

RETURN TEMPERATURE UNIT

THERMOSTATIC, MIXING FUNCTION

SERIES GST200



GST241

PRODUCT DESCRIPTION

The ESBE return temperature unit Series GST200 is designed for applications, where precision return temperature is required. The mixing groups is used for the return temperature control, mixing function, in the heating systems where temperature control over the heating water returning to the heating source is required. An example of such application can be a system with a solid fuel boiler. The GST200 secures that the boiler gets up to a high combustion temperature to ensure the lowest emission, high efficiency of the boiler which reduce tarring and increase the life span of the boiler (preventing condensation).

The return temperature unit is equipped with two shut-off valves with colour coded thermometers, a check valve placed on the return from the heating circuit and a high-class insulation shell. The unit is equipped with a thermostatic load valve series VTC400 with an adjustable temperature of 50-70°C.

When designing the circulation unit product line ESBE focused on performance, design, user friendly usage and environment. This applies to everything from manufacturing, materials to packaging.

VERSIONS

Series GST200

The ESBE series GST200 is a return temperature unit equipped with a pump and a thermostatic load valve series VTC400 with adjustable temperature, 50-70°C. The product is available in one size, DN25 and comes with a Wilo pump.

The pump can be set to constant speed, variable or constant pressure. The compact design of the unit has been thought through and focus put on components such as pump resulted in high performance of the pump group.

SERVICE AND MAINTENANCE

The circulation unit do not require any specific maintenance under normal conditions.

KEY BENEFITS

- Highly efficient circulation pumps, EEI ≤0,20
- High class insulation of hydraulic parts
- Thermostatic load valve
- Available temperature setting in range 50-70°C
- Compact design
- Tested and ready to use
- Designed to last and perform
- High-end product finish

RELATED ACCESSORIES

See separate data sheet for further detailed information.

ESBE Manifold

Manifold for 1, 2, or 3 circulation units. With integrated separator function.

Art. No.

66001100 _____ GMA411- for 1 unit

66001600 _____ GMA521 - for 2 units

66001700 _____ GMA531 - for 3 units

Manifold for 2, 3, 4 or 5 circulation units. Without integrated separator function.

Art. No.

66001200 _____ GMA421- for 2 units

66001300 _____ GMA431 - for 3 units

66001400 _____ GMA441 - for 4 units

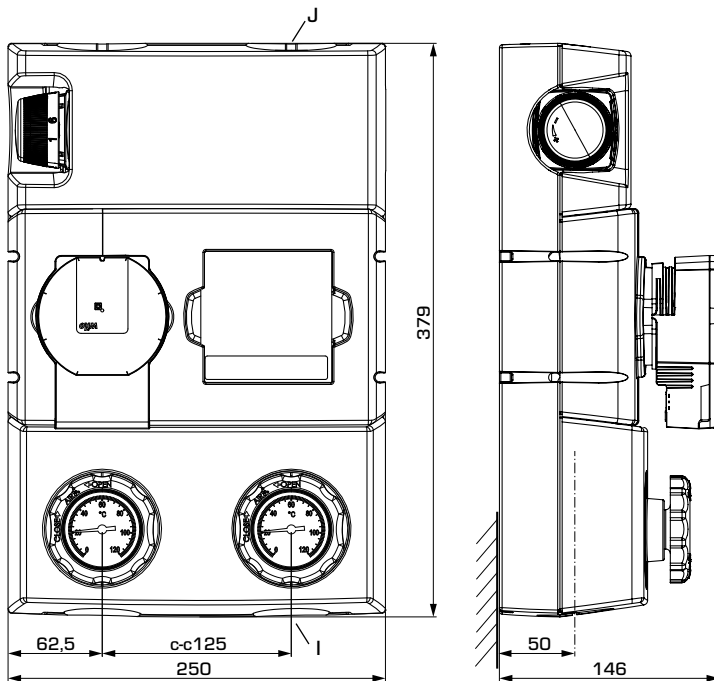
66001500 _____ GMA451 - for 5 units

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PRODUCT ASSORTMENT



GST241

SERIES GST240, ADJUSTABLE TEMPERATURE SETTING

Art. No.	Reference	DN	Pump	Temperature range	Connections		Weight [kg]	Replaces	Note
					I	J			
61121200	GST241	25	Wilo PARA 25-130/6	50-70°C	G 1"	G 1½"	5,6	61120100	

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TECHNICAL DATA



Visit esbe.eu for further detailed information.

The Return temperature unit, in general

Pressure class: _____ PN 10
 Media temperature: _____ max. +100°C
 _____ min. 5°C
 Ambient temperature: _____ max. +58°C
 _____ min. 0°C
 Working pressure: _____ 1,0 MPa (10 bar)
 Dimensions: _____ DN25
 Connections, _____ Internal thread (G), ISO 228/1
 _____ External thread (G), ISO 228/1
 Insulation: _____ EPP λ 0,036 W/mK
 Media: _____ Heating water (in accordance with VDI2035)
 _____ Water / Glycol mixtures, max. 50%.
 water / glycol mixtures are affecting the pump performance. In case of Applications where water / glycol mixtures are used, pump performance should be considered.

Material, in contact with water

Components: _____ Brass, Cast iron, Steel
 Sealing material: _____ PTFE, Aramid fibre, EPDM

EEI (Energy Efficiency Index), circulation pump: _____ $\leq 0,20$

Conformities and certificates

CE LVD 2014/35/EU
 EMC 2014/30/EU
 RoHS3 2015/863/EU
 ErP 2009/125/EU

UK CA SI 2016 No. 1101
 SI 2016 No. 1091
 SI 2012 No. 3032
 SI 2010 No. 2617

PED 2014/68/EU, article 4.3 / SI 2016 No. 1105 (UK)



EnEV

The integrated Load valve

Valve type: _____ VTC422
 Max. differential pressure drop, mixing: _____ 100 kPa (1 bar)
 Rangeability Kv^{max}/Kv^{min} , A-AB: _____ 100
 Leakrate in % of flow*, A-AB: _____ Tight sealing
 Leakrate in % of flow*, B-AB: _____ Tight sealing
 Opening temperature - Adjustable temperature: _____ 50-75°C

* Differential pressure 100kPa (1 bar)

The integrated circulation pump

Pump type: _____ Wilo PARA 25-130/6-43/SC
 Power supply: _____ 230 \pm 10% V AC, 50/60 Hz
 Power consumption: _____ 3-43 W
 Enclosure rating: _____ IP X4D
 Insulation class: _____ F
 EEI (Energy Efficiency Index): _____ $\leq 0,20$

WIRING

Please see the Installation Instruction

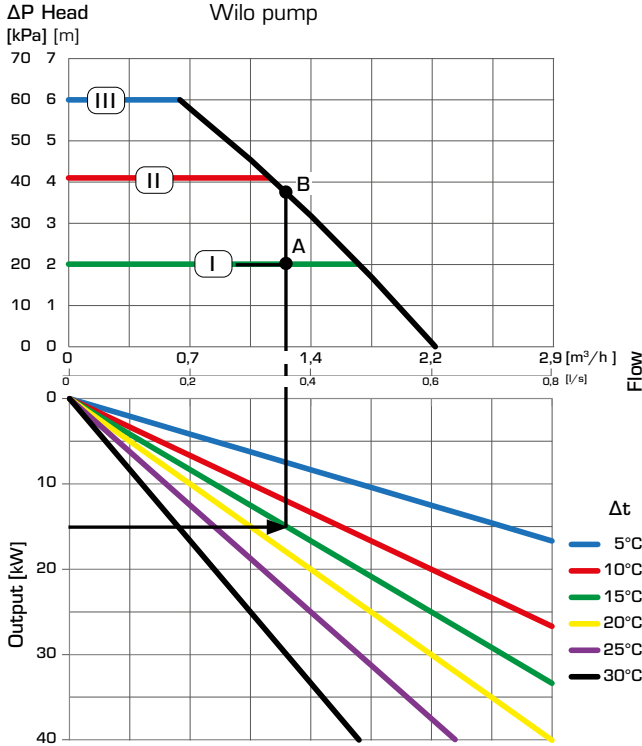
RETURN TEMPERATURE UNIT THERMOSTATIC, MIXING FUNCTION SERIES GST200

DIMENSIONING, PUMP CAPACITY DIAGRAM

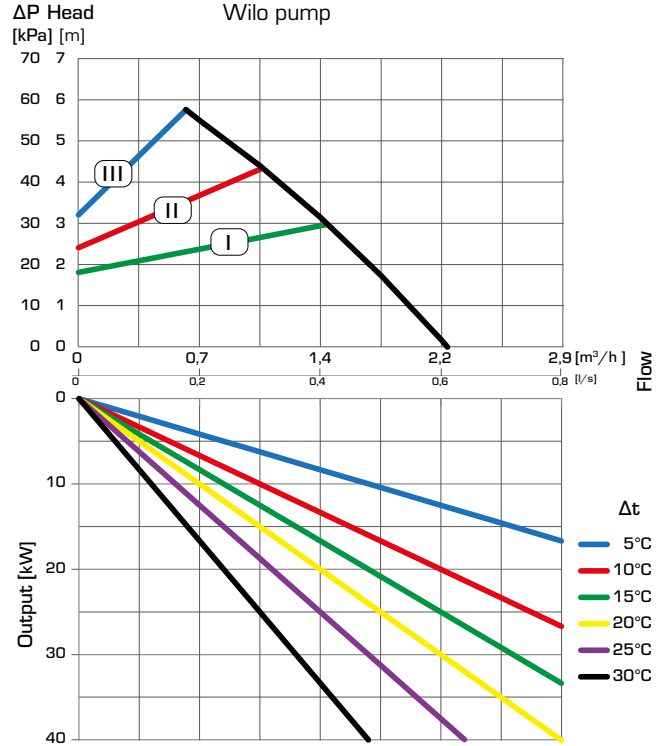
Example: Start with the heat demand of the heating circuit (e.g. 15 kW) and move horizontally to the right in the diagram to the $\Delta t = 15^\circ\text{C}$ (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Setting I gives duty point A with a residual head of 20 kPa. Setting II and III gives duty point B with a residual head of 38 kPa.

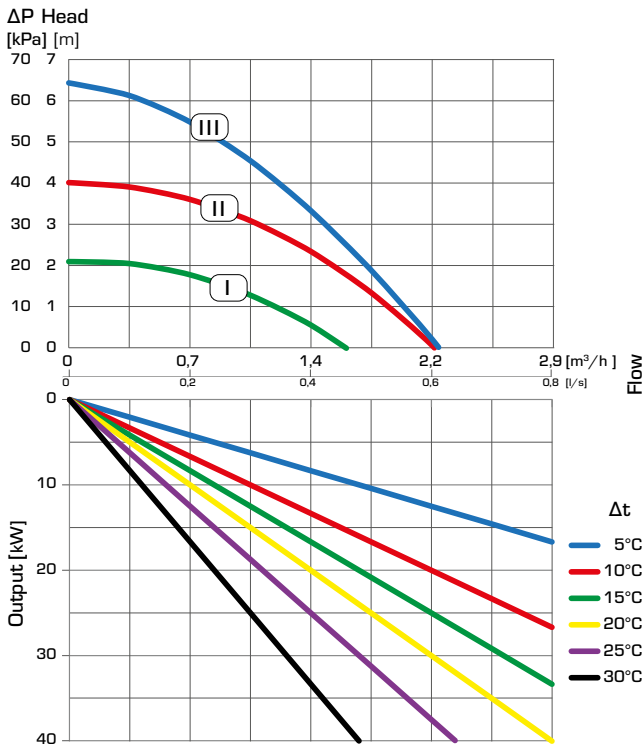
SERIES GST241 – Constant differential pressure, Wilo pump



SERIES GST241 – Variable differential pressure, Wilo pump



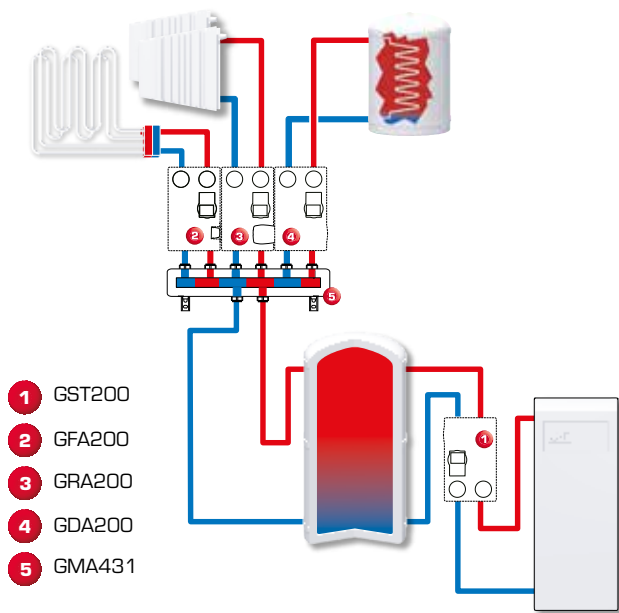
SERIES GST241 – Constant speed, Wilo pump



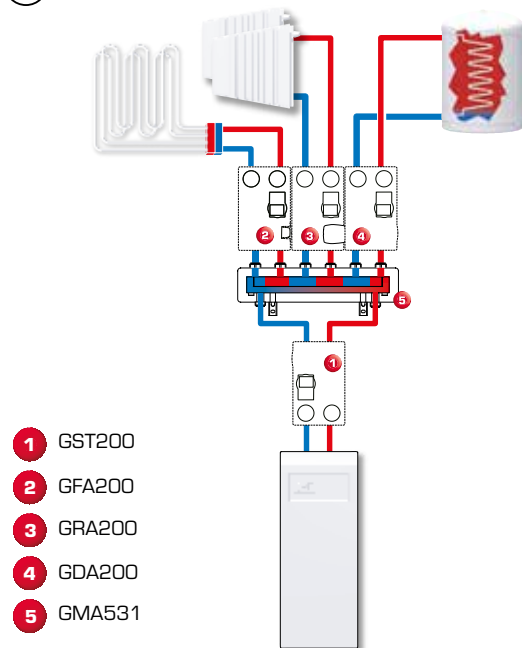
RETURN TEMPERATURE UNIT THERMOSTATIC, MIXING FUNCTION SERIES GST200

INSTALLATION EXAMPLES

①



②



The return temperature unit series GST200 with boiler or accumulation tank as return temperature control and protection device for solid fuel boilers.

In both cases the GST200 secures that the boiler gets up to a high combustion temperature to ensure the lowest emission, high efficiency of the boiler reduce tarring and increase life span of the boiler (preventing condensation). The benefit of using the unit in these applications is the protection of the boiler against condensation, increasing the life span of the boiler and providing the right temperature through the whole combustion process.

*The shown applications are only examples of product use!
Before using the product in any application, the regional and national regulations need to be checked.*