

Centra DRR

3-way Mixing Valve, Red Brass, PN10

Application

The Centra DRR rotary valves provide 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 VMM and VRM-N actuators.

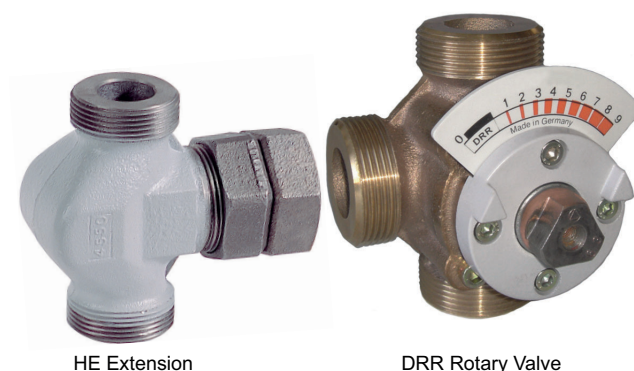
The special inner form of the housing and the all-around changeable rotary plug allow the valve to be adapted to each possible application without having to drain the system.

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 HE-Extension, use in a wide range of pre-piped systems is possible.

Special Features

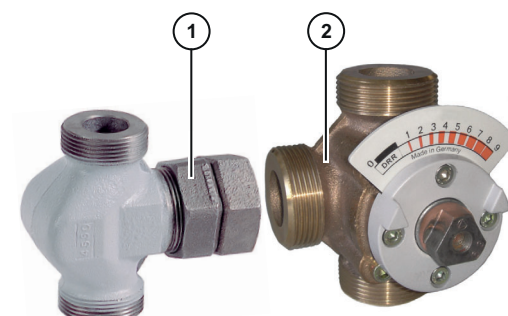
- All around changeable rotary plug
- The housing is made out of red brass which enables especially the use in surface heating systems (floor or wall heating) with an oxygen diffusion problem
- Chrome-plated plug for long life
- Optimized characteristic for supply water temperature control
- Reliable 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



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:	10 bar, 1000 kPa
Operating temperatures	
Water temperatures in the valve:	2 to 130 °C, non-condensing
Specifications	
Leakage rate:	< 1% of Kvs
Connections:	External threads
Angle of rotation:	90 °
Packaging:	Double O-ring lined
Flow characteristic:	equal percentage

Construction

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

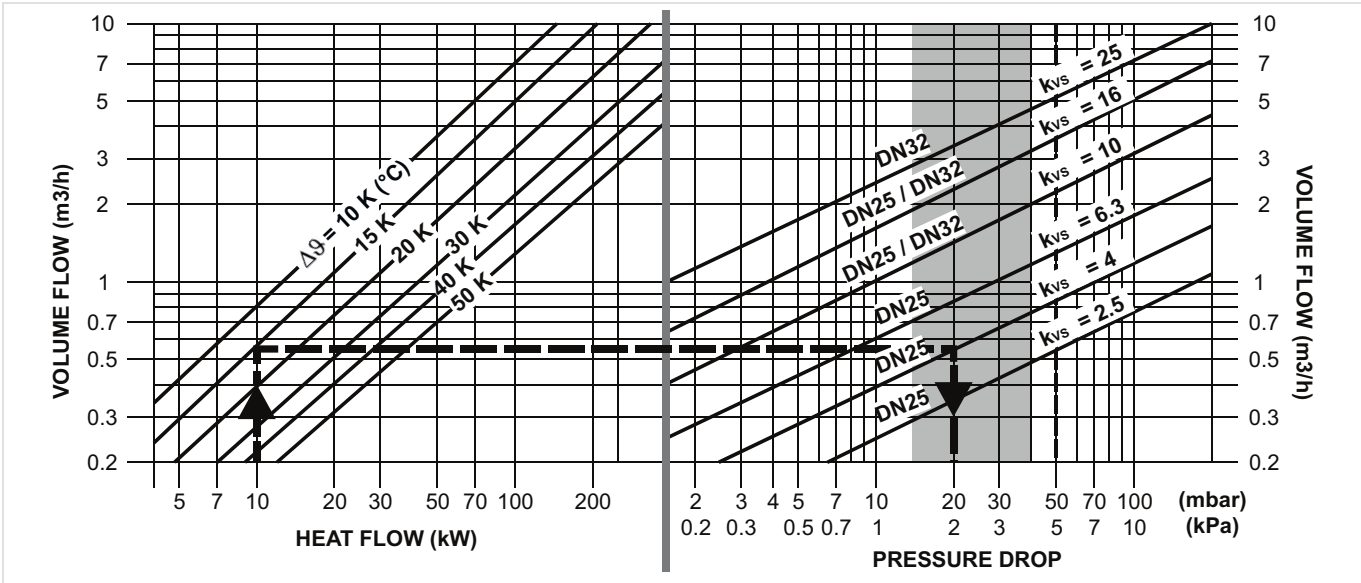
Method of Operation

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

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 Δθ 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 Δθ 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, Δθ= 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. Δθ is the temperature difference, in Kelvin, between the supply and the return flow.)

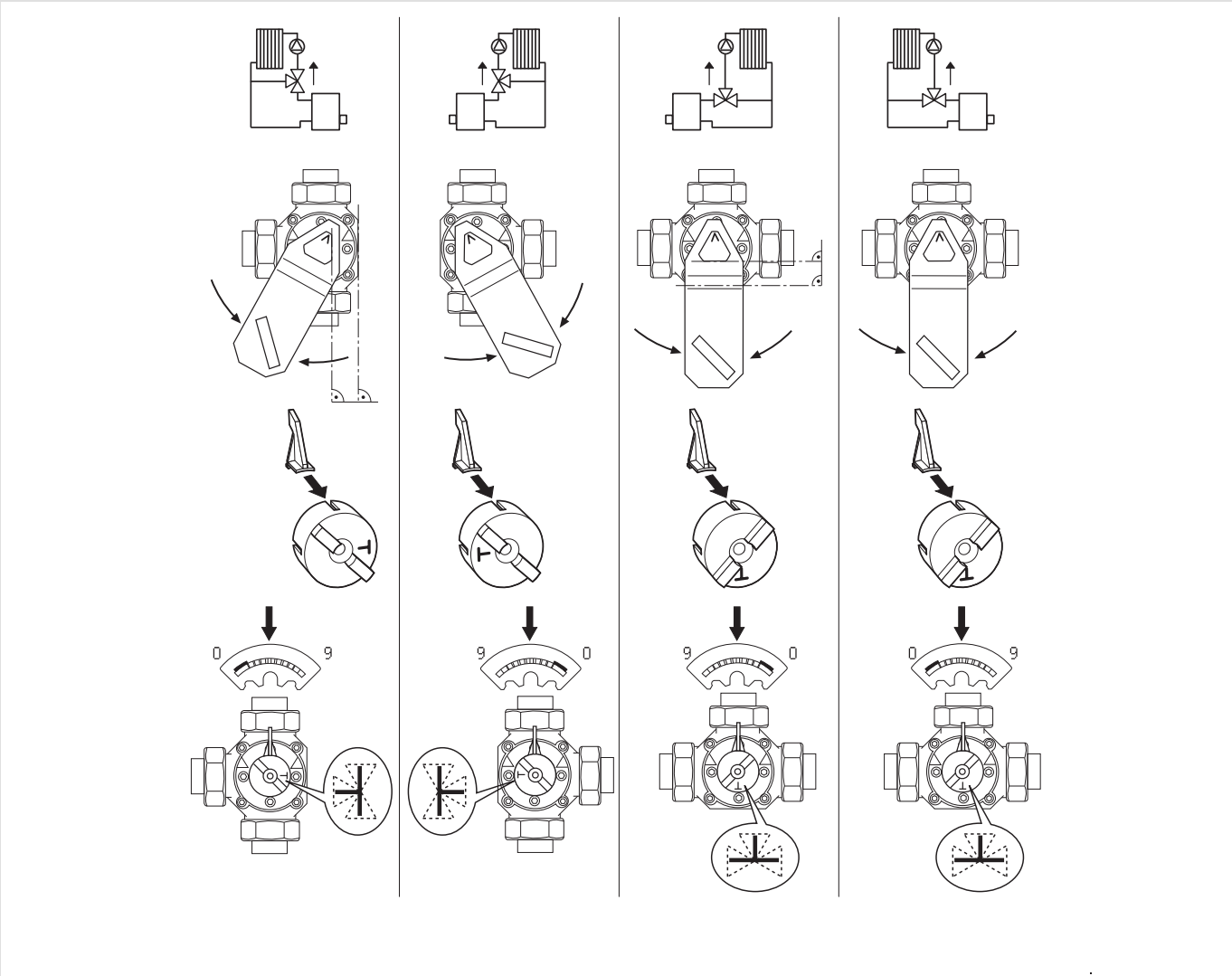
Unit Conversion

1 kW	= 3600 kJ/h	1 bar	= 100 kPa
	= 860 kcal/h		= 10 m water column
1.000 kcal/h	= 1.163 kW	1 mbar	= 10 mm water column

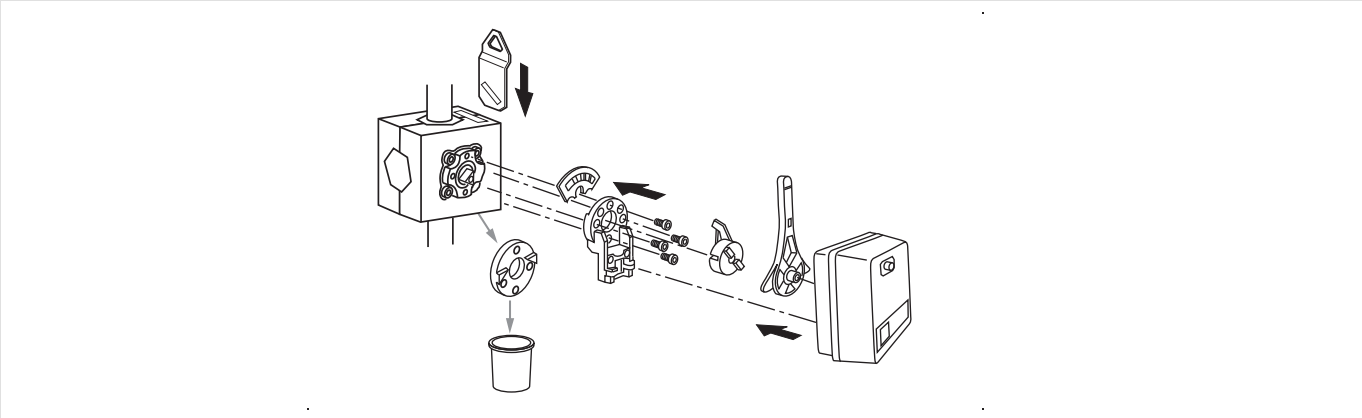
Installation Guidelines

Installation Example

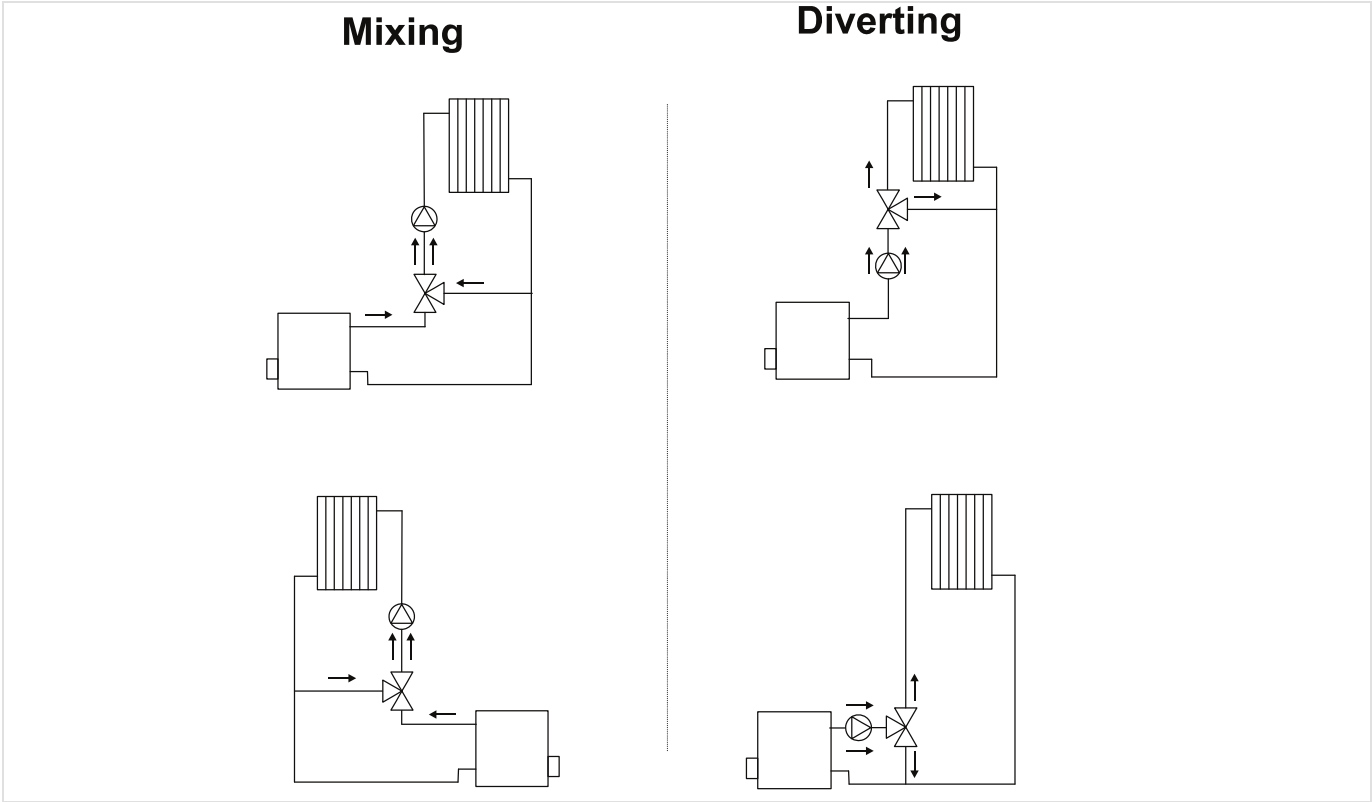
Adjustments for Mixing Applications



Mounting Actuator

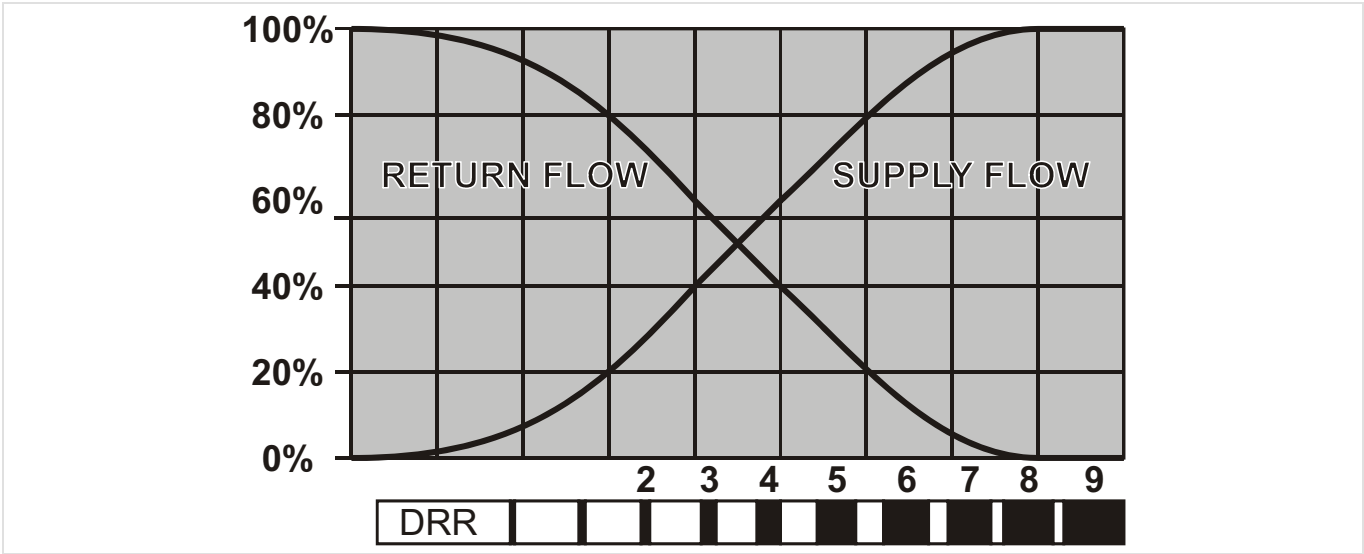


Hydraulic function



Technical Characteristics

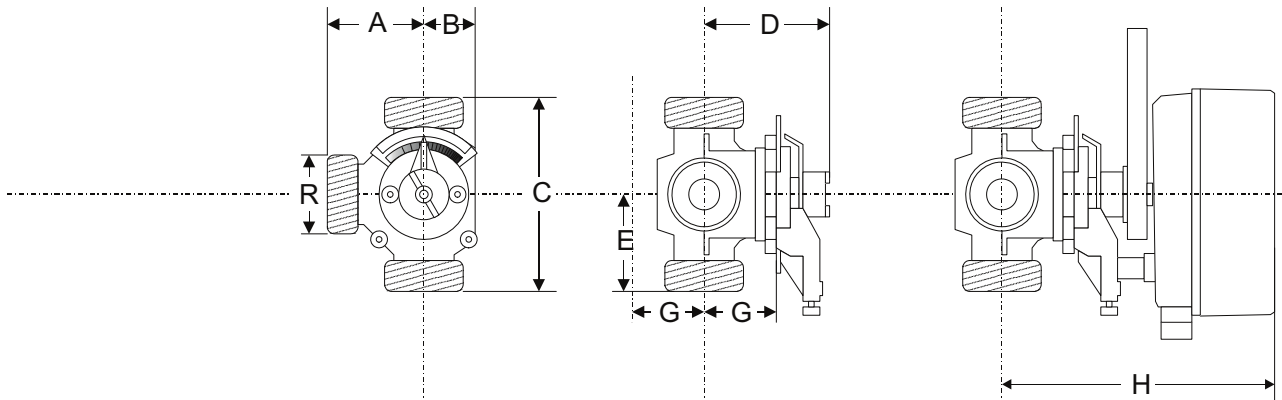
Pressure drop characteristics



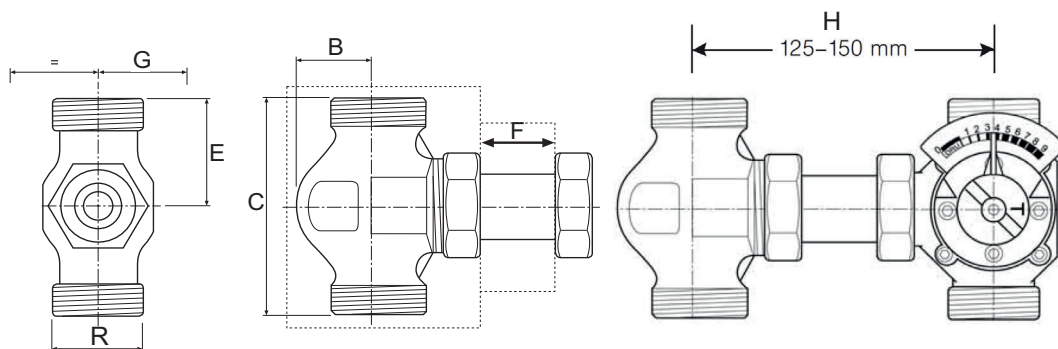
Dimensions

Overview

DRR



HE



DN	A	B	C	D	E	F	G	H	R	Weight	Item number
25	55	32	110	89	55	-	51	182	G1 ¹ / ₂	2.5 kg	DRR25-2.5
25	55	32	110	89	55	-	51	182	G1 ¹ / ₂	2.5 kg	DRR25-4.0
25	55	32	110	89	55	-	51	182	G1 ¹ / ₂	2.5 kg	DRR25-6.3
25	55	32	110	89	55	-	51	182	G1 ¹ / ₂	2.5 kg	DRR25-10
25	55	32	110	89	55	-	51	182	G1 ¹ / ₂	2.5 kg	DRR25-16
25	-	42	110	-	55	0-25	51	-	G1 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.

Options

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

Accessories

	Description		Torque (Nm)	Voltage	Item No.
	VMM	Actuator: 3-point / floating			
		rotating, 90°	20	230 V AC	VMM20
			20	24 V AC	VMM20-24
	VRM-N	Actuator: 0/2 - 10 V / modulating, 3-Point (floating), 2-Point			
		rotating, 90°	20	24 V AC/DC	VRM20N
	Description		Dimension		Item No.
	WTU25	Welding sockets with gasket and cap nut			
			DN25, Pipe size 25 mm		WTU25
	LSU25	Soldering sockets with gasket and cap nut			
			DN25, Pipe size 22 mm		LSU25-22
			DN25, Pipe size 28 mm		LSU25-28
	STU25	Internal threaded sockets with gasket and cap nut			
			DN25, Pipe size 25 mm		STU25

Spare Parts

3-way rotary valve DRR, from 2008 onwards

Overview		Description	Dimension	Item 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
	8, 11, 12	By-pack kit		
				030000522