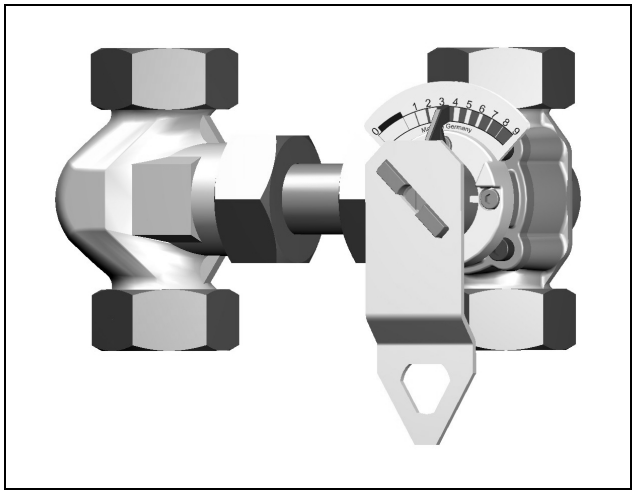
resideo

Centra Rotary Valve
DRU/HE

PRODUCT DATA



FEATURES

- **Chrome-plated plug for long life-span**
- **Optimized characteristics 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 HE25/32 Extension**
- **Thermal insulation package included**

APPLICATION

The DRU25/32 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 sturdy construction ensures 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. In combination with the distance-adjustable HE25/32 Extension, use in a wide range of pre-piped systems is possible.

SPECIFICATIONS

Nominal static pressure	10 bar; 1000 kPa
Maximum pressure drop	dependent on type (see table on page 3)
Leakage rate	< 1% of k_{VS}
Ports	External threads with cap nuts
Angle of rotation	90 °
Packing	Double O-ring lined
Material body	Cast iron (GG20)
Material inner parts	Chrome-plated cast iron
Medium	Heating water according to VDI 2035 (oxygen concentration less than 0.2 g/m^3, pH 8...9.5)
Water temperatures in the valve	2...130 °C, non-condensing
Weight	dependent on type (see tables in section "Dimensions" on page 4)
Flow characteristic	equal percentage

OPERATION

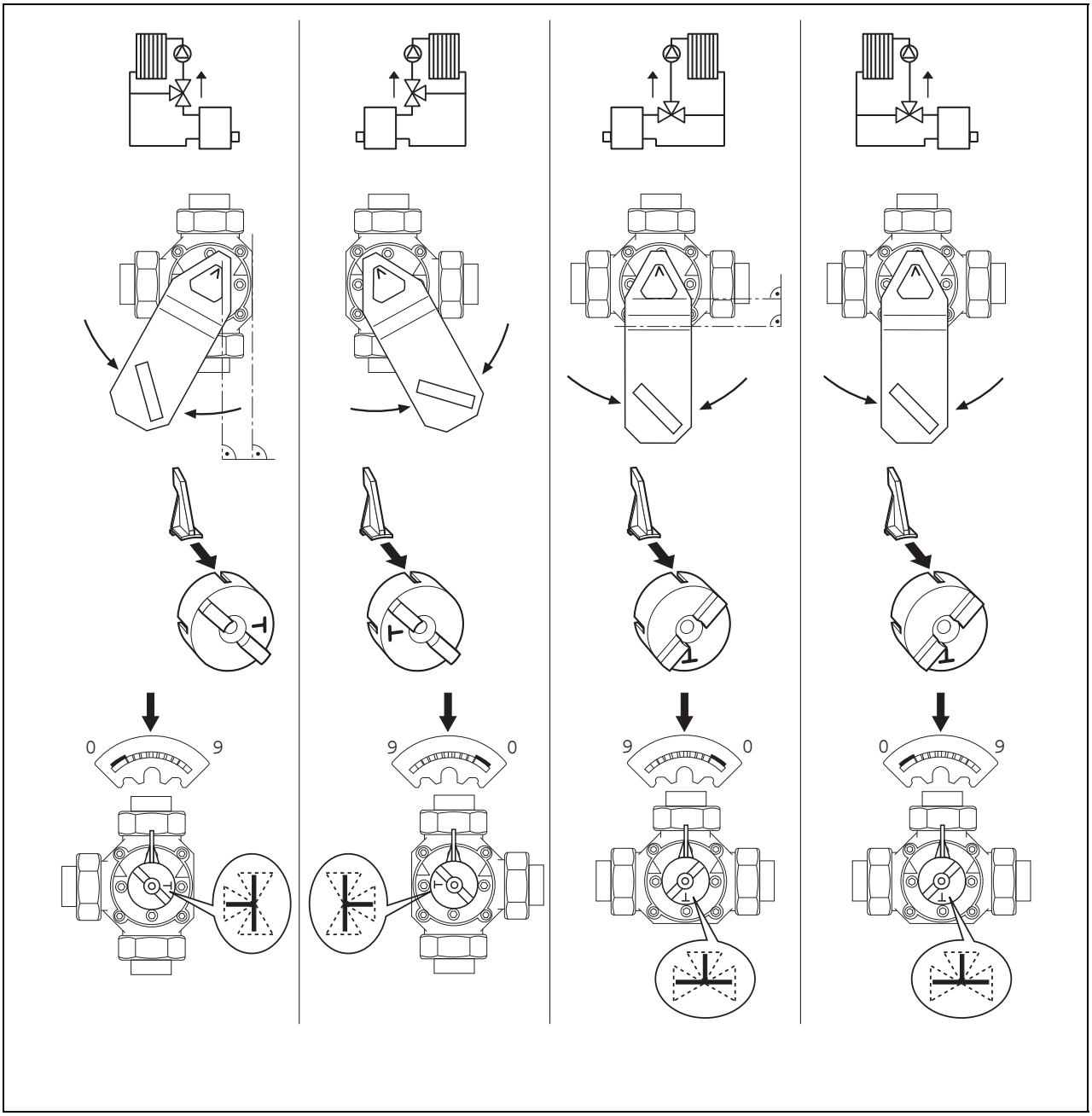
The valve controls a mixing water temperature by means of a rotating plug. The plug adjusts the water flow of two inputs with two control curves. The required flow water temperature is achieved by adding a proportion of return water to the boiler hot water. The DRU has special control characteristics for optimal control performance.

SUITABLE ACTUATORS

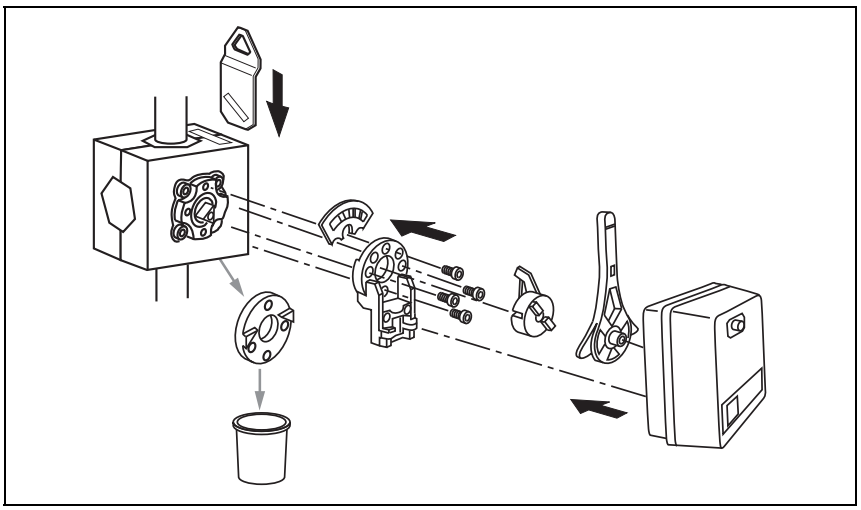
torque [Nm]	OS no. 24 Vac float.	OS no. 230 Vac float.	OS no. 0/2...10V
20	M6061A1021 / VMM20-24	M6061L1027 / VMM20	M7061E1020 / VRM20

MOUNTING

Adjustments for Mixing Applications



Mounting the Actuator



SPECIFICATION AND ORDER NUMBER PER DN

OS No.	DN	k_{vs}	heat flow	Δp	nom. torque	actuator	
		[m³/h]	[kW]	[kPa]	[Nm]	floating	modulating
DRU25-2.5	25	2.5	7-12	100	20	M6061A1021 / VMM20-24, M6061L1027 / VMM20	M7061E1020 / VRM20
DRU25-4.0	25	4.0	12-17	100	20		
DRU25-6.3	25	6.3	17-30	100	20		
DRU25-10	25	10.0	30-50	100	20		
DRU25-16	25	16.0	50-70	100	20		
DRU32-10	32	10	30-50	100	20		
DRU32-16	32	16	50-70	100	20		
DRU32-25	32	25	70-100	100	20		
HE25	25	-	-	-	-	-	-
HE32	32	-	-	-	-	-	-

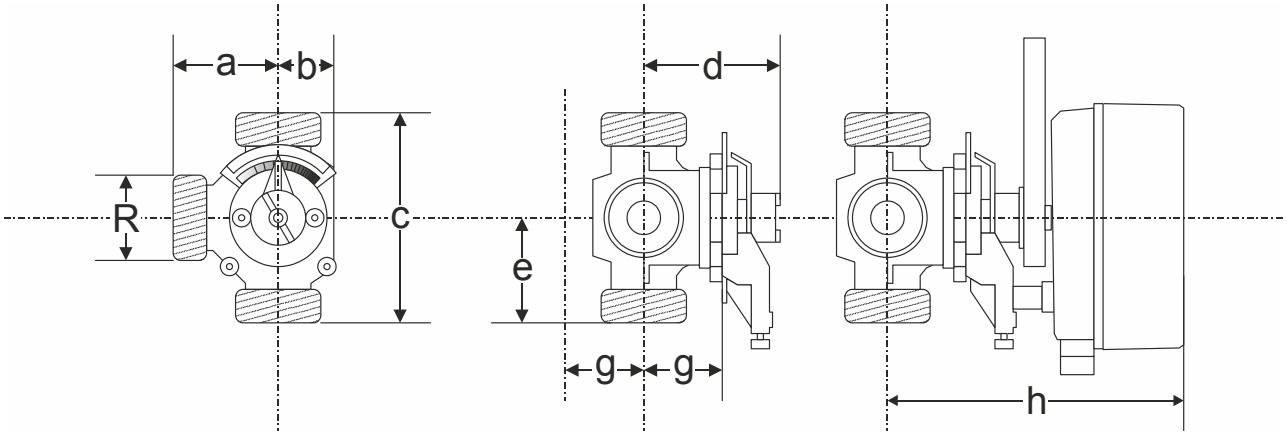
ACCESSORIES

connection set	description	DN	pipe size [mm]	weight [kg]	OS No.
	Welding sockets with gasket and cap nut	25 32	25 32	0.3 0.6	WTU25 WTU32
	Soldering sockets with gasket and cap nut	25 25 25 32 32 32	18 22 28 22 28 35	0.21 0.21 0.21 0.42 0.42 0.41	LSU25-18 LSU25-22 LSU25-28 LSU32-22 LSU32-28 LSU32-35
	Internal threaded sockets with gasket and cap nut	25 32	25 32	0.21 0.40	STU25 STU32

DIMENSIONS

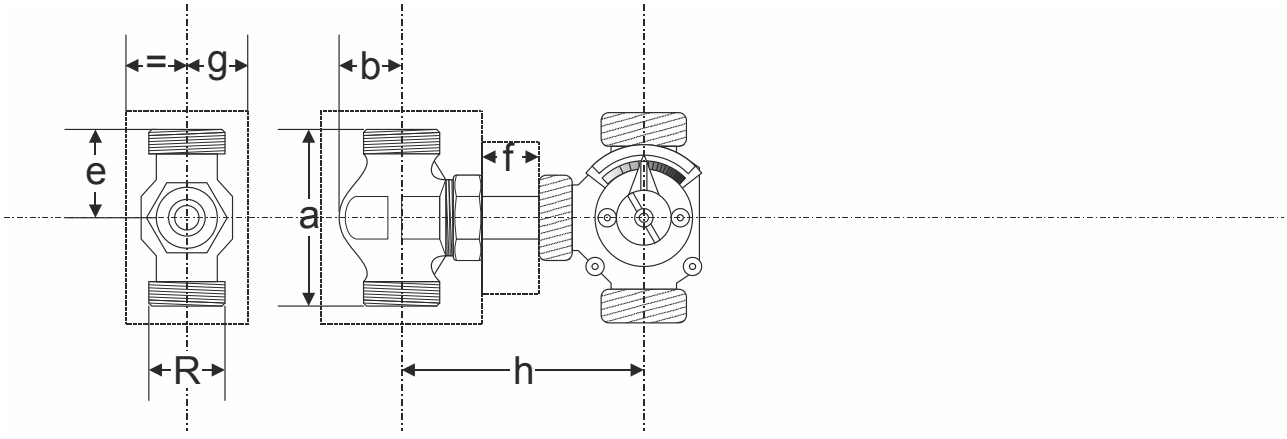
DRU

type	DN	a	b	c	d	e	g	h	R	weight [kg]
DRU25-2.5	25	55	32	110	89	55	51	182	1 ½	2.2
DRU25-4.0	25	55	32	110	89	55	51	182	1 ½	2.2
DRU25-6.3	25	55	32	110	89	55	51	182	1 ½	2.2
DRU25-10	25	55	32	110	89	55	51	182	1 ½	2.2
DRU25-16	25	55	32	110	89	55	51	182	1 ½	2.2
DRU32-10	32	70	44	140	99	70	59	200	2	4.1
DRU32-16	32	70	44	140	99	70	59	200	2	4.1
DRU32-25	32	70	44	140	99	70	59	200	2	4.1

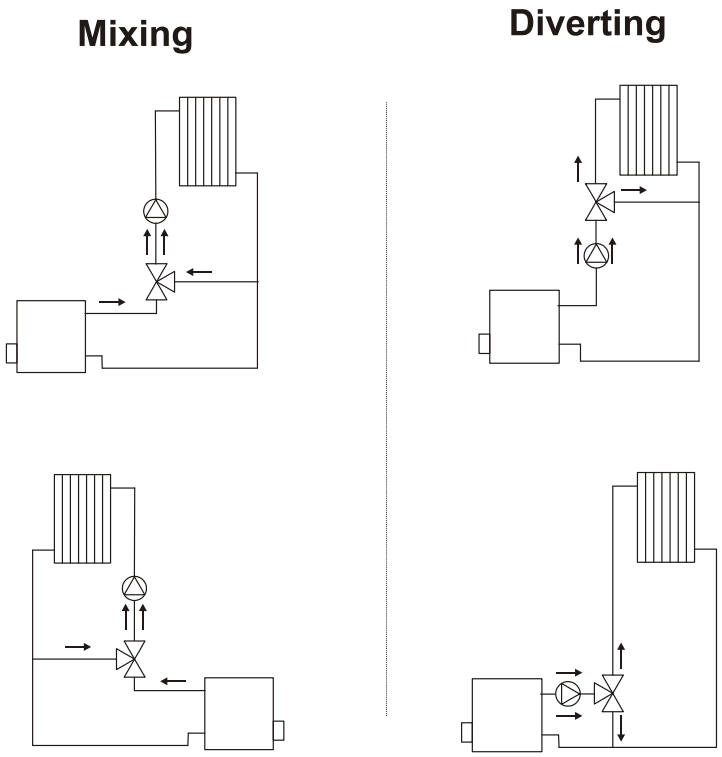


HE

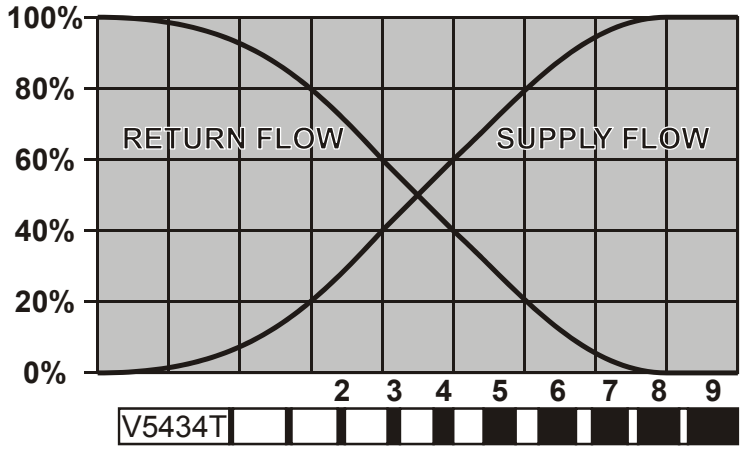
type	DN	a	b	e	f	g	h	R	weight [kg]
HE25	25	110	42	55	0-25	51	125 … 150	1 ½	1.7
HE32	32	140	51	70	0-50	59	150 … 200	2	2.7



HYDRAULIC FUNCTION



Characteristics



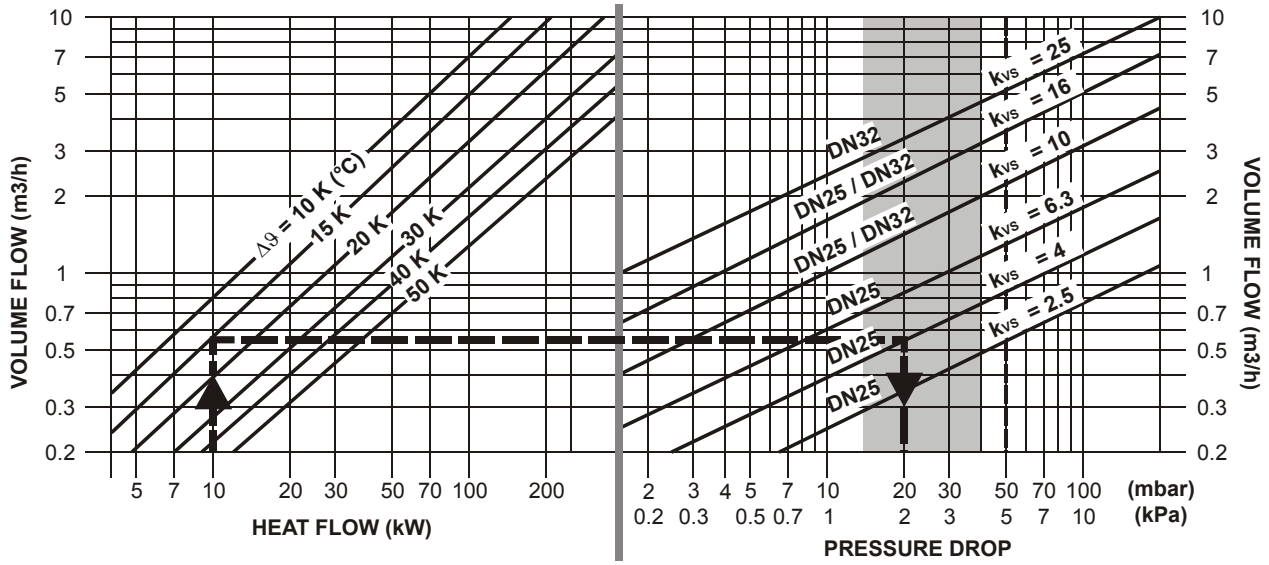
Spare Parts

- O-ring, part no.: 071699535, pre-lubricated
- DRU package, part no.: 030000522, consisting of drive disc with indicator and mixing scale

VALVE DIMENSIONING

Resideo Rotary Valves are employed mainly in hydraulic systems corresponding to the examples shown on page 2. 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 $\dot{Q}$ in the diagram.
2. Move vertically upwards to the intersection with the corresponding $\Delta\vartheta$ line. On the vertical axis, the volume flow $\dot{V}$ can be read off on the left in liters per hour.
3. Move horizontally to the right from the intersection with the $\Delta\vartheta$ 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 $\dot{Q}$ = 10 kW, $\Delta\vartheta$ = 15 K (e.g., 70 / 55 °C)
Required: Nominal rotary valve size and pressure drop

Volume flow:
$$\dot{V} = \frac{\dot{Q}}{1.163 * \Delta\vartheta} = \frac{10}{1.163 * 15} = 0.57\,\mathrm{m^3/h}$$

Result: According to the diagram, the correct valve size is DN25, k_{vs} 4.0 (DRU25-4.0).
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/m^3 and the specific heat capacity of 4.19 kJ/kgK. $\Delta\vartheta$ 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
1000 kcal/h	=	1.163 kW		1 mbar	=	10 mm water column

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