



CSE MIX G75 5/4F

Installation and Operation Manual
CSE MIX G75 5/4F PUMP STATION
with mixing valve

EN

1. Introduction

CSE MIX G75 5/4F pump station is designed to be installed in heating circuits where it provides heating water mixing and circulation through the circuit. Its typical application is in mixed heating circuits in buildings where it provides circulation and mixing of heating water to a desired temperature, or for solid-fuel boiler circuits where it provides circulation and mixing to a min. heating water temperature as a protection against low-temperature corrosion. Actuator of the mixing valve is controlled by an external controller through 3-point control with 230V outputs. The circulation pump is switched by an external controller with a 230 VAC output. The controller is not included in supply.

The pump station is designed to be installed directly on the pipe, with 100 mm min. distance of the pipe axis from a wall.

2. Description of the pump station

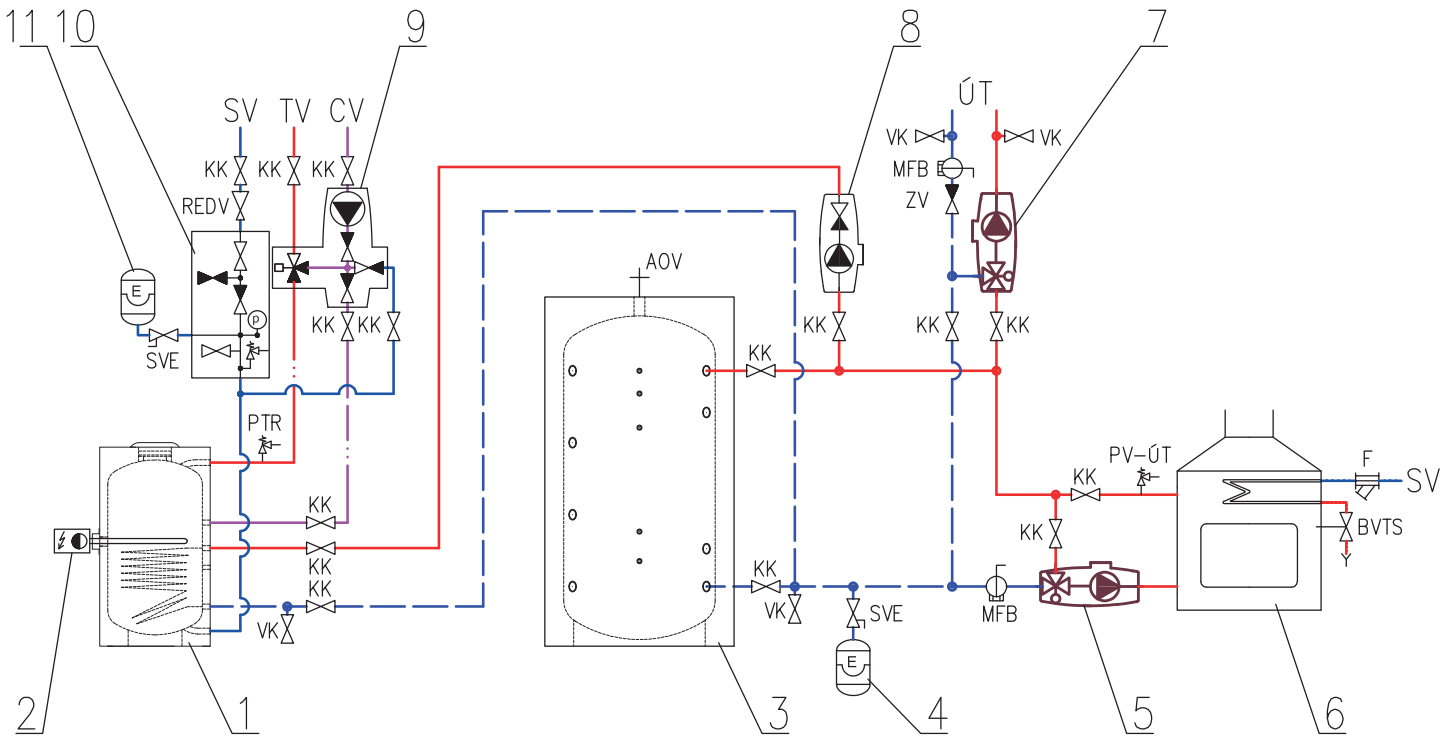
The pump station consists of a UPM3 pump including power and control cables, a 3-way mixing valve with actuator incl. a power cable, a ball valve and insulation.

Main features	
Application	It provides circulation and mixing in a heating circuit or a circuit of a solid-fuel fired heat source. The circulation pump switching and mixing valve control is performed from an external controller.
Description	consists of a UPM3 Flex AS 25-75 130 pump, a 3-way mixing valve LK 840 with AVC actuator and insulation
Working fluid	water, water-glycol mixture (max. 1:1) or water-glycerine mixture (max. 2:1)
Installation	return pipe of a solid fuel boiler / flow pipe into a heating circuit, the min. distance of the pipe axis from a wall is 100 mm
Code	16402

Technical data of CSE MIX G75 5/4F pump station	
Fluid working temperature	5 - 95 °C
Max. working pressure	10 bar
Min. working pressure	0.5 bar
Ambient temperature	5 - 40 °C
Max. rel. humidity	80 % non condensing
Insulation material	EPP RG 60 g/l
Mixing valve Kvs	16 m ³ /h
Mixing valve leak rate	< 1% Kvs at 5 mH ₂ O pressure difference (at mixing valve inlets)
Max. pressure difference	5 m H ₂ O (at mixing valve inlets)
Overall dimensions	325 x 140 x 220 mm
Total weight	4.0 kg
Connections	3 x G5/4" F

3. Pump Station Connection

The diagram shows a typical connection of a solid fuel boiler, thermal store and heating circuit. If there is also the indicated hot water circuit, install the CSE OTS ZV pump station (not included in the supply).



KEY

- 1 hot water storage tank
- 2 electric heating element w. thermostat
- 3 thermal store for heating system
- 4 expansion vessel for heating system
- 5 **pump station for boiler – CSE MIX**
- 6 biomass boiler (fireplace insert/stove)
- 7 **pump station for heating system – CSE MIX**
- 8 pump station for DHW heating – CSE OTS ZV
- 9 pump station for DHW recirculation – CSE TVMIX ZV
- 10 safety kit for HW storage tank
- 11 expansion vessel for DHW

- SV cold water
- TV hot water
- CV hot water recirculation
- ÚT central heating (heating system)

- KK ball valve
- ZV check valve
- AOV automatic air vent valve
- PTR pressure temperature relief valve
- REDV pressure reducing valve (optional)
- VK drain valve
- SVE expansion vessel service valve
- PV-ÚT central heating safety valve
- MFB Magnet Filterball
- F filter
- BVTS thermal safety relief valve for boiler

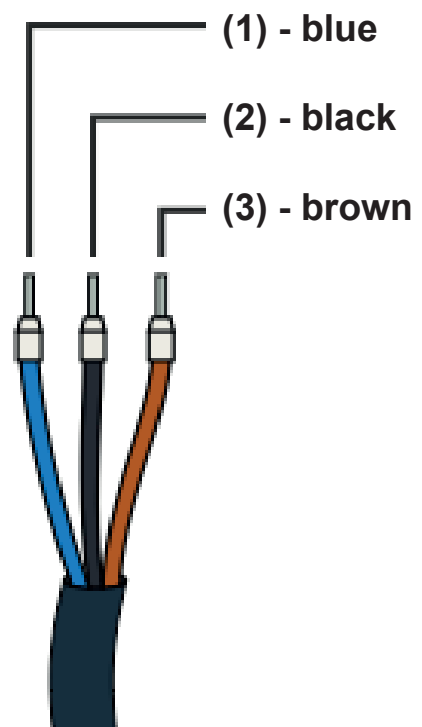
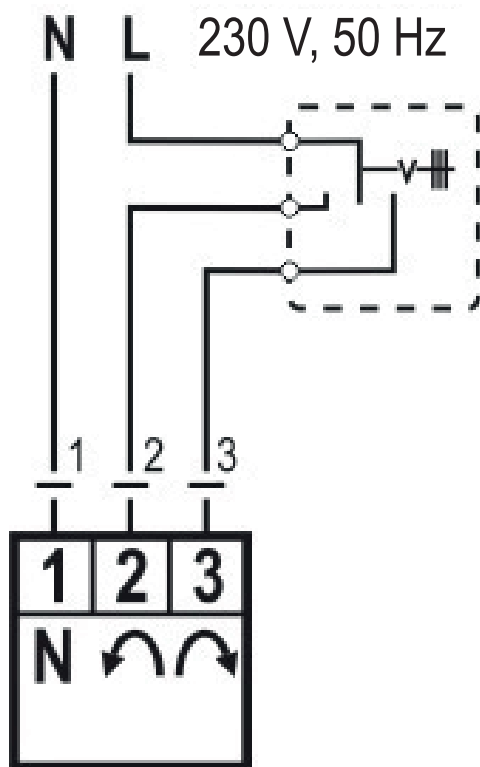
4. Mixing Valve Actuator



Technical data	
Torque	5 Nm
Angle of rotation	90°
Shift time	120 s
Control	3-point
Auxiliary switch	none
Power supply	230 V AC
Max. power input	2.5 VA
IP rating	IP42
Protection class	II by EN 60730-1
Cable (cross section area - length)	3 x 0.5 mm ² - 2 m

actuator wiring

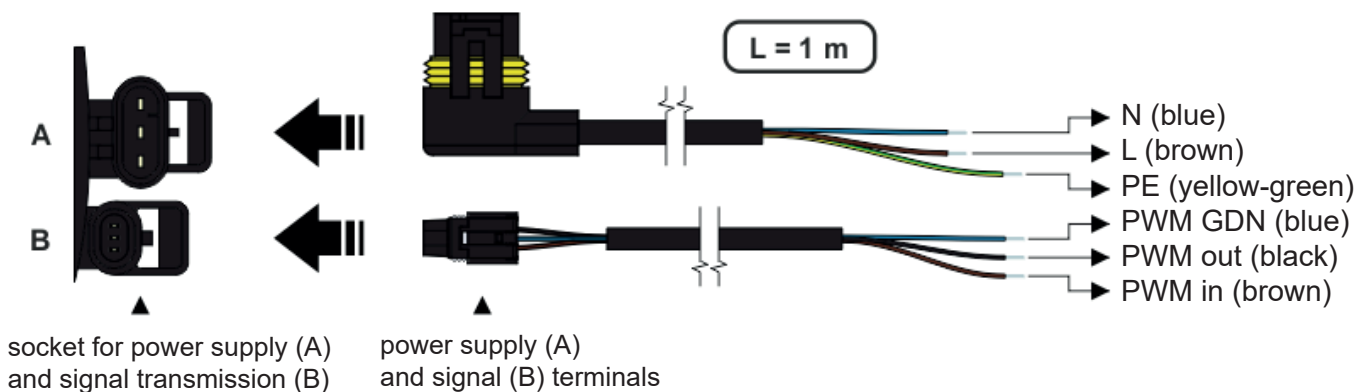
- marking 1, 2, 3 located on the cables



5. UPM3 FLEX AS 25-75 130 mm Pump

Wet-running circulation pump with G 6/4" M connection.

Pump Wiring



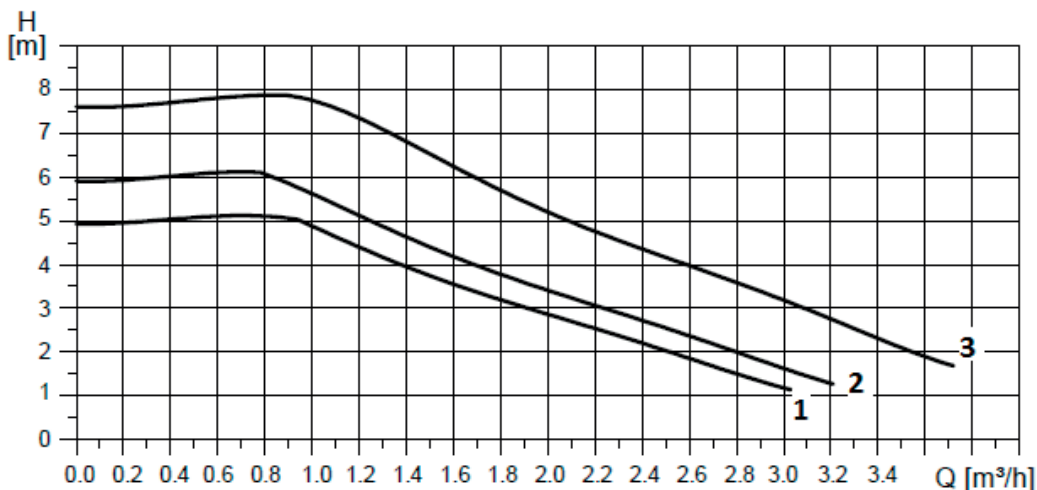
Pump control

The circulation pump can be controlled by an external PWM signal (profile for use in heating systems) or without a PWM signal by selecting a pump performance curve.

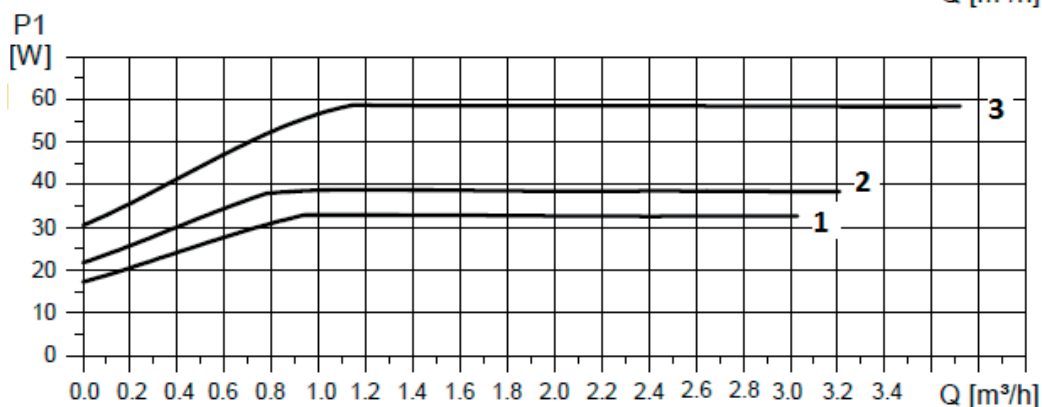
A maximum curve of a pump working range can be defined.

- with PWM signal the pump speed changes with the signal value up to the maximum of the selected curve
- without PWM signal the pump runs at the max. speed according to the selected curve

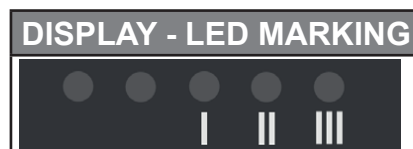
Performance curves



Curve	Max. H (upper graph)	Max. P ₁ (lower graph)
1	5 m	33 W
2	6 m	39 W
3	7.5 m	60 W



Performance Display



The LED marking is further omitted for better clarity.

DISPLAY	PERFORMANCE CURVE	STATUS	Max. H (upper graph)
	1	LOW PERFORMANCE	5 m
	2	MEDIUM PERFORMANCE	6 m
	3	HIGH PERFORMANCE	7.5 m

WARNING: LEDs may be turned by 90° or 180°, or mirrored, depending on the specific pump type.

GREEN LED FLASHING FREQUENCY	PWM SIGNAL RECEPTION
1 flash per second	NO
12 flashes per second	YES

When switched on, the pump runs at factory settings or the last setting. The display shows the current pump performance.

Setting Selection for UPM3

To select your desired setting, press the button repeatedly until you find the setting you need (see the table above). If you pass the desired setting, you have to go one more round until it appears again.

Error Display

DISPLAY	CONTROL MODE
	Seized pump
	Too low power supply voltage
	Electric fault

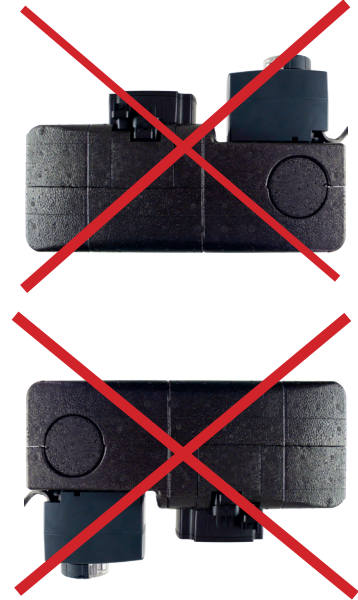
6. Permissible and Prohibited Pump Station Positions

The pump station may be installed either horizontally or vertically.

Permissible positions



Prohibited positions



7. Installation options

The pump station comes with a mixing valve in the left-hand position (see Fig. 1). If this installation position is convenient, there is no need to make any adjustments. When needed, the mixing valve can be rotated to the right-hand position (see Fig. 2). After the valve is turned by 180° and the fittings tightened, the actuator lock shall be unscrewed and screwed into the opening at the other valve side (see Fig. 2) and the position of the valve member and actuator changed (see the paragraph and pictures below).

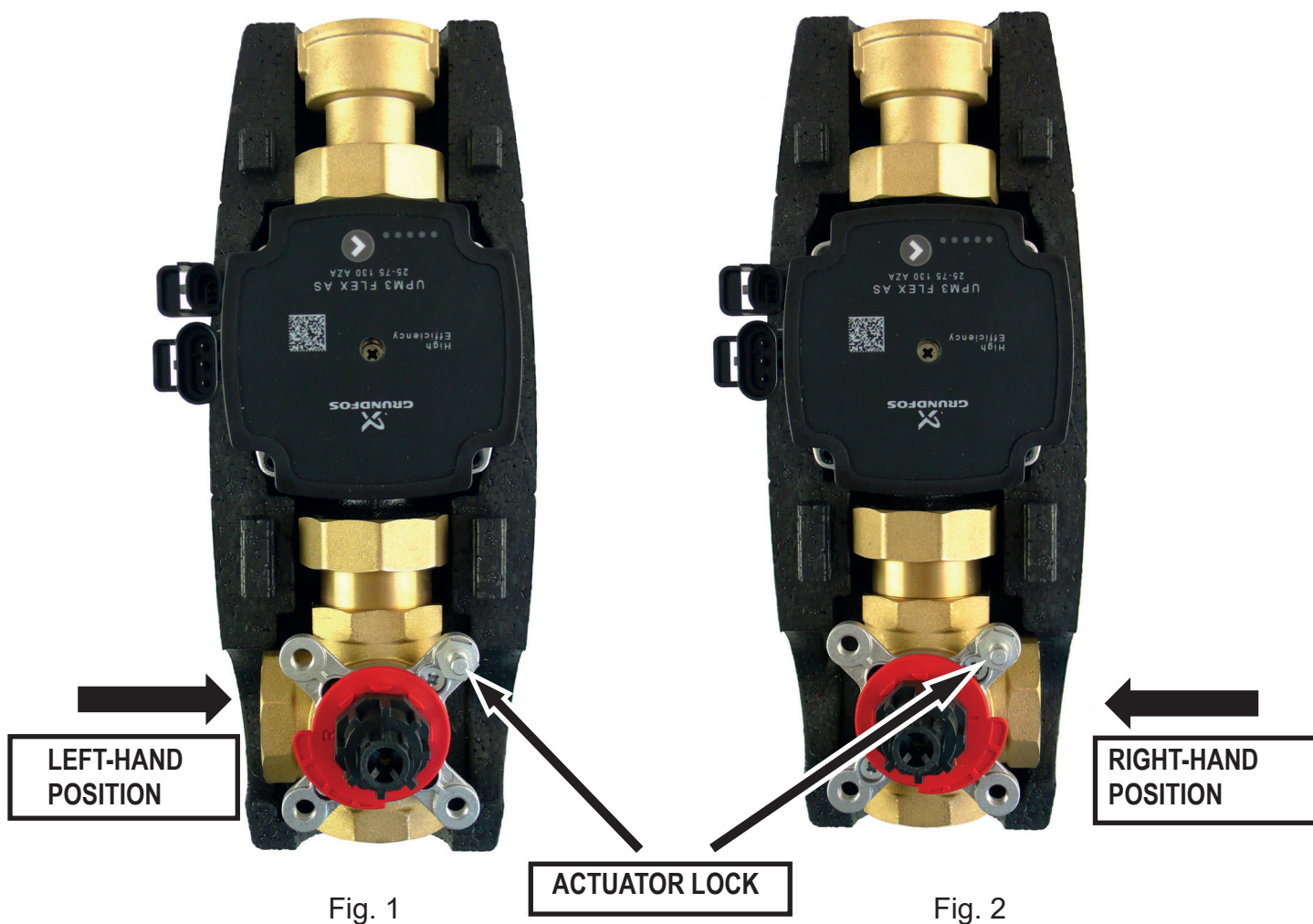


Fig. 1

Fig. 2

Actuator adjustment

Having turned the valve to the right hand position, turn the D-shaft in such a manner that the valve member is between inlets 1 and 3, turn the plastic red wheel into its proper position (see Fig. 4), and finally fit the plastic adapter (see Fig. 4).

The flat edge of the shaft and the arrow on the plastic adapter are located on the same side as the valve member.

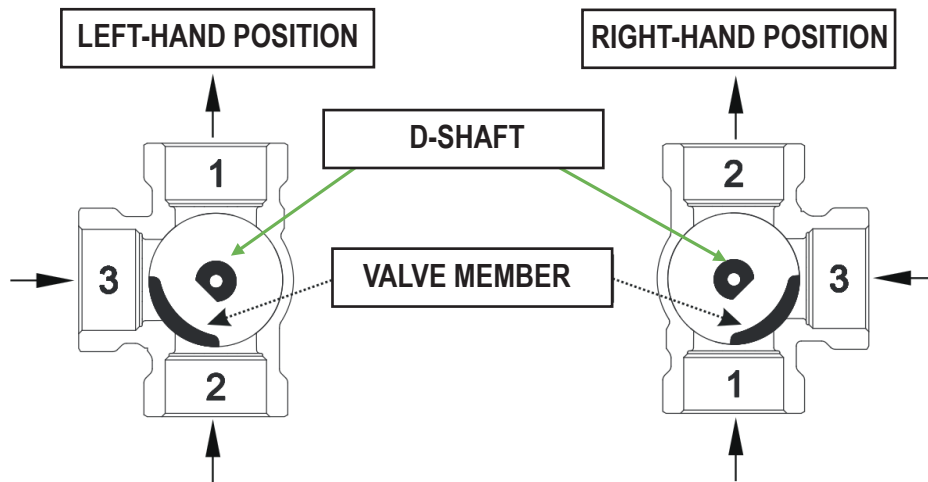


Fig. 3

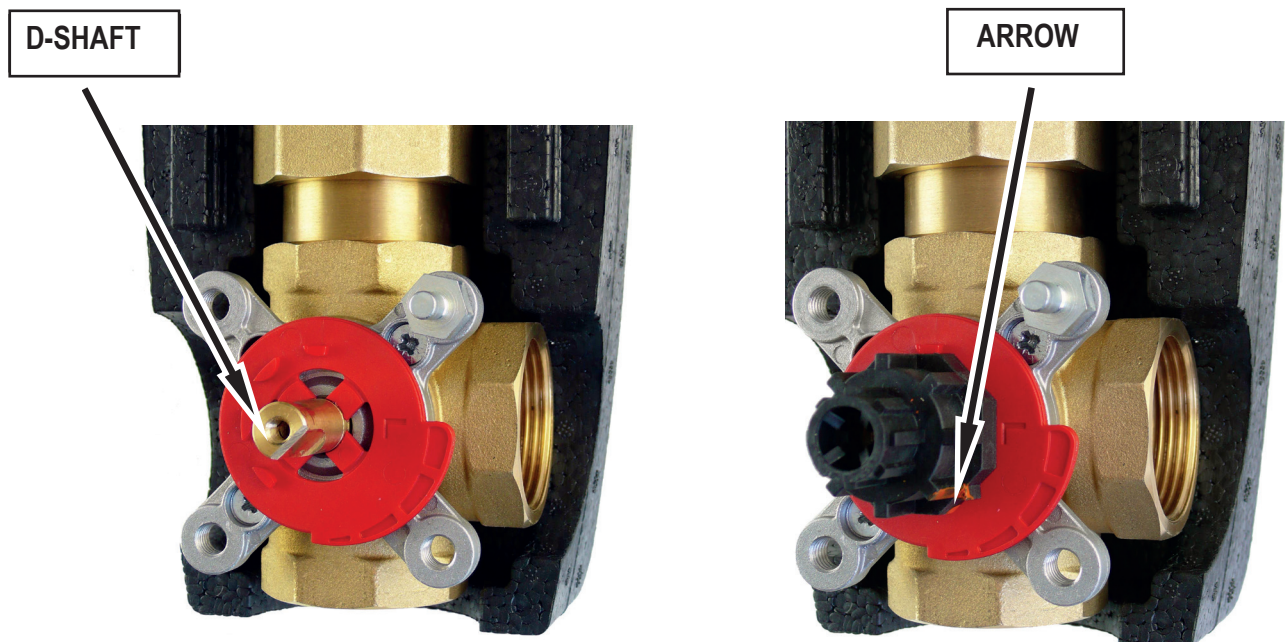
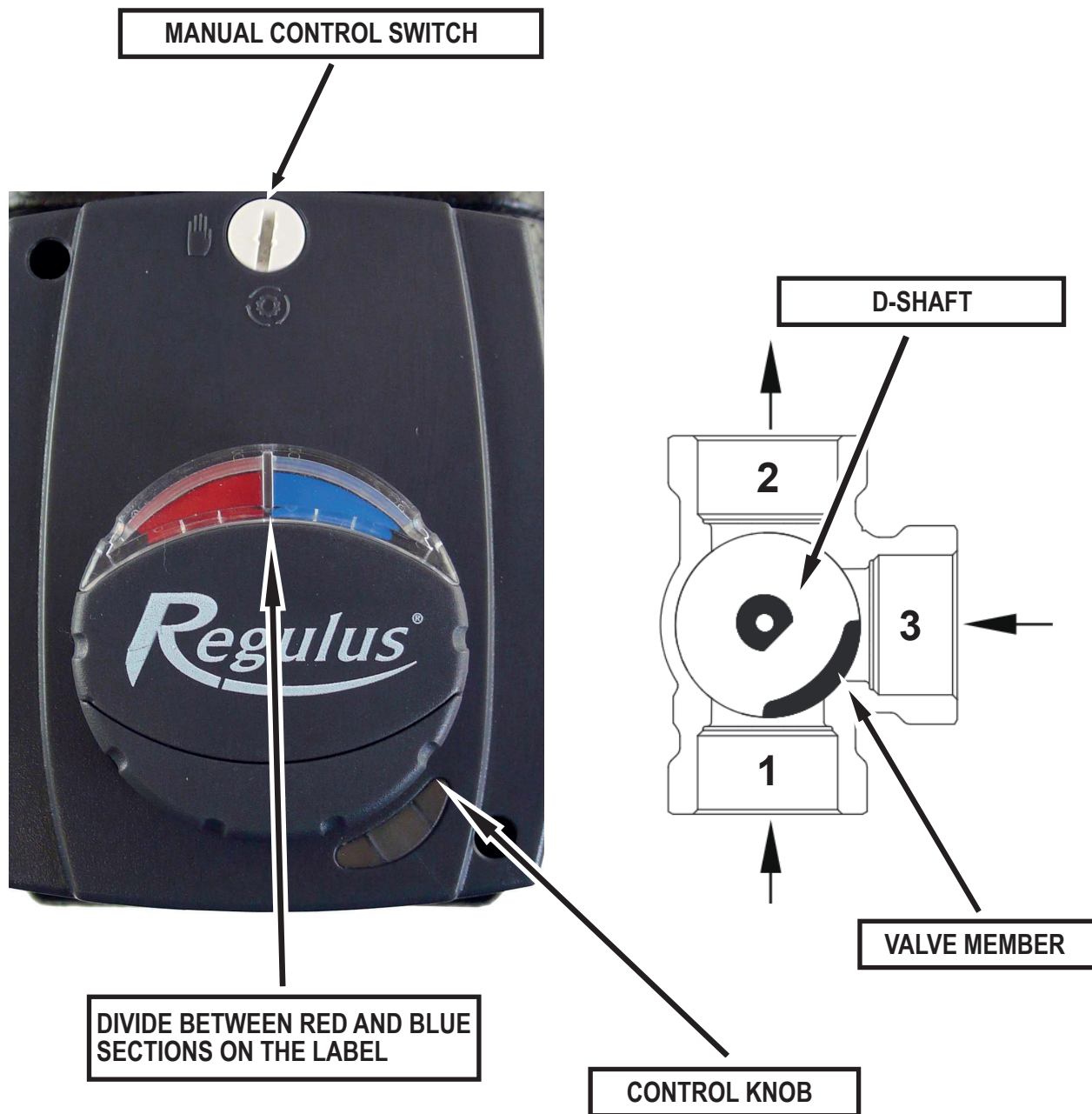


Fig. 4

Prior to fitting the actuator on the plastic adapter, switch it to manual control, set the control knob to the middle of its control range and then fit the actuator onto the adapter already on the valve. The control knob shall be able to turn freely both to left and right by 45°. When turned to the right by 45°, the path 1 is closed, and when turned to the left by 45° the path 3 is closed. Having performed the check, turn the knob back to automatic control.



After the actuator is fitted, the correct position of the round indication label, i.e. hot/cold shall be checked (the marking shall correspond to the manner how the hot and cold piping is connected) as to the right function and position of the valve. In case of a vertical installation in central heating, the red mark on the label shall be on the right-hand side for left-hand installations (see Fig. 5) and on the left-hand side for right-hand installations (see Fig. 6).



Fig. 5



Fig. 6

In case of a horizontal installation with a solid fuel boiler, the red mark on the label shall be on the righthand side for right-hand installations (boiler to the left from the pump station), see Fig. 7, and on the left-hand side for left-hand installations (boiler to the right from the pump station), see Fig. 8.

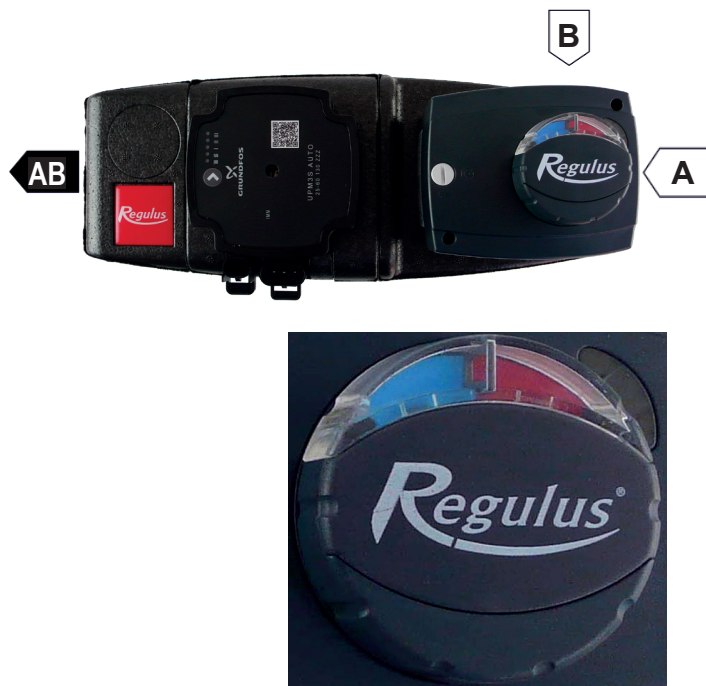


Fig. 7

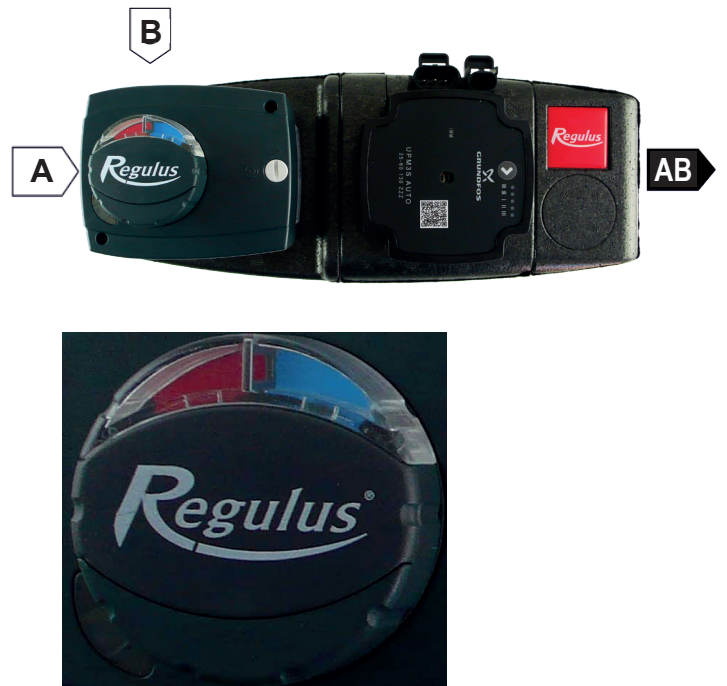


Fig. 8

