

Characterised control valves, 6-way,  
with internal thread

- Two sequences (cooling/heating)
- With a rotary actuator 90°
- Water-side switching or modulating control of thermal heated/chilled elements
- For closed cold and warm water systems


**Type overview**

Type	DN [ ]	Rp ["]	ps [ kPa]	kvs (Sequence I) [ m³/h]	kvs (Sequence II) [ m³/h]
R3015-P25-P25-B2	15	1/2	1600	0.25	0.25
R3015-P25-P4-B2	15	1/2	1600	0.25	0.4
R3015-P25-P63-B2	15	1/2	1600	0.25	0.63
R3015-P25-1-B2	15	1/2	1600	0.25	1
R3015-P25-1P3-B2	15	1/2	1600	0.25	1.3
R3015-P4-P25-B2	15	1/2	1600	0.4	0.25
R3015-P4-P4-B2	15	1/2	1600	0.4	0.4
R3015-P4-P63-B2	15	1/2	1600	0.4	0.63
R3015-P4-1-B2	15	1/2	1600	0.4	1
R3015-P4-1P3-B2	15	1/2	1600	0.4	1.3
R3015-P63-P25-B2	15	1/2	1600	0.63	0.25
R3015-P63-P4-B2	15	1/2	1600	0.63	0.4
R3015-P63-P63-B2	15	1/2	1600	0.63	0.63
R3015-P63-1-B2	15	1/2	1600	0.63	1
R3015-P63-1P3-B2	15	1/2	1600	0.63	1.3
R3015-1-P25-B2	15	1/2	1600	1	0.25
R3015-1-P4-B2	15	1/2	1600	1	0.4
R3015-1-P63-B2	15	1/2	1600	1	0.63
R3015-1-1-B2	15	1/2	1600	1	1
R3015-1-1P3-B2	15	1/2	1600	1	1.3
R3015-1P3-P25-B2	15	1/2	1600	1.3	0.25
R3015-1P3-P4-B2	15	1/2	1600	1.3	0.4
R3015-1P3-P63-B2	15	1/2	1600	1.3	0.63
R3015-1P3-1-B2	15	1/2	1600	1.3	1
R3015-1P3-1P3-B2	15	1/2	1600	1.3	1.3
R3020-P63-1P6-B2	20	3/4	1600	0.63	1.6
R3020-P63-2P5-B2	20	3/4	1600	0.63	2.5
R3020-1-1P6-B2	20	3/4	1600	1	1.6
R3020-1-2P5-B2	20	3/4	1600	1	2.5
R3020-1P6-P63-B2	20	3/4	1600	1.6	0.63
R3020-1P6-1-B2	20	3/4	1600	1.6	1
R3020-1P6-1P6-B2	20	3/4	1600	1.6	1.6
R3020-1P6-2P5-B2	20	3/4	1600	1.6	2.5
R3020-2P5-P63-B2	20	3/4	1600	2.5	0.63
R3020-2P5-1-B2	20	3/4	1600	2.5	1
R3020-2P5-1P6-B2	20	3/4	1600	2.5	1.6
R3020-2P5-2P5-B2	20	3/4	1600	2.5	2.5

## Technical data

<b>Functional data</b>	Media	Cold and warm water, water with glycol up to max. 50% vol.	
	Medium temperature	6°C...80°C	
	Differential pressure $\Delta p_{max}$	100 kPa	
	Differential pressure note	Low noise operation $\Delta p_{v100} < 50 \text{ kPa}$	
	Flow characteristic	Linear	
	Leakage rate	Leakage rate A, air-bubble-tight (EN 12266-1)	
	Pipe connectors	Internal thread according to ISO 7-1	
	Angle of rotation	Sequence 1: 0 ... 30° (Cooling recommended) Neutral zone: 30...60° Sequence 2: 60...90° (Heating recommended)	
	Angle of rotation note	With room controller CRK24-B1 compelling sequence 1 = cooling and sequence 2 = heating	
	Installation position	Upright to horizontal (in relation to the stem)	
	Maintenance	Maintenance-free	
	<b>Materials</b>	Valve	Nickel-plated brass body
		Ball	Chrome-plated brass
Stem		Nickel-plated brass	
Stem seal		O-ring EPDM	
Ball seat		PTFE, O-ring EPDM	
Characterising disc		Stainless steel	

## Safety notes



- The ball valve has been designed for use in stationary heating, ventilation and air-conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The ball valve does not contain any parts that can be replaced or repaired by the user.
- The ball valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

## Product features

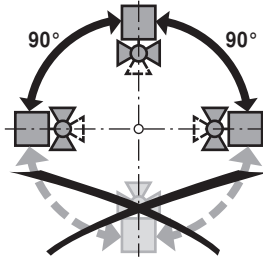
- Mode of operation** The 6-way characterised control valve is adjusted by a rotary actuator. The actuator is connected by a modulating control system or a MP bus signal and moves the ball of the ball valve to the position dictated by the positioning signal. If the valve is adjusted in the clockwise direction (till the end stop), e.g. the cooling sequence is completely enabled; if the valve is adjusted in the counter-clockwise direction (90°), e.g. the heating sequence is completely enabled.

## Accessories

	Description	Type
<b>Mechanical accessories</b>	Fastening angle, for 6-way control valves	ZR-004
	Pipe connector to ball valves DN 15 Rp 1/2"	ZR2315
	Pipe connector to ball valves DN 20 Rp 3/4"	ZR2320

## Installation notes

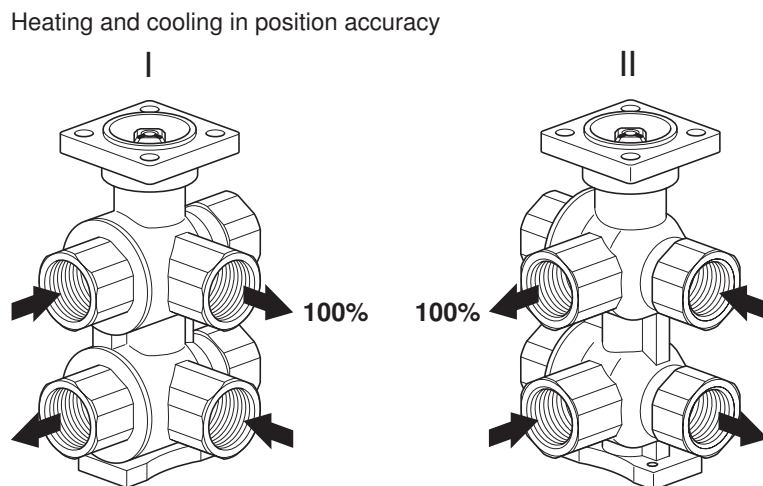
**Recommended installation positions** The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



**Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to. Characterised control valves are regulating devices. The use of dirt filters is recommended in order to prolong their service life as modulating instruments.

**Maintenance** Characterised control valves and rotary actuators are maintenance-free. Before any kind of service work is carried out on the actuator, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow everything to cool down first if necessary and reduce the system pressure to ambient pressure level). The system must not be returned to service until the characterised control valve and the rotary actuator have been properly mounted in accordance with the instructions and the pipeline has been refilled in the proper manner.

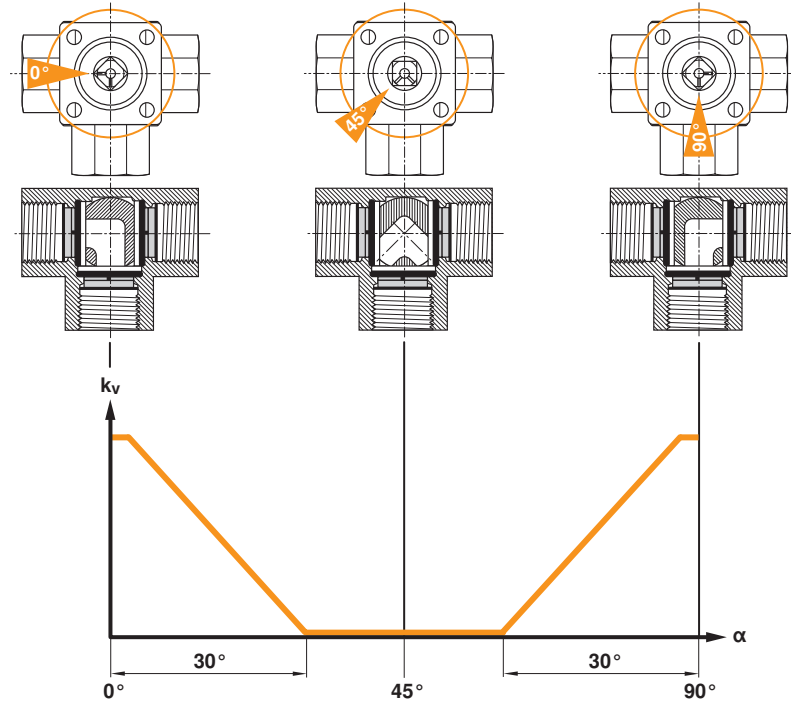
**Flow direction** The flow direction must be observed. The position of the ball can be identified from the L-marking on the stem.



Installation notes

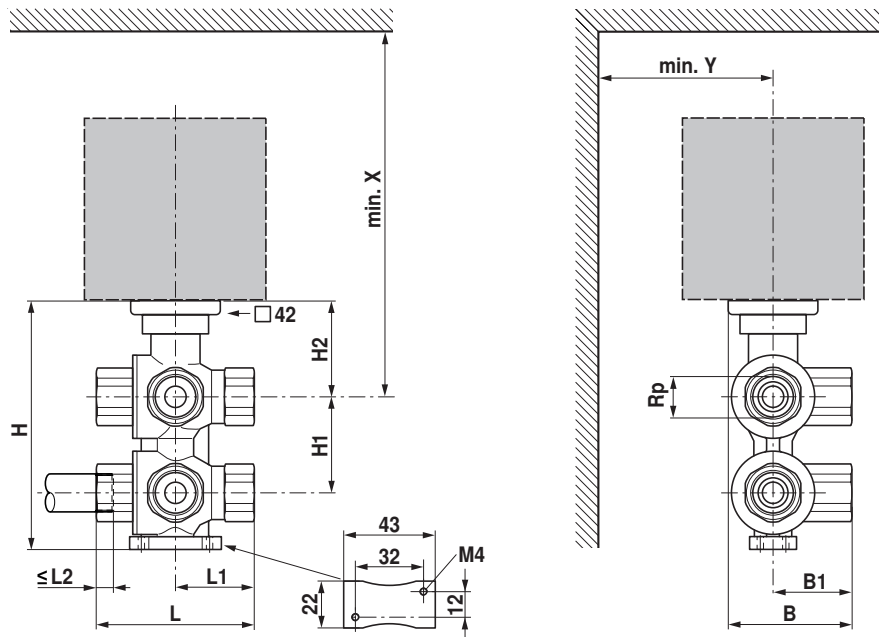
Valve characteristic curve The lower diagram shows the valve characteristic curve in relation to the ball position.

Valve characteristic curve



Dimensions [mm] / Weight

Dimensional drawings



The actuator dimensions can be found on the respective actuator data sheet.

Type	DN	Rp	L	L1	L2	B	B1	H	H1	H2	X	Y	Weight ca.
	[ ]	["]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ mm ]	[ kg ]
R3015-...-B2	15	1/2	79	39.5	13	54	33	119	45	47	200	40	1.0
R3020-...-B2	20	3/4	100	50	14	70	43	148	59	54	230	40	2.1

Further documentations

- Overview Valve-actuator combinations
- Data sheets, actuators
- Installation instructions for actuators and/or ball valves, respectively
- Notes for project planning for 6-way characterised control valves