

Regulus

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RGMAT E W 5/4''

Installation and Operation Manual
Regulus RGMAT E W 5/4'' LOAD UNIT with YONOS PARA 25/7.5
for heating systems

EN

RGMAT E W 5/4''

1. Introduction

RegulusRGMAT E W 5/4" Load Unit makes boiler installation quicker as it contains all components needed for boiler circuit circulation and for boiler protection against low-temperature corrosion. It is designed to be installed directly on return piping. The distance of pipe axis from a wall shall be at least 100 mm to enable insulation removal if needed.

This Load Unit is intended for hydronic fireplaces and solid-fuel boilers.

2. RGMAT E W 5/4" Description

RGMAT E W 5/4" keeps the temperature in a hydraulic boiler circuit above the flue gas condensation temperatures, which prevents so called low-temperature corrosion of the boiler combustion chamber. This limits condensation and boiler tarring significantly, the efficiency of fuel combustion increases and service life of the boiler is extended.

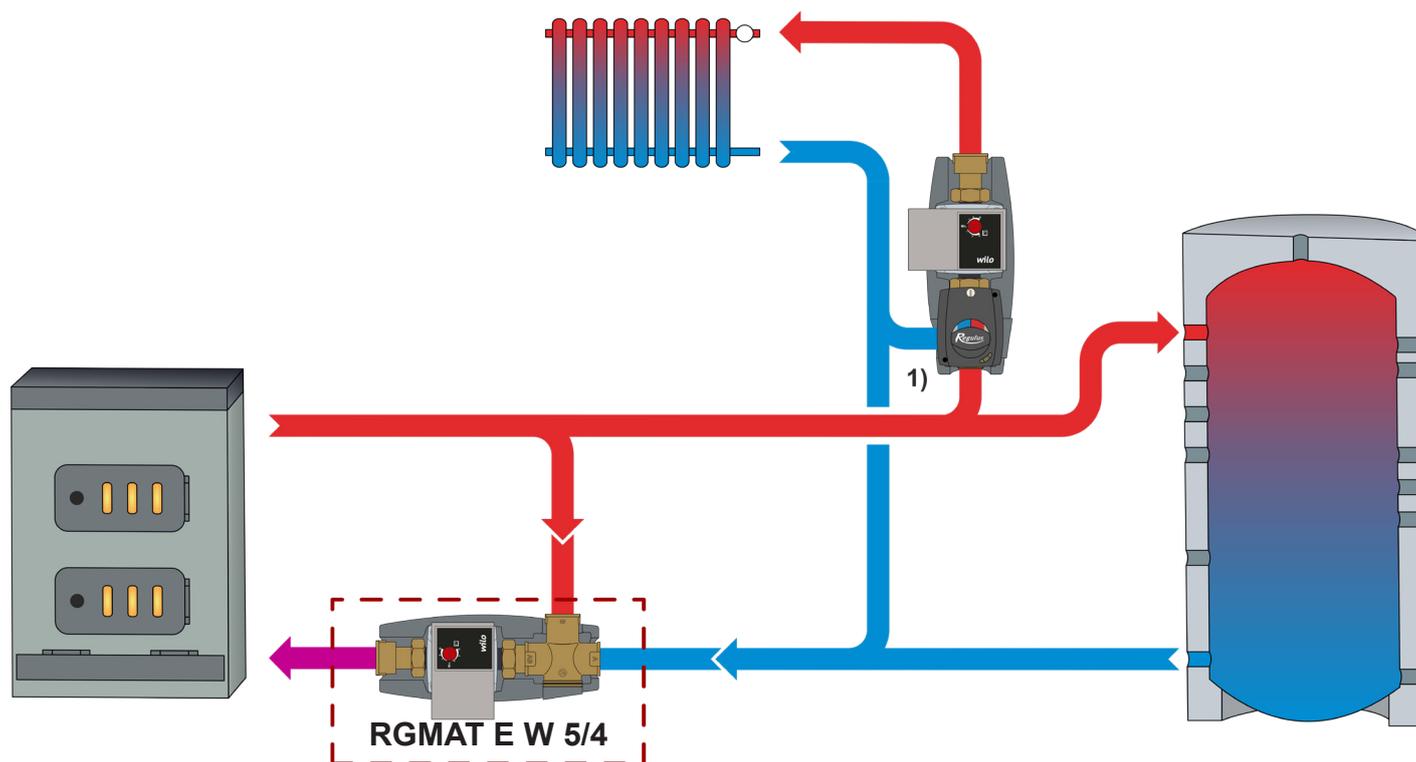
| Main features | |
|---------------|---|
| Purpose | maintaining inlet temperature into a boiler (fireplace) through a load valve |
| Application | Load Unit for solid-fuel boilers and fireplaces; it prevents low-temperature corrosion and boiler (fire) fouling |
| Description | consists of a Wilo Yonos PARA RS 25/7.5 RKC pump, TSV5B valve (with automatic bypass balancing), thermometer and insulation |
| Working fluid | water, water-glycol mixture (max. 1:1), water/glycerine mixture (max. 2:1) |
| Installation | on a return pipe, the, min. distance of the pipe axis from a wall is 100 mm |

| Code | Max. boiler output |
|--------------------------------------|--------------------|
| 15 790 for opening temperature 55 °C | max. 57 kW |
| 15 791 for opening temperature 65 °C | max. 41 kW |

| RGMAT E W 5/4 Technical Data | |
|------------------------------|--------------------|
| Fluid working temperature | 0 - 95 °C |
| Max. working pressure | 6 bar |
| Max. ambient temperature | 58 °C |
| Power supply | 230 V, 50 Hz |
| Insulation material | EPP RG 60 g/l |
| Overall dimensions | 325 x 140 x 220 mm |
| Total weight | 3,27 kg |
| Connections | 3x G 5/4" F |

| Accessories | |
|------------------------------|-------------|
| Bypass with non-return valve | code 16 139 |

3. RGMAT E W 5/4" Connection Diagram



1) CSE MIX W 1F (16 219) or CSE MIX W 1M (16 082) or CSE MIX W 5/4F (16215) or CSE MIX W 1F 7,5 (16 372)

Install the Load Unit respecting the following instructions:

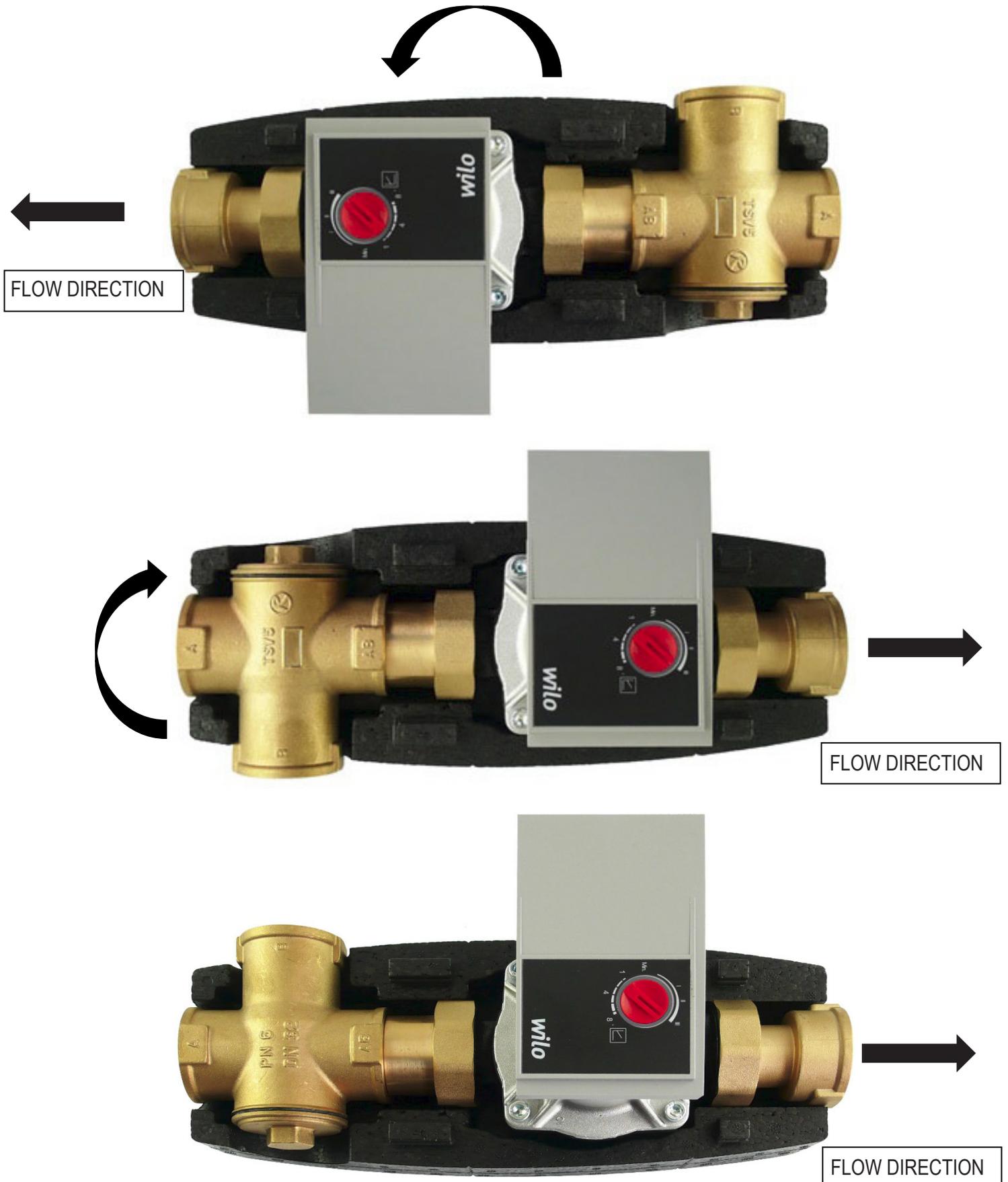
Connect the Load Unit outlet marked **AB** to the piping entering the boiler. Connect the return line from the heating system to the **A** inlet, and the outlet pipe from the boiler to the **B** inlet via a T-piece. Take care to install shut-off valves where necessary to avoid draining the whole system for valve cleaning or replacing the thermostatic element.

When the connecting pipes are not arranged or sloped properly, the thermostatic valve may get blocked by air inside. This may hinder or even disable its operation.

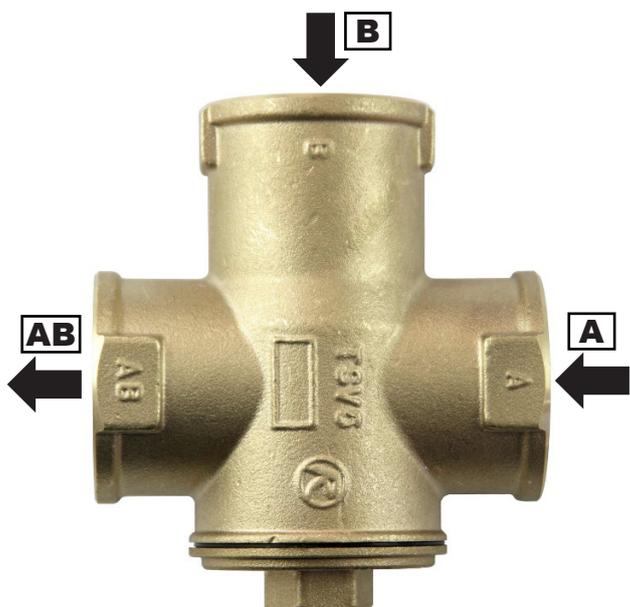
Always respect valid rules and boiler manufacturer's data during installation.

4. Installation options

This Load Unit comes in the version for horizontal installation to the right of a boiler. However, it can be installed also into vertical piping or horizontally to the left of a boiler. When being installed horizontally to the left of a boiler, the Load Unit needs to be turned by 180° and the TSV5B valve turned as shown in the pics below.



5. Function description of a TSV5B load valve



The TSV5B load valve is fitted with an integrated thermostatic insert that will close the “A” inlet (from a heating system), if the return water temperature to the boiler (“AB” outlet) is lower than the opening one. As soon as the opening 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 flow) with the aim to reach the opening temperature (“AB” outlet) in the return pipe.

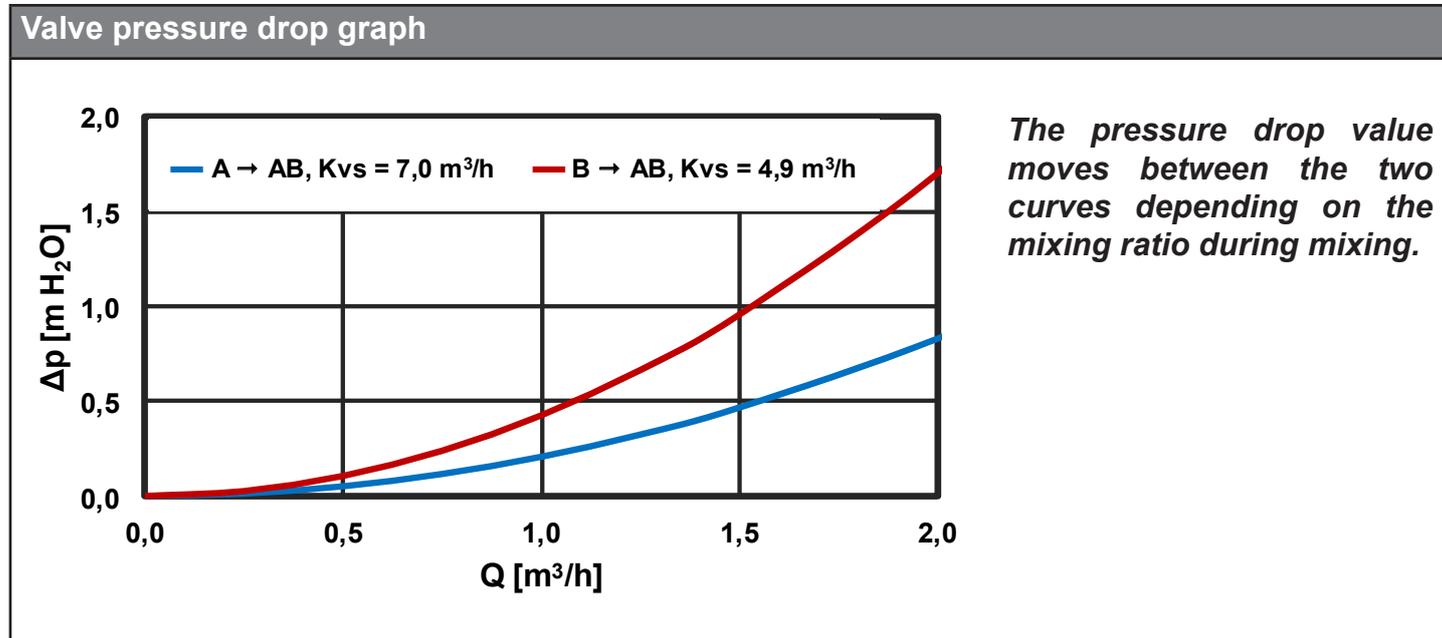
At the same time, the valve closes the “B” inlet, limiting so the hot water flow coming from the bypass till its complete tight closure.

Thanks to this, no balancing valve is needed.

The load valve is made of brass, element and plug seals are in EPDM, cone seal is made of NBR.

| Technical Data | |
|----------------------------|---|
| Max. working temperature | 95 °C |
| Max. working pressure | 6 bar |
| Valve opening temperature | depending on the thermostatic element |
| Control range | $t_{\text{valve opening}} + 5 \text{ °C}$ |
| Valve Kvs (A→AB direction) | 7.0 m ³ /h |
| Valve Kvs (B→AB direction) | 4.9 m ³ /h |
| Connections | 3x G 5/4" F |
| Nominal inner diameter | DN 32 |

| Materials | |
|------------------------|-----------------|
| Housing, cone and plug | brass |
| Spring | stainless steel |
| Element and plug seals | EPDM |
| Cone seal | NBR |



6. YONOS PARA RS 25/7.5 RKC Pump

Design

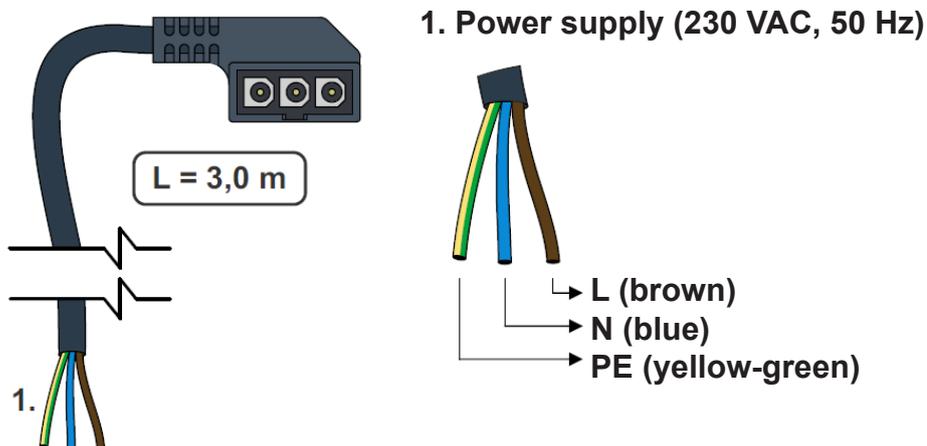
Wet-running circulation pump with G 6/4" M connection.

| Electrical Data | |
|-------------------------------|-----------------------|
| Power supply | 230 V, 50 Hz |
| Power consumption (min./max.) | 4/75 W |
| Current (min./max) | 0.04/0.66 A |
| IP rating | IPX4D |
| Max. speed | 4770 rpm |
| Energy Efficiency Index | ≤ 0,21 by EN 16 297/3 |
| Motor protection | integrated |

| Minimum pressure at suction port to avoid cavitation | |
|--|-------------------|
| Minimum pressure at suction port | 0.05 bar at 50 °C |
| | 0.43 bar at 95 °C |

| Operating conditions | |
|---------------------------|---|
| Fluid working temperature | 0 - 100 °C at 58 °C ambient temperature |
| Max. working pressure | 6 bar |
| Max. head | 7.6 m |

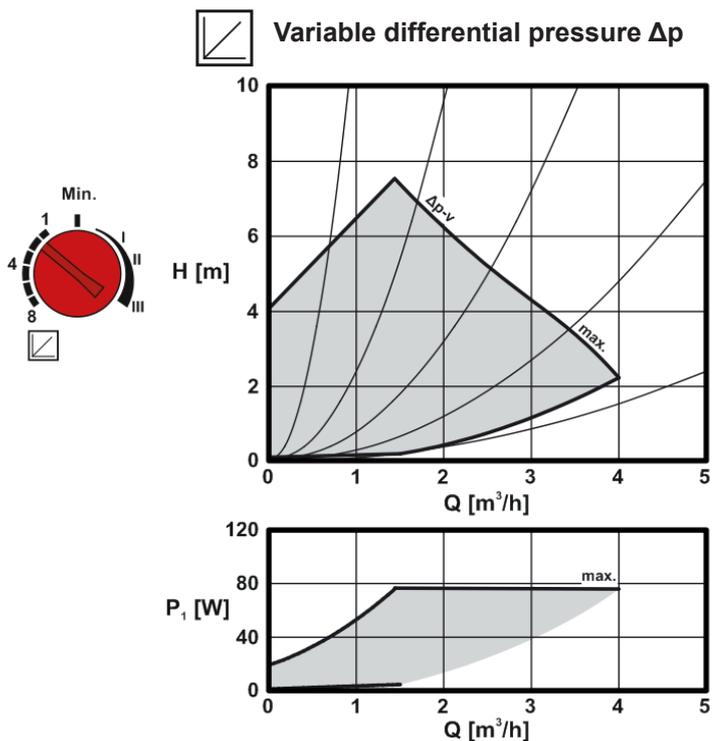
Pump Wiring



Power cable is included in supply

Performance Curves

Characteristics of Δp -v (variable)



Constant speed I, II, III

