



HOED



CANADA KINGSWAY FLOW CONTROL CO., LTD.

☎ +1 (236) 967 7137 📠 +1 (604) 225 9756

📍 110-7450 Lowland Drive Burnaby, BC V5J 5A4

🌐 www.hoedvalve.com

KINGSWAY FLOW CONTROL TECHNOLOGY (BEIJING) CO., LTD.

☎ 010-6502 1147 6502 6245

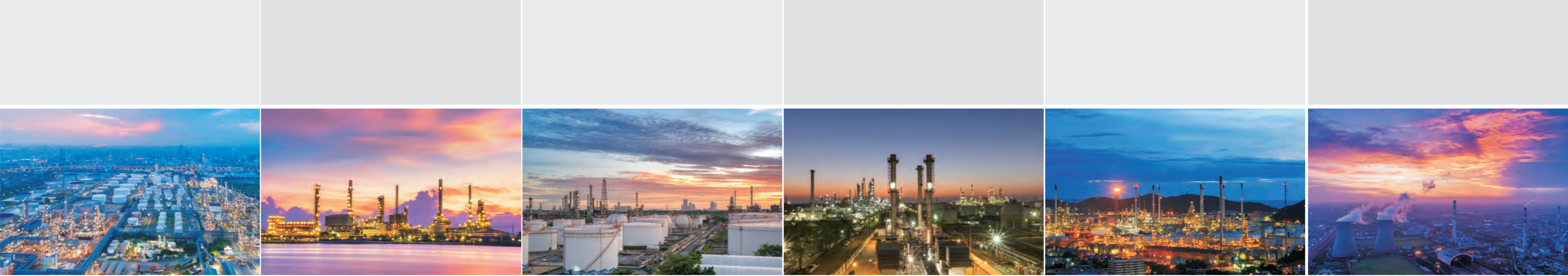
📍 Room 704, Full Tower, Dongsanhuan Zhong Road
No.9, Chaoyang District, Beijing, China, 100020

🌐 www.hoenvdiy.com

✉ info@hoenvdiy.com

Product Manual

CANADA KINGSWAY FLOW CONTROL CO., LTD.



Company Profile

Canada Kingsway flow control Co., Ltd. is a company specialized in the design, development and sales of valves with all kinds of integrated control systems. It owns two series of brands "HOEVNDIY" and "HOED". Main products are high-performance electric butterfly valve, fluorine line butterfly valve, ball valve, regulating valve; All products are qualified by ISO and achieve ISO9001, ISO14001, SIL3, CE and other certificates. Our products widely used in environmental protection, HVAC, electricity, petroleum, chemical, metallurgy, electronics, medicine and other fields.

With many years of on-site application experience, our company have continuously developed and designed many new products with characteristics to meet the special requirements of current fluid treatment conditions. Our outstanding project management and technical expertise are reflected in providing perfect solutions for projects of different scale and different unites. We ensure that our analyze, selection, calculation and design which according to the initial working conditions and technical requirements can provide the best solution and timely delivery to meet your needs.

Our company currently have R&D, production and assembly center for control valve and subassembly system development in Vancouver, Canada. There are 3 after-sales office in Xiamen, Shanghai and Chengdu, meanwhile there is a subsidiary company in Beijing, China in charge of the Asia Pacific marketing and after-sales service. We are using advanced production equipment and technology, through 6 SIGMA excelsior management model and SAP management system to provide customer best production and service and offer our best solution.

Mission

To be a great company providing innovative technological products and services for healthy living.

Vision

Using technology innovation technology to serve industrial development, create value for customers, create opportunities for ourselves.

Values

Moral, people-oriented, collective struggle, win-win cooperation.



All valves produced by the company are ISO 9001 certified
 Products are tested and inspected in accordance with specified test and inspection procedures
 Provides the reliable guarantee for the high quality product



Building an industrial valve solution to create valuable ecology.
 No matter any kind of conditions you are facing, we are committed to providing you
 the most completely valve applications and solutions!

Technology & Services

Factory Capabilities

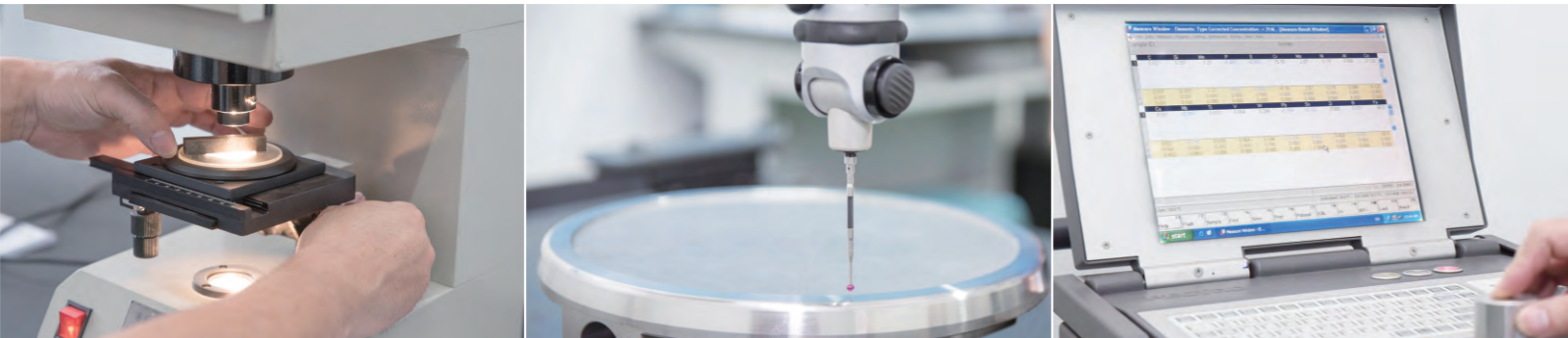
Canada Kingsway is committed to provide high quality, high reliability and high safety valve products. The leading international product conceptual design is applied; the advanced numerical control design tools such as Mastercam, Solidworks are adopted to standardize the production with strict quality control system and advanced testing process. After continuous to improve the design, our products are ensured to adapt to the market better and quickly.

Factory quality management and testing capabilities

Canada Kingsway has its own unique product quality management system and corresponding product quality testing equipment, which provides a reliable guarantee for high-quality products. The main testing equipment includes triple coordinate measuring instruments, metallographic analyzers, spectrum analyzers, magnetic particle flaw detectors, X-ray detection equipment, impact testing machines, universal testing machines, etc., which not only ensure the quality of products from production, processing, testing and shipment but also improve the performance of the product, speed up the delivery schedule of the product, increase product R&D speed and reduce the cost of the product.

CRM customer service system construction

Pre-sales service: type selection guidance, technical confirmation, application condition analysis, maintenance consultation, etc.
 After-sales service: installation guidance, testing and commissioning, maintenance, spare parts sales, site training, etc.
 With the advanced CRM customer service system, we provide the total process of service from the beginning of design consulting to the aftersales of equipment commissioning and maintenance. This is also an important concept and principle we are committed to.



CONTENTS

Fluorine Lined Butterfly Valve

HDF200 Series Wafer Lined Butterfly Valve	01-02
HDF400 Series Lug Type Fluorine Lined Butterfly Valve	03-04
HDF600 Series Flanged Fluorine-lined Butterfly Valves	05-06
HDF800 Series Fluorine Lined (PFA) Butterfly Valve	07-13

Fluorine Lined Ball Valve

HDB600 Series Fluorine Lined Ball Valve	14-17
---	-------

Double Eccentric Butterfly Valve

HDH100 Series Double Eccentric High Performance Butterfly Valve	18-29
---	-------

Triple Eccentric Butterfly Valve

HDY 500 Series Triple Eccentric Butterfly Valve	30-40
---	-------



Fluorine Lined Butterfly Valve

HDF200 Series Wafer Lined Butterfly Valve

Nominal Diameter: DN50–DN800

Working Pressure: 4Bar~16Bar

Side Flange: BS EN 1092-3 : 2003 ,

ANSI B16.5 ISOLB ,

DIN2632, DIN2633,

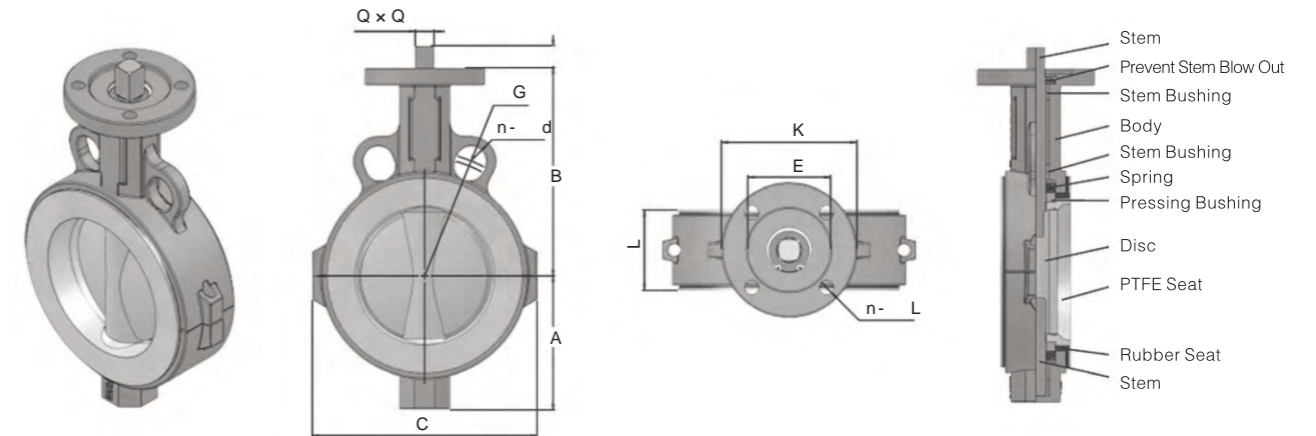
JIS 10K

Top Flange: BS EN ISO 5211 : 2001

Condition: Oil, Chemical, Food, Pharmacy, Energy,

Environmental Protection, etc.

Temperature: -20°C~180°C



Material

No.	Name	Material
1	Body	Ductile iron+ WCB + Stainless Steel
2	Disc	PTFE+WCB+SS
3	Shaft	Stainless Steel Dual phases Steel
4	Seat	PTFE+EPDM+VITON+NBR
5	Bushing	FRP
6	Pressing Bushing	FRP
7	Packing PTFE	PTFE
8	Cushion	Steel
9	Papilionaceous Spring	Spring Steel

Products Features

Technical Specification	
Design Specification	API 609-2004
Specifications Model	DN50~800mm
Nominal Pressure	PN10, PN16, ANSI 150
Applicable Medium	Sulfuric acid, hydrofluoric acid, phosphoric acid, chlorine, alkali, aqua regia, etc
Operating Temperature	-20°C~+180°C
Driving Type	Manual, Air Transmission, Electricity Transmission

External Size

Size DN (mm)	Dimension														
	A	B	C	L	H	Upper Flange			Q×Q	ANSI 150		DIN PN10		DIN PN16	
						K	E	n-ΦL		ΦG	n-Φd	ΦG	n-Φd	ΦG	n-Φd
50	62	136	112	47	32	65	50	4-6.7	9	120.5	4-19	125	4-19	125	4-19
65	70	138	126	50	32	65	50	4-6.7	9	139.5	4-19	145	4-19	145	4-19
80	78	140	142	50	32	65	50	4-6.7	9	152.5	4-19	160	8-19	160	8-19
100	105	158	168	55.5	32	90	70	4-10.3	11	190.5	8-19	180	8-19	180	8-19
125	122	180	240	59	32	90	70	4-10.3	14	216	8-22.4	210	8-19	210	8-19
150	134	186	265	59	32	90	70	4-10.3	14	241.5	8-22.4	240	8-22	240	8-22
200	165	234	320	65	32	125	102	4-14.5	17	298.5	8-22.4	295	8-22	295	8-22
250	194	273	385	73	45	125	102	4-14.6	22	362	12-25.4	350	12-22	355	12-26
300	224	302	450	81	45	125	102	4-14.7	22	432	12-25.4	400	12-22	410	12-26
350	260	320	500	81	45	125	102	4-14.7	-	476.3	12-28.4	460	16-22	470	16-26
400	298	408	585	92	52	175	140	4-18	-	539.9	16-28.4	515	16-26	525	16-30
450	315	422	616	116.5	52	175	140	4-18	-	577.9	16-31.75	565	20-26	585	20-30
500	356	480	685	130	66	210	165	4-22	-	635	20-31.75	620	20-26	650	20-33
600	440	562	818	157	66	210	165	4-22	-	749.3	20-35.1	725	20-30	770	20-36
700	520	625	910	165	66	300	254	8-18	-	863.6	28-35.1	840	24-30	840	24-36
800	590	672	1050	188	66	300	254	8-18	-	977.9	28-41.3	950	24-33	950	24-39

HDF400 Series Lug Type Fluorine Lined Butterfly Valve

Nominal Diameter: DN50–DN800

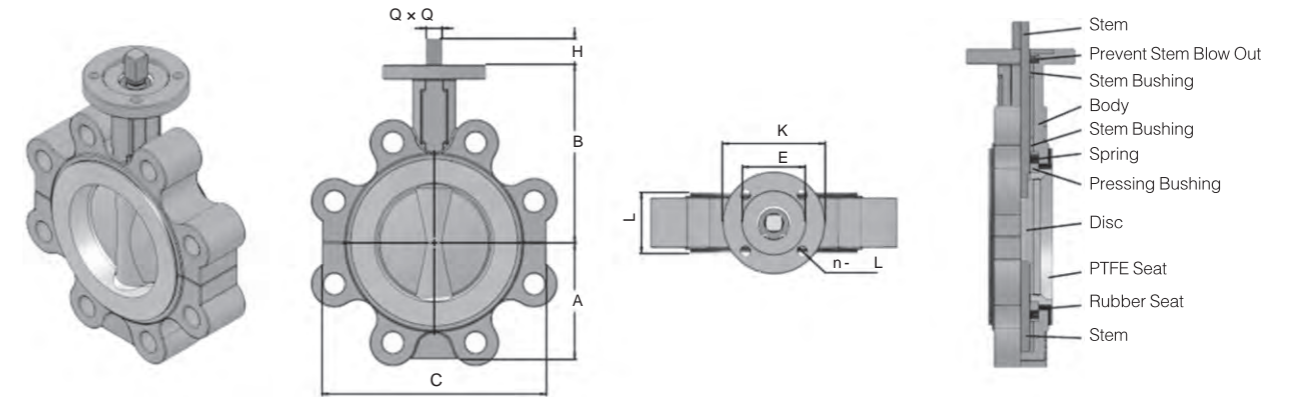
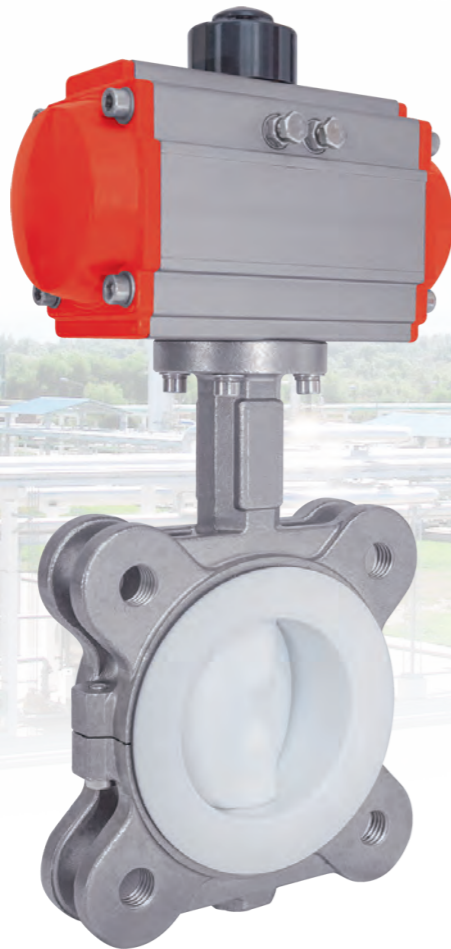
Working Pressure: 4Bar~16Bar

Side Flange: BS EN 1092-3 : 2003 ,
ANSI B16.5 ISOLB ,
DIN2632, DIN2633,
JIS 10K

Top Flange: BS EN ISO 5211 : 2001

Condition: Oil, Chemical, Food, Pharmacy, Energy,
Environmental Protection, etc.

Temperature: -20°C~180°C



Material

No.	Name	Material
1	Body	Ductile iron+WCB+Stainless Steel
2	Disc	PTFE+WCB+SS
3	Shaft	Stainless Steel Dual phases Steel
4	Seat	PTFE+EPDM+VITON+NBR
5	Bushing	FRP
6	Pressing Bushing	FRP
7	Packing PTFE	PTFE
8	Cushion	Steel
9	Papilionaceous Spring	Spring Steel

Products Features

Technical Specification	
Design Specification	API 609-2004
Specifications Model	DN50~800mm
Nominal Pressure	PN10, PN16, ANSI 150
Applicable Medium	Sulfuric acid, hydrofluoric acid, phosphoric acid, chlorine, alkali, aqua regia, etc
Operating Temperature	-20°C~+180°C
Driving Type	Manual, Air Transmission, Electricity Transmission

External Size

Size DN (mm)	Dimension														
	A	B	D	L	H	Upper Flange			Q x Q	ANSI 150		DIN PN10		DIN PN16	
						K	E	n-ΦL		ΦG	n-M	ΦG	n-M	ΦG	n-M
50	60	138	153	47	32	65	50	4-6.7	9	120.5	4-5/8"	125	4-M16	125	4-M16
65	70	142	155	50	32	65	50	4-6.7	9	139.5	4-5/8"	145	4-M16	145	4-M16
80	84	142	180	50	32	65	50	4-6.7	9	152.5	4-5/8"	160	8-M16	160	8-M16
100	102	161	205	55.5	32	90	70	4-10.3	11	190.5	8-5/8"	180	8-M16	180	8-M16
125	122	180	240	59	32	90	70	4-10.3	14	216	8-3/4"	210	8-M16	210	8-M16
150	134	186	265	59	32	90	70	4-10.3	14	241.5	8-3/4"	240	8-M20	240	8-M20
200	165	234	320	63	32	125	102	4-14.5	17	298.5	8-3/4"	295	8-M20	295	12-M20
250	194	273	385	73	45	125	102	4-14.6	22	362	12-7/8"	350	12-M20	355	12-M24
300	224	302	450	81	4.	12S	102	4-14.7	22	432	12-7/8"	400	12-M20	410	12-M24
350	260	320	500	81	45	125	102	4-14.7	-	476.3	12-1"	460	16-M20	470	16-M24
400	298	408	585	92	52	175	140	4-18	-	539.9	16-1"	515	16-M24	525	16-M27
450	315	422	616	116.5	52	175	140	4-18	-	577.9	16-11/8"	565	20-M24	585	20-M27
500	3.56	480	685	130	66	210	165	4-22	-	635	20-11/8"	620	20-M24	650	20-M30
600	440	562	818	157	66	210	165	4-22	-	749.3	20-11/4"	725	20-M27	770	20-M33
700	520	625	910	165	66	300	254	8-18	-	863.6	28-11/4"	840	24-M27	840	24-M33
800	590	672	1050	188	66	300	254	8-18	-	977.9	28-11/2"	950	24-M30	950	24-M36

HDF600 Series Flanged Fluorine-lined Butterfly Valves

Nominal Diameter: DN50–DN800

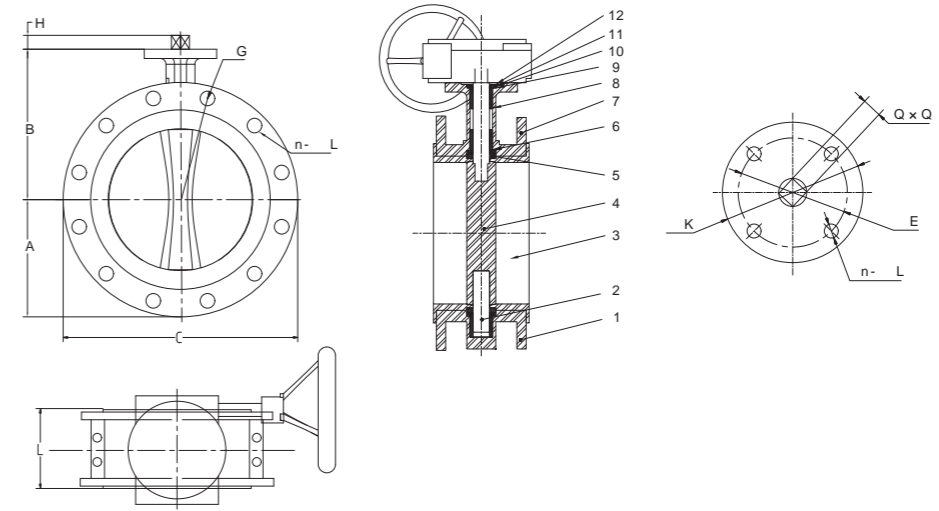
Working Pressure: 10Bar~16Bar

Side Flange: BS EN 1092-3 : 2003 ,
ANSI B16.5 ISOLB ,
DIN2632, DIN2633,
JIS 10K

Top Flange: BS EN ISO 5211 : 2001

Condition: Oil, Chemical, Food, Pharmacy, Energy,
Environmental Protection, etc.

Temperature: -20°C~220°C



Material

No.	Name	Material
1	Body	GGG40
2	Shaft	SS431
3	Seat	PTFE+Silicone
4	Disc	CF8M/CF8M+PTFE
5	Shaft Sleeve	FRP
6	Pressing Sleeve	FRP
7	Body	GGG40
8	Shaft Sleeve	FRP
9	Cushion	Steel
10	Circlip for Shaft	Steel
11	Cushion	Steel
12	Circlip for Hole	Steel

Products Features

Technical Specification	
Design Specification	API 609 & ISO 5752 series 20
Specifications Model	DN50~800mm
Working Pressure	DN50~DN150 ≤1.6MPa DN200~DN400 ≤1.0MPa DN450~DN800 ≤0.6MPa DN900~DN1000 ≤0.5MPa
Applicable Medium	Sulfuric acid, hydrofluoric acid, phosphoric acid, chlorine, alkali, aqua regia, etc
Operating Temperature	-20°C~+190°C
Driving Type	Manual, Gas Transmission, Electricity Transmission

External Size

Size DN (mm)	Dimension														
	A	B	C	L	H	Upper Flange			Q×Q	ANSI 150		DIN PN10		DIN PN16	
						K	E	n-ΦL		ΦG	n-Φd	ΦG	n-Φd	ΦG	n-Φd
50	62	136	152	108	25	65	50	4-M6	9	120.5	4-19	125	4-19	125	4-19
65	70	138	177	112	25	65	50	4-M6	9	139.5	4-19	145	4-19	145	4-19
80	78	140	190	114	25	65	50	4-M6	9	152.5	4-19	160	8-19	160	8-19
100	105	158	228	127	28	90	70	4-M8	11	190.5	8-19	180	8-19	180	8-19
125	122	180	254	140	28	90	70	4-M8	14	216	8-22.4	210	8-19	210	8-19
150	134	186	285	140	30	90	70	4-M8	14	241.5	8-22.4	240	8-22	240	8-22
200	165	269	343	152	35	125	102	4-M10	17	298.5	8-22.4	295	8-22	295	12-22
250	194	269	406	165	38	125	102	4-M10	22	362	12-25.4	350	12-22	355	12-26
300	224	302	482	178	38	125	102	4-M10	22	432	12-25.4	400	12-22	410	12-26
350	260	320	533	190	45	125	102	4-M10	22	476.3	12-28.4	460	16-22	470	16-26
400	298	408	585	216	52	175	140	4-M18	27	539.9	16-28.4	515	16-26	525	16-30
450	315	422	616	222	52	175	140	4-M18	27	577.9	16-31.75	565	20-26	585	20-30
500	356	480	685	229	66	210	165	4-M22	36	635	20-31.75	620	20-26	650	20-33
600	440	562	818	267	66	210	165	4-M22	42	749.3	20-35.1	725	20-30	770	20-36
700	520	625	910	292	66	300	254	8-M18	46	863.6	28-35.1	840	24-30	840	24-36
800	590	672	1050	318	66	300	254	8-M18	50	977.9	28-43.1	950	24-33	950	24-39

HDF800 Series Fluorine Lined (PFA) Butterfly Valve

The valve body and butterfly plate full lining PTFE(or F46, PFA), has a very good corrosion resistance. Can be widely used in petroleum, chemical, electronics, metallurgy, medicine, electricity, environmental protection and other industrial sectors, can be acid, alkali and other strong corrosive medium cut or regulation.

Product Design Features

1. Seamless body design;
2. Design of "V" type sealing packing;
3. Two-way valve seal;
4. Equal percentage flow regulation;
5. Exquisite appearance;
6. Bushing material optional;
7. Platform ISO 5211 standard design.

According to the ISO 5211 connection platform standard, can quickly and easily add the following devices:

Manual device (handle or hand wheel turbine drive), pneumatic device, electric device, hydraulic device, etc.

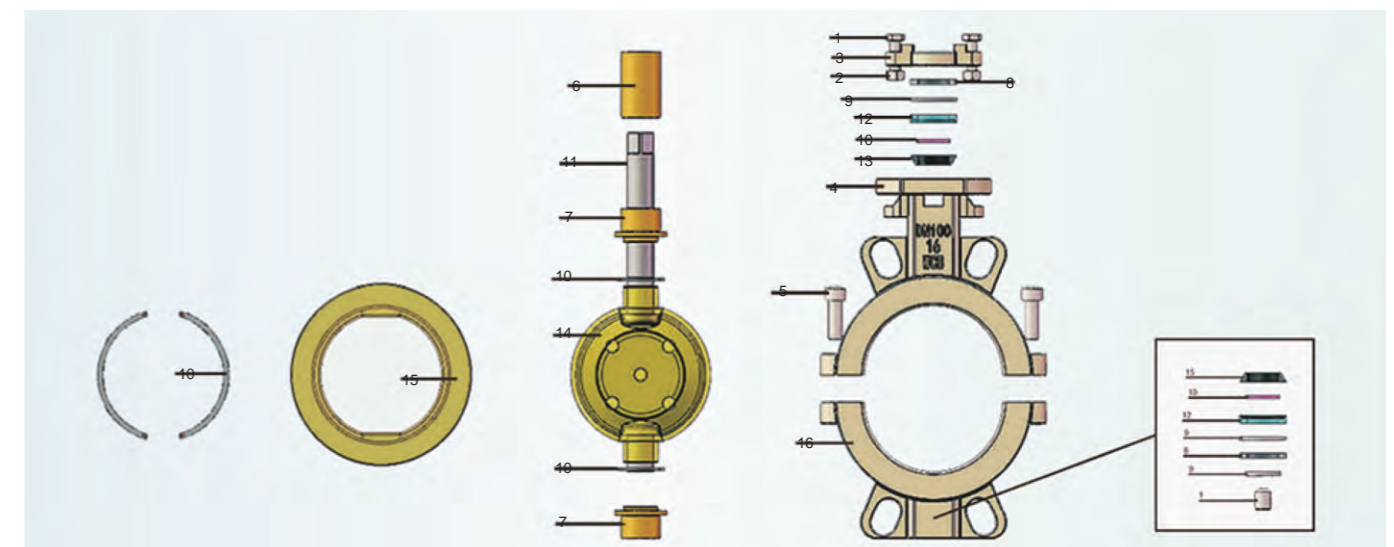


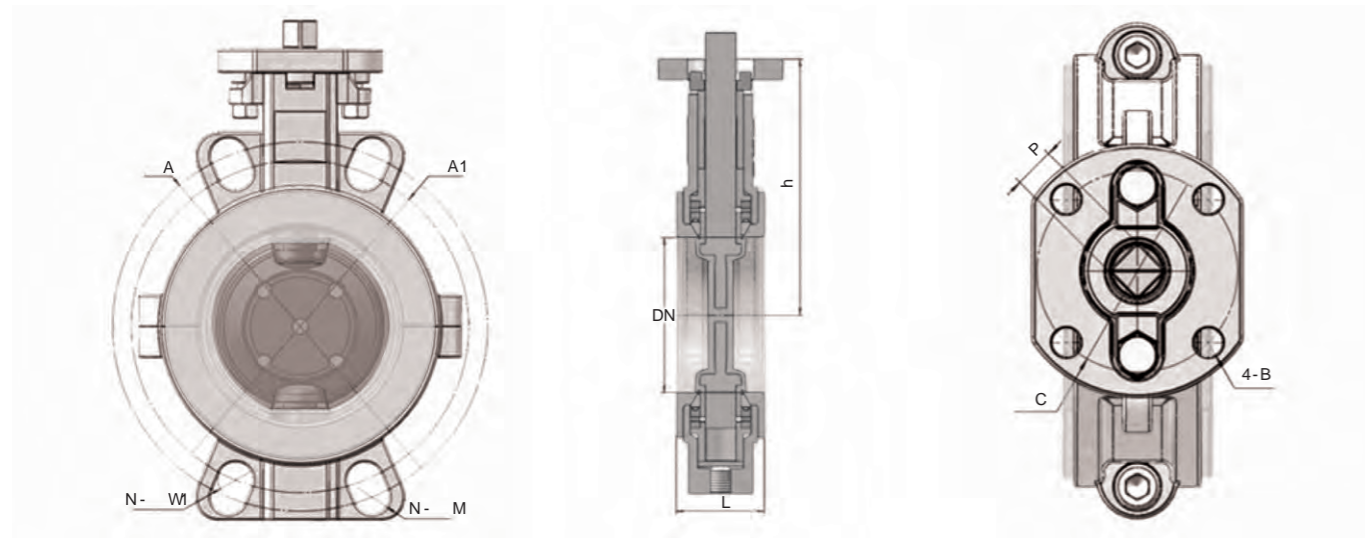
Valve parameters and performance

Nominal Diameter	DN40~500; 1 1/2" ~ 20"
Nominal Pressure	PN16、PN25、150Lb、300Lb
Temperatures	-29~+200°C
Body Material	WCB+F46/PFA、CF8(304)+F46/PFA、CF8M(316)+F46/PFA etc.
Ball Material	WCB+F46/PFA、CF8(304)+F46/PFA、CF8M(316)+F46/PFA etc.
Seat Material	PTFE、F46、PFA
Fluorine Lining Material	PTFE、F46、F40、PFA etc.
End Connections	Clamp connection
Flange Dimensions	GB、ASME、DIN
Leakage Class	ANSI VI
Flow Characteristics	Approximate equal percentage
Driving Device	Manual, pneumatic, electric, etc

Structure Diagram

No.	Name	Material
1	Bolt	WCB 304
2	Nut	WCB 304
3	Gland	WCB CF8 CF8M
4	Body	WCB CF8 CF8M
5	Bolt	WCB 304
6	Bushing	Brass
7	Bushing	Brass
8	Elastic washer	Silicone
9	Positioning ring	Engineering pastic
10	Washer	304 316
11	Stem Disc	WCB CF8 CF8M
12	Washer	PTFE
13	O-rings	Viton
14	Disc lining	PTFE F46 PFA
15	Disc lining	PTFE F46 PFA
16	Body	WCB CF8 CF8M

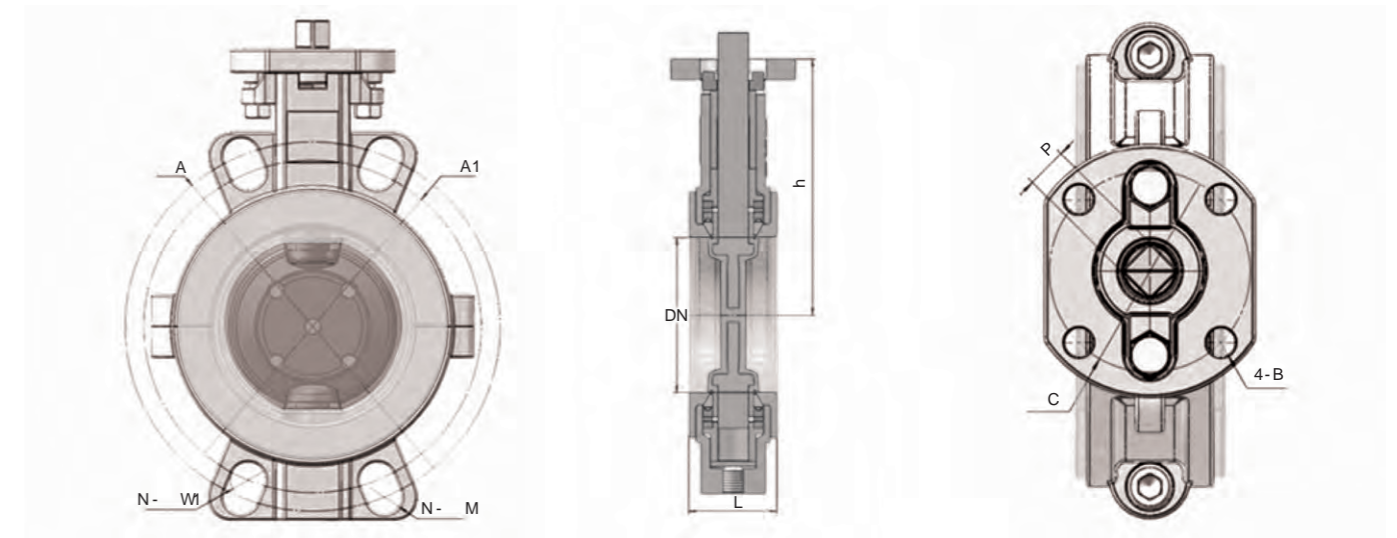




External Size

PN16/PN25 (mm)

Size	DN	L		H		A		M		N	B	C	P
		PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25				
1 1/2	40	33	33	180	180	110	110	18	18	4	7	50	11
2	50	43	43	180	180	125	125	18	18	4	7	50	11
2 1/2	65	46	46	195	195	145	145	18	18	4	7	50	11
3	80	46	46	212	212	160	160	18	18	8	9	70	14
4	100	52	52	231	231	180	190	18	23	8	9	70	14
5	125	56	56	260	260	210	220	18	25	8	11	70	17
6	150	56	56	278	278	240	250	23	25	8	11	102	17
8	200	60	60	475	475	295	310	23	25	12	13	102	22
10	250	68	68	520	520	355	370	25	30	12	13	125	22
12	300	78	78	540	540	410	430	25	30	12	17	140	22
14	350	78	78	560	560	470	490	25	34	16	17	165	27
16	400	102	102	580	580	525	550	30	34	16	21	165	27
18	450	114	114	600	600	585	600	30	34	20	21	165	36
20	500	127	127	620	620	650	660	34	41	20	21	165	36



External Size

150Lb/300Lb (mm)

Size	DN	L		H		A1		M1		N		B	C	P
		150Lb	300Lb	150Lb	300Lb	150Lb	300Lb	150Lb	300Lb	150Lb	300Lb			
1 1/2	40	33	33	142	142	98.5	114.5	19	19	4	4	7	50	11
2	50	43	43	145	145	120.5	127	19	22	4	8	7	50	11
2 1/2	65	46	46	158	158	139.5	149.5	19	22	4	8	7	50	11
3	80	46	46	165	165	152.2	168.5	19	22	4	8	9	70	14
4	100	52	52	175	175	190.5	200	19	22	8	8	9	70	14
5	125	56	56	200	200	216	235	22	22	8	8	11	70	17
6	150	56	56	230	230	241.5	270	22	22	8	12	11	102	17
8	200	60	60	280	280	298.5	330	22	25	8	12	13	102	22
10	250	68	68	320	320	362	387.5	25	29	12	16	13	125	22
12	300	78	78	350	350	432	451	25	32	12	16	17	140	22
14	350	78	78	420	420	476	514.5	29	32	12	20	17	165	27
16	400	102	102	460	460	540	571.5	29	35	16	20	21	165	27
18	450	114	114	500	500	578	628.5	32	35	16	24	21	165	36
20	500	127	127	525	525	635	686	32	35	20	24	21	165	36

Kv-values of lined butterfly valve

Cv=1.167Kv

Disc opening	Size (DN)													
	40	50	65	80	100	125	150	200	250	300	350	400	450	500
25°	1	3	5	7	12	21	56	101	172	250	302	452	521	789
30°	2	4	8	13	25	41	84	151	258	378	561	756	968	1221
35°	4	9	16	24	45	73	134	240	352	537	750	1054	1398	1789
40°	7	13	29	33	60	97	181	323	478	746	1037	1397	1786	2256
45°	10	18	41	50	90	146	245	435	609	1007	1423	1852	2495	3104
50°	14	27	61	69	125	203	296	525	836	1264	1814	2291	3127	3948
55°	18	36	80	95	170	276	395	700	1103	1585	2314	3312	4231	5210
60°	23	48	107	125	225	364	503	891	1353	2035	2938	3959	5060	6396
65°	29	63	141	164	295	477	610	1080	1727	2810	3756	5124	6214	8498
70°	37	78	175	222	400	647	803	1422	2131	3320	4621	6229	7962	10053
75°	43	91	203	292	525	848	1130	2000	2821	4874	6024	8670	11054	13521
80°	47	97	217	347	625	1009	1482	2622	3485	5416	7559	10186	13032	16449
85°	50	102	228	381	685	1106	1723	3050	3846	6067	8221	11023	14023	17531
90°	53	105	235	411	741	1196	1973	3492	4170	6102	8693	11647	14893	18807

Operating torque of lined butterfly valve

(N.m)

Size		ΔP 5bar	ΔP 10bar	ΔP 16bar
DN	in	Water 20°C	Water 20°C	Water 20°C
40	1 1/2	30	40	50
50	2	40	50	90
65	2 1/2	70	85	120
80	3	100	120	160
100	4	130	150	200
125	5	180	210	260
150	6	240	275	360
200	8	350	400	500
250	10	530	600	750
300	12	800	900	1000
350	14	1100	1200	1500
400	16	1400	1550	1900
450	18	2000	2200	2600
500	20	3000	3300	3800

Corrosion resistance of fluorine materials

Medium	Concentration(%)	Temperature(°C)	PTFE(F4)	FEP(F46)	PFA
Gasoline	100	≤50	√	√	√
Chloroform	100	≤50	×	×	×
Copper sulfate	15	≤50	√	√	√
Diethyl ether	100	≤50	×	×	×
Ethyl acetate	100	≤50	×	×	×
Hydrogen peroxide	3~30	≤50	√	√	√
Aqua regia	-	≤50	√	√	√
Nitrobenzene	100	≤50	√	√	√
Caustic soda	10~50	≤100	√	√	√
Sodium hypochlorite	-	≤50	√	√	√
Hydroxyl acid	40~90	-10~30	√	√	√
Oleum	20	≤50	√	√	√
Acrylic	-	≤50	√	√	√
Aniline	100	≤50	√	√	√
Benzene	100	≤50	√	√	√
Butyl acetate	100	≤50	√	√	√
CTC	-	≤50	√	√	√
Sulfuric acid	10~98	≤100	√	√	√
Hydrochloric acid	10~38	≤100	√	√	√
Nitrate	5~98	≤100	√	√	√
Phosphoric acid	50~85	≤100	√	√	√

√ (Apply) × (Not Applicable)

▶ Performance of fluorine lining

PFA

The physical properties of PFA, the electrical properties and chemical properties, stability, lubrication, ageing resistance of PTFE and generally similar, its outstanding characteristic is good thermoplasticity, using the general processing method of thermoplastic plastics, such as injection molding, extrusion, blow molding method. The melting point of PFA is lower than that of PTFE, the mechanical properties at high temperature of PTFE is greater than 1 times, can be used in 200°C long.

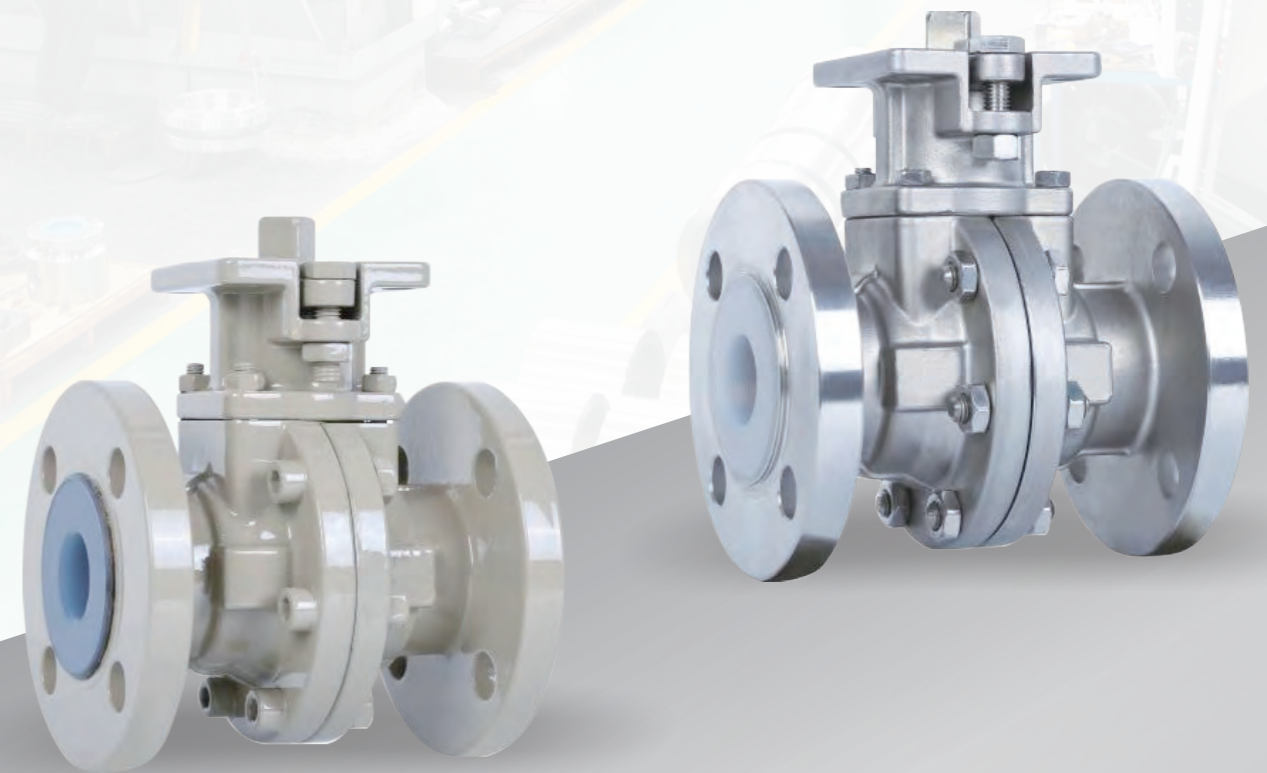
PTFE(F4)

High and low temperature performance of PTFE, in -30 ~ 150°C in long-term use; good wear resistance, static friction coefficient is the smallest plastic, excellent corrosion resistance; electrical insulating performance, and is not affected by the environment, temperature, humidity and frequency, with good arc resistance, excellent resistance to chemical corrosion in addition, corrosion of it under high temperature and high pressure fluorine and alkali metal in the molten state, some halogenated amine or aromatic hydrocarbon to a slight expansion, such as acid, alkali, strong oxidant, grease, ketone, ether, alcohol and even at high temperature on it can not afford effect.

FEP(F46)

FEP physical and mechanical properties, chemical stability, electrical insulation, self lubrication, surface viscosity, aging resistance, flame retardant and PTFE are basically the same, the use temperature of -30~150°C, compared with PTFE, with high impact toughness, good air tightness, radiation resistance, low temperature flexibility, with the advantages of metal glass, strong adhesive force etc. In addition, FEP can resist all of acid and alkali, solvent and oxidant, but not fluoride resistant elements under high temperature and high pressure and molten alkali metal etc.

Fluorine Lined Ball Valve



HDB600 Series Fluorine Lined Ball Valve



600 series of PFA-lined ball valve, the use of the latest structural design. The inner cavity of the valve body and the valve core full lining PTFE (or F46, PFA), corrosion resistance is very good. Can be widely used in petroleum, chemical, electronics, metallurgy, medicine, electricity, environmental protection and other industrial sectors, can be realized on acid, alkali and other strong corrosive medium of circulation and cut off.

Product Design Features

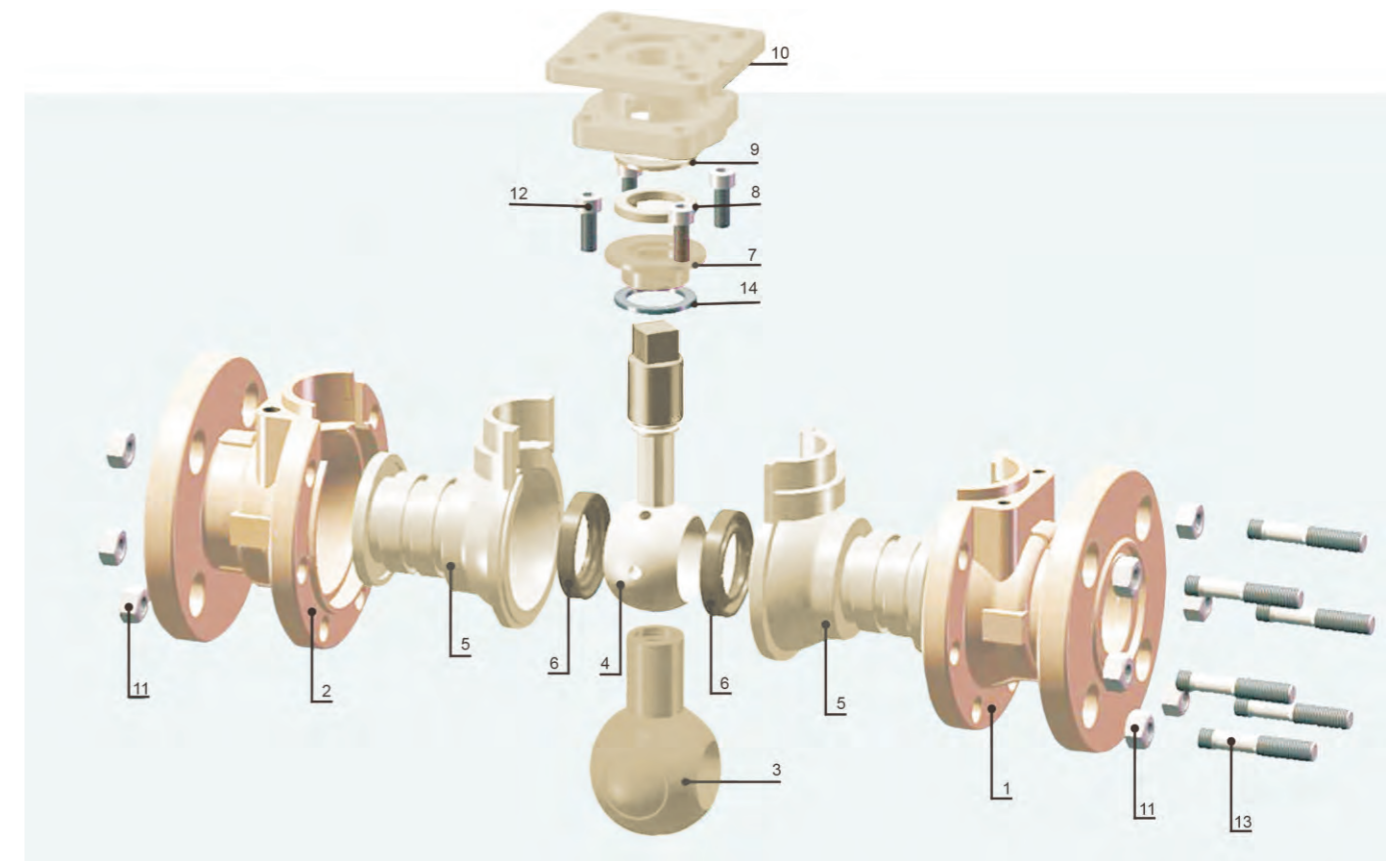
1. Precision casting appearance;
2. The dovetail groove structure of fluorine, anti dropping, available in vacuum condition;
3. Stem packing design, sealing effect is good;
4. The valve ball and the valve cavity are small, and the valve cavity is effectively reduced;
5. Mechanical limit design reduces the torque of the valve;
6. The sealing performance of the valve seat is better by the linear design;
7. Balance the pressure relief hole design to improve the safety performance and service life of the valve;
8. PFA lined V-port ball valve can achieve flow regulation;
9. Valve link platform in accordance with the ISO 5211 standard design appearance.

According to the ISO 5211 connection platform standard, can quickly and easily add the following devices:
Manual device (handle or hand wheel turbine drive), pneumatic device, electric device, hydraulic device, etc.

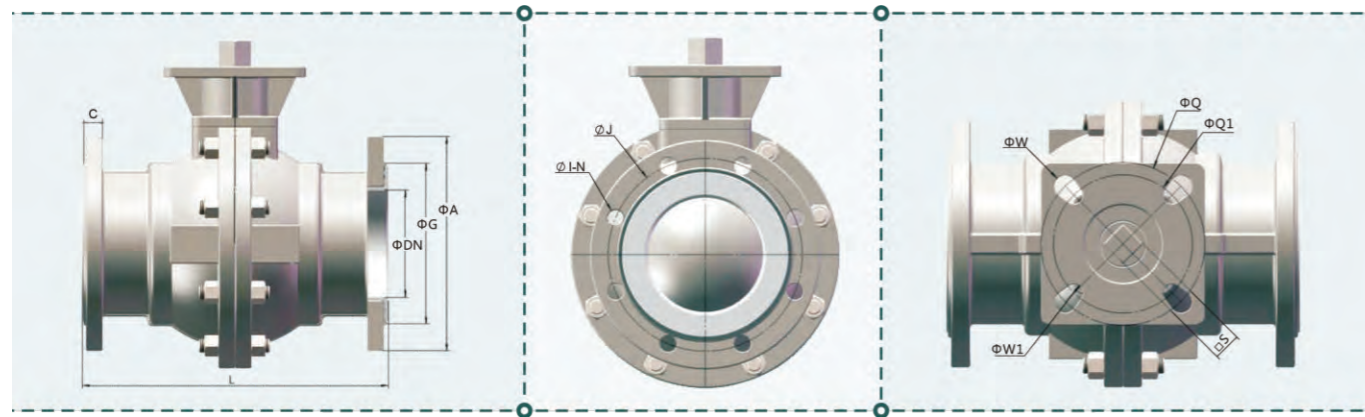
Valve parameters and performance

Nominal Diameter	DN15~300; 1/2"~12"
Nominal Pressure	PN10、PN16、PN25、150Lb、300Lb
Temperatures	-29~+200°C
Body Material	WCB+F46/PFA、CF8(304)+F46/PFA、CF8M(316)+F46/PFA etc.
Ball Material	WCB+F46/PFA、CF8(304)+F46/PFA、CF8M(316)+F46/PFA etc.
Seat Material	PTFE、RPTFE
Fluorine Lining Material	F46、F40、PFA etc.
End Connections	Flange
Flange Dimensions	GB、ASME、DIN
Leakage Class	ANSI VI
Flow Characteristics	Approximate equal percentage
Driving Device	Manual, pneumatic, electric, etc

Structure diagram



No.	Name	Material
1	Main body	WCB CF8
2	Secondary body	WCB CF8
3	Ball lining	PFA F46 F40
4	Ball	WCB CF8
5	Body lining	PFA F46 F40
6	Seat	PTFE、RPTFE、PFA
7	Sealing washer	PTFE、RPTFE
8	Stem packing	PTFE、RPTFE
9	Metal Dome	Spring steel
10	Support	WCB CF8
11	Nut	45 A194-7 304 A194-7
12	Screw	35 A193-B8 304 A193-B8
13	Screw	35 A193-B8 304 A193-B8
14	Metal washer	304



External Size

PN16/PN25 (mm)

Size	DN	L		A		J		C		Q	Q1	W	W1	I		N		S
		PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25					PN16	PN25			
1/2"	15	130	130	95	95	65	65	16	16	50	/	M6	/	14	14	4	4	11
3/4"	20	130	130	105	105	75	75	18	18	50	/	M6	/	14	14	4	4	11
1"	25	140	140	115	115	85	85	18	18	70	50	M8	M6	14	14	4	4	14
1 1/2"	40	165	165	150	150	110	110	18	18	70	/	M8	/	18	18	4	4	17
2"	50	203	203	165	165	125	125	18	20	70	/	M8	/	18	18	4	4	17
2 1/2"	65	222	222	185	185	145	145	18	22	102	70	M10	M8	18	18	8	8	22
3"	80	241	241	200	200	160	160	20	24	102	/	M10	/	18	18	8	8	22
4"	100	305	305	220	235	180	190	20	24	102	/	M12	/	18	23	8	8	27
5"	125	356	356	250	270	210	220	22	26	140	125	M16	M12	18	25	8	8	27
6"	150	394	394	285	300	240	250	22	28	165	140	M20	M16	23	25	12	12	36
8"	200	457	457	340	360	295	310	24	30	165	140	M20	M16	23	25	12	12	36

External Size

150Lb/300Lb (mm)

Size	DN	L		A		J		C		Q	Q1	W	W1	I		N		S
		150Lb	300Lb	150Lb	300Lb	150Lb	300Lb	150Lb	300Lb					150Lb	300Lb			
1/2"	15	108	130	95	95	65	65	16	16	50	/	M6	/	14	14	4	4	11
3/4"	20	117	130	105	105	75	75	18	18	50	/	M6	/	14	14	4	4	11
1"	25	127	140	115	115	85	85	18	18	70	50	M8	M6	14	14	4	4	14
1 1/2"	40	165	165	150	150	110	110	18	18	70	/	M8	/	18	18	4	4	17
2"	50	178	203	165	165	125	125	18	20	70	/	M8	/	18	18	4	4	17
2 1/2"	65	190	222	185	185	145	145	18	22	102	70	M10	M8	18	18	8	8	22
3"	80	203	241	200	200	160	160	20	24	102	/	M10	/	18	18	8	8	22
4"	100	229	305	220	235	180	190	20	24	102	/	M12	/	18	23	8	8	27
5"	125	254	356	250	270	210	220	22	26	140	125	M16	M12	18	25	8	8	27
6"	150	394	394	285	300	240	250	22	28	165	140	M20	M16	23	25	12	12	36
8"	200	457	457	340	360	295	310	24	30	165	140	M20	M16	23	25	12	12	36

Kv-values of PDA lined full bore ball valve

Cv=1.167Kv

Opening angle		9°	18°	27°	36°	45°	54°	63°	72°	81°	90°
Open percentage		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN	in										
15	1/2	0.05	0.14	0.29	0.45	0.83	1.2	2.1	3	6.2	11
20	3/4	0.21	0.47	1	1.52	2.55	3.57	5.84	8.1	17.3	31
25	1	0.34	0.76	1.6	2.45	4.1	5.75	9.4	13	28	50
40	1 1/2	1.12	2.45	5.28	8.11	13.8	19.4	35.2	51	104	184
50	2	1.32	2.87	6.17	9.46	16	22.6	44.3	66	142	255
80	3	2.86	7.61	15.7	23.8	38.2	52.5	100	149	321	578
100	4	7	17	36	55	87	121	244	367	791	1427
150	6	18	49	100	152	243	334	702	1068	2295	4135

Kv-values of PFA lined V-port ball valve

Cv=1.167Kv

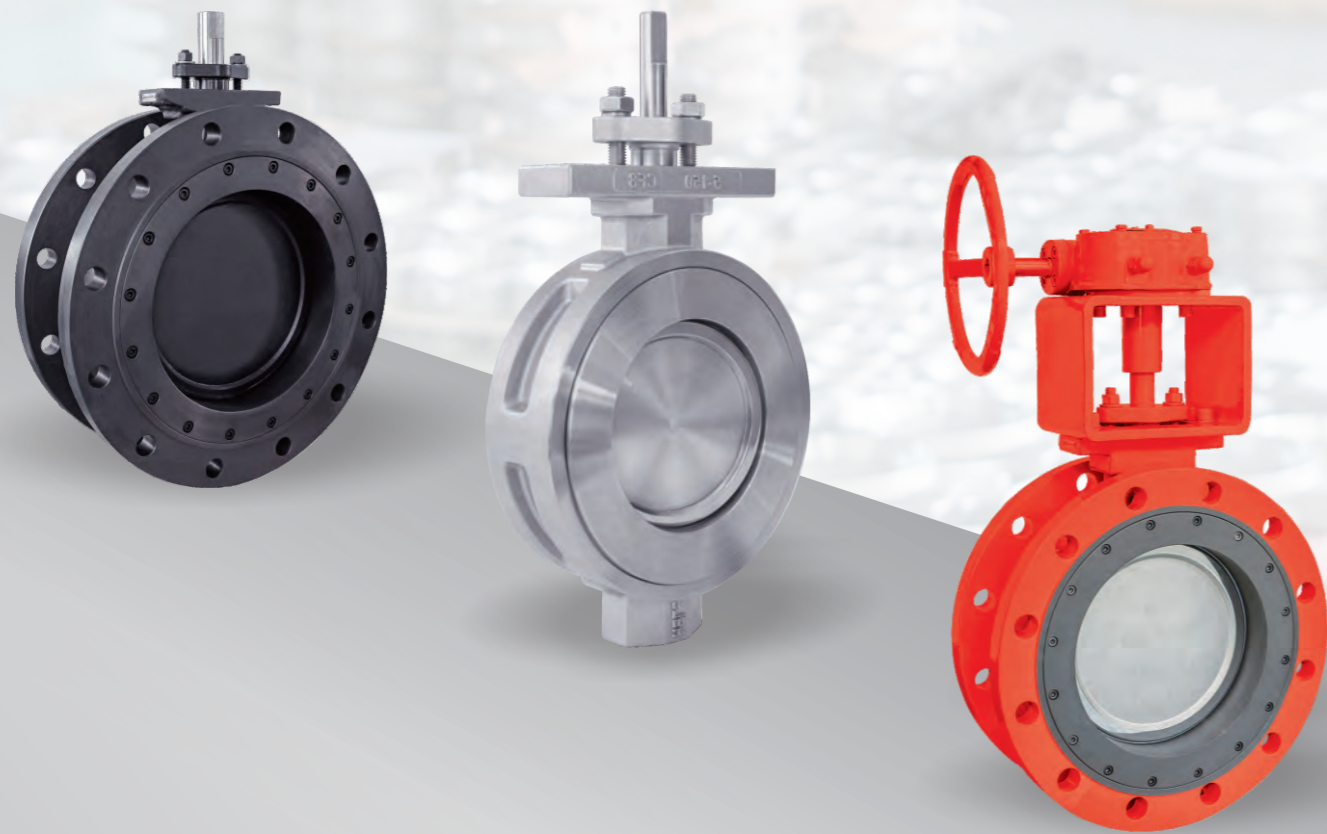
Size (DN)	25	32	40	50	65	80	100	125	150	200	250	300
Kv-values	25	38	65	100	190	290	410	590	1000	1600	2600	4000

Operating torque of lined ball valve

(N.m)

Size		ΔP 5bar	ΔP 10bar	ΔP 16bar
DN	in	Water 20°C	Water 20°C	Water 20°C
15	1/2	8	10	13
20	3/4	8	10	13
25	1	9	12	16
40	1 1/2	12	20	30
50	2	20	33	50
80	3	45	60	75
100	4	100	125	150
150	6	210	300	400

Double Eccentric Butterfly Valve



HDH100 Series Double Eccentric High Performance Butterfly Valve



1	Nominal diameter
API	2"-120" (inch)
IOS	DN50-DN3000(mm)

2	Valve feature code
D	Standard code
F	Fireproof type (fire resistant type)

3	Connection type code
W	Wafer type
L	LUG type
F	Double Flange type
H	Welded type

4	Pressure class code
150	ANSI Class 150Lb
300	ANSI Class 300Lb
600	ANSI Class 600Lb

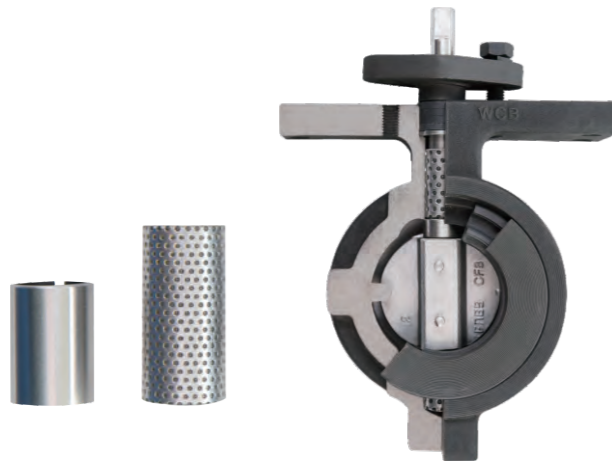
5	Driving mode code
M	Manual
K	Bare stem
G	Worm gear transmission
P	Pneumatic
D	Electric

6	Body material code
WB	Carbon steel
S4	Stainless steel CF8
S6	Stainless steel CF8M
SL	Stainless steel CF3
SN	Stainless steel CF3M
AM	Monel
AH	Hastelloy alloy

7	Stem material code
17	Martensite stainless steel 17-4PH
S4	Stainless steel 304
S6	Stainless steel 316
R1	Stainless steel 1Cr13
R2	Stainless steel 2Cr13

8	Butterfly plate material code
S4	Stainless steel CF8
S6	Stainless steel CF8M
SL	Stainless steel CF3
SN	Stainless steel CF3M

9	Seal of the seat material code
PT	PTFE
RT	RPTFE reinforced ptfе
PL	Para-phenyl PPL



► **Features**

- The unique dynamic load seal PTFE seat design is adopted with good elasticity and high reliability.
- Sealing can be maintained without the need of adding O ring or metal part.
- The lip type sealing structure can compensate for the changes of temperature and pressure.
- Long service life and low maintenance.
- In seal test, there is no bubble and leakage at both directions.

► **Design of offset shaft and eccentric butterfly plate**

- The seat and butterfly plate do not contact each other when the valve is opened or at the middle position.
- There is no wear point at the upper and lower parts of the seat.
- Low torque with low requirement for operating mechanism.

► **Fire resistant structure**

The fire resistant type valve is subjected to fire test according to API 607.

► **Seat type**

PTFE, R-PTFE, Fireproofseat, etc.

► **Reliable fixing of shaft**

The anti-blow-out structure is provided at the top of the shaft to prevent the shaft from running out of the gland in case of accidental breaking of the shaft.

► **Convenient seat maintenance and servicing**

The seat can be replaced just through removing the inserts without the need of disassembling the butterfly valve and shaft.

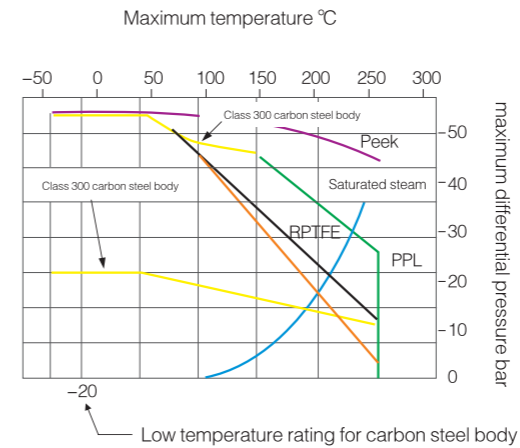
► **Provided with shut-off and control functions**

- Having excellent control characteristics;
- Proportional change of flow characteristic curve;
- Wide adjusting range;
- Tight sealing can be realized even when it is used for control.

► **Seat rated value**

The seat rated values indicated on the curve are only for the seat. It is the differential pressure between the two ends of the butterfly valve when the valve is fully closed. These rated values can serve as use guide under general conditions. According to past experience, the rated values for improved and changed other seat materials may be higher.

► **Body rated value**

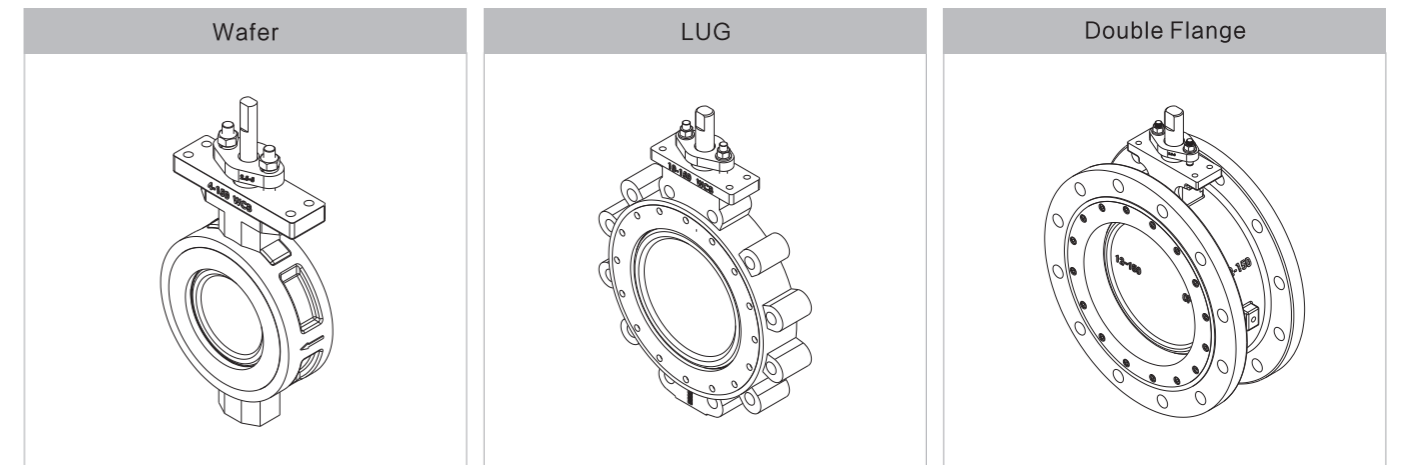


The maximum working pressure of body and testing pressure of body of various materials are listed in the body pressure ratings table. The actual working pressure in the working conditions shall be decided according to the seat rated values.

Rated value of 150Lb body (bar)					
Temperature	Carbon steel	Ductile iron	Stainless steel	20# alloy	Monel
-20~38	19.7	17.2	19.0	15.8	15.8
93	17.9	16.2	16.5	13.8	13.8
149	15.8	14.8	14.8	12.4	13.1
204	13.8	13.8	13.4	11.0	12.8
260	11.7	11.7	11.7	10.3	11.7
Test pressure	31	27.6	29.3	24.1	24.1

Rated value of 300Lb body (bar)				
Temperature	Carbon steel	Stainless steel	20# alloy	Monel
-20~38	51	49.6	41.4	41.1
93	46.5	42.7	35.9	36.5
149	45.2	38.6	32.1	34.1
204	43.8	35.5	29.0	33.1
260	41.4	33.1	26.9	32.8
Test pressure	77.6	75.8	62	62

► **Body connection**



▶ Valve torque

Nominal diameter		150Lb, Torque, Shaft side be downstream, Standard Seat					
		Closing differential pressure					
Inch	DN	lb-ft@ 100psi	N.m@ 6.9bar	lb-ft@ 200psi	N.m@ 13.8bar	lb-ft@ 285psi	N.m@ 19.7bar
2	50	19	26	20	28	21	29
2 1/2	65	21	29	23	31	24	33
3	80	25	34	27	37	29	39
4	100	35	47	39	53	43	58
5	125	48	65	56	76	63	86
6	150	72	97	83	113	93	126
8	200	121	164	142	193	160	217
10	250	163	222	202	274	234	318
12	300	214	290	287	390	350	475
14	350	362	491	505	684	626	849
16	400	463	628	646	876	802	1087
18	450	602	816	844	1144	1050	1423
20	500	810	1098	1140	1546	1421	1926
24	600	1234	1673	1758	2384	2200	2983
30	750	2170	2942	2940	3986	3595	4873
36	900	3530	4786	4860	6589	5990	8121
42	1050	5780	7837	8060	10928	10000	13558
48	1200	9170	12433	12840	17409	15960	21638
54	1350	12950	17558	17900	24269	22110	29977
60	1500	19020	25790	26040	35310	32000	43397

Nominal diameter		150Lb, Torque, Shaft side be downstream, Fireproof Seat					
		Closing differential pressure					
Inch	DN	lb-ft@ 100psi	N.m@ 6.9bar	lb-ft@ 200psi	N.m@ 13.8bar	lb-ft@ 285psi	N.m@ 19.7bar
2	50	28	39	30	42	32	45
2 1/2	65	42	57	45	61	47	64
3	80	53	72	57	77	59	81
4	100	67	91	74	100	80	108
5	125	97	132	114	155	128	174
6	150	131	178	152	206	170	230
8	200	218	296	256	347	288	391
10	250	333	452	406	550	468	635
12	300	508	589	636	862	745	1010
14	350	604	819	758	1028	889	1205
16	400	710	963	920	1247	1099	1489
18	450	970	1315	1370	1857	1710	2318
20	500	1390	1885	1980	2685	2482	3364
24	600	2050	2779	2700	3661	2200	2983
30	750	2920	3959	3940	5342	4807	6517
36	900	3530	4786	4960	6725	5990	8121
42	1050	5620	7620	7440	10087	10000	13558
48	1200	8800	11931	12100	16405	14905	20208

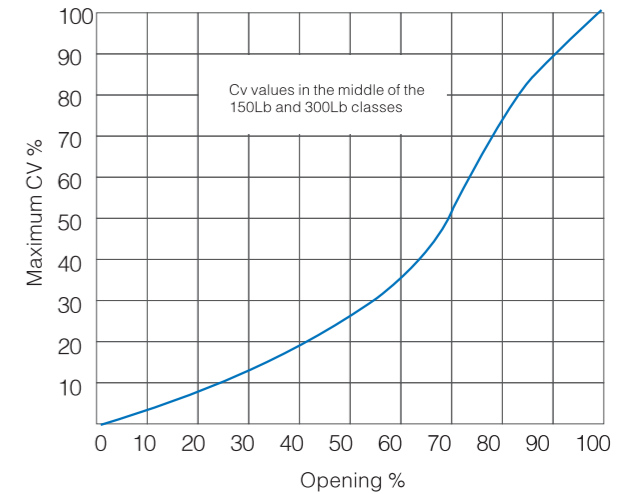
Nominal diameter		300Lb, Torque, Shaft side be downstream, Standard Seat											
		Closing differential pressure											
Inch	DN	lb-ft@ 300psi	N.m@ 20.7bar	lb-ft@ 400psi	N.m@ 27.6bar	lb-ft@ 500psi	N.m@ 34.5bar	lb-ft@ 600psi	N.m@ 41.4bar	lb-ft@ 700psi	N.m@ 48.3bar	lb-ft@ 740psi	N.m@ 51bar
2 1/2	65	30	41	33	45	36	50	39	54	42	58	44	60
3	80	31	42	34	46	38	51	41	55	44	60	45	62
4	100	52	70	58	79	65	88	72	97	78	106	81	110
6	150	119	161	138	188	158	214	178	241	197	267	205	278
8	200	231	313	271	368	312	422	352	477	392	532	408	554
10	250	354	480	422	572	490	664	557	756	625	848	652	885
12	300	492	667	582	790	673	913	764	1035	854	1158	890	1207
14	350	824	1117	1012	1372	1200	1627	1388	1882	1576	2137	1651	2239
16	400	989	1340	1212	1643	1435	1946	1658	2248	1881	2550	1970	2671
18	450	1279	1734	1562	2118	1845	2520	2128	2885	2411	3269	2524	3422
20	500	1707	2314	2096	2842	2485	3369	2874	3897	3263	4424	3419	4635
24	600	2309	3131	2832	3840	3355	4549	3878	5258	4401	5967	4610	6251
30	750	4210	5708	5080	6888	5950	8067	6820	9247	7690	10426	8038	10898
36	900	7220	9789	8760	11877	10300	13965	11840	16053	13380	18141	13996	18976

Nominal diameter		300Lb Torque, Shaft side be downstream, Fireproof Seat											
		Closing differential pressure											
Inch	DN	lb-ft@ 300psi	N.m@ 20.7bar	lb-ft@ 400psi	N.m@ 27.6bar	lb-ft@ 500psi	N.m@ 34.5bar	lb-ft@ 600psi	N.m@ 41.4bar	lb-ft@ 700psi	N.m@ 48.3bar	lb-ft@ 740psi	N.m@ 51bar
2 1/2	65	45	62	50	68	54	75	59	81	63	87	66	90
3	80	57	77	58	79	60	81	61	83	63	85	63	86
4	100	86	117	94	127	102	138	110	149	118	160	121	164
6	150	189	256	212	287	235	319	258	350	281	381	290	394
8	200	313	424	354	480	395	536	436	591	477	647	493	669
10	250	464	629	522	708	580	786	638	865	696	944	719	975
12	300	825	1119	960	1302	1095	1485	1230	1668	1365	1851	1419	1924
14	350	922	1250	1076	1459	1230	1668	1384	1877	1538	2085	1600	2169
16	400	1170	1586	1396	1885	1610	2183	1830	2481	2050	2779	2138	2899
18	450	1980	2685	2440	3308	2900	3932	3360	4556	3820	5179	4004	5429
20	500	2800	3796	3460	4691	4120	5586	4780	6481	5400	7376	5704	7734
24	600	4400	5966	5400	7321	6400	8677	7400	10033	8400	11389	8800	11931

▶ Flow Parameters

150Lb		
Nominal diameter		Cv
Inch	DN	
2	50	57
2 1/2	65	78
3	80	165
4	100	400
5	125	650
6	150	1,050
8	200	2,200
10	250	3,300
12	300	5,100
14	350	5,800
16	400	8,000
18	450	10,500
20	500	14,000
24	600	21,600
30	750	34,000
36	900	55,500
42	1050	82,650
48	1200	108,300
54	1350	133,500
60	1500	159,000

300Lb		
Nominal diameter		Cv
Inch	DN	
2 1/2	65	78
3	80	165
4	100	400
6	150	1,050
8	200	1,800
10	250	3,150
12	300	4,750
14	350	5,200
16	400	6,900
18	450	9,300
20	500	11,300
24	600	18,500
30	750	29,100
36	900	47,500



The flow coefficient of 150Lb and 300Lb butterfly valves is listed in the following table. Cv value indicates water flow per minute that passes through the fully opened valve when the differential pressure is 1psi(0.07bar) and the temperature is 60° F(15.6°C), and its unit is USgal/min.

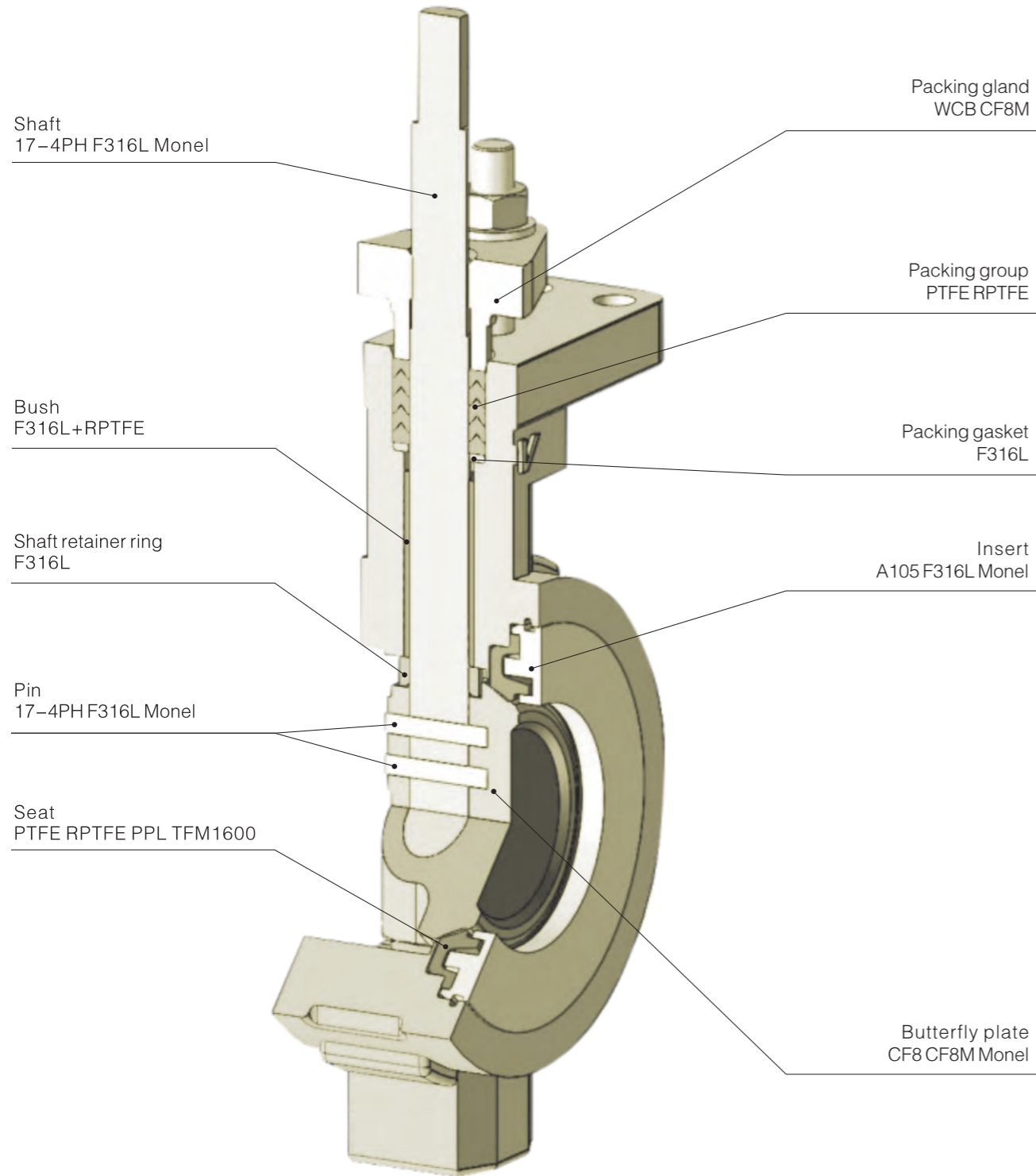
To confirm Cv value of the valve at the middle position:

1. Confirm the percentage of the maximum Cv value from the curve.
2. Multiply the percentage of the maximum Cv value from the curve by the Cv value from the flow datasheet

For example: The Cv value of the butterfly valve of 6"(DN150), 150Lb under opening of 70% is:

- (1) Confirm the percentage of the maximum Cv value of the butterfly valve of 6"(DN150), 150Lb under opening of 70% is 53%.
- (2) The maximum Cv value is: Cv value=0.53 × 1050=560

Table of Materials For Spare Parts

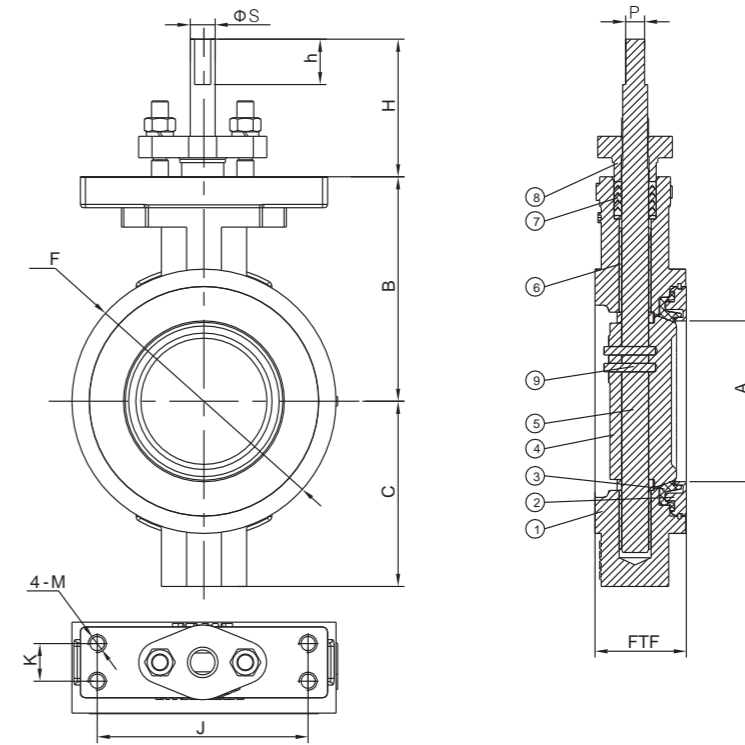


Wafer Type Butterfly Valve

Pressure: Class 150 Type: Wafer
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class150 Wafer Type Butterfly valve Dimension

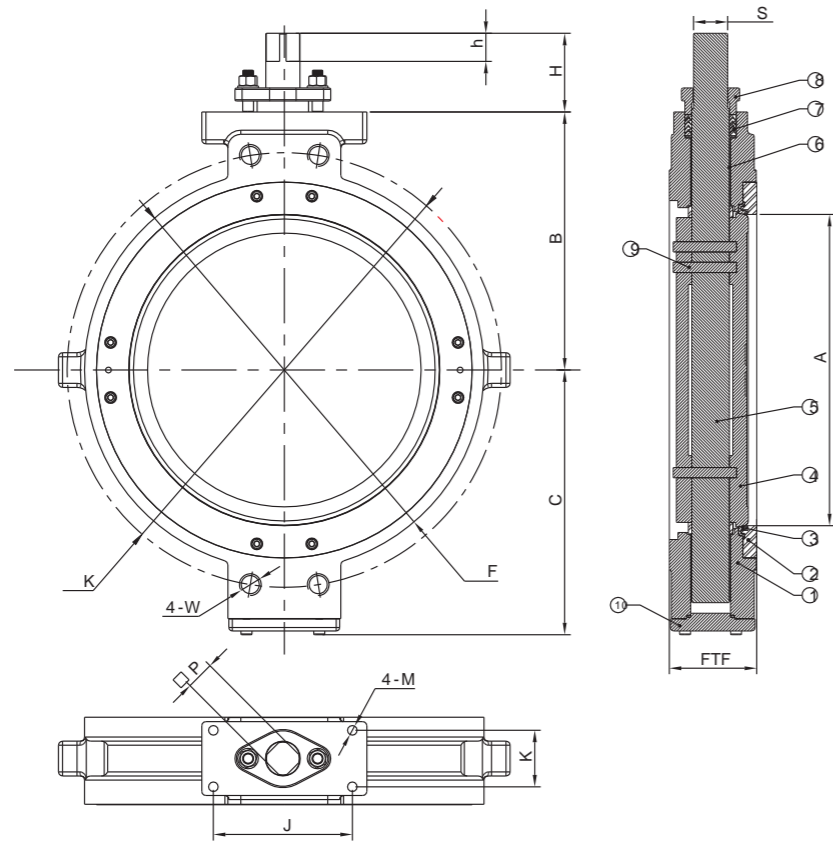
NPS	ΦA	B	C	ΦF	FTF ± 3.3	H	h	P	ΦS	J	K	M
1 1/2"	38	82	70	102	44	42.5	14	7	10	125.4	22.4	M10
2"	50	82	70	102	44	42.5	14	7	10	125.4	22.4	M10
2 1/2"	59	111	82	118	48	82	27	11.2	14.8	125.4	22.4	M10
3"	73	120	93	132	48	82	27	11.2	14.8	125.4	22.4	M10
4"	96	133	110	157	54	82	27	11.2	14.8	125.4	22.4	M10
5"	111	135	120	186	57	82	27	11.2	14.8	125.4	22.4	M10
6"	142	152	135	217	57	82	27	14	18	125.4	22.4	M10
8"	188	187	172	273	64	82	27	15.9	21.9	125.4	22.4	M10
10"	236	231	202	330	71	97	28	20.6	28	142.7	37.3	M12
12"	282	260	241	376	81	97	33	23.8	33.3	142.7	37.3	M12
14"	314	315	295	413	92	105	41	28.7	37	142.7	37.3	M16

Wafer Type Butterfly Valve

Pressure: Class 150 Type: Wafer
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class 150 Wafer Type Butterfly valve Dimension

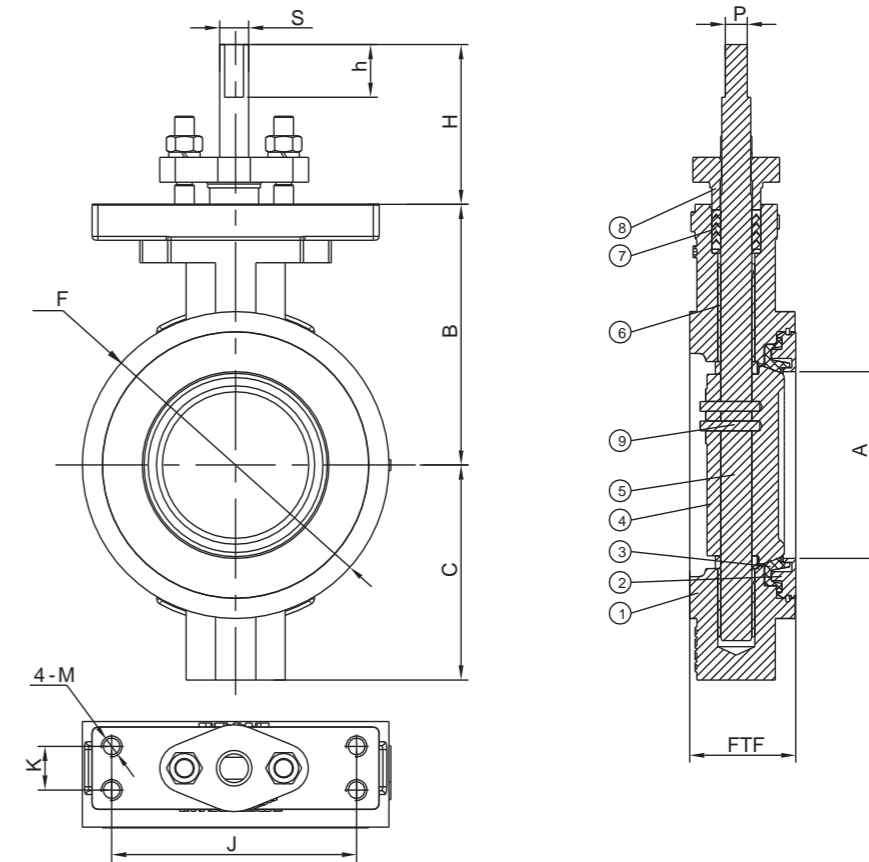
NPS	ΦA	B	C	ΦF	FTF±3.3	H	h	P	ΦS	J	K	M	ΦK	W
16"	362	355	329	470	102	111	41	33.5	42	203.2	82.6	M16	539.8	Φ30
18"	413	356	340	533	114	111	41	35	47	203.2	82.6	M16	577.9	1 1/8"-8UN
20"	455	377	387	584	127	115	41	41.4	50	203.2	82.6	M16	635	1 1/8"-8UN
24"	548	490	467	692	154	130	51	51	64	254	107.7	M20	749.3	1 1/4"-8UN
28"	682	570	552	799	165	157	50.8	50.8	66	254	107.7	M20	863.6	1 1/4"-8UN
30"	702	570	557	863	167	157	50.8	50.8	66	254	107.7	M20	914.4	1 1/4"-8UN
32"	702	570	557	905	191	157	50.8	50.8	66	254	107.7	M20	977.9	1 1/2"-8UN
48"	1168	841	805	1385	254	293	90	90	125	381	178	M20	1422.4	1 1/2"-8UN

Wafer Type Butterfly Valve

Pressure: Class 300 Type: Wafer
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class 300 Wafer Type Butterfly valve Dimension

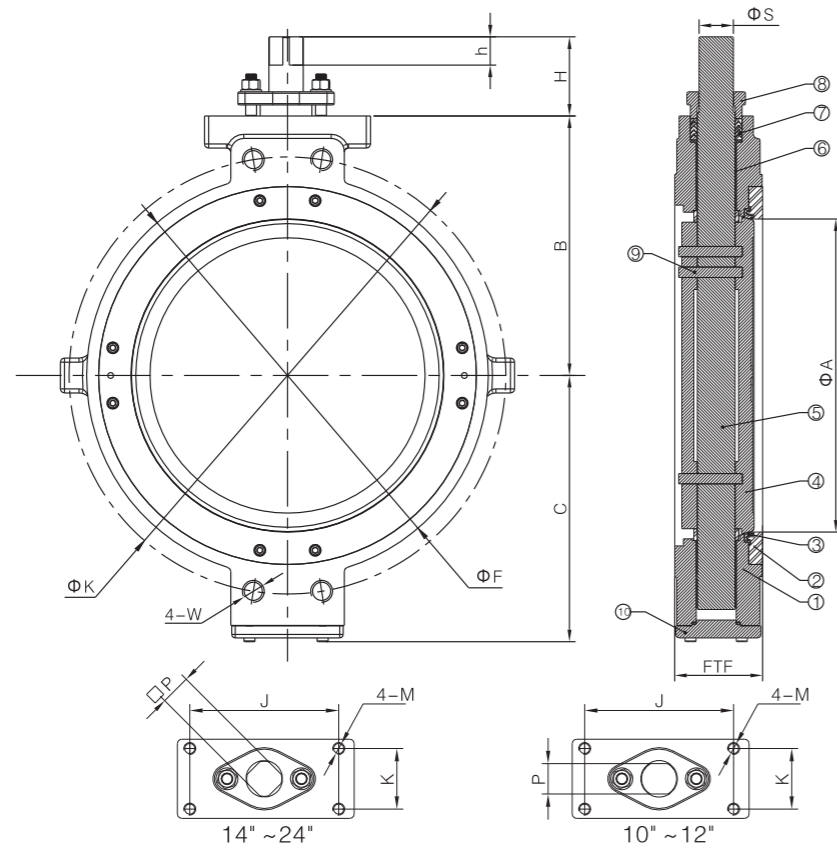
NPS	ΦA	B	C	ΦF	FTF±3.3	H	h	P	ΦS	J	K	M
2"	38	81.8	70	102	44	42.5	14	7	10	125.4	22.4	M10
2 1/2"	59	111.1	82.5	118	48	82	27	11.2	14.8	125.4	22.4	M10
3"	73	120.5	93	132	48	82	27	11.2	14.8	125.4	22.4	M10
4"	96	133.3	110	157	54	82	27	11.2	14.8	125.4	22.4	M10
5"	111	135	120	186	57	82	27	11.2	14.8	125.4	22.4	M10
6"	142	174	153	217	59	82	27	15.9	21.9	125.4	22.4	M10
8"	188	212	180	273	73	95	28	20.6	28	142.7	37.3	M12

Wafer Type Butterfly Valve

Pressure: Class 300 Type: Wafer
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class 300 Wafer Type Butterfly valve Dimension

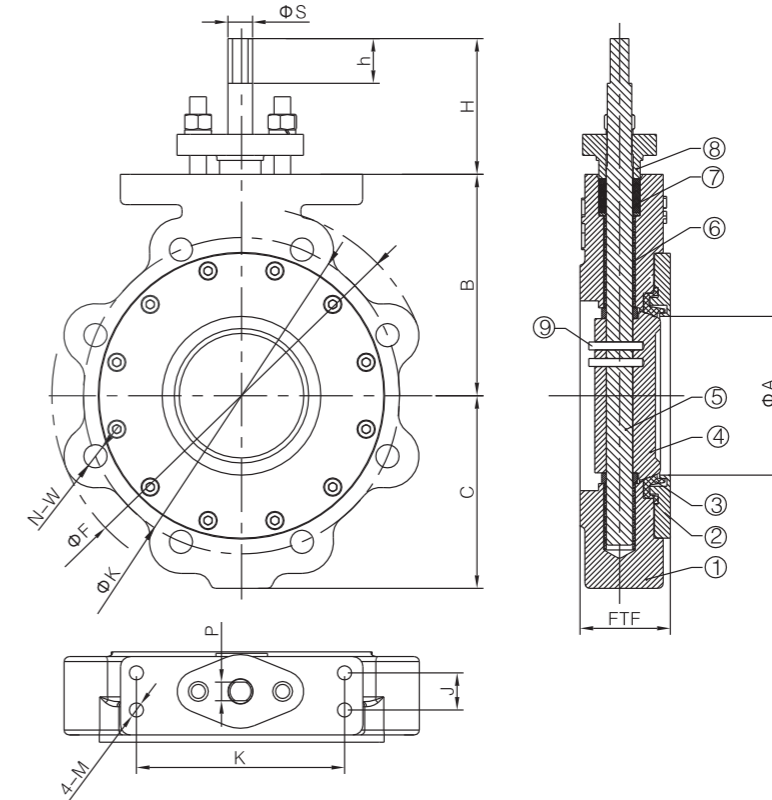
NPS	ΦA	B	C	ΦF	FTF±3.3	H	h	P	ΦS	J	K	M	ΦK	4-W
10"	236	254	222	327	83	100	33	23.8	33.3	142.7	37.3	M12	387.4	1"-8UN
12"	282	282	284	385	92	105	41	28.7	37	142.7	37.3	M12	450.8	1 1/8"-8UN
14"	314	325	310	416	117	102	34.5	41.4	50	203.2	82.6	M16	514.4	1 1/8"-8UN
16"	362	350	338	472	133	102	34.5	41.4	50	203.2	82.6	M16	571.5	1 1/4"-8UN
18"	413	424	412	537	149	118	40	51	64	254	107.7	M20	628.6	1 1/4"-8UN
20"	454	446	440	588	159	130	43	51	64	254	107.7	M20	658.8	1 1/4"-8UN
24"	548	500	505	692	181	145	60	51	64	254	107.7	M20	812.8	1 1/2"-8UN

LUG Type Butterfly Valve

Pressure: Class 150 Type: LUG
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class 150 LUG Type Butterfly valve Dimension

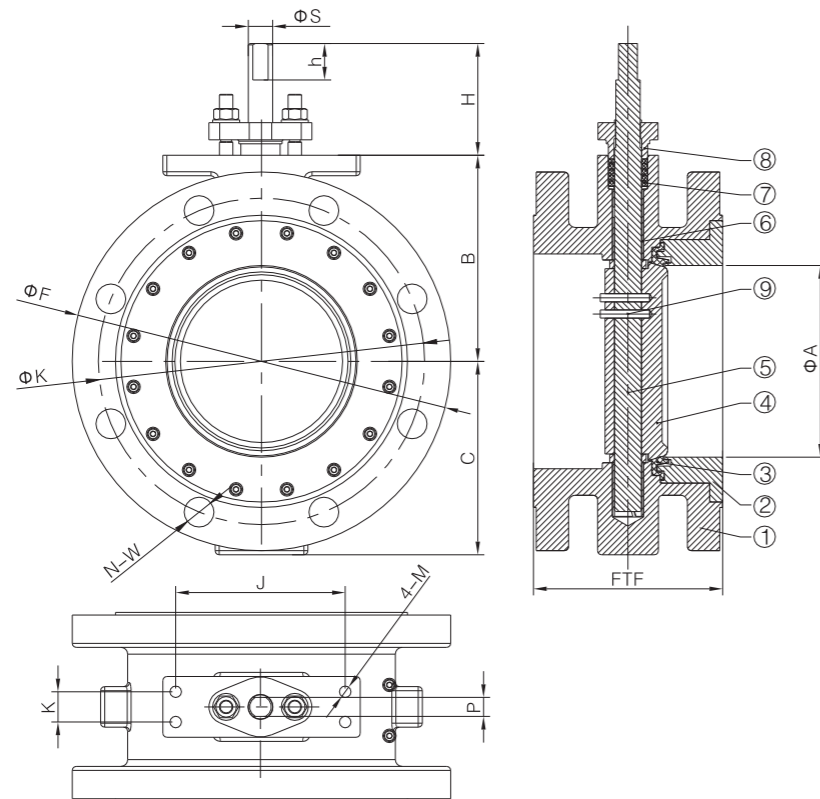
NPS	ΦA	B	C	FTF±3.3	H	h	P	ΦS	J	K	M	ΦF	ΦK	N-W
2 1/2"	59	111.1	82.5	48	82	27	11.2	14.8	125.4	22.4	M10	180	139.7	4 - 5/8"-11UNC
3"	73	120.5	93	48	82	27	11.2	14.8	125.4	22.4	M10	190	152.4	4 - 5/8"-11UNC
4"	96	133.3	110	54	82	27	11.2	14.8	125.4	22.4	M10	230	190.5	8 - 5/8"-11UNC
5"	111	135	120	57	82	27	11.2	14.8	125.4	22.4	M10	255	215.9	8 - 3/4"-10UNC
6"	142	152.4	135	57	82	27	14	18	125.4	22.4	M10	280	241.3	8 - 3/4"-10UNC
8"	188	187.3	172	64	82	27	15.9	21.9	125.4	22.4	M10	345	298.5	8 - 3/4"-10UNC
10"	236	231.8	202	71	97	28	20.6	28	142.7	37.3	M12	405	362	12 - 7/8"-9UNC
12"	282	260.3	241.3	81	97	33	23.8	33.3	142.7	37.3	M12	485	431.8	12 - 7/8"-9UNC
14"	314	315	295	92	105	41	28.7	37	142.7	37.3	M16	535	476.3	12 - 1"-8UN

Double Flange Type Butterfly Valve

Pressure: Class 150 Type: Double Flange
 Temperature: -30°C~180°C Leakage: VI FCI70-2

Technology standard

Design & manufacturing standards: API 609
 Temperature & pressure standards: ASME B16.34
 Inspection & test: API 598
 Flange size: ASME B16.5



Class 150 Double Flange Type Butterfly valve Dimension

NPS	ΦA	B	C	FTF±3.3	H	h	P	ΦS	J	K	M	ΦF	ΦK	N-W
3"	73	121	93	114	82	27	11.2	14.8	125.4	22.4	M10	190	152.4	4 - Φ19
4"	96	133.3	110	127	82	27	11.2	14.8	125.4	22.4	M10	230	190.5	8 - Φ19
5"	111	135	120	140	82	27	11.2	14.8	125.4	22.4	M10	255	215.9	8 - Φ22
6"	142	152.4	143	140	82	27	14	18	125.4	22.4	M10	280	241.3	8 - Φ22
8"	188	187.3	172	152	82	27	15.9	21.9	125.4	22.4	M10	345	298.5	8 - Φ22
10"	236	231.8	202	168	97	28	20.6	28	142.7	37.3	M12	405	362	12 - Φ26
12"	282	260.3	241.3	178	97	33	23.8	33.3	142.7	37.3	M12	485	431.8	12 - Φ26
14"	314	315	295	190	105	41	28.7	37	142.7	37.3	M16	535	476.3	12 - Φ29

Triple Eccentric Butterfly Valve

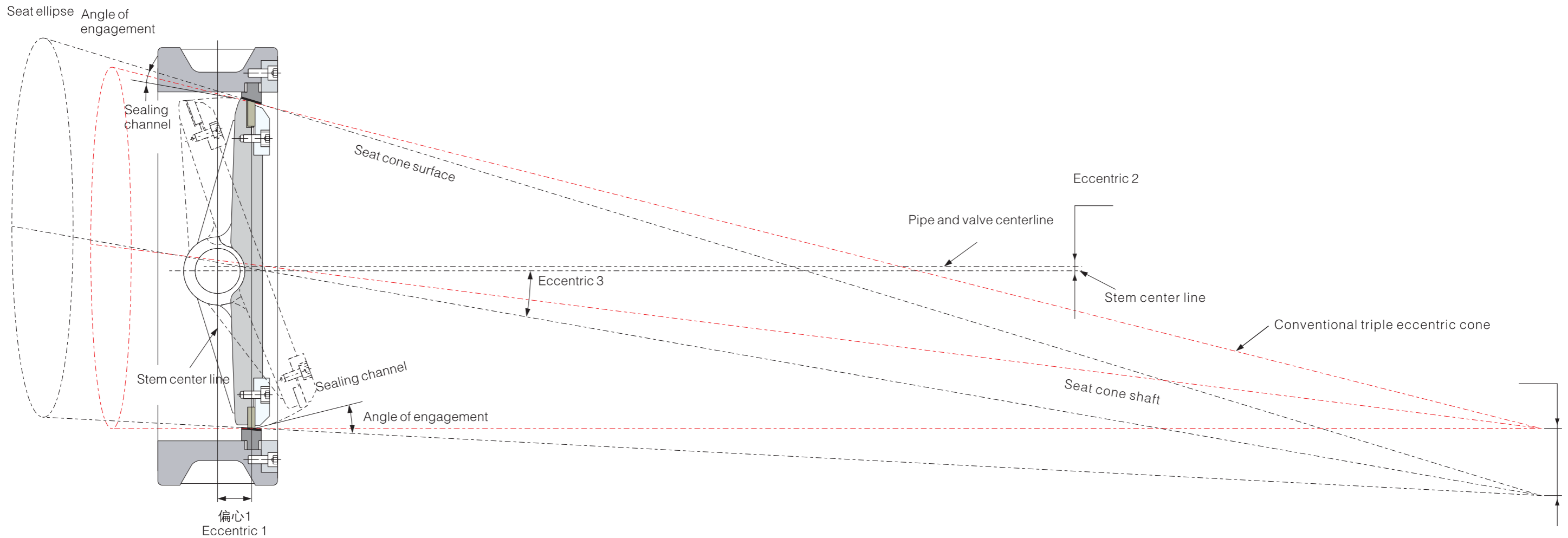


HDY 500 Series Triple Eccentric Butterfly Valve

Working principle

Triple eccentric metal to metal seal butterfly valve call close tightly in bi-direction. The geometrical shape ensures that the valve plate sealing ring is only in contact with the valve seat when the valve is closed, So the sealing parts will not generate friction or wear and can produce a torque so that the seal has enough "welding" performance to ensure the contact of the sealing parts is even and consistent and to achieve the bi-direction zero leakage sealing effect.

Triple eccentric structure drawing

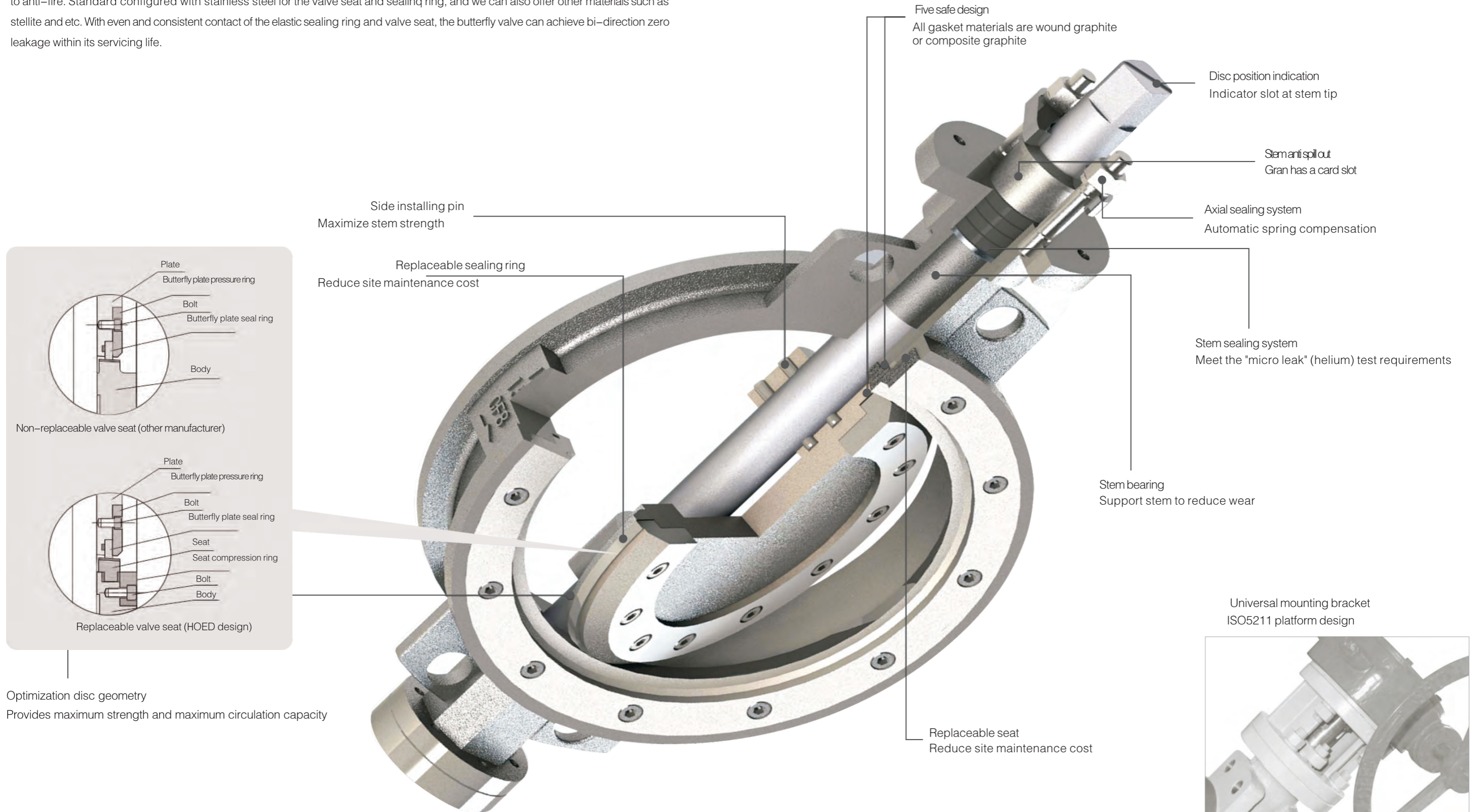


Triple eccentric geometry

- Eccentric 1. The stem shaft is located behind the valve seat shaft, so that the sealing part can be completely contact with the entire valve seat.
- Eccentric 2. The center line of the valve stem is off the line and the center line of the valve, which is free from the interference of the valve opening and closing.
- Eccentric 3. The cone shaft of the valve seat is deviated from the center line of the valve stem so that the friction can be eliminated when close and open. And this can achieve an even and consistent tight sealing effect around the entire valve seat.

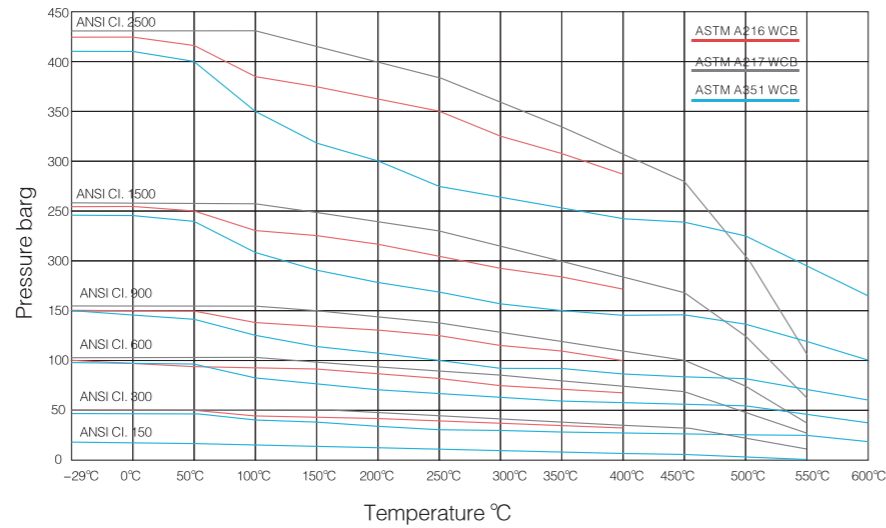
Production introduction

HOED's triple eccentric metal to metal seal butterfly valve can offer zero leakage with the lowest torque. It is metal to metal's inherent characteristic to anti-fire. Standard configured with stainless steel for the valve seat and sealing ring, and we can also offer other materials such as stellite and etc. With even and consistent contact of the elastic sealing ring and valve seat, the butterfly valve can achieve bi-direction zero leakage within its servicing life.



▶ Temperature pressure curve

Mark:
All temperature pressure class meec ASME B16.34 ASTM A216 WCB cannot be used for a long period of more than 425°C celsius

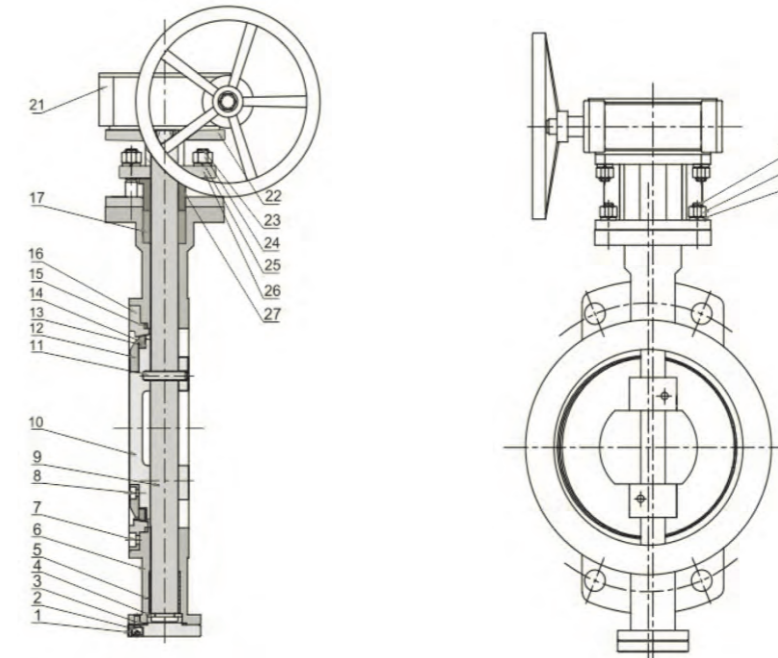


▶ Reference Torque(N.m)

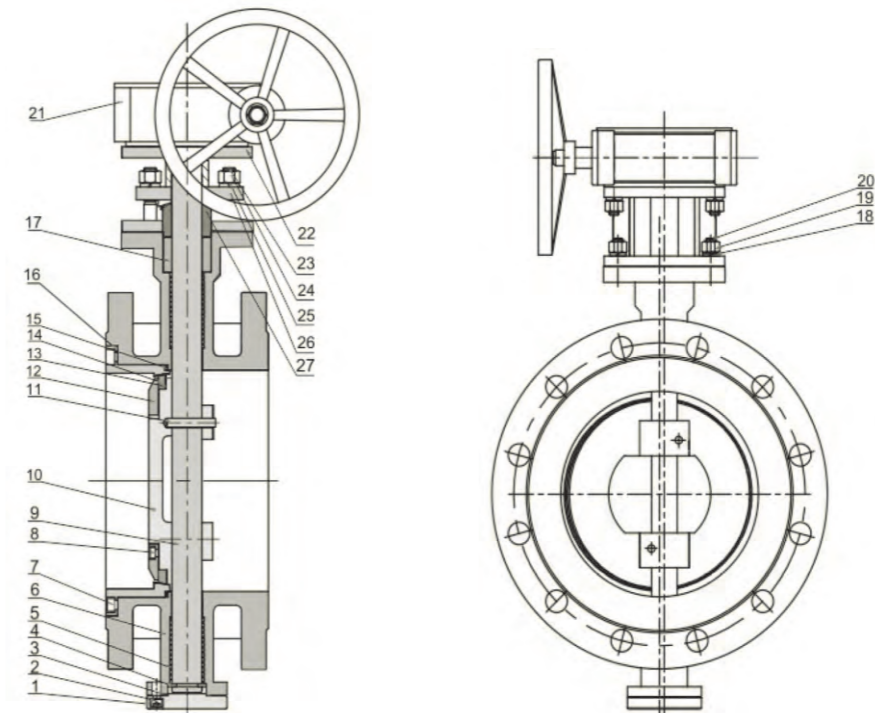
Size		Differential pressure (Bar)					
		20		50		100	
Inch	DN	Close	Open	Close	Open	Close	Open
3	80	79	89	134	154	214	324
4	100	108	132	188	236	382	719
6	150	150	267	334	430	700	1691
8	200	265	423	525	1063	1666	3084
10	250	475	750	969	1724	2678	5293
12	300	676	1122	1371	2537	3469	7711
14	350	818	1529	1655	3283	4528	9214
16	400	1078	2099	2186	5613	4988	13406
18	450	1371	2783	2770	6405	7924	24182
20	500	1490	3277	3000	8327	10560	31279
24	600	2162	5456	4324	12821	11164	43527
28	700	5458	18389				
30	750	6259	25311				
32	800	7219	26900				
36	900	10632	36319				
40	1000	13159	44689				
42	1050	14611	57523				
48	1200	22853	70641				

Mark: 1. The listed torque is based on the normal temperature, the numerical value of stem is the flow direction of medium flow
2. the safety factor of torque is 1.3 times for actuator

▶ Design specification



Splint Type Triple Eccentric Hard Seal Butterfly Valve



Flange Type Triple Eccentric Hard Seal Butterfly Valve

Design: API 609

Pressure Rating: Class150-600

Face to Face: API 609

Range Ends: ASME B16.5

Testing: API 598

Min. Thickness: ASME B16.34

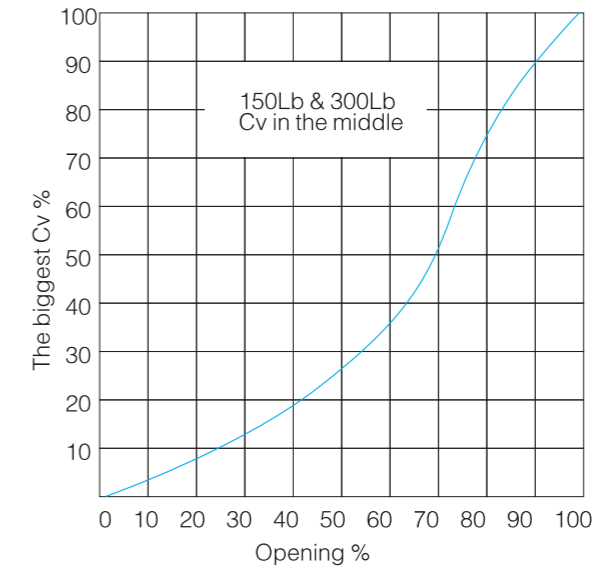
Temperature: -29°C~+425°C

Operation Method: Manual, Pneumatic actuator, Electric actuator, Pneumatic-hydraulic actuator,
Electric-hydraulic actuator.

Other standard products can also be produced

No.	Part Name	C.S Material	S.S Material
1	End Cover	A105	F304/F316
2	Inner Hexagon Screw	8.8	A2-70
3	Lower Gasket	304+Spiral graphite	304+ Spiral graphite
4	Splin Collar	304	304
5	Axle Sleeve	316+QPQ	316+QPQ
6	Body	WCB	CF8/CF8M
7	Inner Hexagon Screw	A2-70	A2-70
8	Inner Hexagon Screw	A2-70	A2-70
9	Stem	17-4PH	17-4PH
10	Disc	WCB	CF8/CF8M
11	Taper Pin	329	329
12	Disc Retainer	A105	F304/F316
13	Disc Seal Gasket	304+Composite graphite	304+Composite graphite
14	Disc Seal Ring	316	316
15	Body Seal Gasket	304+Graphite	304+Graphite
16	Seat	304-STL	304-STL
17	Graphite Packing	Flexible graphite	Flexible graphite
18	Spring Washer	SUS301	SUS301
19	Nut	8	A2-70
20	Bolt	8.8	A2-70
21	Worm Gear	Kit	Kit
22	Yoke	WCB	WCB
23	Bolt	8.8	A2-70
24	Nut	8	A2-70
25	Spring Washer	SUS 301	SUS 301
26	Gland Clamp	WCB	CF8/CF8M
27	Gland	A105	F304/F316

▶ **Valve Cv Value(Flow Coefficient)**



Class 150

Inch	Stroke of Disc (%)									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
3"	10	23	37	55	75	99	123	136	141	129
4"	19	42	74	118	163	213	276	330	351	326
6"	36	86	161	254	370	507	688	875	1011	982
8"	55	95	279	415	607	847	1123	1423	1623	1678
10"	101	152	451	682	986	1378	1845	2371	2790	2956
12"	130	307	669	1054	1515	2050	2720	3401	4038	4191
14"	145	398	706	1140	1840	2833	3707	5517	7220	7527
16"	383	499	942	1604	2552	3837	5590	7607	9442	10208
18"	484	809	1470	2433	3680	5242	6901	8759	10657	12287
20"	509	1073	1810	2834	4338	6163	8621	11436	14108	14725
24"	539	1342	2475	4000	6146	9166	12772	16189	20629	23338
28"	688	1535	2662	4521	6776	10329	15895	22110	29294	30800
30"	715	1725	3293	5724	9254	14274	21723	30037	33550	34650
32"	748	1828	3489	6065	9803	15121	23014	31821	37664	39600
36"	867	2247	4316	7943	12596	19674	29350	42130	46871	49280
40"	1320	3025	5720	9790	15950	24090	32670	44017	60576	63690
42"	1432	3190	6160	10120	16500	25520	39050	55000	67980	71500
44"	1485	3460	6681	10976	17896	27679	42354	59654	73732	77550
48"	1656	4000	7724	12689	20686	31998	48963	68961	85237	89650

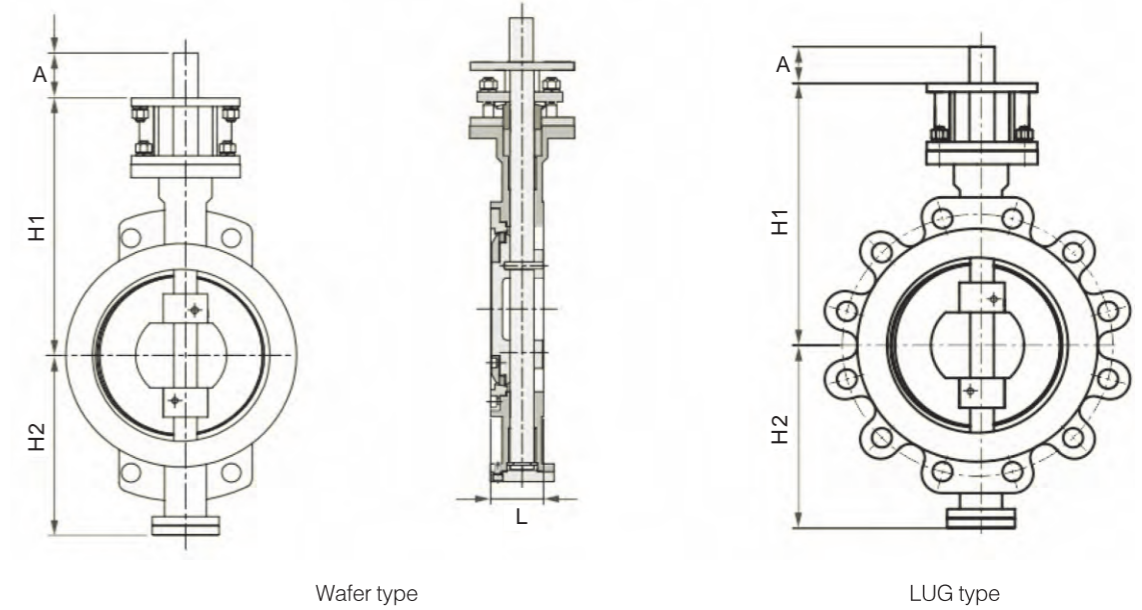
Class 300

Inch	Stroke of Disc (%)									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
3"	9	17	30	48	64	94	120	136	146	135
4"	14	44	77	123	132	177	205	227	223	216
6"	33	108	185	263	313	418	483	567	646	661
8"	52	172	315	462	582	748	921	1090	1268	1364
10"	103	255	455	846	1093	1299	1593	1921	2609	2641
12"	166	415	701	1035	1289	1801	2311	2747	3029	3077
14"	229	526	904	1304	1654	2357	2879	3496	4311	4770
16"	241	554	988	1621	2211	3529	4826	5939	7295	7636
18"	286	726	1311	2177	2937	4698	6145	7662	9216	10029
20"	385	1066	1816	3088	4451	6388	8415	10538	12934	14010
24"	419	1087	2088	3713	5098	8078	10685	13416	16653	17992
28"	472	1222	2340	3841	6000	10406	15752	22000	25905	26950
30"	545	1394	2459	4322	6700	12210	19030	26180	31790	33330
32"	550	1540	2970	5390	7800	13310	20460	29150	33990	35310
36"	671	1738	3740	7040	11100	19360	29480	38610	44880	46750

Class 600

Inch	Stroke of Disc (%)									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
3"	9	20	40	59	79	92	97	101	106	103
4"	17	30	50	105	138	292	352	462	616	563
6"	44	74	125	208	308	424	537	644	717	666
8"	66	153	282	446	626	889	1079	1286	1399	1348
10"	88	233	438	684	944	1353	1621	1928	2081	2030
12"	147	320	603	990	1433	1918	2428	2885	3213	3175
14"	218	534	939	1429	2042	2697	3301	4038	4115	3831
16"	230	901	1408	2068	2828	3742	4443	5013	5365	5181
18"	427	1036	1774	2624	3510	4486	5398	6184	6433	6102
20"	524	1273	2179	3222	4311	5510	662g	7596	7900	7493
24"	652	1418	2574	4034	5811	7794	9656	11856	13586	13212

• Note:Cv=1.167Kv



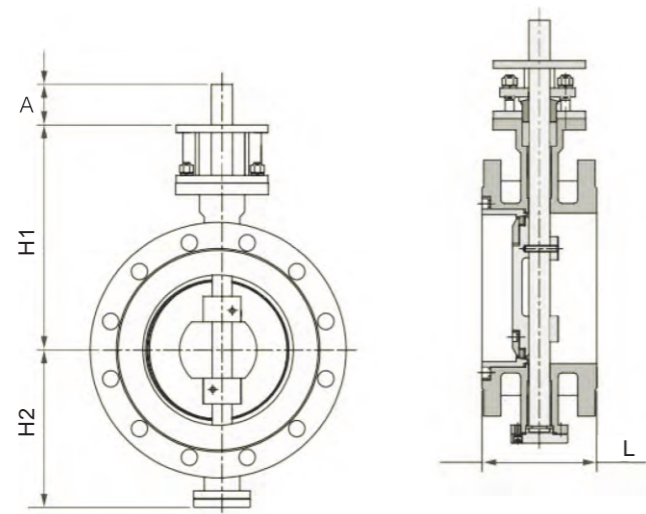
Overall dimensions and reference weight

Wafer type

SIZE		ASME CL150					ASME CL300					ASME CL600				
Inch	DN	H1	H2	A	L	weighe(kg)	H1	H2	A	L	weighe(kg)	H1	H2	A	L	weighe(kg)
3"	80	260	125	36	48	10	260	125	36	48	14	234	136	40	54	20
4"	100	290	141	36	54	15	290	141	36	54	15	298	185	40	64	21
6"	150	330	165	40	57	20	350	189	40	59	29	355	238	56	78	41
8"	200	385	214	40	54	34	415	236	56	73	50	405	263	80	102	70
10"	250	425	243	40	71	45	455	272	56	83	75	485	328	140	117	105
12"	300	490	286	56	81	73	490	310	80	92	109	538	365	140	140	153
14"	350	525	312	56	92	97	545	335	80	117	164	610	390	140	155	230
16"	400	545	350	80	102	123	575	389	140	133	228	680	440	160	178	319
18"	450	580	383	80	114	164	660	422	140	149	285	683	460	160	200	399
20"	500	580	414	80	127	220	700	462	140	159	343	795	526	200	216	480
24"	600	690	484	140	154	324	785	531	160	181	513	885	623	200	232	718

LUG type

SIZE		ASME CL150					ASME CL300					ASME CL600				
Inch	DN	H1	H2	A	L	weighe(kg)	H1	H2	A	L	weighe(kg)	H1	H2	A	L	weighe(kg)
3"	80	260	125	36	48	13	260	125	36	48	18	234	136	40	54	24
4"	100	290	141	36	54	17	290	141	36	54	22	298	185	40	64	25
6"	150	330	165	40	57	23	350	189	40	59	41	355	238	56	78	49
8"	200	385	214	40	54	36	415	236	56	73	56	405	263	80	102	84
10"	250	425	243	40	71	49	455	272	56	83	77	485	328	140	117	126
12"	300	490	286	56	81	83	490	310	80	92	119	538	365	140	140	183
14"	350	525	312	56	92	117	545	335	80	117	254	610	390	140	155	276
16"	400	545	350	80	102	160	575	389	140	133	300	680	440	160	178	383
18"	450	580	383	80	114	194	660	422	140	149	455	683	460	160	200	478
20"	500	580	414	80	127	270	700	462	140	159	499	795	526	200	216	576
24"	600	690	484	140	154	387	785	531	160	181	788	885	623	200	232	861



Flange type

Overall dimensions and reference weight

Flange type

SIZE		ASME CL.150					ASME CL.300				
Inch	DN	H1	H2	A	L	weighe(kg)	H1	H2	A	L	weighe(kg)
3"	80	260	125	36	114	22	260	125	36	114	22
4"	100	290	141	36	127	28	290	141	36	127	33
6"	150	330	155	40	140	40	330	189	40	140	61
8"	200	385	214	40	152	61	415	236	56	152	86
10"	250	425	243	40	165	83	455	272	56	165	100
12"	300	490	286	56	170	127	490	310	80	178	175
14"	350	525	312	56	190	156	545	335	80	190	284
16"	400	545	350	80	216	138	575	389	140	216	340
18"	450	580	383	80	222	229	660	422	140	222	487
20"	500	580	414	80	229	311	700	462	140	229	529
24"	600	690	484	140	267	433	785	531	160	267	834
28"	700	795	556	140	292	732	880	617	160	292	1382
30"	750	865	611	160	318	848	1000	671	180	318	1595
32"	800	865	611	160	318	1015	1000	671	180	318	1805
36"	900	1000	736	160	330	1495	1150	801	200	330	2215
40"	1000	1130	801	180	410	2035	1150	801	200	410	2270
42"	1050	1130	801	180	410	2155	1215	900	250	410	2756
48"	1200	1267	866	200	470	3045	1300	991	280	470	3400

SIZE		ASME CL.600				
Inch	DN	H1	H2	A	L	weighe(kg)
3"	80	234	136	40	180	32
4"	100	298	185	40	190	66
6"	150	355	238	56	210	121
8"	200	405	263	80	230	198
10"	250	485	328	140	250	298
12"	300	538	365	140	270	378
14"	350	610	390	140	290	445
16"	400	680	440	160	310	670
18"	450	683	460	160	330	750
20"	500	795	526	200	350	1000
24"	600	885	623	200	390	1452



OTHER VALVE

