

## 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	065Z0412		
		4.0		065Z0404	065Z0413		
		6.3		065Z0405	065Z0413		
	25	6.3		065Z0406	-		
		10		065Z0407	065Z0414		
	32	16		065Z0408	065Z0415		
	40	25		065Z0409	065Z0416		
	50	40		065Z0410	065Z0417		

Ordering (continued)

Spare parts and accessories

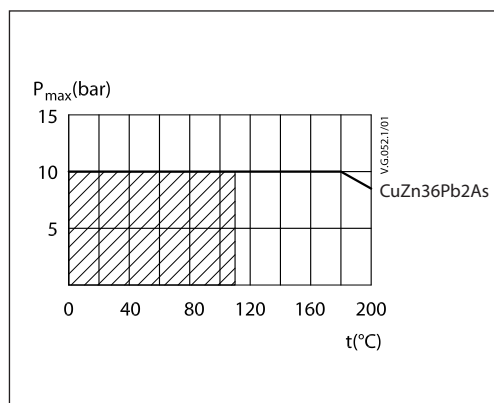
Type	DN	Code No.	
Connection plate HRB		065Z0439	
Linkage kit		065Z0440*	
Retrofit linkages for rotary valves		065Z0441	
Replacement handle		065Z0442	
Transparent cover, scale and pointer	15-20	065Z0444	
	25	065Z0445	
	32	065Z0446	
	40	065Z0447	
	50	065Z0448	
Stuffing box	HRB 3/4	15-20	065Z0449
	HRB 3/4	25	065Z0450
	HRB 3/4	32	065Z0451
	HRB 3	40	065Z0452
	HRB 4	40	065Z0460
	HRB 3	50	065Z0453
	HRB 4	50	065Z0461

\*Supplied with actuator AMB 162/182

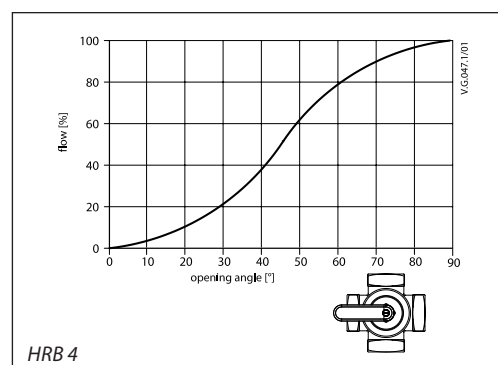
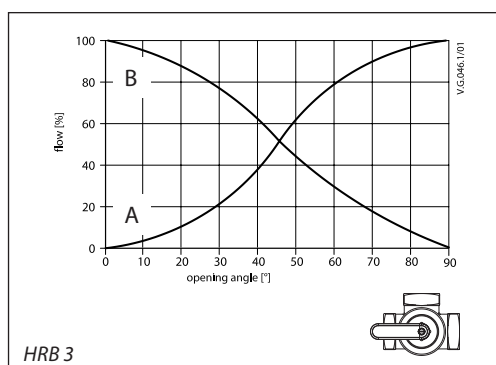
Technical data

Nominal diameter	DN	15	20	25	32	40	50
Control characteristic		S characteristic					
Leakage	HRB 3	Diverting: max. 0.02% of flow / Mixing: max. 0.05 % 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					

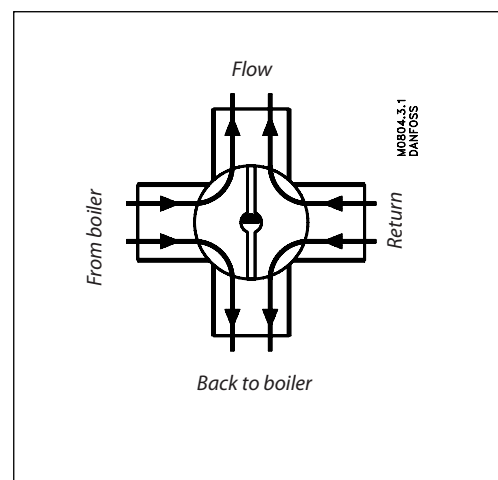
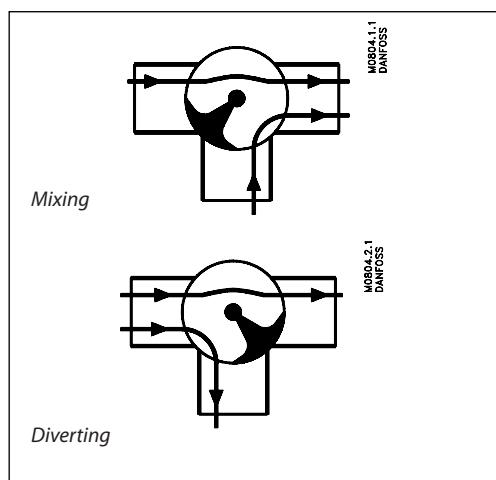
Pressure temperature diagram



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.

Connection

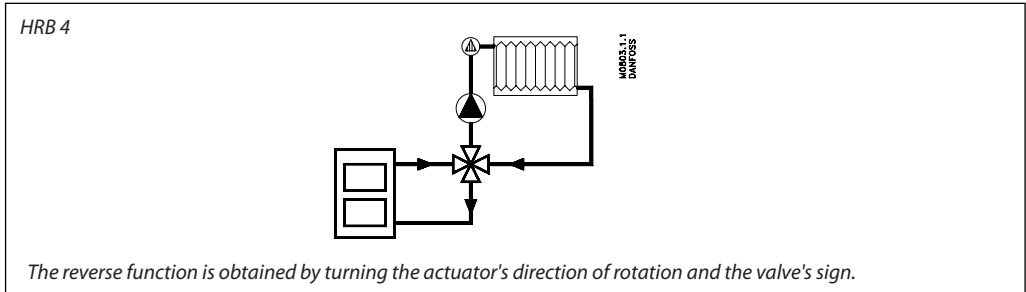
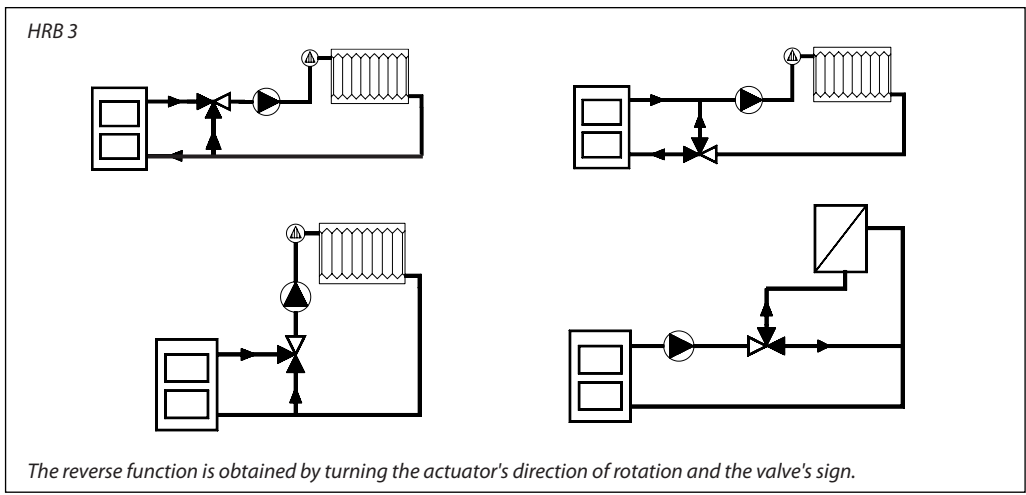
HRB 3 can be used as a mixing valve and in connection with heat exchangers where a certain leakage can be accepted.

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.

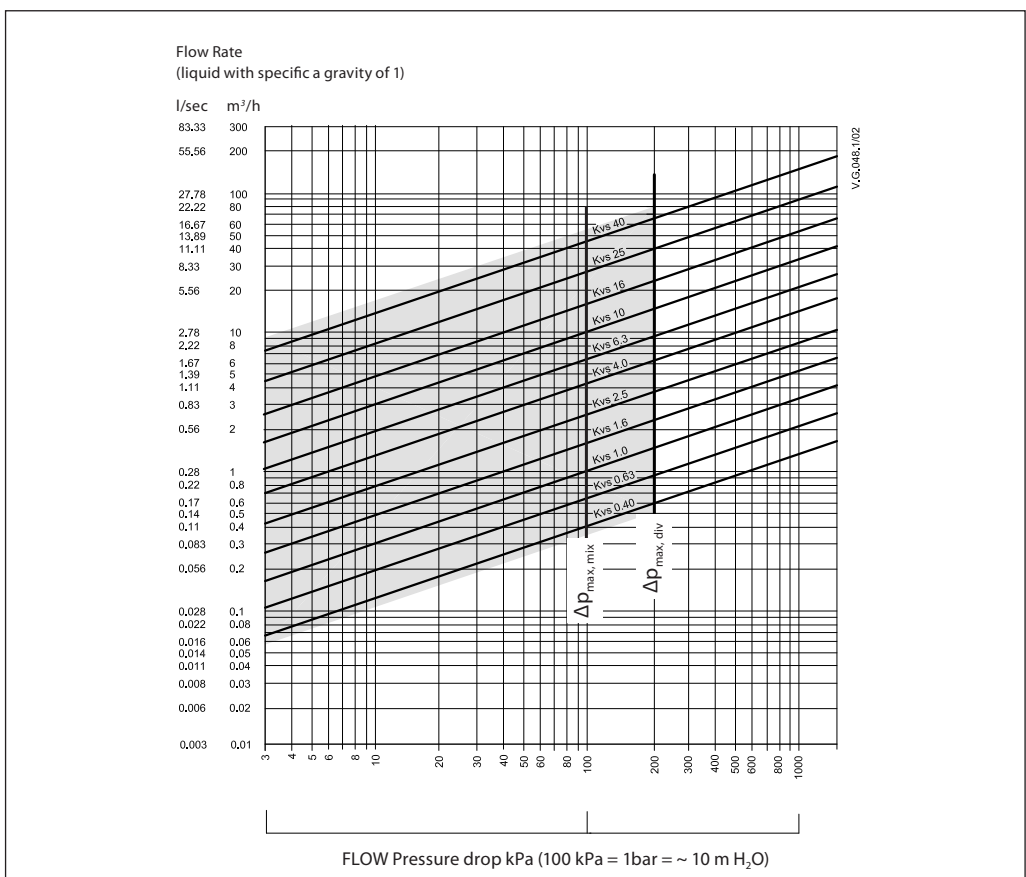
Disposal

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

Application principles

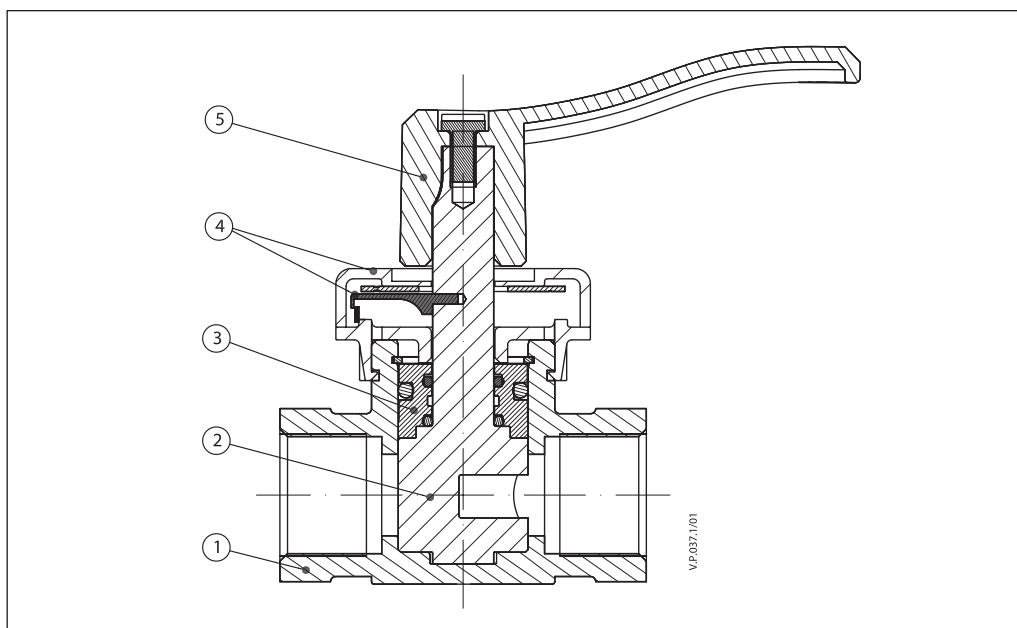


Sizing



Design

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



Dimensions

**HRB 3**

**HRB 4**

DN	A	B	C	D	E	Connection	Weight (kg)		Actuator
	mm						HRB 3	HRB 4	
15	36	72	114	88	143	Rp 1/2"	0.55	0.60	AMB 162 AMB 182
20	36	72	114	88	143	Rp 3/4"	0.58	0.67	
25	41	82	119	92	147	Rp 1"	0.92	0.98	
32	47	94	125	97	152	Rp 1 1/4"	1.2	1.3	
40	58	116	136	97	152	Rp 1 1/2"	1.5	1.8	
50	62.5	125	140.5	103	158	Rp 2"	2.5	2.8	





