	THERMAL POWER [kW]	PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PRODUCTION DHW AT 60°C [l/hour]	QUANTITY DHW AT 45°C FOR FIRST 10 min. ⁽²⁾ [l]
BST 200	16,50	1450	38	315	195
BST 300	29,00	2600	31	554	310
BST 400	34,50	3000	38	659	395
BST 500	44,00	3850	35	840	495
BST 800	50,00	4400	49	955	668
BST 1000	60,00	5300	47	1145	770
BST 1500	79,00	6900	60	1500	1040
BST 2000	93,00	8200	67	1800	1300

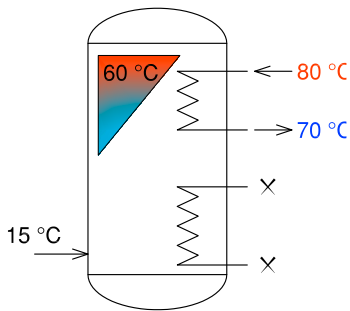
(1) Time required to bring the temperature of the cylinder from 15 °C to 60 °C

(2) Quantity of DHW (Sanitary Hot Water) at 45°C available in first 10 minutes with accumulation of DHW at 60° C.

ACCUMULATION AT 60 °C

UP HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 60^{\circ}C$



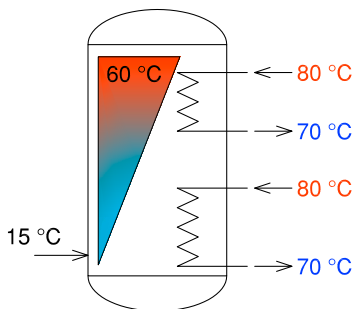
MODEL	THERMAL POWER [kW]	PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PPRODUCTION DHW AT 60°C [l/hour]
BST 200	11,50	1000	24	220
BST 300	18,00	1500	22	340
BST 400	21,00	1850	28	400
BST 500	21,00	1850	32	400
BST 800	29,00	2500	35	550
BST 1000	29,00	2500	37	550
BST 1500	35,00	3100	36	675
BST 2000	46,70	4100	44	890

(1) Time required to bring the temperature of the upper part of the cylinder (about 1/3 of the total volume) from 15 °C to 60 °C.

ACCUMULATION AT 60 °C

DOUBLE HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 60^{\circ}C$



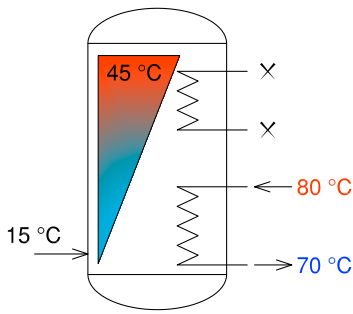
MODEL	THERMAL POWER [kW]	UPPER PUMP CAPACITY [l/hour]	LOWER PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PRODUCTION DHW AT 60°C [l/hour]
BST 200	28,00	1000	1450	22	530
BST 300	47,00	1500	2600	20	890
BST 400	55,50	1850	3000	23	1050
BST 500	65,00	1850	3850	24	1240
BST 800	79,00	2500	4400	32	1500
BST 1000	89,00	2500	5300	35	1700
BST 1500	114,00	3100	6900	41	2170
BST 2000	139,70	4100	8200	45	2670

(1) Time required to bring cylinder temperature from 15 °C to 60°C

ACCUMULATION AT 45 °C

LOW HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 45^{\circ}C$



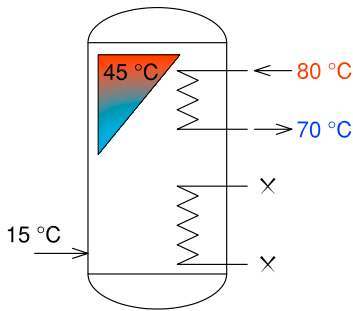
MODEL	THERMAL POWER [kW]	PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PRODUCTION DHW AT 45°C [l/hour]
BST 200	20,00	1760	21	570
BST 300	35,00	3000	18	1000
BST 400	40,00	3500	22	1140
BST 500	53,00	4670	20	1500
BST 800	59,50	5200	28	1700
BST 1000	68,50	6000	28	1960
BST 1500	95,00	8300	33	2700
BST 2000	112,00	9850	37	3200

(1) Time required to bring the temperature of the cylinder from 15 °C to 45 °C

ACCUMULATION AT 45 °C

UP HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 45^{\circ}C$



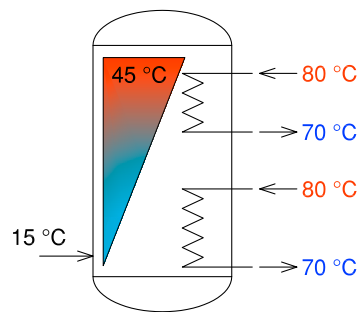
MODEL	THERMAL POWER [kW]	PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PRODUCTION DHW AT 45°C [l/hour]
BST 200	14,00	1230	14	400
BST 300	21,50	1840	13	610
BST 400	26,00	2230	16	740
BST 500	26,00	2230	18	740
BST 800	36,00	3170	19	1020
BST 1000	36,00	3170	20	1020
BST 1500	42,00	3700	20	1210
BST 2000	56,00	4900	24	1600

(1) Time required to bring the temperature of the upper part of the cylinder (about 1/3 of the total volume) from 15 °C to 45 °C.

ACCUMULATION AT 45 °C

DOUBLE HEAT EXCHANGER: $T_{inlet} = 80^{\circ}C$; $\Delta T = 10^{\circ}C$.

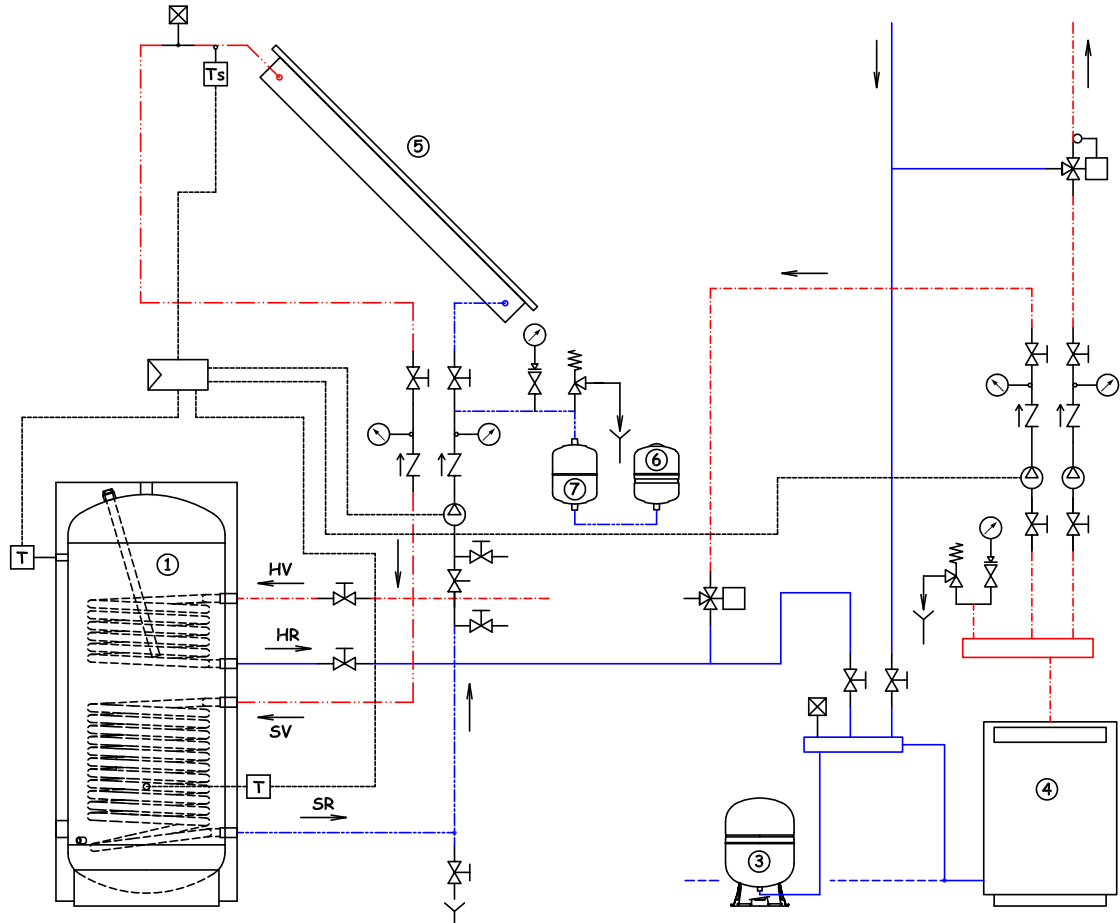
STORAGE WATER HEATER: $T_{inlet} = 15^{\circ}C$; $T_{accumulation} = 45^{\circ}C$



MODELLO	THERMAL POWER [kW]	UPPER PUMP CAPACITY [l/hour]	LOWER PUMP CAPACITY [l/hour]	HEATING TIME ⁽¹⁾ [min]	PRODUCTION DHW AT 45°C [l/hour]
BST 200	34,00	1760	1230	12	970
BST 300	56,50	3000	1840	11	1580
BST 400	66,00	3500	2230	13	1870
BST 500	79,00	4670	2230	13	2250
BST 800	95,50	5200	3170	18	2730
BST 1000	104,50	6000	3170	20	2990
BST 1500	137,00	8300	3700	23	3920
BST 2000	168,00	9850	4900	25	4810

(1) Time required to bring cylinder temperature from 15 °C to 45°C

HYDRAULIC DIAGRAM 1 (BST CYLINDER WITH SOLAR CIRCUIT AND INTEGRATION)



HYDRAULIC DIAGRAM 2 (BST CYLINDER WITH SANITARY CIRCUIT)

