Instruction Manual

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

EN
verze 1.0

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1 Introduction

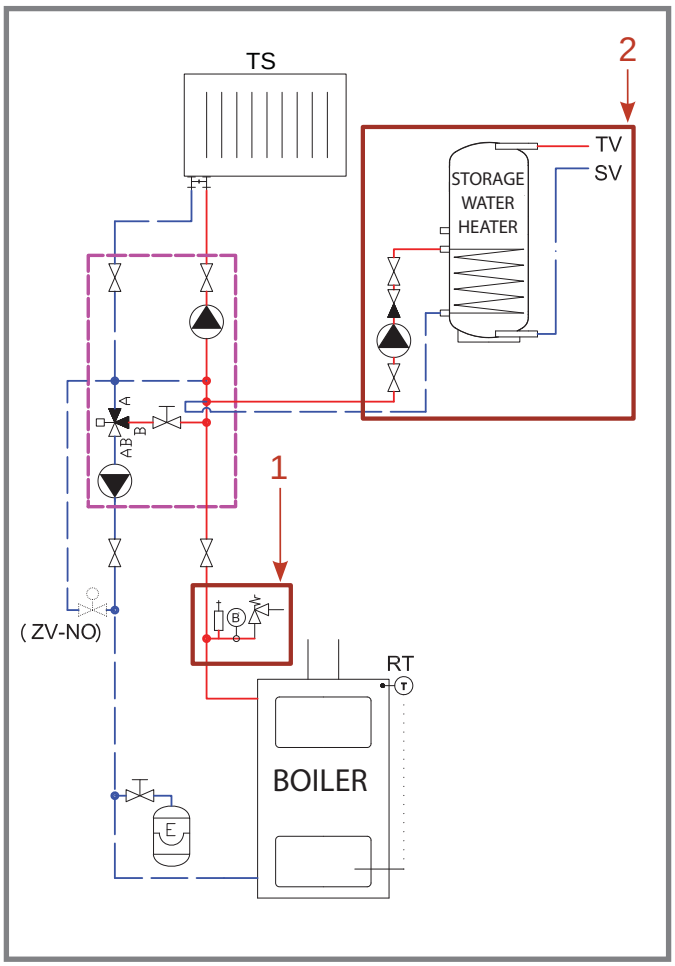
Regulus CS TSV Pump Station contains all major components necessary for boiler protection and faultless operation of both space heating and domestic water heating which makes boiler installation easier and faster. It is designed to be mounted either directly on a flow pipe from a boiler or on a wall.

This Pump Station is intended for solid-fuel boilers, no accumulation tank, enabling DHW heating.

2 Function Description of Regulus CS TSV Pump Station

CS TSV keeps the return temperature to a boiler at 65 °C which protects the boiler against condensation and tarring. Water for a heating system is mixed to a temperature corresponding to the boiler output. It can work at a low boiler output e.g. with the temperatures of 75/65 °C in the boiler and 50/40 °C in the heating system. Output for the heating system is controlled on the boiler itself - e.g. with an RT3 thermostatic controller or with a room unit with an RT3-E controller.

3 Schematic Hydraulic Diagram



Key:		
TS	- heating system	
TV	- domestic hot water	
SV	- cold water	
E	- expansion vessel	
B	- pressure gauge	
ZV-NO	- zone valve normally open	
T	- thermometer	
RT	- thermostatic draft regulator	
1	Safety assembly for a heating system, code 8063. The assembly contains a manometer, air vent valve and a safety valve. Should these components be already installed on the boiler, this assembly is not needed.	Optional accessories
2	A storage water heater can be connected to this pump station.	

4 Pump Station Components:

» circulation pump
» boiler pump
» TSV3 thermostatic mixing valve
» 2 ball valves to connect a heating system

5 Function Description and Balancing TSV3 Valve (code 10347)

TSV3 thermostatic 3-way valve is fitted with a thermostatic insert that closes "A" inlet port (from a heating system) if the return water to boiler (outlet port "AB") is cooler than the nominal value. As soon as the nominal temperature is reached, the thermostat starts opening the "A" inlet port for heating system return water to mix with hot water from the boiler (inlet port "B") so that the nominal temperature of return water to boiler (outlet port "AB") is kept. The inlet port "B" stays permanently open.

However, since the "B" inlet remains permanently open, depending on the specific hydraulic conditions it may happen that more extra hot water will be mixed from "B" inlet than needed for reaching the nominal temperature at the "AB" outlet, and so its resulting temperature will be higher than desired. For this reason the "B" inlet has a limited inlet cross section and a ball valve is installed upstream of the valve. The ball valve shall be used to set an optimum flow rate through the "B" inlet port.

Ball valve adjustment:

a. For cold firing (temperature of boiler flow water below 60 °C and A inlet closed) the minimum flow rate set by the boiler manufacturer shall be ensured (usually a temperature drop of 15-30 °C).

b. for return water temperature before "A" inlet over 65 °C, the temperature at the "AB" outlet should be higher by 2 to 5 °C that the temperature before the "A" inlet.

When setting is finished, it is advisable to remove the valve control lever in order to avoid unintentional closing or other undesired position changes.

6 Wilo Star-RS 25/4 G6/4" Pumps

Design

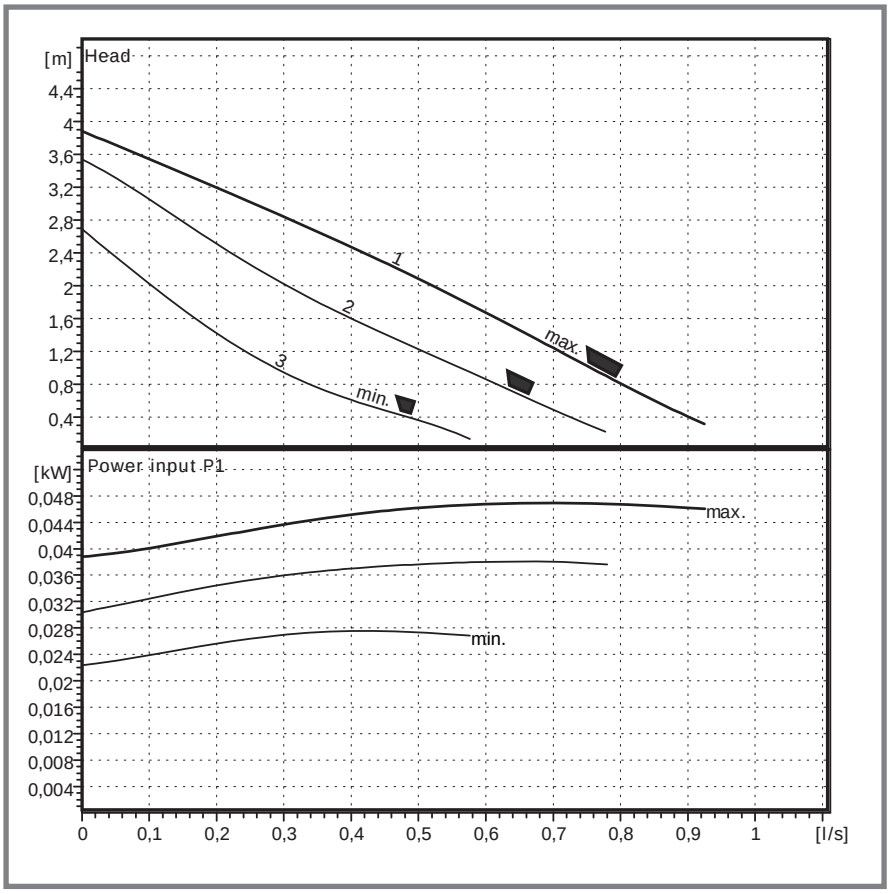
Wet running circulation pump with threaded connections. Three--stage model for performance adjustment.

Use

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

Technické parametry

» Permissible temperature range for the medium -10 °C to +110 °C
» Power supply 1~230 V, 50 Hz
» El. protection IP 44
» Max. working pressure 10 bar



» Suitable for any mounting position with the shaft in a horizontal position; with the terminal board in a position of 3-6-9-12 o'clock.

» 3-stage model for performance adjustment.

» Safe and simple installation thanks to a handy protruding boss for a spanner on the pump body.

» Simplified electric wiring thanks to a terminal board with removable cable glands, usable in either direction.

Quick coupler with a spring clamp.

7 Optional Accessories

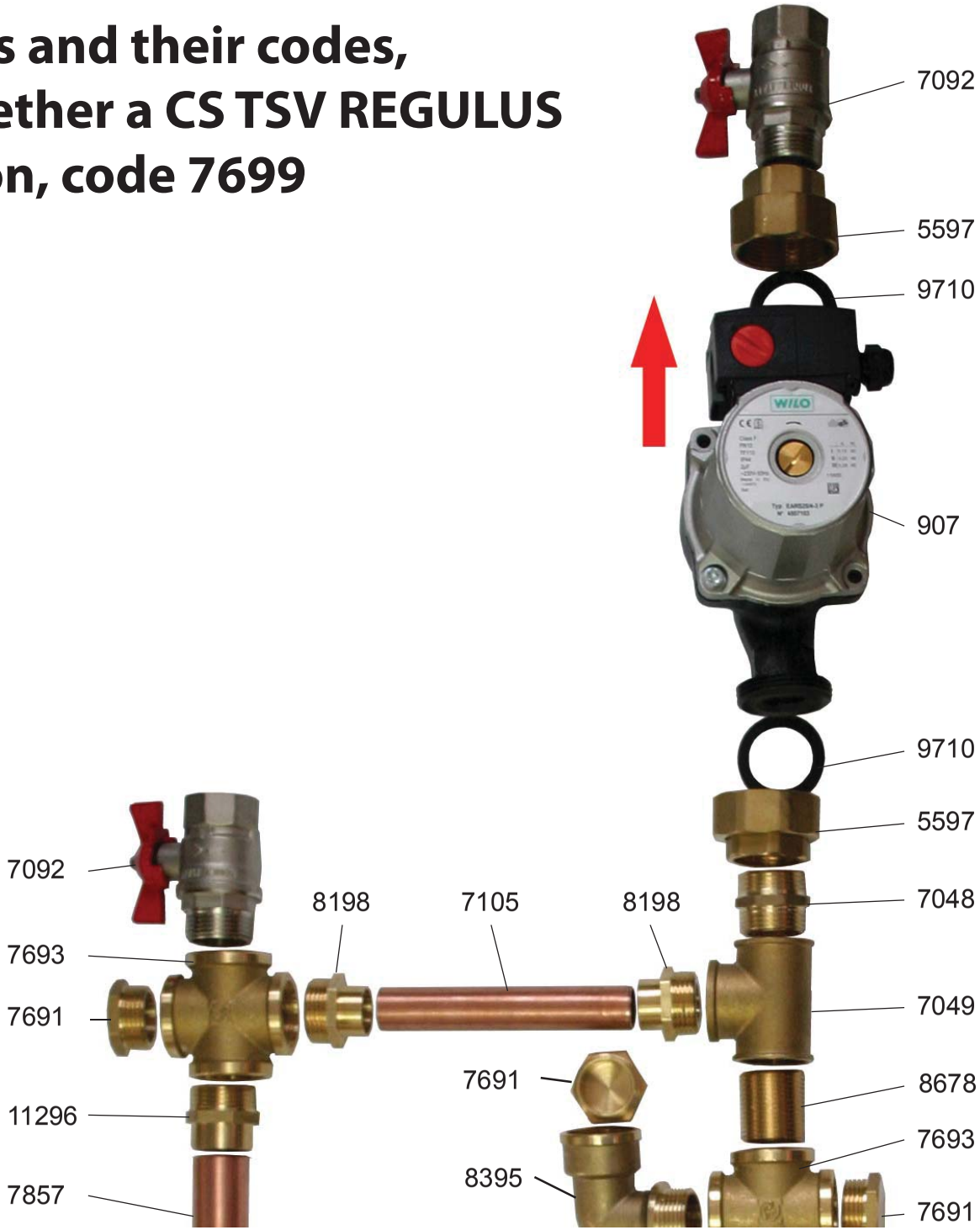
a) Safety assembly for a heating system

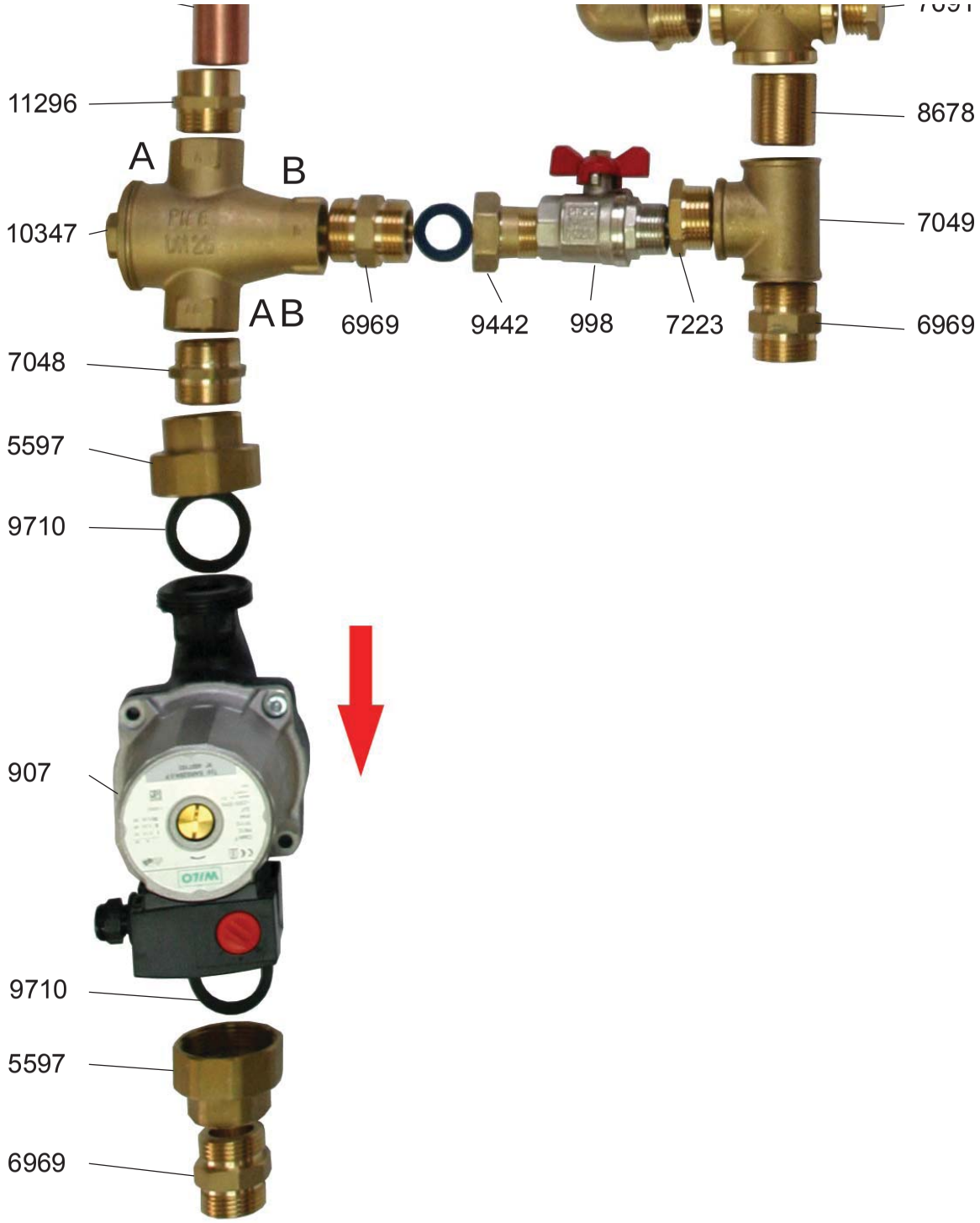
The assembly contains a manometer, air vent valve and a safety valve. Should these components be already installed on the boiler, this assembly is not needed.

b) Regulus DHW tanks

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

Components and their codes, making together a CS TSV REGULUS Pump Station, code 7699

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