



resideo

Centra Rotary Valves DRR

3-way Rotary Valve PN10 and HE25 Extension

APPLICATION

The DRR Three-Way Rotary Valve provides water temperature control in heating and air-conditioning applications. These valves are designed for accurate mixing control of supply water temperature and return-flow temperature.

The housing is made out of red brass which enables especially the use in surface heating systems (floor or wall heating) with an oxygen diffusion problem.

The sturdy construction and red brass material ensure long operating life and high reliability when used in combination with M6061/VMM and M7061/VRM actuators.

The special inner form of the housing and the all-around changeable rotary plug allow the valve to be adapted to each possible application without having to drain the system.

The DRR Three-Way Rotary Valve is especially designed for applications with sludge deposition and for panel heating (e.g. underfloor and ceiling heating systems) with oxygen diffusion.

In combination with the distance-adjustable H-Extension, use in a wide range of pre-piped systems is possible.

SPECIAL FEATURES

- The housing is made out of red brass which enables especially the use in surface heating systems (floor or wall heating) with an oxygen diffusion problem
- Chrome-plated plug for long life
- Optimized characteristic for supply water temperature control
- All around changeable rotary plug
- Reliable and easy mounting of electrical actuators
- Wide range of flow rates in two housing sizes
- Compact design
- Use for manifolds by accessory H-Extension
- Thermal insulation package included



HE Extension

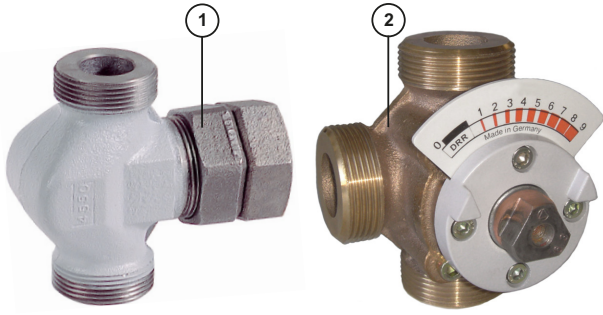


DRR Rotary Valve

TECHNICAL DATA

Media	
Medium:	Heating water according to VDI 2035 Oxygen concentration: < 0.2 g/m ³ , pH 8...9.5
Pressure values	
Nominal static pressure:	1000 kPa (10 bar)
Max. pressure drop:	dependent on type
Operating temperatures	
Water temperature:	2 to 130 °C, non-condensing
Specifications	
Leakage rate:	< 1% of Kvs
Ports:	External threads with cap nuts
Angle of rotation:	90°
Packaging:	Double O-ring lined
Flow characteristic:	equal percentage
Weight:	dependent on type

CONSTRUCTION

Overview	Components	Materials	
	1	Housing HE25	Cast iron (GG20)
	2	Housing DRR	Red brass
	Not depicted components:		
	Inner parts DRR	Chrome-plated cast iron	

METHOD OF OPERATION

The valve controls a mixing water temperature with a rotating plug. The plug adjusts with two control curves the water flow of two inputs. The required flow water

temperature is reached by adding a proportion of return water to the boiler hot water. For optimum control performance, the DRR has special control characteristics.

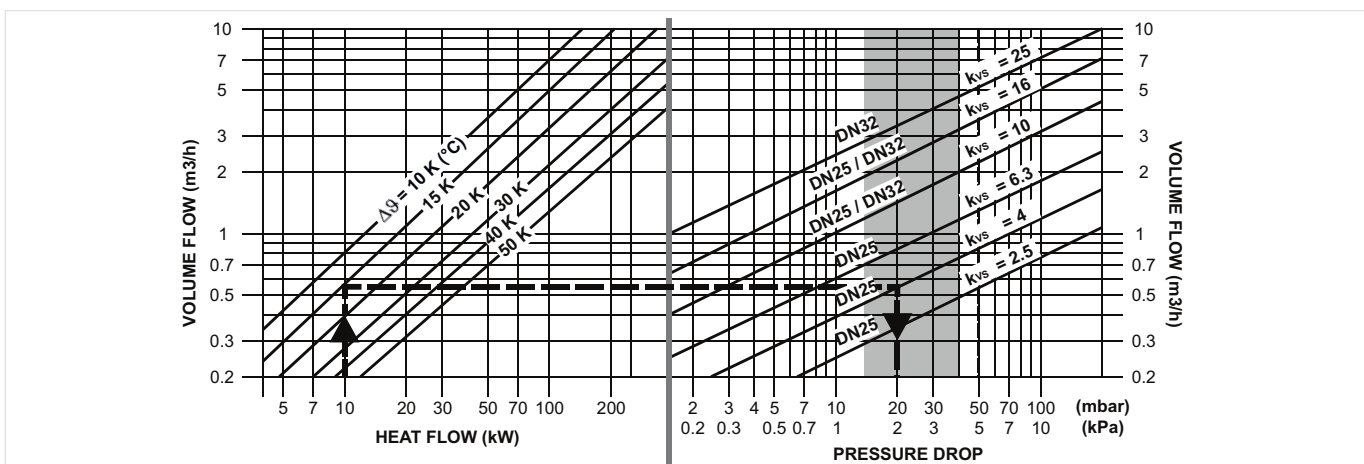
Suitable Actuators

Torque (Nm)	Order number 24 Vac floating	Order number 230 Vac floating	Order number 0/2...10 V
20	M6061A1021 VMM20-24	M6061L1027 VMM20	M7061E1020 VRM20

Valve dimensioning

Rotary Valves are employed mainly in hydraulic systems corresponding to the examples. The rotary valve can be set quite easily. In order to obtain good control characteristics, the pressure drop in the rotary valve should be about the same as the pressure drop in the "volume-variable" part of the pipe system, i.e. about 1.5...4.0 kPa or 15...40 mbar. The following dimensioning diagram is based on this interrelationship. The setting is obtained as follows:

- 1) Find heat flow Q in the diagram.
- 2) Move vertically upwards to the intersection with the corresponding $\Delta\theta$ line. On the vertical axis, the volume flow V can be read off on the left in liters per hour.
- 3) Move horizontally to the right from the intersection with the $\Delta\theta$ line into the shaded section (1.5-4.0 kPa). Here you will find the nominal rotary valve size to be selected.
- 4) From this intersection, go vertically downwards. Read off the pressure drop in the rotary valve in kPa (mbar).



Example

Given: Heat flow Q = 10 kW, $\Delta\theta = 15$ K (z.B. 70/55 °C)
 Required: Nominal rotary valve size and pressure drop

Volume flow:
$$\dot{V} = \frac{\dot{Q}}{1.163 \cdot \Delta\theta} = \frac{10}{1.163 \cdot 15} = 0.57 \text{ m}^3/\text{h}$$

Result: According to the diagram, the correct valve size is DN25, kvs 4.0
 The pressure drop is 2 kPa or 20 mbar or 200 mm water column

(The factor 1.163 contains the water density of 1000 kg/m³ and the specific heat capacity of 4.19 kJ/kgK. $\Delta\theta$ is the temperature difference, in Kelvin, between the supply and the return flow.)

Unit Conversion

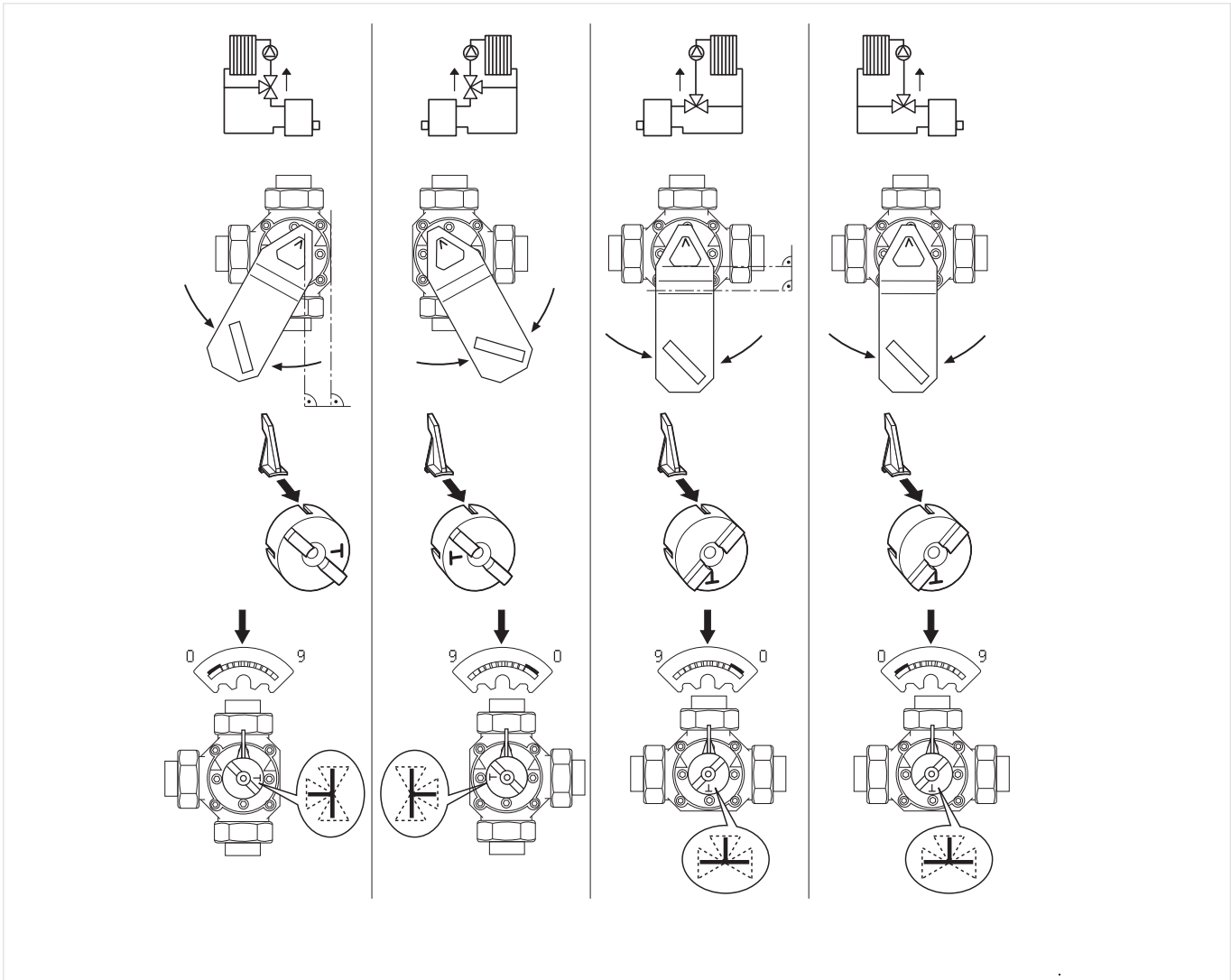
1 kW = 3600 kJ/h
 = 860 kcal/h
 1.000 kcal/h = 1.163 kW

1 bar = 100 kPa
 = 10 m water column
 1 mbar = 10 mm water column

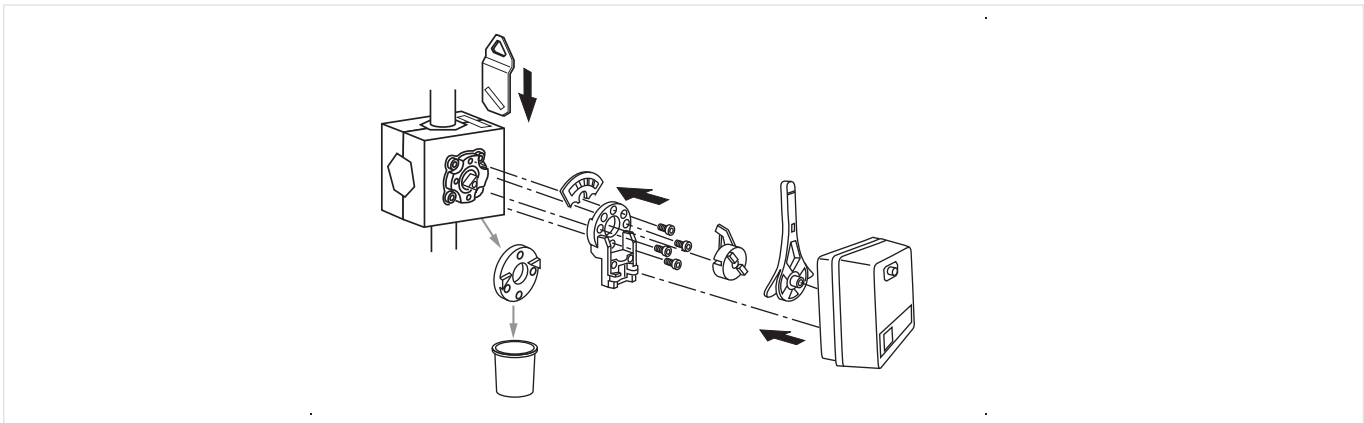
INSTALLATION GUIDELINES

Installation Example

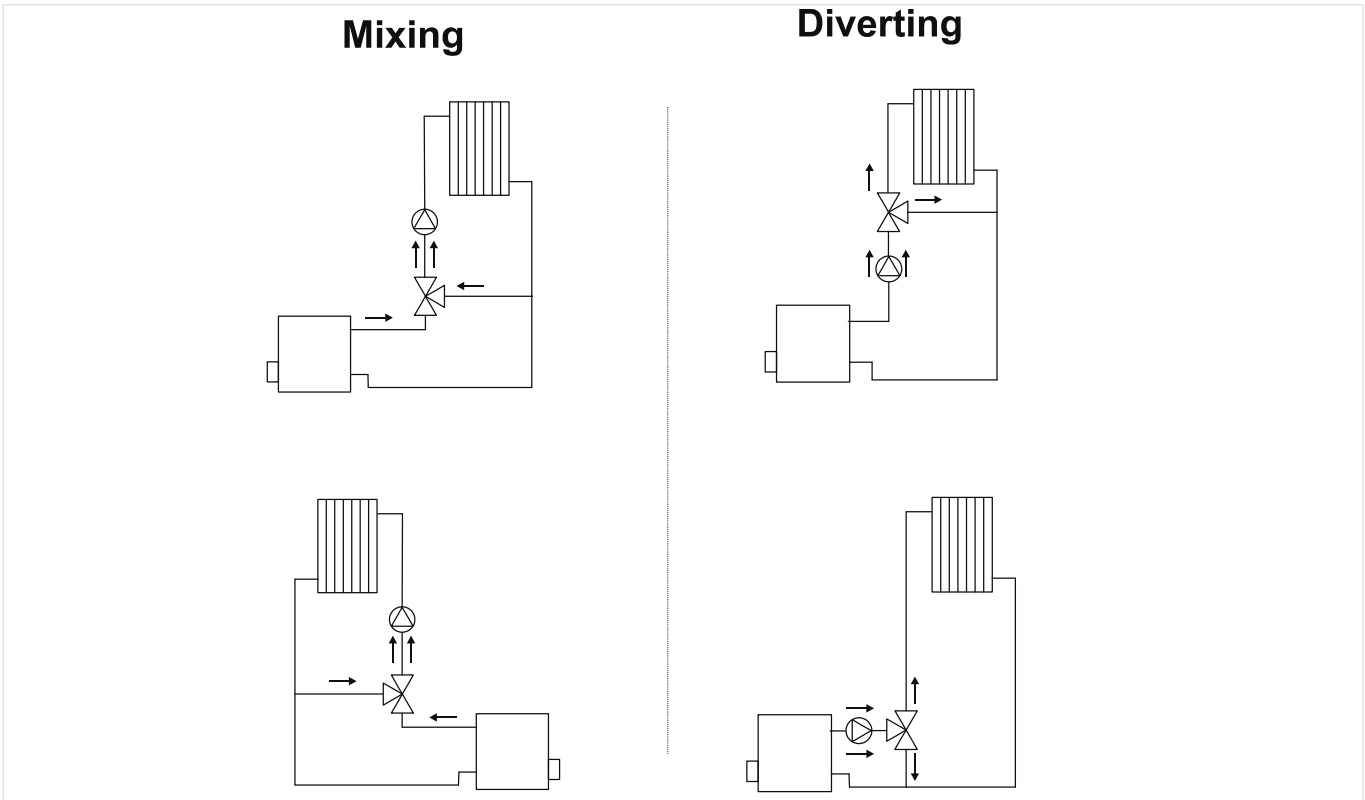
Adjustments for Mixing Applications



Mounting Actuator

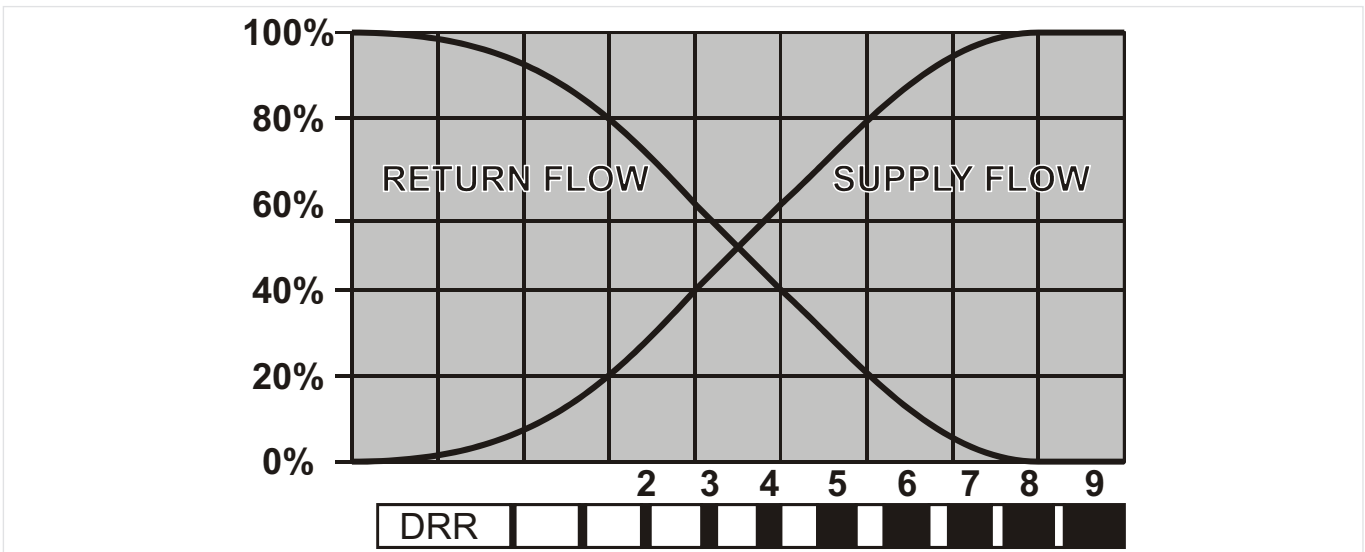


Hydraulic function



TECHNICAL CHARACTERISTICS

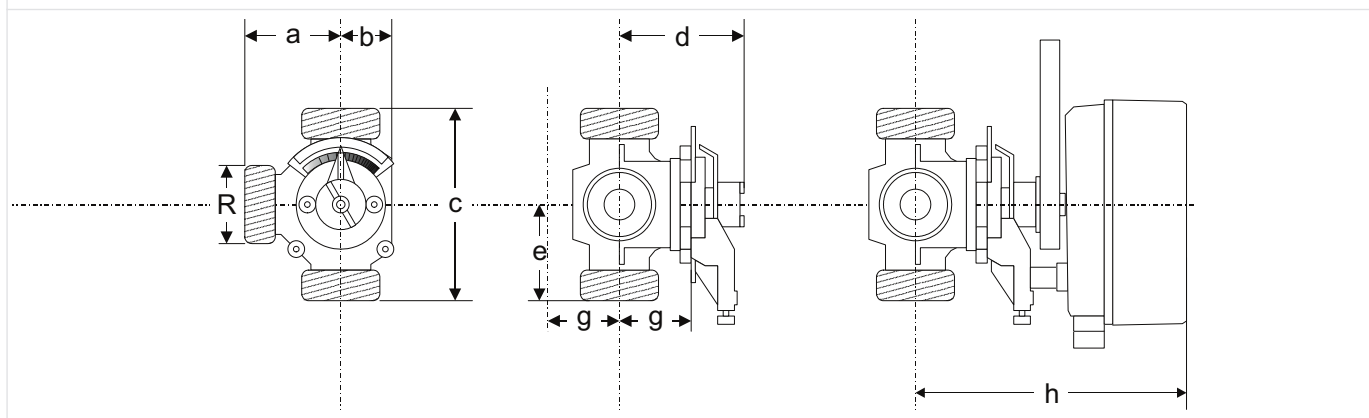
Pressure drop characteristics



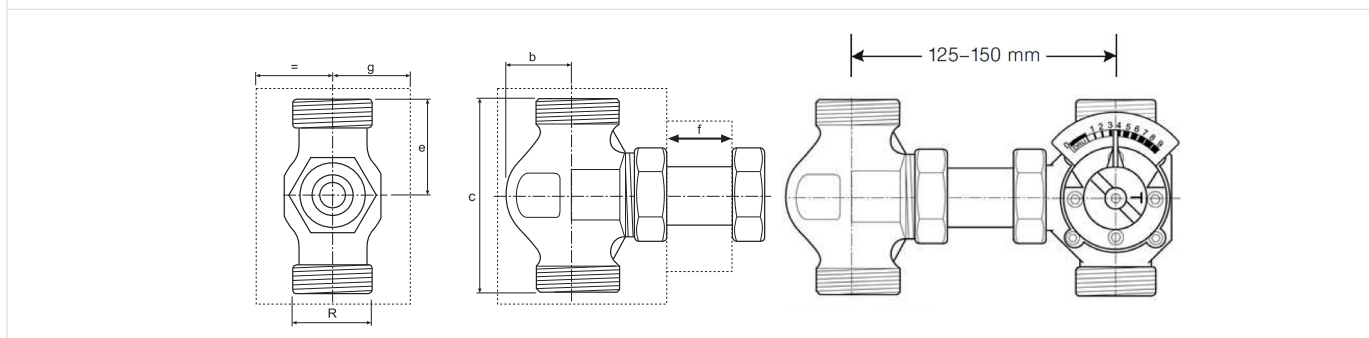
DIMENSIONS

Overview

DRR



HE



DN	a	b	c	d	e	f	g	h	R	Weight	Order number
25	55	32	110	89	55	-	51	182	1 ¹ / ₂	2.5 kg	DRR25-2.5
25	55	32	110	89	55	-	51	182	1 ¹ / ₂	2.5 kg	DRR25-4.0
25	55	32	110	89	55	-	51	182	1 ¹ / ₂	2.5 kg	DRR25-6.3
25	55	32	110	89	55	-	51	182	1 ¹ / ₂	2.5 kg	DRR25-10
25	55	32	110	89	55	-	51	182	1 ¹ / ₂	2.5 kg	DRR25-16
25	-	42	110	-	55	0-25	51	-	1 ¹ / ₂	1.7 kg	HE25

Note: All dimensions in mm unless stated otherwise.

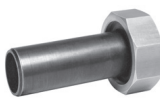


ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice. When ordering, please always state the type, the ordering or the part number.

Options

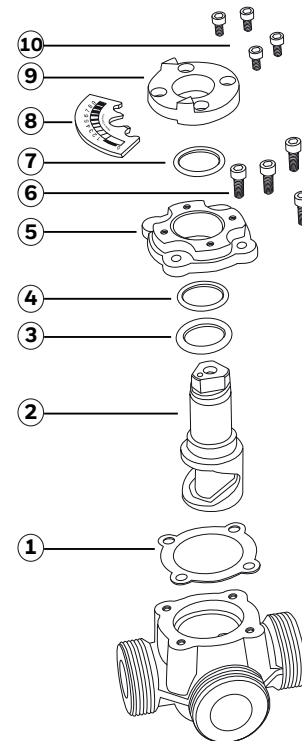
DN	k _{vs} -value (m ³ /h)	Heat flow (kW)	Nominal torque (Nm)	Δp (kPa)	Order number
25	2.5	2.5	100	20	DRR25-2.5
25	4.0	4.0	100	20	DRR25-4.0
25	6.3	6.3	100	20	DRR25-6.3
25	10.0	10.0	100	20	DRR25-10
25	16.0	16.0	100	20	DRR25-16
25	-	-	-	-	HE25

Accessories

	Description	Dimension	Part No.
	WTU25	Welding sockets with gasket and cap nut	
			DN25, Pipe size 25 mm
	LSU25	Soldering sockets with gasket and cap nut	
			DN25, Pipe size 18 mm
			DN25, Pipe size 22 mm
		DN25, Pipe size 28 mm	LSU25-28
	STU25	Internal threaded sockets with gasket and cap nut	
			DN25, Pipe size 25 mm

Spare Parts

3-way rotary valve DRR, from 2008 onwards

Overview	Description	Dimension	Part No.	
	2	Rotary plug		
			DN 25 (k _{vs} 2.5)	030000434
			DN 25 (k _{vs} 4.0)	030000435
			DN 25 (k _{vs} 6.3)	030000436
			DN 25 (k _{vs} 10)	030000437
	1, 3, 4, 5, 6, 7, 9, 10	Valve cover with o-ring and screws		030000105
	1, 3, 4, 7	Seal kit complete		019001030
	9, 10	O-ring cover with screws		030000114
	7	O-ring		071099535



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