



Motorized control valves

HRB 3, HRB 4

Description

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

Main data:

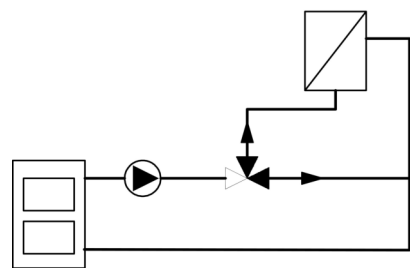
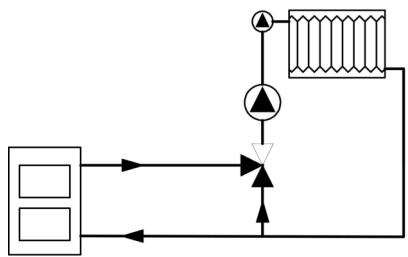
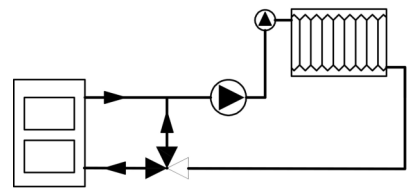
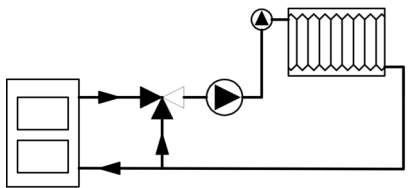
- DN 15–50
- k_{VS} 0.4–40 m³/h
- PN 10
- T_{max} = 110 °C
- 3-way or 4-way
- S characteristic

Features & benefits

- 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

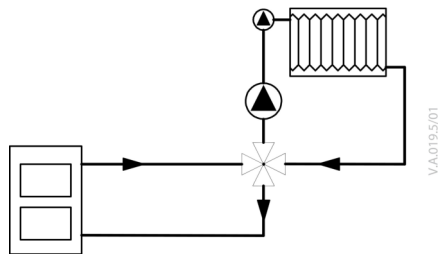
Applications

HRB 3



The reverse function is obtained by turning the actuator's direction of rotation and the valve's sign.

HRB 4



The reverse function is obtained by turning the actuator's direction of rotation and the valve's sign.

Ordering

Product code numbers

Type	Diameter [mm]	Pressure nominal [bar]	Kvs values [m ³ /h]	Connection size	Code number
HRB 3	20	10	2.50	Rp 3/4	065Z0397
HRB 3	15	10	4.00	Rp 1/2	065Z0398
HRB 3	15	10	0.40	Rp 1/2	065Z0399
HRB 3	15	10	0.63	Rp 1/2	065Z0400
HRB 3	15	10	1.00	Rp 1/2	065Z0401
HRB 3	15	10	1.63	Rp 1/2	065Z0402
HRB 3	15	10	2.50	Rp 1/2	065Z0403
HRB 3	20	10	4.00	Rp 3/4	065Z0404
HRB 3	20	10	6.30	Rp 3/4	065Z0405
HRB 3	25	10	6.30	Rp 1	065Z0406
HRB 3	25	10	10.00	Rp 1	065Z0407
HRB 3	32	10	16.00	Rp 1 1/4	065Z0408
HRB 3	40	10	25.00	Rp 1 1/2	065Z0409
HRB 3	50	10	40.00	Rp 2	065Z0410
HRB 4	15	10	2.50	Rp 1/2	065Z0411
HRB 4	20	10	4.00	Rp 3/4	065Z0412
HRB 4	20	10	6.30	Rp 3/4	065Z0413
HRB 4	25	10	10.00	Rp 1	065Z0414
HRB 4	32	10	16.00	Rp 1 1/4	065Z0415
HRB 4	40	10	25.00	Rp 1 1/2	065Z0416
HRB 4	50	10	40.00	Rp 2	065Z0417

Spare parts code numbers



065Z0447

Transparent cover, scale and pointer HRB

Transparent cover, scale and pointer HRB



082H0255

AMB Linkage kit for Danfoss HRB, HRE, HFE

AMB Linkage kit for Danfoss HRB, HRE, HFE



082G4235

Linkage kit HRB Generation 2009

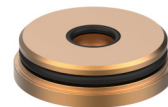
Linkage kit HRB Generation 2009



065Z0460

Stuffing box HRB4, HRE4 DN40

Stuffing box HRB4, HRE4 DN40



065Z0452

Stuffing box HRB3, HRE3 DN40

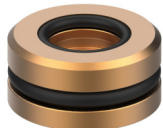
Stuffing box HRB3, HRE3 DN40



065Z0442

Replacement handle HRB, HRE

Replacement handle HRB, HRE



065Z0449

Stuffing box HRB DN15-20, HRE DN20

Stuffing box HRB DN15-20, HRE DN20



065Z0444

Transparent cover, scale and pointer HRB

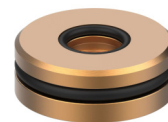
Transparent cover, scale and pointer HRB



065Z0445

Transparent cover, scale and pointer HRB

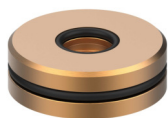
Transparent cover, scale and pointer HRB



065Z0450

Stuffing box HRB, HRE DN25

Stuffing box HRB, HRE DN25



065Z0451

Stuffing box HRB, HRE DN32

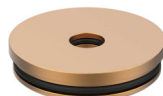
Stuffing box HRB, HRE DN32



065Z0446

Transparent cover, scale and pointer HRB

Transparent cover, scale and pointer HRB



065Z0453

Stuffing box HRB3, HRE3 DN50

Stuffing box HRB3, HRE3 DN50



065Z0448

Transparent cover, scale and pointer HRB

Transparent cover, scale and pointer HRB



065Z0461

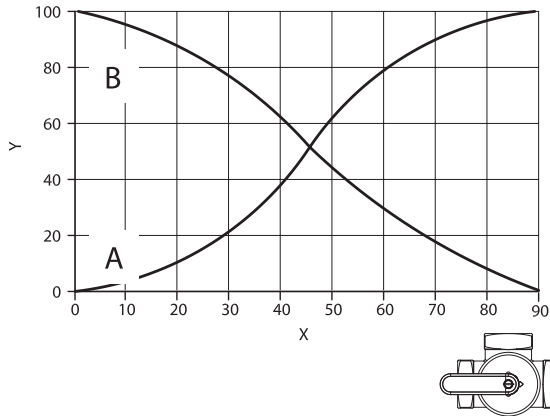
Stuffing box HRB4, HRE4 DN50

Stuffing box HRB4, HRE4 DN50

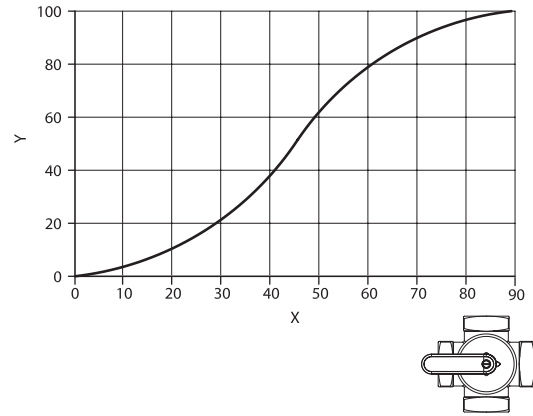
Functions

Valve characteristics

HRB 3



HRB 4



X	opening angle [°]
Y	flow [%]

Product details

General data

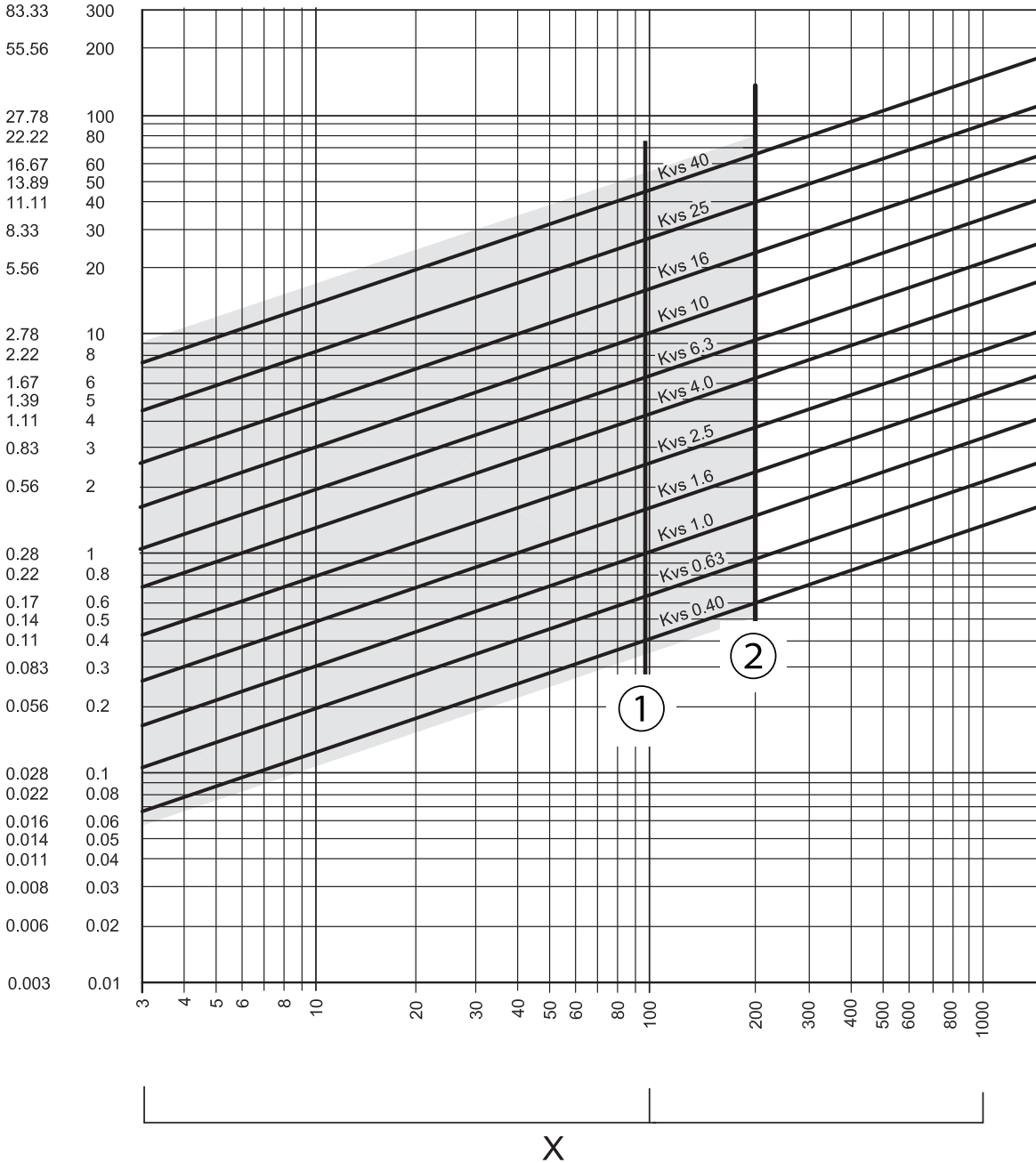
Technical data

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

Sizing

Y

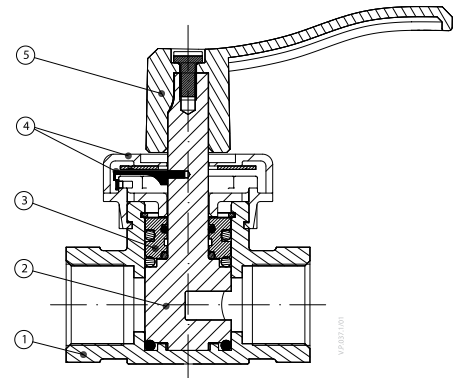
l/sec m³/h



X	FLOW Pressure drop kPa (100 kPa = 1bar = ~ 10 m H ₂ O)
Y	Flow Rate (liquid with specific a gravity of 1)
①	$\Delta p_{max, mix}$
②	$\Delta p_{max, div}$

Design

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

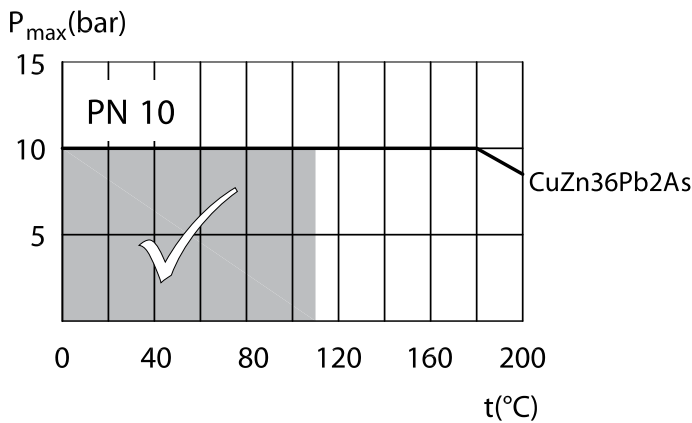


Materials

Valve body and slide shoe	CuZn36Pb2As (Brass DZR, CW 602N)
Stuffing box	CuZn36Pb2As (Brass DZR, CW 602N)
Stuffing box sealing	EPDM

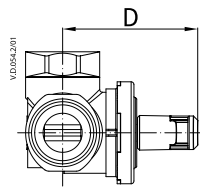
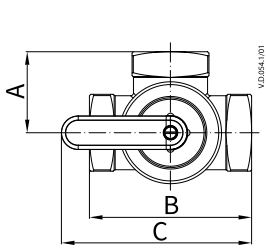
Pressure and temperature data

Pressure temperature diagram

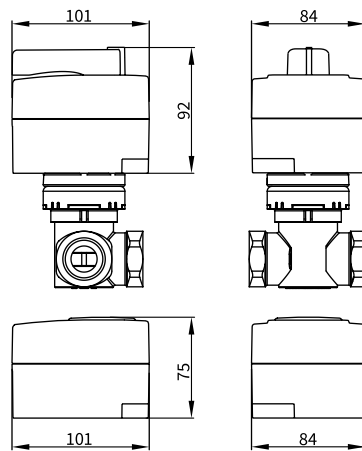
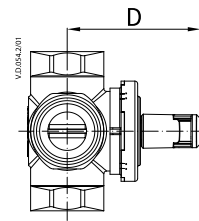
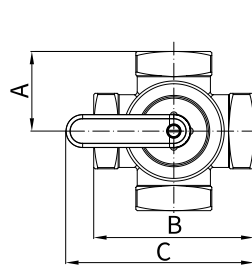


Dimensions

HRB 3



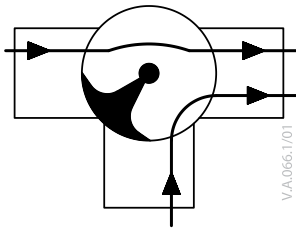
HRB 4



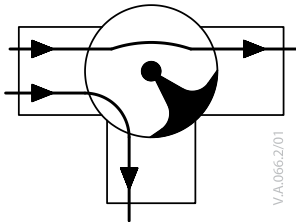
HRB 3, HRB 4

DN	A	B	C	D	Connection	Weight (kg)		Actuator
						HRB 3	HRB 4	
mm								
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	

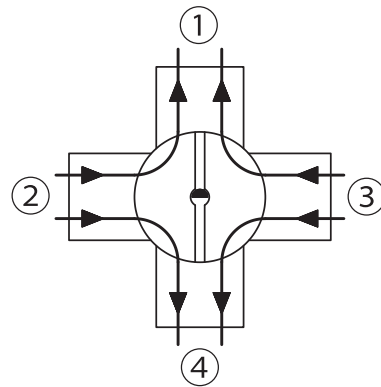
Installation



Mixing



Diverting



①	Flow
②	From boiler
③	Return
④	Back to boiler

Valve mounting

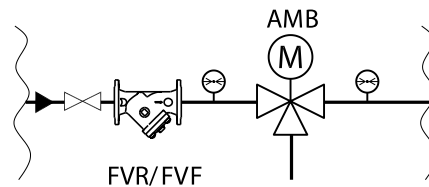
Before valve mounting pipes have to be cleaned and free from abrasion. Mechanical loads on valve body caused by the pipes are not allowed. It is recommended to install a strainer into application to avoid damaging controlling components.

Connection

HRB 3 can be used as a mixing valve, 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.

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



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The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

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Manufacturer's Declaration	Danfoss MD 221123EN0829101.01	Danfoss	PED, Pressure, EU RoHS
EAC Declaration	EAC KZ 7100841.13.12.02339	EAC - Eurasian Customs Union	MD
Export Control Declaration	Butterfly, other valves, Manual balancing valves, one pipe solution valves and hot water balancing valves	Danfoss	
UA Declaration	Danfoss UA 10.01.23 Heat Control Valves	Danfoss	

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