

Butterfly valve with Wafer types

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



Picture may differ from product

Type overview

Type	DN	Kvmax [m³/h]	Kvs [m³/h]	PN	n(gl)
D6100N	100	520	150	6 / 10 / 16	3.2

Technical data

Functional data		Fluid	Water, water with glycol up to max. 50% vol.
	Fluid temperature	-10...120°C [14...248°F]	
	Flow characteristic	0...60% opening angle: equal percentage (VDI/VDE 2173) 0...100% opening angle: S-form	
	Leakage rate	tight, leakage rate A (EN 12266-1)	
	Angle of rotation	90°	
	Pipe connection	Flange according to ISO 7005-2 according to EN 1092-2 PN6/10/16, AS Table E (DN 50...150) PN10/16, AS Table E (DN 350) PN16 (DN 400...600)	
	Installation orientation	upright to horizontal (in relation to the spindle)	
	Servicing	maintenance-free	
Materials		Valve body	EN-GJS-400-15 (GGG 40)
	Body finish	polyester powder coated	
	Closing element	Stainless steel AISI 304 (1.4301)	
	Spindle	Stainless steel AISI 420 (1.4021)	
	Spindle seal	EPDM O-ring	
	Spindle 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.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with 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 hydronic shocks in the pipe system.

Product features

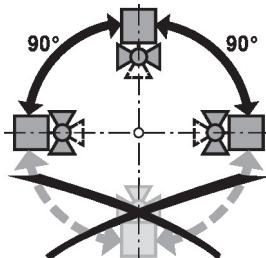
Operating mode	The butterfly valve is opened or closed completely by an open/close rotary actuator. Continuous rotary actuators are connected by a commercially available controller and move the valve to any position desired. The valve disk made of stainless steel is pressed into the soft-sealing EPDM 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

Electrical accessories	Description	Type
	Stem heater flange F05 (30 W)	ZR24-F05
Mechanical accessories	Description	Type
	Worm gear for butterfly valves DN 25...100	ZD6N-S100
	Lever for butterfly valves DN 25...100	ZD6N-H100

Installation notes

Permissible installation orientation 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.

Spindle heater In cold water applications and warm humid ambient air, condensation can be caused in the actuators. This can lead to corrosion in the gear train of the actuator and a breakdown of the actuator. In such applications, the use of a spindle heater is recommended.
The spindle heater must only be activated when the system is in operation because it does not have a temperature controller.

Servicing Butterfly valves and rotary actuators are maintenance-free. Before any service work on the control element 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 200	Kv (m ³ /h)	5	240	520	1050	1860	3010	4640	6880	9470	10300
DN 250	Kv (m ³ /h)	6	320	720	1450	2560	4140	6380	9460	13030	14200
DN 300	Kv (m ³ /h)	9	430	950	1920	3400	5490	8460	12530	17250	18800
DN 350	Kv (m ³ /h)	11	550	1220	2460	4370	7060	10870	16110	22190	24100
DN 400	Kv (m ³ /h)	17	850	1880	3800	6740	10900	16800	24890	34280	37300
DN 450	Kv (m ³ /h)	28	1260	2670	4700	7400	11760	17960	27340	37910	42800



Configuration linear characteristic curve

The flow characteristic can be set to linear using Belimo Assistant 2.

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

Differential and close-off pressure

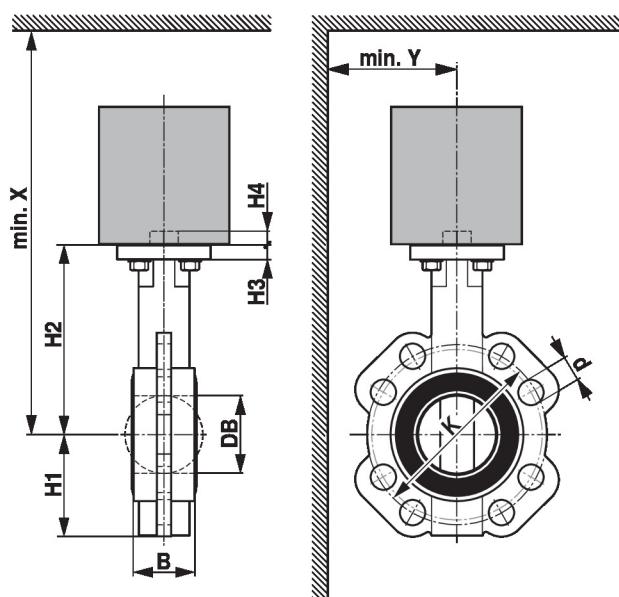
The maximum differential and close-off pressure of butterfly valves depends on diameter and type of the mounted actuator.

To ensure optimum operation and maximum service life, the maximum differential and close-off pressure must not be exceeded.

Please refer to the corresponding table of values in the notes for project planning.

Dimensions

Dimensional drawings



Type	DN	B [mm]	DB [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	d (PN6) [mm]	K (PN6) [mm]	d (PN10) [mm]	K (PN10) [mm]
D6100N	100	52	103	106	170	11	13	4 x 19	170	8 x 19	180

d (PN16) [mm]	K (PN16) [mm]	d (Table E) [mm]	K (Table E) [mm]	X [mm]	Y [mm]	kg
8 x 19	180	4 x 18	178	410	190	4.0

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