

Project 7953

Final Product Information

Solar module units

March 2010



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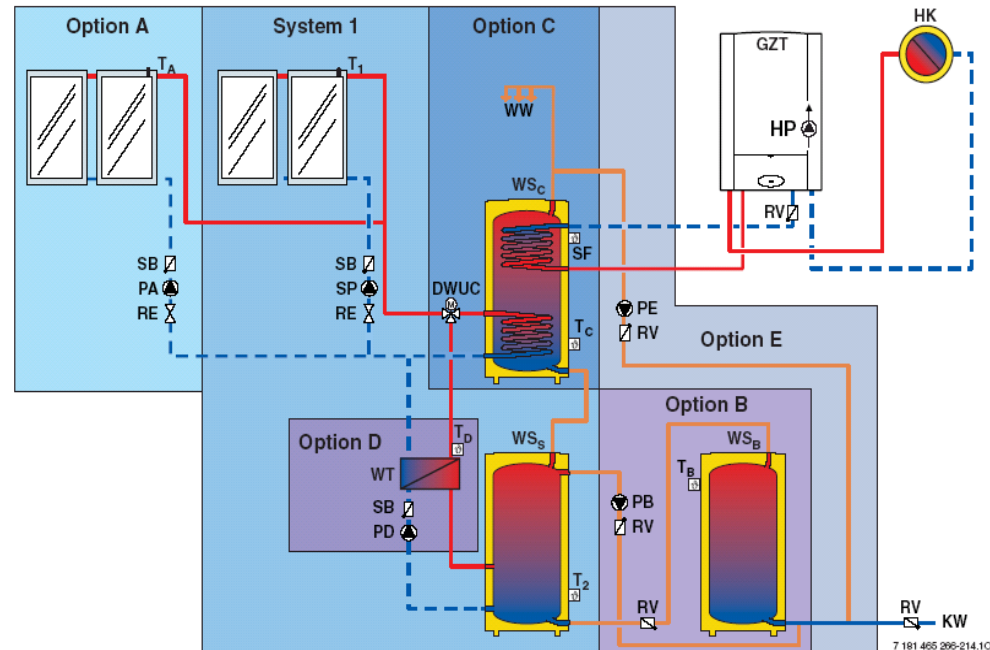
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1. Project idea:

- Provide pre-fabricated solar modules to simplify solar thermal piping arrangements for individual solar applications.

- The solar module units can be built up like LEGO bricks.

- Easy installation, reducing installation and system failures.



- Next step is to provide complete solar systems.

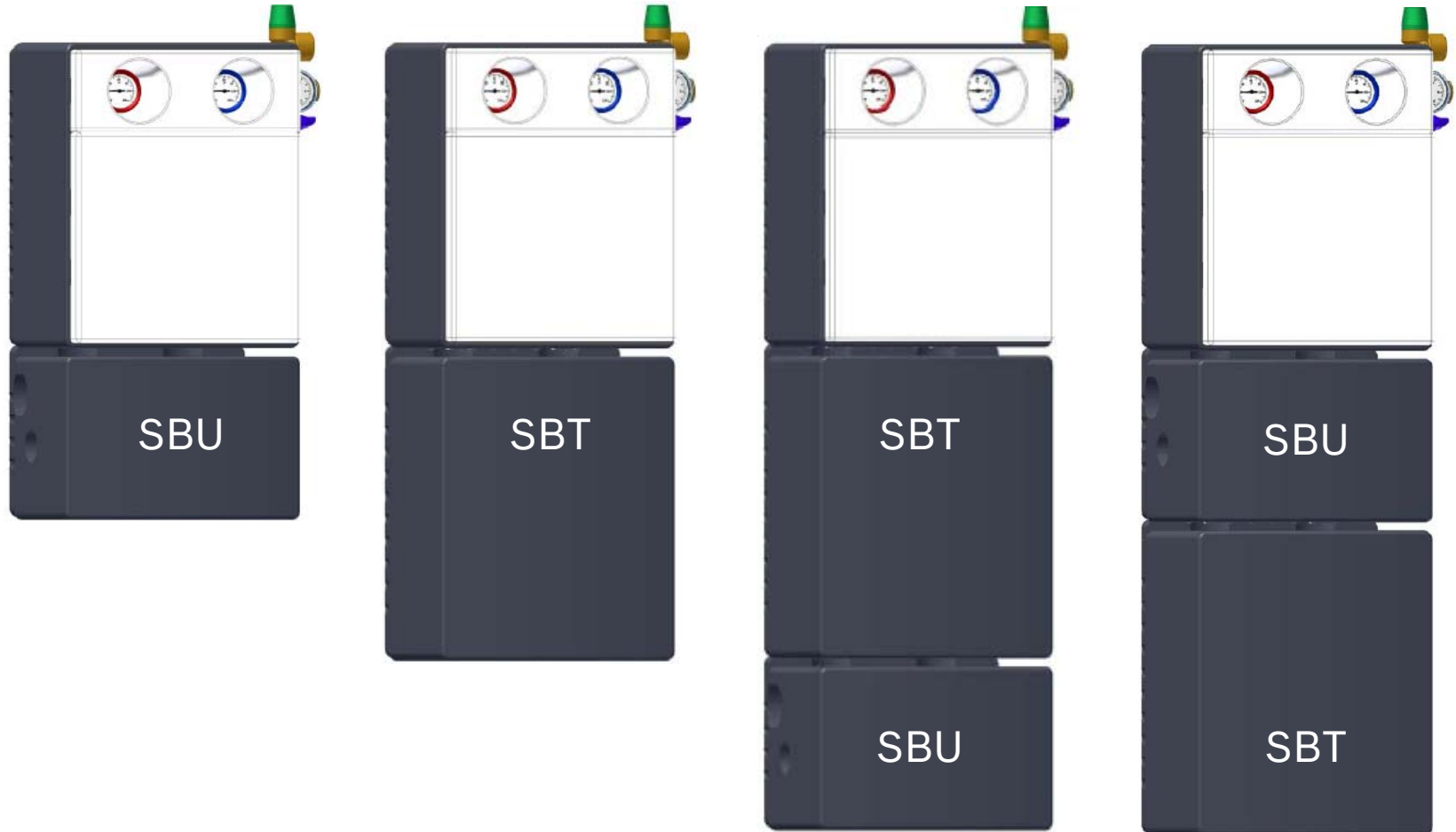
- Design based on the new solar pump station.

2. Customer benefits

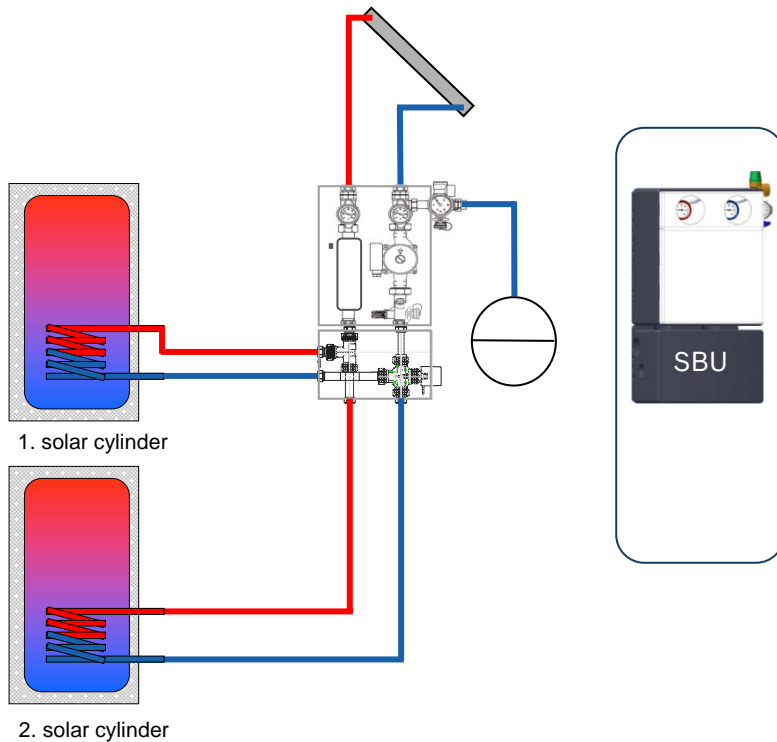
Customer Need	Benefit	Reason Why
Easy planning	Solar module units simplify the planning of a solar system	Reduces component complexity and provide multifunction capabilities
Easy and fast installation	Solar module units are fast and easy to install	Components install easily and reduce labor costs
Prevention of failures	Solar module units prevent installation and system failures	Clearly defined combinations and piping structure lower system failures



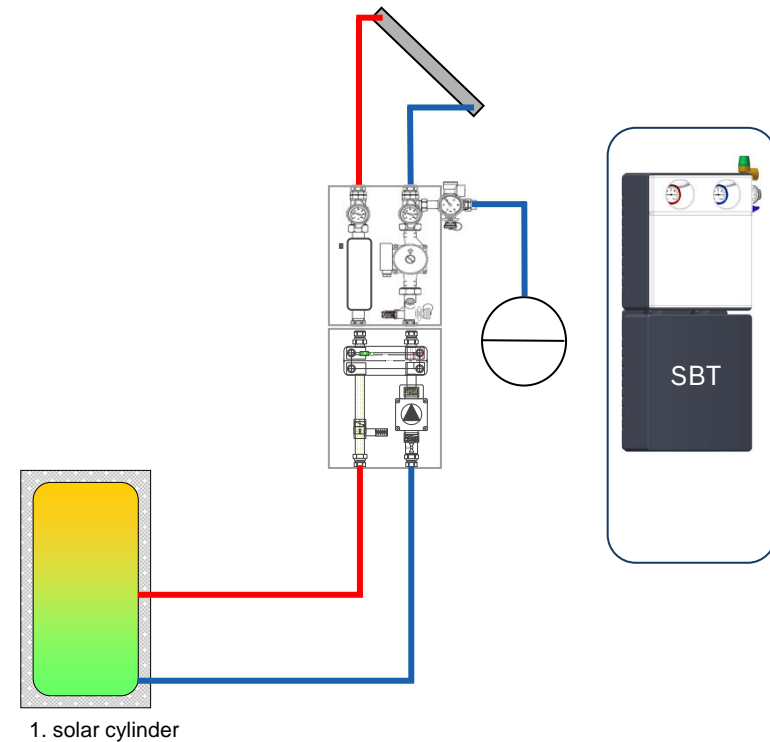
3.1 Solar module combinations TT



4.1 Systems: 2 cylinders or 1 buffer cylinder

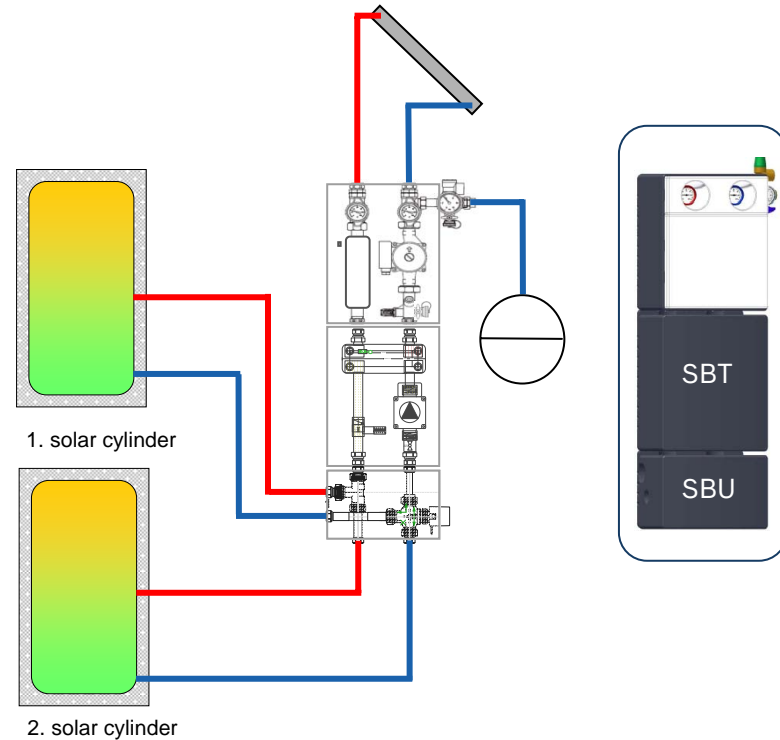
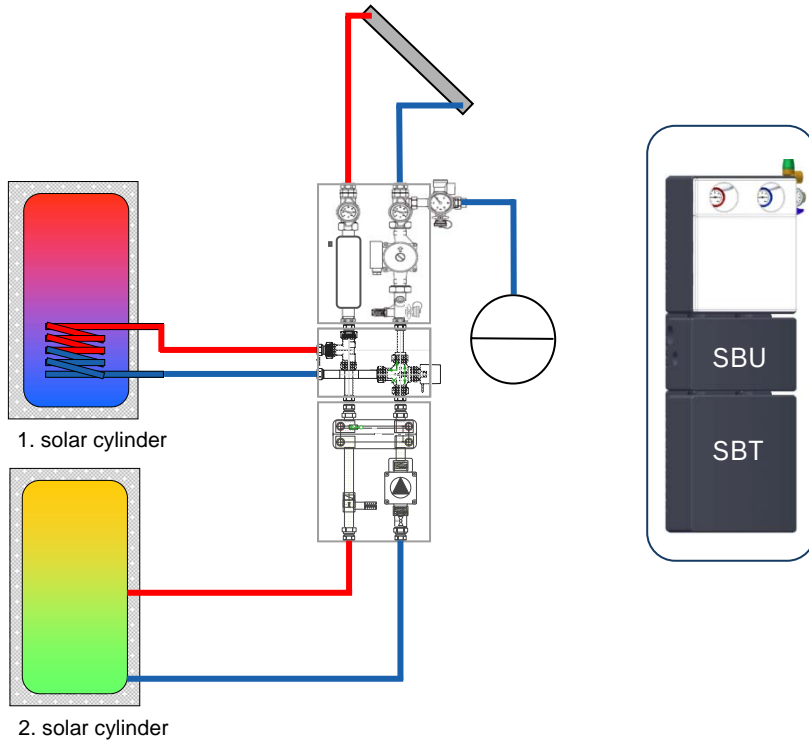


System with KS pump station + SBU module (8718572675)



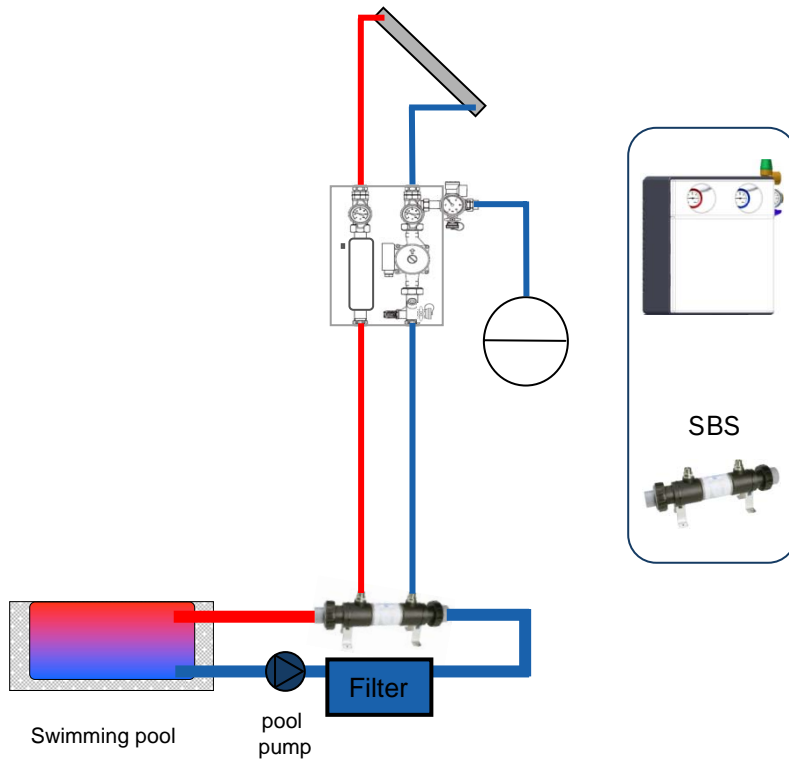
System KS pump station + SBT module (8718572704)

4.2 Systems: 2 cylinder systems

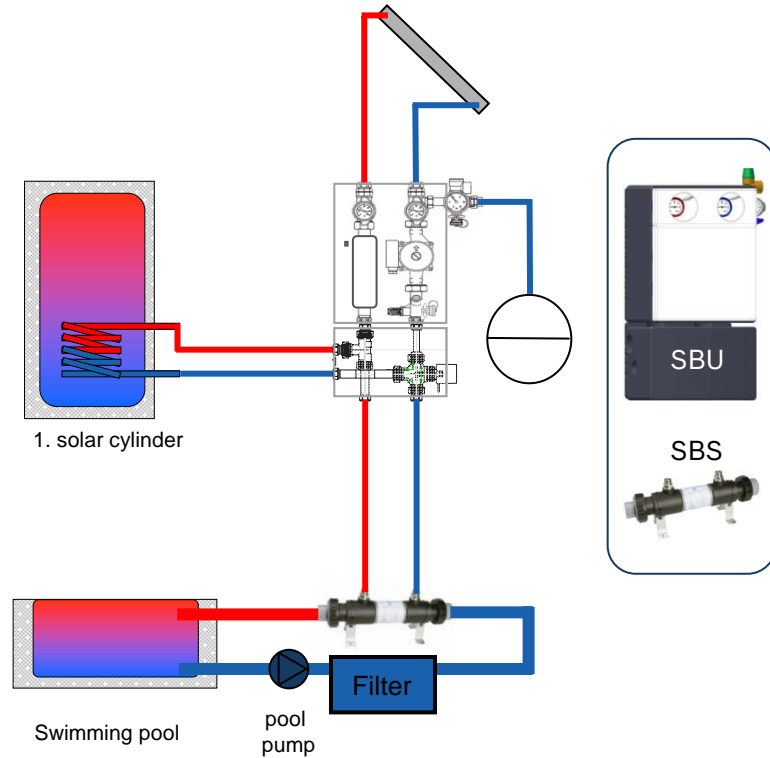


System with KS pump station + SBT module (8718572704) + SBU module (8718572675)

4.3 Systems: Pool systems

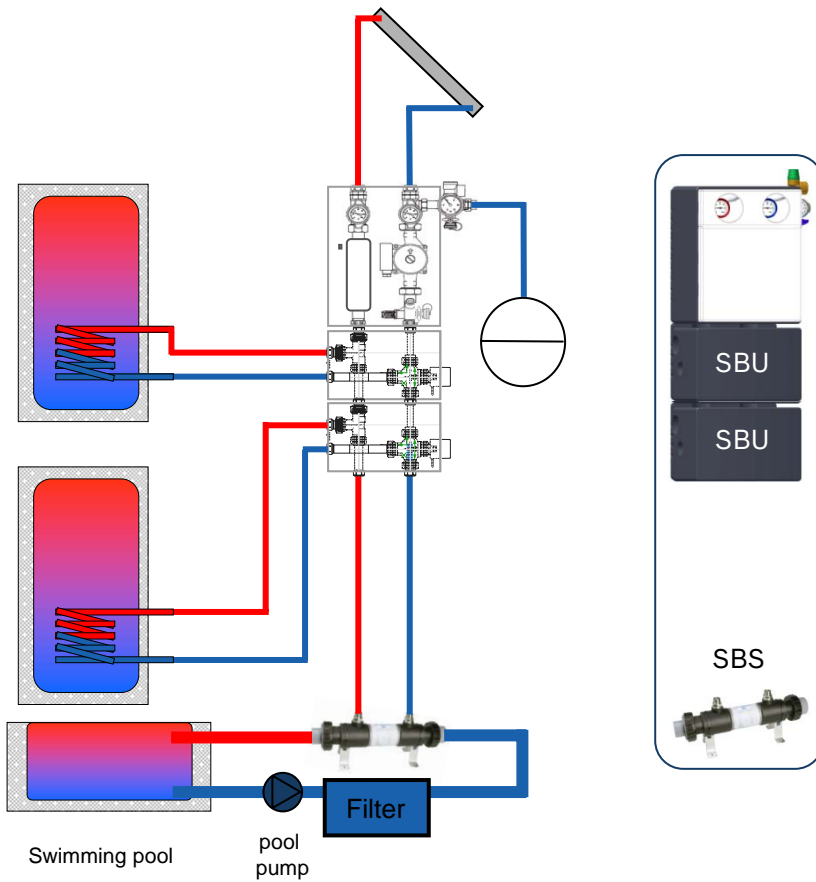


System with KS pump station + SBS module (8718572676)

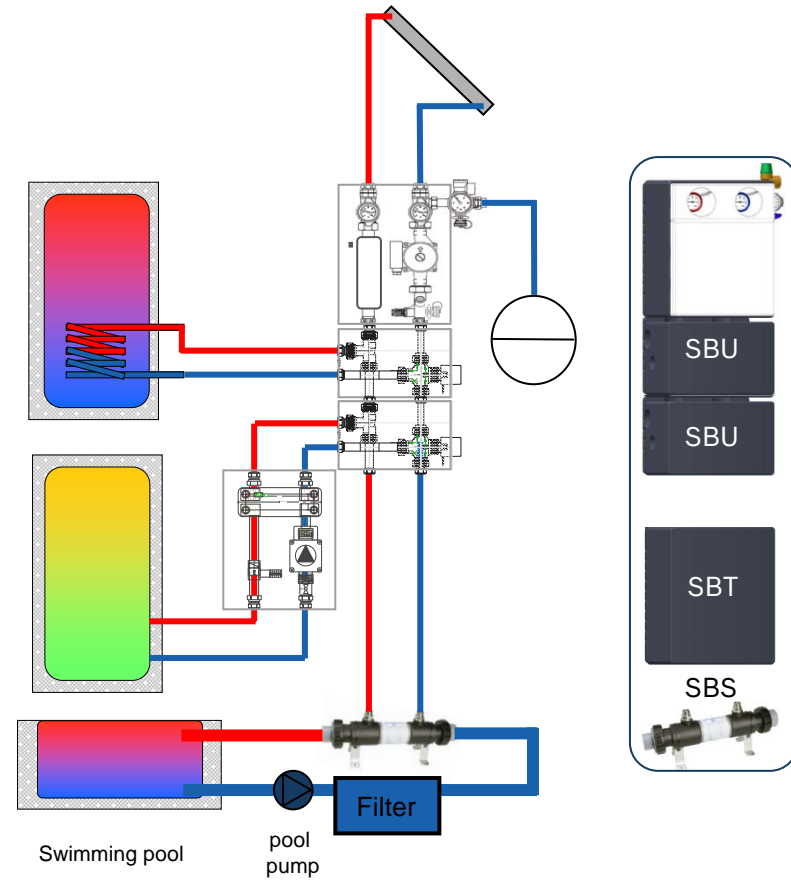


System with KS pump station + SBSU module (8718572675) + SBS module (8718572676)

4.4 Systems: Cylinder and pool systems



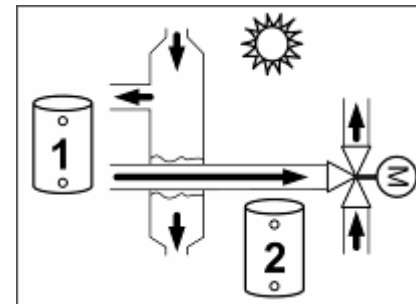
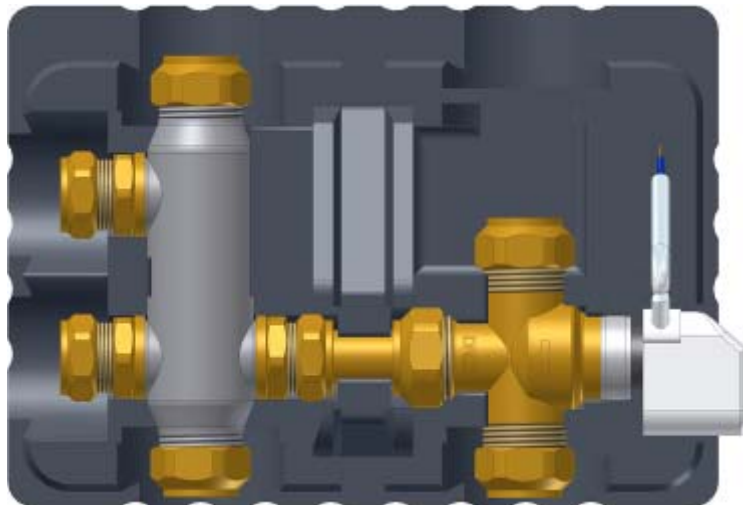
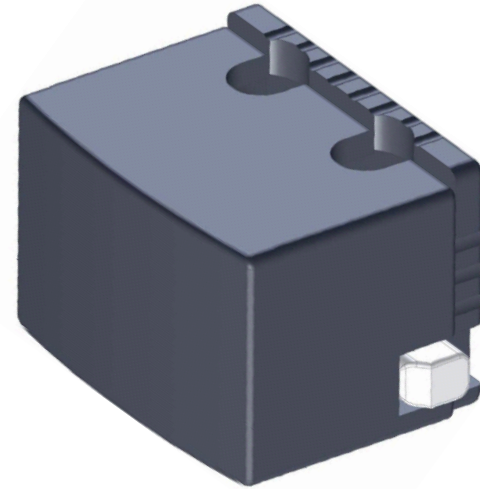
System with KS pump station + 2x SBU module (8718572676)



System with KS station + 2 x SBU + SBS + SBT module

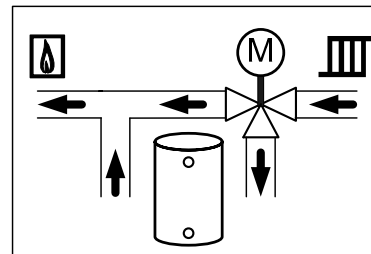
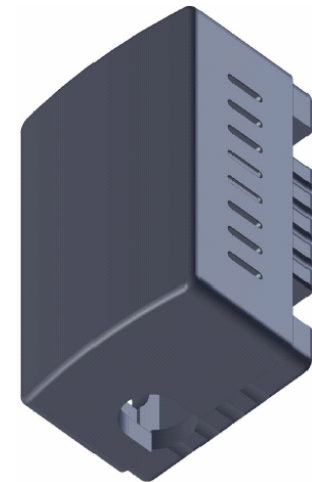
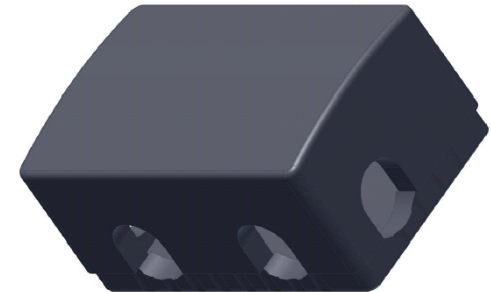
5.1 Module SBU: change over unit

Solar systems with two cylinders and one solar pump station. Priority/first cylinder connect is on the left side, second cylinder is on the bottom. Overlap of the rear panel is needed for cooling of the solar pump station.



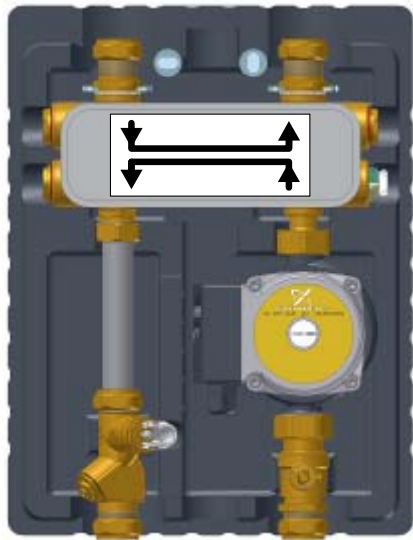
5.2 Module SBH: heating support unit

Solar space heating with return flow increase. Horizontal or vertical mounting.



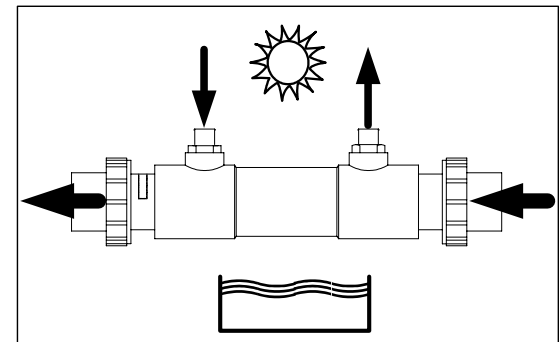
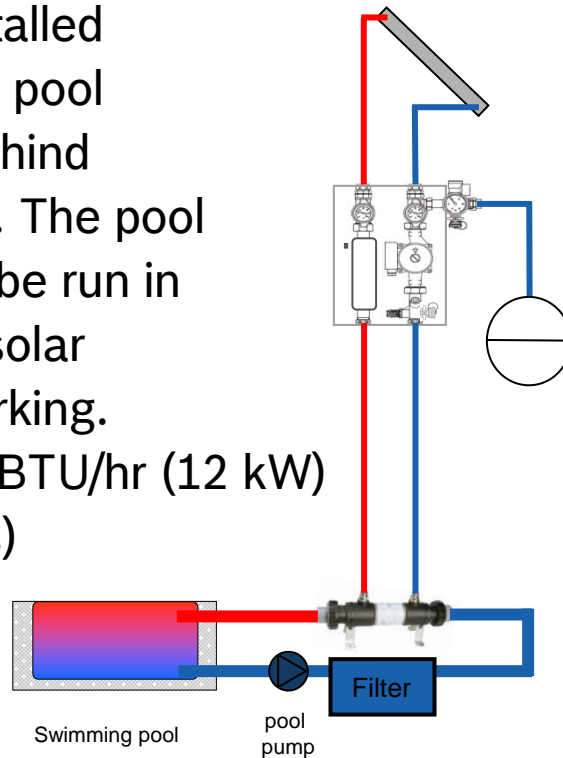
5.3 Module SBT: system division unit

Division solar fluid – heating water. Usage for buffer cylinder without internal heat exchanger. Overlap of the rear panel is needed for cooling of the solar pump station. Max. 34,140 BTU/hr (10 kW) (8 collectors, 264gal / 1000L tank)



5.4 Module SBS: heat exchanger for pool

Connects a solar system with a swimming pool. The heat exchanger has to be installed directly in the pool circulation behind the pool filter. The pool pump has to be run in the time the solar system is working. Max. 41,000 BTU/hr (12 kW) (10 collectors)



FPI solar module units

7. Technical Data	Change Over Unit	Heating Support Unit	System Division Unit	Heat Exchanger for Pool
Type	SBU	SBH	SBT	SBS
Part number	8 718 572 675	8 718 572 677	8 718 572 704	8 718 572 676
width x height x depth	290 / 203 / 217	290 / 174 / 135	290 / 374 / 217	525 / 120 / 210
mm	11.4 / 8 / 8.5	11.4 / 6.9 / 5.3	11.4 / 14.7 / 8.5	20.8 / 4.7 / 8.3
inch				
Connection solar loop secondary loop	Clamp ring ½" Clamp ring ¾"	Clamp ring ½" Clamp ring ¾"	Clamp ring ½" Clamp ring ¾"	G 3/4", PVC D50
Max. pressure	87psi/6 bar	87psi/6 bar	87psi/6 bar	87psi/6 (solar) / 36.3psi/2,5 (pool)
Valves/ gravity flow stop	-	-	x / x	-
Thermometer/hand air vent	-	-	- / x	-
Flow meter	-	-	0.5-4.2 gal/min 2-16 L/min	-
Delivery height pump	-	-	18 ft / 4 m (UPS15-58)	-
Socket temperature sensor			6 / 9,7 mm	6/8 mm
Electro thermal drive	2,5 W (power-off open)	2,5 W (power-off closed)		
Pressure loss	KVS 4,5	KVS 4,5	10 mbar / 4 inchH ₂ O	4 inchH ₂ O (solar) / 40 inchH ₂ O (pool)
Performance heat exchanger			10 kW/34,000BTU/h (solar 1.8gpm dT 45°F (solar 131°F/86°F, heating 77°F/122°F))	12 kW/41,000BTU/h (solar 2.2gpm, 136°F/97°F, pool 4.4gpm, 68°F/70°F)

Thermotechnology



7.1 Planning SBS

E.g. design point: 12 kW

10 collectors: 2.2 gpm

Pool pump: 44 gpm

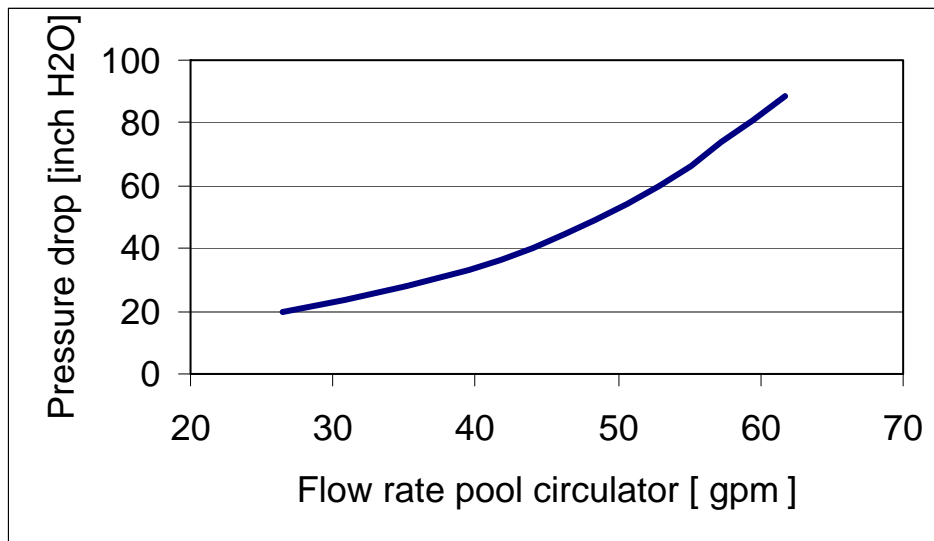
Solar: 136°F/97°F

Pool: 68°F/70°F

Pressure loss:

Pool: 40 inchH₂O,

solar 4 inch H₂O

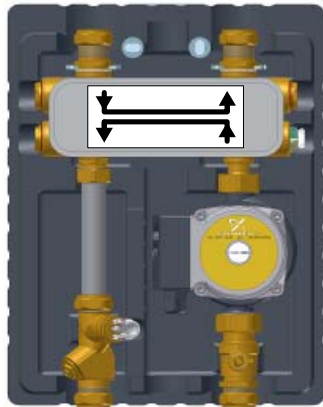


Performance SBS [kW / BTU/h]	Collector temperature (pool temperature 68°F, 44 gpm*)				
	86°F	104°F	122°F	140°F	158°F
4 collectors (0.9 gpm)	1,5 / 5,121	3,0 / 10,243	4,5 / 15,364	5,5 / 18,779	6,5 / 22,193
6 collectors (1.3 gpm)	2,3 / 7,853	4,3 / 14,682	6,5 / 22,193	8,5 / 29,022	10,0 / 34,12
8 collectors (1.8l gpm)	3,0 / 10,243	5,5 / 18,779	8,5 / 29,022	11,5 / 39,265	13,3 / 45,411
10 collectors (2.2 gpm)	3,5 / 11,950	6,3 / 21,510	9,5 / 32,437	12,8 / 43,704	15,0 / 51,216

*) -10% lower performance by flow rate 26.4 gpm

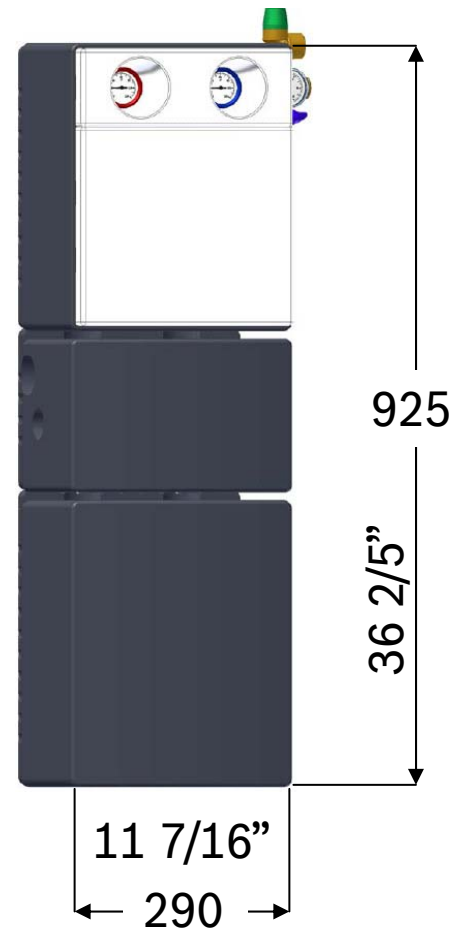
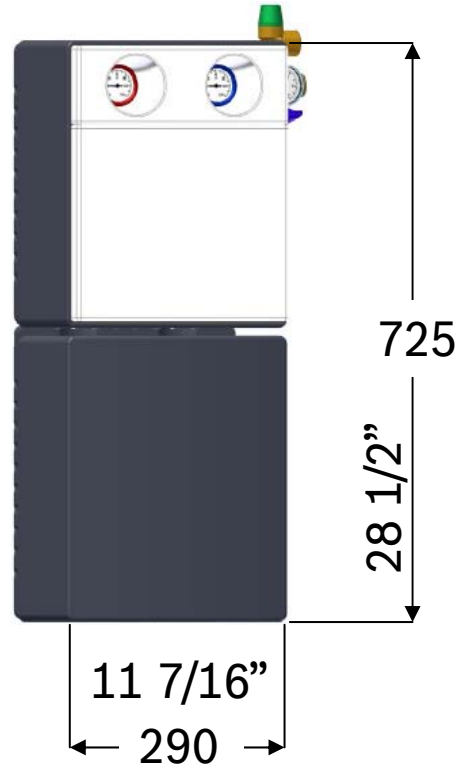
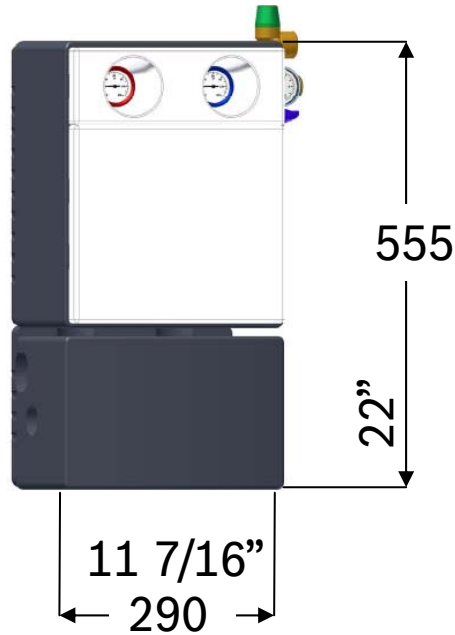
7.2 Planning SBT

E.g. design point: 10 kW
8 collectors 1.8 gpm
heating 1.58 gpm
dT 25K (solar 131°F/86°F,
heating 77°F/120°F)
pressure drop 4 inchH₂O

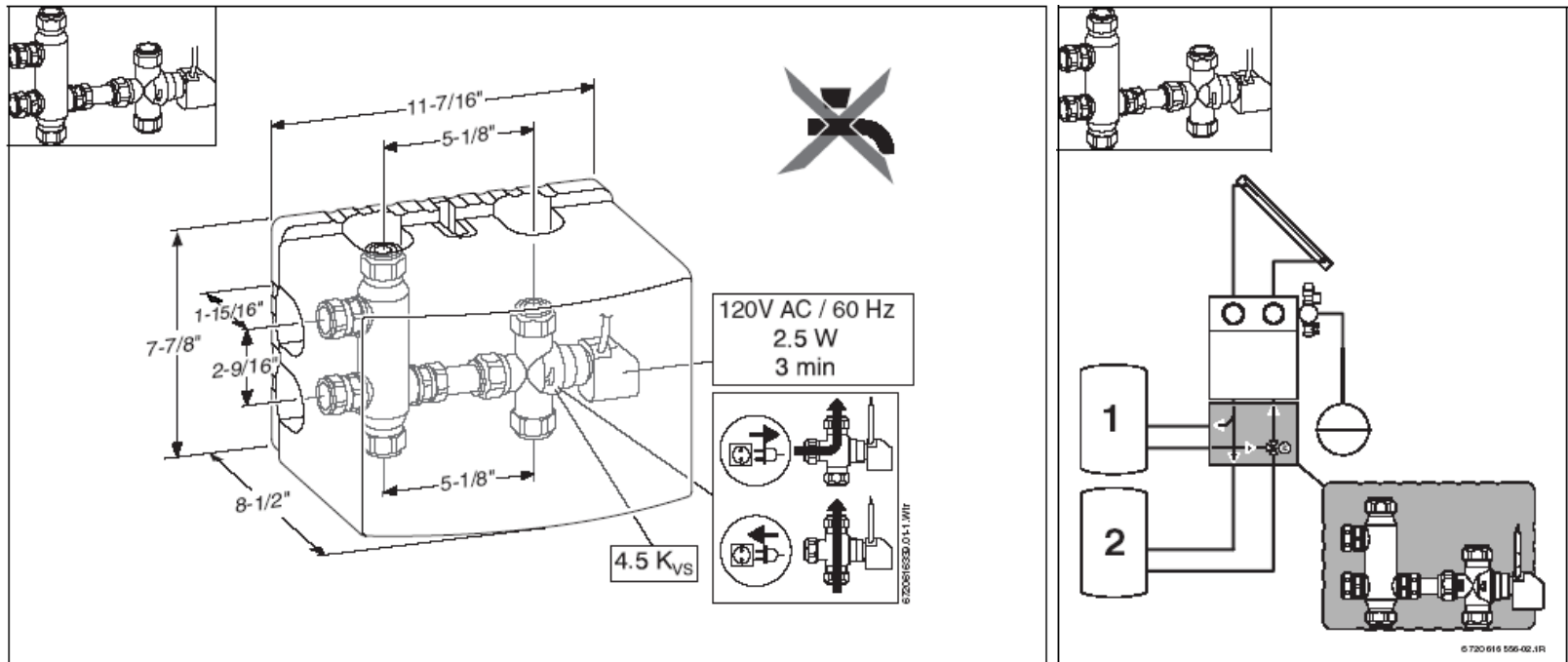


Numbers of collectors	Size of buffer water tank (30-50 gal/collector)
4	120 – 200
6	180 – 300
8	240 – 400

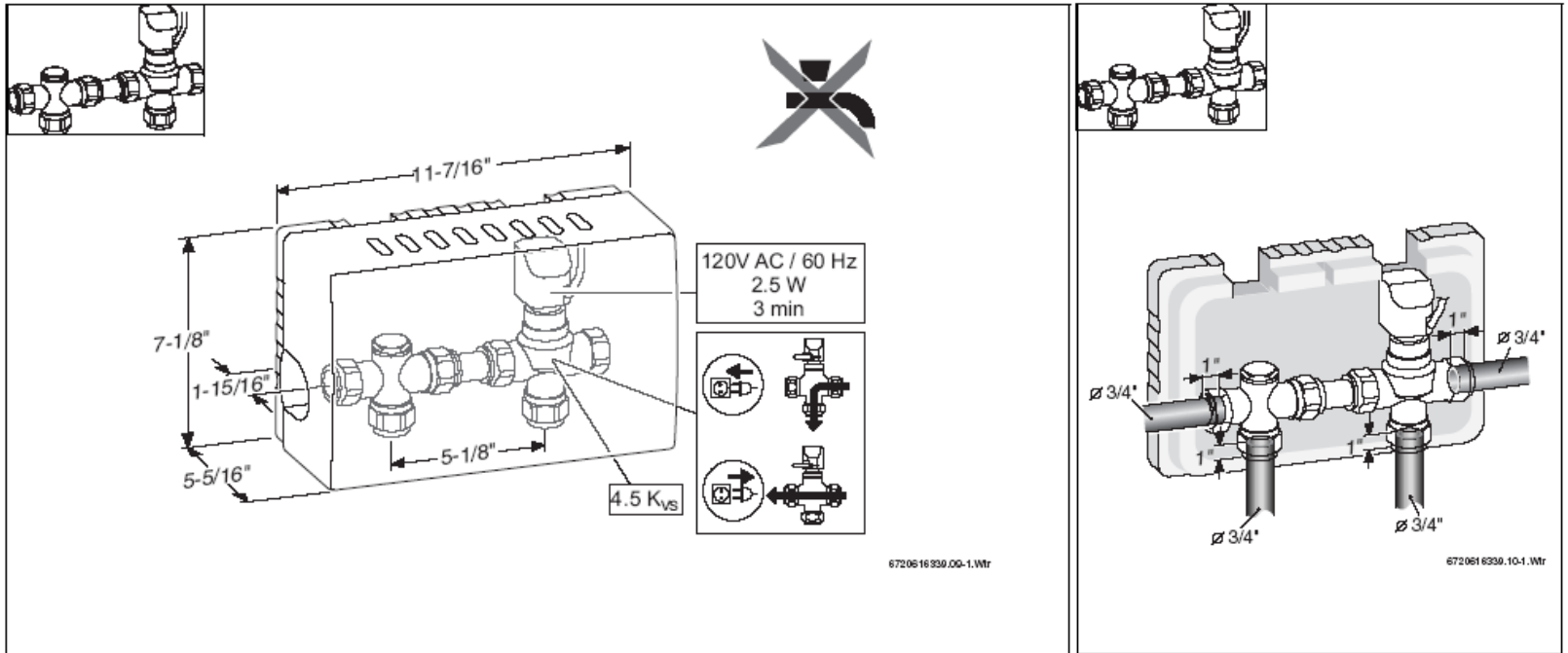
7.3 Dimensions complete solutions



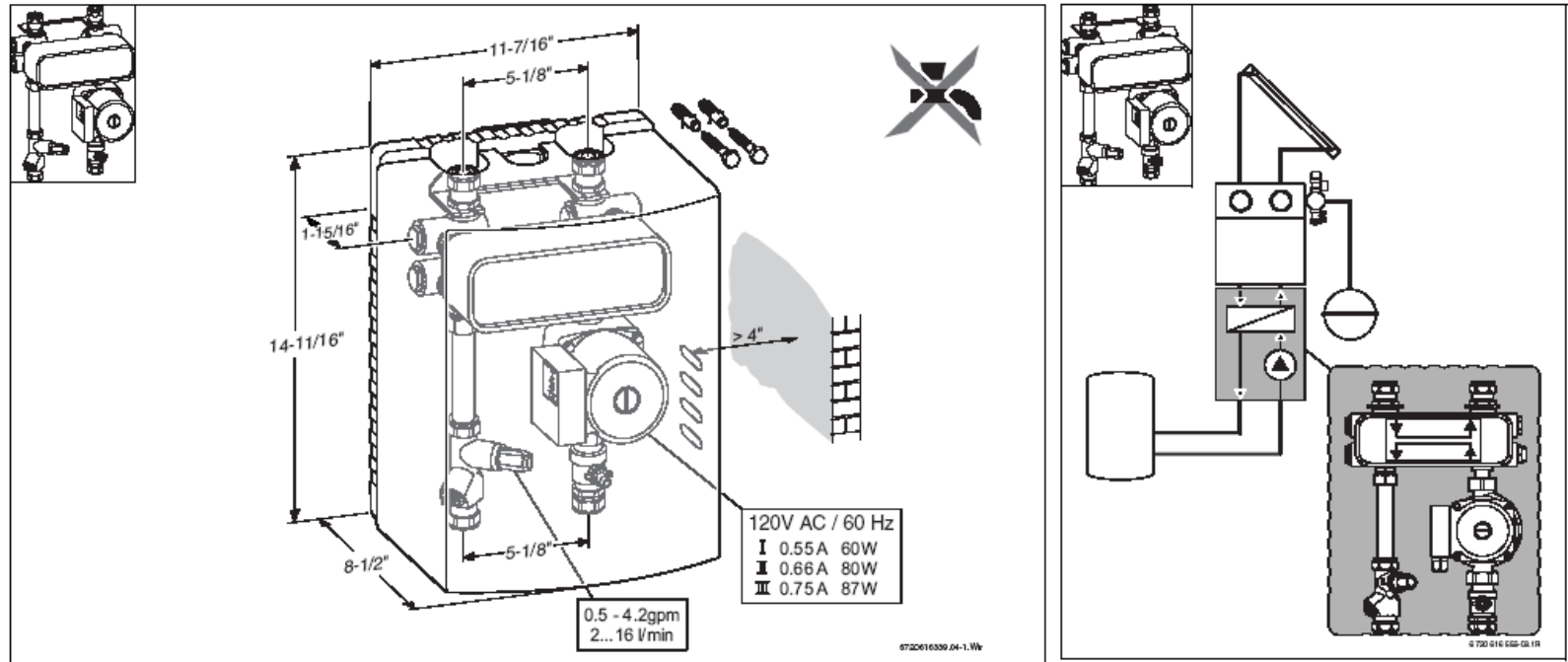
7.4 Dimensions SBU change over unit



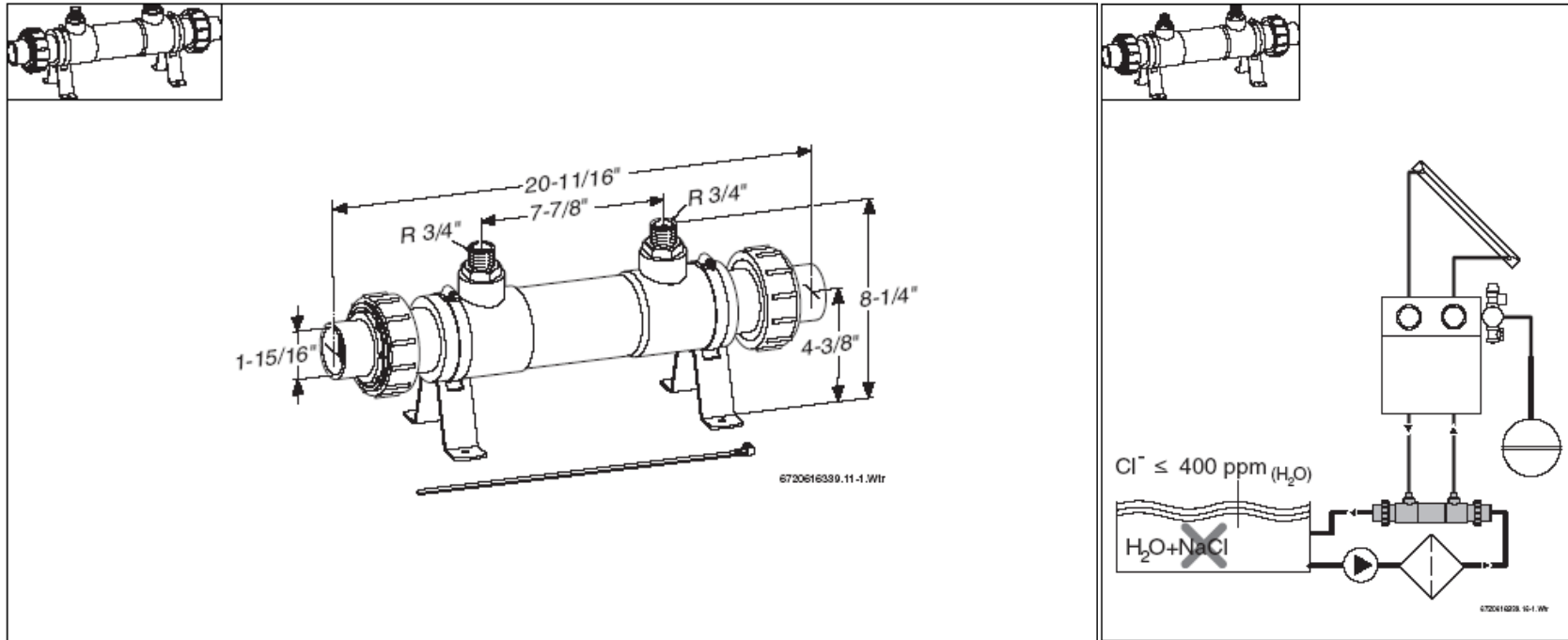
7.5 Dimensions SBH heating support unit



7.6 Dimension SBT System Division Unit



7.7 Dimension SBS Heat Exchanger for Pool



8. New part numbers

Part number	Type	Description English	Trade Price
8718572675	SBU	Change over unit	\$470
8718572676	SBS	Heat exchanger for pool	\$570
8718572677	SBH	Heating support unit	\$370
8718572704	SBT	System division unit	\$990



9. Existing accessories

Part number	Description	For use with
5991384	Sensor AS1 (Buderus) 9,7 mm	SBT
63012831	Sensor AS1.6 (Buderus) 6 mm	SBS
5991376	Sensor FV/FZ (Buderus)	SBH

10. Market introduction dates

Country	Brand	Date of introduction
USA/Canada	All (Original Quality Label)	March 17 th , 2010



11. Contact

Product Management TT/SNA-MKT3

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