

# MIXING VALVE SERIES VRG330

The compact rotary 3-way mixing and diverting valve series VRG330 is developed in particular for high flow applications and is available in DN 20–50, brass, PN10. Three types of connections are available; internal thread, external thread and rotating nut. Patented + Registered design.

## OPERATION

The ESBE series VRG330 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°. Together with actuator series ESBE ARA600, the VRG330 valves are also easily automated thanks to the unique valve-to-actuator interface. For more advanced control functions, the ESBE controllers allows even more applications.

ESBE VRG330 valves are available in dimensions DN 20 – 50 with internal thread or external thread, or with rotating nut in DN20.

The VRG330 is designed for high flow applications with extra high Kvs-value between port ■ - ▲. Kvs-value in bypass (●) is about 60% of specified Kvs (■ - ▲).

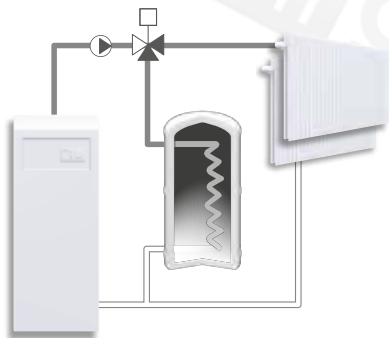
## SERVICE AND MAINTENANCE

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.

## INSTALLATION EXAMPLES

All the examples of installations 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.



Internal thread



External thread



Rotating nut

## VALVE VRG330 DESIGNED FOR

- Heating
- Comfort cooling
- Solar heating
- Zone

## SUITABLE ACTUATORS AND CONTROLLERS

- Series ARA600
- Series 90\*
- Series 90C
- Series CRA110, CRA120\*, CRA140, CRA150
- Series CRB100
- Series CRC110, CRC120\*, CRC140
- Series CRD100
- Series CRS130

\*Adaptor kit necessary

## TECHNICAL DATA

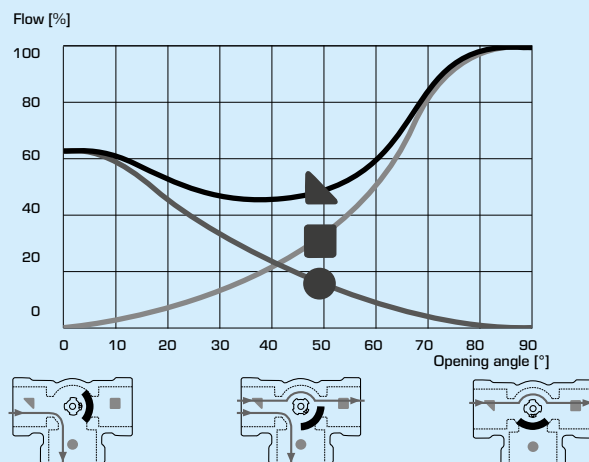
Pressure class: \_\_\_\_\_ PN 10  
 Media temperature: \_\_\_\_\_ max. (continuously) +110°C  
 \_\_\_\_\_ max. (temporarily) +130°C  
 \_\_\_\_\_ min. -10°C  
 Torque (at nominal pressure), DN15-32: \_\_\_\_\_ < 3 Nm  
 DN40-50: \_\_\_\_\_ < 5 Nm  
 Leakrate in % of flow\*: \_\_\_\_\_ < 0,05  
 Working pressure: \_\_\_\_\_ 1 MPa (10 bar)  
 Max. differential pressure drop: \_\_\_\_\_ Mixing, 100 kPa (1 bar)  
 \_\_\_\_\_ Diverting, 200 kPa (2 bar)  
 Close off pressure: \_\_\_\_\_ 200 kPa (2 bar)  
 Rangeability Kv/Kv<sup>min</sup>, A-AB: \_\_\_\_\_ 100  
 Connections: \_\_\_\_\_ Internal thread, EN 10226-1  
 \_\_\_\_\_ External thread, ISO 228/1

\* Differential pressure 100kPa (1 bar)

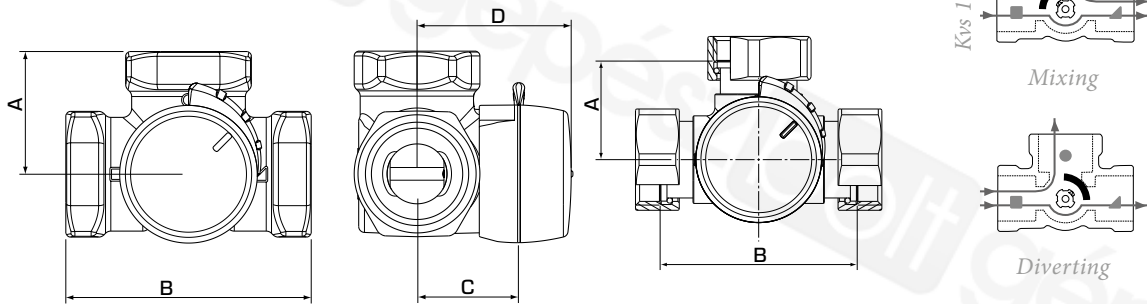
Material  
 Valve body: \_\_\_\_\_ Dezincification resistant brass, DZR  
 Slide: \_\_\_\_\_ Abrasion resistant brass  
 Shaft and bushing: \_\_\_\_\_ PPS composite  
 O-rings: \_\_\_\_\_ EPDM

PED 2014/68/EU, article 4.3

## VALVE CHARACTERISTICS



# MIXING VALVE SERIES VRG330



VRG331, VRG332

VRG338

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

## SERIES VRG331, INTERNAL THREAD

| Art. No. | Reference | DN | Kvs*<br>■ - ▲ | Kvs*<br>■ - ● | Connection | A  | B   | C  | D  | Weight [kg] | Note |
|----------|-----------|----|---------------|---------------|------------|----|-----|----|----|-------------|------|
| 11700100 | VRG331    | 20 | 13            | 8             | Rp 3/4"    | 36 | 72  | 32 | 50 | 0,43        |      |
| 11700200 | VRG331    | 25 | 17            | 10            | Rp 1"      | 41 | 82  | 34 | 52 | 0,70        |      |
| 11700300 | VRG331    | 32 | 32            | 20            | Rp 1 1/4"  | 47 | 94  | 37 | 55 | 0,95        |      |
| 11701100 | VRG331    | 40 | 45            | 30            | Rp 1 1/2"  | 53 | 106 | 44 | 62 | 1,65        |      |
| 11701300 | VRG331    | 50 | 65            | 40            | Rp 2"      | 60 | 120 | 46 | 64 | 2,28        |      |

## SERIES VRG332, EXTERNAL THREAD

| Art. No. | Reference | DN | Kvs*<br>■ - ▲ | Kvs*<br>■ - ● | Connection | A  | B   | C  | D  | Weight [kg] | Note |
|----------|-----------|----|---------------|---------------|------------|----|-----|----|----|-------------|------|
| 11700600 | VRG332    | 20 | 13            | 8             | G 1"       | 36 | 72  | 32 | 50 | 0,43        |      |
| 11700700 | VRG332    | 25 | 17            | 10            | G 1 1/4"   | 41 | 82  | 34 | 52 | 0,70        |      |
| 11700800 | VRG332    | 32 | 32            | 20            | G 1 1/2"   | 47 | 94  | 37 | 55 | 0,95        |      |
| 11701200 | VRG332    | 40 | 45            | 30            | G 2"       | 53 | 106 | 44 | 62 | 1,66        |      |
| 11701400 | VRG332    | 50 | 65            | 40            | G 2 1/4"   | 60 | 120 | 46 | 64 | 2,28        |      |

## SERIES VRG338, ROTATING NUT

| Art. No. | Reference | DN | Kvs*<br>■ - ▲ | Kvs*<br>■ - ● | Connection | A  | B  | C  | D  | Weight [kg] | Note |
|----------|-----------|----|---------------|---------------|------------|----|----|----|----|-------------|------|
| 11701500 | VRG338    | 20 | 13            | 8             | 3x RN 1"   | 36 | 72 | 32 | 50 | 0,57        |      |

\* Kvs-value in m<sup>3</sup>/h at a pressure drop of 1 bar. Flow chart, see product catalogue. RN = Rotating Nut

# MIXING VALVE SERIES VRG330

## DIMENSIONING

### RADIATOR OR UNDERFLOOR HEATING SYSTEMS

Start with the heat demand in kW (e.g. 25 kW) and move vertically to the chosen  $\Delta t$  (e.g. 10°C).

Move horizontally to the shaded field (pressure drop of 3-15 kPa) and select the smaller Kvs-value (e.g. 8,0). A mixing valve with suitable Kvs-value will be found in respective product description.

### OTHER APPLICATIONS

Make sure maximum  $\Delta P$  is not exceeded (see lines A and B in the graph below).

