

Characterised control valve, 3-way,  
Internal thread

- For closed cold and warm water systems
- For modulating water-side control of air handling units and heating systems
- Air bubble-tight (control path A - AB)


**Type overview**

Type	kvs [ m <sup>3</sup> /h]	DN [ ]	Rp ["]	PN [ ]	n(gl) [ ]	Sv min. [ ]
R3015-P25-S1	0.25	15	1/2	16	3.2	50
R3015-P4-S1	0.4	15	1/2	16	3.2	50
R3015-P63-S1	0.63	15	1/2	16	3.2	50
R3015-1-S1	1	15	1/2	16	3.2	50
R3015-1P6-S1	1.6	15	1/2	16	3.2	50
R3015-2P5-S1	2.5	15	1/2	16	3.2	50
R3015-4-S1	4	15	1/2	16	3.2	100
R3020-4-S2	4	20	3/4	16	3.2	100
R3020-6P3-S2	6.3	20	3/4	16	3.2	100
R3025-6P3-S2	6.3	25	1	16	3.2	100
R3025-10-S2	10	25	1	16	3.2	100
R3032-16-S3	16	32	1 1/4	16	3.2	100
R3040-16-S3	16	40	1 1/2	16	3.2	100
R3040-25-S4	25	40	1 1/2	16	3.2	100
R3050-25-S4	25	50	2	16	3.2	100
R3050-40-S4	40	50	2	16	3.2	100
R3050-58-S4	58	50	2	16	3.2	100

**Technical data**

Functional data	Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature		-10...120°C
Medium temperature note		The allowed media temperature can be limited, depending on the type of actuator. Limitations can be found in the respective data sheets of the actuators.
Rated pressure ps		1600 kPa
Closing pressure Δps		1400 kPa
Differential pressure Δpmax		350 kPa
Differential pressure note		200 kPa for low-noise operation
Flow rate		Bypass B – AB: 70% of kvs value
Flow characteristic		Control path A – AB: equal percentage (VDI/VDE 2178), optimised in the opening range, Bypass B – AB: linear (VDI/VDE 2178)
Leakage rate		Control path A - AB: Leakage rate A, air-bubble-tight (EN 12266-1), Bypass B - AB: Leakage class I (EN 1349 and EN 60534-4) approx. 1...2% of the kvs value, with respect to the largest value within the DN
Pipe connectors		Internal thread according to ISO 7-1
Angle of rotation		90° (Operating range control path A - AB 15...90°, Bypass B – AB 15...70°)
Installation position		Upright to horizontal (in relation to the stem)
Maintenance		Maintenance-free
<b>Materials</b>	Housing	Brass body nickel-plated
	Closing element	Stainless steel

## Technical data

Materials		
Stem		Stainless steel
Stem seal		O-ring EPDM
Valve seat		PTFE, O-ring EPDM
Characterising disc		TEFZEL
		R3040-25-S4, R3050-40-S4, R3050-58-S4: Stainless steel

## Safety notes



- The 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 during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- The 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

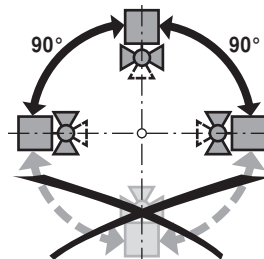
<b>Mode of operation</b>	The characterised control valve is adjusted by a rotary actuator. The actuator is controlled by a commercially available modulating or 3-point control system and moves the ball of the valve – the throttling device – to the position dictated by the positioning signal. Open the characterised control valve counterclockwise and close it clockwise.
<b>Flow characteristic</b>	Equal percentage flow control is ensured by the integrated characterising disc.

## Accessories

	Description	Type
<b>Mechanical accessories</b>	Pipe connector to ballvalves DN 15 Rp 1/2"	ZR2315
	Pipe connector to ballvalves DN 20 Rp 3/4"	ZR2320
	Pipe connector to ballvalves DN 25 Rp 1"	ZR2325
	Pipe connector to ballvalves DN 32 Rp 1 1/4"	ZR2332
	Pipe connector to ballvalves DN 40 Rp 1 1/2"	ZR2340
	Pipe connector to ballvalves DN 50 Rp 2"	ZR2350

## Installation notes

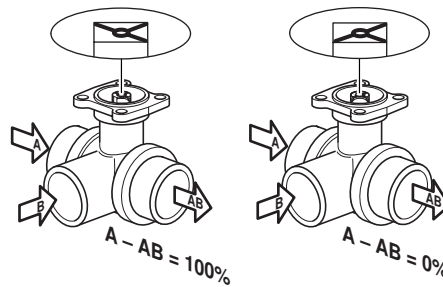
**Recommended installation positions** The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



**Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to. Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of suitable strainer is recommended.

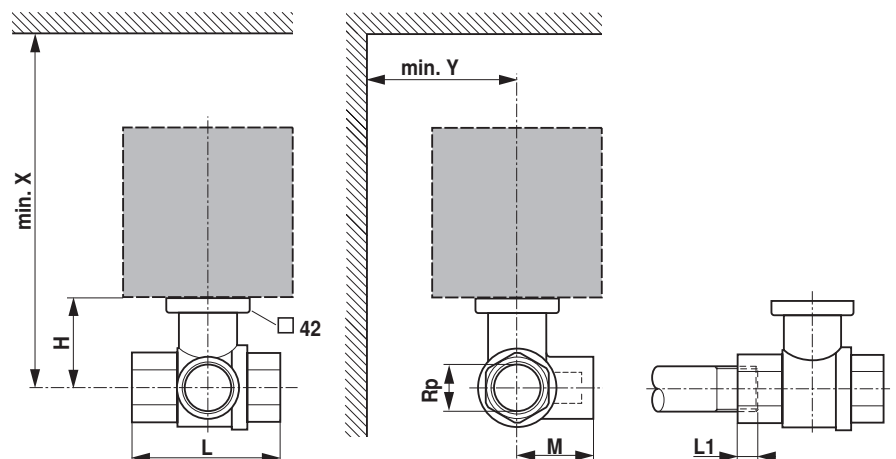
## Installation notes

- Maintenance** Ball 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 ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.
- Flow direction** The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the ball valve could become damaged. Please ensure that the ball is in the correct position (marking on the spindle).



## Dimensions / Weight

### Dimensional drawings



L1: Maximum screwing depth.

X/Y: Minimum distance with respect to the valve centre.

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

## Dimensions / Weight

Type	DN [ ]	Rp ["]	L [ mm]	L1 [ mm]	M [ mm]	H [ mm]	X [ mm]	Y [ mm]	Weight approx. [ kg]
R3015-P25-S1	15	1/2	67	13	36	35	230	90	0.27
R3015-P4-S1	15	1/2	67	13	36	35	230	90	0.27
R3015-P63-S1	15	1/2	67	13	36	35	230	90	0.27
R3015-1-S1	15	1/2	67	13	36	35	230	90	0.27
R3015-1P6-S1	15	1/2	67	13	36	44	230	90	0.37
R3015-2P5-S1	15	1/2	67	13	36	44	230	90	0.37
R3015-4-S1	15	1/2	67	13	36	44	230	90	0.37
R3020-4-S2	20	3/4	78	14	41.5	46	235	90	0.46
R3020-6P3-S2	20	3/4	78	14	41.5	46	235	90	0.46
R3025-6P3-S2	25	1	87	16	45	46	235	90	0.65
R3025-10-S2	25	1	87	16	45	46	235	90	0.65
R3032-16-S3	32	1 1/4	105	19	55.5	50.5	240	90	0.95
R3040-16-S3	40	1 1/2	111	19	56	50.5	240	90	1.15
R3040-25-S4	40	1 1/2	122	19	66.5	62	250	90	1.15
R3050-25-S4	50	2	125	22	68	56	245	90	1.9
R3050-40-S4	50	2	142	22	79	68	262	90	1.8
R3050-58-S4	50	2	142	22	79	68	262	90	1.8

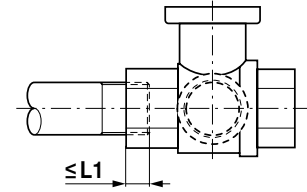
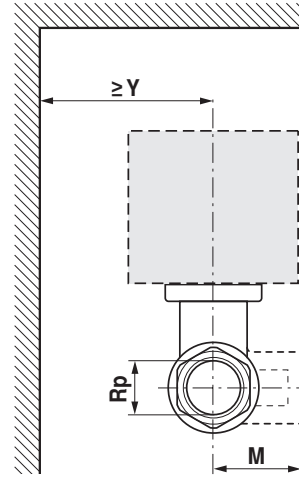
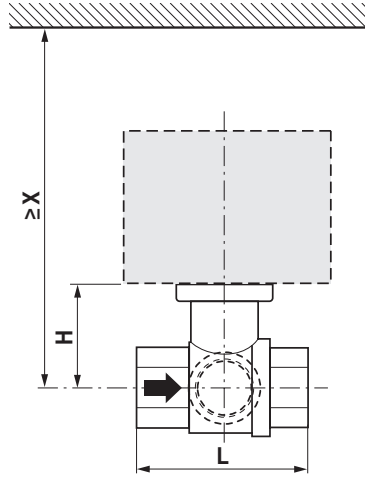
## Further documentation

- Overview Valve-actuator combinations
- Data sheets for actuators
- Installation instructions for actuators and/or ball valves
- General notes for project planning

R2..-S..



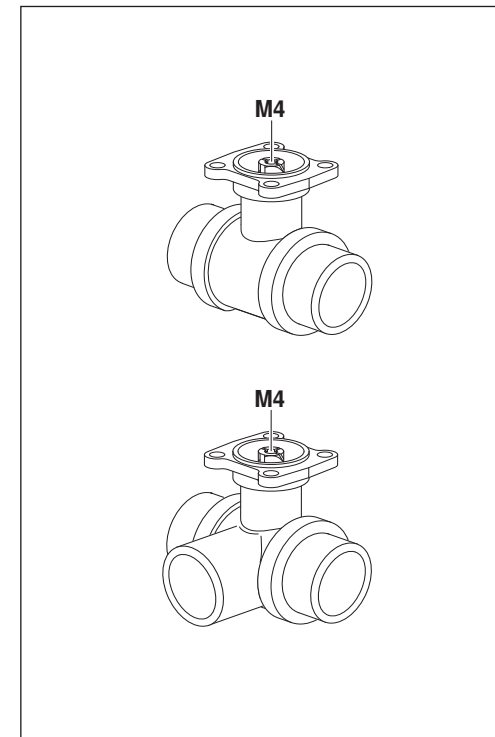
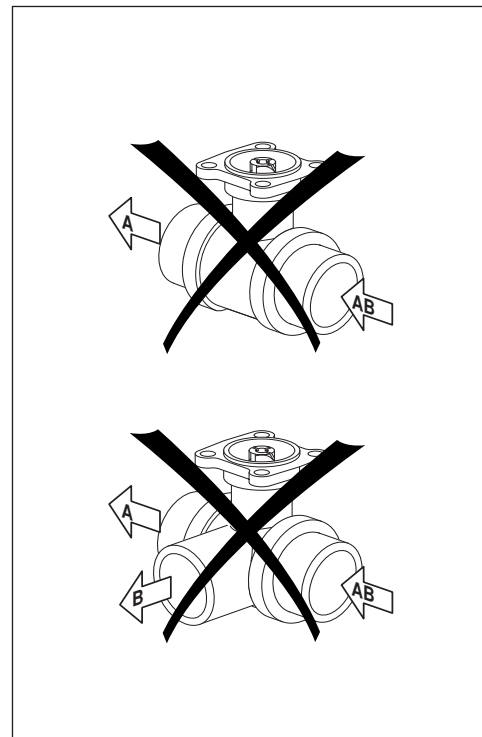
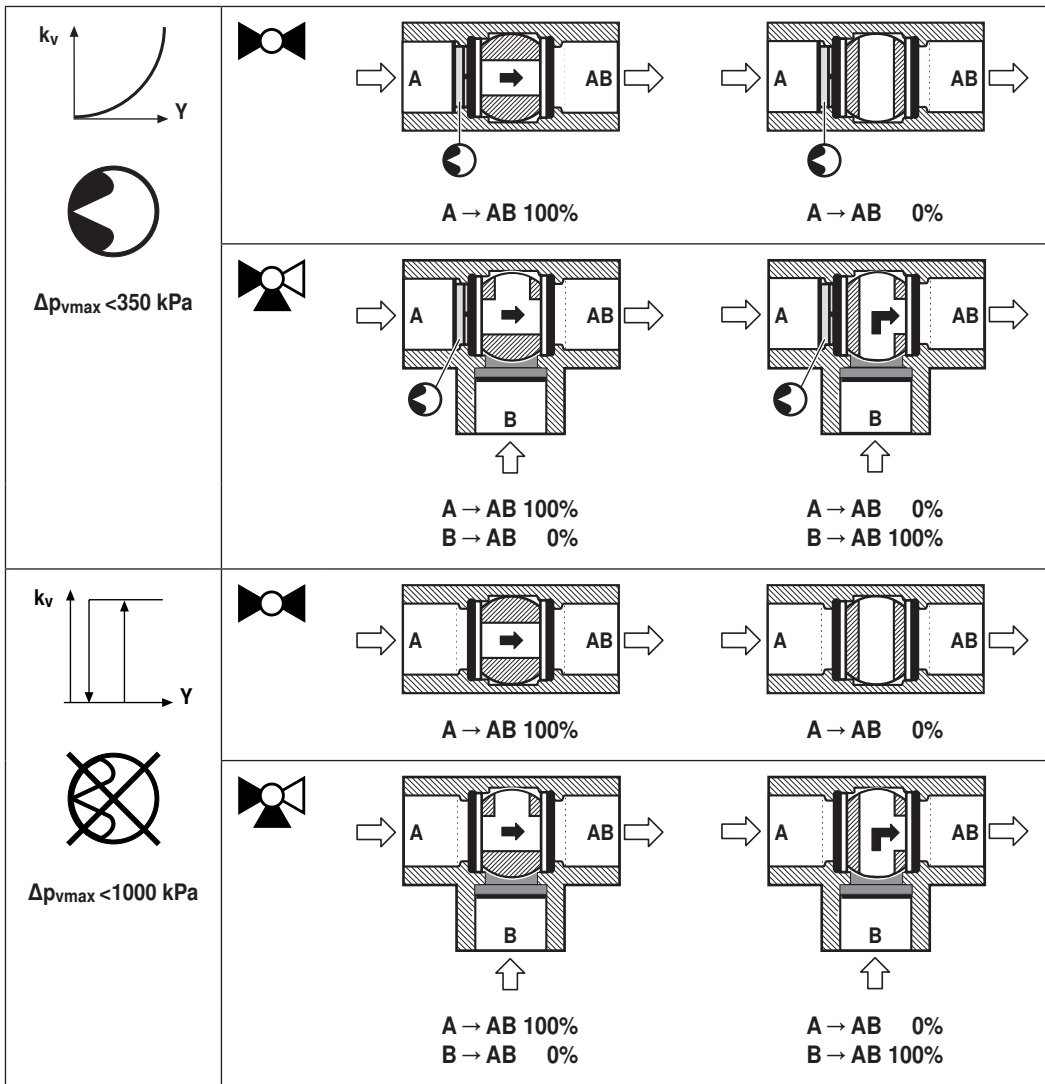
R3..-S..



71270-00001.B



t -10 ... +120 °C		p <sub>s</sub> 1600 kPa																									
		DN	Rp	mm				80 °C		100 °C		120 °C				100 °C		120 °C									
				L	H	M	L1	KR..		TR..		LR..A		NR..A		SR..A		TRF..		LRF..		NRF..A		SRF..A			
mm	”	mm	”	L	H	M	L1	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
R2015..-S1	R3015..-S1	15	1/2”	67	44	36	13	150	75	185	75	195	75	230	80	230	80	190	80	200	90	220	90	220	90		
R2020..-S2	R3020..-S2	20	3/4”	78	46	41.5	14					200	75	235	80	235	80			205	90	225	90	225	90		
R2025..-S2	R3025..-S2	25	1”	87	46	45	16					200	75	235	80	235	80			205	90	225	90	225	90		
R2032..-S3	R3032..-S3	32	1 1/4”	105	50.5	55.5	19							240	80	240	80					230	90	230	90		
R2040..-S3	R3040..-S3	40	1 1/2”	111	50.5	56	19							240	80	240	80					230	90	230	90		
	R3040-25-S4	40	1 1/2”	122	62	66.5	19									250	80							240	90		
R2050..-S4	R3050..-S4	50	2”	125	56	68	22									245	80							235	90		
	R3050-40-S4 R3050-58-S4	50	2”	142	68	79	22									262	80							252	90		



 	 <b>A → AB 100%</b>	 <b>A → AB 0%</b>
	<b>B → AB 0%</b>	<b>B → AB 100%</b>

