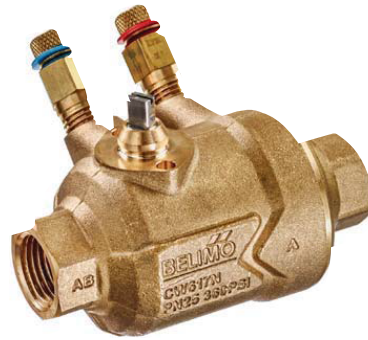


Pressure independent zone valve,  
2-way, Internal thread

- For closed cold and warm water systems
- For water-side modulating control of air-handling and heating systems
- Snap-assembly
- Version with measuring ports (P/T ports)


**Type overview**

Type	DN [ ]	Rp ["]	Vnom [ l/s]	PN [ ]
C215QPT-B	15	1/2	0.058	25
C215QPT-D	15	1/2	0.117	25
C220QPT-F	20	3/4	0.272	25
C220QPT-G	20	3/4	0.583	25
C225QPT-G	25	1	0.583	25

**Technical data**

<b>Functional data</b>	Media	Cold and warm water, water with glycol up to max. 50% vol.
	Medium temperature	-20...120°C 2...90°C (with actuator)
	Differential pressure	16...350 kPa / 600 kPa Not recommended for constant use at 600 kPa, where this is the case, please contact Belimo technical support.
	Permissible pressure ps	1600 kPa
	Closing pressure Δps	700 kPa
	Flow characteristic	Equal percentage (VDI/VDE 2178), optimised in the opening range
	Rangeability	Sv >100
	Pressure stability	16...34 kPa: ±10% 35...350 kPa: ±5%
	Leakage rate	Leakage rate A, tight (EN 12266-1)
	Flow setting	see Installation instructions
	Pipe connectors	Internal thread according to ISO 7-1
	Angle of rotation	90° (Operating range 15...90°)
	Installation position	Upright to horizontal (in relation to the stem)
	Maintenance	Maintenance-free
	<b>Materials</b>	Housing
Closing element		Stainless steel
Stem		Stainless steel
Stem seal		O-ring EPDM
Valve seat		PTFE, O-ring EPDM
Diaphragm		EPDM
<b>Terms</b>	Abbreviations	Vnom = nominal flow with valve completely opened Vmax = maximum flow set by the angle of rotation limitation on the actuator

**Safety notes**

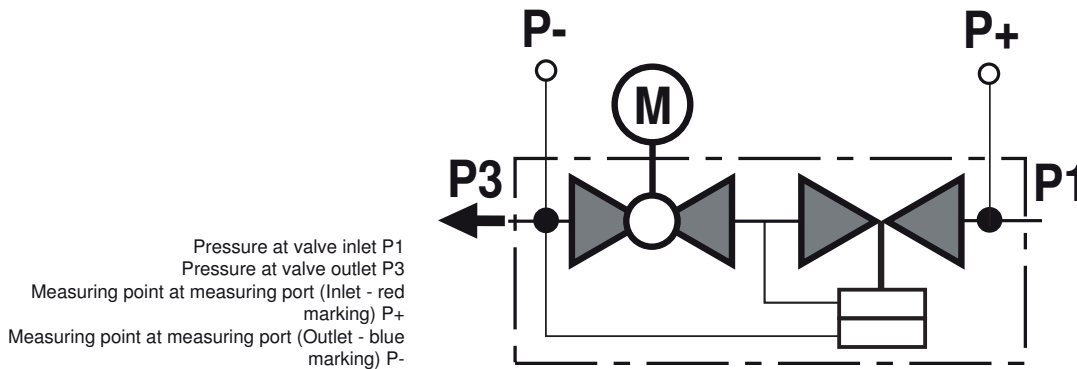

- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. 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

**Mode of operation** 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.

**Flow characteristic** Equal percentage flow control is ensured by the special design of the ball.

**Constant flow volume** With a differential pressure of 16...600 kPa, a constant flow volume is achieved thanks to the integrated pressure regulating valve. Independent of the differential pressure through the valve, a valve authority of 1 is achieved. Even with pressure variations and in the partial load range, the flow rate remains constant with each respective opening position (angle of rotation) and ensures a steady control.



**Constant flow volume** Instead of the electric actuator, the PIQCV-valve can also be operated with a flow limiter (see accessories). The flow limiter ensures that the heat exchanger is continuously supplied with a manually fixed amount of water.

**Measurement ports (P/T ports)** The C2..QPT-.. type valves have two measurement ports. The total drop in pressure across the valve can be determined using the measurement points at the valve inlet (P1) and outlet (P3). The measurement ports can be used to easily establish whether the effective differential pressure across the valve is within the effective pressure range of 16...350 kPa. If it is, the valve operates independently of pressure and the correct flow rate is automatically ensured by the valve according to the setting table.

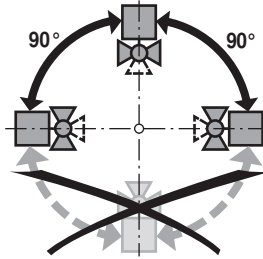
The differential pressure measurement can also be used to optimise the pump setting. This involves reducing the delivery height of the pump until only the minimum differential pressure required (16kPa) is still present across the valve at the point of lowest pressure (the furthest away from the pump in hydraulic terms).

## Accessories

	Description	Type
<b>Mechanical accessories</b>	Pipe connector to ball valve DN 15 Rp 1/2"	ZR2315
	Pipe connector to ball valve DN 20 Rp 3/4"	ZR2320
	Pipe connector to ball valve DN 25 Rp 1"	ZR2325
	Spindle extension CQ	ZCQ-E
	Flow limiter PIQCV	ZCQ-FL

### 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.



**Installation position in return** Installation in the return is recommended.

### Installation notes

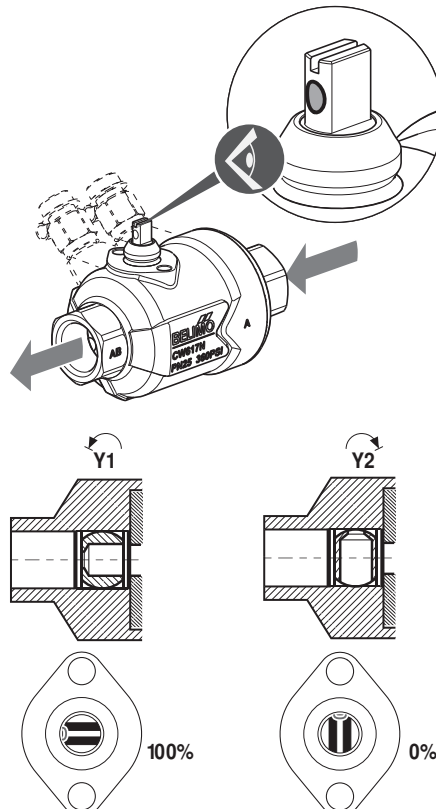
**Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to. Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work).

The installation of suitable strainer is recommended.

**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).

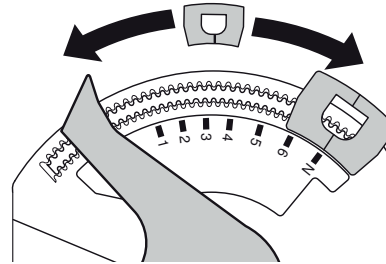
The system must not be returned to service until the ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.

**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).



Installation notes

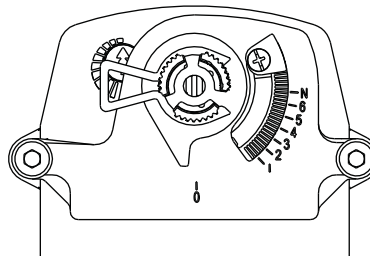
**Flow setting** The angle of rotation of the CQ actuator can be changed by clip in 2.5° increments. This is used to set the  $\dot{V}_{max}$ -value (maximum flow rate of the valve). Remove end stop clip and place at desired position.



	Pos	1	2	3	3+	4-	4	4+	5-	5	5+	6-	6	6+	N-	N	
C215QPT-B	$\dot{V}_{max}$ (l/h)	20	30	40	45	50	60	70	80	90	105	120	135	150	165	180	210
	$\dot{V}_{max}$ (l/s)	0.006	0.008	0.011	0.013	0.014	0.017	0.019	0.022	0.025	0.029	0.033	0.038	0.042	0.046	0.050	0.058
C215QPT-D	$\dot{V}_{max}$ (l/h)	50	70	100	110	130	150	170	190	210	240	270	300	330	360	400	420
	$\dot{V}_{max}$ (l/s)	0.014	0.019	0.028	0.031	0.036	0.042	0.047	0.053	0.058	0.067	0.075	0.083	0.092	0.100	0.111	0.117
C220QPT-F	$\dot{V}_{max}$ (l/h)	90	130	190	220	250	290	340	390	440	500	570	630	700	760	820	980
	$\dot{V}_{max}$ (l/s)	0.025	0.036	0.053	0.061	0.069	0.081	0.094	0.108	0.122	0.139	0.158	0.175	0.194	0.211	0.228	0.272
C220QPT-G	$\dot{V}_{max}$ (l/h)	260	410	600	670	750	840	920	1010	1110	1210	1310	1420	1530	1640	1750	2100
C225QPT-G	$\dot{V}_{max}$ (l/s)	0.072	0.114	0.167	0.186	0.208	0.233	0.256	0.281	0.308	0.336	0.364	0.394	0.425	0.456	0.486	0.583



The angle of rotation of the TQF actuator can be changed by limit stop. This is used to set the  $\dot{V}_{max}$ -value (maximum flow rate of the valve). Srew loosen limit stop and move to desired position.

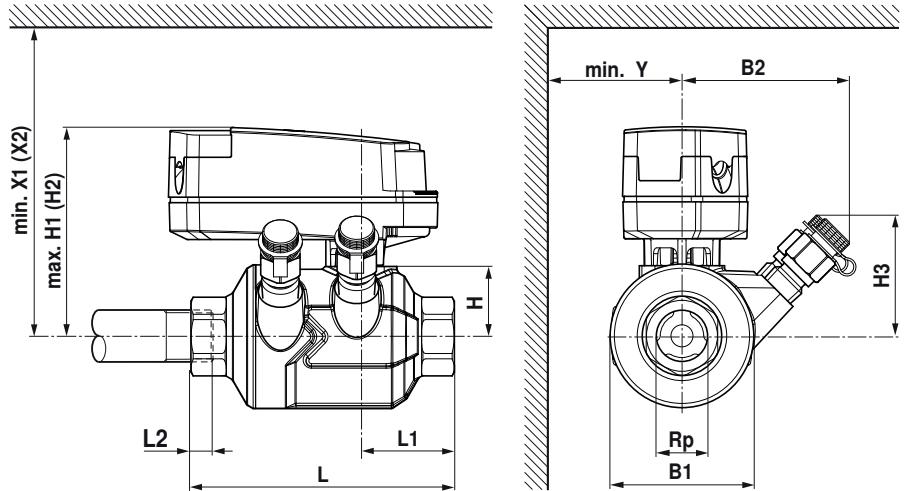


		1	2	3	4	5	6	N	$V_{nom}$
C215QPT-B	$\dot{V}_{max}$ (l/h)	20	30	40	60	90	135	180	210
	$\dot{V}_{max}$ (l/s)	0.006	0.008	0.011	0.017	0.025	0.038	0.050	0.058
C215QPT-D	$\dot{V}_{max}$ (l/h)	50	70	100	150	210	300	400	420
	$\dot{V}_{max}$ (l/s)	0.014	0.019	0.028	0.042	0.058	0.083	0.111	0.117
C220QPT-F	$\dot{V}_{max}$ (l/h)	90	130	190	290	440	630	820	980
	$\dot{V}_{max}$ (l/s)	0.025	0.036	0.053	0.081	0.122	0.175	0.228	0.272
C220QPT-G	$\dot{V}_{max}$ (l/h)	260	410	600	840	1110	1420	1750	2100
C225QPT-G	$\dot{V}_{max}$ (l/s)	0.072	0.114	0.167	0.233	0.308	0.394	0.486	0.583



## Dimensions / Weight

Dimensional drawings



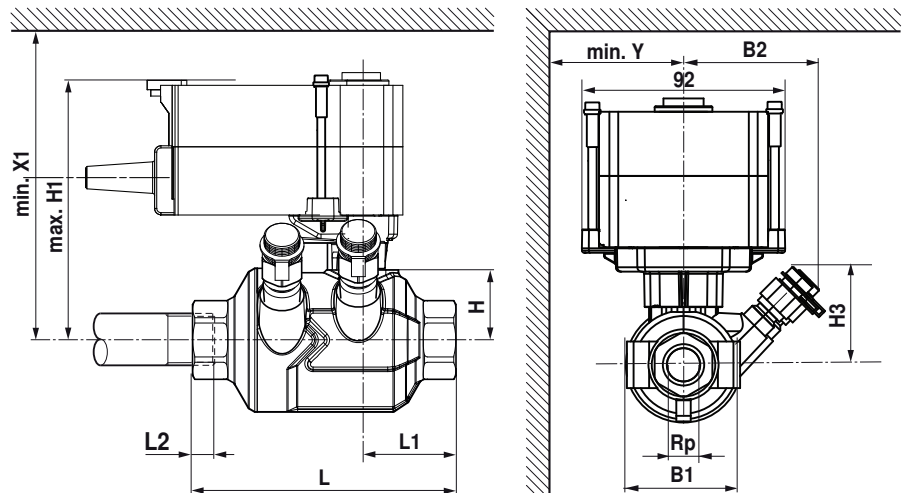
H1/X1: without spindle extension CQ  
 H2/X2: with spindle extension CQ (ZCQ-E)  
 L2: Maximum screwing depth.

Type	DN [ ]	Rp ["]	L [ mm]	L1 [ mm]	L2 [ mm]	B1 [ mm]	B2 [ mm]	H [ mm]	H1 [ mm]	H2 [ mm]
C215QPT-B	15	1/2	96	34	13	52	61	26	80	112
C215QPT-D	15	1/2	96	34	13	52	61	26	80	112
C220QPT-F	20	3/4	106	39	14	63	72	31	85	117
C220QPT-G	20	3/4	118	42	15	78	65	38	92	124
C225QPT-G	25	1	118	42	17	78	65	38	92	124

Type	H3 [ mm]	Y [ mm]	X1 [ mm]	X2 [ mm]	Weight approx. [ kg]
C215QPT-B	44	40	125	155	0.8
C215QPT-D	44	40	125	155	0.8
C220QPT-F	49	45	130	165	1.2
C220QPT-G	51	55	145	170	1.8
C225QPT-G	51	55	145	170	1.8

## Dimension / Weight

## Dimensional drawings



H1/ X1: With reference to the TQF actuator  
L2: Maximum screwing depth.

Type	DN [ ]	Rp ["]	L [ mm]	L1 [ mm]	L2 [ mm]	B1 [ mm]	B2 [ mm]	H [ mm]	H1 [ mm]
C215QPT-B	15	1/2	96	34	13	52	61	26	120
C215QPT-D	15	1/2	96	34	13	52	61	26	120
C220QPT-F	20	3/4	106	39	14	63	72	31	125
C220QPT-G	20	3/4	118	42	15	78	65	38	135
C225QPT-G	25	1	118	42	17	78	65	38	135

Type	H3 [ mm]	Y [ mm]	X1 [ mm]	Weight approx. [ kg]
C215QPT-B	44	45	165	0.8
C215QPT-D	44	45	165	0.8
C220QPT-F	49	45	170	1.2
C220QPT-G	51	55	185	1.8
C225QPT-G	51	55	185	1.8