Worlds Valve

CE 0038 ISO9000

TIANJIN WORLDS VALVE CO.,LTD.

天津沃得斯阀门有限公司

Company Profile

TIANJIN WORLDS VALVE LTD. is located at TIAN JIN BIN HAI where is only 3 kilometers away from Tianjin Xingang Port,TIANJIN WORLDS VALVE LTD. is a specialized manufacture enterprise that focuses producing, installing, sale and service. The main products include Center Line Butterfly Valve, Flanged Butterfly Valve, Metal Butterfly Valve, Check Valve, Gate Valve, Waterpower Control Valve, Microresistance Slow Close Check Valve, Multi-function Pump Control Valve and their series products. Moreover, we can produce control valve and pressure reducing valve that are different materials, pressures, specifications actuation ways. Our products include more than 50 serials and 1200 species, and the annual production output is more than 8.000 metric tons. WORLDS valves have been selling well a ll over China and exporting to Europe, America and other countries and areas, which are used widely in water supply and drainage, electric power, petrol chemical industry, metallurgy and other trades. Our products are quite creative, good quality, good price and excellent credit, so customers trust our products.

WORLDS has advanced technicians and engineers and has a lot of large and middle machines including 178 sets of manufacturing equipments and 32 sets of performance testing equipments importing from overseas. Our products have original design, exquisite technique, perfect manufacture and complete testing ways. It has passed ISO 9001 international quality system certification of DNV.WORLDS must supply best products and service for all customers.

Certificates And Patents

WORLDS has advanced technicians and engineers and has a lot of large and middle machines including 178 sets of manufacturing equipments and 32 sets of performance testing equipments importing from overseas. Our products have original design, exquisite technique, perfect manufacture and complete testing ways. It has made special equipment license TS, ISO9001 quality system certification and the European Pressure Equipment CE certification, the American Petroleum Institute API certification and a series of international certification auth -ority, over the years, with its first class enterprise management and product quality consistent valve industry . in order to ensure product quality, the company's main production equipment and testing instruments all use well-known brand, all products are in strict accordance with international standards, whether it is production management, and quality assurance system are comprehensive use of international advanced mode.

Measuring And Packaging






Production System

The perfect process not only because of our advanced manufacturing technique equipment and complete tests but also for worlds multi department teams.

The technicians participance make our products be equipped with excellent quality and potential value during they being well manufactured



Introduction of the valve

The valve body shall be one-piece wafer design with extended neck and a concentric disc and seat configuration to allow for 2”~24” of piping insulation, have flange hole drilling per international flange standards and be provided with a non-corrosive bushing and self-adjusting stem seal. Flange locating holes shall be provided on wafer bodies to allow for quick and precise alignment during valve installation. The valve disc edge and hub on metal discs shall be spherically machined and hand polished for minimum torque and maximum sealing capability. The valve stem shall be one-piece design and be mechanically retained in the body neck and no part of the stem shall be exposed to the line media. The seat shall totally encapsulate the body isolating the body from the line media and no flange gaskets shall be required. The wafer valve shall be rated for bubble-tight shut-off for bidirectional service to 16 Bar on sizes 2”-12” (50mm-300mm) and to 10Bar on sizes 14”-24” (350mm-600mm). The valve shall be tested for tight shut-off to 110% of the rated pressure. The Valve shall have the following approvals and certifications: CE/PED Certification, ANSI 61-2008 (Potable Water) Certification, SIL, ABS, Bureau Veritas, DNV, ISO9001,API,

Butterfly Valve CBF02-TSF03

Max working pressure

DN50-DN300 16Bar

Flange PN10 PN16 150LB JIS 5K /10K

DN350-DN600 10Bar

Flange PN10 PN16 150LB JIS 5K /10K

Design

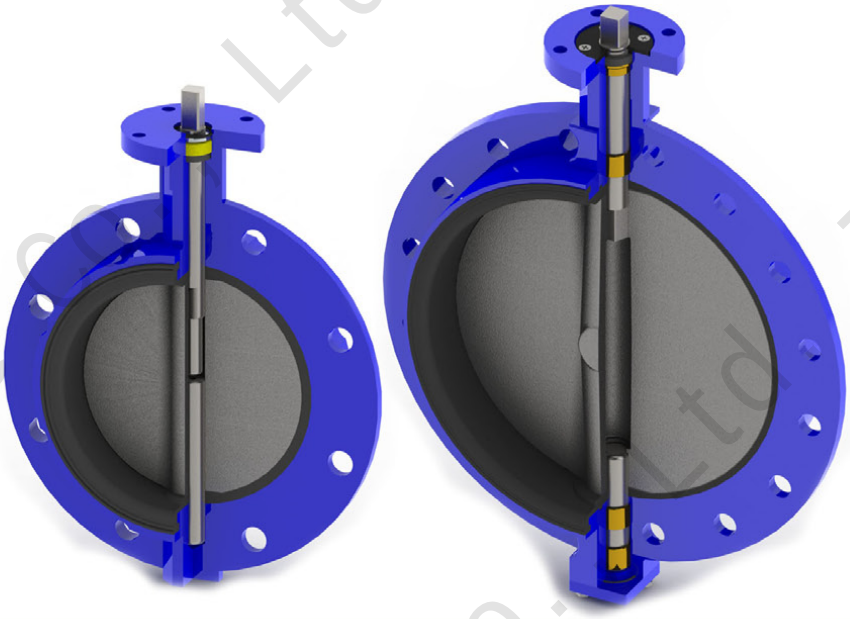
JIS B 2032 EN593 JIS B 2220 ISO5211

Face to Face

DIN558-1 JIS B 2002 ISO5752 BS5155

Testing

EN 12266-1 ISO5208 API598 JIS B2003



Body

Material	Referencesstandard	Coating
Cast iron	GG20 GG25 A126	Epoxy Ral 5005
Ductile iron	GGG40 GGG45 GGG50 A536 A395	Epoxy Ral 5005
Carbon steel	WCB WCC LCC LCB	Epoxy Ral 7011
Stainless steel	CF8 CF8M CF3 CF3M SAF2507 SAF2205	
Aluminuim-bronze	C95400 C95500 C95800	

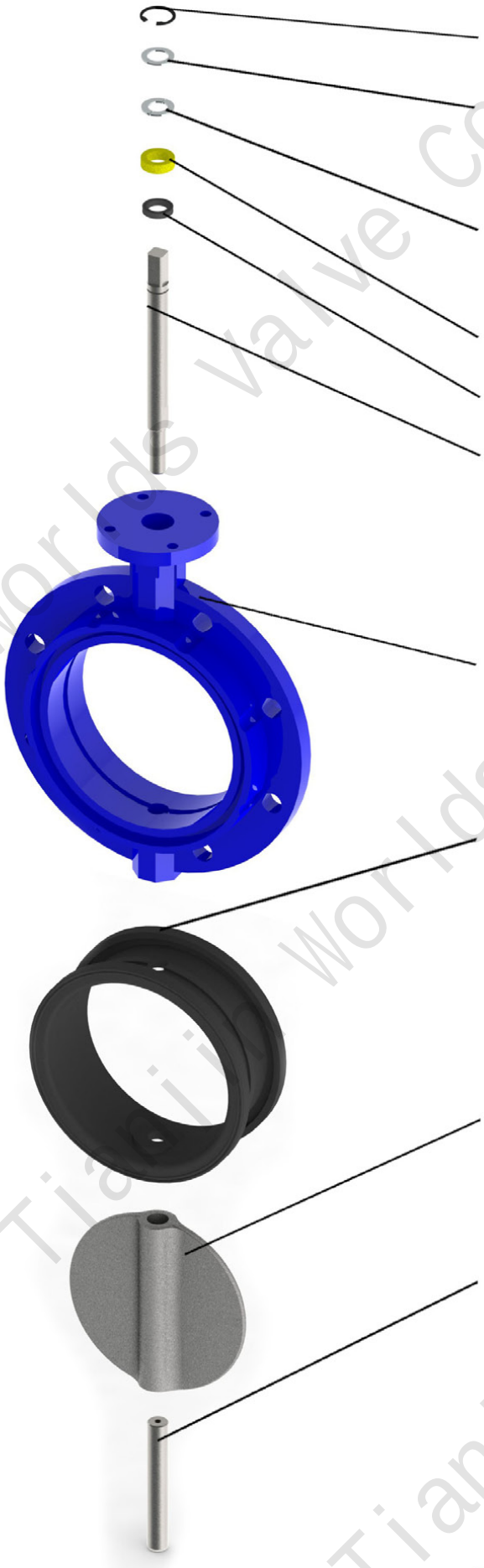
Disc

Material	References	Standard coating
Ductile iron	GGG40 GGG45 GGG50 A536	Nickel Brass-Nikle
Carbon steel	WCB WCC LCC LCB	
Stainless steel	CF8 CF8M CF3 CF3M SAF2507 SAF2205	
Aluminuim-bronze	C95400 C95500 C95800	

Body Rubber Seat

References	Desigation	Trade Name	Working temp	Applications
NBR	Nitrile Rubber	BUNA-N	-25/+100	Oils ,Hydrocarbons ,Gas, Air ,Water
EPDM	Copolymer	EPDM	-35/+130	Water ,Sea Water,Steam,Diluted Acids
FKM	Fluoroelastomer	VITON	-20/+200	Oils, Hydrocarbons, Acids
CR	Polychloroprene	NEOPRENE	-20/+100	Alkail, Bases,Water
NR	Natural Rubber	NR	-40/+80	Glycols,Abrasive media
MVQ	Sillicon Rubber	SR	-60/+190	Water,food,Drinks
CSM	Chlorosulfonate Polychloroprene	HYPALON	-20/+125	Acids,mineral bases,Alcohols,Hydrocarbons
PTFE	PolyTetraFluoroEthyl -ene	TEFLON	-35/+150	Acidity Alkaline

Main Spare Part Material Quality（DN50-DN350）

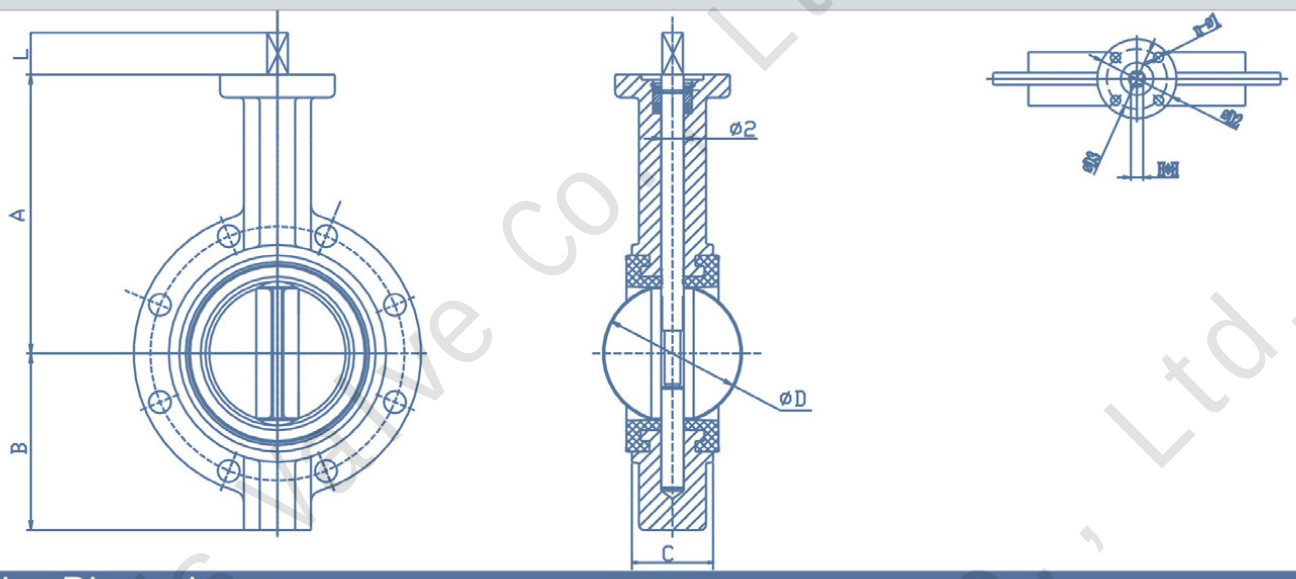


1	Snap Spring	Sk7
2	Gasket	Stainless Steel Carbon Steel
3	Half Ring	Stainless Steel Carbon Steel
4	Bushing	FRP
5	"X"Ring	NBR / VITON/EPDM
6	Shaft	SS410 SS304 SS431 SS316 MONEL K500 17-4PH C62300 C92200 2507 2205
7	Body	GGG40 GGG45 GGG50 WCB WCC LCC LCB CF8 CF8M CF3 CF3M C95800 C95400 C95500
8	Body seat	NBR(BUNA-N) EPDM HEPDM FKM(VITON) Polychloroprene Natural Rubber Sillicon Rubb
9	Disc	GGG40 GGG45 GGG50 WCB WCC LCC LCB CF8 CF8M CF3 CF3M C95800 C95400 C95500
10	Down Shaft	SS410 SS304 SS431 SS316 MONEL K500 17-4PH C62300 C92200 2507 2205

Main Spare Part Material Quality（DN400-DN600）

1	Screw	Stainless Steel
2	Packing Gland	Stainless Steel
3	Packing	NBR /VITON
4	Bushing	Luberized Bronze
5	Shaft	Stainless Steel
		Bronze
6	Body	GGG40 GGG45 GGG50
		WCB WCC LCC LCB
		CF8 CF8M CF3 CF3M
		C95800 C95400 C95500
7	Body Seat	NBR(BUNA-N)
		EPDM
		HEPDM
		FKM(VITON)
		Polychloroprene
		Natural Rubber
		Sillicon Rubber
8	Disc	GGG40 GGG45 GGG50
		CF8 CF8M CF3 CF3M
		C95800 C95400 C95500
		WCB WCC LCC LCB
9	Bushing	Luberized Bronze
10	Down Shaft	Stainless Steel
		Bronze
11	"O"Ring	NBR /VITON
12	End Cover	GGG40 GGG45 GGG50
		WCB WCC LCC LCB
		CF8 CF8M CF3 CF3M
		C95800 C95400 C95500
13	Gasket	Stainless Steel
14	Spring Washer	Stainless Steel
15	Screw	Stainless Steel

Drawing(50-300)



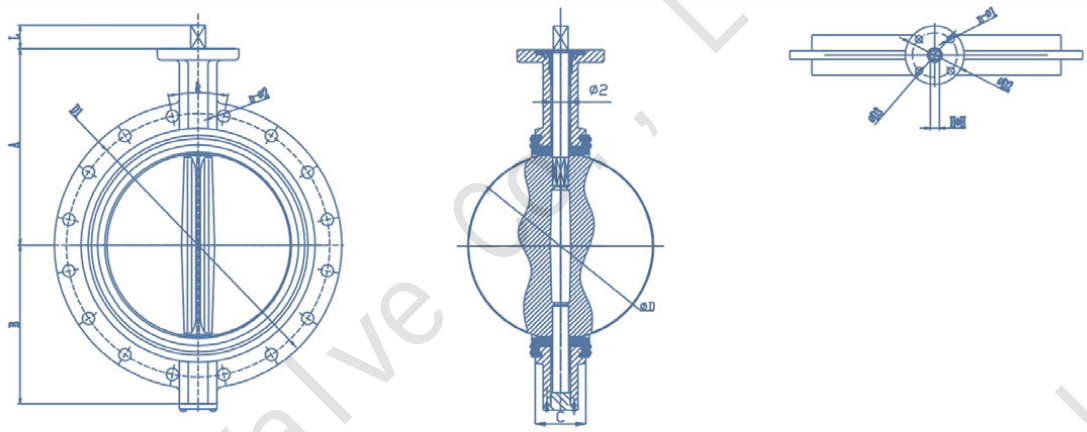
Outline Dimensions

SIZE (mm)	A	B	C	D	ø2	ISO5211	D2	D3	n-ø1	H	L
50	140	80	43	52.9	12.6	F07	90	70	4-10	11	14
65	150	89	46	64.5	12.6	F07	90	70	4-10	11	14
80	158	95	64	78.8	12.6	F07	90	70	4-10	11	14
100	176	108	64	104.1	15.77	F07	90	70	4-10	11	14
125	190	127	70	123.3	18.92	F07	90	70	4-10	14	17
150	212	150	76	155.6	18.92	F07	90	70	4-10	14	17
200	235	179	89	202.51	22.1	F10	125	102	4-12	17	22
250	265	208	114	250.42	28.45	F10	125	102	4-12	22	22
300	305	242	114	301.5	31.6	F10	125	102	4-12	22	22

Connection Dimensis

	Outer Diameter Of Flange				Diameter Of Center Circle				Number And Diameter Of Bolt Holes			
DN	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

Drawing(350-600)



Outline Dimensions

SIZE (mm)	A	B	C	D	ϕ2	ISO5211	D2	D3	n-ϕ1	H	L
350	368	270	127	333.5	31.6	F12	150	125	4-14	22	22
400	400	310	140	389.6	33.15	F14	175	140	4-18	27	36
450	422	340	152	440.5	37.95	F14	175	140	4-18	27	36
500	440	362	152	491.6	41.15	F14	175	140	4-18	36	36
600	565	440	178	592.5	50.62	F16	210	165	4-22	36	46

Connection Dimensisns

	Outer Diameter Of Flange				Diameter Of Center Circle				Number And Diameter Of Bolt Holes			
DN	150LB	PN10	PN16	JIS10K	150LB	PN10	PN16	JIS10K	150LB	PN10	PN16	JIS10K
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

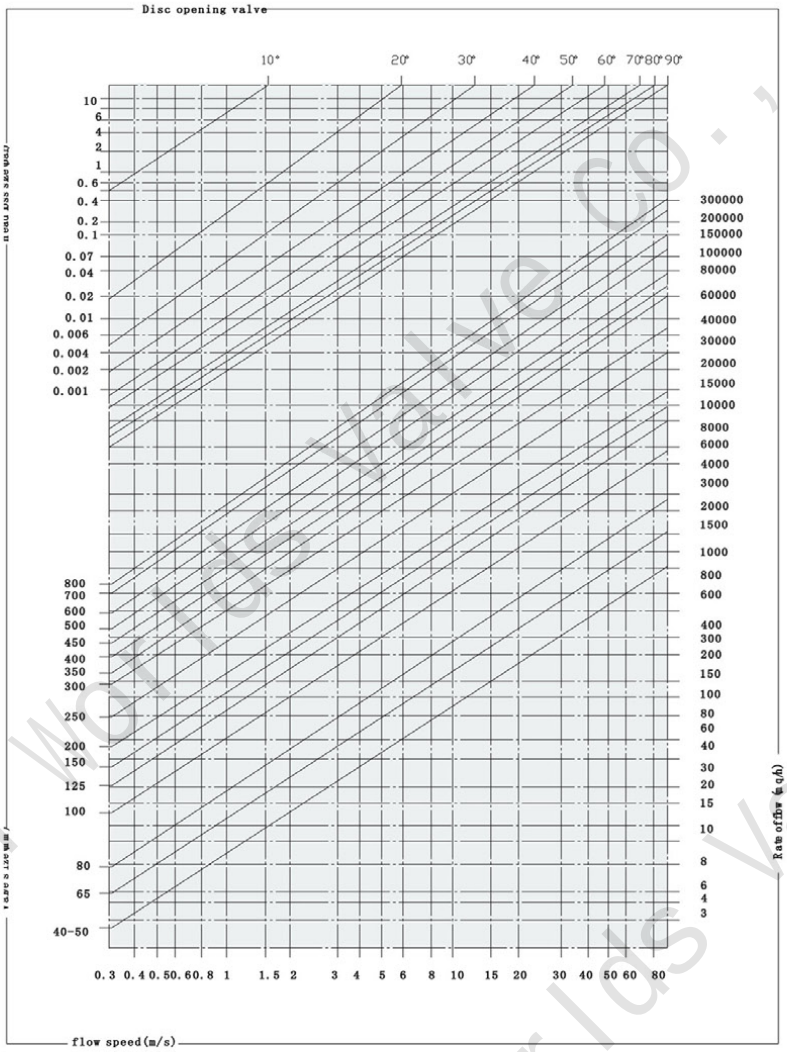
Torque values-Nm

APPLICATION IN WATER

SIZE		6 Bar	10 Bar	16 Bar	SIZE		6 Bar	10 Bar	16 Bar
mm	inch				mm	inch			
DN40	1.5"	7	9	9	DN350	14"		519	782
DN50	2"	8	9	10	DN400	16"		757	1224
DN65	2.5"	13	15	17	DN450	18"		1054	1513
DN80	3"	19	21	26	DN500	20"		1420	1879
DN100	4"	33	37	43	DN600	24"		2176	3383
DN125	5"	51	57	65	DN700	28"		3162	4182
DN150	6"	80	94	103	DN800	32"		4794	6664
DN200	8"	140	171	206	DN900	36"		6503	8296
DN250	10"	215	264	299	DN1000	40"		8330	11526
DN300	12"	299	402	417	DN1200	48"		14280	18020

Head losses

Notes:Values indicated in this page is only for information



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 follosw:

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）

Size	Flow in Gpm@1 PSI P@ Various Disc Angles								
(mm)	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	21705
500	14	971	1674	3628	6465	10698	16931	25396	27908
600	22	1222	2587	5605	9989	16528	26157	39236	43116

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.

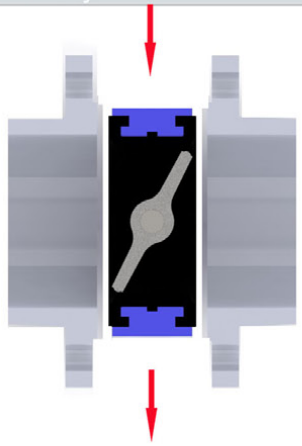
(3)After the valve was examined and assembled, no scuffing happens at the time of on-off rotation.

(4)After the valve was examined and assembled, the sealing test should be carried out as the introduction.

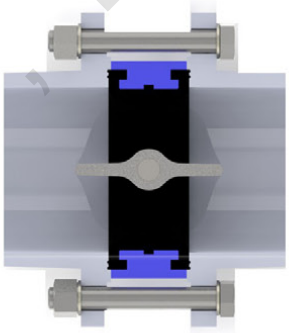
(5)After each examination, detailed records should be filed for reference.

INSTALLATION

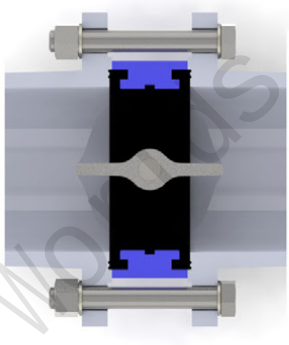
Assembly



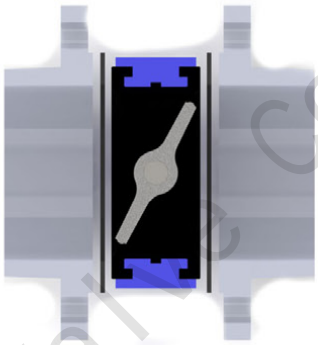
1 Leave a space between flanges so that valve can be easily inserted and re-moved .and move the valve in accordance with the arrow



2 Open completely the valve before tightening flanges



3 Tighten bolts till flanges are in contact with valve body

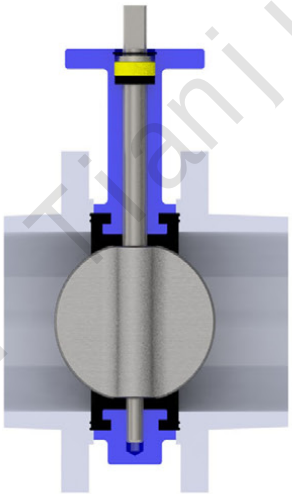


4 NOTE: do not insert other packing between flange and valve

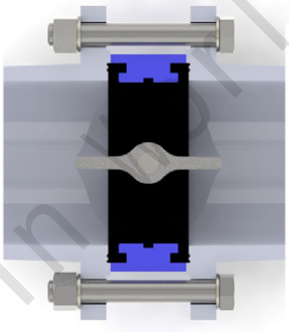
NOTE:Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to aviod that heat damage the seat， Clean carefully the welding to avoid that slags damage the seat

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 AL-Bronze 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.

Features

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.

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