

ROTARY MOTORIZED VALVES

# MIXING VALVE SERIES VRG140

The compact rotary 4-way mixing valve series VRG140 is available in DN 15–50, 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 15 – 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

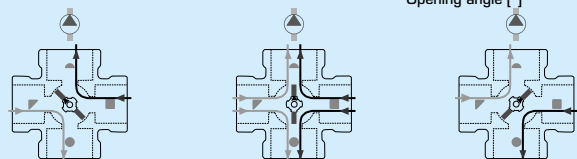
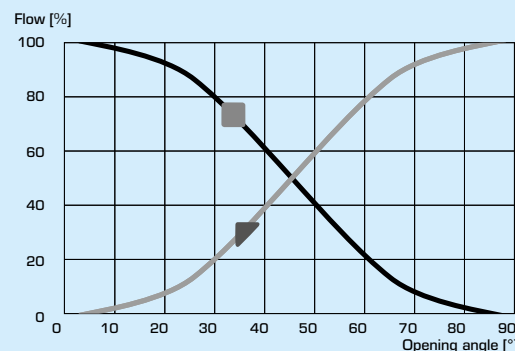
Pressure class: \_\_\_\_\_ PN 10  
 Media temperature: \_\_\_\_\_ max. (continuously) +110°C  
 \_\_\_\_\_ max. (temporarily) +130°C  
 \_\_\_\_\_ min. -10°C  
 Torque (at nominal pressure) DN15-32: \_\_\_\_\_ < 3 Nm  
 DN40-50: \_\_\_\_\_ < 5 Nm  
 Leakrate in % of flow\*: \_\_\_\_\_ < 1,0%  
 Working pressure: \_\_\_\_\_ 1 MPa (10 bar)  
 Max. differential pressure drop: \_\_\_\_\_ 100 kPa (1 bar)  
 Close off pressure: \_\_\_\_\_ 100 kPa (1 bar)  
 Rangeability Kv/Kv<sup>min</sup>, 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)

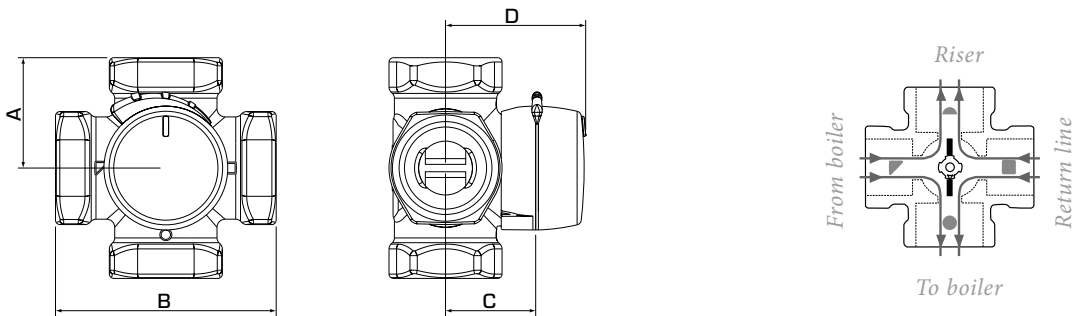
Material  
 Valve body: \_\_\_\_\_ Dezincification resistant brass DZR  
 Slide: \_\_\_\_\_ Abrasion resistant brass  
 Shaft and bushing: \_\_\_\_\_ PPS composite  
 O-rings: \_\_\_\_\_ EPDM

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

### 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
11640100	VRG141	15	2,5	Rp 1/2"	36	72	32	50	0,40	
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	

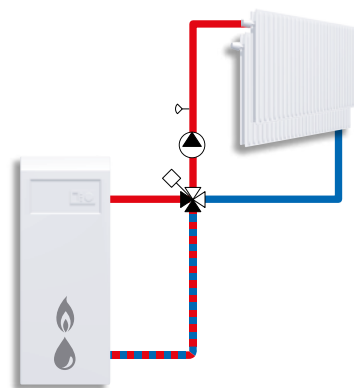
## SERIES VRG142, EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	A	B	C	D	Weight [kg]	Note
11640900	VRG142	20	4	G 1"	36	72	32	50	0,52	
11641000			6,3							
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 m<sup>3</sup>/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  $\Delta t$  (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  $\Delta P$  is not exceeded (see lines A and B in the graph below).

