

Instruction Manual

CS TSV MIX REGULUS PUMP STATION - for boilers and heating systems



EN
v 1.1

Regulus

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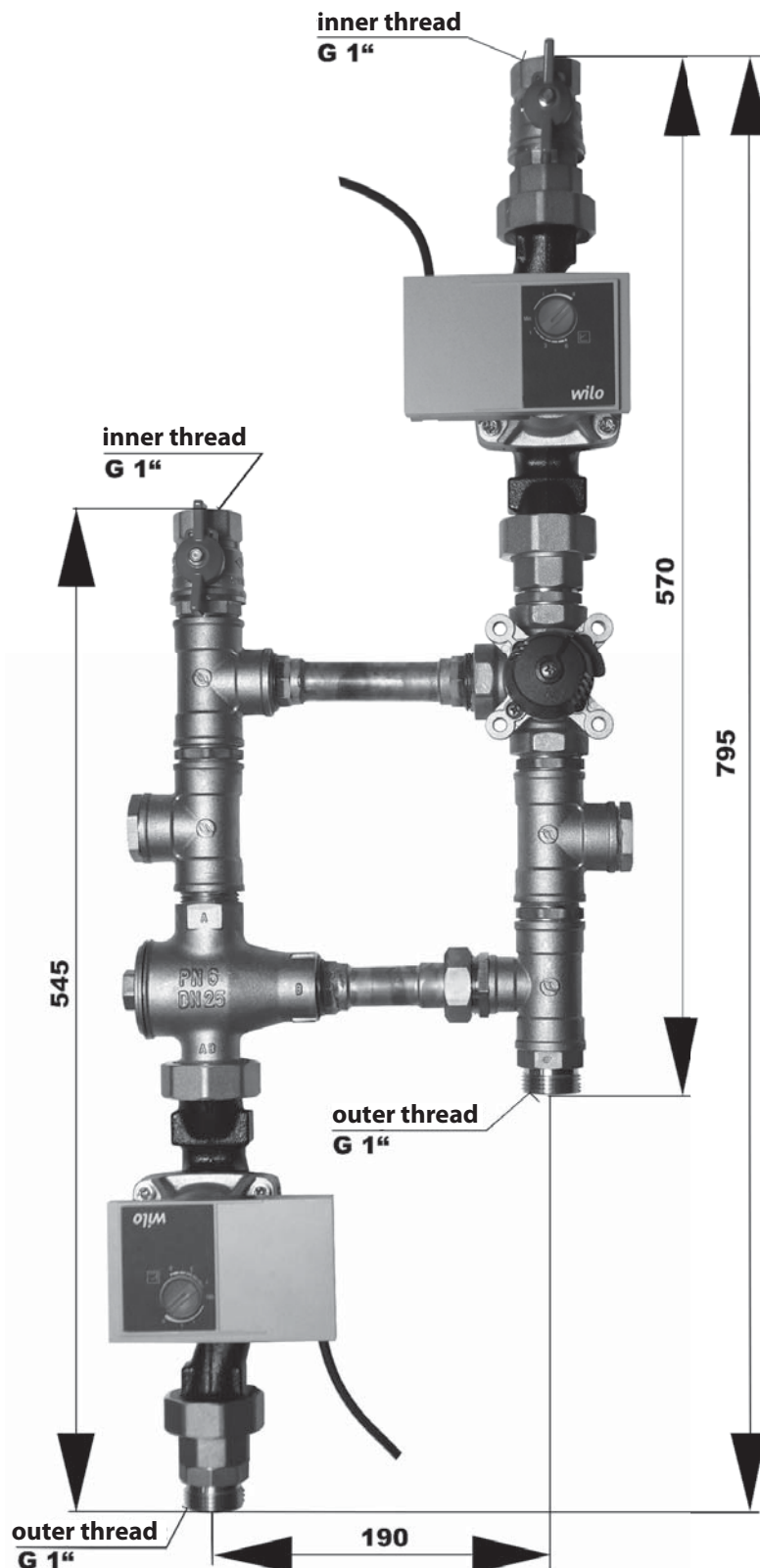
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1 Introduction

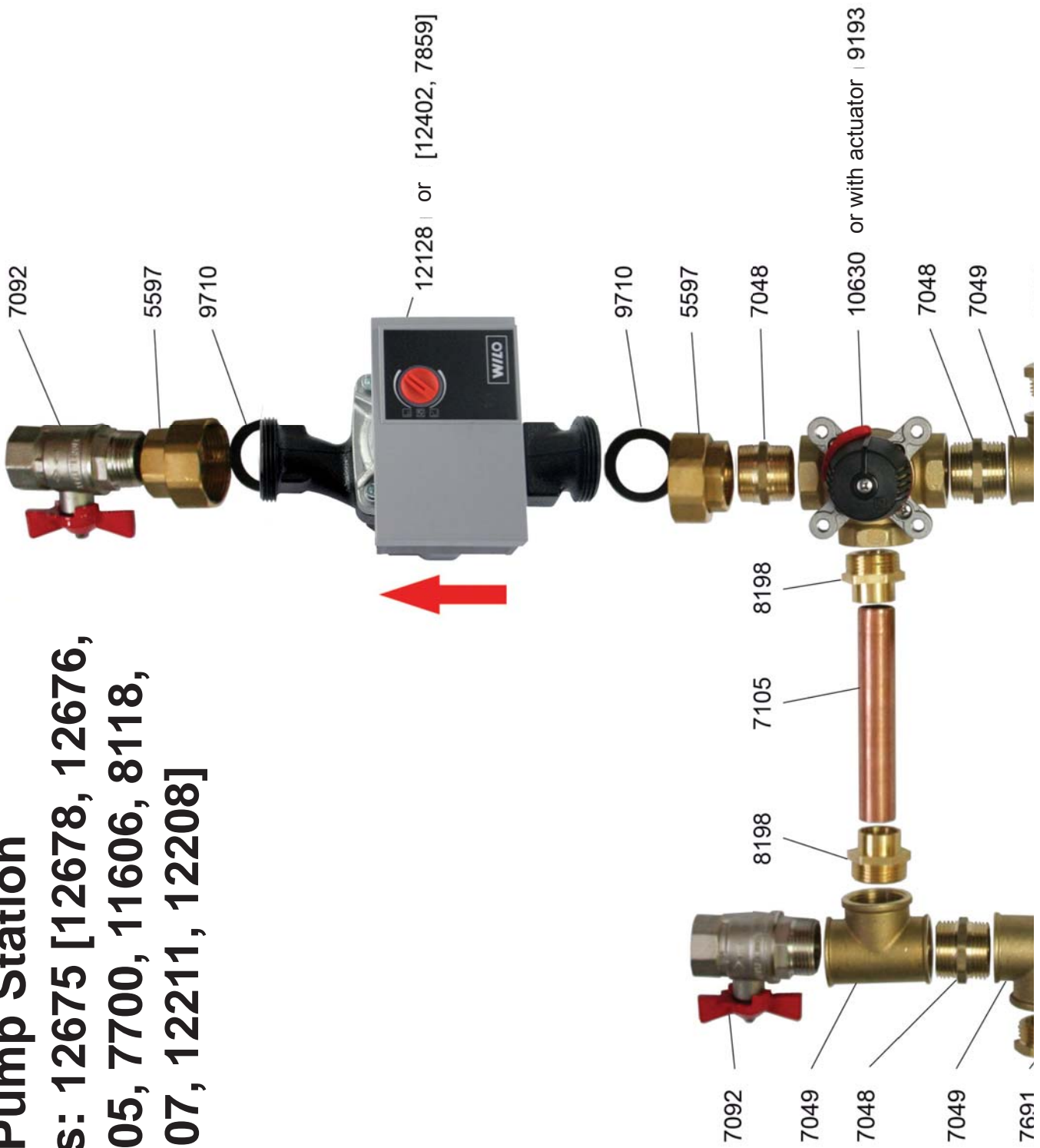
CS TSV MIX Regulus Pump Station makes boiler installation easier. It contains all the important components necessary for boiler protection and proper operation in both space- and water heating. It is designed to be mounted directly on a boiler flow piping or on a wall.

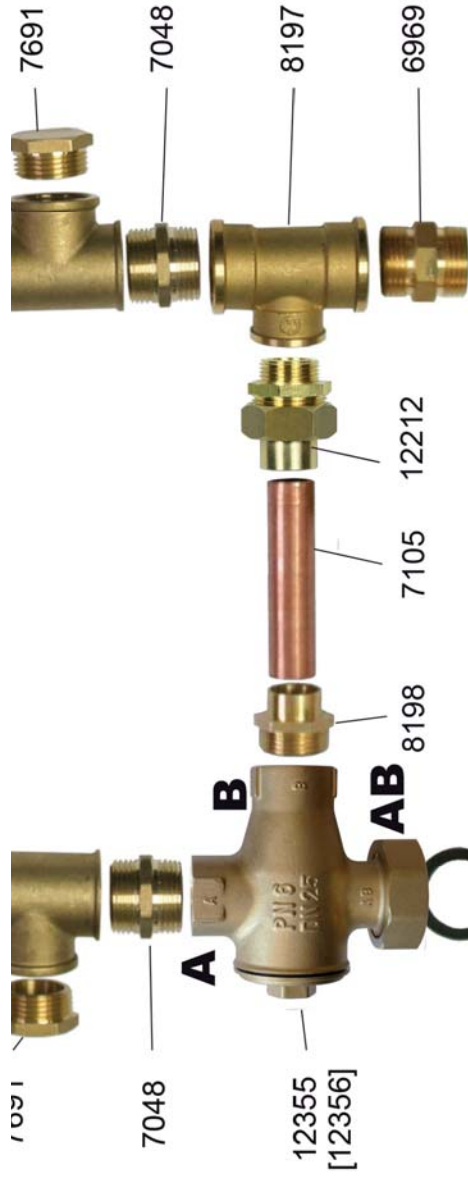
This pump station is designed for solid-fuel boilers with an accumulation tank, enabling sanitary water heating in a storage tank.

2 Connection dimensions of CS TSV MIX Regulus



Components of CS TSV MIX Regulus Pump Station with codes: 12675 [12678, 12676, 13178, 11605, 7700, 11606, 8118, 12210, 12207, 12211, 12208]



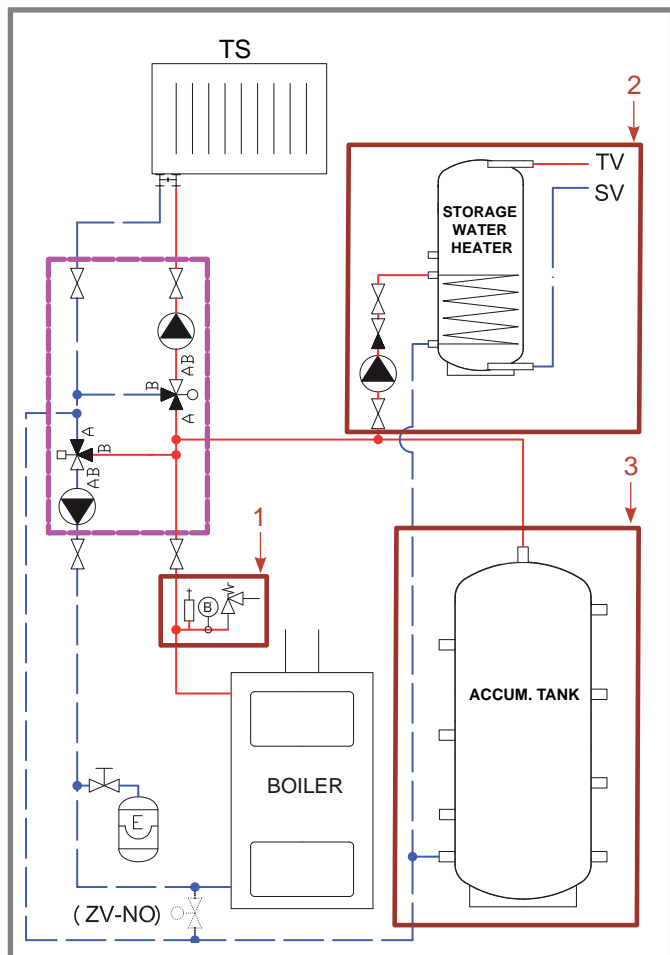


Code	Item name	Qty	Unit
7049	T-piece, brass, 1" FFF	3	pcs
8197	T-piece, brass, reducer, 1" x 3/4" FFF	1	pcs
7092	Ball valve, 1", M-F	2	pcs
5597	Coupling for pump, 6/4" - 1" F-F, brass, incl. gaskets	3	pcs
7691	Hex head plug, brass, 1" M	2	pcs
12355	TSV3B thermostatic valve with nut, G6/4", 55°C, DN 25 G1" F	1	pcs
12356	TSV3B thermostatic valve with nut, G6/4", 65°C, DN 25 G1" F	1	pcs
7048	Nipple, 1", brass	5	pcs
10630	3-way mixing valve, 1" F	1	pcs
9193	230V actuator for mixing valve, 120s, 5Nm, three point on/off	1	pcs
6969	Nipple, 1", thick wall	2	pcs
8198	Male pipe adapter, 1" to Cu 22, brazing	3	pcs
12212	Male pipe adapter, 3/4" to Cu 22, brazing	1	pcs
7105	Copper pipe, 22x1, semi-hard, 5m	0,2	m
9710	Gasket for pump union nut, 6/4"	4	pcs
10989	5-layer cardboard flap box, 840x300x150, 300x830 division	1	pcs
12128	Yonos Para 25/1-6 RKC circ. pump, 180mm, 6/4"	2	pcs
12402	ALPHA2 L 25-60 180 circ. pump, 1x230V, class A	2	pcs
7859	ST 25/7-180-9h-6/4" circ. pump	2	pcs

3 Function description of CS TSV MIX Regulus

CS TSV MIX keeps the return temperature to a boiler at 55 °C [65 °C] which prevents condensation and boiler tarring. Water for the heating system (i.e. power for the heating system) is mixed in a 3-way valve, either a manually operated one, or an electronically controlled valve. Heat surplus is stored in the accumulation tank and used automatically when the boiler extinguishes.

4 Schematic hydraulic diagram of CS TSV MIX Regulus



Key:	
TS	- heating system
TV	- domestic hot water
SV	- cold water
E	- expansion vessel
B	- manometer
ZV-NO	- zone valve, normally open
1	Safety assembly for a heating system, code 9797. The assembly contains a manometer, air release valve and a safety valve. In case these components are already installed on the boiler, this assembly is not needed.
2	A storage water heater can be connected to the pump station.
3	An accumulation tank can be connected to the pump station.

Optional accessories

5 Variants of CS TSV MIX Regulus

Model	TSV temper.	Pump	Mix. valve actuator	Code
CS TSV MIX 55 YP 26/1-6	55 °C	Yonos Para 25/1-6 RKC	No	12675
CS TSV MIX 65 YP 26/1-6	65 °C	Yonos Para 25/1-6 RKC	No	12678
CS TSV MIX 55 P YP 26/1-6	55 °C	Yonos Para 25/1-6 RKC	Yes	12676
CS TSV MIX 65 P YP 26/1-6	65 °C	Yonos Para 25/1-6 RKC	Yes	13178
CS TSV MIX 55 ST 25/7	55 °C	Star ST 25/7	No	11605
CS TSV MIX 65 ST 25/7	65 °C	Star ST 25/7	No	7700
CS TSV MIX 55 P ST 25/7	55 °C	Star ST 25/7	Yes	11606
CS TSV MIX 65 P ST 25/7	65 °C	Star ST 25/7	Yes	8118
CS TSV MIX 55 Alpha	55 °C	Alpha2 L 25-60	No	12210
CS TSV MIX 65 Alpha	65 °C	Alpha2 L 25-60	No	12207
CS TSV MIX 55 P Alpha	55 °C	Alpha2 L 25-60	Yes	12211
CS TSV MIX 65 P Alpha	65 °C	Alpha2 L 25-60	Yes	12208

6 Components of CS TSV MIX Regulus

- » heating system pumps
- » TSV3B thermostatic mixing valve
- » 2 ball valves for connection to a heating system
- » 3-way mixing valve for a heating system
- » mixing valve actuator (for the version with actuator only)

7 Function description of the TSV3B valve [12355 - 55 °C or 12356 - 65 °C]



TSV B thermostatic mixing valve is fitted with an integrated thermostatic element that will close the „A” inlet (from a heating system), if the return water to the boiler („AB” outlet) is colder than nominal. As soon as the nominal temperature is reached, the thermostat starts opening the „A” inlet slowly and mixing the cold return water with the hot water from the „B” inlet (boiler outlet) with the aim to reach the nominal return temperature („AB” outlet). At the same time, it closes the „B” inlet, limiting so the hot water flow coming from the by-pass till its complete tight closure. Thanks to this, no balancing valve is needed.

The Thermostatic mixing valve is made of brass, sealing of the element and body plug are made of EPDM, sealing of closing plug is made of NBR.

8 Description of the 3-way mixing valve



A 3-way mixing valve mixes heating water for a heating system to a required temperature. Mixing is done by a circular segment rotor. The rotor turning angle used for regulation is about 90° and corresponds to a scale from 0 to 10 (without stops it can rotate 360°).

9 G 6/4” Pumps: Wilo Star ST 25/7 - 180mm, G6/4” [7859]

Wilo Yonos Para 25/1-6 RKC, 180mm, G6/4” [12128]

Grundfos ALPHA2L 25-40, 180mm, G6/4” [12402]

Design

Wet running circulation pumps with threaded joints. Selectable speed steps for output adjustment.

Application

All hot-water heating systems, industrial circulation systems, cold water circulation systems and A/C units.

**Wilo Star ST 25/7 - 180mm,
G 6/4", code 7859**



**Wilo Yonos Para 25/1-6 RKC,
180mm, G 6/4", code 12128**



**Grundfos ALPHA2L 25-60,
180mm, G 6/4", code 12402**



10 M21 actuator for mixing valve [code 9193]



Technical data:

Power supply - 230V/ 50Hz

Torque - 5Nm

Shift time - 120s

El. protection - IP42

11 Optional accessories



a) Safety assembly for a heating system [code 9797]

The assembly contains a manometer, air release valve and a safety valve. In case these components are already installed on the boiler, this assembly is not needed.

b) Regulus storage water heaters

- model lines RBC, R2BC, RGC, R2GC, NBC, N2BC, RDC and R2DC

c) Accumulation tanks

- model lines PS, PS E, PSWF, PS2F, PS N, PSWF N, PS2F N, HSK, DUO E and DUO E2.

09/2014