

Butterfly valve with Lug types

- For open and closed cold and warm water systems
- For switching heat generators or cooling machines on/off


Type overview

Type	DN []	kvmax [m³/h]	kvs [m³/h]	PN []
D625NL	25	50	24	10 / 16
D632NL	32	55	25	10 / 16
D640NL	40	65	27	10 / 16
D650NL	50	100	30	10 / 16
D665NL	65	170	50	10 / 16
D680NL	80	260	75	10 / 16
D6100NL	100	520	150	10 / 16
D6125NL	125	880	260	10 / 16
D6150NL	150	1400	400	10 / 16
D6350NL	350	10300	3010	16
D6400NL	400	14200	4140	16
D6450NL	450	18800	5490	16
D6500NL	500	24100	7060	16
D6600NL	600	37300	10900	16
D6700NL	700	42800	11760	16

The types D6200NL, D6250NL and D6300NL have been replaced by the types D6200WL, D6250WL and D6300WL. For technical data please check the datasheet D6..WL.

Technical data

Functional data	Fluid	Cold and warm water, water with glycol up to max. 50% vol.
	Fluid temperature	-20...120°C
	Flow characteristic	0...100% opening angle: S-form; 0...60% opening angle: equal percentage
	Flow characteristic note	For butterfly valve actuator combinations with the PR actuator, the flow characteristic can be set to linear using the Belimo Assistant App
	Leakage rate	tight, leakage rate A (EN 12266-1)
	Angle of rotation	90°
	Installation position	upright to horizontal (in relation to the stem)
	Suitable connection flange	In accordance with ISO 7005-2 and EN 1092-2
	Servicing	maintenance-free
	Materials	Housing
Closing element		stainless steel (1.4308)
Stem		stainless steel AISI 420 (1.4021)
Stem seal		EPDM O-ring
Stem bearing		RPTFE
Seat		EPDM

Safety notes


- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.

Safety notes

- 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.
- The damper must be opened and closed slowly in order to avoid hydraulic shocks in the pipe system.

Product features

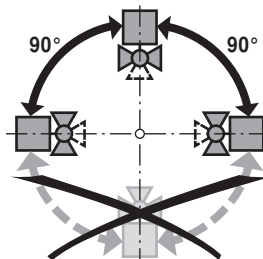
- Mode of operation** The butterfly valve is opened or closed completely by an open/close rotary actuator. Continuous rotary actuators are connected by a commercially available controller and move the valve to any position desired. The valve disk made of stainless steel is pressed into the soft-sealing EPDM seat by a rotary movement and ensures leakage rate A (tight). The pressure losses are slight in the open position and the kv value is at a maximum.
- Manual override** Manual throttling or isolation can be carried out with a lever or a worm gear (see «Accessories»).
- With lever (DN 25...150): Adjustable in 10 ratchet steps with position indication (0 = 0° (angle); 9 = 90° (angle))
 - With worm gear (DN 25...700): steplessly adjustable (self-locking) with position indication.

Accessories

	Description	Type
Electrical accessories	Stem heating flange F05 DN25...100 (30 W)	ZR24-F05
	Description	Type
Mechanical accessories	Worm gear for butterfly valves DN 25...100	ZD6N-S100
	Manual control for butterfly valves DN 25...100 DN 25...100	ZD6N-H100
	Worm gear for butterfly valves DN 125...300	ZD6N-S150
	Manual control for butterfly valves DN 125...150 DN 125...150	ZD6N-H150
	Worm gear for butterfly valves DN 350	ZD6N-S350
	Worm gear for butterfly valves DN 400	ZD6N-S400
	Worm gear for butterfly valves DN 450	ZD6N-S450
	Worm gear for butterfly valves DN 500	ZD6N-S500
	Worm gear for butterfly valves DN 600	ZD6N-S600
	Worm gear for butterfly valves DN 700	ZD6N-S700

Installation notes

- Recommended installation positions** The butterfly valves may be mounted upright to horizontal. The butterfly valves may not be installed in a hanging position i.e. with the spindle pointing downwards.



- Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to.

Installation notes

Stem heating In cold water applications and warm humid ambient air can cause condensation in the actuators. This can lead to corrosion in the gear box of the actuator and causes a breakdown of it. In such applications, the use of a stem heating is provided. The stem heating must be enabled only when the system is in operation, because it does not have temperature control.

Servicing Butterfly valves and rotary actuators are maintenance-free. Before any service work on the final controlling device is carried out, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable if necessary). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow all components to cool down first if necessary and always reduce the system pressure to ambient pressure level).

The system must not be returned to service until the butterfly valve and the rotary actuator have been reassembled correctly in accordance with the instructions and the pipeline has been refilled by professionally trained personnel.

To avoid a torque increase during off season shut down, exercise the butterfly valve (full open and close) at least once a month.

Flow setting The Belimo butterfly valves have an approximate equal percentage characteristic curve between 0...60% opening angle. The following table shows the respective kv values in relation to the opening angle (%).

		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN 25	kv (m ³ /h)	0.1	2	6	10	15	24	36	46	48	50
DN 32	kv (m ³ /h)	0.1	2	6	11	15	25	38	49	51	55
DN 40	kv (m ³ /h)	0.1	2	6	11	16	27	41	59	62	65
DN 50	kv (m ³ /h)	0.1	2	6	11	18	30	45	67	90	100
DN 65	kv (m ³ /h)	0.1	4	9	17	30	50	76	110	160	170
DN 80	kv (m ³ /h)	0.2	6	13	26	50	75	120	170	240	260
DN 100	kv (m ³ /h)	0.2	12	26	50	90	150	230	350	480	520
DN 125	kv (m ³ /h)	0.4	20	40	90	160	260	400	590	810	880
DN 150	kv (m ³ /h)	1	30	70	140	250	400	620	910	1260	1400
DN 350	kv (m ³ /h)	5	240	520	1050	1860	3010	4640	6880	9470	10300
DN 400	kv (m ³ /h)	6	320	720	1450	2560	4140	6380	9460	13030	14200
DN 450	kv (m ³ /h)	9	430	950	1920	3400	5490	8460	12530	17250	18800
DN 500	kv (m ³ /h)	11	550	1220	2460	4370	7060	10870	16110	22190	24100
DN 600	kv (m ³ /h)	17	850	1880	3800	6740	10900	16800	24890	34280	37300
DN 700	kv (m ³ /h)	28	1260	2670	4700	7400	11760	17960	27340	37910	42800



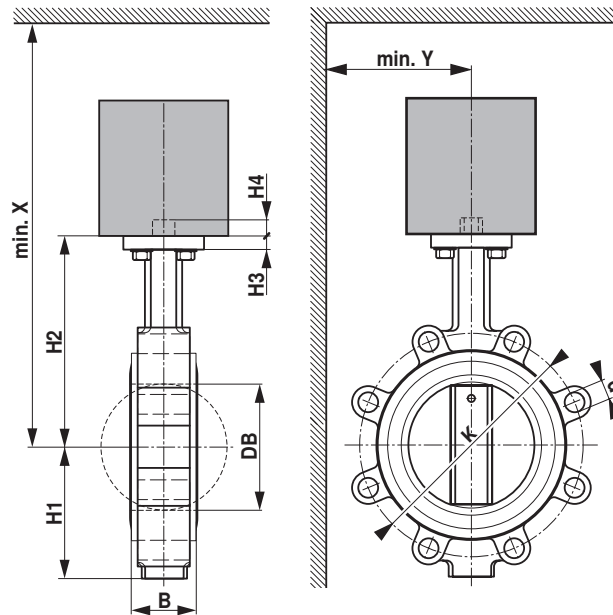
Parameterisation linear characteristic curve

For butterfly valve actuator combinations with the PR actuator, the flow characteristic can be set to linear using the Belimo Assistant App. The following table shows the respective kv values in relation to the control signal (%).

		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN 100	kv (m ³ /h)	52	104	156	208	260	312	364	416	468	520
DN 125	kv (m ³ /h)	88	176	264	352	440	528	616	704	792	880
DN 150	kv (m ³ /h)	140	280	420	560	700	840	980	1120	1260	1400

Dimensions / Weight

Dimensional drawings



Type	DN []	B [mm]	DB [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	d (PN10)	K (PN10) [mm]
D625NL	25	32	30	53	90	10	13	4 x M12	85
D632NL	32	33	35	60	100	10	13	4 x M16	100
D640NL	40	33	42	68	119	10	13	4 x M16	110
D650NL	50	43	52	72	133	11	13	4 x M16	125
D665NL	65	46	64	81	147	11	13	4 x M16	145
D680NL	80	46	78	96	158	11	13	8 x M16	160
D6100NL	100	52	103	106	170	11	13	8 x M16	180
D6125NL	125	56	122	122	194	15	19	8 x M16	210
D6150NL	150	56	155	140	202	15	19	8 x M20	240
D6350NL	350	78	333	266	361	15	24		
D6400NL	400	102	391	315	402	20	48		
D6450NL	450	114	442	328	420	20	48		
D6500NL	500	127	493	358	474	22	48		
D6600NL	600	154	594	454	559	22	48		
D6700NL	700	165	695	532	622	33	66		

Type	d (PN16)	K (PN16) [mm]	X [mm]	Y [mm]	Weight
D625NL	4 x M12	85	320	150	1.3 kg
D632NL	4 x M16	100	340	150	1.6 kg
D640NL	4 x M16	110	350	160	1.7 kg
D650NL	4 x M16	125	370	160	2.5 kg
D665NL	4 x M16	145	380	170	3.1 kg
D680NL	8 x M16	160	390	180	4.4 kg
D6100NL	8 x M16	180	410	190	5.1 kg
D6125NL	8 x M16	210	530	210	7.7 kg
D6150NL	8 x M20	240	540	220	8.9 kg
D6350NL	16 x M24	470	1200	340	45 kg
D6400NL	16 x M27	525	1300	1300	92 kg
D6450NL	20 x M27	585	1300	1400	110 kg
D6500NL	20 x M30	650	1700	1500	150 kg
D6600NL	20 x M33	770	1800	1800	240 kg
D6700NL	24 x M33	840	1800	1900	320 kg

Further documentation

- The complete product range for water applications
- Data sheets for actuators
- Installation instructions for actuators and/or butterfly valves
- General notes for project planning