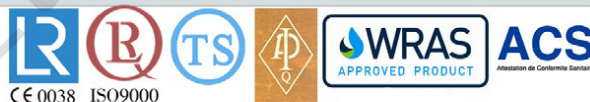


Introduction of the valve



The two pieces of body wafer type butterfly valve and a concentric disc and seat with PTFE. The painting thickness can reach up to 3~4mm. Heavy duty top plate is drilled and slotted to ISO 5211 and other existing valve drillings, thus allowing ease of automation and interchangeability. Discs have a streamlined design, providing higher Cv and lower pressure drop. The Flow Line shaft seal is achieved through a continuous pressure exerted from the flatted area of the seat to the machined flatted area of the disc. The raised flatted area of the seat corresponds precisely with the machined flatted hub area of the disc. These matching flatted surfaces provide a wide sealing area for the elastomer backed PTFE seat to exert pressure against, forming the primary seal. Secondary sealing is provided by a 360° machined radius on the flatted hub.

Features

- 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
- Splitted body design
- Can be installed in any desired position
- Maintenance-free
- Can be disassembled, material-specific recycling possible

General 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



Parts of name and purpose



CE 0038 ISO9000

NECK: An extended neck design in all valve sizes allows for piping insulation and provides easy access for mounting actuators.

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

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.

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.

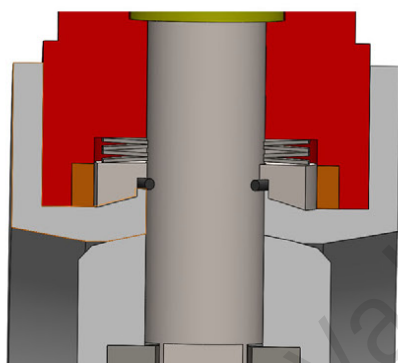
Seat Energizer: A resilient seat energizer extends completely around the seat, including the disc hub. This provides uniform force sufficient for bubble-tight shut off.

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.

Key Design

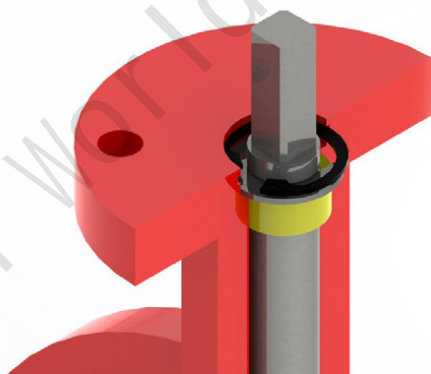


CE 0038 ISO9000



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.

The seat is designed as shown in the figure, the advantage of this design is better sealing, effectively preventing the media leakage from the valve cavity.



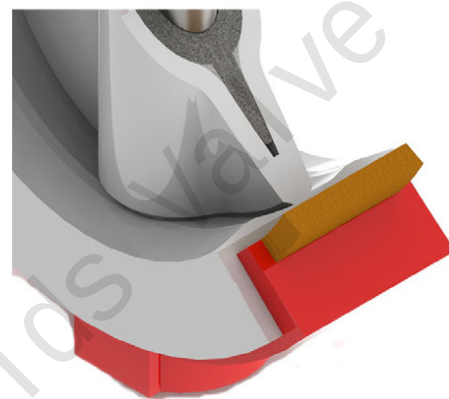
TOP STEM BUSHING:

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.

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.



CBF05E-TA04



Extensive field research and engineering have developed this state of the art design which provides excellent shut off protection (bubbletight shut off) and high C_v values. The Series CBF05E-TA04 is crafted in a variety of materials such as PTFE, tainless Steel, UHMWPE and special alloys to fit a wide range of customer requirements. As with all WORLDS's products, precision manufacturing and exceptional quality remain the keys to a proven record of long service life.

Technical Data(DN50-DN600)

Design Standard

EN593 API 609 BS5155 MSS SP-67

Face to Face

DIN558-1 API609 DIN3202 K1 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

AS 2129 Table D/E

Top Flange

ISO 5211(accroding to the customer need)

Temperature Range

- 35 to +200(depending on pressure,medium and material)

Suitable Medium

flesh water, waste water,sewage,seawater,air,vapor,food,oils,medicine

alkailis, salt, ect

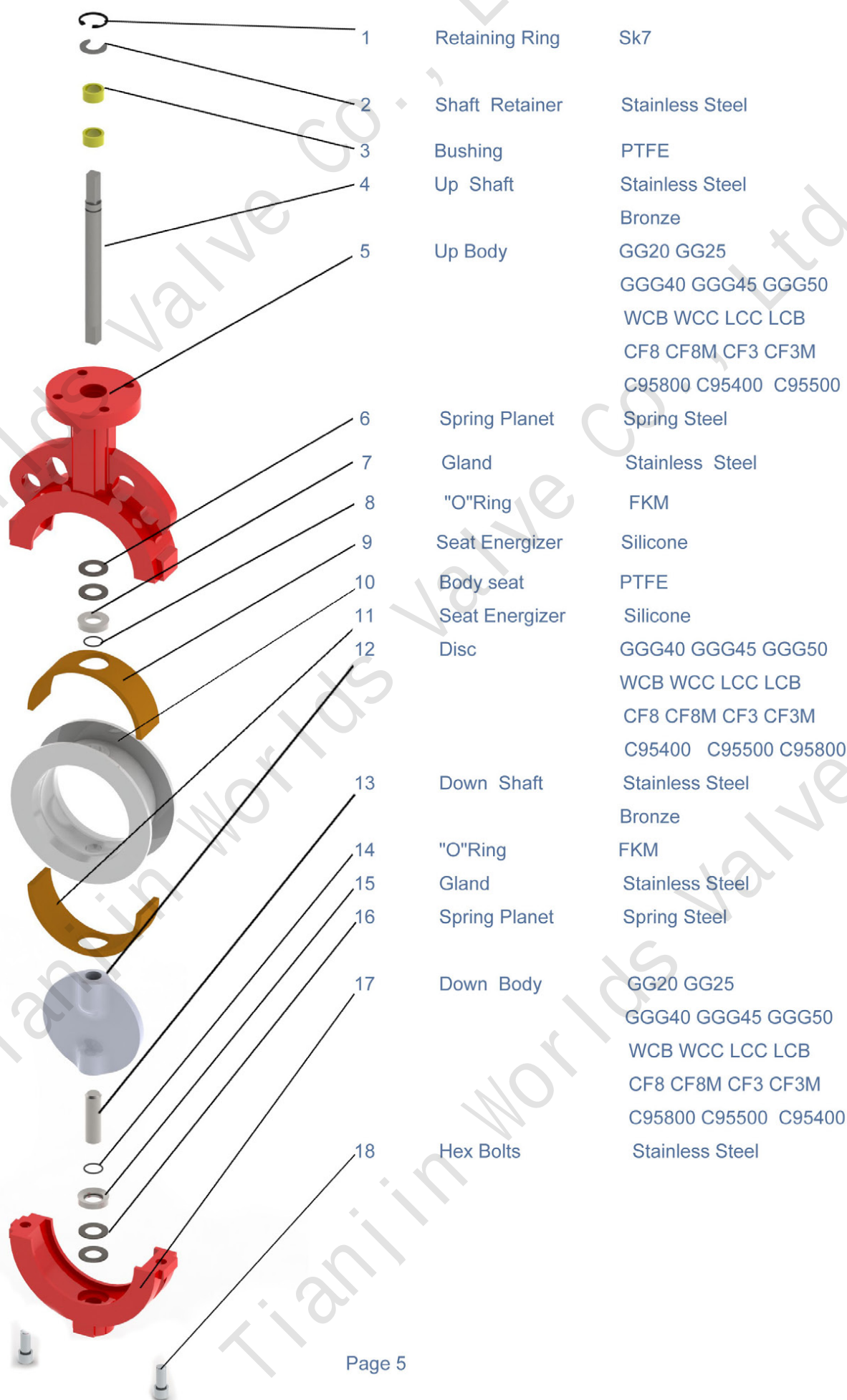
Max Working Pressure

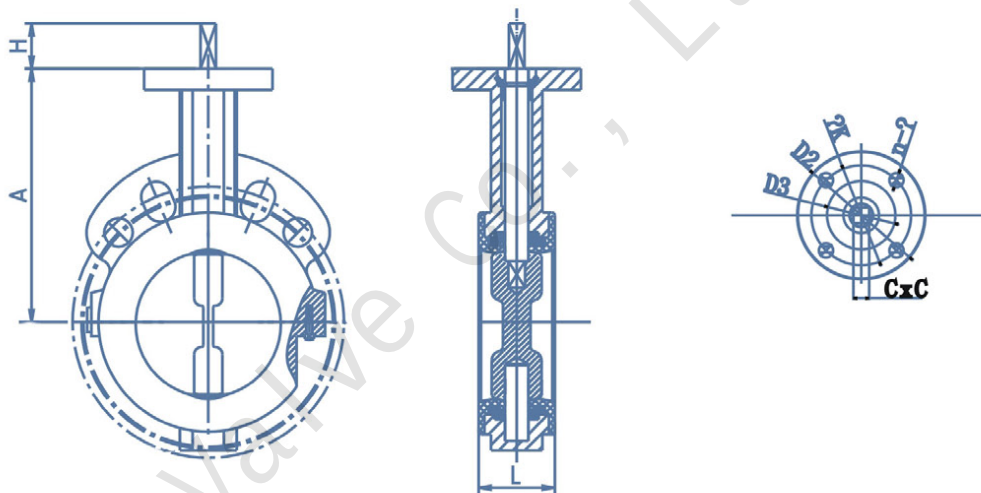
DN50-DN250 16Bar

DN300-DN600 10Bar



Main Spare Part Material Quality



Drawing

Outline Dimensions

SIZE	L	A	H	CxC	IS05211	D2	D3	k	n-d	ø2
DN50	43	140	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.6
DN65	46	150	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.6
DN80	46	160	14	9x9	F07/F05	90/65	55/35	70/50	4-10/7	12.6
DN100	52	178	14	11x11	F07	90	55	70	4-10	15.77
DN125	56	190	17	14x14	F07	90	55	70	4-10	18.92
DN150	56	200	17	14x14	F07	90	55	70	4-10	18.92
DN200	60	240	22	17x17	F10	125	70	102	4-12	22.10
DN250	68	273	22	22x22	F10	125	70	102	4-12	28.45
DN300	78	310	22	22x22	F10	125	70	102	4-12	31.60
DN350	78	346	22	22x22	F10	125	70	102	4-12	31.60
DN400	102	375	36	27x27	F14	175	100	140	4-18	33.15
DN450	114	406	36	27x27	F14	175	100	140	4-18	37.95
DN500	127	438	36	36x36	F14	175	100	140	4-18	41.12
DN600	154	495	46	36x36	F16	210	130	165	4-22	50.65

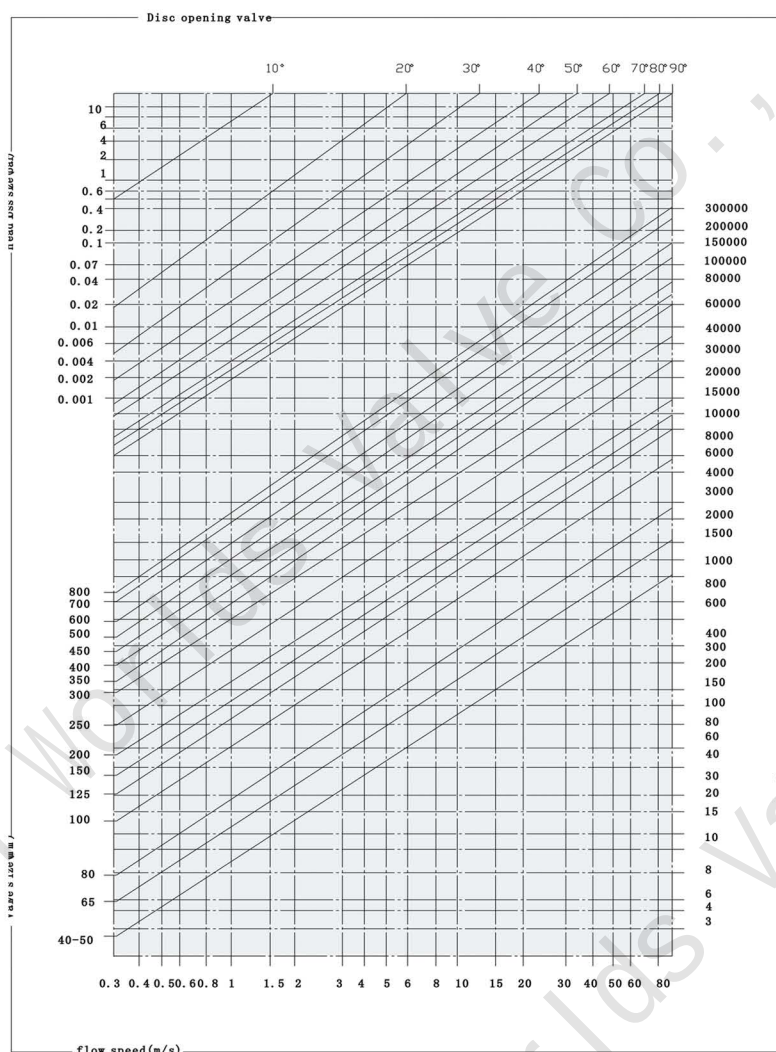
Connection Dimensis

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	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	635	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

Head losses

Formulae for calculation of rate flow

Notes: Values indicated in this page is only for information



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

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 follow:

Qe equivalent water flow

(mc/l o l/s)

Q fluid flow

(mc/l o l/s)

d fluid specific gravity

(Kg/mc)

Values CV (CV=1.16KV)

Flow in Gpm@1 PSI P@ Various Disc Angles									Full 90°
(mm)	10°	20°	30°	40°	50°	60°	70°	80°	Open
40	0.04	3	6	12	23	32	46	60	69
50	0.08	4	10	20	38	54	77	106	115
65	0.17	7	17	31	55	83	122	173	187
80	0.26	10	19	33	60	99	156	234	257
100	0.43	14	31	66	118	196	309	464	510
125	0.68	25	52	113	201	333	527	791	869
150	1.7	38	81	174	311	514	814	1221	1342
200	2.55	76	160	347	618	1022	1618	2426	2666
250	3.4	128	272	590	1051	1740	2754	4130	4539
300	4.3	199	421	911	1624	2688	4254	6381	7013
350	5	287	608	1317	2347	3883	6146	9217	10129
400	7	394	836	1811	3227	5340	8451	12676	13930
450	9	523	1107	2399	4274	7072	11193	16789	18449
500	12	825	1423	3084	5495	9093	14391	21587	23722
600	19	1039	2199	4764	8491	14049	22233	33351	36649

Installation Instructions

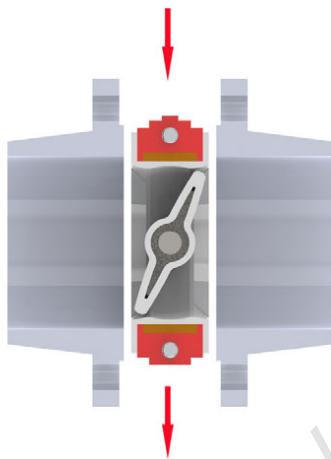
The butterfly valve can be installed on the pipeline, which is at any angle.

1. The valve should be installed in the location being sure to provide convenient operation, maintenance and replacement.
2. 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.
3. 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.
4. 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.
5. As mounting the butterfly valve in pipeline, the load for tightening connection bolts should be uniformed.
6. After installation, the disc must be opened in the case of the strength pressure test on pipeline being carried out.
7. 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.

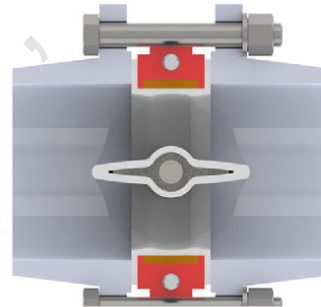


INSTALLATION

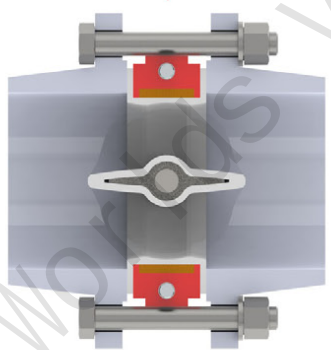
Assembly



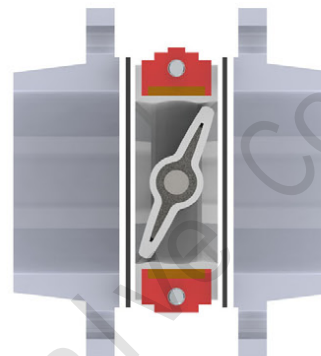
1 Leave a space between flanges so that valve can be easily inserted and removed and move the valve in accordance with the arrow



2 Open completely the valve before tightening flanges



3 Tighten bolts till flanges are in contact with valve body

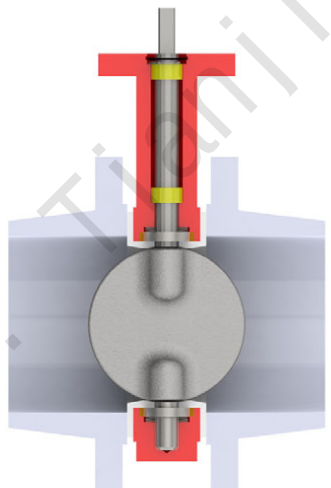


4 **NOTE:** do not insert other packing between flange and valve

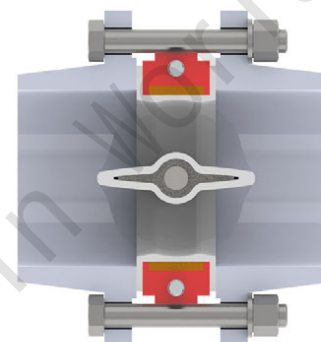
NOTE: Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat, Clean carefully the welding to avoid that slags damage the seat

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 axis

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	remedy
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 not 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.