

» High performance butterfly valve for air separation

DOUBLE ECCENTRIC BUTTERFLY VALVE



Beijing Afa Trading Co., Ltd

summary

The D series air separation dedicated butterfly valve is a transformed product of Senova's introduction of advanced butterfly valve technology from Europe. This product is specifically customized for cryogenic and pressure swing adsorption air separation equipment. High speed pneumatic/hydraulic actuators can be installed, and manual switches can also be used. This butterfly valve has a service life of over one million, with characteristics that meet the needs of air separation equipment, such as high-frequency, high-speed switching, regulating, and overspeed switching.

Valve size available

Class 150 clamp-on (Wafer)	1.5" ~ 60"	DN40 ~ DN1500
Class 150 Lug type (LUG)	2" ~ 60"	DN50 ~ DN1500
Class 150 flanged (Double Flange)	3" ~ 60"	DN80 ~ DN1500
Class 300 clamp-on (Wafer)	2" ~ 24"	DN50 ~ DN600
Class 300 Lug type (LUG)	2.5" ~ 24"	DN65 ~ DN600
Class 300 flanged (Double Flange)	3" ~ 24"	DN80 ~ DN600

Features

- Using a unique dynamic load sealing PTFE valve seat design, it has good elasticity and high reliability;
- No need to add O-rings or metal components to maintain sealing;
- The lip type sealing structure can compensate for changes in temperature and pressure;
- Long service life and low maintenance workload;
- Sealing test, achieving no bubble leakage in both directions.

Seal type

PT FE, R-PT FE, Fireproof valve seat, etc.

Reliable fixing of shaft

The top of the shaft has an anti blowing structure to prevent the upper end of the shaft from moving out of the cover in case of accidental breakage

Convenient seat maintenance and servicing

Simply remove the insert to replace the valve seat, without the need to disassemble the butterfly valve and shaft.

Provided with shut off and control functions

- Has excellent control characteristics;
- Proportional variation of flow characteristic curve;
- Wide adjustment range;
- Even when used for control, it can still be tightly sealed.

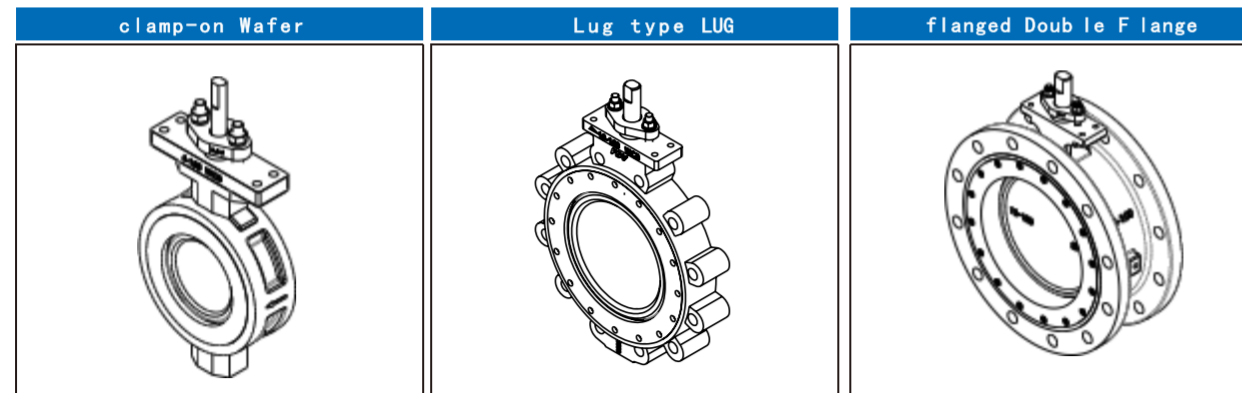


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Valve body connection form
Body Type



Explanations to butterfly valve model establishment

1	2	3	4	5	6	7	8	9
6"(DN150)	D	W	150	M	WB	17	S4	PT

1	阀门通径 Valve size
美标	2"-120" (英寸inch)
国标	DN50-DN3000 (mm)
2	阀门的特征代号 Valve feature code
D	标准型 Standard code
F	防火型(耐火型) Fireproof type (fire resistant type)
3	连接形式代号 Connection type code
W	对夹式 Wafer type
L	凸耳式 LUG type
F	法兰式 Double Flange type
4	压力等级代号 Pressure class code
150	ANSI CLASS 150Lb
300	ANSI CLASS 300 Lb
600	ANSI CLASS 600 Lb
5	驱动方式代号 Driving mode code
M	手动 Manual
K	光杆 Bare stem
G	蜗轮传动 Worm gear transmission
P	气动 Pneumatic
D	电动 Electric

6	阀体材料代号 Body material code
WB	碳钢WCB Carbon steel
S4	不锈钢CF8 Stainless steel CF8
S6	不锈钢CF8M Stainless steel CF8M
SL	不锈钢CF3 Stainless steel CF3
SM	不锈钢CF3M Stainless steel CF3M
AM	蒙乃尔 Monel
AH	哈氏合金 Hastelloy alloy
7	阀杆材料代号 Stem material code
17	马氏体不锈钢17-4PH Martensite stainless steel 17-four PH
S4	不锈钢304 Stainless steel 304
S6	不锈钢316 Stainless steel 316
R1	不锈钢1CR13 Stainless steel 1CR13
R2	不锈钢2CR13 Stainless steel 2CR13
8	蝶板材料代号 Butterfly plate material code
S4	不锈钢CF8 Stainless steel CF8
S6	不锈钢CF8M Stainless steel CF8M
SL	不锈钢CF3 Stainless steel CF3
SM	不锈钢CF3M Stainless steel CF3M
9	密封阀座的材料代号 Seal of the seat material code
PT	PTFE聚四氟乙烯
RT	RPTFE增强聚四氟乙烯
PL	对位聚苯PPL

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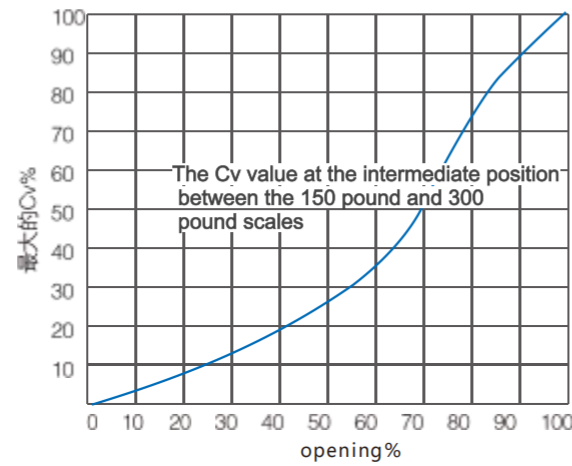
Flow parameters

The following table provides the flow coefficients for 150 pound and 300 pound butterfly valves. The Cv value represents the water flow rate per minute through a fully open valve at a pressure differential of 1 pound inch (0.07 bar) and a temperature of 60 ° F (15.6 ° C), measured in US gallons per minute.

150磅级 Class		
阀门尺寸 Valve size		Cv
英寸 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

300磅级 Class		
阀门尺寸 Valve size		Cv
英寸 Inch	DN	
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.

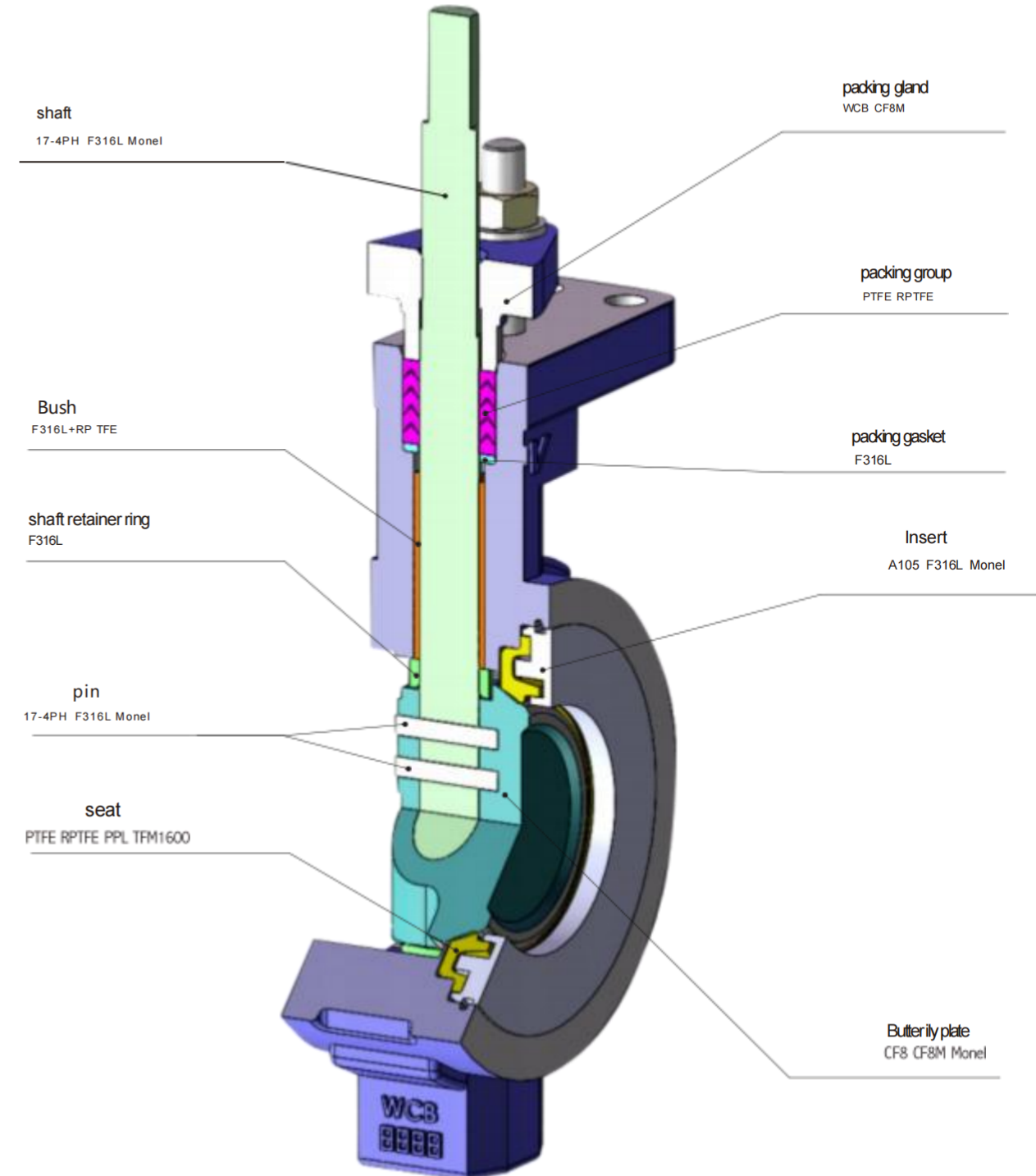


To confirm cv value of the valve at the middle position:

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

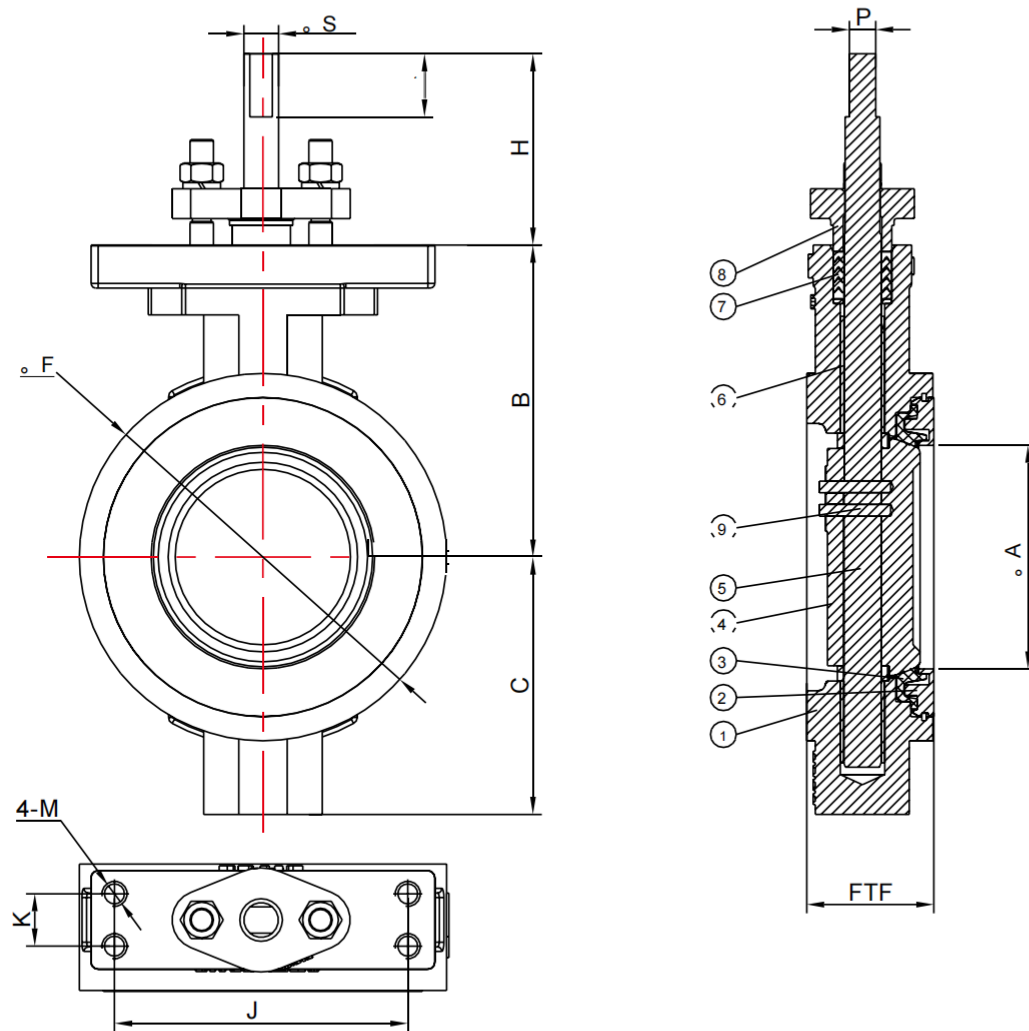


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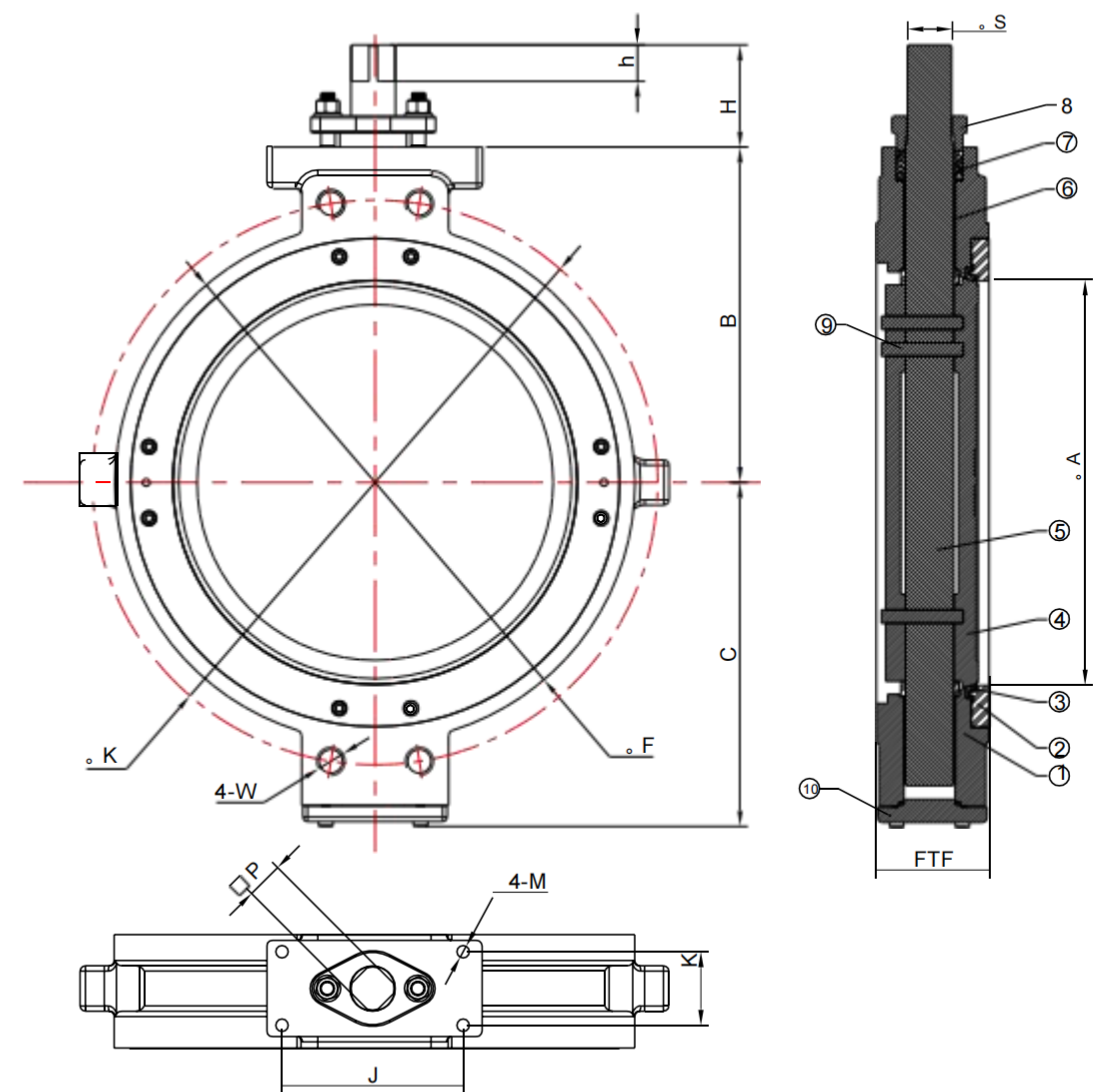
DOUBLE ECCENTRIC BUTTERFLY VALVE

Class 150 Wafer Type Butterfly valve Dimension



No	Partname	A	B	C	D	E	Other	NP	A	B	C	F	FTF±3.3	H	h	P	S	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
								2.5"	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
Place a tick in the appropriate box which material you required Other materials tick the "other" column and remark.																				
9	Pin	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH														
8	Cover	WCB	WCB	CF8	CF8M	CF3M														
7	Packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE														
6	Sleeve	316L+RPTFE																		
5	Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH														
4	Disc	CF8	CF8M	CF8	CF8M	CF3M														
3	Seat	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE														
2	Insert	A105	A105	F304	F316	F316L														
1	Body	WCB	WCB	CF8	CF8M	CF3M														
								Data				Technology standard								
								Pressure		Class 150		Design & manufacturing standards				API609				
								Type		Wafer		Temperature & pressure standards				ASME B16.34				
								Temperature		-30°C ~ 180°C		Inspection & test				API598				
								Leakage		VI FCI70-2		Flange size				ASME B16.5				

Class 150 Wafer Type Butterfly valve Dimension



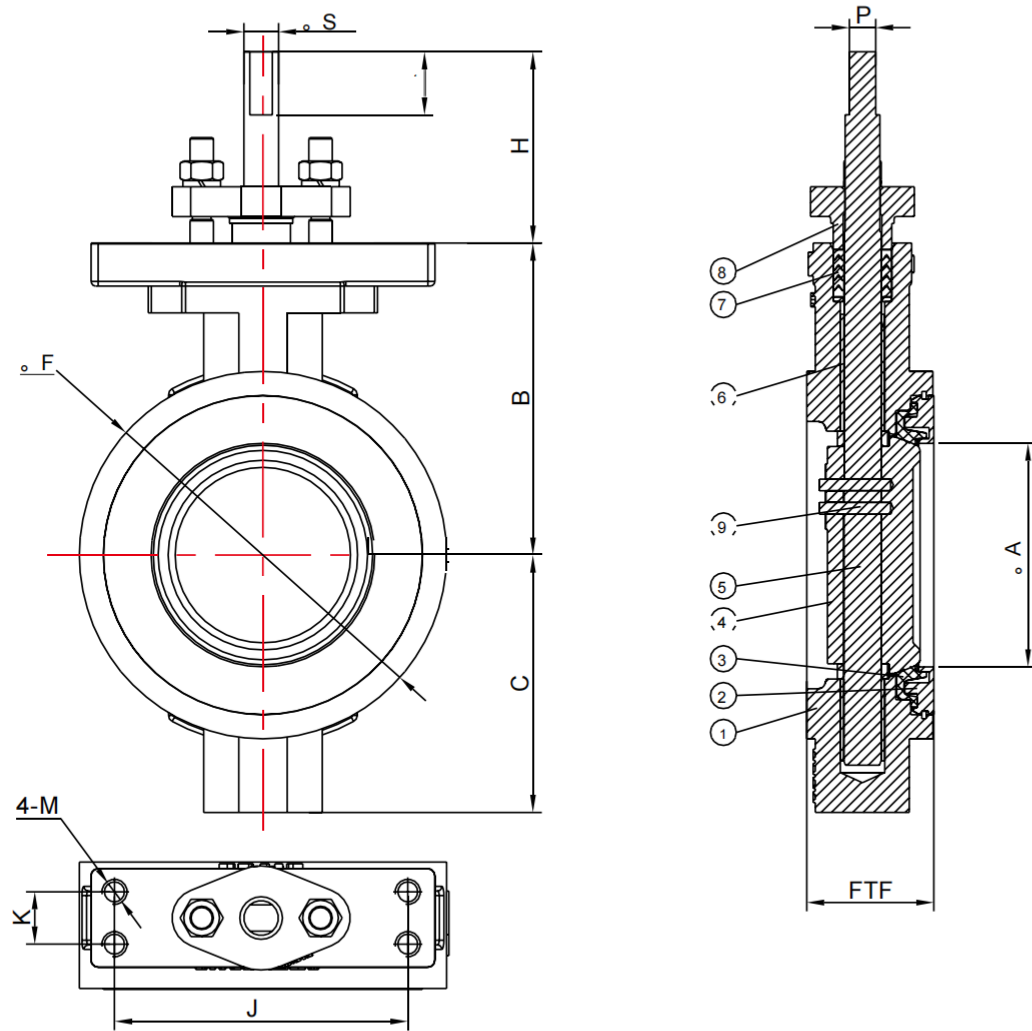
No	Partname	A	B	C	D	E	Other	NPS	A	B	C	F	FTF±3.3	H	h	P	S	J	K	M	W	
								16"	455	377	387	584	127	115	41	41.4	50	293.2	82.6	M16	635	1 1/8"-BUN
								18"	413	356	340	533	114	111	41	35	47	203.2	82.6	M16	577.9	1 1/8"-BUN
								20"	455	377	387	584	127	115	41	41.4	50	293.2	82.6	M16	635	1 1/8"-BUN
								24"	548	490	467	692	154	130	51	51	64	254	107.7	M20	749.3	1 1/4"-BUN
								28"	682	570	552	799	165	157	50.8	50.8	66	254	107.7	M20	863.6	1 1/4"-BUN
								30"	702	570	557	863	167	157	50.8	50.8	66	254	107.7	M20	914.4	1 1/4"-BUN
								32"	702	570	557	905	191	157	50.8	50.8	66	254	107.7	M20	977.9	1 1/2"-BUN
								48"	1168	841	805	1385	254	293	90	90	125	381	178	M20	1422.4	1 1/2"-BUN
Place a tick in the appropriate box which material you required Other materials tick the "other" column and remark.																						
9	Pin	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH																
8	Cover	WCB	WCB	CF8	CF8M	CF3M																
7	Packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE																
6	Sleeve	316L+RPTFE																				
5	Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH																
4	Disc	CF8	CF8M	CF8	CF8M	CF3M																
3	Seat	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE																
2	Insert	A105	A105	F304	F316	F316L																
1	Body	WCB	WCB	CF8	CF8M	CF3M																
								Data				Technology standard										
								Pressure		Class 150		Design & manufacturing standards				API609						
								Type		Wafer		Temperature & pressure standards				ASME B16.34						
								Temperature		-30°C ~ 180°C		Inspection & test				API598						
								Leakage		VI FCI70-2		Flange size				ASME B16.5						

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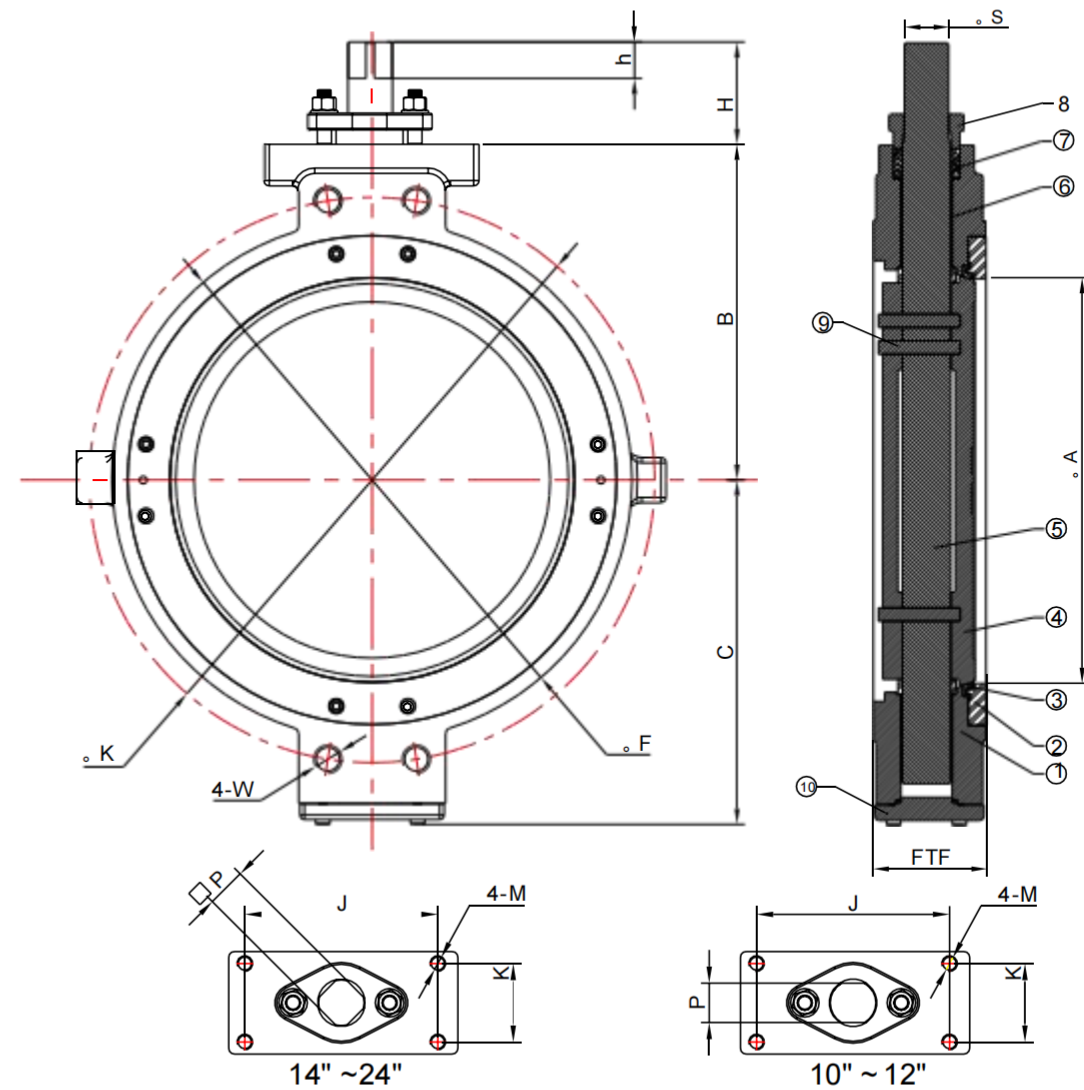
Class 300 Wafer Type Butterfly valve Dimension



Place a tick in the appropriate box which material you required
Other materials tick the "other" column and remark.

No	Partname	Material					NPS	A	B	C	F	FTF±0.3	H	h	P	S	J	K	M
		A	B	C	D	E													
9	Pin	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	2.5"	59	111.1	82.5	118	48	82	27	11.2	14.8	125.4	22.4	M10
8	Cover	<input type="checkbox"/> WCB	<input type="checkbox"/> WCB	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	3"	73	120.5	93	132	48	82	27	11.2	14.8	125.4	22.4	M10
7	Packing	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	4"	96	133.3	110	157	54	82	27	11.2	14.8	125.4	22.4	M10
6	Sleeve	316L+RPTFE					5"	111	135	120	186	57	82	27	11.2	14.8	125.4	22.4	M10
5	Stem	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	6"	142	174	153	217	59	82	27	15.9	21.9	125.4	22.4	M10
4	Disc	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	8"	188	212	180	273	73	95	28	20.6	28	142.7	37.3	M12
3	Seat	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	Data		Technology standard										
2	Insert	<input type="checkbox"/> A105	<input type="checkbox"/> A105	<input type="checkbox"/> F304	<input type="checkbox"/> F316	<input type="checkbox"/> F316L	Pressure	Class 300	Design & manufacturing standards		API609								
1	Body	<input type="checkbox"/> WCB	<input type="checkbox"/> WCB	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	Type	Wafer	Temperature & pressure standards		ASME B16.34								
							Temperature	-30°C ~ 180°C	Inspection & test		API598								
							Leakage	vi FC170-2	Flange size		ASME B16.5								

Class 300 Wafer Type Butterfly valve Dimension



Place a tick in the appropriate box which material you required
Other materials tick the "other" column and remark.

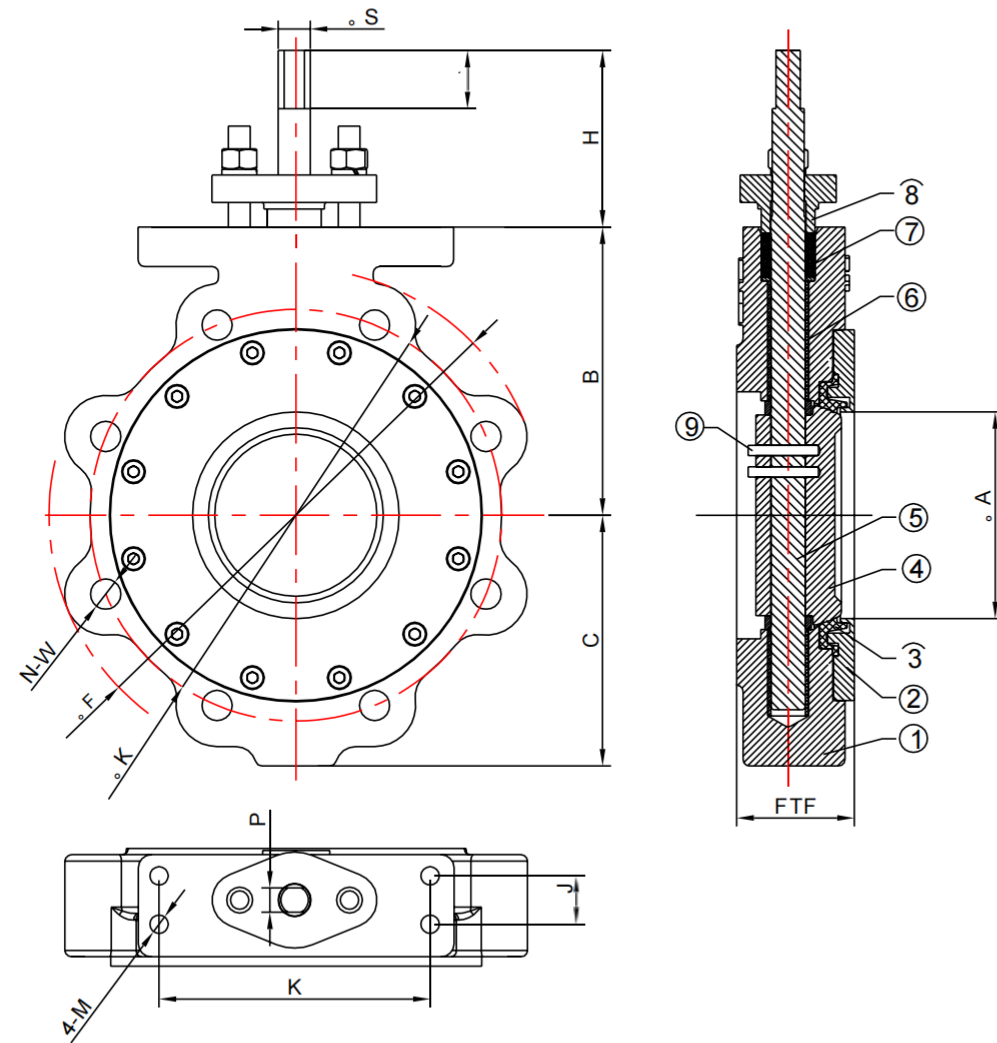
No	Partname	Material					NPS	A	B	C	F	FTF±3.3	H	h	P	S	J	K	M	4-W	
		A	B	C	D	E															Other
9	Pin	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	10"	236	254	222	327	83	100	33	23.8	33.3	142.7	37.3	M12	387.4	1"-8UN
8	Cover	<input type="checkbox"/> WCB	<input type="checkbox"/> WCB	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	12"	282	282	284	385	92	105	41	28.7	37	142.7	37.3	M12	450.8	1 1/8"-8UN
7	Packing	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	14"	314	325	310	416	117	102	34.5	41.4	50	203.2	82.6	M16	514.4	1 1/8"-8UN
6	Sleeve	316L+RPTFE					16"	362	350	338	472	133	102	34.5	41.4	50	203.2	82.6	M16	571.5	1 1/4"-8UN
5	Stem	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	<input type="checkbox"/> 17-4PH	18"	413	424	412	537	149	118	40	51	64	254	107.7	M20	628.6	1 1/4"-8UN
4	Disc	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	20"	454	446	440	588	159	130	43	51	64	254	107.7	M20	658.8	1 1/4"-8UN
3	Seat	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	<input type="checkbox"/> RPTFE	24"	548	500	505	692	181	145	60	51	64	254	107.7	M20	812.8	1 1/2"-8UN
2	Insert	<input type="checkbox"/> A105	<input type="checkbox"/> A105	<input type="checkbox"/> F304	<input type="checkbox"/> F316	<input type="checkbox"/> F316L	Data		Technology standard												
1	Body	<input type="checkbox"/> WCB	<input type="checkbox"/> WCB	<input type="checkbox"/> CF8	<input type="checkbox"/> CF8M	<input type="checkbox"/> CF3M	Pressure	Class 300	Design & manufacturing standards		API609										
							Type	Wafer	Temperature & pressure standards		ASME B16.34										
							Temperature	-30°C ~ 180°C	Inspection & test		API598										
							Leakage	vi FC170-2	Flange size		ASME B16.5										

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DOUBLE ECCENTRIC BUTTERFLY VALVE

Class 150 LUG Type Butterfly valve Dimension

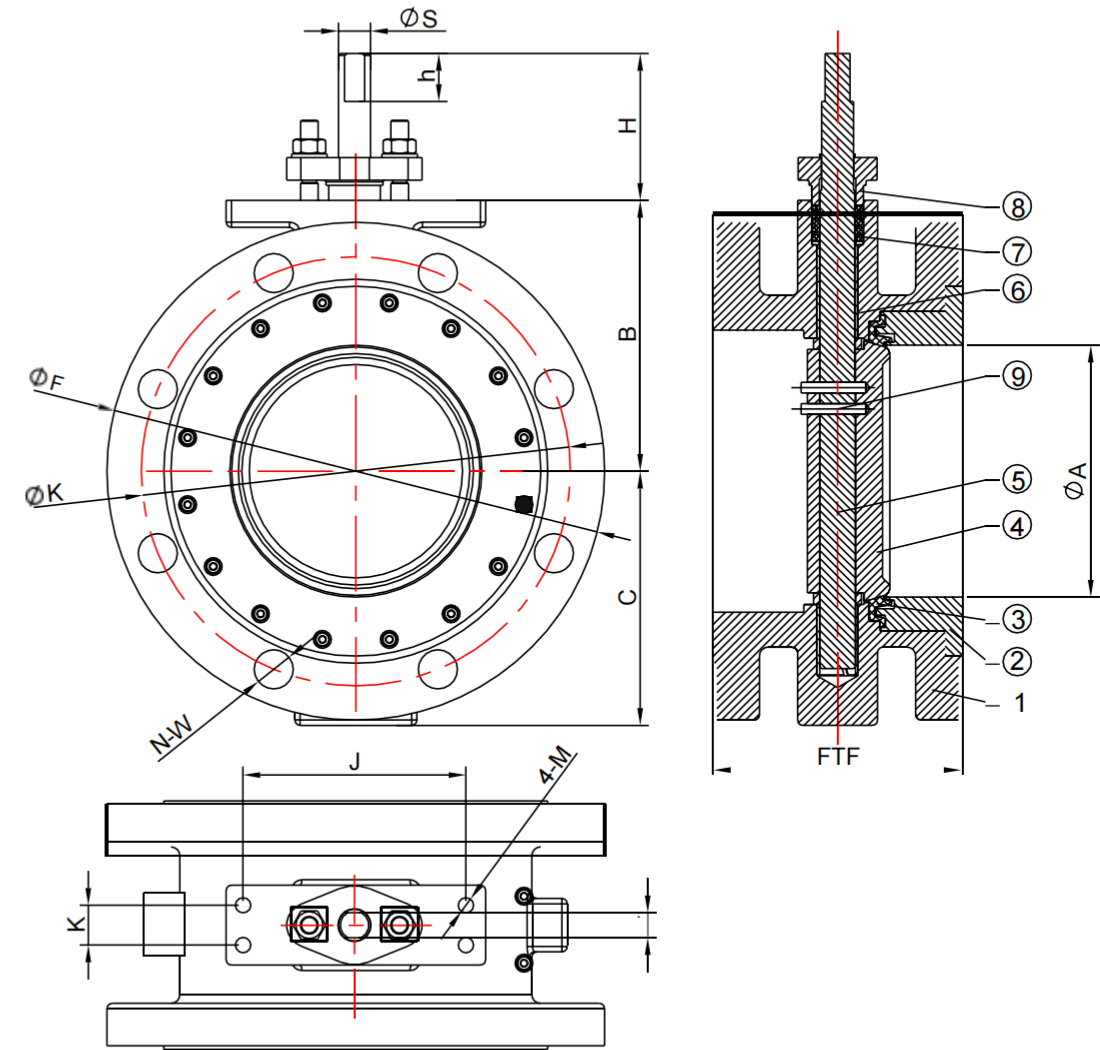


Place a tick in the appropriate box which material you required.

Other materials tick the "other" column and remark.

No	Partname	A	B	C	D	E	Other	NPS	ø A	B	C	FTF±3.3	H	h	P	ø S	J	K	M	ø F	ø K	N-W
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5"	59	111.1	82.5	48	82	27	11.2	14.8	125.4	22.4	M10	180	139.7	4 - 5/8"-11UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3"	73	120.5	93	48	82	27	11.2	14.8	125.4	22.4	M10	190	152.4	4 - 5/8"-11UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4"	96	133.3	110	54	82	27	11.2	14.8	125.4	22.4	M10	230	190.5	8 - 5/8"-11UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5"	111	135	120	57	82	27	11.2	14.8	125.4	22.4	M10	255	215.9	8 - 3/4"-10UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6"	142	152.4	135	57	82	27	14	18	125.4	22.4	M10	280	241.3	8 - 3/4"-10UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8"	188	187.3	172	64	82	27	15.9	21.9	125.4	22.4	M10	345	298.5	8 - 3/4"-10UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10"	236	231.6	202	71	97	28	20.6	28	142.7	37.3	M12	405	362	12 - 7/8"-9UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12"	282	280.3	241.3	81	97	33	23.8	33.3	142.7	37.3	M12	485	431.8	12 - 7/8"-9UNC
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14"	314	315	295	92	105	41	28.7	37	142.7	37.3	M16	535	476.3	12 - 1"-8UN
9	Pin	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH		Data				Technology standard										
8	Cover	WCB	WCB	CF8	CF8M	CF3M		Pressure	Class 150	Design & manufacturing standards				API609								
7	Packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE		Type	LUG	Temperature & pressure standards				ASME B16.34								
6	Sleeve	316L+RPTFE						Temperature	-30°C~180°C				Inspection & test				API598					
5	Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH		Leakage	VI FC170-2				Flange size				ASME B16.5					

Class 150 Double Flange Type Butterfly valve Dimension



Place a tick in the appropriate box which material you require.

Other materials tick the "other" column and remark.

No	Partname	A	B	C	D	E	Other	NPS	ø A	B	C	FTF±3.3	H	h	P	ø S	J	K	M	ø F	ø K	N-W
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3"	73	121	93	114	82	27	11.2	14.8	125.4	22.4	M10	190	152.4	4 - 19
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4"	96	133.3	110	127	82	27	11.2	14.8	125.4	22.4	M10	230	190.5	8 - 19
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5"	111	135	120	140	82	27	11.2	14.8	125.4	22.4	M10	255	215.9	8 - 22
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6"	142	152.4	143	140	82	27	14	18	125.4	22.4	M10	280	241.3	8 - 22
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8"	188	187.3	172	152	82	27	15.9	21.9	125.4	22.4	M10	345	298.5	8 - 22
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10"	236	231.6	202	168	97	28	20.6	28	142.7	37.3	M12	405	362	12 - 26
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12"	282	280.3	241.3	178	97	33	23.8	33.3	142.7	37.3	M12	485	431.8	12 - 26
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14"	314	315	295	190	105	41	28.7	37	142.7	37.3	M16	535	476.3	12 - 29
9	Pin	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH		Data				Technology standard										
8	Cover	WCB	WCB	CF8	CF8M	CF3M		Pressure	Class 150	Design & manufacturing standards				API609								
7	Packing	RPTFE	RPTFE	RPTFE	RPTFE	RPTFE		Type	Double Flange	Temperature & pressure standards				ASME B16.34								
6	Sleeve	316L+RPTFE						Temperature	-30°C~180°C				Inspection & test				API598					
5	Stem	17-4PH	17-4PH	17-4PH	17-4PH	17-4PH		Leakage	VI FC170-2				Flange size				ASME B16.5					