ESBE SYSTEM UNITS

RETURN TEMPERATURE UNIT
MOTORIZED, MIXING FUNCTION SERIES GSC100

GSC111 GSC112
3-way rotary mixing valve

GSC121 GSC122
Bivalent rotary mixing valve

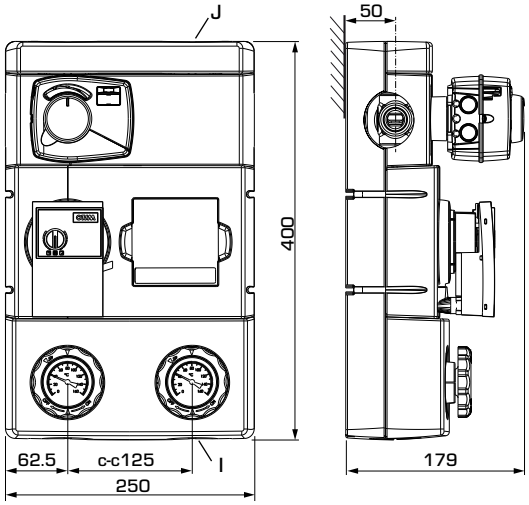
PRODUCT DESCRIPTION

The ESBE series GSC100 is a return temperature unit designed for applications, where the return temperature control is required. Equipped with two shut-off valves with thermometers, check valve, high class insulation shell and high efficiency circulation pump. The GSC100 is delivered with constant temperature controller for high accuracy control. The Return temperature unit is available with 3-way rotary mixing for the best regulation performance or bivalent rotary mixing valve for the perfect stratification and quick accumulation tank load.

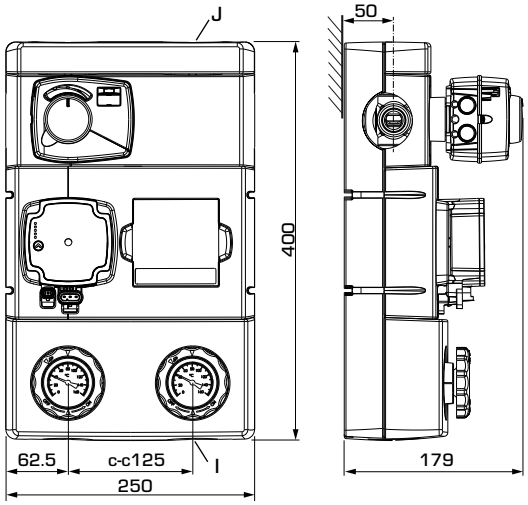
KEY BENEFITS

- Constant temperature high accuracy control
- 3-way or bivalent mixing valve
- System pre balance
- Perfect stratification and efficient load of the accumulation tank

PRODUCT ASSORTMENT



GSC111, GSC121



GSC112, GSC122

SERIES GSC110

Art. No.	Reference	DN	Pump	Temperature range	Connections		Weight [kg]	Note
					I	J		
61140200	GSC111	25	Wilo 25/6	5-95°C	G 1"	G 1½"	6.0	
61140400	GSC111	32	Wilo 25/7.5		G 1¼"	G 1½"	7.4	
61140600	GSC112	25	Grundfos 25-50	5-95°C	G 1"	G 1½"	6.1	
61140800	GSC112	32	Grundfos 25-70		G 1¼"	G 1½"	7.5	

SERIES GSC120

Art. No.	Reference	DN	Pump	Temperature range	Connections		Weight [kg]	Note
					I	J		
61160100	GSC121	25	Wilo 25/6	5-95°C	G 1"	G 1½"	6.0	
61160200	GSC121	32	Wilo 25/7.5		G 1¼"	G 1½"	6.5	
61160300	GSC122	25	Grundfos 25-50	5-95°C	G 1"	G 1½"	6.0	
61160400	GSC122	32	Grundfos 25-70		G 1¼"	G 1½"	6.6	

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TECHNICAL DATA Visit esbe.eu for further detailed information.

The Return temperature unit, in general:

Pressure class: PN 6
Media temperature: max. +110°C
min. 0°C
Ambient temperaure: 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, Iron, Copper
Sealing material of: PTFE, Aramid fibre, EPDM

Conformities and certificates:

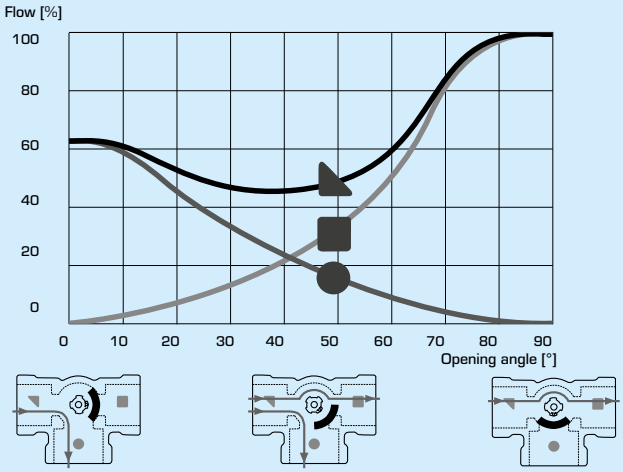
PED 2014/68/EU, article 4.3
LVD 2014/35/EU
EMC 2014/30/EU
RoHS 2011/65/EU
ErP 2009/125/EC
ErP 2015
EnEV2014

The integrated 3-way mixing valve, Series GSC110:

Max. differential pressure drop: 100 kPa (1 bar)
Close off pressure: 200 kPa (2 bar)
Rangeability Kv^{max}/Kv^{min}, A-AB: 100
Leakrate in % of flow*: < 0.05%

* Differential pressure 100kPa (1 bar)

VALVE CHARACTERISTICS

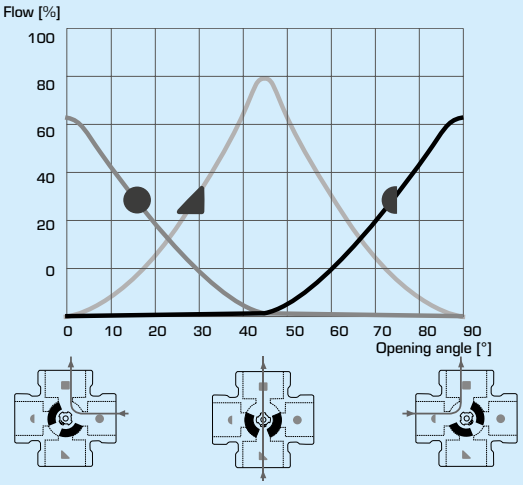


The integrated bivalent mixing valve, Series GSC120:

Max. differential pressure drop: 100 kPa (1 bar)
Close off pressure: 200 kPa (2 bar)
Rangeability Kv^{max}/Kv^{min}, A-AB: 100
Leakrate in % of flow*: < 0.05%

* Differential pressure 100kPa (1 bar)

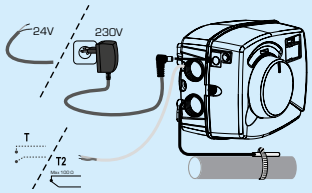
VALVE CHARACTERISTICS



The integrated controller:

Temperature range: +5 to +95°C
Power supply: 230 ± 10% V AC, 50 Hz
Power consumption: 10 VA
Running time at max. speed: max. 30s
Enclosure rating: IP41
Protection class: II

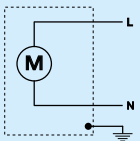
CONTROLLER WIRING



The integrated circulation pump:

Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption - Wilo 25/6: 3-45 W
- Wilo 25/7.5 3-76 W
- Grundfos 25-50: 2-34 W
- Grundfos 25-70: 2-53 W
Enclosure rating: IP X4D
Insulation class: F

PUMP WIRING*



* Circulation pump should be preceded by a multi-pole contact breaker in the fixed installation.

ESBE
NO.1 IN HYDRONIC SYSTEM CONTROL

RETURN TEMPERATURE UNIT
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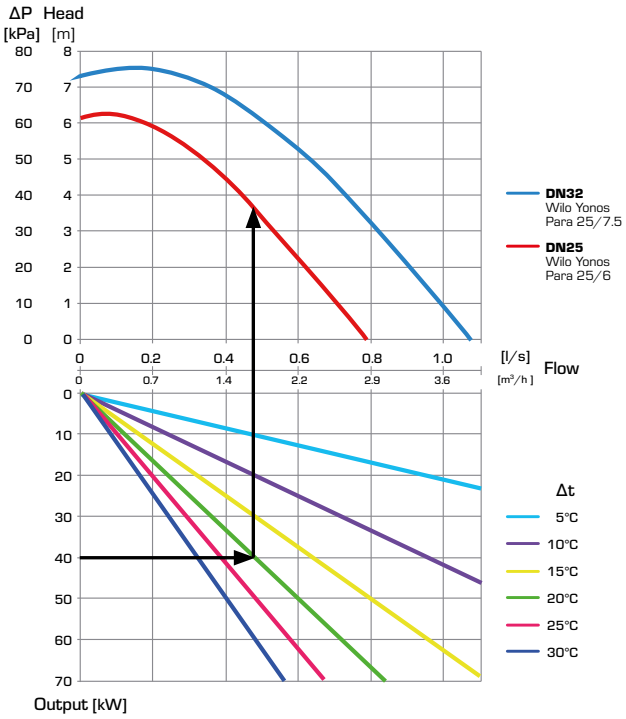
DIMENSIONING, PUMP CAPACITY DIAGRAM

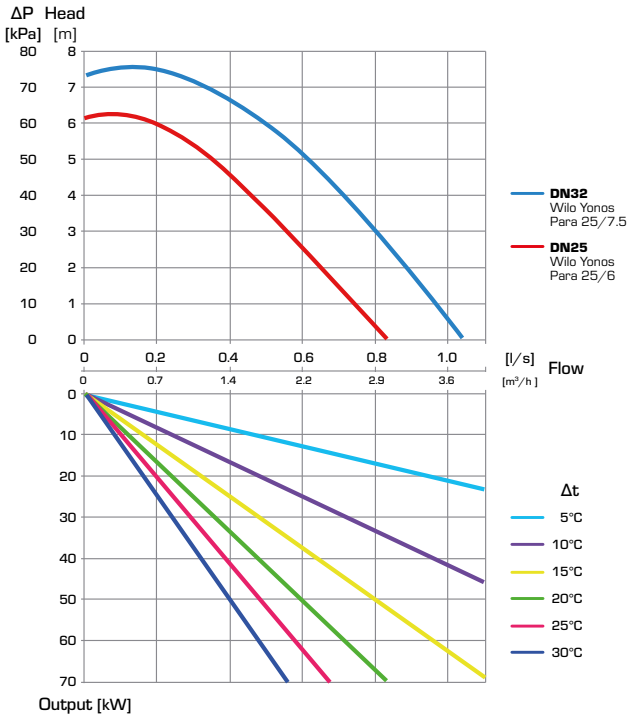
Example: Start with the heat output of the boiler (e.g. 40 kW) and move horizontally to the right in the diagram to the chosen Δt (recommended by boiler supplier), which is the temperature difference between the riser from the boiler and the return to the boiler (e.g. 85°C - 65°C = 20°C).

Move vertically up to the curves representing load unit performance. Check that the pump curve overcomes the additional pressure drops in system components such as pipes, boiler and storage tank.

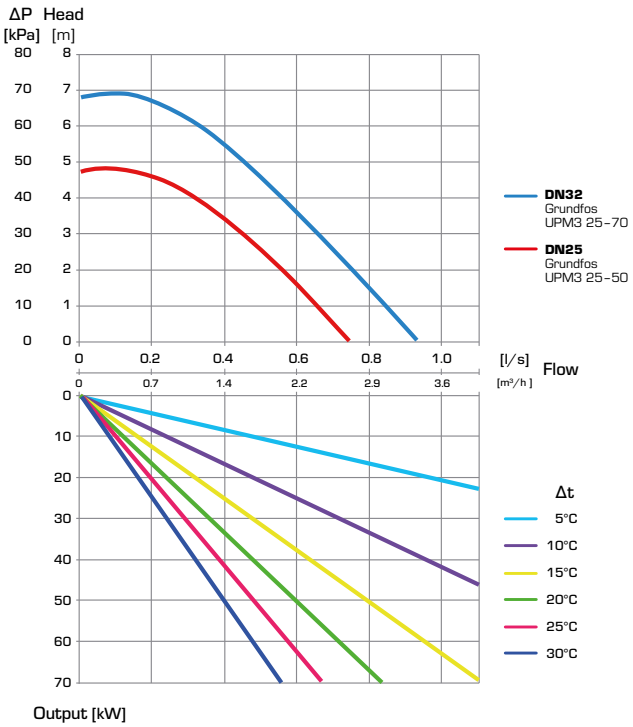
SERIES GSC110 – available pressure, Wilo pump



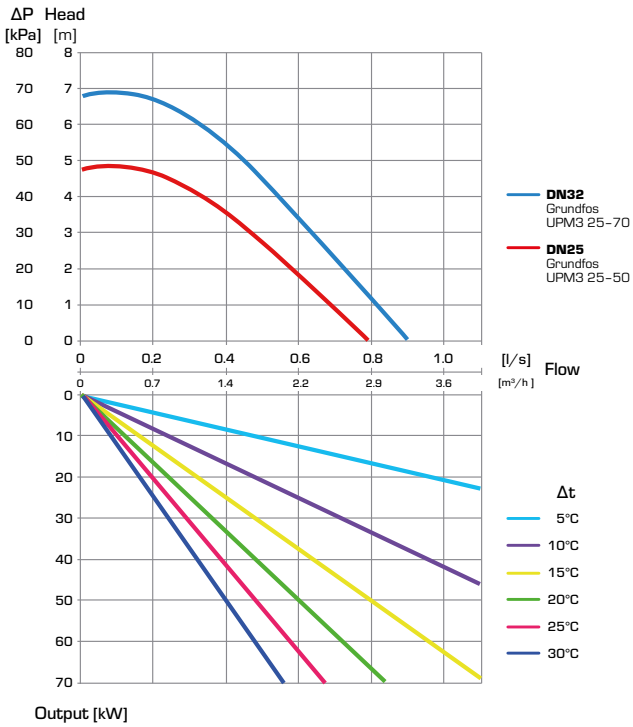
SERIES GSC120 – available pressure, Wilo pump



SERIES GSC110 – available pressure, Grundfos pump



SERIES GSC120 – available pressure, Grundfos pump



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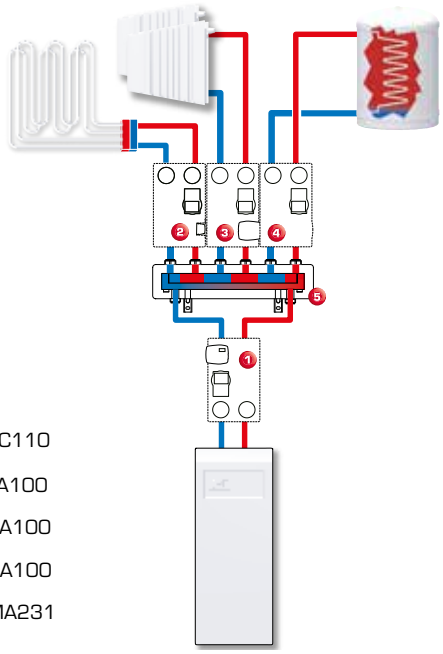
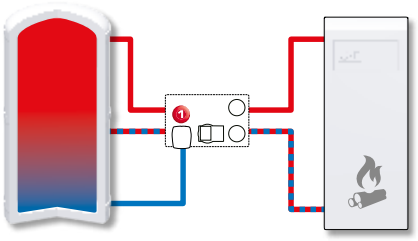
INSTALLATION EXAMPLES



1. GSC110
2. GFA100
3. GRA100
4. GDA100
5. GMA231



1. GSC120

NO.1 IN HYDRONIC SYSTEM CONTROL