

Data sheet

Rotary valves HRB 3, HRB 4

Description



HRB rotary valves can be used in combination with electric actuators AMB 162 and AMB 182.

**Features:**

- Lowest leakage in class
- Unique position indicator (visible also when actuator is mounted)
- Ergonomic handle
- Easy installation
- For mixing and diverting applications
- Internal thread connection

**Main data:**

- DN 15–50
- $k_{vs}$  0.4–40 m<sup>3</sup>/h
- PN 10
- $T_{max}$  = 110 °C
- 3-way or 4-way
- S characteristic

Danfoss HRB rotary valves are primarily designed for regulation of flow temperature in heating systems where a certain leakage can be accepted and where a defined control characteristic is not required.

Ordering

Type	DN (mm)	$k_{vs}$ (m <sup>3</sup> /h)	PN	Connection	Code No.		
					HRB 3	HRB 4	
HRB 3 HRB 4	15	0.4	10	Rp 1/2"	065Z0399	-	
		0.63			065Z0400		
		1.0			065Z0401		
		1.63			065Z0402		
		2.5			065Z0403		065Z0411
		4.0			065Z0398		-
	20	2.5		065Z0397	-		
		4.0		065Z0404	065Z0412		
		6.3		065Z0405	065Z0413		
		6.3		065Z0406	-		
	25	10		065Z0407	065Z0414		
		16		065Z0408	065Z0415		
	32	25		065Z0409	065Z0416		
	40	40		065Z0410	065Z0417		
	50						

Ordering (continued)

Spare parts for old generation AMB actuators

Picture	Type	Code No.
	Retrofit linkages for: HRB 3 (Gen. 2009) <b>065B2220</b> ---> <b>065B2230</b> HRB 4 (Gen. 2009) <b>065B2240</b> ---> <b>065B2246</b>	<b>082G4235</b>

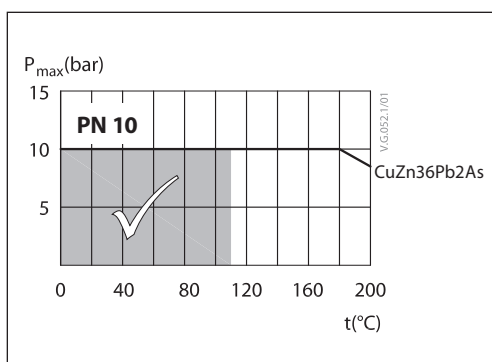
Spare parts and accessories for HRB valves

Type	DN	Code No.	
Transparent cover, scale and pointer	15-20	<b>065Z0444</b>	
	25	<b>065Z0445</b>	
	32	<b>065Z0446</b>	
	40	<b>065Z0447</b>	
	50	<b>065Z0448</b>	
Stuffing box	HRB 3/4	15-20	<b>065Z0449</b>
	HRB 3/4	25	<b>065Z0450</b>
	HRB 3/4	32	<b>065Z0451</b>
	HRB 3	40	<b>065Z0452</b>
	HRB 4	40	<b>065Z0460</b>
	HRB 3	50	<b>065Z0453</b>
	HRB 4	50	<b>065Z0461</b>
Replacement handle		<b>065Z0442</b>	
Linkage kit for AMB (Gen. 2014)		<b>082H0255</b>	

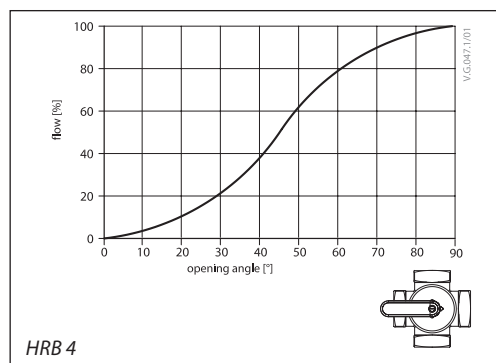
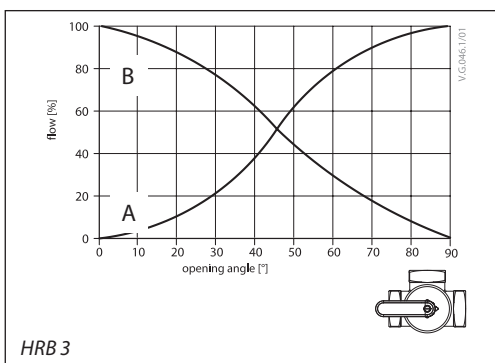
Technical data

Nominal diameter	DN	15	20	25	32	40	50
Control characteristic		S characteristic					
Leakage	HRB 3	Diverting: max. 0.3 % of flow / Mixing: max. 1 % of flow					
	HRB 4	max. 1.0 % of $k_{vs}$					
Nominal pressure	PN	10					
Max. closing pressure	bar	Diverting: 2 / Mixing: 1					
Torque at PN	Nm	5					
Medium		Circulation water / glycolic mixture up to 50 %					
Medium pH		Min. 7, max. 10					
Medium temperature	°C	2 ... 110					
Connections		Internal thread. ISO 7/1					
<b>Materials</b>							
Valve body and slide shoe		CuZn36Pb2As (Brass DZR, CW 602N)					
Stuffing box		CuZn36Pb2As (Brass DZR, CW 602N)					
Stuffing box sealing		EPDM					

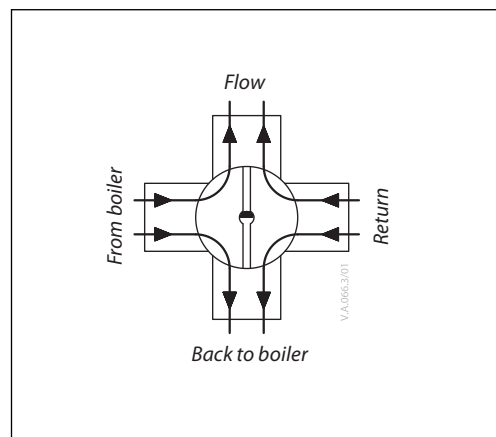
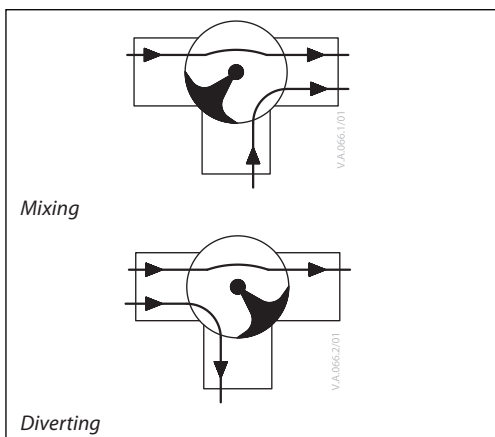
Pressure temperature diagram



Valve characteristics



Installation



Valve mounting

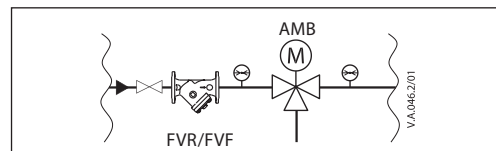
Before valve mounting pipes have to be cleaned and free from abrasion. Mechanical loads on valve body caused by the pipes are not allowed. It is recommended to install a strainer into application to avoid damaging controlling components.

**Note:**  
Install a strainer upstream of the valve  
(e.g. Danfoss FVR/FVF)

Connection

HRB 3 can be used as a mixing valve, diverting valve and in connection with heat exchangers where a certain leakage can be accepted.

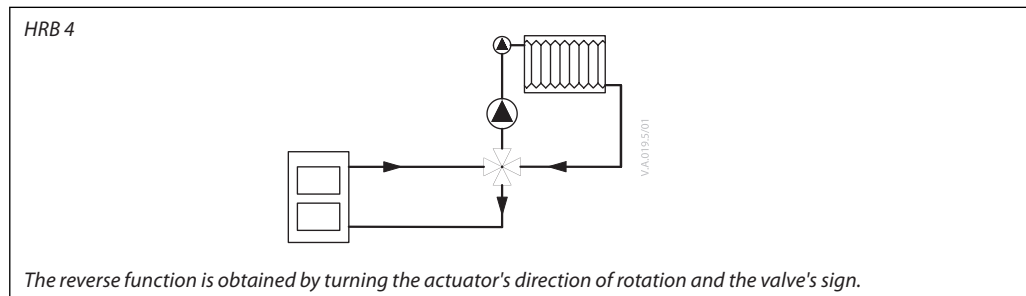
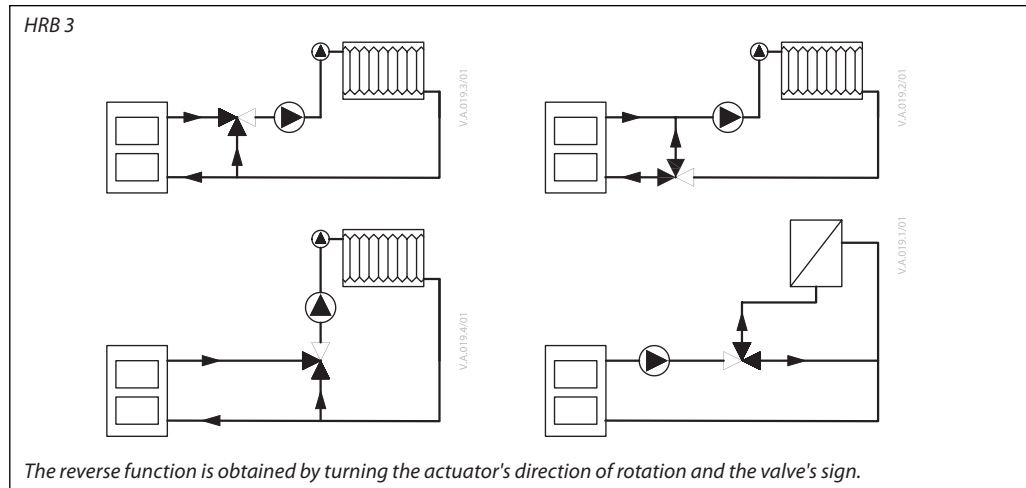
HRB 4 operates according to the double shunt principle i.e. the water from the boiler is mixed with a certain portion of the water in the return. In this way the water which goes to the boiler reaches a higher return temperature than by using 3-way valves. This means that the risk of corrosion in oil and solid fuel boilers is reduced.



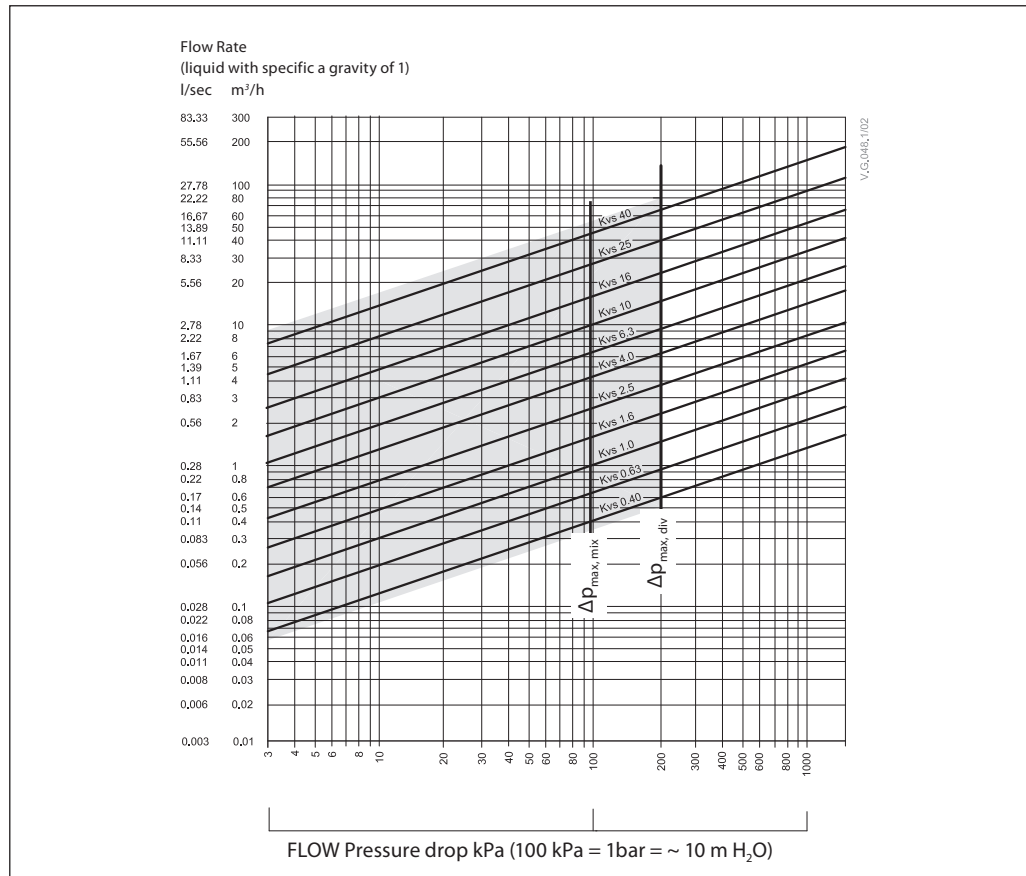
Disposal

The valve must be dismantled and the elements sorted into various material groups before disposal.

Application principles

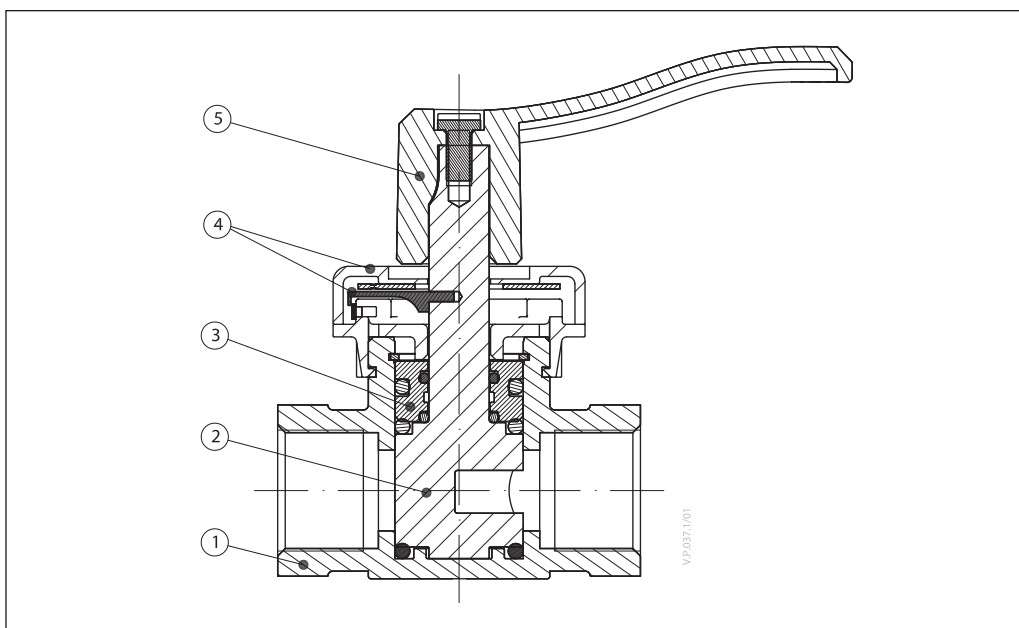


Sizing



Design

- 1. Valve body
- 2. Slide shoe
- 3. Stuffing box
- 4. Transparent cover and indicator
- 5. Handle



Dimensions

**HRB 3**

**HRB 4**

**HRB 3, HRB 4**

DN	A	B	C	D	Connection	Weight (kg)		Actuator
						HRB 3	HRB 4	
15	36	72	114	88	Rp 1/2"	0.55	0.60	AMB 162 AMB 182
20	36	72	114	88	Rp 3/4"	0.58	0.67	
25	41	82	119	92	Rp 1"	0.92	0.98	
32	47	94	125	97	Rp 1 1/4"	1.2	1.3	
40	58	116	136	97	Rp 1 1/2"	1.5	1.8	
50	62.5	125	140.5	103	Rp 2"	2.5	2.8	





