Technical data sheet

V2.. ABV
Butterfly valves

Product overview

- Butterfly valves are suitable for industrial and civil applications, and can be used as on/off valves and control valves.
  - Cooling and heating
  - water treatment
  - Shipbuilding industry
  - Paper
  - Power & Energy
  - Data Centers
  - Civil Aviation & Metro
- Long-lasting sealing performance with zero leakage and maintenance-free.
- The low-torque design effectively reduces the torque of the drive device, and is highly efficient and energy-saving.
- The stem is designed with a self-lubricating sleeve to prevent stem deflection.
- Excellent flow characteristics and low pressure loss.
- Sulfur dioxide corrosion resistance test and salt spray test.
- Easy installation, no special tools are required to install Gruner Actuator.
- Compatible with GRUNER 910 / 920 / 930 / 363 series electric actuators, available as 2/3-point (SPDT) on/off control butterfly valves, or 4−20 mA / DC 0(2)−10 V regulating type control butterfly valve.

Technical parameters

Performance parameters	Valve diameter	DN50…DN800
	Media range	Cold water/hot water/glycol solution Special media such as seawater/drinking water/wastewater/sewage/gas*
	Medium temperature	EPDM： -20 °C – +110 °C PTFE:0 °C – +100 °C NBR： -10 °C – +80 °C
	Rated pressure	PN 16 complies with EN1333
	Flow characteristics	See "Flow Characteristics"
	Leakage level	Class A according to ISO 5208 (tight seal)

GRUNER Automation Asia Pacific Ltd.
Flat 4, 11/F, Lucida Industrial Building
43 Wang Lung Street, Tsuen Wan, NT, Hong Kong

Phone : +852 3628 3760
info@gruner.com.hk
www.grunerasiapacific.com

	Rotation angle	0… Max. 90°
	Installation:	Refer to "Installation Instructions"
	How it works	Electric / Manual
Material	Body:	Ductile iron / stainless steel / aluminum alloy
	Disc Plate:	Stainless steel / ductile iron + nylon / aluminum bronze
	Seat:	EPDM / PTFE / NBR
	Stem:	Stainless steel SS420
Safety performance	Design and manufacture	ISO 10631, EN 593, GB/T 12238
	Valve body structure dimensions	ISO 5752, EN 558-1, GB/T 12221
	Pipe connection flanges	ISO 7005-2, EN 1092-1, GB/T 9113
	Inspection	ISO 5208, EN 12266, GB/T 13927
	Top Flange (Actuator Mounting Flange)	ISO 5211
	Environmental compatibility	ISO 9001（Quality）
Size/weight	Size/weight	See "Dimensions/Weight"

* Please consult the manufacturer for confirmation before selecting special media.

Selection Instructions

Valve	Ports	Connection	Pressure	Type	.	Valve size	Disc	Seat
V	**2**	**In**	**A**	**For example**	**.**	**100**	**N**	**E**
		W = Wafer type **L** = Lug type **D** = Double flange	**A** = 16 bar **B** = 25 bar	**BV** = Butterfly valves **BVE** = Eccentric BFV		50 = DN 50 65 = DN 65 80 = DN 80 100 = DN 100 ↓ 800 = DN 800	**N** = Nylon coated **S** = Stainless steel **A** = Aluminum Bronze	**E** = EPDM **P** = PTFE **N** = NBR

Model example:

V2WABV.100SE = Center-line Wafer butterfly valve, 16 bar, DN100, body: ductile iron, plate: stainless steel, seat: EPDM

V2DABV.500NE = Double Flange Butterfly Valve, 16 bar, DN500, Body: Ductile Iron, Plate: Nylon Coated, Seat: EPDM

Safety Precautions

Electrical installation

The electrical connection of the actuator must comply with the relevant local regulations (see "Electrical Wiring").

Commissioning and maintenance

Before the test run of the electric butterfly valve, it is necessary to confirm that the wiring is correct and the parts are functionally intact.
To avoid pressure shocks on the butterfly valve, before starting the pump, V2: The BV must be placed in a fully open position (either manually or via a control signal).
Before performing any maintenance on a valve or actuator, do the following:

- Turn off the pump and power
- Close the main shut-off valve in the pipeline
- Release the pressure on the pipes and allow them to cool completely

Disconnect the terminal blocks if needed.
Valves can only be commissioned after the correct installation of the handwheel, turbine or actuator.

Safety Matters

- The operation of this equipment must at all times comply with regulations and restrictions designed for the safety of persons and property!
- The device is not allowed to be used outside of the designated field of application, especially on board aircraft.
- The device should only be installed by properly trained personnel.
- The equipment installation process must comply with local laws and regulations or regulations issued by the authorities.
- Valves must comply with all local and currently applicable laws and regulations when disposed of at the end of life and are not allowed to be disposed of as household waste.
- By law, some parts may require special handling, as they may be harmful to the environment.

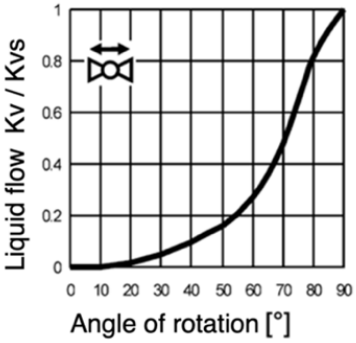
Flow characteristics

DN	Flow Coefficient Kv（m³/h）								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	0.1	1.3	6.5	16	30	49	72	86	87
DN65	0.2	4.9	14	27	48	80	125	156	162
DN80	0.3	8.0	16	29	54	96	158	217	239
DN100	2.4	15	37	77	128	209	315	520	565
DN125	6.4	37	64	122	208	338	524	747	820
DN150	7.4	49	105	183	324	522	897	1330	1536
DN200	17	68	174	298	506	856	1439	2437	3039
DN250	22	180	334	571	1003	1682	2803	4203	4619
DN300	35	195	444	801	1379	2369	4697	6494	7137
DN350	38	292	619	1340	2388	3952	6254	9381	10309
DN400	45	401	850	1843	3285	5434	8600	12901	14176
DN450	52	532	1126	2441	4349	7197	11391	17087	18776
DN500	57	684	1448	3138	5593	9254	14646	21969	24142
DN600	62	1057	2238	4849	8641	14298	22627	33941	37298
DN700	76	1568	3148	5740	8651	16414	25978	38967	42820
DN800	84	2065	4144	7557	11927	17831	27158	41624	59040
DN900	92	2613	5245	9563	15094	22566	34369	52677	74719
DN1000	105	3619	7262	13241	20899	31285	47651	73032	103590

liquid

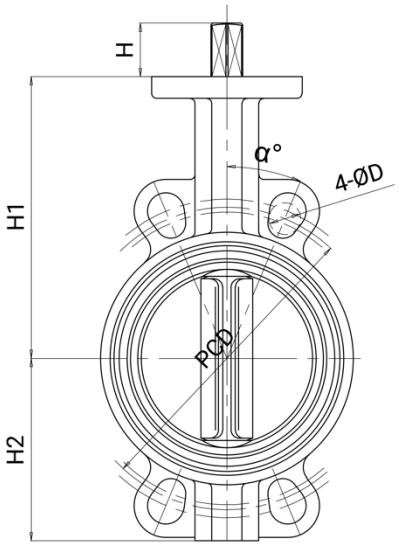
$$Q = \frac{Kv}{\sqrt{\frac{Ps}{\Delta P}}}$$

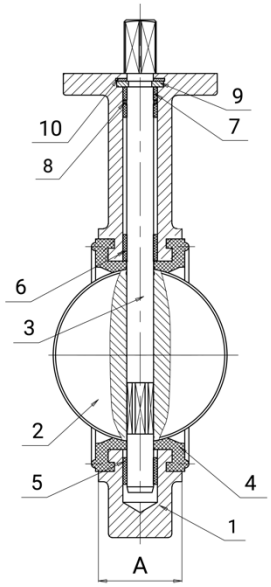
Q = flow rate [m³/h]
Ps = specific gravity (water = 1) [kg/dm³]
ΔP = pressure drop [bar]

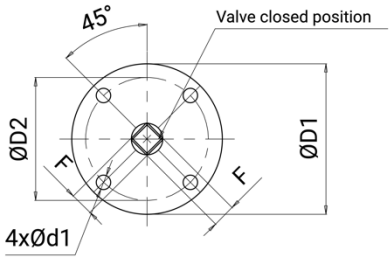


Size/weight

【V2WABV Wafer BFV DN50...DN150】







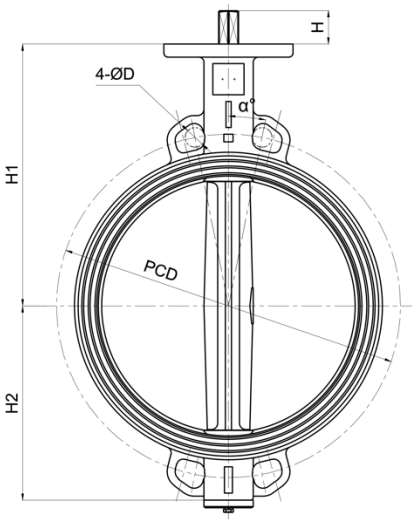
Item	Name	Material
1	Body	GGG40
2	Disc	DI+nylon11/CF8
3	Shaft	SS420
4	Seat	EPDM
5	Lower shaft sleeve	PTFE
6	Middle shaft sleeve	PTFE
7	Short shaft sleeve	PTFE
8	O ring/O-ring	EPDM
9	Split ring	SS416
10	Circlip	65Mn

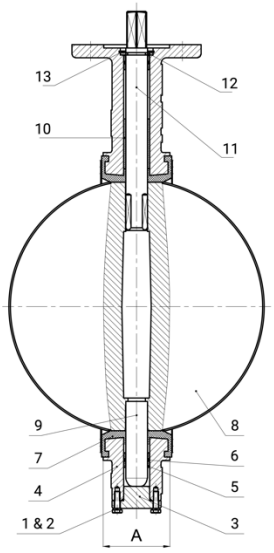
-	Nominal pressure	1.6 MPa
-	Shell pressure	2.4 MPa
-	Sealing pressure	1.76 MPa

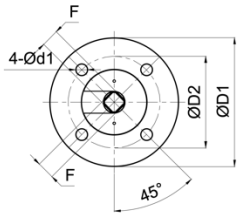
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	GB/T 9113 PN 10			GB/T 9113 PN 16			ØD1	ØD2	4xØd1	H	FxF	Weight
				PCD	4-OD	α°	PCD	4-OD	α°						(KGS)
50	130	72	43	Ø125	4-Ø19	45°	Ø125	4-Ø19	45°	65	50	4xØ7	14	11x11	2.67
65	145	75	46	Ø145	4-Ø19	45°	Ø145	4-Ø19	45°	65	50	4xØ7	14	11x11	3.15
80	156	90	46	Ø160	4-Ø19	22.5°	Ø160	4-Ø19	22.5°	65	50	4xØ7	14	11x11	3.77
100	169	108	52	Ø180	4-Ø19	22.5°	Ø180	4-Ø19	22.5°	65	50	4xØ7	14	11x11	4.55
125	191	125	56	Ø210	4-Ø19	22.5°	Ø210	4-Ø19	22.5°	90	70	4xØ 10	19	14x14	6.5
150	212	140	56	Ø240	4-Ø23	22.5°	Ø240	4-Ø23	22.5°	90	70	4xØ10	24	17x17	7.8

【V2WABV Wafer BFV DN200...DN800】







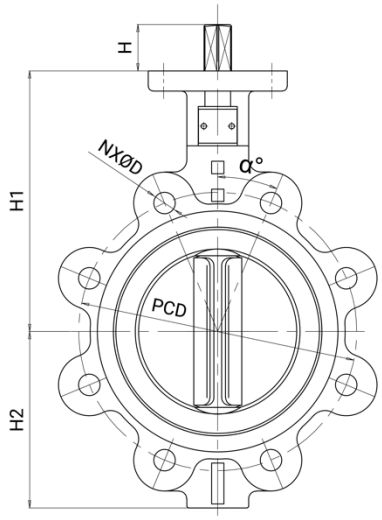
Item	Name	Material
1	Bolt	Q235-A
2	Spring washer	Q235-A
3	Bottom end cover	GGG40
4	Body	GGG40
5	Short shaft sleeve	PTFE
6	O ring	EPDM
7	Seat	EPDM
8	Disc	DI+nylon11/CF8
9	Lower shaft	SS420
10	Long shaft sleeve	PTFE
11	Upper shaft	SS420
12	Split ring	SS416
13	Circlip	65Mn

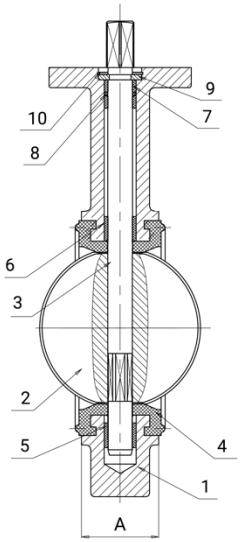
-	Nominal pressure	1.0 MPa / 1.6 MPa
-	Shell pressure	1.5 MPa / 2.4 MPa
-	Sealing pressure	1.1 MPa / 1.76 MPa

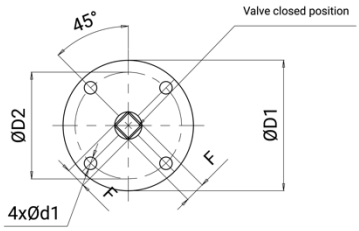
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	GB/T 9113 PN 10			GB/T 9113 PN 16			ØD1	ØD2	4-Ød1	H	FxF	Weight
				PCD	4-OD	α°	PCD	4-OD	α°						(KGS)
200	246	166	60	Ø295	4-Ø23	22.5°	Ø295	4-Ø23	15°	125	102	4-Ø12	24	17x17	13.6
250	283	203	66	Ø350	4-Ø23	15°	Ø355	4-Ø28	15°	125	102	4-Ø12	24	22x22	19
300	318	236	76.5	Ø400	4-Ø23	15°	Ø410	4-Ø28	15°	150	102	4-Ø12	24	22x22	28.95
350	327	272	76.5	Ø460	4-Ø23	11.25°	Ø470	4-Ø28	11.25°	150	125	4-Ø14	29	27x27	37.6
400	405	304	102	Ø515	4-Ø28	11.25°	Ø525	4-Ø31	11.25°	150	125	4-Ø14	29	27x27	52.5
450	414	335	114	Ø565	4-Ø28	9°	Ø585	4-Ø31	9°	175	125	4-Ø14	29	27x27	68.55
500	462	368	129	Ø620	4-Ø28	9°	Ø650	4-Ø34	9°	210	165	4-Ø22	48	36x36	84.25
600	518	428	154	Ø725	4-Ø31	9°	Ø770	4-Ø37	9°	210	165	4-Ø23	48	36x36	143.2
700	618	520	163	Ø840	4-Ø33	7.5°	Ø840	4-Ø37	7.5°	210	165	4-Ø23	60	46x46	352
800	665	580	188	Ø950	4-Ø33	7.5°	Ø950	4-Ø39	7.5°	210	165	4-Ø23	60	46x46	427

【V2LABV Lug BFV DN50...DN150】







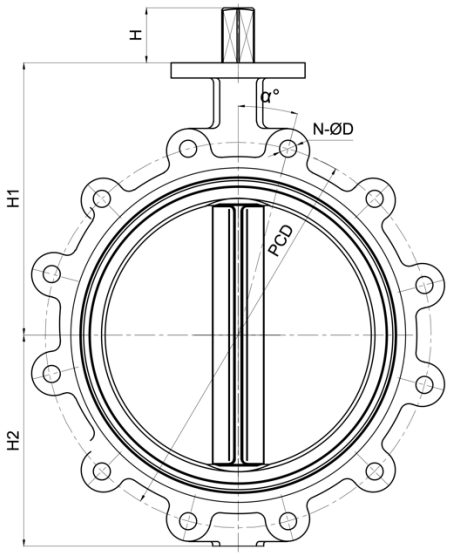
Item	Name	Material
1	Body	GGG40
2	Disc	DI+nylon11/CF8
3	Shaft	SS420
4	Seat	EPDM
5	Lower shaft sleeve	PTFE
6	Middle shaft sleeve	PTFE
7	Short shaft sleeve	PTFE
8	O ring/O-ring	EPDM
9	Split ring	SS416
10	Circlip	65Mn

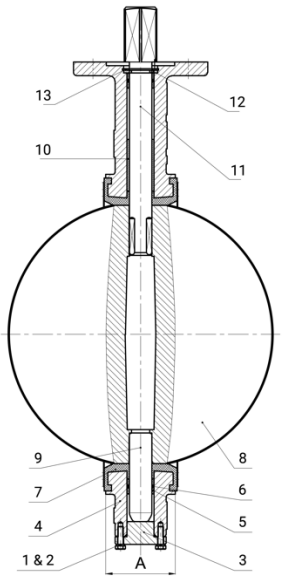
-	Nominal pressure	1.6 MPa
-	Shell pressure	2.4 MPa
-	Sealing pressure	1.76 MPa

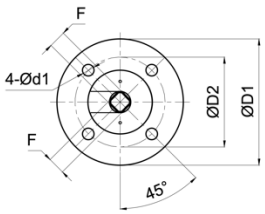
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	GB/T 9113 PN 10			GB/T 9113 PN 16			ØD1	ØD2	4xØd1	H	FxF	Weight
				PCD	N-ØD	α°	PCD	N-ØD	α°						(KGS)
50	130	72	43	Ø125	4-Ø18	45°	Ø125	4-Ø18	45°	65	50	4xØ7	14	11x11	5.17
65	145	75	46	Ø145	8-Ø18	45°	Ø145	4-Ø18	45°	65	50	4xØ7	14	11x11	5.25
80	156	90	46	Ø160	8-Ø18	22.5°	Ø160	8-Ø18	22.5°	65	50	4xØ7	14	11x11	5.77
100	169	108	52	Ø180	8-Ø18	22.5°	Ø180	8-Ø18	22.5°	65	50	4xØ7	14	11x11	8.55
125	191	125	56	Ø210	8-Ø18	22.5°	Ø210	8-Ø18	22.5°	90	70	4xØ10	19	14x14	11.10
150	212	140	56	Ø240	8-Ø22	22.5°	Ø240	8-Ø22	22.5°	90	70	4xØ10	24	17x17	13.40

【V2LABV Lug BFV DN200...DN800】







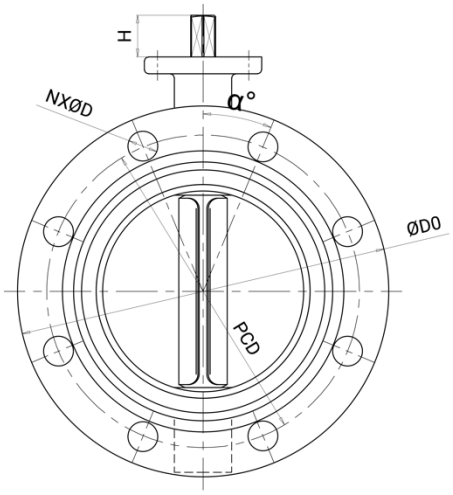
Item	Name	Material
1	Bolt	Q235-A
2	Spring washer	Q235-A
3	Bottom end cover	GGG40
4	Body	GGG40
5	Short shaft sleeve	PTFE
6	O ring	EPDM
7	Seat	EPDM
8	Disc	DI+nylon11/CF8
9	Lower shaft	SS420
10	Long shaft sleeve	PTFE
11	Upper shaft	SS420
12	Split ring	SS416
13	Circlip	65Mn
14	Key/key	45#

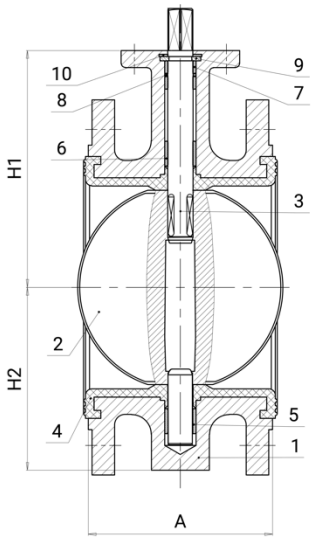
-	Nominal pressure	1.0 MPa / 1.6 MPa
-	Shell pressure	1.5 MPa / 2.4 MPa
-	Sealing pressure	1.1 MPa / 1.76 MPa

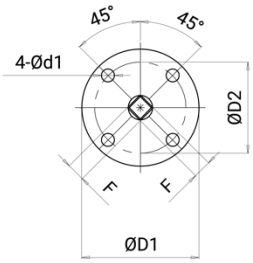
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	GB/T 9113 PN 10			GB/T 9113 PN 16			ØD1	ØD2	4-Ød1	H	FxF	Weight
				PCD	N-ØD	α°	PCD	N-ØD	α°						(KGS)
200	246	166	60	Ø295	8-Ø23	22.5°	Ø295	12-Ø23	15°	125	102	4-Ø12	24	17x17	22.70
250	283	203	66	Ø350	12-Ø23	15°	Ø355	12-Ø28	15°	125	102	4-Ø12	24	22x22	31.40
300	318	236	76.5	Ø400	12-Ø23	15°	Ø410	12-Ø28	15°	150	102	4-Ø12	24	22x22	49.85
350	327	272	76.5	Ø460	16-Ø23	11.25°	Ø470	16-Ø28	11.25°	150	125	4-Ø14	29	27x27	66.80
400	405	304	102	Ø515	16-Ø28	11.25°	Ø525	16-Ø31	11.25°	150	125	4-Ø14	29	27x27	92.60
450	414	335	114	Ø565	20-Ø28	9°	Ø585	20-Ø31	9°	175	125	4-Ø14	29	27x27	127.55
500	462	368	129	Ø620	20-Ø28	9°	Ø650	20-Ø34	9°	210	165	4-Ø22	48	36x36	174.45
600	518	428	154	Ø725	20-Ø31	9°	Ø770	20-Ø37	9°	210	165	4-Ø23	48	36x36	266.70
700	618	520	163	Ø840	24-Ø33	7.5°	Ø840	24-Ø37	7.5°	210	165	4-Ø23	60	46x46	352
800	665	580	188	Ø950	24-Ø33	7.5°	Ø950	24-Ø39	7.5°	210	165	4-Ø23	60	46x46	495

【V2DABV Double Flanged BFV DN50 – DN150】







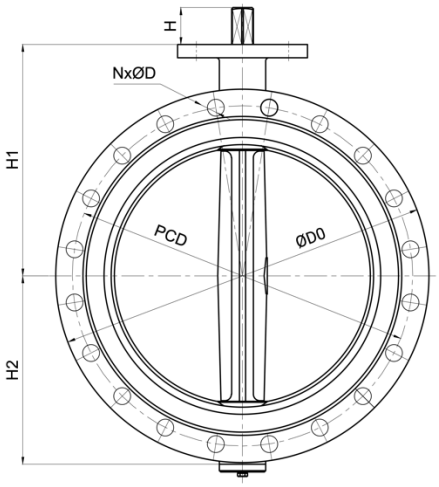
Item	Name	Material
1	Body	GGG40
2	Disc	DI+nylon11/CF8
3	Shaft	SS420
4	Seat	EPDM
5	Lower shaft sleeve	PTFE
6	Middle shaft sleeve	PTFE
7	Short shaft sleeve	PTFE
8	O ring/O-ring	EPDM
9	Split ring	SS416
10	Circlip	65Mn
11	Manual head	Assembly

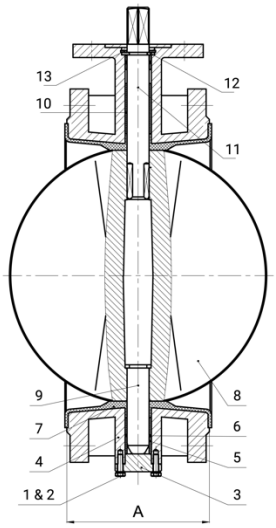
-	Nominal pressure	1.6 MPa
-	Shell pressure	2.4 MPa
-	Sealing pressure	1.76 MPa

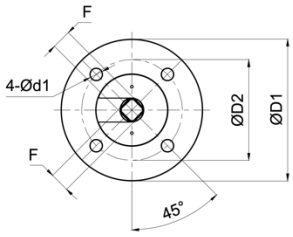
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	GB/T 9113 PN 10				GB/T 9113 PN 16				ØD1	ØD2	4-Ød1	H	FxF	Weight
				PCD	N-ØD	ØD0	α°	PCD	N-ØD	ØD0	α°						(KGS)
50	126	67	108	Ø125	4-Ø19	165	45°	Ø125	4-Ø19	165	45°	65	50	4-Ø7	14	11x11	6.58
65	136	72	112	Ø145	4-Ø19	185	45°	Ø145	4-Ø19	185	45°	65	50	4-Ø7	14	11x11	7.85
80	144	80	114	Ø160	8-Ø19	200	22.5°	Ø160	8-Ø19	200	22.5°	65	50	4-Ø7	14	11x11	9.37
100	153	95	127	Ø180	8-Ø19	220	22.5°	Ø180	8-Ø19	220	22.5°	65	50	4-Ø7	14	11x11	11.75
125	171	107	140	Ø210	8-Ø19	250	22.5°	Ø210	8-Ø19	250	22.5°	90	70	4-Ø10	19	14x14	15.10
150	185	125	140	Ø240	8-Ø23	285	22.5°	Ø240	8-Ø23	285	22.5°	90	70	4-Ø10	24	17x17	18.90

【V2DABV Double Flanged BFV DN200...DN800】







Item	Name	Material
1	Bolt	Q235-A
2	Spring washer	Q235-A
3	Bottom end cover	GGG40
4	Body	GGG40
5	Short shaft sleeve	PTFE
6	O ring	EPDM
7	Seat	EPDM
8	Disc	DI+nylon11/CF8
9	Lower shaft	SS420
10	Long shaft sleeve	PTFE
11	Upper shaft	SS420
12	Split ring	SS416
13	Circlip	65Mn

-	Nominal pressure	1.0 MPa / 1.6 MPa
-	Shell pressure	1.5 MPa / 2.4 MPa
-	Sealing pressure	1.1 MPa / 1.76 MPa

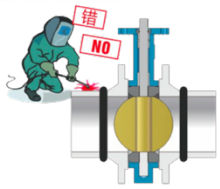
Item	Name	Technical requirements
1	Design	GB/T12238
2	Top Flange	ISO 5211
3	Testing	GB/T13927
4	Side Flange	GB/T9113 PN10/PN16
5	Unspecified Tolerance	GB/T1804-m

DN	H1	H2	A	ØD0	PCD	N-ØD	α°	ØD1	ØD2	FxF	H	4-Ød1	Weight (KGS)
200	226	156	152	340	Ø295	8xØ23 12xØ23	22.5° 15°	125	102	17x17	24	4-Ø12	30.10
250	262	186	165	395 405	Ø350 Ø355	12xØ23 12xØ28	15°	125	102	22x22	24	4-Ø12	41.40
300	297	211	178	445 460	Ø400 Ø410	12xØ23 12xØ28	15°	150	102	22x22	24	4-Ø12	56.85
350	315	236	190	505 520	Ø460 Ø470	16xØ23 16xØ28	11.25°	150	125	27x27	29	4-Ø14	74.00
400	384	267	216	565 580	Ø515 Ø525	16xØ28 16xØ31	11.25°	150	125	27x27	29	4-Ø14	101.00
450	410	320	222	615 640	Ø565 Ø585	20xØ28 20xØ31	9°	175	140	36x36	48	4-Ø18	125.05
500	446	357	229	670 715	Ø620 Ø650	20xØ28 20xØ34	9°	210	165	36x36	48	4-Ø22	157.25
600	515	420	267	780 840	Ø725 Ø770	20xØ31 20xØ37	9°	210	165	36x36	48	4-Ø23	238.70
700	560	465	292	895 910	Ø840 Ø840	24xØ31 24xØ37	7.5°	210	165	46x46	60	4-Ø23	346.00
800	620	516	318	1015 1025	Ø950 Ø950	24xØ31 24xØ39	7.5°	210	165	46x46	60	4-Ø23	451.00

Installation instructions

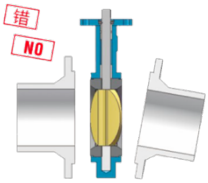
weld

It is not possible to weld the flange on the side of the installed butterfly valve



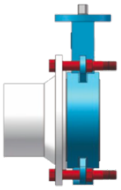
Parallel installation

The flange should be installed in parallel



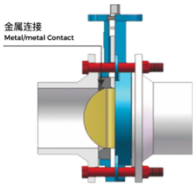
Tube end use

The working pressure shall not exceed 40% of the nominal pressure.



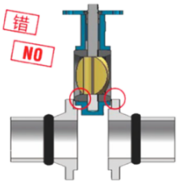
Bolt fastening

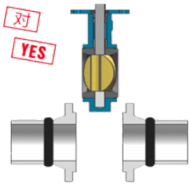
Tighten the bolts slowly to strengthen the metal connection



distance

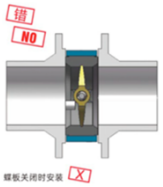
There should be enough distance between the two flanges to allow the valve to fit in without damaging the bushing

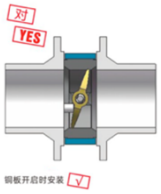




Bushing protection

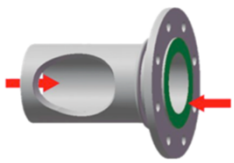
Do not install the butterfly plate when it is closed, in this case, the bushing may be deformed





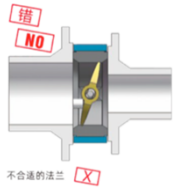
cleaning

Cleaning pipes and gaskets around



Flanges are consistent

Inconsistent flanges can clog the butterfly plate, or create vortices in the pipe



Seals

The sealing ring between the flange and the bushing can not be used, and the sealing ring between the flange and the bushing will cause the bushing to deform so that it will block the butterfly plate and cannot be closed