• Add: No 255, Shenjiabang Road,
Baihe Industry Park, Qingpu
District, Shanghai
P. C : 201700
Tel : +86-021-6983 3987
Fax : +86-021-5252 7736
E-mail : info@dbv-armaturen.com

DBV

www.dbv-armaturen.com

DBV®

www.dbv-armaturen.com

BUTTERFLY VALVE SERIES
BALL VALVE SERIES

DBV VALVE GROUP CO.,LTD.

Company Introduction

DBV VALVE GROUP CO.,LTD.

DBV Corporation, founded in 2001, sets its headquarters in BAIHE Industry Park, Qingpu District, Shanghai Municipality, is a modern enterprise specializing in the manufacturing, sales and service of various intelligently controlled valves (pneumatically, electrically or hydraulically-driven ball valves).

It has set up an advanced physical/chemical test center, and has gathered professional CNC processing and testing/ pressure-test automatic production facilities and enrolled experienced technical production team. The factory implements wholly ISO quality standard system to ensure the quality of the product. The floating ball valve, trunnion ball valve, welded ball valve, cryogenic ball valve and bi-directional zero-leakage butterfly valve, wholly flange/wafer/lug/BW metal seated butterfly valve, cryogenic butterfly valve produced by DBV have the features of simple structure, good sealing performance, small torque, water resistance, preventing from static electricity and the outrush of valve spindle, convenient on-site maintenance. The products are manufactured strictly in accordance with ISO, ANSI, API, GB, HG and so on, the diameter range of the product is DN10~1000mm(12"~40"), the nominal pressure range is 1.6MPa~42MPa (150Lb~2500Lb) while its operating temperature range is -196℃~750℃. The materials involve carton steel, stainless steel, heat-resisting alloy steel, monel alloy, low-temp steel and other special steels, the driving modes consist of manual, worm, electrical, pneumatical, hydraulical and computer-programmed.

So far, DBV valves are widely applied with stable performance in severe work conditions for many years in the fields such as petroleum, chemicals, metallurgy, light industry, coal chemicals, power station, urban building, water supply, oil/gas transportation, natural gas, and long-distance pipelines. The products can suit the strict requirements of fluid control industry and get appraisal and recognition from users thanking to its merits like compatibility, economic and high performance.

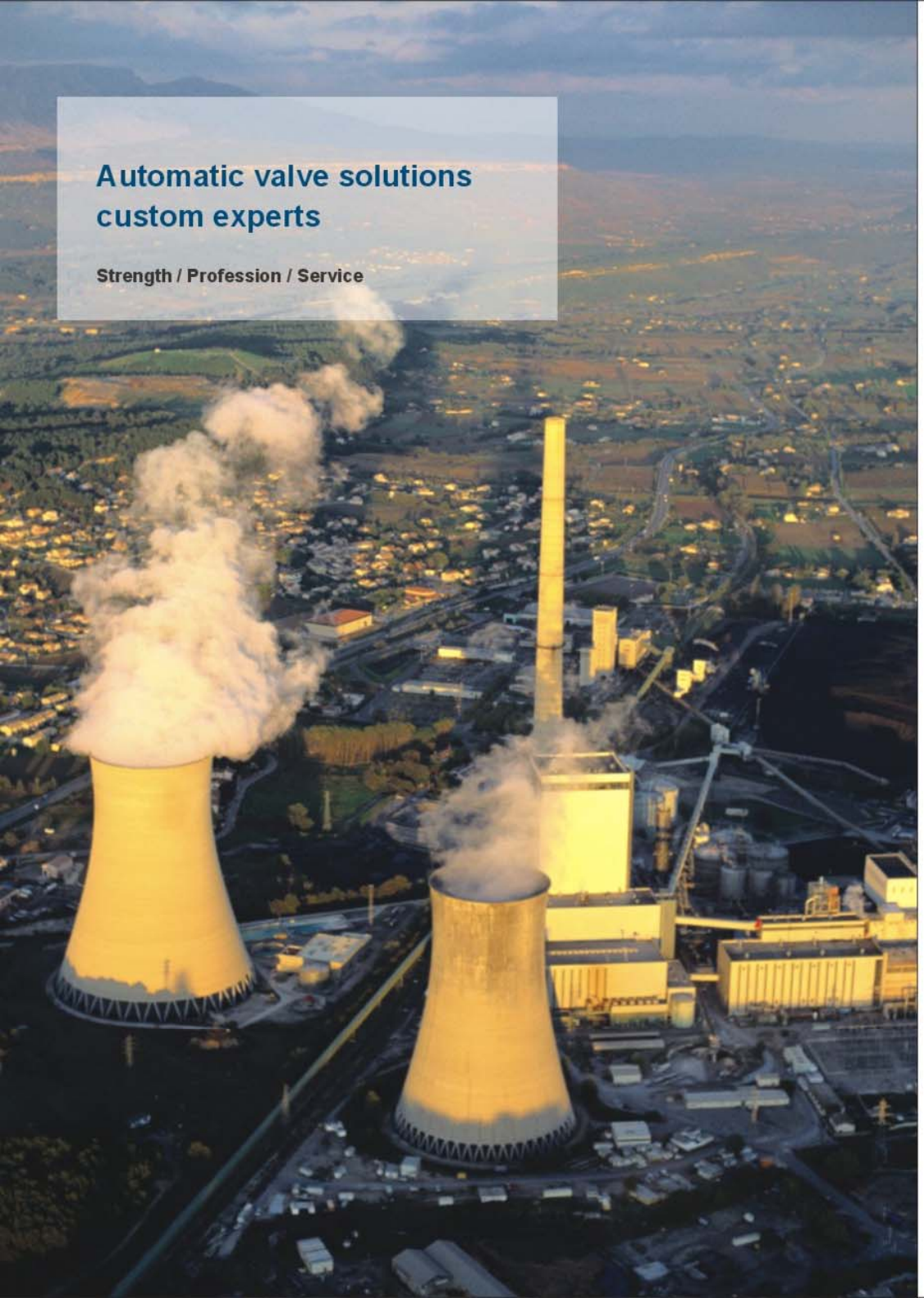
DBV Corporation always persists in the management ideas of Customer First, Stressing On Quality and Technical Innovation, strives to explore up-to-date independent core technology, provides customers with sustainable solution and coordinated service support so as to effectively guarantee the economic benefits of the customers. DBV has limitless potential to develop high-end products, and exerts fully into the continuous technical innovation and high-quality service, is devoted to become one of most professional, most comprehensive and most reliable valve manufacturers throughout the world.

Production Equipment

In order to strive for perfection, east perform strict and scientific production and processing process. We pay attention to every part, every machine structure design and processing technology. Strict testing to ensure product quality, therefore, the experts of the east treasure with the latest gold detection equipment and the most scientific methods to control each production link.

DBV VALVE GROUP CO.,LTD.

RESEARCH AND DEVELOP INDEPENDENTLY AND SUSTAINED INNOVATION



CONTENTS

BUTTERFLY VALVE SERIES

BALL VALVE SERIES

DBV VALVE GROUP CO.,LTD.
www.dbv-armaturen.com

BUTTERFLY VALVE SERIES

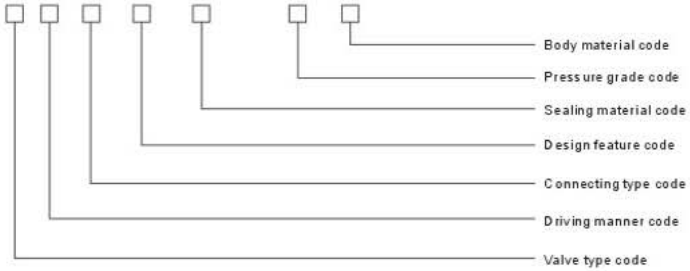
BUTTERFLY VALVE SERIES

Butterfly Valve Codes

Execution standard

Designed according to JB/T8527 rules
Flange according to the provisions of the regulation GB/T9113.1
Face to face according to the provisions of GB/T12221
Pressure test according to GB/T13927, JB/T9092 rules
Design according to the provisions of the ANSI B16.34
Flange according to ANSI B16.5 or the rules of the MSS - SP - 44
Face to face according to stipulations API609
Pressure test according to API598 rules
(if you need other standard, it could take another technical confirmation)

Model Schedule Instruction



Valve type code: D-Butterfly valve

Driving manner code:3-Worm wheel and lever operation 6-Pneumatic driving
9-Electric driving(wrench lever driving omitted)

Connecting type code:4-Flange connecting 6-Welding connection
7-Wafer type

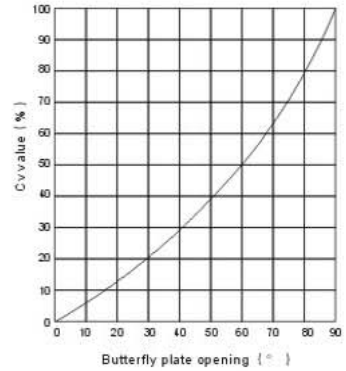
Design feature code : 1-Single eccentric structure 2-Double eccentric structure
3-triple eccentric structure

Sealing material code :X-Rubber F-Polytetrafluoroethylene
H-Alloy steel W-Stainless steel Y-Hard alloy

Pressure grade code :nominal pressure=10*MPa, class is the actual figure

Body material code: Z-HT200 C-WCB P-CF8 ZG1Cr18Ni9Ti
R-CF8M ZG1Cr18Ni12Mo2Ti

D343Y-16P: Notes as 1.6MPa nominal pressure, worm wheel operation , flange-connecting, triple eccentric structure, CF8 valve body ,and hard alloy sealing material.



BUTTERFLY VALVE SERIES
Products Performance Specification

STANDARDS COMPLIANCE

Design and manufacture standard		API 609	Inspection and test standard		API 598
Material pressure-temp standard		ASME B16.34	Flange ends dimension standard	Size≤24" to	ANSI B16.5
Face to face dimension standard	Flange short pattern to	ISO5752 basic series 13		Size＞24" to	ANSI B16.47 Series B
	Flange long pattern to	ASME B16.10	Fire proof standard		API 607

STANDERDS COMPLIANCE

Design standard	Flange connection dimension	Face to face dimension	Pressure test
JB/8527 API609	GB/T9113 JB/T79.1 HG20592	GB12221 API609	GB/T13927 ISO5208 JB/T9092 API598

PRODUCTS PERFORMANCE SPECIFICATION

Pressure		Testing pressure at constant temperature (Mpa)			Applicable temperature	Applicable medium
		The shell testing	High-Pressure seal	Low-Pressure seal		
Pound grade (Class)	150	2.93	2.07	0.6	-46℃~550℃ Different raw material for different work temperature	Water、oil、gas and other causticity medium (Different raw material for different medium)
	300	7.58	5.52	0.6		
	600	15.0	11.03	0.6		
	900	22.5	16.5	0.6		

PRODUCTS PERFORMANCE SPECIFICATION

Nominal pressure	PN			ANSI	
	0.6-15MPa			150LB-900LB	
Strength test	1.5 times				
Hydraulic pressure seal test	1.1times				
Pressure seal test	0.6MPa				
Body material	Grey casting iron Z	Ductile irom Q	Carbon steel C	Alloy steel I	CiNiTi steel P CiNiMoTi steel R
Working temperature	0~150℃	-15~300℃	-29~425℃	-29~530℃	-196~600℃
Applicable medium	Water, sea water, steam, gas, oil, etc.		Water, steam, gas and oil, etc.		Acetic acids, nitric acid, stench, pharmaceutical, etc.

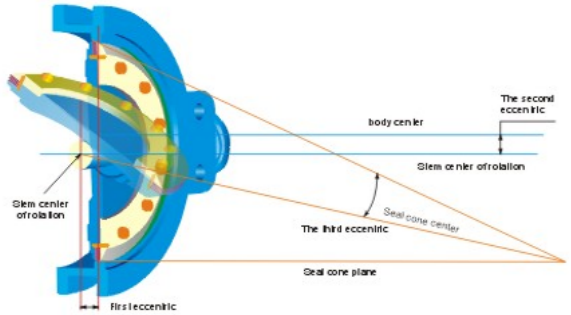
BUTTERFLY VALVE SERIES
Triple Offset Bi-directional Metal-seated Butterfly Valve

Triple Eccentric Butterfly Valve Design Features

The first eccentricity: the deviation between stem rotation center and the seat centerline ensures a tight seal between the seat and disc.

The second eccentricity: the deviation between stem rotation center and the seat centerline, when the valve opens, can make the butterfly plate leave sealing surface quickly.

The third eccentricity: the deviation between the center of the seal ring's vertebral body and the seat centerline completely eliminates the friction between disc and seat.



Products Characteristics

- Elastic property of composite metal sealing ring performs zero leakage.
- Torque seal ensures persistent two-way zero leakage.
- The design of right-angled rotation with zero friction is implemented by the distinctive triple eccentric principle. It eliminates the friction between the seat and sealing ring in90 rotation.
- STL one-piece hard-surface seat may adapt to many working conditions, which is featured by long service life and easy maintenance.
- One-piece cast(sheet welded)body, face-to-face dimensions conforming to ISO5752,ASMEB16.10and API609 , can be replacement to high performance butterfly valves and other types of valves, with easy and flexible installation.
- All metal structure and zero leakage performance make the valve have the property of nature fireproof safety
- Anti-blowout stem for high dependability, completely conforms to API609.
- The valve position indicator on the stem and the flange mounted at the top are in favor of the indication of disc position.
- The stem of triple eccentric butterfly valve is a shaft structure,stem and disc are connected by pin-key combination.

Low Switching Torque

DBV's butterfly valve series adopt the sealing design of triple eccentric, flexible multi-layer metal and graphite superimposed to ensure good sealing performance and reduce operating torque.

Zero Leakage

Multi-layer seal self- positioning design, satisfies the demands of API598 zero leakage.

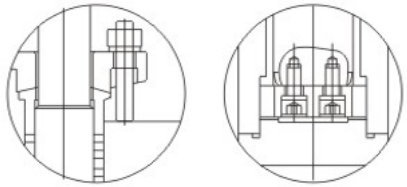
Blow Out Proof Stem

DBV butterfly valve adopts double blow out proof stem design, according with the requirement of API609 and ANSI B31.1
Upper: stem bottom slot, embedded split ring, preventing stem blow out.
Bottom: The stem is designed with a step shaft which is matched with the bushing to prevent the valve stem from blowing out.

BUTTERFLY VALVE SERIES
Triple Offset Bi-directional Metal-seated Butterfly Valve

Fire Proof Design

Metal and piled up multilayer graphite seal design, the inherent fire prevention function, satisfying API607 fire prevention requirements.

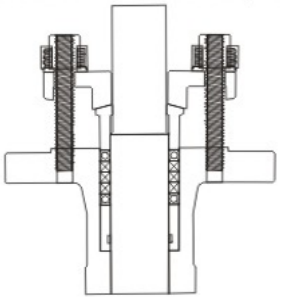


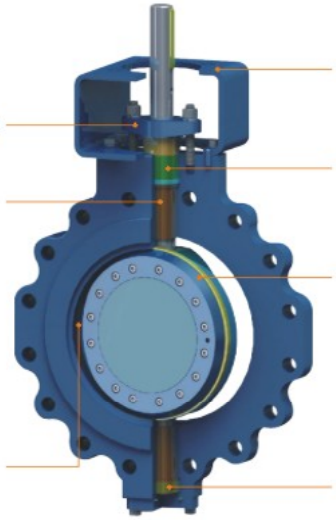
upper blow-out proof structure

At the bottom of the blow-out proof structure

Low Leakage Stem Seal

1. Stem is guided and positioned by the stem bearing during the whole course to avoid the case that the stem offset, caused by lateral pressure shock, resulted in the leakage of stem packing.
2. Packing adopts the processing method of pre-compression, of which upper and lower ends use braided graphite rope and the middle uses forming graphite ring, to enhance the anti-leakage performance
3. The roughness control of stem and packing surface: Stem: Ra0.4~Ra0.8, Packing: Ra1.6.
4. The choice of dynamic load gland flange keeps packing compressed constantly and continuously to reduce the leakage of stem packing seal.
5. According to users' requirements, the valve stem seal can be designed in accordance with Shell MESC77/312 and TA Luft 20PPM is in accordance with the nitrogen suction method.





The Upper Blow Out Proof Stem Design

Extended bearing design

Using extended precise bearing, reducing stem friction, ensuring low operating torque; Graphite ring is used to prevent pollutants from entering the bearing.

Seat Carbide Surfacing

Overall harden the seat to extend the life of the valve and reduce the number of maintenance.

Brackt

Designed according to ISO5211, easy to install gearbox's pneumatic or electical actuator.

Low Leakage Packing (optional)

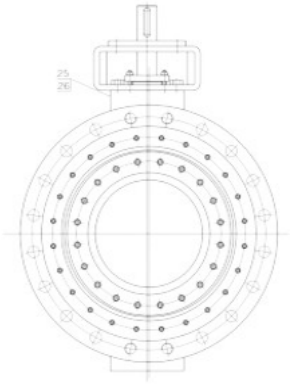
Advanced clip wire braided graphite packing (used in the bottom and top) and low leakage packing (used in the middle) ensures the leakage max. 20PPM.

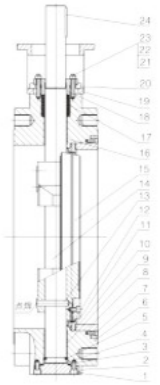
Multi-layer Seal Design

Sealing ring elastic deformation can realize the swaps between zero leakages sealing rings and be convenient to maintain.

At The Bottom Of The Stem Blow-out Proof Design

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

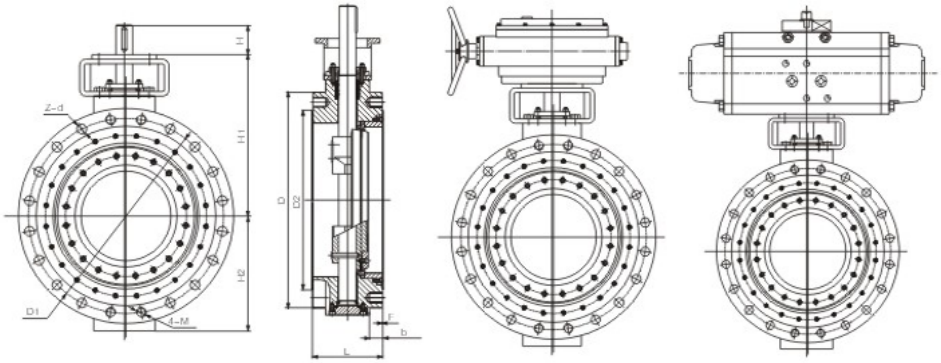




THE MAJOR PARTS MATERIAL

NO	Part Name	Materials	NO	Part Name	Materials
1	Hex. Socket Screw	ASTM A193 B7		Adjustable Gasket	Flexible Graphite
2	End Cover	ASTM A105		Seal Ring	ASTM A276 304
3	Gasket	Flexible Graphite+304		Hex. Socket Screw	ASTM A193 B7
4	Spacer	ASTM A276 304		Pressure Ring	ASTM A105
5	Split Collar	ASTM A276 420	16	Bushing	304
6	Body	ASTM A216 WCB	17	Packing	Flexible Graphite
7	Hex. Socket Screw	ASTM A193 B7	18	Packing Gland	ASTM A216 WCB
8	Compression Ring	ASTM A105	19	Stents	ASTM A216 WCB
9	Bushing	304	20	Hex.bolt	ASTM A193 B7
10	Body Seat ring	A105+STL	21	Stud	ASTM A193 B7
11	Right Seat Ring	Flexible Graphite	22	Nut	ASTM A194 2H
12	Left Seat Ring	Flexible Graphite	23	Flat Washer	C.S
13	Pin	ASTM A193 B7	24	Pin	ASTM A29 1035
14	Stem	17-4PH	25	Name Plate	ASTM A240 321
15	Disc Assemblies	Part Pictures	26	Rivet	ASTM A240 321
	Disc	ASTM A216 WCB			

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

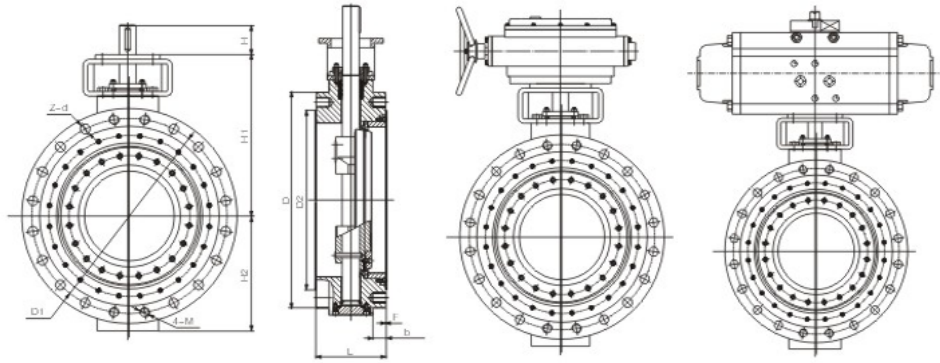


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.0

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	108	165	125	102	20	3	4-18	M16	50	200	75
80	114	200	160	138	20	3	8-18	M16	50	226	98
100	127	220	180	158	22	3	8-18	M16	50	250	130
125	140	250	210	188	22	3	8-18	M16	50	295	165
150	140	285	240	212	24	3	8-22	M20	55	315	175
200	152	340	295	268	24	3	8-22	M20	60	380	220
250	165	395	350	320	26	3	12-22	M20	65	405	250
300	178	445	400	370	26	4	12-22	M20	65	480	300
350	190	505	460	430	26	4	16-22	M20	70	545	330
400	216	565	515	482	26	4	16-26	M24	70	550	360
450	222	615	565	532	28	4	20-26	M24	95	620	380
500	229	670	620	585	28	4	20-26	M24	100	680	410
600	267	780	725	685	34	5	20-30	M27	105	750	460
700	292	895	840	800	34	5	24-30	M27	105	820	530
800	318	1015	950	905	36	5	24-33	M30	110	910	610
900	330	1115	1050	1005	38	5	28-33	M30	130	930	640
1000	410	1230	1160	1110	38	5	28-36	M33	140	980	720
1200	470	1455	1380	1330	44	5	32-39	M36	160	1220	820
1400	530	1675	1590	1535	48	5	36-42	M39	170	1310	930
1600	600	1915	1820	1760	52	5	40-48	M45	180	1460	980
1800	670	2115	2020	1960	56	5	44-48	M45	190	1560	1090
2000	760	2325	2230	2170	60	5	48-48	M45	190	1670	1190

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

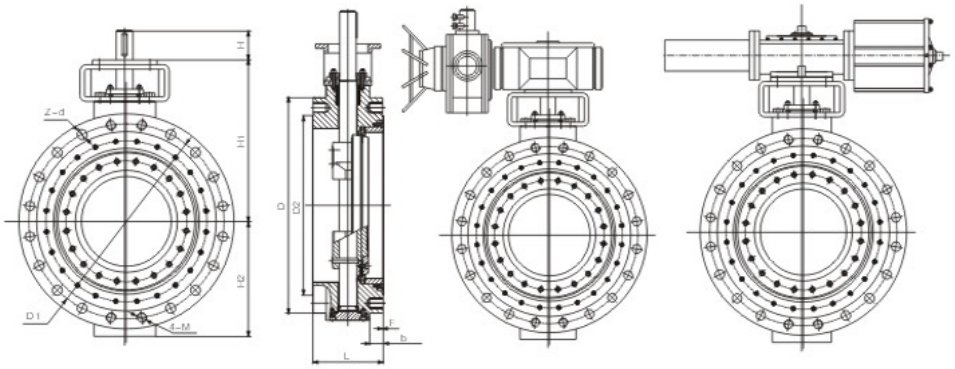


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN0.6

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	108	140	110	90	16	3	4-14	M12	50	200	75
80	114	190	150	128	18	3	4-18	M16	50	226	98
100	127	210	170	148	18	3	4-18	M16	50	250	130
125	140	240	200	178	18	3	8-18	M16	50	295	165
150	140	265	225	202	20	3	8-18	M16	55	315	175
200	152	320	280	258	22	3	8-18	M16	60	380	220
250	165	375	335	312	24	3	12-18	M16	65	405	250
300	178	440	395	365	24	4	12-22	M20	65	480	300
350	190	490	445	415	24	4	12-22	M20	70	545	330
400	216	540	495	465	24	4	16-22	M20	70	550	360
450	222	595	550	520	24	4	16-22	M20	95	620	380
500	229	645	600	570	26	4	20-22	M20	100	680	410
600	267	755	705	670	30	5	20-26	M24	105	750	460
700	292	860	810	775	26	5	24-26	M24	105	820	530
800	318	975	920	880	26	5	24-30	M27	110	910	610
900	330	1075	1020	980	26	5	24-30	M27	120	930	640
1000	410	1175	1120	1080	26	5	28-30	M27	120	980	720
1200	470	1405	1340	1295	28	5	32-33	M30	140	1220	820
1400	530	1630	1560	1510	32	5	36-36	M33	160	1310	930
1600	600	1830	1760	1710	34	5	40-36	M33	180	1460	980
1800	670	2045	1970	1920	36	5	44-39	M36	180	1560	1090
2000	760	2265	2180	2125	38	5	48-42	M39	190	1670	1190

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

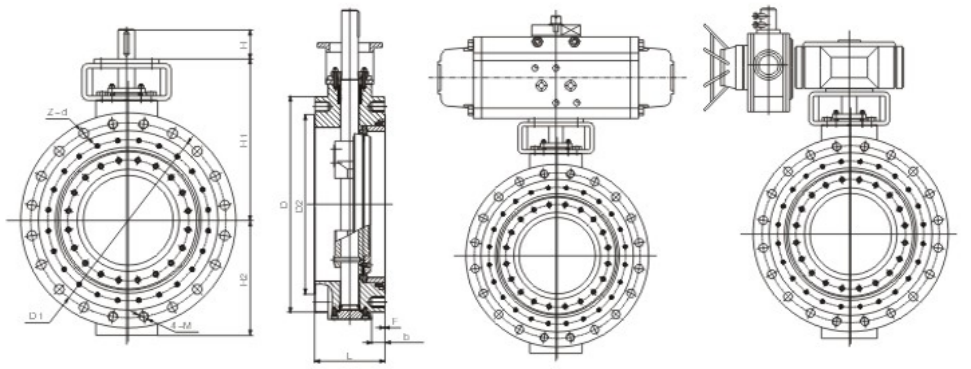


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN2.5

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	108	165	125	102	20	3	4-18	M16	50	200	75
80	114	200	160	138	24	3	8-18	M16	50	226	98
100	127	235	190	162	24	3	8-22	M20	50	250	130
125	140	270	220	188	26	3	8-26	M24	55	295	165
150	140	300	250	218	28	3	8-26	M24	60	315	175
200	152	360	310	278	30	3	12-26	M24	65	380	220
250	165	425	370	335	32	3	12-30	M27	65	405	250
300	178	485	430	395	34	4	16-30	M27	70	480	300
350	190	555	490	450	38	4	16-33	M30	70	545	330
400	216	620	550	505	40	4	16-36	M33	100	550	360
450	222	670	600	555	46	4	20-36	M33	100	620	380
500	229	730	660	615	48	4	20-36	M33	105	680	410
600	267	845	770	720	58	5	20-39	M36	105	750	460
700	292	960	875	820	50	5	24-42	M39	110	820	530
800	318	1085	990	930	54	5	24-48	M45	130	910	610
900	330	1185	1090	1030	58	5	28-48	M45	140	930	640
1000	410	1320	1210	1140	62	5	28-55	M52	140	980	720
1200	470	1530	1420	1350	70	5	32-55	M52	170	1220	820
1400	530	1755	1640	1560	76	5	36-60	M56	180	1310	930
1600	600	1975	1860	1780	84	5	40-60	M56	190	1460	980
1800	670	2195	2070	1985	90	5	44-68	M64	200	1560	1090
2000	760	2425	2300	2210	96	5	48-68	M64	200	1670	1190

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

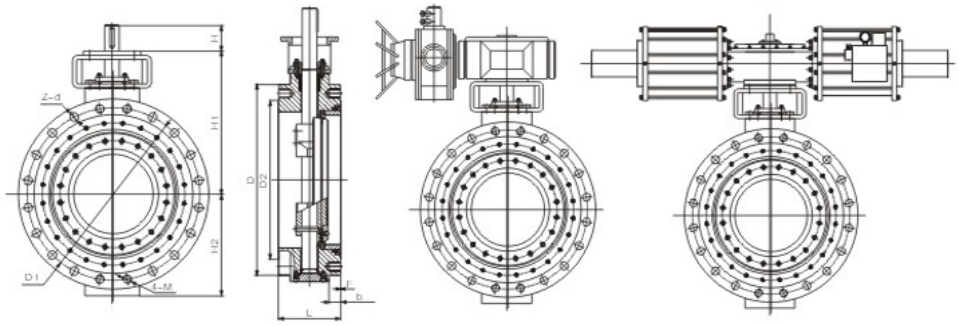


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.6

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	108	165	125	102	20	3	4-18	M16	50	200	75
80	114	200	160	138	20	3	8-18	M16	50	226	98
100	127	220	180	158	22	3	8-18	M16	50	250	130
125	140	250	210	188	22	3	8-18	M16	55	295	165
150	140	285	240	212	24	3	8-22	M20	60	315	175
200	152	340	295	268	24	3	12-22	M20	65	380	220
250	165	405	355	320	26	3	12-26	M24	65	405	250
300	178	460	410	378	28	4	12-26	M24	70	480	300
350	190	520	470	428	30	4	16-26	M24	70	545	330
400	216	580	525	490	32	4	16-30	M27	100	550	360
450	222	640	585	550	40	4	20-30	M27	100	620	380
500	229	715	650	610	44	4	20-33	M30	105	680	410
600	267	840	770	725	54	5	20-36	M33	105	750	460
700	292	910	840	795	40	5	24-36	M33	110	820	530
800	318	1025	950	900	42	5	24-39	M36	130	910	610
900	330	1125	1050	1000	44	5	28-39	M36	140	930	640
1000	410	1255	1170	1115	46	5	28-42	.M39	140	980	720
1200	470	1485	1390	1330	52	5	32-48	M45	170	1220	820
1400	530	1685	1590	1530	58	5	36-48	M45	180	1310	930
1600	600	1930	1820	1750	64	5	40-55	M52	190	1460	980
1800	670	2130	2020	1950	68	5	44-55	M52	200	1560	1090
2000	760	2345	2230	2150	70	5	48-60	M56	200	1670	1190

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

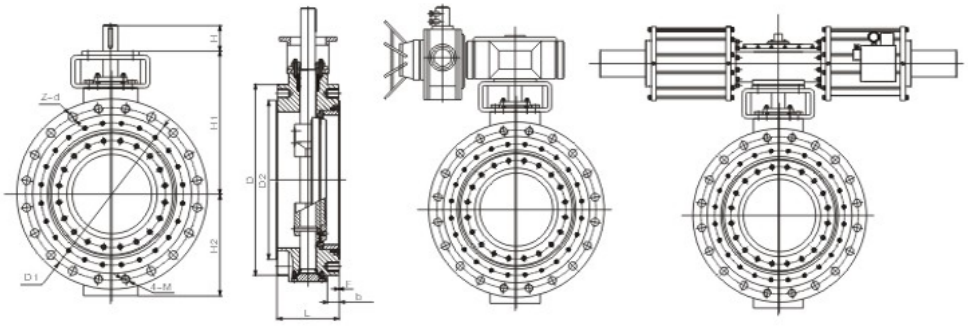


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN6.3

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	150	180	135	102	26	3	4-22	M20	50	200	75
80	180	215	170	138	28	3	8-22	M20	50	226	98
100	190	250	200	162	30	3	8-26	M24	55	250	130
125	200	295	240	188	34	3	8-30	M27	65	295	165
150	210	345	280	218	36	3	8-33	M30	65	315	175
200	230	415	345	285	42	3	12-36	M33	70	380	220
250	250	470	400	345	46	3	12-36	M33	70	405	250
300	270	530	460	410	52	4	16-36	M33	100	480	300
350	290	600	525	465	56	4	16-39	M36	100	545	330
400	310	670	585	535	60	4	16-42	M39	105	550	360
500	350	800	705	615	68	4	16-48	M45	110	680	410
600	390	930	820	735	76	5	16-56	M52	110	750	460

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

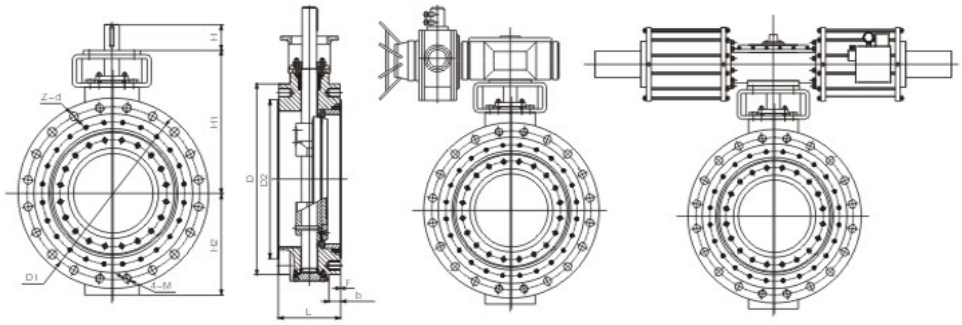


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN4.0

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	150	165	125	102	20	3	4-18	M16	50	200	75
80	180	200	160	138	24	3	8-18	M16	50	226	98
100	190	235	190	162	24	3	8-22	M20	55	250	130
125	200	270	220	188	26	3	8-26	M24	60	295	165
150	210	300	250	218	28	3	8-26	M24	65	315	175
200	230	375	320	285	34	3	12-30	M27	65	380	220
250	250	450	385	345	38	3	12-33	M30	70	405	250
300	270	515	450	410	42	4	16-33	M30	70	480	300
350	290	580	510	465	46	4	16-36	M33	100	545	330
400	310	660	585	535	50	4	16-39	M36	100	550	360
450	330	685	610	460	57	4	20-39	M36	105	620	380
500	350	755	670	615	57	4	20-42	M39	105	680	410
600	390	890	795	735	72	5	20-48	M45	110	750	460

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

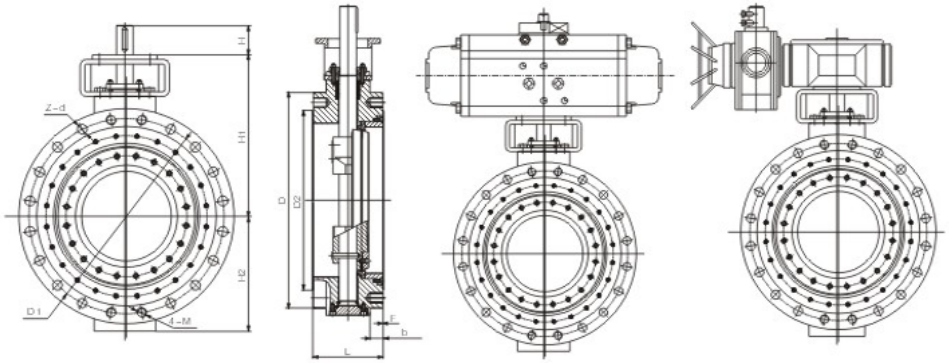


MAIN CONNECTION DIMENSIONS

Nominal Pressure: PN10.0

Nominal Diameter	L	D	D1	D2	b	f	Z-d	M	H	H1	H2
50	150	195	145	102	28	3	4-26	M24	50	200	75
80	180	230	180	138	32	3	4-26	M24	50	226	98
100	190	265	210	162	36	3	4-30	M27	55	250	130
125	200	315	250	188	40	3	4-33	M30	65	295	165
150	210	355	290	218	44	3	8-33	M30	65	315	175
200	230	430	360	285	52	3	8-39	M33	70	380	220
250	250	505	430	345	60	3	8-39	M39	70	405	250
300	270	585	500	410	68	4	12-42	M45	100	480	300
350	290	655	560	465	74	4	12-48	M45	100	545	330
400	310	715	620	535	82	4	12-48	M45	105	550	360
500	350	870	780	615	94	4	16-56	M52	110	680	410
600	390	990	875	735	102	5	16-62	M56	110	750	460

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

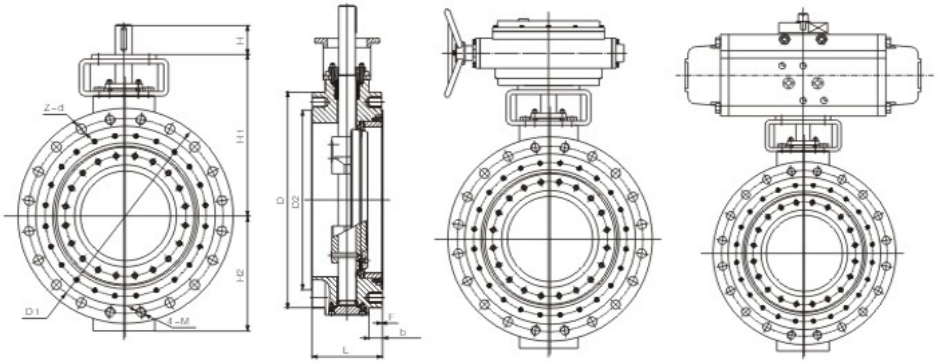


MAIN CONNECTION DIMENSIONS

Nominal Pressure: Class 600

Nominal Diameter		L	D	D1	D2	b	f	Z-d	M(in)	H	H1	H2
2	50	150	165	127	92	26	7	8-19	5/8	55	205	125
3	80	180	210	168.5	127	32	7	8-22	3/4	55	235	127
4	100	190	255	200	157	38	7	8-26	7/8	60	270	160
5	125	200	280	235	186	45	7	8-29	1	65	315	285
6	150	210	320	270	216	48	7	12-29	1	70	340	196
8	200	230	380	330	270	56	7	12-32	1-1/8	70	390	221
10	250	250	445	387.5	324	64	7	16-35	1-1/4	70	450	256
12	300	270	520	451	381	67	7	20-35	1-1/4	100	500	307
14	350	290	585	514.5	413	70	7	20-39	1-3/8	100	530	330
16	400	310	650	571.5	470	76	7	20-42	1-1/2	110	600	391
18	450	330	710	628.5	533	83	7	20-45	1-5/8	110	630	400
20	500	350	775	686	584	89	7	24-45	1-5/8	130	670	352
24	600	390	915	813	692	102	7	24-51	1-7/8	140	730	513
28	700	430	1075	965.2	800	111.2	7	28-55	2	160	930	640
32	800	470	1195	1079.5	914	117.5	7	28-60	2-1/4	170	995	710

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

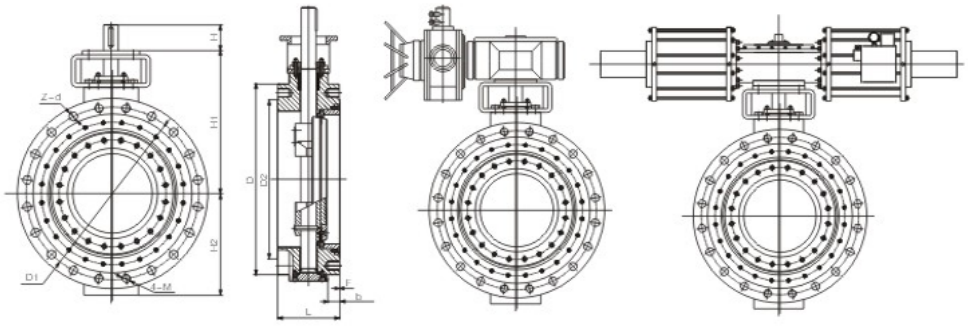


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 300

Nominal Diameter		L	D	D1	D2	b	f	Z-d	M(in)	H	H1	H2
2	50	108	165	127	92	23	2	8-19	5/8	50	185	135
3	80	114	210	168.5	127	29	2	8-22	3/4	50	205	150
4	100	127	255	2000	157	32	2	8-22	3/4	55	230	185
5	125	140	280	235	186	35	2	8-22	3/4	65	250	185
6	150	140	320	270	216	37	2	12-22	3/4	65	310	210
8	200	152	380	330	270	42	2	12-26	7/8	70	345	240
10	250	165	445	387.5	324	48	2	16-29	1	70	395	280
12	300	178	520	451	381	51	2	16-32	1-1/8	100	450	315
14	350	190	585	514.5	413	54	2	20-32	1-1/8	100	490	350
16	400	216	650	571.5	470	58	2	20-36	1-1/4	105	530	350
18	450	222	710	628.5	533	61	2	24-36	1-1/4	110	580	410
20	500	229	775	686	584	64	2	24-36	1-1/4	110	630	460
24	600	267	915	813	692	70	2	24-41	1-1/2	130	710	510
28	700	430	920	857.2	787	87.47	2	36-36	1-1/4	140	720	430
32	800	470	1055	977.9	902	101.6	2	32-42	1-1/2	170	780	455
36	900	510	1170	1089	1010	101.6	2	32-46	1-5/8	170	860	475
40	1000	550	1275	1190.6	1114	114.3	2	40-46	1-5/8	190	930	455
48	1200	630	1510	1416	1327	127	2	40-51	1-7/8	190	1080	860

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

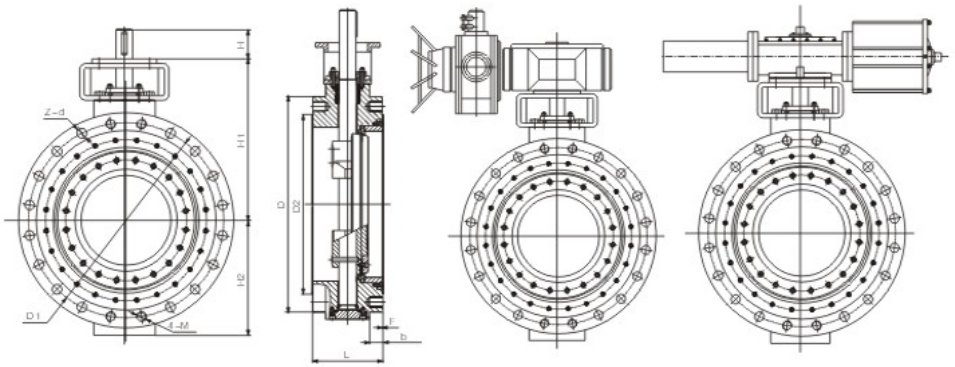


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 1500

Nominal Diameter		L	D	D1	D2	b	f	Z-d	M(in)	H	H1	H2
6	150	290	395	317.5	215.9	82.6	7	8-39	1-3/8	109	347	257
8	200	330	485	393.7	269.9	92.1	7	8-45	1-5/8	109	405	307
10	250	390	585	482.6	323.8	108	7	8-52	1-7/8	129	510	371
12	300	430	675	571.5	381	123.9	7	12-54	2	129	545	414
14	350	470	750	635	412.8	133.4	7	12-61	2-1/4	178	610	493
16	400	510	825	704.8	469.9	145.1	7	12-67	2-1/2	199	655	530
18	450	550	915	774.7	533.4	162	7	12-74	2-3/4	199	750	591
20	500	630	985	831.8	584.2	177.8	7	12-80	3	199	810	664
24	600	710	1170	990.6	692.2	203.2	7	12-94	3-1/2	249	950	780

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

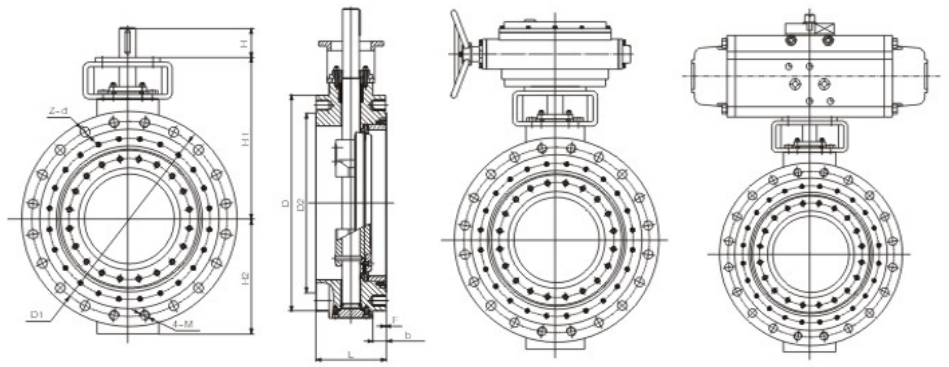


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 900

Nominal Diameter		L	D	D1	D2	b	f	Z-d	M(in)	H	H1	H2
6	150	250	380	317.5	215.9	55.6	7	8-32	1-1/8	79	315	238
8	200	310	470	393.7	269.9	63.5	7	8-39	1-3/8	79	360	281
10	250	350	545	469.9	323.8	69.9	7	12-39	1-3/8	109	412	358
12	300	380	610	533.4	381	79.4	7	16-39	1-3/8	109	475	383
14	350	400	640	558.8	412.8	85.8	7	16-42	1-1/2	128	512	419
16	400	430	705	616	469.9	88.9	7	16-45	1-5/8	129	610	455
18	450	460	785	685.8	533.4	101.6	7	16-52	1-7/8	178	660	503
20	500	490	855	749.3	584.2	108	7	16-54	2	178	685	550
24	600	530	1040	901.7	692.2	139.7	7	16-67	2-1/2	199	790	656

BUTTERFLY VALVE SERIES
Flange Type Metal Seated Butterfly Valve

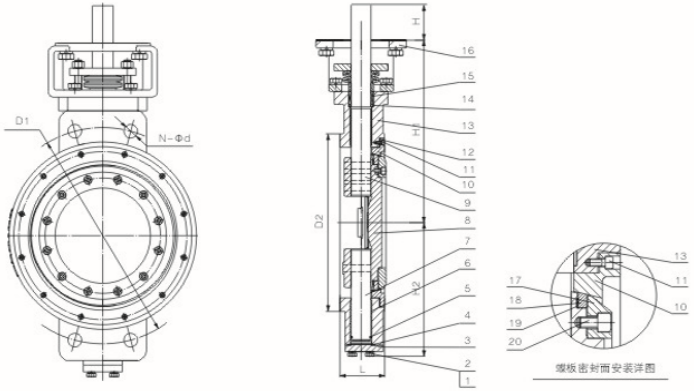


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 150

Nominal Diameter		L	D	D1	D2	b	f	Z-d	M(in)	H	H1	H2
2	50	108	150	120.5	92	18	2	4-19	5/8	50	175	75
3	80	114	190	152.5	127	22	2	4-19	5/8	50	195	110
4	100	127	230	190.5	157	24	2	8-19	5/8	50	225	135
5	125	140	255	216	186	24	2	8-22	3/4	55	250	155
6	150	140	280	241.5	216	26	2	8-22	3/4	60	285	185
8	200	152	345	298.5	270	29	2	8-22	3/4	65	330	225
10	250	165	405	362	324	31	2	12-25	7/8	65	360	255
12	300	178	485	432	381	32	2	12-25	7/8	70	420	305
14	350	190	535	476	413	35	2	12-29	1	70	460	325
16	400	216	595	540	470	37	2	16-29	1	100	490	360
18	450	222	635	578	533	40	2	16-32	1-1/8	100	525	370
20	500	229	700	635	584	43	2	20-32	1-1/8	105	580	410
24	600	267	815	749.5	692	48	2	20-35	1-1/4	105	640	480
28	700	292	835	795.3	762	43	2	44-22	3/4	110	660	550
32	800	318	940	900.1	864	44.6	2	48-22	3/4	130	715	600
36	900	330	1055	1009.6	972	50.9	2	44-26	7/8	140	780	660
40	1000	410	1175	1120.8	1080	54.1	2	44-30	1	140	830	640
48	1200	470	1390	1335.1	1289	63.6	2	44-33	1-1/8	170	960	830
56	1400	530	1600	1543	1492	71.6	2	60-33	1-1/8	180	1070	970

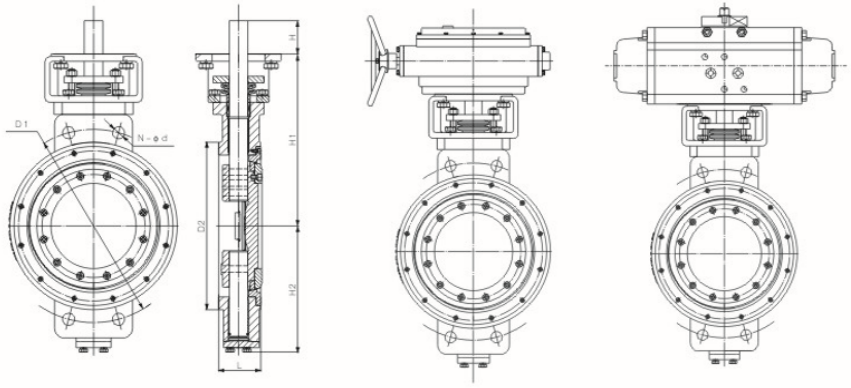
BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve



THE MAJOR PARTS MATERIAL

NO	Part Name	Materials
1	Screw	S31803
2	Gasket	S31803
3	Flange	A182 F51
4	Gasket	S31803+Graphite
5	Ring of preventing rushing out	S31803
6	Bushing	S31803
7	Stem	A182 F51
8	Disc	4A
9	Stem	A182 F51
10	Seat	A182 F51+STL
11	Countersunk head screw	S31803
12	Gasket	S31803+Graphite
13	Body	4A
14	Packing washer	S31803
15	Packing	Graphite
16	Yoke	A216 WCB
17	Butterfly disc pressing ring	A182 F51
18	Sealing ring	A182 F51+STL
19	Gasket	S31803+ Graphite
20	Countersunk head screw	S3180

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

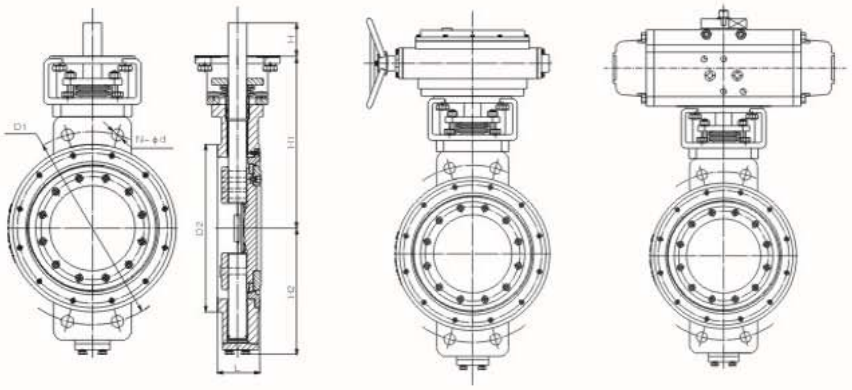


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.0

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	125	102	4-18	50	200	75
80	49	160	138	4-18	50	226	98
100	56	180	158	4-18	50	250	130
125	64	210	188	4-18	50	295	150
150	70	240	212	4-22	55	315	165
200	71	295	268	4-22	60	380	210
250	76	350	320	4-22	65	405	245
300	83	400	370	4-22	65	460	280
350	92	460	430	4-M20	70	525	315
400	102	515	482	4-M24	70	540	345
450	114	565	532	4-M24	95	620	380
500	127	620	585	4-M24	100	650	410
600	154	725	685	4-M27	105	690	460
700	165	840	800	4-M27	105	780	510
800	190	950	905	4-M30	110	860	580
900	203	1050	1005	4-M30	130	900	630
1000	216	1160	1110	4-M33	140	980	700
1200	254	1380	1330	4-M36	160	1100	810
1400	279	1590	1535	4-M39	170	1200	930
1600	318	1820	1760	4-M45	180	1330	980
1800	356	2020	1960	4-M45	190	1450	1050
2000	406	2230	2170	4-M45	190	1560	1150

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

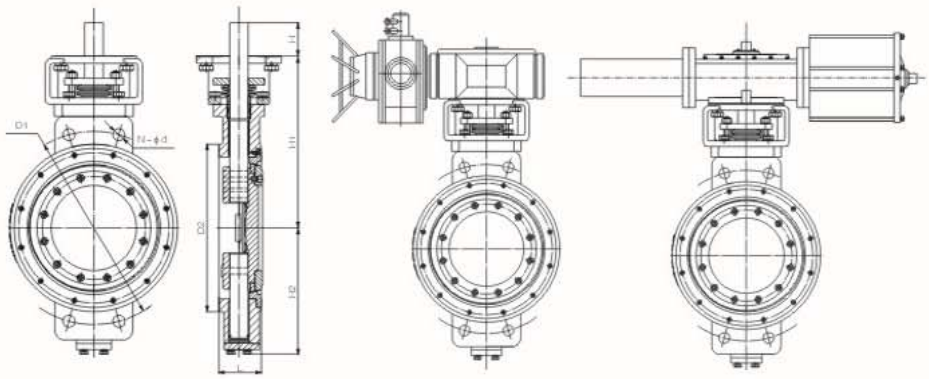


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN0.6

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	110	90	4-14	50	200	75
80	49	150	128	4-18	50	226	98
100	56	170	148	4-18	50	250	130
125	64	200	178	4-18	50	295	150
150	70	225	202	4-18	55	315	165
200	71	280	258	4-18	60	380	210
250	76	335	312	4-18	65	405	245
300	83	395	365	4-22	65	460	280
350	92	445	415	4-22	70	525	315
400	102	495	465	4-M20	70	540	345
450	114	550	520	4-M20	95	620	380
500	127	600	570	4-M20	100	650	410
600	154	705	670	4-M24	105	690	460
700	165	810	775	4-M24	105	780	510
800	190	920	880	4-M27	110	860	580
900	203	1020	980	4-M27	120	900	630
1000	216	1120	1080	4-M27	120	980	700
1200	254	1340	1295	4-M30	140	1100	810
1400	279	1560	1510	4-M33	160	1200	930
1600	318	1760	1710	4-M33	180	1330	980
1800	356	1970	1920	4-M36	180	1450	1050
2000	406	2180	2125	4-M39	190	1560	1150

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

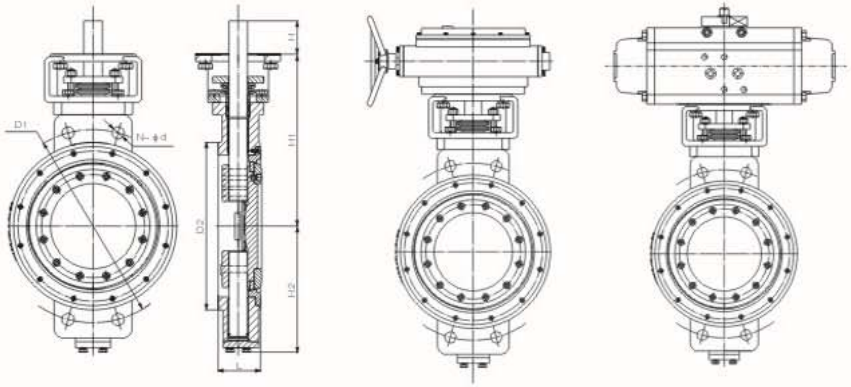


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN2.5

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	125	102	4-18	50	200	75
80	49	160	138	4-18	50	226	98
100	56	190	162	4-22	50	250	130
125	64	220	188	4-26	55	295	150
150	70	250	218	4-26	60	315	165
200	71	310	278	4-26	65	380	210
250	76	370	335	4-30	65	405	245
300	83	430	395	4-M27	70	460	280
350	92	490	450	4-M30	70	525	315
400	102	550	505	4-M33	100	540	345
450	114	600	555	4-M33	100	620	380
500	127	660	615	4-M33	105	650	410
600	154	770	720	4-M36	105	690	460
700	165	875	820	4-M39	110	780	510
800	190	990	930	4-M45	130	860	580
900	203	1090	1030	4-M45	140	900	630
1000	216	1210	1140	4-M52	140	980	700
1200	254	1420	1350	4-M52	170	1100	810
1400	279	1640	1560	4-M56	180	1200	930
1600	318	1860	1780	4-M56	190	1330	980
1800	356	2070	1985	4-M64	200	1450	1050
2000	406	2300	2210	4-M64	200	1560	1150

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

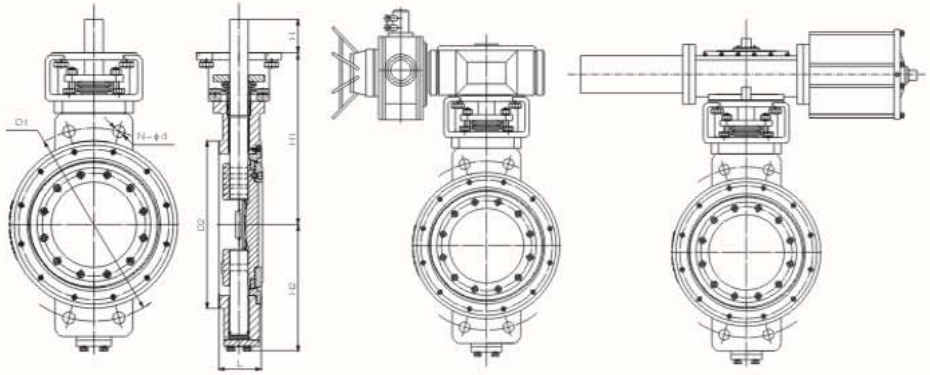


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.6

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	125	102	4-18	50	200	75
80	49	160	138	4-18	50	226	98
100	56	180	158	4-18	50	250	130
125	64	210	188	4-18	55	295	150
150	70	240	212	4-22	60	315	165
200	71	295	268	4-22	65	380	210
250	76	355	320	4-26	65	405	245
300	83	410	378	4-26	70	460	280
350	92	470	428	4-M24	70	525	315
400	102	525	490	4-M27	100	540	345
450	114	585	550	4-M27	100	620	380
500	127	650	610	4-M30	105	650	410
600	154	770	725	4-M33	105	690	460
700	165	840	795	4-M33	110	780	510
800	190	950	900	4-M36	130	860	580
900	203	1050	1000	4-M36	140	900	630
1000	216	1170	1115	4-M39	140	980	700
1200	254	1390	1330	4-M45	170	1100	810
1400	279	1590	1530	4-M45	180	1200	930
1600	318	1820	1750	4-M52	190	1330	980
1800	356	2020	1950	4-M52	200	1450	1050
2000	406	2230	2150	4-M56	200	1560	1150

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

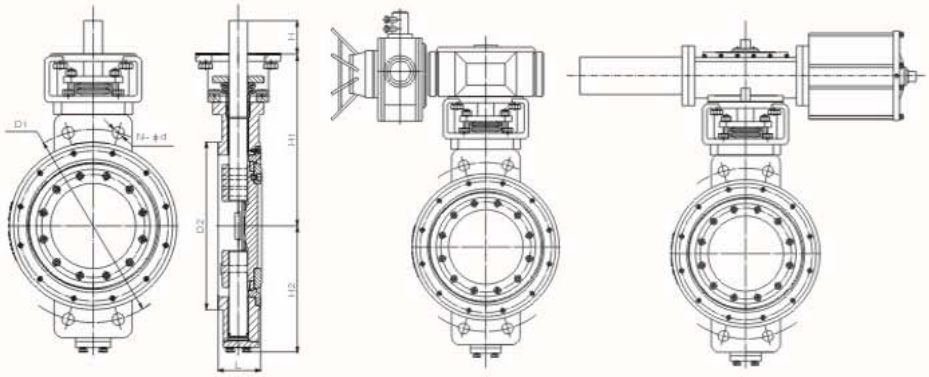


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN6.3

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	135	102	4-22	50	200	75
80	64	170	138	4-22	50	226	98
100	64	200	162	4-26	55	250	130
125	70	240	188	4-30	65	295	165
150	76	280	218	4-33	65	315	175
200	89	345	285	4-M33	70	380	220
250	114	400	345	4-M33	70	405	250
300	114	460	410	4-M33	100	480	300
350	127	525	465	4-M36	100	545	330
400	140	585	535	4-M39	105	550	360
500	152	705	615	4-M45	110	680	410
600	178	820	735	4-M52	110	750	460

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

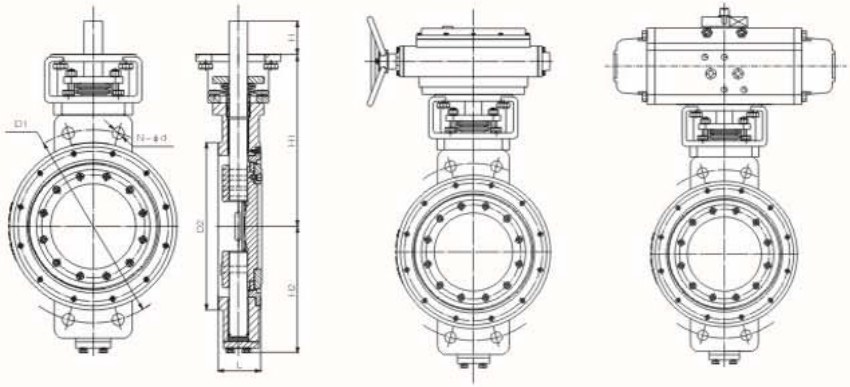


MAIN CONNECTION DIMENSIONS

Nominal Pressure: PN4.0

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	125	102	4-18	50	200	75
80	64	160	138	4-18	50	226	98
100	64	190	162	4-22	55	250	130
125	70	220	188	4-26	60	295	165
150	76	250	218	4-26	65	315	175
200	89	320	285	4-M27	65	380	220
250	114	385	345	4-M30	70	405	250
300	114	450	410	4-M30	70	480	300
350	127	510	465	4-M33	100	545	330
400	140	585	535	4-M36	100	550	360
450	152	610	460	4-M36	105	620	380
500	152	670	615	4-M39	105	680	410
600	178	795	735	4-M45	110	750	460

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

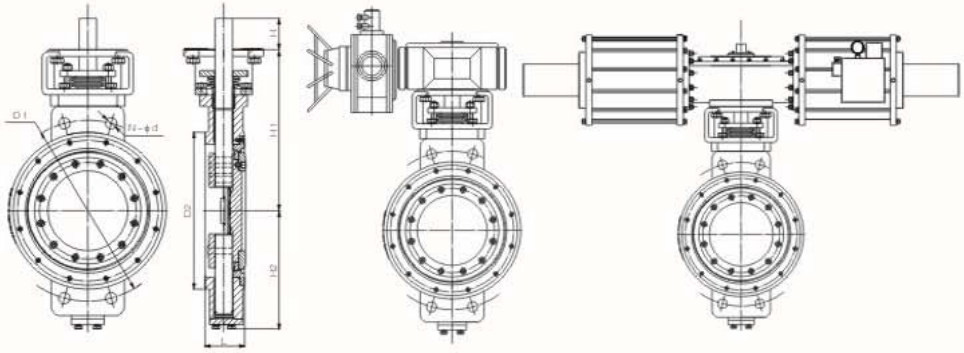


MAIN CONNECTION DIMENSIONS

Nominal Pressure: Class 150

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	120.5	92	4-19	50	200	75
3	80	49	152.5	127	4-19	50	230	110
4	100	54	190.5	157	4-19	50	265	135
5	125	57	216	186	4-22	55	325	155
6	150	58	241.5	216	4-22	60	345	185
8	200	64	298.5	270	4-22	65	395	225
10	250	71	362	324	4-25	65	425	255
12	300	81	432	381	4-25	70	495	305
14	350	92	476	413	4-29	70	555	325
16	400	102	540	470	4-(1)	100	590	360
18	450	114	578	533	4-(1-1/8)	100	630	370
20	500	127	635	584	4-(1-1/8)	105	700	410
24	600	154	749.5	692	4-(1-1/4)	105	750	480
28	700	165	795.3	762	8-(3/4)	110	830	550
32	800	190	900.1	864	8-(3/4)	130	950	600
36	900	203	1009.6	972	8-(7/8)	140	1000	660
40	1000	216	1120.8	1080	8-(1)	140	1080	640
48	1200	254	1335.1	1289	8-(1-1/8)	170	1250	830

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

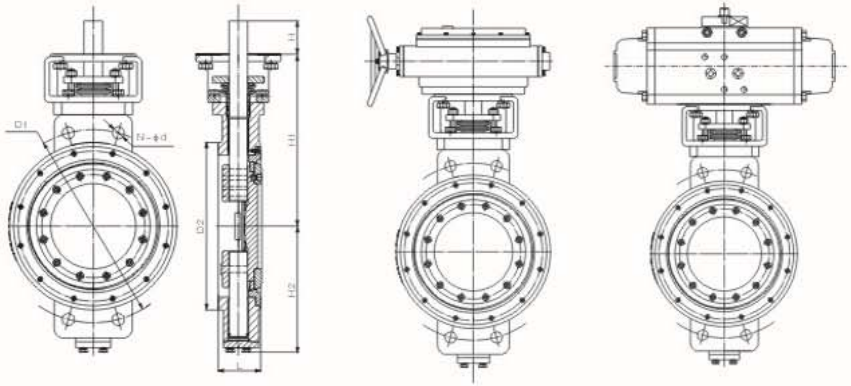


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN10.0

Nominal Diameter	L	D1	D2	N-d	H	H1	H2
50	43	145	102	4-26	50	200	75
80	64	180	138	4-26	50	226	98
100	64	210	162	4-30	55	250	130
125	70	250	188	4-33	65	295	165
150	76	290	218	4-M30	65	315	175
200	89	360	285	4-M33	70	380	220
250	114	430	345	4-M39	70	405	250
300	114	500	410	4-M45	100	480	300
350	127	560	465	4-M45	100	545	330
400	140	620	535	4-M45	105	550	360
500	152	780	615	4-M52	110	680	410
600	178	875	735	4-M56	110	750	460

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

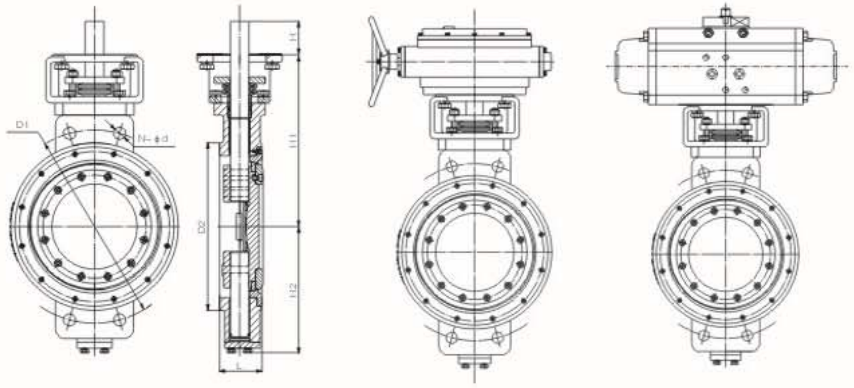


MAIN CONNECTION DIMENSIONS

Nominal Pressure Class 600

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	127	92	4-(5/8)	55	175	125
3	80	54	168.5	127	4-(3/4)	55	414	127
4	100	64	200	157	4-(7/8)	60	447	160
5	125	70	235	186	4-(1)	65	395	285
6	150	78	270	216	4-(1)	70	490	196
8	200	102	330	270	4-(1-1/8)	70	536	221
10	250	117	387.5	324	4-(1-1/4)	70	641	256
12	300	140	451	381	4-(1-1/4)	100	727	307
14	350	155	514.5	413	4-(1-3/8)	100	757	330
16	400	178	571.5	470	4-(1-1/2)	110	825	391
18	450	200	628.5	533	4-(1-5/8)	110	840	400
20	500	216	686	584	4-(1-5/8)	130	978	352
24	600	232	813	692	4-(1-7/8)	140	1070	513

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

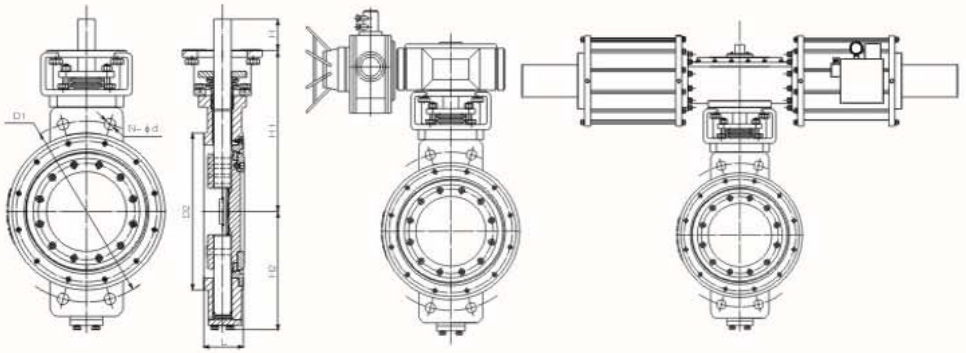


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 300

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	127	92	4-19	50	250	135
3	80	49	168.5	127	4-22	50	270	150
4	100	54	2000	157	4-22	55	305	185
5	125	57	235	186	4-22	65	345	185
6	150	59	270	216	4-(3/4)	65	380	210
8	200	73	330	270	4-(7/8)	70	410	240
10	250	83	387.5	324	4-(1)	70	470	280
12	300	92	451	381	4-(1-1/8)	100	545	315
14	350	117	514.5	413	4-(1-1/8)	100	590	350
16	400	133	571.5	470	4-(1-1/4)	105	640	350
18	450	149	628.5	533	4-(1-1/4)	110	690	410
20	500	159	686	584	4-(1-1/4)	110	740	460
24	600	181	813	692	4-(1-1/2)	130	850	510
28	700	229	857.2	787	4-(1-1/4)	140	980	430
32	800	241	977.9	902	4-(1-1/2)	170	1080	455
36	900	241	1089	1010	4-(1-5/8)	170	1110	475
40	1000	300	1190.6	1114	4-(1-5/8)	190	1150	455
48	1200	360	1416	1327	4-(1-7/8)	190	1410	860

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

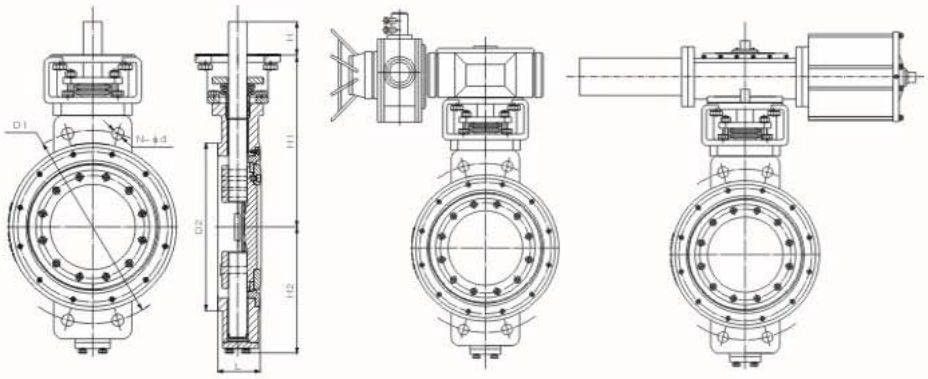


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 1500

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
6	150	160	317.5	215.9	4-(1-3/8)	109	347	257
8	200	180	393.7	269.9	4-(1-5/8)	109	405	307
10	250	200	482.6	323.8	4-(1-7/8)	129	510	371
12	300	230	571.5	381	4-(2)	129	545	414
14	350	250	635	412.8	4-(2-1/4)	178	610	493
16	400	265	704.8	469.9	4-(2-1/2)	199	655	530
18	450	300	774.7	533.4	4-(2-3/4)	199	750	591
20	500	340	831.8	584.2	4-(3)	199	810	664
24	600	400	990.6	692.2	4-(3-1/2)	249	950	780

BUTTERFLY VALVE SERIES
Wafer Type Metal Seated Butterfly Valve

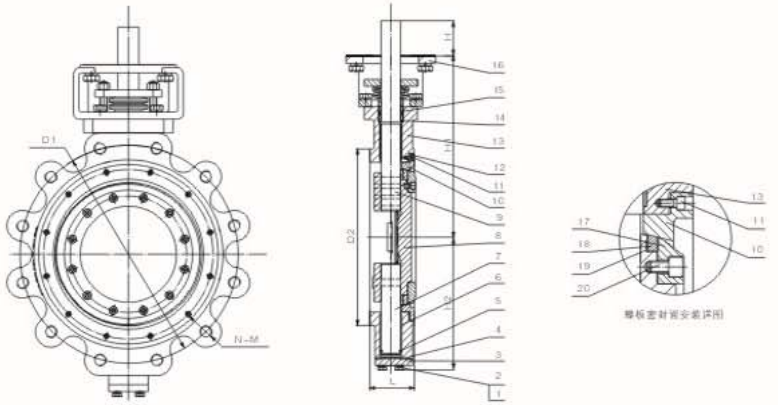


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 900

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
6	150	104	317.5	215.9	4-(1-1/8)	79	315	238
8	200	112	393.7	269.9	4-(1-3/8)	79	360	281
10	250	135	469.9	323.8	4-(1-3/8)	109	412	358
12	300	170	533.4	381	4-(1-3/8)	109	475	383
14	350	173	558.8	412.8	4-(1-1/2)	128	512	419
16	400	210	616	469.9	4-(1-5/8)	129	610	455
18	450	228	685.8	533.4	4-(1-7/8)	178	660	503
20	500	250	749.3	584.2	4-(2)	178	685	550
24	600	275	901.7	692.2	4-(2-1/2)	199	790	656

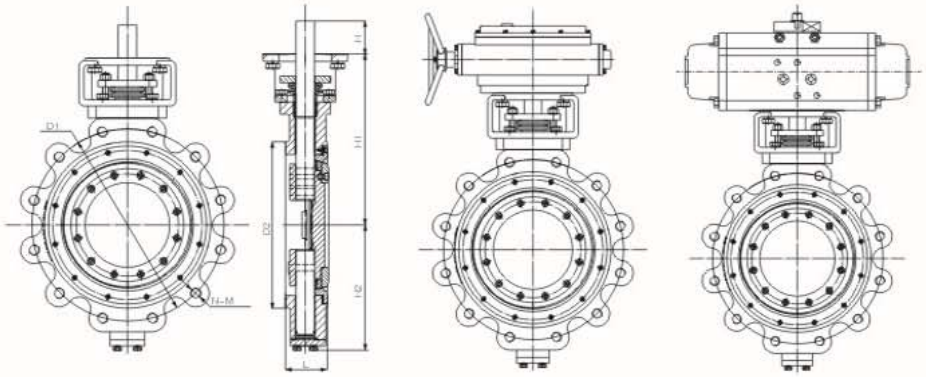
BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve



THE MAJOR PARTS MATERIAL

NO	Part Name	Materials
1	Screw	S31803
2	Gasket	S31803
3	Flange	A182 F51
4	Gasket	S31803+Graphite
5	Ring of preventing rushing out	S31803
6	Bushing	S31803
7	Stem	A182 F51
8	Disc	4A
9	Stem	A182 F51
10	Seat	A182 F51+STL
11	Countersunk head screw	S31803
12	Gasket	S31803+Graphite
13	Body	4A
14	Packing washer	S31803
15	Packing	Graphite
16	Yoke	A216 WCB
17	Butterfly disc pressing ring	A182 F51
18	Sealing ring	A182 F51+STL
19	Gasket	S31803+ Graphite
20	Countersunk head screw	S3180

BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve

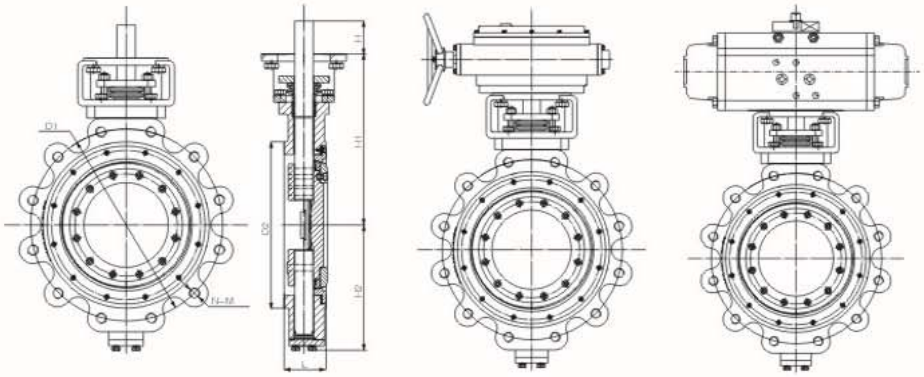


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 150

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	120.5	92	4-(5/8)	50	200	75
3	80	49	152.5	127	4-(5/8)	50	230	110
4	100	54	190.5	157	8-(5/8)	50	265	135
5	125	57	216	186	8-(3/4)	55	325	155
6	150	58	241.5	216	8-(3/4)	60	345	185
8	200	64	298.5	270	8-(3/4)	65	395	225
10	250	71	362	324	12-(7/8)	65	425	255
12	300	81	432	381	12-(7/8)	70	495	305
14	350	92	476	413	12-(1)	70	555	325
16	400	102	540	470	16-(1)	100	590	360
18	450	114	578	533	16-(1-1/8)	100	630	370
20	500	127	635	584	20-(1-1/8)	105	700	410
24	600	154	749.5	692	20-(1-1/4)	105	750	480
28	700	165	795.3	762	40-(3/4)	110	830	550
32	800	190	900.1	864	48-(3/4)	130	950	600
36	900	203	1009.6	972	44-(7/8)	140	1000	660
40	1000	216	1120.8	1080	44-(1)	140	1080	640
48	1200	254	1335.1	1289	44-(1-1/8)	170	1250	830

BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve

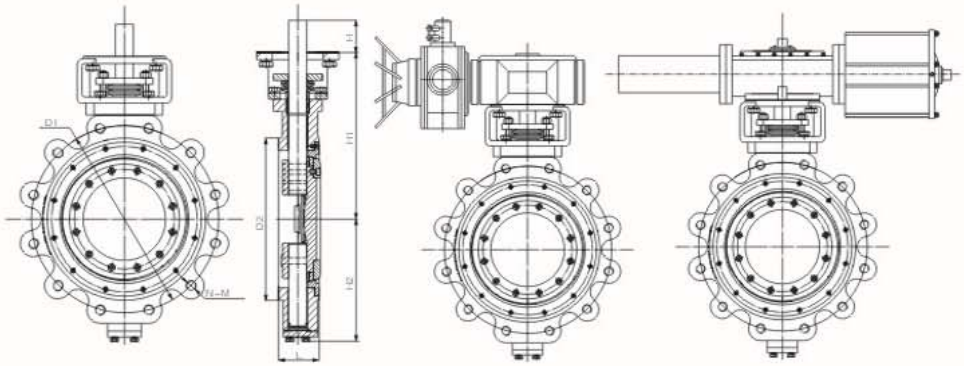


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 300

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	127	92	8-(5/8)	50	250	135
3	80	49	168.5	127	8-(3/4)	50	270	150
4	100	54	2000	157	8-(3/4)	55	305	185
5	125	57	235	186	8-(3/4)	65	345	185
6	150	59	270	216	12-(3/4)	65	380	210
8	200	73	330	270	12-(7/8)	70	410	240
10	250	83	387.5	324	16-(1)	70	470	280
12	300	92	451	381	16-(1-1/8)	100	545	315
14	350	117	514.5	413	20-(1-1/8)	100	590	350
16	400	133	571.5	470	20-(1-1/4)	105	640	350
18	450	149	628.5	533	24-(1-1/4)	110	690	410
20	500	159	686	584	24-(1-1/4)	110	740	460
24	600	181	813	692	24-(1-1/2)	130	850	510
28	700	229	857.2	787	36-(1-1/4)	140	980	430
32	800	241	977.9	902	32-(1-1/2)	170	1080	455
36	900	241	1089	1010	32-(1-5/8)	170	1110	475
40	1000	300	1190.6	1114	40-(1-5/8)	190	1150	455
48	1200	360	1416	1327	40-(1-7/8)	190	1410	860

BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve

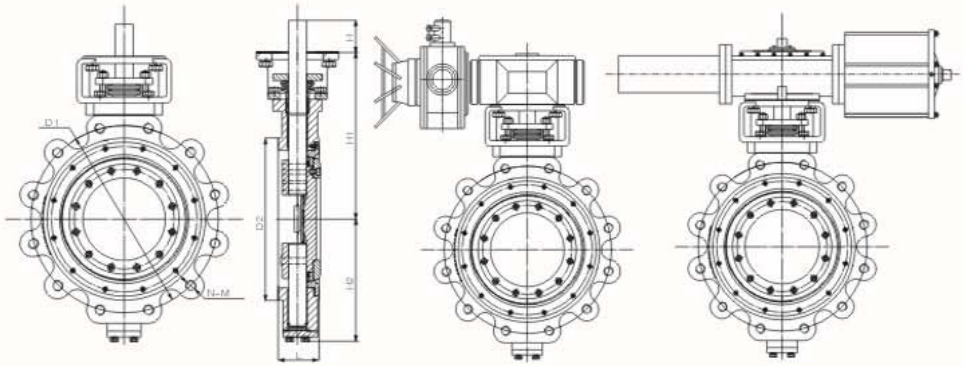


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 600

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
2	50	43	127	92	8-(5/8)	55	175	125
3	80	54	168.5	127	8-(3/4)	55	414	127
4	100	64	200	157	8-(7/8)	60	447	160
5	125	70	235	186	8-(1)	65	395	285
6	150	78	270	216	12-(1)	70	490	196
8	200	102	330	270	12-(1-1/8)	70	536	221
10	250	117	387.5	324	16-(1-1/4)	70	641	256
12	300	140	451	381	20-(1-1/4)	100	727	307
14	350	155	514.5	413	20-(1-3/8)	100	757	330
16	400	178	571.5	470	20-(1-1/2)	110	825	391
18	450	200	628.5	533	20-(1-5/8)	110	840	400
20	500	216	686	584	24-(1-5/8)	130	978	352
24	600	232	813	692	24-(1-7/8)	140	1070	513

BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve

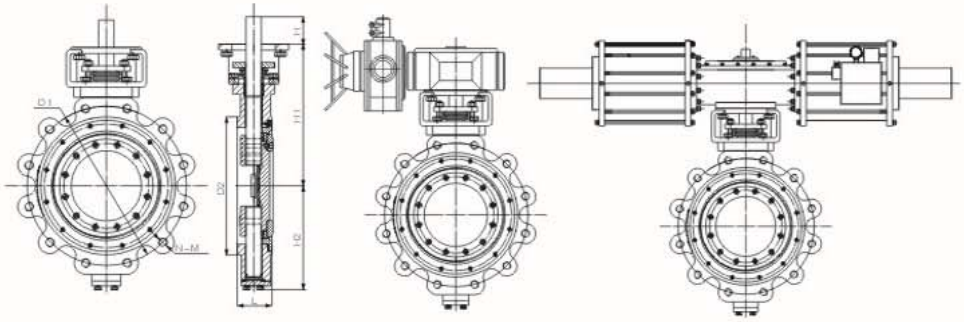


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 900

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
6	150	104	317.5	215.9	12-(1-1/8)	79	315	238
8	200	112	393.7	269.9	12-(1-3/8)	79	360	281
10	250	135	469.9	323.8	16-(1-3/8)	109	412	358
12	300	170	533.4	381	20-(1-3/8)	109	475	383
14	350	173	558.8	412.8	20-(1-1/2)	128	512	419
16	400	210	616	469.9	20-(1-5/8)	129	610	455
18	450	228	685.8	533.4	20-(1-7/8)	178	660	503
20	500	250	749.3	584.2	20-(2)	178	685	550
24	600	275	901.7	692.2	20-(2-1/2)	199	790	656

BUTTERFLY VALVE SERIES
LUG Type Metal Seated Butterfly Valve

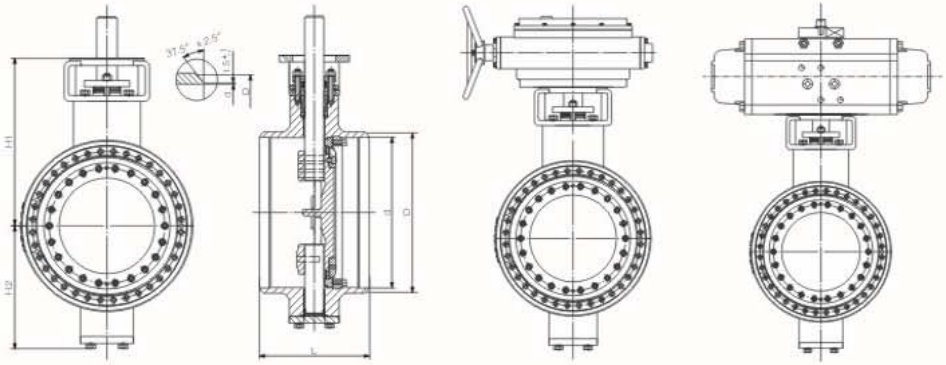


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 1500

Nominal Diameter		L	D1	D2	N-d	H	H1	H2
6	150	160	317.5	215.9	12-(1-3/8)	109	347	257
8	200	180	393.7	269.9	12-(1-5/8)	109	405	307
10	250	200	482.6	323.8	12-(1-7/8)	129	510	371
12	300	230	571.5	381	16-(2)	129	545	414
14	350	250	635	412.8	16-(2-1/4)	178	610	493
16	400	265	704.8	469.9	16-(2-1/2)	199	655	530
18	450	300	774.7	533.4	16-(2-3/4)	199	750	591
20	500	340	831.8	584.2	16-(3)	199	810	664
24	600	400	990.6	692.2	16-(3-1/2)	249	950	780

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve



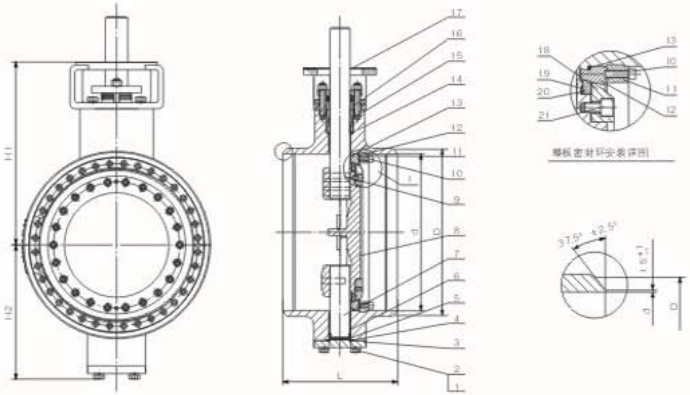
MAIN CONNECTION DIMENSIONS

Nominal Pressure — PN0.6

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	78	90	50	225	80
100	190	96	110	50	250	115
125	200	121	135	50	295	130
150	210	146	161	55	310	145
200	230	202	222	60	380	175
250	250	255	278	65	400	210
300	270	303	330	65	460	235
350	290	351	382	70	510	270
400	310	398	432	70	545	300
450	330	450	484	95	620	330
500	350	501	535	100	650	370
600	390	602	636	105	680	430
700	430	692	726	105	780	470
800	470	792	826	110	860	530
900	510	892	926	120	900	580
1000	550	992	1028	120	980	650
1200	630	1192	1228	140	1100	765
1400	710	1392	1428	160	1200	890

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve

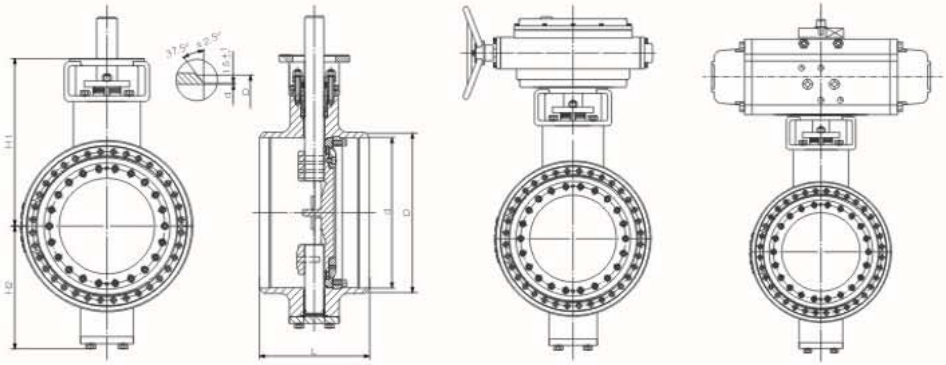


THE MAJOR PARTS MATERIAL

NO	Part Name	Materials
1	Screw	35
2	Gasket	65Mn
3	Flange	25
4	Gasket	SS316+石墨
5	Rushed out of the ring	QT400
6	Bushing	QT400+NI
7	Stem	17-APH
8	Disc	A351 Cf8
9	Stem	17-4PH
10	Countersunk head screw	SS304
11	Suspension loop	2Cr13
12	Seat	A182 F316L+STL
13	Gasket	SS316+石墨
14	Body	A216 WCB
15	Packing washer	QT400
16	Packing	石墨
17	Stents	A216 WCB
18	Butterfly plate pressure ring	2Cr13
19	Sealing ring	SS316+石墨
20	Sealing ring	A182F316+STL
21	Countersunk head screw	SS304

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve



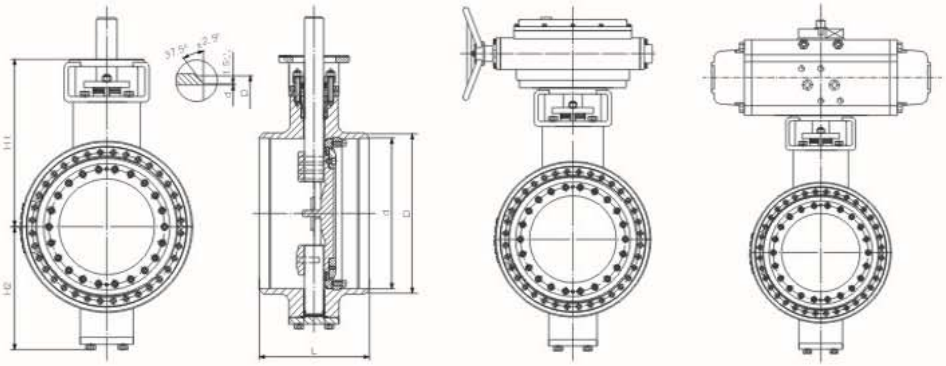
MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.6

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	78	90	50	225	80
100	190	96	110	50	250	115
125	200	121	135	55	295	130
150	210	146	161	60	310	145
200	230	202	222	65	380	175
250	250	255	278	65	400	210
300	270	303	330	70	460	235
350	290	351	382	70	510	270
400	310	398	432	100	545	300
450	330	450	484	100	620	330
500	350	501	535	105	650	370
600	390	602	636	105	680	430
700	430	692	726	110	780	470
800	470	792	826	130	860	530
900	510	892	926	140	900	580
1000	550	992	1028	140	980	650
1200	630	1192	1228	170	1100	765
1400	710	1392	1428	180	1200	890

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve

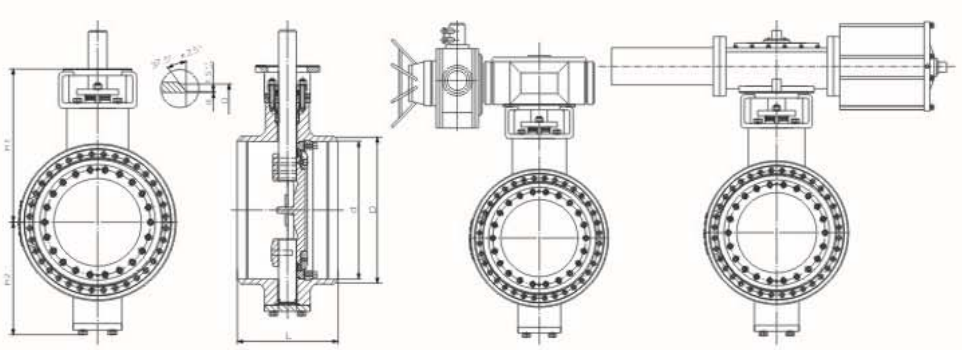


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN1.0

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	78	90	50	225	80
100	190	96	110	50	250	115
125	200	121	135	50	295	130
150	210	146	161	55	310	145
200	230	202	222	60	380	175
250	250	255	278	65	400	210
300	270	303	330	65	460	235
350	290	351	382	70	510	270
400	310	398	432	70	545	300
450	330	450	484	95	620	330
500	350	501	535	100	650	370
600	390	602	636	105	680	430
700	430	692	726	105	780	470
800	470	792	826	110	860	530
900	510	892	926	130	900	580
1000	550	992	1028	140	980	650
1200	630	1192	1228	160	1100	765
1400	710	1392	1428	170	1200	890

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve

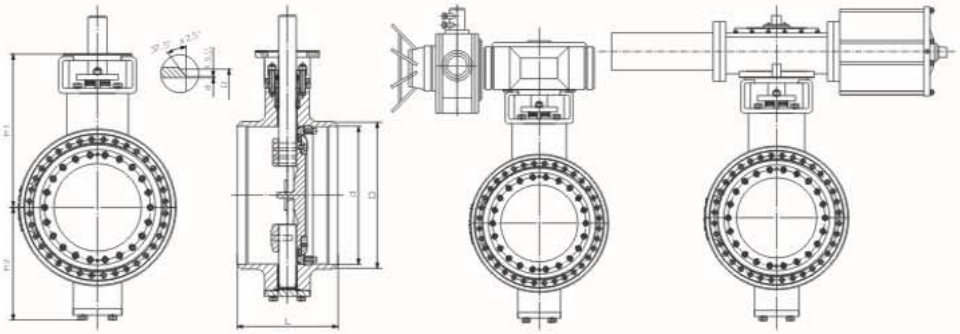


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN4.0

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	78	90	50	225	80
100	190	96	110	55	250	115
125	200	120	135	60	295	130
150	210	145	161	65	310	145
200	230	200	222	65	380	175
250	250	252	278	70	400	210
300	270	301	330	70	460	235
350	290	351	382	100	510	270
400	310	398	432	100	545	300
450	330	448	484	105	620	330
500	350	495	535	105	650	370
600	390	595	636	110	680	430

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve

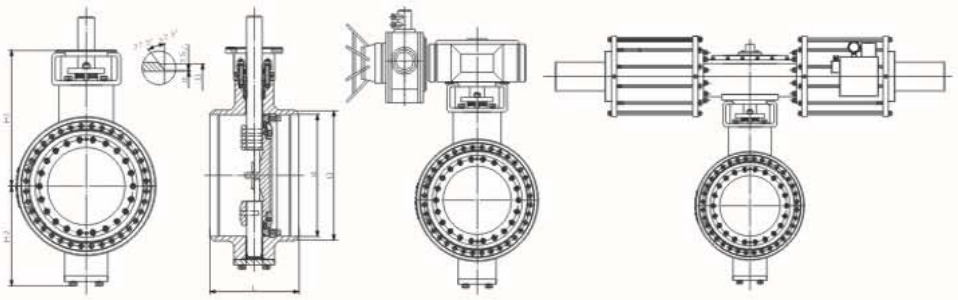


MAIN CONNECTION DIMENSIONS

Nominal Pressure PN2.5

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	78	90	50	225	80
100	190	96	110	50	250	115
125	200	121	135	55	295	130
150	210	146	161	60	310	145
200	230	202	222	65	380	175
250	250	255	278	65	400	210
300	270	303	330	70	460	235
350	290	351	382	70	510	270
400	310	398	432	100	545	300
450	330	450	484	100	620	330
500	350	501	535	105	650	370
600	390	602	636	105	680	430
700	430	692	726	110	780	470
800	470	792	826	130	860	530
900	510	892	926	140	900	580
1000	550	992	1028	140	980	650
1200	630	1192	1228	170	1100	765
1400	710	1392	1428	180	1200	890

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve



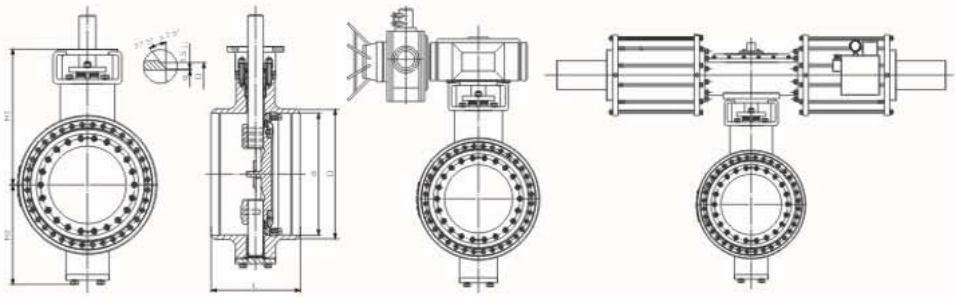
MAIN CONNECTION DIMENSIONS

Nominal Pressure PN10.0

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	75	90	50	225	80
100	190	92	110	55	250	115
125	200	112	135	60	295	130
150	210	136	161	65	310	145
200	230	190	222	65	380	175
250	250	236	278	70	400	210
300	270	284	330	70	460	235
350	290	332	382	100	510	270
400	310	376	432	100	545	300
500	350	475	535	105	650	370
600	390	575	636	110	680	430

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve



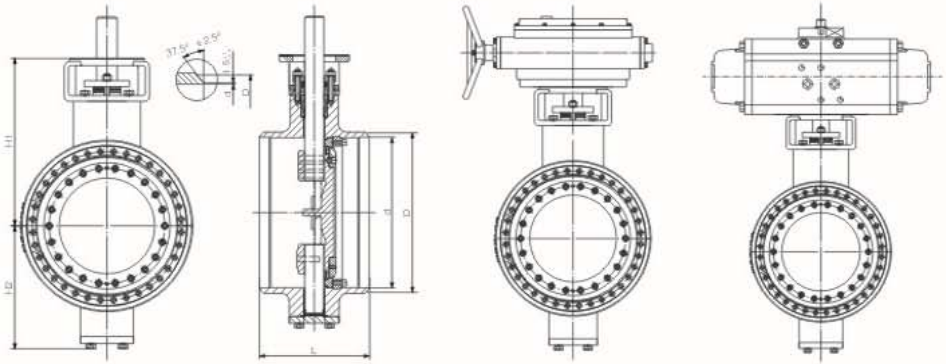
MAIN CONNECTION DIMENSIONS

Nominal Pressure: PN6.3

Nominal Diameter	L	d	D	H	H1	H2
50	150	47	57	50	200	65
80	170	77	90	50	225	80
100	190	94	110	55	250	115
125	200	118	135	60	295	130
150	210	142	161	65	310	145
200	230	198	222	65	380	175
250	250	246	278	70	400	210
300	270	294	330	70	460	235
350	290	342	382	100	510	270
400	310	378	432	100	545	300
500	350	485	535	105	650	370
600	390	585	636	110	680	430

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve



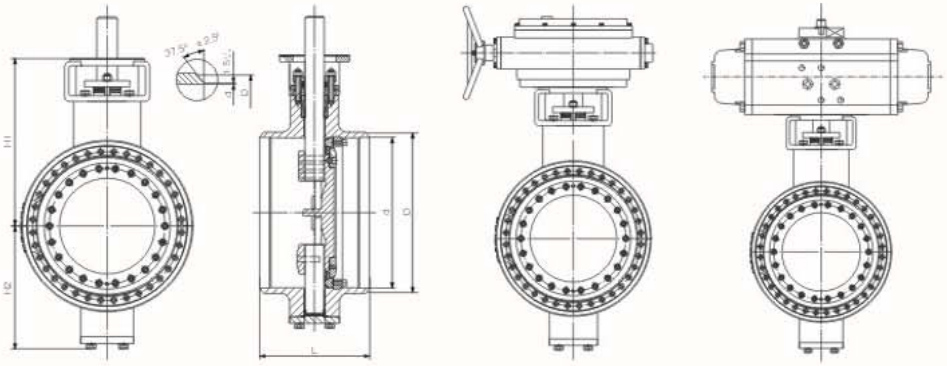
MAIN CONNECTION DIMENSIONS

Nominal Pressure: Class 300

Nominal Diameter		L	d	D	H	H1	H2
2	50	150	52.5	60.3	50	185	65
3	80	170	77.9	88.9	50	205	80
4	100	190	102.3	114.3	55	230	115
5	125	200	128.2	139.7	65	250	130
6	150	210	154.1	168.3	65	310	145
8	200	230	202.7	219.1	70	345	175
10	250	250	254.5	273	70	395	210
12	300	270	304.8	323.9	100	450	235
14	350	290	336.6	355.6	100	490	270
18	400	310	387.4	406.4	105	530	300
18	450	330	434.9	457	110	580	330
20	500	350	482.6	508	110	630	370
24	600	390	581.1	610	130	710	430
28	700	430	672.7	711.2	140	720	470
32	800	470	770.7	812.8	170	780	530
36	900	510	869.3	914.4	170	860	580
40	1000	550	967.3	1016	190	930	650
48	1200	630	1164	1219.2	190	1080	765

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve



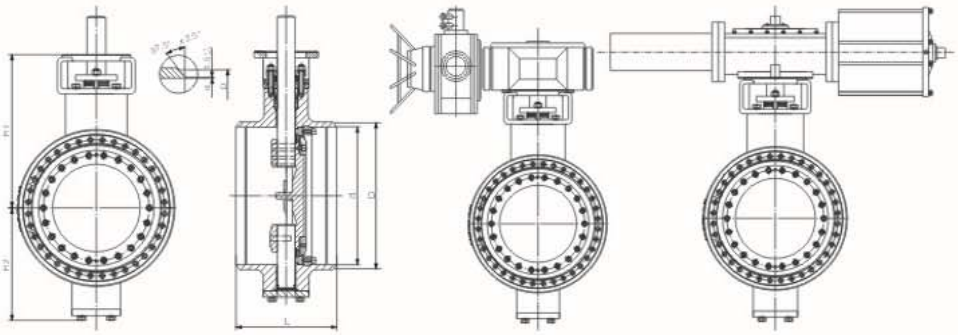
MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 150

Nominal Diameter		L	d	D	H	H1	H2
2	50	150	52.5	60.3	50	175	65
3	80	170	77.9	88.9	50	195	80
4	100	190	102.3	114.3	50	225	115
5	125	200	128.2	139.7	55	250	130
6	150	210	154.1	168.3	60	285	145
8	200	230	202.7	219.1	65	330	175
10	250	250	254.5	273	65	360	210
12	300	270	304.8	323.9	70	420	235
14	350	290	336.6	355.6	70	460	270
18	400	310	387.4	406.4	100	490	300
18	450	330	434.9	457	100	525	330
20	500	350	482.6	508	105	580	370
24	600	390	581.1	610	105	640	430
28	700	430	672.7	711.2	110	660	470
32	800	470	770.7	812.8	130	715	530
36	900	510	869.3	914.4	140	780	580
40	1000	550	967.3	1016	140	830	650
48	1200	630	1164	1219.2	170	960	765

BUTTERFLY VALVE SERIES

Butt Welding Type Metal Seated Butterfly Valve

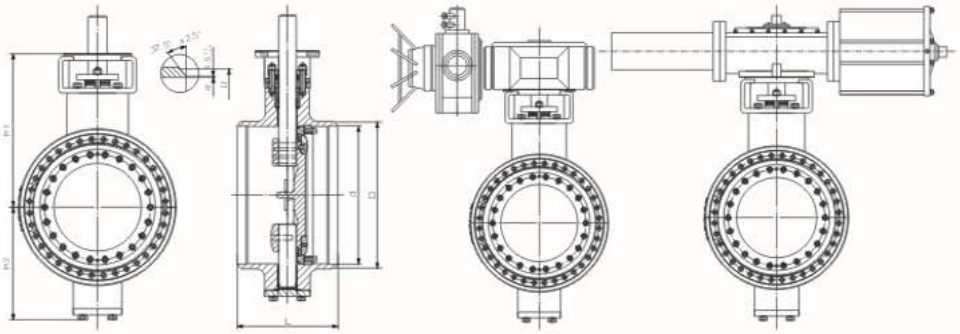


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 900

Nominal Diameter		L	d	D	H	H1	H2
6	150	250	102.3	114.3	79	315	238
8	200	310	128.2	139.7	79	360	281
10	250	350	151.4	168.3	109	412	358
12	300	380	198.5	219.1	109	475	383
14	350	400	247.7	273	128	512	419
18	400	430	295.3	323.9	129	610	455
18	450	460	325.4	355.6	178	660	503
20	500	490	363.5	406.4	178	685	550
24	600	530	409.5	457	199	790	656

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve

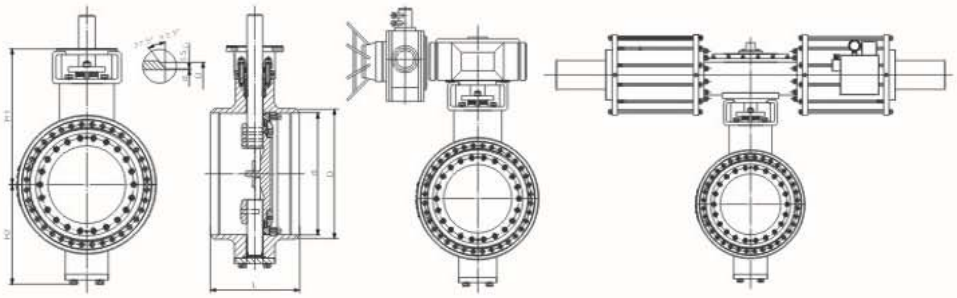


MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 600

Nominal Diameter		L	d	D	H	H1	H2
2	50	150	52.5	60.3	55	205	125
3	80	170	77.9	88.9	55	235	127
4	100	190	102.3	114.3	60	270	160
5	125	200	128.2	139.7	65	315	285
6	150	210	154.1	168.3	70	340	196
8	200	230	198.5	219.1	70	390	221
10	250	250	247.7	273	70	450	256
12	300	270	295.3	323.9	100	500	307
14	350	290	325.4	355.6	100	530	330
18	400	310	363.5	406.4	110	600	391
18	450	330	409.5	457	110	630	400
20	500	350	455.6	508	130	670	352
24	600	390	547.7	610	140	730	513

BUTTERFLY VALVE SERIES
Butt Welding Type Metal Seated Butterfly Valve



MAIN CONNECTION DIMENSIONS

Nominal Pressure — Class 1500

Nominal Diameter		L	d	D	H	H1	H2
6	150	290	102.3	114.3	109	347	257
8	200	330	128.2	139.7	109	405	307
10	250	390	154.1	168.3	129	510	371
12	300	430	198.5	219.1	129	545	414
14	350	470	247.7	273	178	610	493
18	400	510	295.3	323.9	199	655	530
18	450	550	325.4	355.6	199	750	591
20	500	630	363.5	406.4	199	810	664
24	600	710	409.5	457	249	950	780

BUTTERFLY VALVE SERIES
Cryogenic Flange/Wafer Metal Seated Butterfly Valve

Use

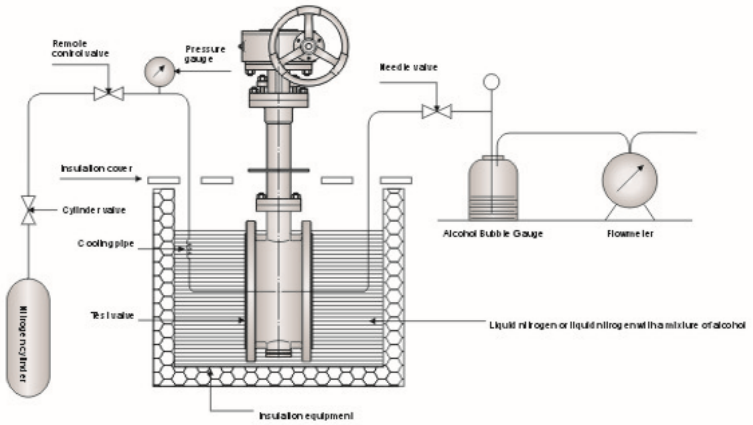
Cryogenic butterfly valve is mainly used as the on-off device to control the low temperature liquid medium such as LNG, ethylene, liquid nitrogen, loxygen, etc.

Structure Features

- The high positioned packing part ensures the stabilization low leakage under low temperature environment.
- Low leakage stem packing material is adopted to meet the requirement of its sealing.
- A draining plate structure is used to prevent the condensed water from flowing into the heat jacket.
- The important parts' material would be used low-temperature treatment before the finishing machine to eliminate the influence caused by phase changing.
- Tripple eccentric design is used to ensure no friction during the close and open, and also enjoys the features of low torque, easy handling.
- The body sealing is deposited with hard alloy or stainless steelwhich has the characteristics of anti-corrosion, anti-erosion and anti-wear and so on.
- Stem bushing structure can reduce the open torque and wearing and reach reliable sealing.
- Electric, pneumatic, hydraulic, hydro-electric actuator and so on could be used according to clients' request to realize remote and automatic controlling.

The Type Test of Cryogenic Valves

According to the requiements of certain standards, the test of cryogenic butterfly valves shall be carried out under both normal and cryogenic. With its principle as following:



Cryogenic test device type

BUTTERFLY VALVE SERIES
Cryogenic Flange/Wafer Metal Seated Butterfly Valve

TECHNICAL SPECIFICATIONS

Design Basis		GB	BS EN	API
Low technical requirements		GB/T 24925、BS 6364、MSS SP-134		
Design Standard		GB/T 12238	BS EN 593	API 609
Face-to-Face Dimensions		GB/T 12221	BS EN 558	API 609
Connection End*	Flanged	GB/T 9113	BS EN 1092-1	ASME B16.5
Test and Inspection		GB/T 13927	BS EN 12266	API 598

* The end type and dimension can be designed and manufactured according to the buyers' request.

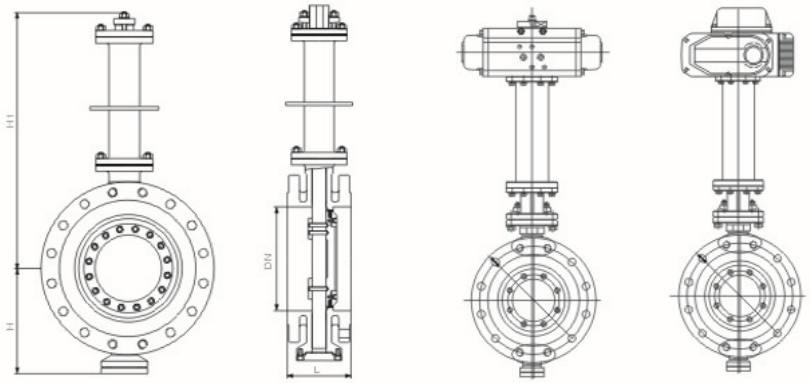
MAIN PARTS AND MATERIALS

Conventional Type

Part Name	Stainless Steel			
Body	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
Disc	A351-CF8	A351-CF8M	A351-CF3	A351-CF3M
Stem	A182-F304	A182-F316	A182-F304L	A182-F316L
Seal ring	PTFE、PCTFE			
Packing	PTFE、Low leakage combined packing			

BUTTERFLY VALVE SERIES

Cryogenic Flange/wafer Metal Seated Butterfly Valve



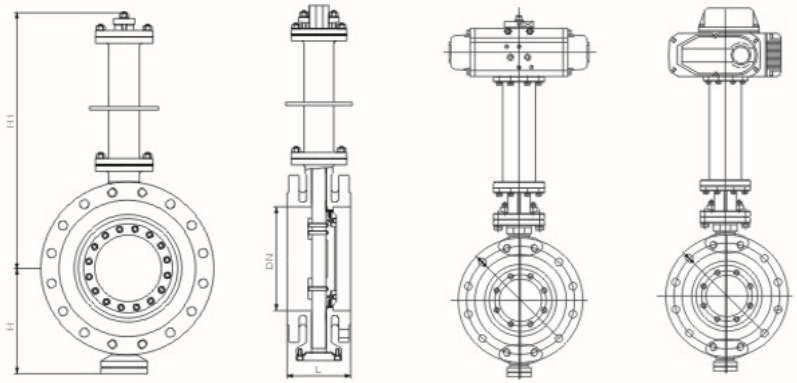
MAIN CONNECTION DIMENSIONS

Nominal Pressure						PN10~PN40
DN	PN10/PN16/PN25			PN40		
	L	H1	H	L	H1	H
50	108	575	70	150	575	80
65	112	590	80	170	590	90
80	114	630	93	180	630	98
100	127	650	103	190	650	115
125	140	658	118	200	658	135
150	140	660	198	210	660	198
200	152	683	236	230	685	246
250	165	718	276	250	723	290
300	178	780	297	270	780	312
350	190	840	324	290	850	352
400	216	887	352	310	895	392
450	222	948	368	330	950	412
500	229	1035	411	350	1040	460
600	267	1170	460	390	1180	516

Remark: The extended partial dimension of cryogenic butterfly valves' stem/packing should be determined according to fluid medium and relative standard.

BUTTERFLY VALVE SERIES

Cryogenic Flange/wafer Metal Seated Butterfly Valve



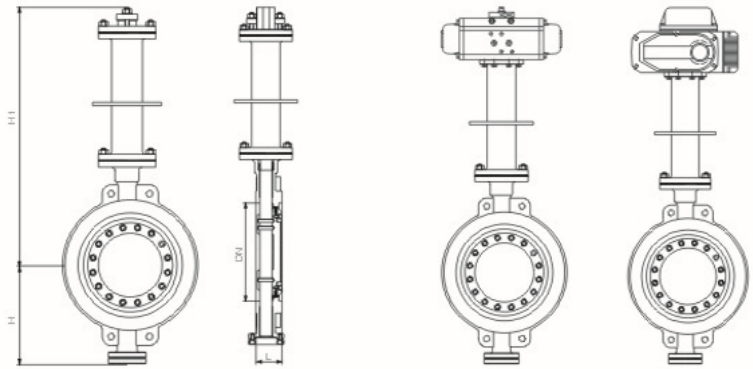
MAIN CONNECTION DIMENSIONS

Nominal Pressure						Class150~Class300
NPS	Class 150			Class300		
	L	H1	H	L	H1	H
2	108	575	70	150	575	80
2-1/2	112	590	80	170	590	90
3	114	630	93	180	630	98
4	127	650	103	190	650	115
5	140	658	118	200	658	135
6	140	660	198	210	660	198
8	152	683	236	230	685	246
10	165	718	276	250	723	290
12	178	780	297	270	780	312
14	190	840	324	290	850	352
16	216	887	352	310	895	392
18	222	948	368	330	950	412
20	229	1035	411	350	1040	460
24	267	1170	460	390	1180	516

Remark: The extended partial dimension of cryogenic butterfly valves' stem/packing should be determined according to fluid medium and relative standard.

BUTTERFLY VALVE SERIES

Cryogenic Flange/wafer Metal Seated Butterfly Valve

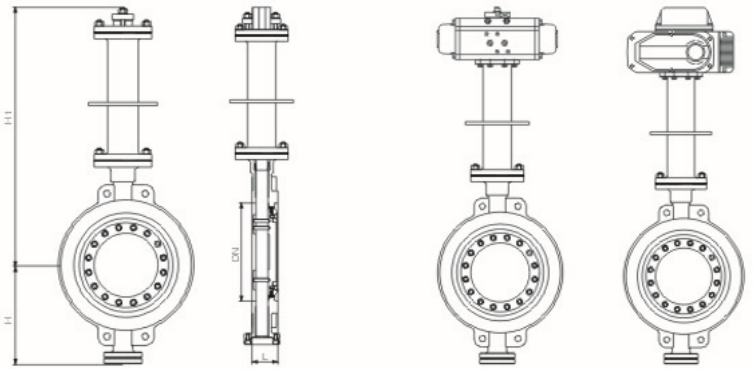


MAIN CONNECTION DIMENSIONS

Nominal Pressure						PN10 – PN40
DN	PN10/PN16/PN25			PN40		
	L	H1	H	L	H1	H
50	43	575	70	43	575	80
65	46	590	80	46	590	90
80	49	630	93	64	630	98
100	56	650	103	64	650	115
125	64	658	118	70	658	135
150	70	660	198	76	660	198
200	71	683	236	89	685	246
250	76	718	276	114	723	290
300	83	780	297	114	780	312
350	92	840	324	127	850	352
400	102	887	352	140	895	392
450	114	948	368	152	950	412
500	127	1035	411	152	1040	460
600	154	1170	460	178	1180	516

Remark: The extended partial dimension of cryogenic butterfly valves' stem/packing should be determined according to fluid medium and relative standard.

BUTTERFLY VALVE SERIES
Cryogenic Flange/wafer Metal Seated Butterfly Valve



MAIN CONNECTION DIMENSIONS

Nominal Pressure						Class150 – Class300
NPS	Class150			Class300		
	L	H1	H	L	H1	H
2	43	575	70	43	575	80
2-1/2	46	590	80	46	590	90
3	48	630	93	48	630	98
4	54	650	103	54	650	115
5	55	658	118	55	658	135
6	57	660	198	59	660	198
8	64	683	236	73	685	246
10	71	718	276	83	723	290
12	81	780	297	92	780	312
14	92	840	324	117	850	352
16	102	887	352	133	895	392
18	114	948	368	149	950	412
20	127	1035	411	159	1040	460
24	154	1170	460	181	1180	516

Remark: The extended partial dimension of cryogenic butterfly valves' stem/packing should be determined according to fluid medium and relative standard.

BUTTERFLY VALVE SERIES
Hydraulic Control Non-return Butterfly Valve

Use

Hydraulic control non-return butterfly valve has two kinds of function: shut-off and non-return. Also the kind of ideal control equipment has good procedure which according to pre-set classified as quickly shut-off , slow-closure two phase(means quickly shut-off to steady angle at first, then slowly close the surplus angle)and take action to eliminate the medium water-hammer damage the pipeline equipment in the pipeline, for this reason to aim to protect pipe system. Mainly used for power, metallurgy, city construction, water and drain system and any automation pump station system.

Structure Features

Hydraulic control non-return butterfly valve has lwo kinds of function shut-off and non-return. Its open-close time and angle stroke range can be adjusted, intead of traditional device of butterfly valve with check valve or gate valve with check valve.

Hydraulic control non-return butterfly valve disposes additional power supply, such as accumulator or counterweight etc. When power broken off or forced outage occurs suddenly, the fluid source ,which has been garnered by accumulator, or weighted potential energy can make the valve to shut off automatically through the magnetic exchange valve, according to the pre-set procedure, divided into shutting off quickly and slowly, to aim to eliminate or reduce water hammer to protect the pipe system.

The bearing adopts non-oil self-lubricating characterized by stong bearing capacity, high-wearing, small friction resistance etc.

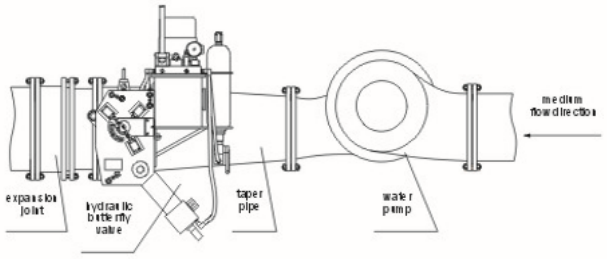
Opening and closing flexibly, reliable seal perfomance, small fluid resistance, steady hydraulic system pressure with valve position indicator;
With perfect hydraulic system and electrical control system, it can both operate locally and in long distance.

Operation Principle

With oil pump generating set starting, the oil pump will input the pressure oil to accumulator tank till reaching the rated pressure(After weight-loaded opening on pump generating set, the pressure oil will enter the oill cylinder directly);when opening the valve, with the oil cylinder solenoid valve processing, pressure oil enters into the oil cylinder stacklass cavity and drives crank valve shaft to rotate then valve opens. When closing, the oil cylinder solenoid valve processing, pressure oil enters into the oil cylinder suker-rod cavity(weight-loaded under weighted working and drive crank valve shaft to rotate, then valve closes.

The whole travelling time of opening and closing valve can be achieved by adjusting the flow speed control valve on hydraulic circuit. The angle of quick and slow closing valve can be achieved by adjusting the regulating stem on the end of the oil cylinder.

Pipeline Installation Diagram



BUTTERFLY VALVE SERIES
Hydraulic Control Non-return Butterfly Valve

TECHNICAL SPECIFICATIONS

Design Basis		GB
Design Standard		JB/T 5299
Face-to-Face Dimensions		GB/T 12221
Connection End*	Flanged	GB/T 9113 GB/T 17241
Test and inspection		GB/T 13927

* The end type and dimension can be designed and manufactured according to the buyers's request.

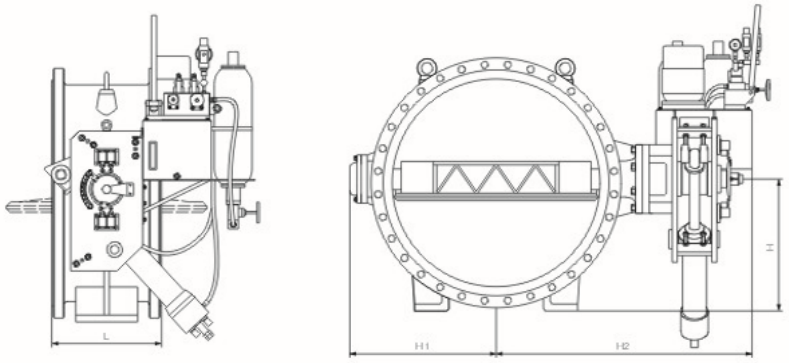
MAIN PARTS AND MATERIALS

Conventional Type

Part Name	Material
Body	Grey cast iron , ductile cast iron, carbon steel, stainless steel
Disc	Grey cast iron , ductile cast iron, carbon steel, stainless steel
Seal ring	Rubber, PTFE
Stem	stainless steel
Packing	F.G、PTFE

BUTTERFLY VALVE SERIES

Hydraulic Control Non-return Butterfly Valve



MAIN CONNECTION DIMENSIONS

Nominal Pressure: PN2.5/PN6/PN10/PN16/PN25

DN	L	H	H1	H2
400	216	340	350	650
450	222	365	375	680
500	229	400	400	750
600	267	470	465	800
700	292	540	530	860
800	318	580	585	1000
900	330	635	670	1050
1000	410	690	720	1100
1200	470	800	850	1220
1400	530	920	980	1335
1600	600	1050	1110	1485
1800	670	1140	1250	1655
2000	760	1250	1370	1800

BUTTERFLY VALVE SERIES

Engineering Data Flow Coefficient (cv Value)

CV VALUES 150Lb

Valve size mm	Valve size inch	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
80	3	1	6	14	23	31	39	47	54	62	71	82	96	112	128	143	156	163	165
100	4	2	12	26	42	57	72	85	98	113	130	150	176	205	234	262	285	299	302
150	6	16	31	45	59	76	101	134	178	233	297	369	448	531	616	698	758	796	796
200	8	30	57	82	108	140	185	246	327	427	544	676	821	974	1130	1280	1390	1460	1460
250	10	52	99	142	187	242	320	426	566	739	942	1170	1420	1690	1960	2220	2410	2530	2530
300	12	78	147	212	279	362	478	636	846	1100	1410	1750	2120	2520	2920	3310	3600	3780	3780
350	14	106	201	289	380	493	651	866	1150	1500	1920	2380	2890	3430	3980	4510	4890	5140	5140
400	16	165	313	451	594	769	1020	1350	1800	2350	2990	3720	4510	5350	6210	7040	7640	8020	8020
450	18	217	413	594	782	1010	1340	1780	2370	3090	3940	4890	5940	7050	8180	9270	10100	10600	10600
500	20	268	509	733	965	1250	1650	2200	2920	3820	4860	6040	7340	8710	10100	11400	12400	13000	13000
600	24	386	734	1060	1390	1800	2380	3170	4210	5500	7000	8700	10600	12500	14500	16500	17900	18800	18800
700	28	559	1060	1530	2010	2610	3450	4590	6100	7960	10100	12600	15300	18200	21100	23900	25900	27200	27200
750	30	630	1200	1720	2270	2940	3880	5160	6870	8960	11400	14200	17200	20400	23700	28900	29200	30700	30700
800	32	719	1370	1970	2590	3360	4440	5900	7840	10200	13000	16200	19700	23300	27100	30700	33300	35000	35000
900	36	884	1680	2420	3180	4120	5450	7250	9630	12600	16000	19900	24200	28700	33300	37700	40900	43000	43000
1000	40	1170	2220	3190	4210	5450	7210	9580	12700	16600	21200	26300	31900	37900	44000	49800	54100	56900	56900
1050	42	1230	2340	3370	4440	5760	7610	10100	13400	17600	22400	27800	33700	40000	46500	52600	57100	60000	60000
1200	48	1640	3120	4490	5920	7670	10100	13500	17900	23400	29800	37000	45000	53400	61900	70100	76100	80000	80000

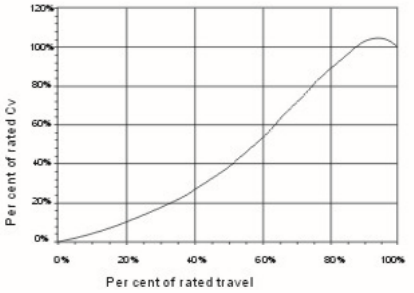
300Lb

Valve size mm	Valve size inch	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
80	3	1	6	14	23	31	39	47	54	62	71	82	96	112	125	143	156	163	165
100	4	2	12	26	42	57	72	85	98	113	130	150	176	205	234	262	285	299	302
150	6	6	25	41	54	69	91	121	162	212	268	334	407	482	559	634	689	725	725
200	8	11	45	74	98	126	166	222	298	389	492	613	746	884	1030	1160	1260	1330	1330
250	10	19	82	135	178	229	301	402	540	705	891	1110	1350	1600	1860	2110	2290	2410	2410
300	12	29	122	202	266	342	450	601	807	1050	1330	1660	2020	2400	2780	3150	3420	3600	3600
350	14	39	167	274	363	466	613	818	1100	1430	1810	2260	2750	3260	3780	4290	4660	4900	4900
400	16	58	248	408	539	692	910	1220	1630	2130	2690	3360	4090	4840	5610	6370	6920	7280	7280
450	18	77	326	537	710	911	1200	1600	2150	2810	3550	4420	5380	6380	7400	8390	9110	9590	9590
500	20	95	403	663	876	1130	1480	1980	2650	3460	4380	5460	6640	7880	9130	10400	11300	11800	11800
600	24	136	580	955	1260	1620	2130	2850	3820	4990	6310	7860	9570	11300	13100	14900	16200	17100	17100
700	28	199	844	1390	1840	2360	3100	4150	5560	7260	9190	11400	13900	16500	19100	21700	23600	24800	24800
750	30	232	986	1620	2150	2750	3620	4840	6490	8480	10700	13400	16300	19300	22400	25400	27500	29000	29000
800	32	261	1110	1830	2420	310	4080	5450	7310	9550	12100	15000	18300	21700	25200	28600	31000	32600	32600
900	36	332	1410	2320	3070	3940	5190	6930	9300	12100	15400	19100	23300	27600	32000	36300	39400	41500	41500
1000	40	399	1700	2790	3690	4740	6230	8330	11200	14600	18400	23000	28000	33200	38400	43600	47400	49900	49900
1050	42	457	1940	3200	4230	5430	7140	9540	12800	16700	21100	26300	3200	38000	44000	50000	54200	57100	57100
1200	48	480	2040	3360	4440	5700	7500	10000	13400	17500	22200	27700	33700	39900	46300	52500	57000	60000	60000

TRIPLE OFFEST METAL-SEATED BUTTERFLY VALVE

Valve Size mm	Valve Size inch	Class 150lb Cv	Class 150lb Kv	Class 300lb Cv	Class 300lb Kv	Class 600lb Cv	Class 600lb Kv
80	3"	165	143	165	143	150	130
100	4"	290	251	290	251	250	216
150	6"	790	684	725	628	600	519
200	8"	1460	1264	1330	1152	1080	935
250	10"	2200	1905	2110	1827	1700	1472
300	12"	3780	3273	3500	3030	2520	2182
350	14"	5140	4450	4620	4000	4068	3522
400	16"	6940	6009	6280	5437	5380	4658
450	18"	9500	8225	8590	7437	7470	6468
500	20"	13000	11255	11500	9957	9820	8502
600	24"	18800	16277	16180	14009	14940	12935
700	28"	27200	23550	23400	20260		
750	30"	30700	26580	29000	25108		
800	32"	35000	30303	32600	28225		
900	36"	43000	37229	41500	25931		
1000	40"	56900	49264	49900	43203		
1050	42"	61700	53419	57100	49437		
1200	48"	81000	70130	74000	64069		

CV CURVE



BUTTERFLY VALVE SERIES

Triple Offset Butterfly Valve Torques(nm)

TRIPLE OFFSET BUTTERFLY VALVE TORQUES(NM)

Nominal Diameter		PN/MPa						CL		
		0.6	1.0	1.6	2.5	4.0	6.4	150	300	600
DN/mm	NPS/in	N.m								
50	2	22	26	33	53	75	114	35	83	165
65	21/2	26	31	54	73	95	127	60	115	191
80	3	30	51	73	90	135	260	155	251	415
100	4	55	92	125	165	245	470	225	355	750
125	5	93	148	205	260	370	570	270	500	880
150	6	160	225	410	500	710	950	425	785	2700
200	8	180	360	540	720	1080	1400	604	1350	3330
250	10	317	466	850	1125	1675	2425	885	1700	5085
300	12	571	895	1220	2530	2185	2835	1820	2250	10650
350	14	737	1460	2010	2550	3650	4350	2265	3745	12700
400	16	945	1750	2550	3365	4975	5825	2700	5330	15350
450	18	1305	2205	3100	3970	5800	12100	3615	6685	18945
500	20	1840	2956	4075	5190	7425	15250	4700	8800	23895
600	24	2500	4995	5415	8545	12000	22120	5100	15100	34550
700	28	2772	5697	6200	12700	20450	24500	8585	23750	39750
750	30	2900	6050	6930	14895	23825	27500	10750	28150	43750
800	32	3520	6576	7880	17865	28500	30500	12300	33745	48950
900	36	4747	7626	8775	23795	32550	34500	15350	44950	56350
1000	40	6225	10545	12200	31995	39000	39500	20570	60500	67595
1050	42	7320	17725	14640	36000	46500	49500	24185	68150	81150
1200	48	11285	18505	21000	44000	55700	65000	30735	78400	101500
1300	52	16470	19625	26950	49000			33850	90150	116050
1400	56	22815	23930	31410	55000			38500	103500	
1500	60	23795	32540	39050	65000			42000	111500	
1600	64	36765	39000	43700	76500			46500	133000	

BUTTERFLY VALVE SERIES

Triple Eccentric Butterfly Valve Material Table

MATERIALS LIST

ASTM Standard	Chemical compositions (%)										Mechanical Properties				Hardness Brinell min
	C max	Mn max	P max	S max	Si max	Cr	Mo	Ni	Cu max	V max	Tensile [MPa]min	Yield [MPa]min	Elongation [%]min	Reduction [%]min	
A216 WCB	0.30	1.00	0.040	0.045	0.60	≤0.50	≤0.20	≤0.50	0.30	0.03	485-655	250	22	35	
A216 WCB	0.25	1.20	0.040	0.045	0.60	≤0.50	≤0.20	≤0.50	0.30	0.03	485-655	275	22	35	
A352 Lc3	0.15	0.50-0.80	0.040	0.045	0.60			3.00-4.00			485-655	275	35	24	
A217 Wc6	0.15-0.20	0.50-0.80	0.040	0.045	0.60	1.00-1.50	0.45-0.65		0.50		485-655	275	20	35	
A217 Wc9	0.05-0.18	0.40-0.70	0.040	0.045	0.75	2.00-2.75	1.00-1.50		0.50		485-655	275	20	35	
A217 C5	0.20	0.40-0.70	0.040	0.045	2.00	4.00-6.50	0.45-0.65		0.50		620-795	415	18	35	
A361 CF3	0.03	1.50	0.040	0.040	1.50	17.0-21.0	≤0.50	8.0-12.0			485	205	35		
A361 CF3M	0.03	1.50	0.040	0.040	2.00	17.0-21.0	9.0-13.0	2.0-30			485	205	30		
A351 CF8	0.08	1.50	0.040	0.040	1.50	18.0-21.0	≤0.50	8.0-11.0			485	205	35		
A351 CF8M	0.08	1.50	0.040	0.040	2.00	18.0-21.0	2.0-3.0	9.0-12.0			485	205	30		
A351 CF8C	0.08	1.50	0.040	0.040	1.50	18.0-21.0	≤0.50	98.0-12.0			485	205	30		
A351 CN7M	0.07	1.50	0.040	0.040	0.35	19.0-22.0	2.0-3.0	27.5-30.5			450	170	35		
A105	0.35	0.60-1.50	0.040	0.050	0.35	≤0.30	≤0.12	≤0.40	0.40	0.030	485	150	22	30	
A182 F6A	0.15	1.00	0.040	0.030	1.00	11.5-13.5		≤0.50			485	275	18	35	
A182 F304	0.08	2.00	0.040	0.030	1.00	18.0-20.2		8.0-11.0			515	205	30	50	
A182 F304L	0.035	2.00	0.040	0.030	1.00	18.0-20.0		8.0-13.0			485	170	30	50	
A182 F316	0.08	2.00	0.040	0.030	1.00	16.0-18.0	2.0-3.0	10.0-14.0			515	205	30	50	
A182 F316L	0.035	2.00	0.040	0.030	1.00	16.0-18.0	2.0-3.0	10.0-15.0			485	170	30	50	
A182 F321	0.08	2.00	0.040	0.030	1.00	≥17.0		9.0-12.0			515	205	30	50	
A182 F11	0.10-0.20	0.30-0.80	0.040	0.040	0.50-1.00	1.0-1.5	0.44-0.65				515	310	20	30	179-217
A182 F22	0.05-0.15	0.30-0.60	0.040	0.040	0.50	2.0-2.5	0.87-1.13				515	31	20	30	156-207
A182 F5	0.15	0.60-0.60	0.030	0.030	0.50	4.0-6.0	0.44-0.65	≤0.50			485	275	20	35	143-217
A350 Lf2	0.60	1.35	0.030	0.040	0.15-0.30	≤0.30	≤0.12	≤0.40	0.40	0.030	485-655	250	22	30	
A276 410	0.15	1.00	0.040	0.030	1.00	11.5-13.5					480	275	16	50	
A276 420	0.15	1.00	0.040	0.030	1.00	12.0-14.0								5	255
A276 321	0.08	2.00	0.045	0.030	1.00	17.0-19.0		9.0-12.0			515	205	30	40	
A320 L7	0.38-0.48	0.75-1.00	0.035	0.040	0.15-0.35	0.80-1.10	0.15-0.25				125	105	16	50	
A320 L7M	0.38-0.48	0.75-1.00	0.035	0.040	0.15-0.35	0.80-1.10	0.15-0.25				100	80	16	50	235
A193 B7	0.37-0.49	0.65-1.10	0.035	0.040	0.15-0.35	0.75-1.20	0.15-0.25				860	720	16	50	
A193 B7M	0.37-0.49	0.65-1.10	0.035	0.040	0.15-0.35	0.75-1.20	0.15-0.25				690	550	18	50	235
A193 B16	0.36-0.47	1.45-0.70	0.035	0.040	0.15-0.35	0.80-1.15	0.50-0.65			0.25-0.35	860	725	18	50	
A193 B8	0.08	2.00	0.045	0.030	1.00	18.0-20.0		8.0-10.5			515	205	30	50	223
A193 B8M	0.08	2.00	0.045	0.030	1.00	16.0-18.0	2.00-3.00	10.0-14.0			515	205	30	50	223
A194 2H	≥0.40	1.00	0.040	0.050	0.40		0.15-0.25								248-352
A194 7	0.37-0.49	0.65-1.10	0.040	0.040	0.15-0.35	0.75-1.20									159-237
A194 8	0.08	2.00	0.045	0.030	1.00	18.0-20.0		8.0-10.5							126-300
A194 8M	0.08	2.00	0.045	0.030	1.00	16.0-18.0	2.00-3.00	10.0-14.0							126-300