

ESBE SYSTEM UNITS

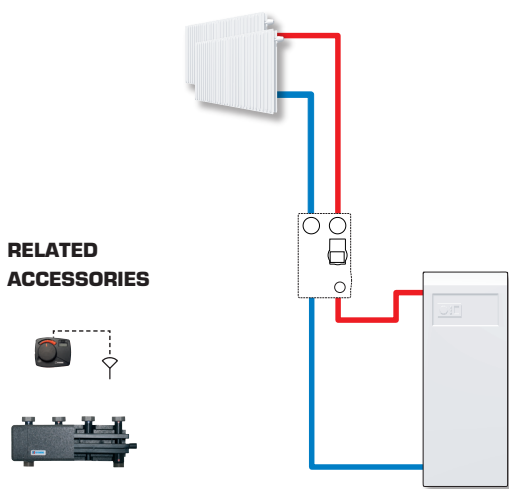
CIRCULATION UNIT

MIXING FUNCTION, SERIES GRA101

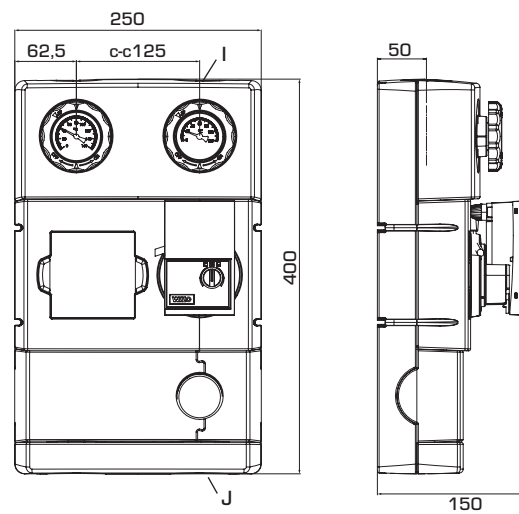
When developing Circulation Units focus was to deliver a flexible and high end solution with ESBE knowledge. This permeates the entire product, from components and insulation to assembly and packaging design.



INSTALLATION EXAMPLES



DIMENSIONS



SERIES GRA

Art. No.	Reference	DN	Pump	Connections		Weight [kg]	Note
				I	J		
61041811	GRA101	25	Wilo 25/6	G 1"	G 1½"	5,7	

KEY BENEFITS

- Outstanding flow control thanks to the progressive characteristic of the valve
- One size fits all - progressive characteristic
- Adjustments and electronic parts easily accessible
- Ready to use with most controllers available on the market
- Possible to mount with ESBE manifold for up to 5 units



PRODUCT DESCRIPTION

The ESBE series GRA101 is a circulation mixing unit which is intended for heating circulations where the outstanding flow and temperature control are required. Equipped with two shut-off valves with thermometers, check valve, high class insulation shell and high efficiency circulation pump

The GRA101 is delivered with the 3-way rotary progressive mixing valve. The Circulation Mixing Unit ensures best regulation performances independent from flow rate and low oversizing risk thanks to progressive valve characteristic, as well as the working possibility with most controllers available on the market.

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

RELATED ACCESSORIES

ESBE Controller

Art. No.

12820100 ___ CRC111 Controller Outdoor Sensor 230V 6NM

12662200 ___ CRB122 Controller Indoor Sensor 230V 6NM

12682200 ___ CRD122 Controller In- And Outdoorsensor 230V 6NM

ESBE Actuator

Art. No.

12101300 ___ ARA661 3-Point SPDT 230VAC 6NM 120S

12101400 ___ ARA671 3-Point SPDT 230VAC 6NM 240S

12520100 ___ ARA639 Prop/Multi 24VAC 6NM 15-120S

12520200 ___ ARA659 Prop 24VAC 6NM 45-120S

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

You can find further detailed information in separate data sheets, available on www.esbe.eu

TECHNICAL DATA

The Circulation unit, in general:

Pressure class: _____ PN 6

Media temperature: _____ max. +110°C

_____ min. 0°C

Ambient temperature: _____ max. +50°C

_____ min. 0°C

Working pressure: _____ 0,6 MPa (6 bar)

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%

(above 20% admixture, the pump data must be checked)

_____ Water / Ethanol mixtures, max. 28%

Material, in contact with water:

Components of: _____ Brass, Cast iron, Steel

Sealing material of: _____ PTFE, Aramid fibre, EPDM

EEI (Energy Efficiency Index),

Wilco circulation pump: _____ <0,21

Conformities and certificates:

LVD 2014/35/EU



ErP 2009/125/EU

EMC 2014/30/EU

ErP 2015

RoHS 2011/65/EU



EnEV2014

PED 2014/68/EU,

article 4.3

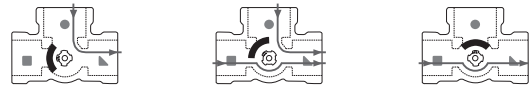
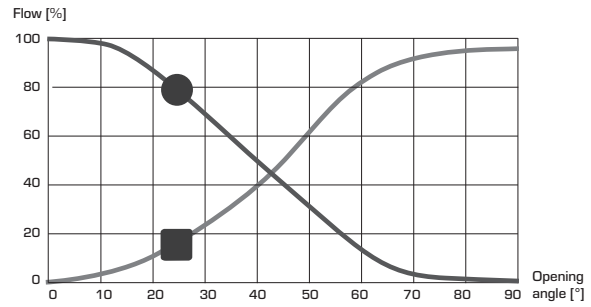
The integrated mixing valve:

Max. differential pressure drop: _____ 100 kPa (1 bar)

Close off pressure: _____ 200 kPa (2 bar)

Leakrate in % of flow*: _____ < 0,05%

Valve Characteristics



* Differential pressure 100kPa (1 bar)

The integrated circulation pump:

Power supply: _____ 230 ± 10% V AC, 50/60 Hz

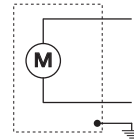
Power consumption - Wilo 25/6: _____ 3-45 W

Enclosure rating: _____ IP X4D

Insulation class: _____ F

EEI (Energy Efficiency Index) - Wilo 25/6: _____ <0,20

Pump wiring



DIMENSIONING, PUMP CAPACITY DIAGRAM

Example: Start with the heating demand of heating circuit [e.g. 25 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 working point and read the available pressure of the pump on the left - $\Delta p = 45$ kPa.

Available pressure, Wilo pump

