ROTARY VALVES

MIXING VALVE
SERIES VRG130

The compact rotary 3-way mixing valve series VRG130 is available in DN 15–50, and is made of brass, PN10. Four types of connections are available; internal thread, external thread, compression fitting and rotating nut. Patented + Registered design.

Internal thread

External thread

Compression fitting

Rotating nut

Rotating nut/
External thread

OPERATION

The ESBE series VRG130 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 a wide choice of mounting positions. Together with actuator series ESBE ARA600 the VRG130 valves are also easily automated and have extraordinary regulating accuracy thanks to the unique valve-to-actuator interface. For more advanced control functions, the ESBE controllers allows even more applications.

ESBE VRG130 valves are available in dimensions DN 15 – 50 with internal or external thread, with rotating nut in DN20, or with compression fittings for pipe O.D. 22 and 28 mm.

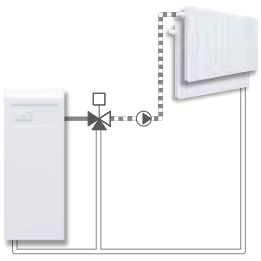
SERVICE AND MAINTENANCE

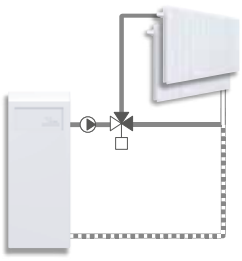
The slender and compact design of the valve allows for easy tool access when assembling and disassembling the valve.

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.


Mixing


Diverting

VALVE VRG130 DESIGNED FOR

- Heating
- Comfort cooling
- Floor heating
- Solar heating
- Ventilation
- Zone

SUITABLE ACTUATORS AND CONTROLLERS

- Series ARA600
- Series 90*

*Adaptor kit necessary

- Series CRA210, CRA120*
- Series CRB210, CRB220
- Series CRC210, CRC120*
- Series CRD220
- Series CRK210
- Series CRS210

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*:	Mixing < 0,05%
	Diverting < 0,02%
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^{min}, A-AB:	100
Connections:	Internal thread, EN 10226-1
	External thread, ISO 228/1
	Compression fitting, EN 1254-2
Media:	Heating water (in accordance with VDI2035)
	Water / Glycol mixtures, max. 50%
	Water / Ethanol mixtures, max. 28%

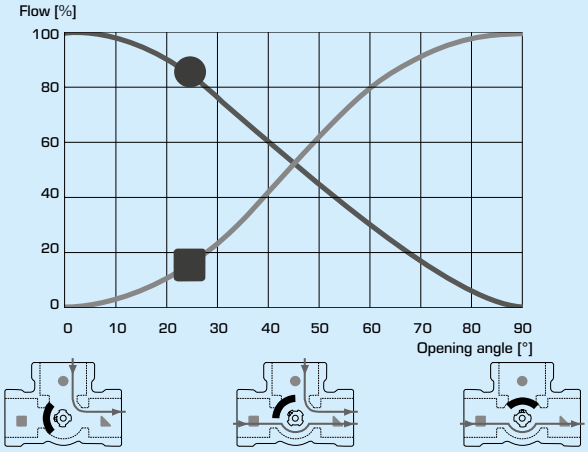
* Differential pressure 100kPa (1 bar)

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



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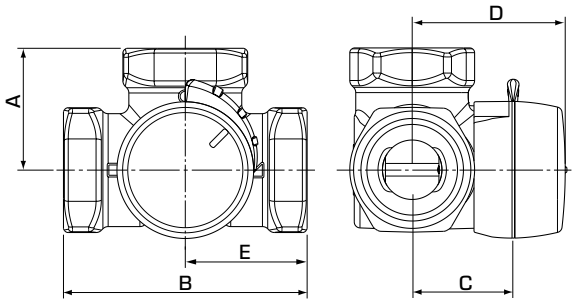
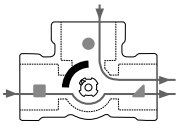
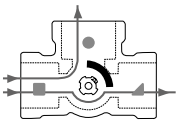
MIXING VALVE
SERIES VRG130



VRG131, VRG132, VRG133



Mixing



Diverting

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

SERIES VRG131, INTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	A	B	C	D	E	Weight [kg]	Replaces
11600100	VRG131	15	0,4	Rp ½"	36	72	32	50	36	0,40	
11600200			0,63								
11600300			1								
11600400			1,6								
11600500			2,5								
11600600			4								
11600700	VRG131	20	2,5	Rp ¾"	36	72	32	50	36	0,43	
11600800			4								
11600900			6,3								
11601000	VRG131	25	6,3	Rp 1"	41	82	34	52	41	0,70	
11601100			10								
11601200	VRG131	32	16	Rp 1¼"	47	94	37	55	47	0,95	
11603400	VRG131	40	25	Rp 1½"	53	106	44	62	53	1,68	
11603600	VRG131	50	40	Rp 2"	60	120	46	64	60	2,30	

SERIES VRG132, EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	A	B	C	D	E	Weight [kg]	Replaces
11601500	VRG132	15	0,4	G ¾"	36	72	32	50	36	0,40	
11601600			0,63								
11601700			1								
11601800			1,6								
11601900			2,5								
11602000			4								
11602100	VRG132	20	2,5	G 1"	36	72	32	50	36	0,43	
11602200			4								
11602300			6,3								
11602400	VRG132	25	6,3	G 1¼"	41	82	34	52	41	0,70	
11602500			10								
11602600	VRG132	32	16	G 1½"	47	94	37	55	47	0,95	
11603500	VRG132	40	25	G 2"	53	106	44	62	53	1,69	
11603700	VRG132	50	40	G 2¼"	60	120	46	64	60	2,30	

* Kvs-value in m^3/h at a pressure drop of 1 bar.

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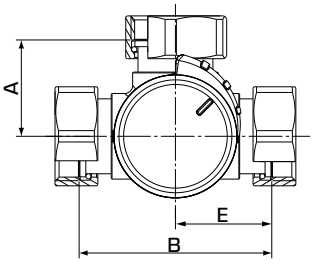
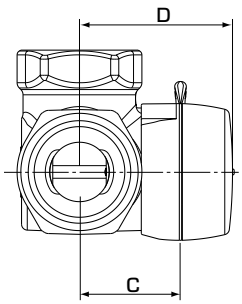
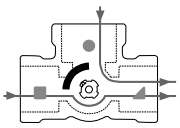
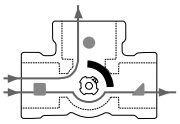
MIXING VALVE
SERIES VRG130







Mixing



Diverting

VRG138

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

SERIES VRG133, COMPRESSION FITTING

Art. No.	Reference	DN	Kvs*	Connection	A	B	C	D	E	Weight [kg]	Replaces
11606000	VRG133	20	1,6	CPF 22 mm	36	72	32	50	36	0,40	
11606100			2,5								
11602900			4								
11603000			6,3								
11603100	VRG133	25	10	CPF 28 mm	41	82	34	52	41	0,45	

SERIES VRG138, ROTATING NUT AND EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	A	B	C	D	E	Weight [kg]	Replaces
11603800	VRG138	20	4	2x RN 1" + G 1"	36	72	32	50	36	0,56	
11604100			6,3	3x RN 1"						0,59	

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting RN = Rotating Nut

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MIXING VALVE
SERIES VRG130

DIMENSIONING

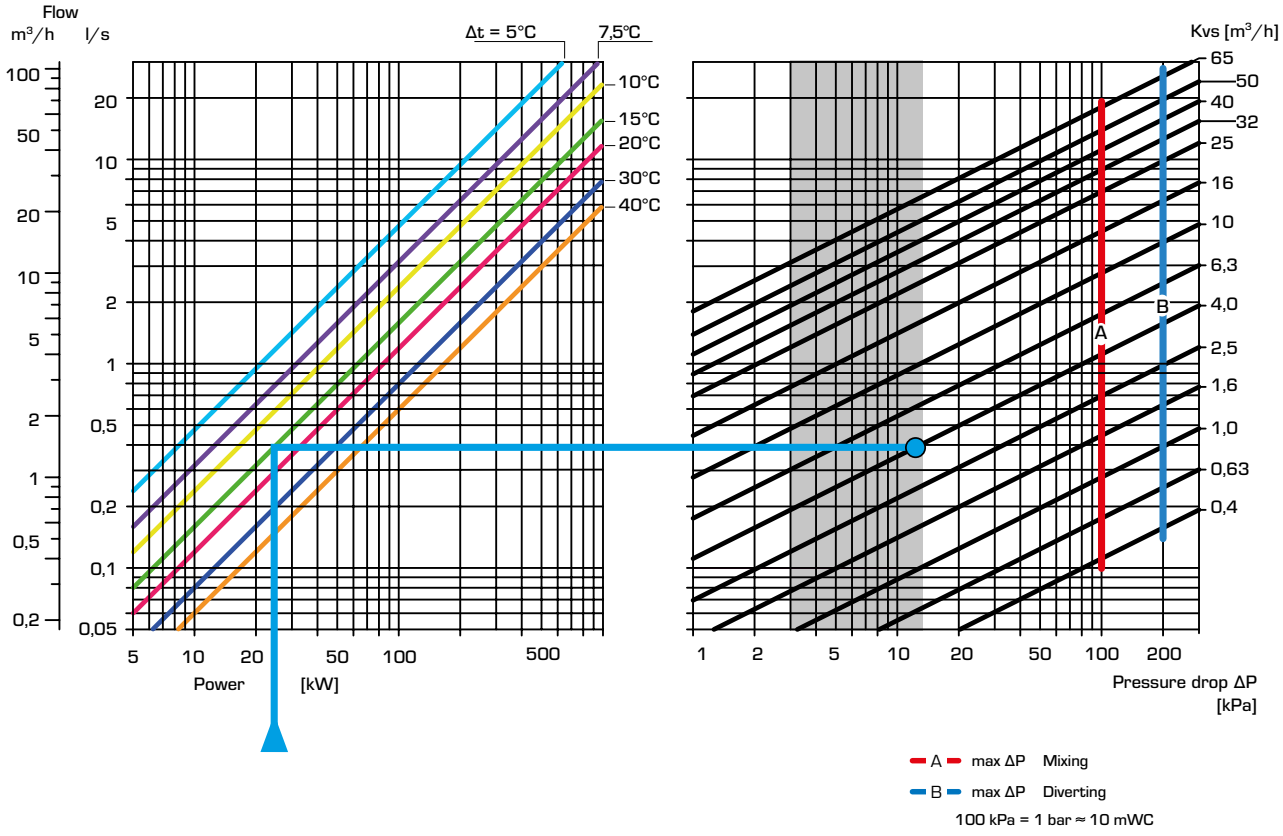
RADIATOR OR UNDERFLOOR HEATING SYSTEMS

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).



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