



Value Valves

VF-75 SERIES Centric Butterfly Valves

Centric Butterfly Valves VF-75 Series VALUE VALVES

INTRODUCTION OF THE VALVE



The two pieces of body wafer type butterfly valve and a concentric disc and seat configuration to with whole package PTFE sealed structure, takes whole package PTFE painting skills for the body. The painting thickness can reach up to 3~4mm , which effectively avoids the direct interaction between the body and the medium and the medium's corrosion for the body. Different painting skills and materials of valve's disc are taken according to the customer's need, such as PTFE and nylon painting, stainless steel and bronze material for the body, etc.

FEATURES

Absolutely tight sealing with flow in either direction The valve body and disc are accurately machined which results in low operating torque and long service life and reliability PTFE liner seated prevents corrosion and guarantees long service life
Can be disassembled, material specific recycling possible
Can be installed at the end of pipe for lugged type butterfly valve

APPLICATIONS

The products are used in a wide range of industries worldwide including:

- ❑ Chemical and petrochemical industries
- ❑ Water & Wastewater Treatment
- ❑ Pneumatic materials handling technology
- ❑ Shipbuilding
- ❑ Food Processing
- ❑ Petroleum Refining & Oilfield
- ❑ Power generation industry
- ❑ Mining
- ❑ Irrigation
- ❑ Textile
- ❑ Desalination
- ❑ Steel Production
- ❑ Sugar/Ethanol
- ❑ HVAC



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VALUE VALVES

DESIGN DETAILS

NECK

An extended neck design in all valve sizes allows for 2" of piping insulation and provides easy access for mounting actuators.

FLANGE LOCATING HOLES

Locating holes in the wafer version provide quick and precise alignment during valve installation eliminating disc interference with adjacent pipe I.D.

TOP STEM BUSHING

A top stem bushing, retained by a stainless steel ring, is provided to absorb actuator side thrusts and is acetal as standard or PTFE as an option.

BODY

Bodies are two piece wafer or lug style and are epoxy coated. All bodies meet full ASME Class 150 and DIN 3840 pressure ratings for hydrostatic requirements.

DISC

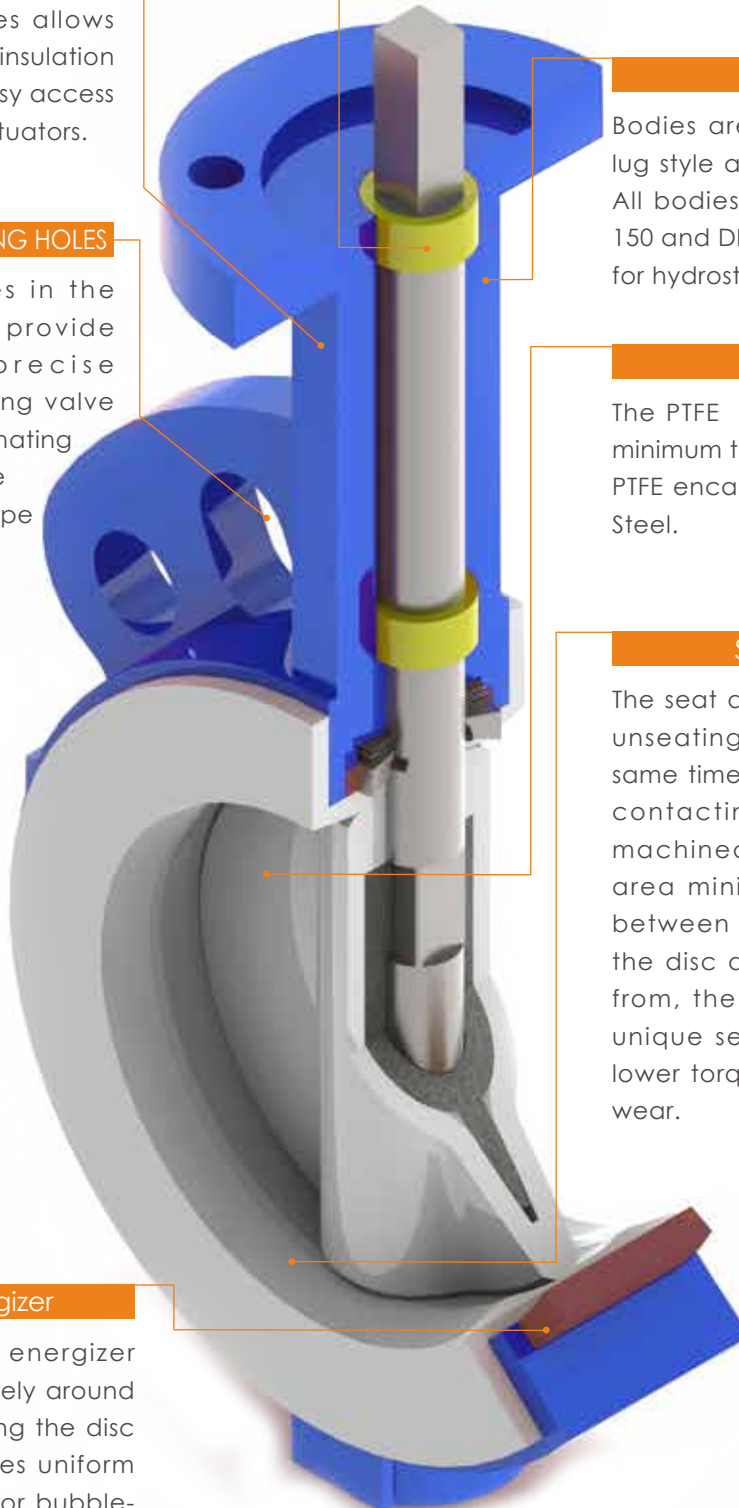
The PTFE disc has 1/8" (3 mm) minimum thickness of pure, virgin PTFE encapsulated over Stainless Steel.

SEAT DESIGN

The seat design reduces seating unseating torque and, at the same time, reduces wear on the contacting parts. Curvatures machined into the inner seat area minimize contact forces between the disc and seat as the disc approaches, or opens from, the closed position. This unique seat geometry permits lower torques and reduces seat wear.

Seat Energizer

A resilient seat energizer extends completely around the seat, including the disc hub. This provides uniform force sufficient for bubble-tight shut off.



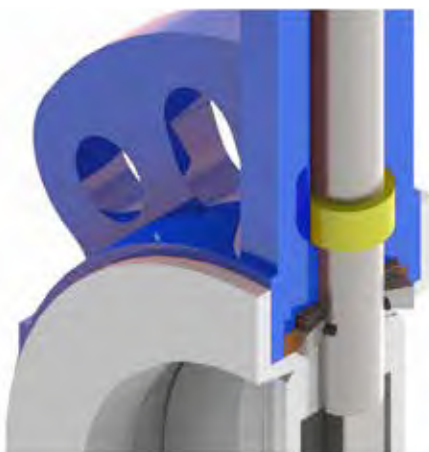
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KEY DESIGN



■ TOP STEM BUSHING:

The bushing can assure the correct interaction between the upper shaft and the lower shaft, at the same time, it can make sure the smooth running of the shaft.



- Disc spring, two sets for a group, is a state of compressive deformation in the body. It will impose elastic force on the press sleeve, compact the O ring and seat, improve axial sealing, then provided the bearing stress for the seat and disc, to cover the shortage of elasticity about PTFE seat.

■ SEAT DESIGN:

The seat design reduces seating unseating torque and, at the same time, reduces wear on the contacting parts. Curvatures machined into the inner seat area minimize contact forces between the disc and seat as the disc approaches, or opens from, the closed position. This unique seat geometry permits lower torques and reduces seat wear.

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VF-75 SERIES



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TECHNICAL DATE(DN50-DN600)

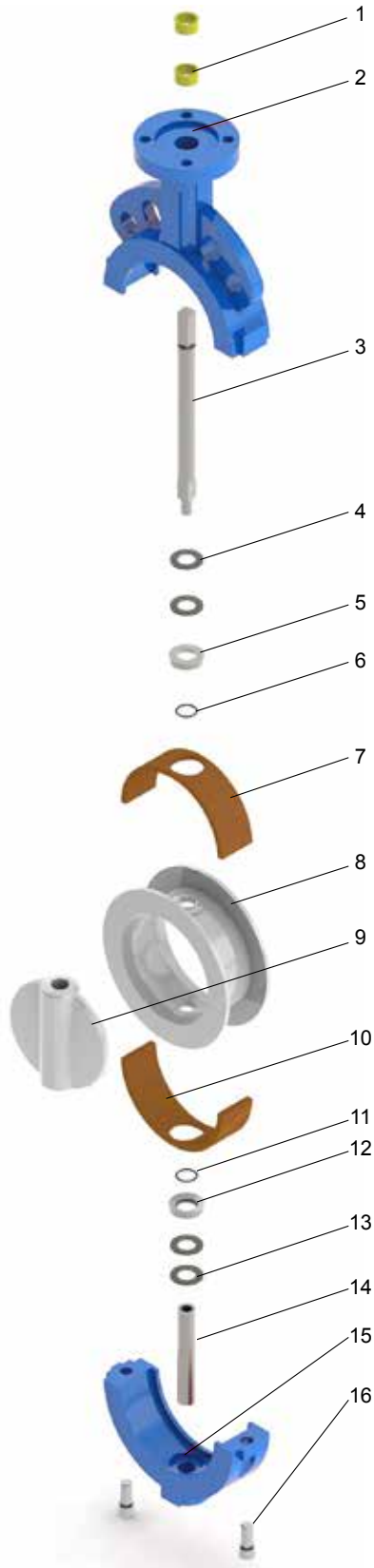
- Design Standard:
 - EN593
 - API 609
 - BS5155
 - MSS SP-67
- Face to Face:
 - DIN558-1
 - API609
 - ISO5752
 - BS5155
- Testing Inspection:
 - EN 12266-1, ISO5208, API598
- Flange Accommodation:
 - ASME B 16.1 125LB
 - ASME B 16.5 150LB
 - BS 4504 PN10/16
 - DIN 2501 PN10/16
 - ISO7005 PN10/16
 - EN1092 PN10/16
 - JIS B 2220 10K
- Top Flange:
 - ISO 5211 (according to the customer need)
- Temperature Range:
 - 35°C to +200°C
 - (depending on pressure, medium and material)
- APPLICATIONS:
 - flesh water, waste water, sewage, sea water, air, vapor, food, oils, medicine alkalis, salt, ect.
- Max Working Pressure:
 - DN50-DN250 16Bar
 - DN300-DN600 10Bar



Centric Butterfly Valves VF-75 Series

VALUE VALVES

PARTS AND MATERIALS



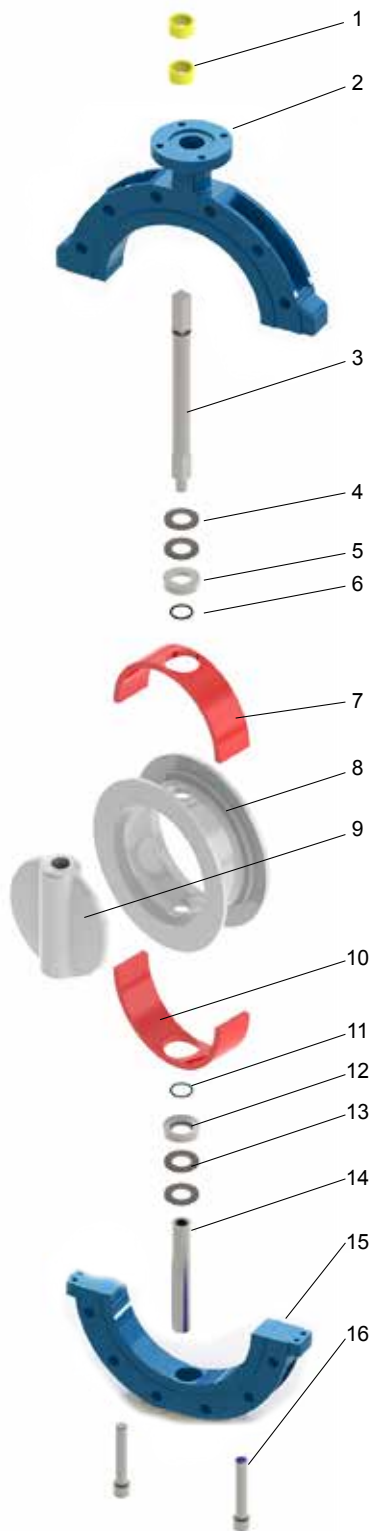
DN50-DN300

No.	Item	Material
1	Bushing	PTFE
2	Up Body	GGG40 Carbon Steel Stainless Steel
3	Up Shaft	Stainless Steel
4	Spring Planet	Spring Steel
5	Gland	Stainless Steel
6	"O"Ring	NBR /VITON
7	Seat Energizer	Silicone
8	Body seat	PTFE/FRP
9	Disc	GGG40 GGG45 GGG50+PTFE/PFA WCB WCC LCC LCB+PTFE/PFA CF8 CF8M CF3 CF3M+PTFE/PFA C95400 C95500 C95800 +PTFE/PFA
10	Seat Energizer	Silicone
11	"O"Ring	NBR/ VITON
12	Gland	Stainless Steel
13	Spring Planet	Spring Steel
14	Down Shaft	Stainless Steel
15	Down Body	GGG40 Carbon Steel Stainless Steel
16	Hex Bolts	Stainless Steel

Centric Butterfly Valves VF-75 Series VALUE VALVES

PARTS AND MATERIALS

DN350-DN600

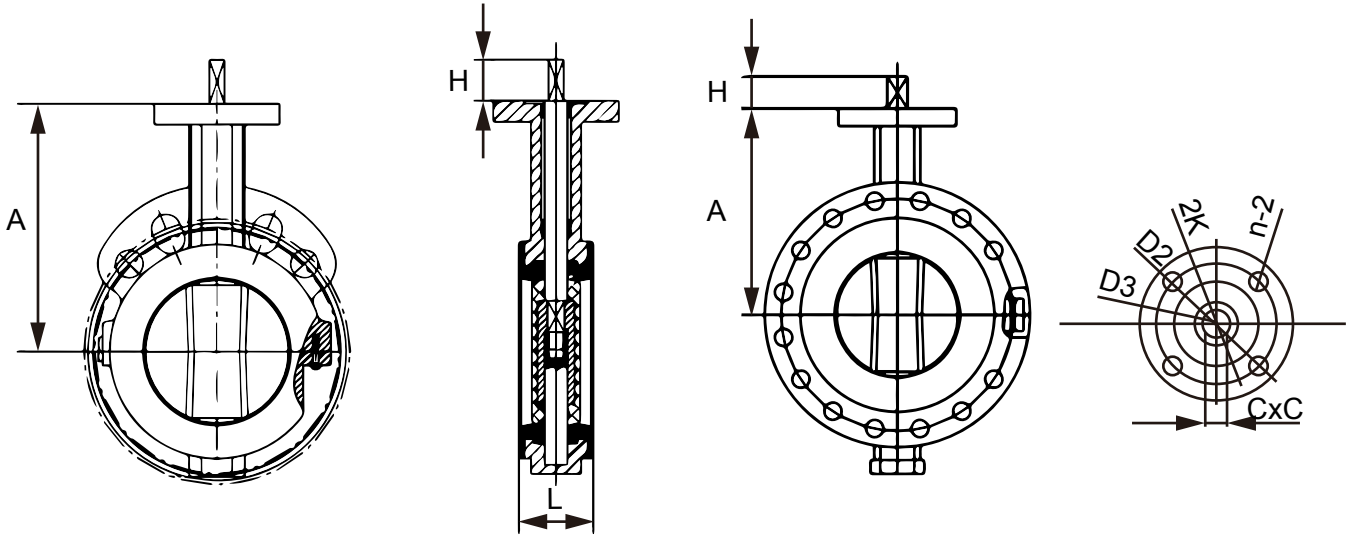


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DIMENSIONS

DN50-DN600



SIZE(DN)	L	A	H	CxC	ISO 5211	D2	D3	k	n- ϕ	$\phi 2$
50	43	140	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.60
65	46	150	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.60
80	46	160	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.60
100	52	178	14	11x11	F07	90	55	70	4-10	15.77
125	56	190	17	14x14	F07	90	55	70	4-10	18.92
150	56	200	17	14x14	F07	90	55	70	4-10	18.92
200	60	240	22	17x17	F10	125	70	102	4-12	22.10
250	68	273	22	22x22	F10	125	70	102	4-12	28.45
300	78	310	22	22x22	P10	125	70	102	4-12	31.60
350	78	346	22	22x22	F10	125	70	102	4-12	31.60
400	102	375	36	27x27	F14	175	100	140	4-18	23.15
450	114	406	36	27x27	F14	175	100	140	4-18	37.96
500	127	438	36	36x36	F14	175	100	140	4-18	41.12
600	154	495	46	36x36	F16	210	130	165	4-22	50.65

CONNECTION DIMENSIONS

SIZE(DN)	Outer Diameter Of Flange				Diameter Of Center Circle				Number And Diameter Of Bolt Holes			
	150LB	PN10	PN16	JIS10K	150LB	PN10	PN16	JIS10K	150LB	PN10	PN16	JIS10K
50	150	165	165	155	120.7	125	125	120	4-19	4-19	4-19	4-19
65	180	185	185	175	139.7	145	145	140	4-19	4-19	4-19	4-19
80	190	200	200	185	152.4	160	160	150	4-19	8-19	8-19	8-19
100	230	220	220	210	190.5	180	180	175	8-19	8-19	8-19	8-19
125	255	250	250	250	215.9	210	210	210	8-22	8-19	8-19	8-23
150	280	285	285	280	241.3	240	240	240	8-22	8-23	8-23	8-23
200	345	340	340	330	298.5	295	295	290	8-22	8-23	12-23	12-23
250	405	395	405	400	362.0	350	355	355	12-26	12-23	12-28	12-25
300	485	445	460	445	431.8	400	410	400	12-26	12-23	12-28	16-25
350	535	505	520	490	476.3	460	470	445	12-29	16-23	16-28	16-25
400	595	565	580	560	539.8	515	525	510	16-29	16-28	16-31	16-27
450	635	615	640	620	577.9	565	585	565	16-32	20-28	20-31	20-27
500	700	670	715	675	636.0	620	650	620	20-32	20-28	20-34	20-27
600	815	780	840	795	749.3	725	770	730	20-35	20-31	20-37	24-33

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HEAD LOSSES

Formulae for calculation of rate flow

Liquids:

$$Q = \frac{KV}{\sqrt{\frac{PS}{\Delta P}}}$$

- Q rate of flow (m3/h)
- PS specific gravity (water=1)
- ΔP pressure drop (bar)

Gas:

$$Q = 28.5 \frac{KV}{\sqrt{\frac{PS}{P_2 \cdot \Delta P}}}$$

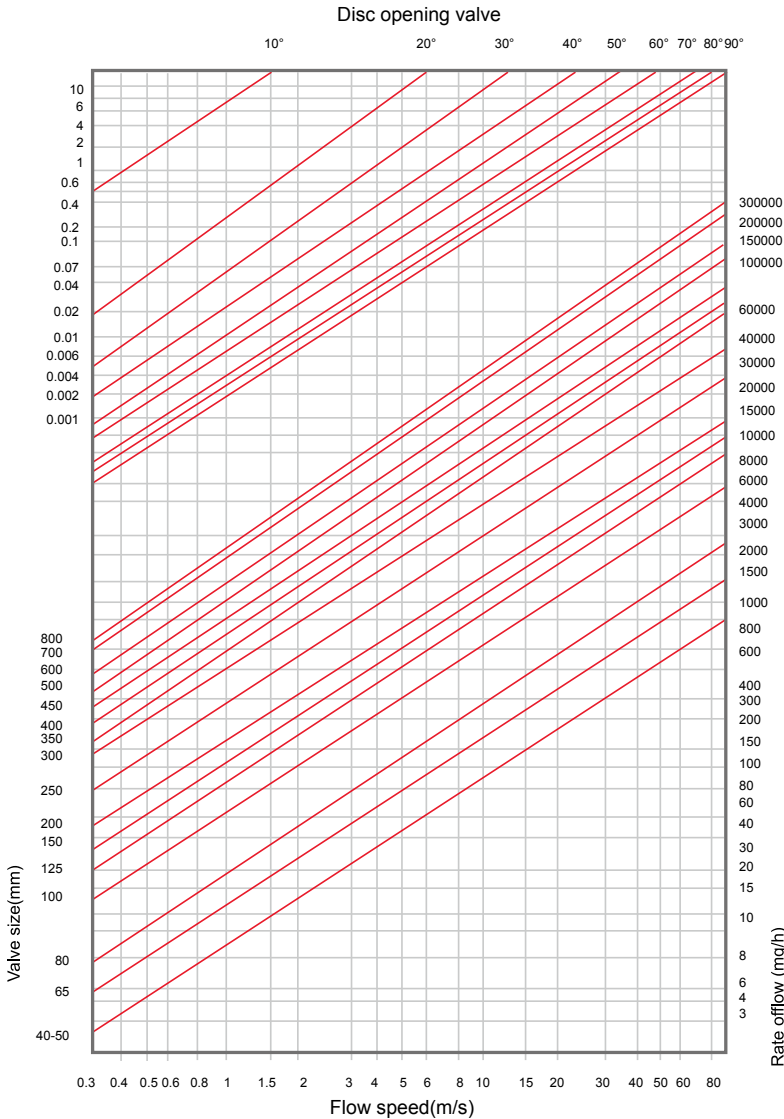
- Q rate of flow (m3/h)
- PS specific gravity (air=1)
- ΔP pressure drop (bar)
(less than 1/2 inlet pressure)
- P2 outlet pressure

Steam:

$$Q = 22.5 \cdot KV \cdot \sqrt{P_2 \cdot \Delta P}$$

- Q rate of flow (Kg/h)
- ΔP pressure drop (bar)
(less than 1/2 inlet pressure)
- P2 outlet pressure

Calculation of the rate of flow equivalent to H2O:
For different liquid, gas or steam head losses are determined by equivalent water of flow, as follows:
Qe equivalent water flow(mc/l or l/s)
Q fluid flow(mc/l or l/s)
d fluid specific gravity(Kg/mc)



VALUE KV (CV=1.17KV)

Size (mm)	Flow in Gpm@1 PSI P@ Various Disc Angles								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	0.1	5	12	24	45	64	90	125	135
65	0.2	8	20	37	65	98	144	204	220
80	0.3	12	22	39	70	116	183	275	302
100	0.5	17	36	78	139	230	364	546	600
125	0.8	29	61	133	237	392	620	930	1022
150	2	45	95	205	366	605	958	1437	1579
200	3	89	188	408	727	1202	1903	2854	3136
250	4	151	320	694	1237	2047	3240	4859	5340
300	5	234	495	1072	1911	3162	5005	7507	8250
350	6	338	715	1549	2761	4568	7230	10844	11917
400	8	464	983	2130	3797	6282	9942	14913	16388
450	11	615	1302	2822	5028	8320	13168	19752	21706
500	14	971	1674	3626	6465	10698	16931	25396	27905
600	22	1222	2587	5605	9989	16528	26157	39236	43116

TORQUE CHART (Nm)

pressure rating mm	1.0MPA	1.6MPA
	Lubricating (N.m)	
50	13	16
65	22	26
80	33	40
100	55	66
125	85	102
150	133	160
200	266	320
250	387	465
300	540	647
350	1012	1214
400	1584	-
450	1958	-
500	2431	-
600	4378	-

To use torque chart, note the following:
1. No Including Safety Factor
2. Test medium: water / room temperature

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INSTALLATION INSTRUCTIONS



The butterfly valve can be installed on the pipeline, which is at any angle.

- ❑ The valve should be installed in the location being sure to provide convenient operation, maintenance and replacement.
- ❑ As mounting the butterfly valve, fail to consider flow direction of mediums in pipeline, that is to say, the valve can be used in double way.
- ❑ Before installation, the butterfly valve should be stored in ware house and prevent it from moisture and in so doing, the disc should be kept to open at an angle of 15 degree.
- ❑ Before installation, the following processes should be completed:

(1) Check carefully and confirm the operation condition of the valve is in line with the technical specification and requirements.

(2) Clean the disc sealing area and body sealing completely. It is not permitted to open the disc before cleaning.

(3) Check and confirm the handle is strongly collected to the flange and stem.

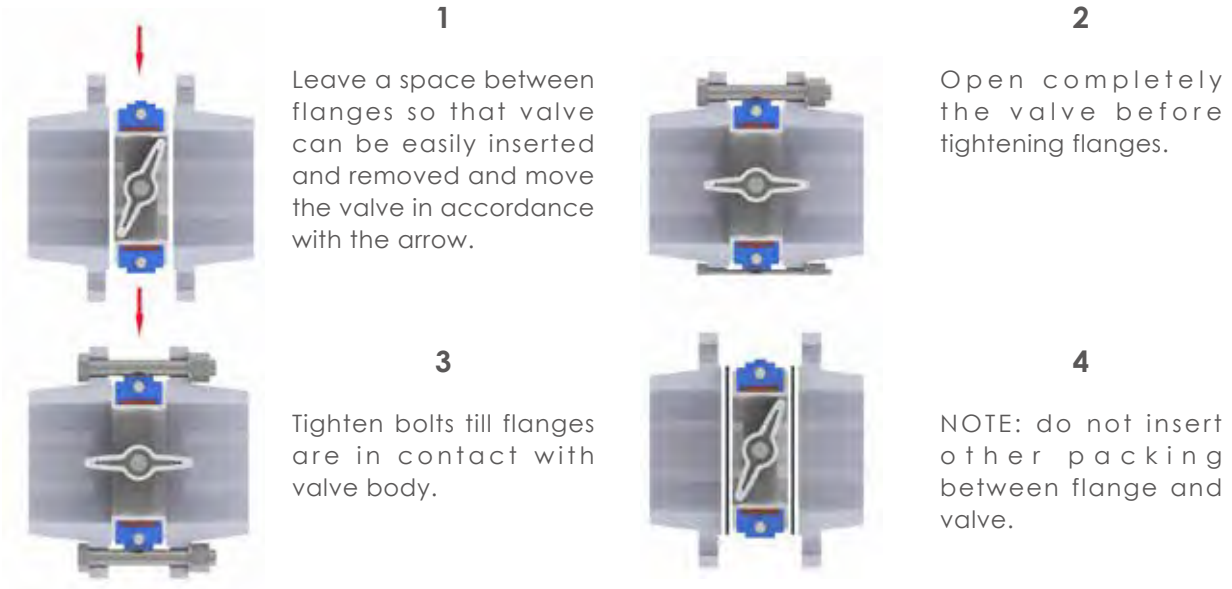
- ❑ As mounting the butterfly valve in pipeline, the load for tightening connection bolts should be uniformed.
- ❑ After installation, the disc must be opened in the case of the strength pressure test on pipeline being carried out.
- ❑ After being installed, the valve should be examined regularly. The main item to be checked are as follows:
 - (1) Whether the valve seat and 'O' sealing ring have been damaged.
 - (2) Check the sealing effects of the disc sealing area.
 - (3) After the valve was examined and assembled, no scuffing happens at the time of on-off rotation.
 - (4) After the valve was examined and assembled, the sealing test should be carried out as the introduction.
 - (5) After each examination, detailed records should be filed for reference.



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INSTALLATION

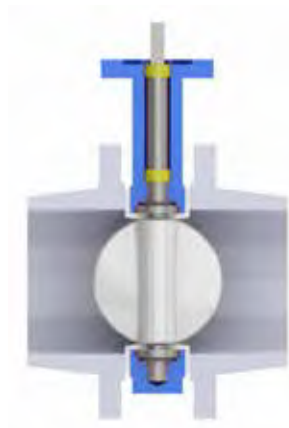


NOTE:

Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat. Clean carefully the welding to avoid that slags damage the seat.

Installation for powders and muddy fluids

In case of use with powders or muddy fluids, install the valve with horizontal rotation axis, to allow sediments to flow easily on opening.



❌ **Wrong**
Vertical rotation axis



✅ **Right**
Horizontal rotation

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VALUE VALVES

WORK PRINCIPLE

- ▣ This product mainly consists of body, stem, disc, seat bushings etc. The rotation of actuating device makes stem and disc revolved, which ensures on-off operations and flow control.
- ▣ The rotation of the actuating device ensures dependability and position disc control and position disc control and water flow control. Rotate handle wheel clockwise, the valve is close.

ADVANTAGE

1. Small in size and light in weight. Easy installation and maintenance. It can be mounted wherever needed.
2. Simple and compact construction, quick 90degrees on-off operation.
3. Minimized operating torque, energy saving.
4. Bubbles-tight sealing with no leakage under the pressure testing
5. Wide selection of materials, applicable for various medium.
6. Long service life. Standing the test of tens of thousands opening/closing operations.
7. Flow curve tending to straight line. Excellent regulation performance.

TROUBLE & REMEDY

Trouble	Cause	
Leakage in sealing area	Disc sealing area or body sealing seat scratched, disc is not closed completely. Hexagonal socket head bolts on clamping ring are not tightened completely.	Repair the disc sealing replace repair the body sealing seat, adjust actuator to close the disc completely, tighten loosed hexagonal socket head bolts.
Leakage in shaft end	The seat or The 'O' ring is riot pressed completely.	Replace the body sealing seat
Leakage in joint area between valve face and relevant flange on pipeline	Connection bolts are not screwed up uniformly,	Tighten the connection bolts evenly.

VF-8 Series 136 inch
High Performance
Triple-Offset Butterfly Valves



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