

ROTARY VALVES

MIXING VALVE SERIES VRG140

The compact rotary 4-way mixing valve series VRG140 is available in DN 20–50, and is made of brass, PN10. Two types of connections are available; internal thread and external thread. Registered design.



Internal thread



External thread

OPERATION

The ESBE series VRG140 is a range of compact low leakage mixing valves made of special brass alloys allowing use in heating and cooling installations.

For easy manual operation the valves are equipped with non-slip knobs and end stops for an operation angle of 90°. The valve position scale can be turned over and rotated, allowing many different mounting positions. Together with actuator series ESBE ARA600, the VRG140 valves are also easily automated and have good regulating accuracy thanks to the unique valve-to-actuator interface. For more advanced control functions, the ESBE controllers allow even more applications.

ESBE VRG140 valves are available in dimensions DN 20 – 50 with internal thread and external thread.

SERVICE AND MAINTENANCE

The slender and compact design of the valve allows for easy tool access when assembling and disassembling the valve.

Repair kits are available for key components.

VALVE VRG140 DESIGNED FOR

- Heating
- Comfort cooling
- Solar heating

SUITABLE ACTUATORS AND CONTROLLERS

- Series ARA600
- Series 90*
- Series 90C
- Series CRK210
- Series CRD220
- Series CRC210, CRC120*
- Series CRB210, CRB220
- Series CRA210, CRA120*

* Adaptor kit necessary

TECHNICAL DATA

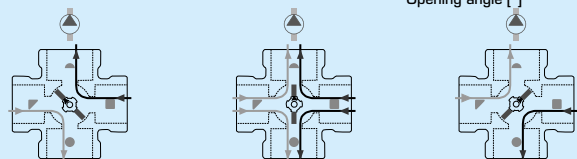
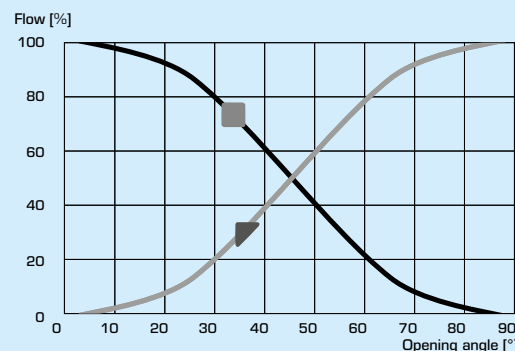
Pressure class: _____ PN 10
 Media temperature: _____ max. (continuously) +110°C
 _____ max. (temporarily) +130°C
 _____ min. -10°C
 Torque (at nominal pressure) DN20–32: _____ < 3 Nm
 DN40–50: _____ < 5 Nm
 Leakrate in % of flow*: _____ < 1,0%
 Working pressure: _____ 1 MPa (10 bar)
 Max. differential pressure drop: _____ 100 kPa (1 bar)
 Close off pressure: _____ 100 kPa (1 bar)
 Rangeability Kv/Kv^{min}, A-AB: _____ 100
 Connections: _____ Internal thread, EN 10226-1
 _____ External thread, ISO 228/1
 Media: _____ Heating water (in accordance with VDI2035)
 _____ Water / Glycol mixtures, max. 50%
 _____ Water / Ethanol mixtures, max. 28%

* Differential pressure 100kPa (1 bar)

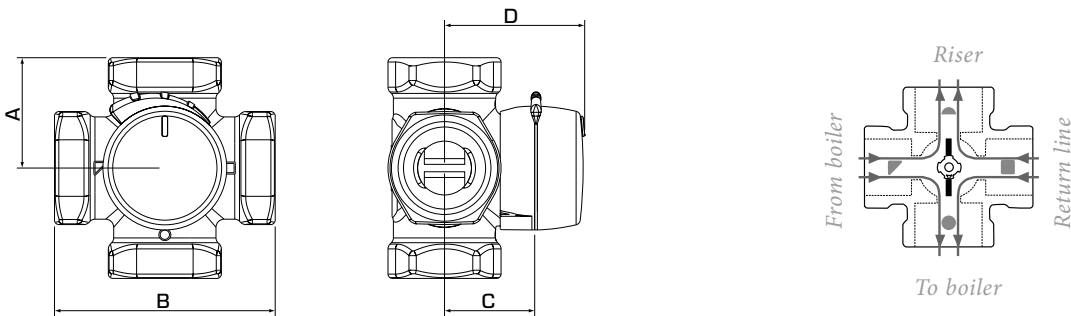
Material
 Valve body: _____ Dezincification resistant brass DZR
 Slide: _____ Abrasion resistant brass
 Shaft and bushing: _____ PPS composite
 O-rings: _____ EPDM

PED 2014/68/EU, article 4.3

VALVE CHARACTERISTICS



MIXING VALVE SERIES VRG140



The flat-sided spindle top points towards the sleeve position.

SERIES VRG141, INTERNAL THREAD

| Art. No. | Reference | DN | Kvs* | Connection | A | B | C | D | Weight [kg] | Note |
|----------|-----------|----|------|------------|----|-----|----|----|-------------|------|
| 11640200 | VRG141 | 20 | 4 | Rp 3/4" | 36 | 72 | 32 | 50 | 0,52 | |
| 11640300 | | | 6,3 | | | | | | | |
| 11640400 | VRG141 | 25 | 10 | Rp 1" | 41 | 82 | 34 | 52 | 0,80 | |
| 11640500 | VRG141 | 32 | 16 | Rp 1 1/4" | 47 | 94 | 37 | 55 | 1,08 | |
| 11641500 | VRG141 | 40 | 25 | Rp 1 1/2" | 53 | 106 | 44 | 62 | 1,89 | |
| 11641700 | VRG141 | 50 | 40 | Rp 2" | 60 | 120 | 46 | 64 | 2,55 | |

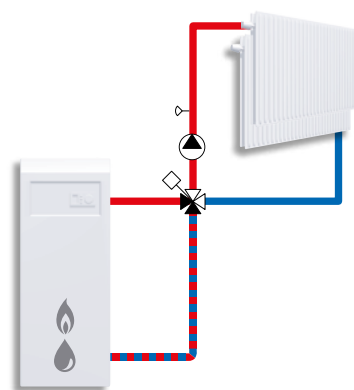
SERIES VRG142, EXTERNAL THREAD

| Art. No. | Reference | DN | Kvs* | Connection | A | B | C | D | Weight [kg] | Note |
|----------|-----------|----|------|------------|----|----|----|----|-------------|------|
| 11641000 | VRG142 | 20 | 6,3 | G 1" | 36 | 72 | 32 | 50 | 0,52 | |
| 11641100 | VRG142 | 25 | 10 | G 1 1/4" | 41 | 82 | 34 | 52 | 0,80 | |
| 11641200 | VRG142 | 32 | 16 | G 1 1/2" | 47 | 94 | 37 | 55 | 1,08 | |

* Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart, see product catalogue.

INSTALLATION EXAMPLES

All the examples of installation can be mirrored. The valve position scale can be turned over and rotated to fit a number of installation layouts and should at the installation be fitted in the correct position as shown in the instruction for installation. The symbol markings of the valve ports (■●▲) minimize the risk of incorrect installation.



Mixing

MIXING VALVE SERIES VRG140

DIMENSIONING

RADIATOR OR UNDERFLOOR HEATING SYSTEMS

Start with the heat demand in kW (e.g. 25 kW) and move vertically to the chosen Δt (e.g. 15°C).

Move horizontally to the shaded field (pressure drop of 3-15 kPa) and select the smaller Kvs-value (e.g. 4.0). A mixing valve with suitable Kvs-value will be found in respective product description.

OTHER APPLICATIONS

Make sure maximum ΔP is not exceeded (see lines A and B in the graph below).

