



STANDARDS

- ISO 5211 mounting pad with square shaft permits direct mount actuation for manual (le-ver gear), pneumatic and electric actuators
- Valve Rating:
Top lange mounting pad: ISO 5211 Basic
Design: MSS-SP-68, BS 5155, ISO 5752
Shell/Seat Test: MSS-SP-61
- Seat Hydro: Class 150 (360 psig): Class 300 (740 psig)

Model 82 & 83 Series High Performance Butterfly Valves

FEATURES & BENEFITS

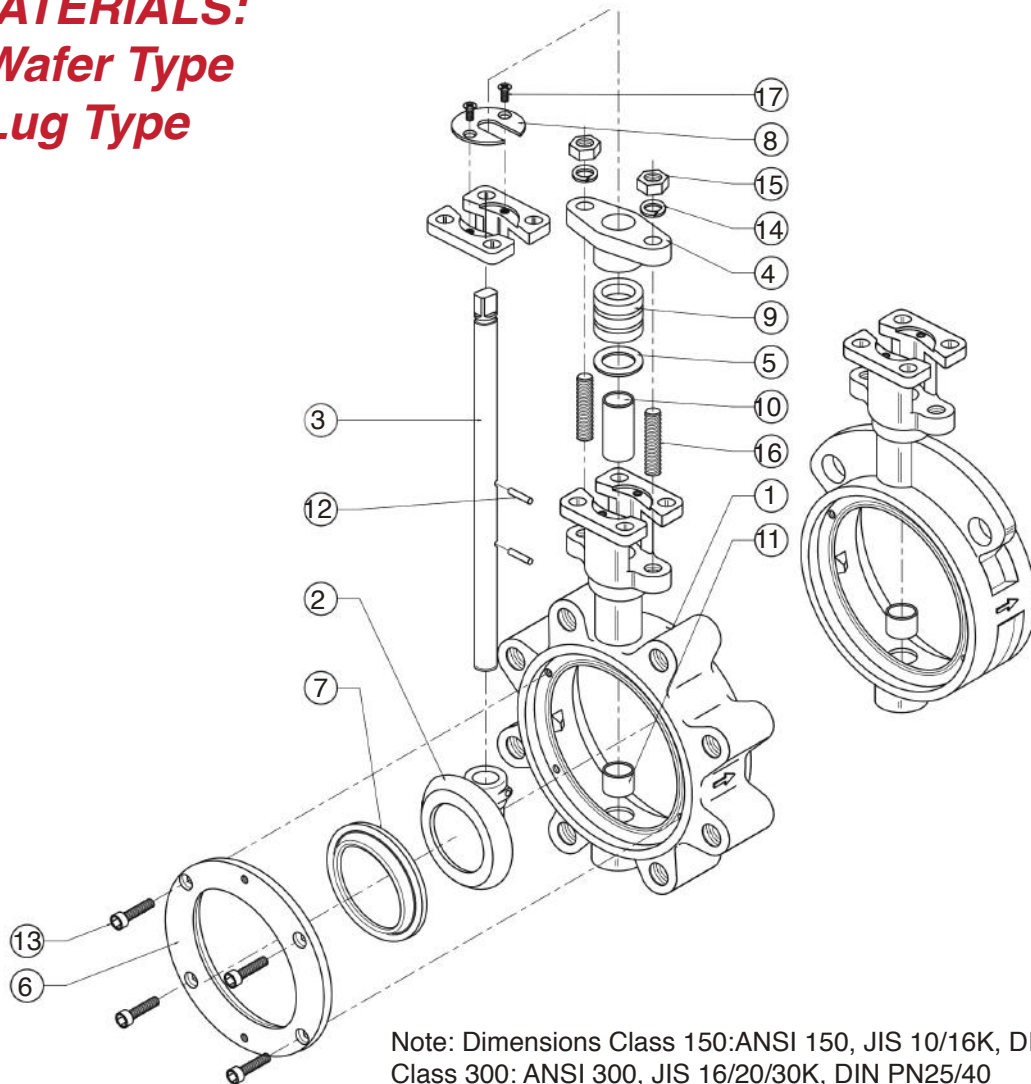
- Size: 2" ~ 24"
- Type: Wafer, Lug
- Pressure Rating: Class 150#, 300#
- Body Material: A216 WCB Cast Steel and A351 CF8M Stainless Steel
- Seat Material: Soft Seat: TFM-4215, PTFE, RTFE, NBR, EPDM, FKM; Metal Seat: A240 Tp 316 / 304
- Drilling: ANSI 150#, ANSI 300#
- Tight Shutoff
- Gland flange prevents uneven load distribution against packing
- Internal travel stop design to prevent over travel of the disc.
- High strength 1 piece stem in A564 Gr. 630

OPTIONS

- Optional Drilling: JIS 10/16K, DIN PN 10/16, JIS 20/30K, DIN PN 25/40

Model 82 & 83 Series Butterfly Valves

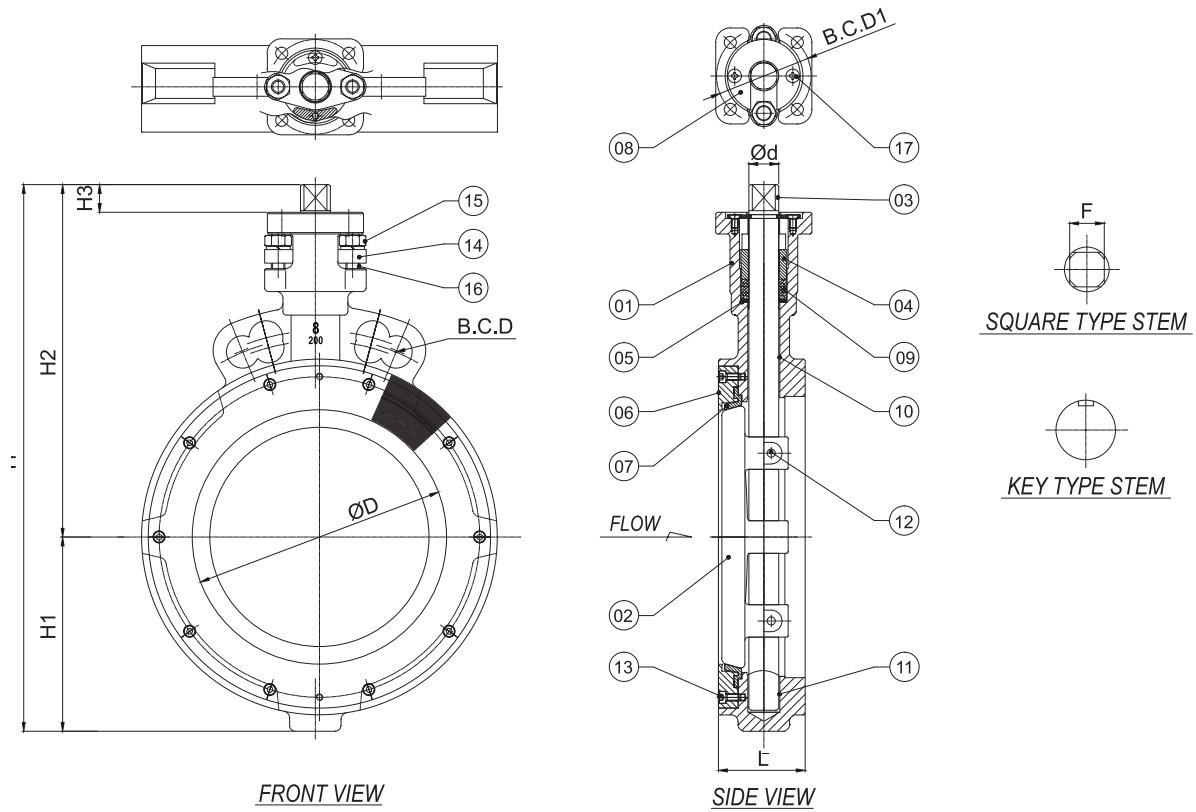
BILL OF MATERIALS: 82 Series Wafer Type 83 Series Lug Type



No	Description	Materials	Qty
1	Body	A216 WCB / A351 CF8M	1
2	Disc	A351 CF8M	1
3	Stem	A564 Gr. 630	1
4	Gland Flange	A216 WCB / A351 CF8M	1
5	Packing Retainer	A276 Tp 316	1
6	Retainer Ring	A351 CF8M	1
7	Seat	TFM4215/ PTFE / RTFE / A240 Tp 316 / 304	1
8	Top Retainer	A283D - A36 / A276 Tp 316	1
9	Grand Packing	Graphite	3
10	Upper Bearing	RTFE + 316SS	1
11	Lower Bearing	RTFE + 316SS	1
12	Disc Pin	A276 Tp 316	2
13	Hex Socket Bolt	A283D - A36 / A276 316SS	4 - 14
14	Spring Washer	A283D - A36 / A276 316SS	2
15	Hex Nut	A283D - A36 / A276 316SS	2
16	Stud Bolt	A283D - A36 / A276 316SS	2
17	Flat Head Screw	A283D - A36 / A276 316SS	2

Model 82 & 83 Series Butterfly Valves

DIMENSIONS: Model 82 Series Wafer Type, Class 150



Size	H	H1	H2	H3	Ød	F	ØD	B.C.D1	L
2"	8.63	2.36	6.27	0.60	0.51	0.43	1.65	2.76	1.73
2-1/2"	9.54	2.75	6.78	0.60	0.63	0.55	2.40	2.76	1.81
3"	9.85	3.01	6.84	0.60	0.63	0.55	2.91	2.76	1.89
4"	11.07	3.54	7.53	0.70	0.63	0.55	3.70	2.76	2.13
5"	12.55	4.09	8.45	0.70	0.71	0.55	4.65	2.76	2.24
6"	13.62	4.53	9.09	0.75	0.87	0.67	5.51	2.76	2.28
8"	15.91	5.65	10.26	0.81	0.87	0.67	7.40	2.76	2.52
10"	18.44	6.69	11.75	0.81	1.10	0.87	9.39	4.02	2.81
12"	20.63	7.76	12.88	0.95	1.10	0.87	11.02	4.02	3.19

Model 82 & 83 Series Butterfly Valves

MATERIAL SELECTION: 82 Series Wafer Type Class 150

No	Description	#150 CS-STHW		#150 SS-STHW		Qty
		Soft Seat	Metal Seat	Soft Seat	Metal Seat	
1	Body	A216 WCB		A351 CF8M		1
2	Disc	A 351 CF8M				1
3	Stem	A 564 Gr. 630				1
4	Gland Flange	A216 WCB		A351 CF8M		1
5	Packing Retainer	A276 Tp 316				1
6	Retainer Ring	A351 CF8M				1
7	Seat	PTFE / RTFE	A240 Tp 316	PTFE / RPTFE	A240 Tp 316	1
			A240 Tp 304		A240 Tp 304	
8	Top Retainer	A283D-A36		A276 Tp 316		1
9	Grand Packing	Graphite				3
10	Upper Bearing	R.TFE + 316SS				1
11	Lower Bearing	RTFE + 316SS				1
12	Disc Pin	A276 Tp 316				2
13	Hex Socket Bolt	A283D-A36		A276 316SS		4 - 14
14	Spring Washer	A283D-A36		A276 316SS		2
15	Hex Nut	A283D-A36		A276 316SS		2
16	Stud Bolt	A283D-A36		A276 316SS		2
17	Flat Head Screw	A283D-A36		A276 316SS		2

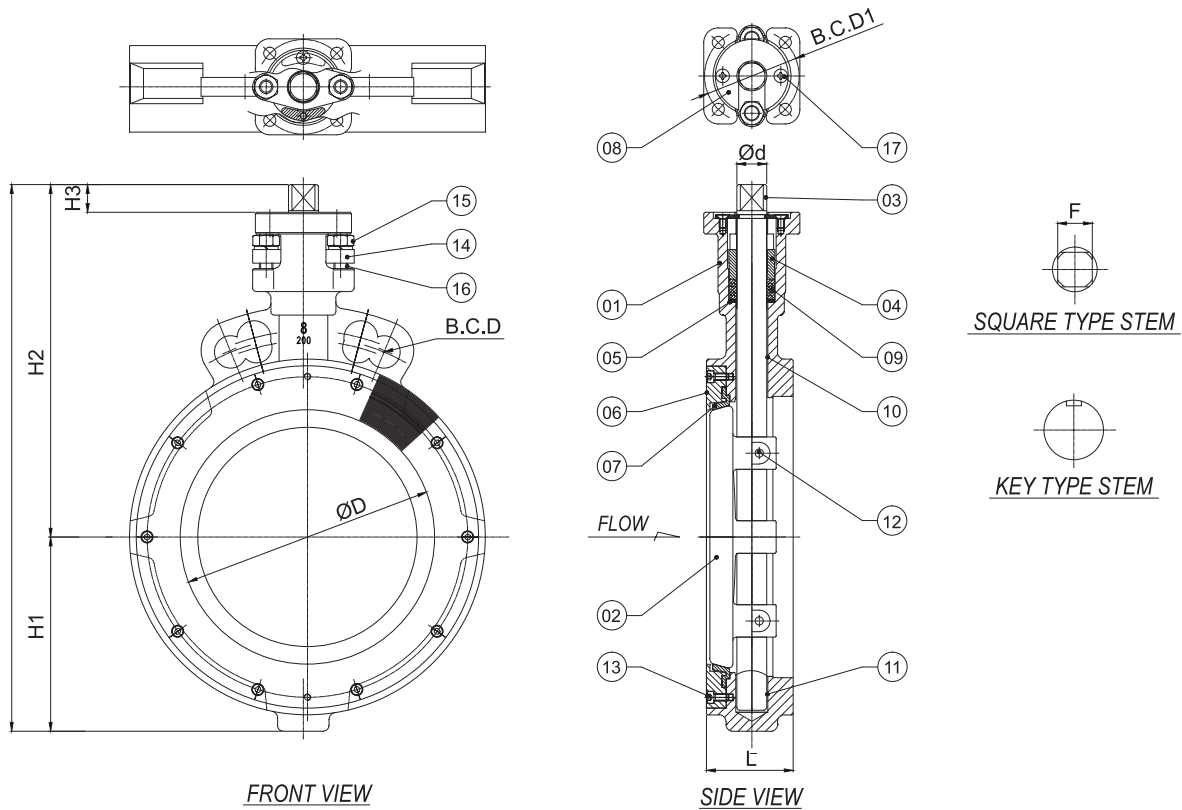
FLANGE DRILLING TABLE

Size	ANSI 150			J1S 10K			JIS 16K			PN10			PN16		
	IN	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n
2"	4.75	4	0.75	4.72	4	0.75	4.72	8	0.75	4.92	4	0.71	4.92	4	0.71
2-1/2"	5.50	4	0.75	5.51	4	0.75	5.51	8	0.75	5.71	4	0.71	5.71	4	0.71
3"	6.00	4	0.75	5.91	8	0.75	6.30	8	0.91	6.30	8	0.71	6.30	8	0.71
4"	7.50	8	0.75	6.89	8	0.75	7.28	8	0.91	7.09	8	0.71	7.09	8	0.71
5"	8.50	8	0.88	8.27	8	0.91	8.86	8	0.98	8.27	8	0.71	8.27	8	0.71
6"	9.50	8	0.88	9.45	8	0.91	10.24	12	0.98	9.45	8	0.87	9.45	8	0.87
8"	11.75	8	0.88	11.42	12	0.91	12.01	12	0.98	11.61	8	0.87	11.61	12	0.87
10"	14.25	12	1.00	13.98	12	0.98	14.96	12	1.06	13.78	12	0.87	13.98	12	1.02
12"	17.00	12	1.00	15.75	16	0.98	16.93	16	1.06	15.75	12	0.87	16.14	12	1.02

Note: 'n' Number of bolt holes
'h' Bolt hole diameter

Model 82 & 83 Series Butterfly Valves

DIMENSIONS: Model 82 Series Wafer Type, Class 300



Size	H	H1	H2	H3	Ød	F	ØD	B.C.D1	L
2"	8.63	2.36	6.27	0.60	0.51	0.43	1.65	2.76	1.73
2-1/2"	9.54	2.75	6.78	0.60	0.63	0.55	2.40	2.76	1.81
3"	9.85	3.01	6.84	0.60	0.63	0.55	2.91	2.76	1.89
4"	11.07	3.54	7.53	0.70	0.63	0.55	3.70	2.76	2.13
5"	12.55	4.09	8.45	0.70	0.71	0.55	4.65	2.76	2.24
6"	13.62	4.53	9.09	0.75	0.87	0.67	5.51	2.76	2.28
8"	15.91	5.65	10.26	0.81	1.10	0.87	7.40	4.02	2.87
10"	18.44	6.69	11.75	0.81	1.10	0.87	9.39	4.02	3.25
12"	20.48	7.60	12.88	0.95	1.10	0.87	11.02	4.02	3.62

Model 82 & 83 Series Butterfly Valves

MATERIAL SELECTION: 82 Series Wafer Type Class 300

No	Description	#300 CS-STHW		#300 SS-STHW		Qty
		Soft Seat	Metal Seat	Soft Seat	Metal Seat	
1	Body	A216 WCB		A351 CF8M		1
2	Disc	A 351 CF8M				1
3	Stem	A 564 Gr. 630				1
4	Gland Flange	A216 WCB		A351 CF8M		1
5	Packing Retainer	A276 Tp 316				1
6	Retainer Ring	A351 CF8M				1
7	Seat	PTFE / RTFE	A240 Tp 316	PTFE / RPTFE	A240 Tp 316	1
			A240 Tp 304		A240 Tp 304	
8	Top Retainer	A283D-A36		A276 Tp 316		1
9	Grand Packing	Graphite				3
10	Upper Bearing	R.TFE + 316SS				1
11	Lower Bearing	RTFE + 316SS				1
12	Disc Pin	A276 Tp 316				2
13	Hex Socket Bolt	A283D-A36		A276 316SS		4 - 14
14	Spring Washer	A283D-A36		A276 316SS		2
15	Hex Nut	A283D-A36		A276 316SS		2
16	Stud Bolt	A283D-A36		A276 316SS		2
17	Flat Head Screw	A283D-A36		A276 316SS		2

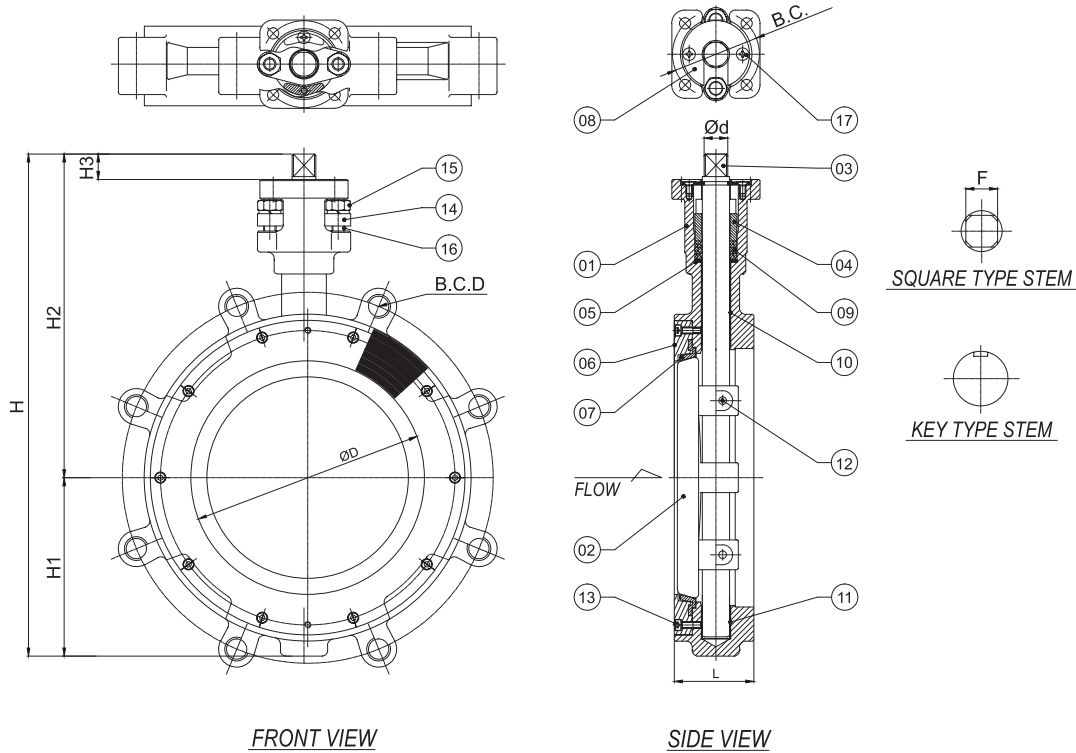
FLANGE DRILLING TABLE

Size IN	ANSI 300			J1S 16K/20K			JIS 30K			PN25			PN40		
	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h
2"	5.00	8	0.75	4.72	8	0.75	5.12	8	0.75	4.92	4	0.71	4.92	4	0.71
2-1/2"	5.87	8	0.87	5.51	8	0.75	6.3	8	0.91	5.71	8	0.71	5.71	8	0.71
3"	6.63	8	0.87	6.30	8	0.91	6.69	8	0.91	6.30	8	0.71	6.30	8	0.71
4"	7.87	8	0.87	7.28	8	0.98	7.68	8	0.98	7.48	8	0.87	7.48	8	0.87
5"	9.25	8	0.87	8.86	8	0.98	9.06	8	0.98	8.66	8	1.02	8.66	8	1.02
6"	10.62	12	0.87	10.24	12	0.98	10.83	12	1.06	9.84	8	1.02	9.84	8	1.02
8"	13.00	12	1.00	12.01	12	0.98	12.60	12	1.06	12.20	12	1.02	12.60	12	1.18
10"	15.25	16	1.13	14.96	12	1.06	15.35	12	1.30	14.57	12	1.18	15.16	12	1.30
12"	17.75	16	1.25	16.93	16	1.06	17.72	16	1.30	16.93	16	1.18	17.72	16	1.30

Note: 'n' Number of bolt holes
'h' Bolt hole diameter

Model 82 & 83 Series Butterfly Valves

DIMENSIONS: Model 83 Series Lug Type, Class 150



Size	H	H1	H2	H3	Ød	F	ØD	B.C.D1	L
2"	8.63	2.36	6.27	0.60	0.51	0.43	1.65	2.76	1.73
2-1/2"	9.54	2.76	6.78	0.60	0.63	0.55	2.40	2.76	1.81
3"	9.85	3.01	6.84	0.60	0.63	0.55	2.91	2.76	1.89
4"	11.07	3.54	7.53	0.70	0.63	0.55	3.70	2.76	2.13
5"	12.55	4.09	8.45	0.70	0.71	0.55	4.65	2.76	2.24
6"	13.62	4.53	9.09	0.75	0.87	0.67	5.51	2.76	2.28
8"	15.91	5.65	10.26	0.81	0.87	0.87	7.40	2.76	2.52
10"	18.44	6.69	11.75	0.81	1.10	0.87	9.39	4.02	2.81
12"	20.63	7.76	12.88	0.95	1.10	0.87	11.02	4.02	3.18
14"	26.87	11.00	15.87	2.76	1.50			5.51	3.62
16"	31.66	12.54	19.12	3.48	1.77			6.50	4.02
18"	33.73	13.31	20.41	3.48	2.17			6.50	4.49
20"	34.59	14.17	20.41	3.48	2.17			6.50	5.00
24"	39.76	16.70	23.05	3.68	2.56			6.50	6.06

Model 82 & 83 Series Butterfly Valves

MATERIAL SELECTION: 83 Series Lug Type Class 150

No	Description	#300 CS-STHW		#300 SS-STHW		Qty
		Soft Seat	Metal Seat	Soft Seat	Metal Seat	
1	Body	A216 WCB		A351 CF8M		1
2	Disc	A 351 CF8M				1
3	Stem	A 564 Gr. 630				1
4	Gland Flange	A216 WCB		A351 CF8M		1
5	Packing Retainer	A276 Tp 316				1
6	Retainer Ring	A351 CF8M				1
7	Seat	PTFE / RTFE	A240 Tp 316	PTFE / RPTFE	A240 Tp 316	1
			A240 Tp 304		A240 Tp 304	
8	Top Retainer	A283D-A36		A276 Tp 316		1
9	Grand Packing	Graphite				3
10	Upper Bearing	R.TFE + 316SS				1
11	Lower Bearing	RTFE + 316SS				1
12	Disc Pin	A276 Tp 316				2
13	Hex Socket Bolt	A283D-A36		A276 316SS		4 - 14
14	Spring Washer	A283D-A36		A276 316SS		2
15	Hex Nut	A283D-A36		A276 316SS		2
16	Stud Bolt	A283D-A36		A276 316SS		2
17	Flat Head Screw	A283D-A36		A276 316SS		2

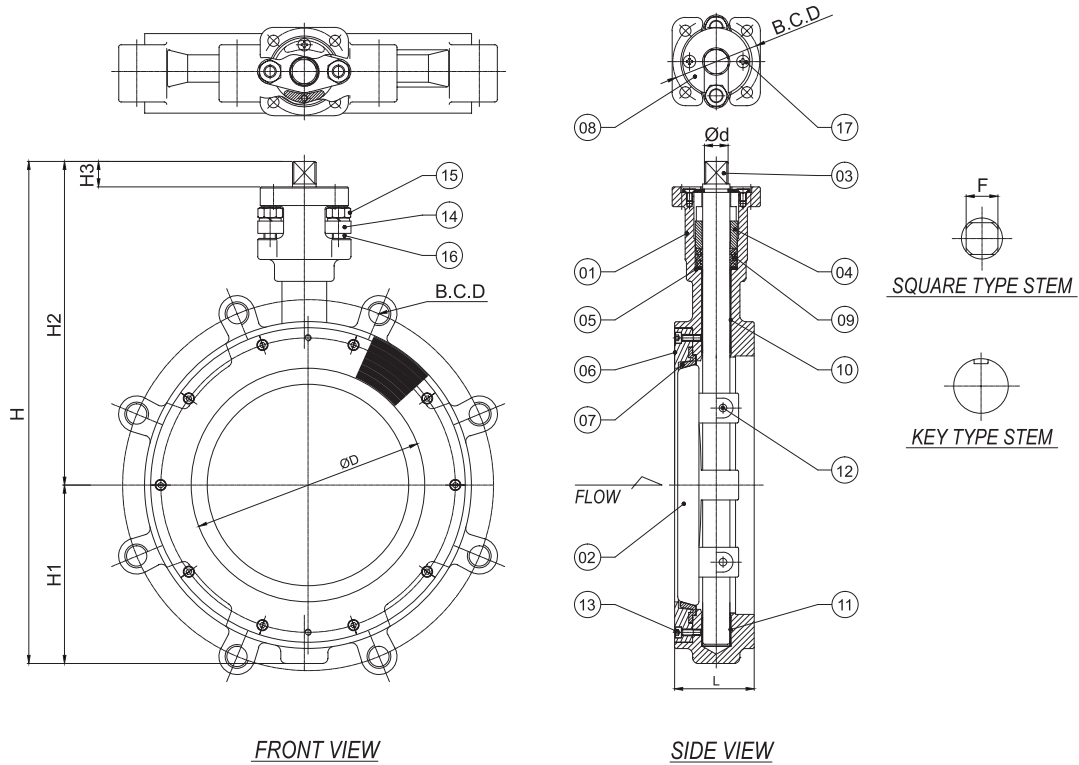
FLANGE DRILLING TABLE

Size	PN10			PN16			ANSI 150 LBS			JIS 10K			JIS 16K		
In	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h
2"	4.92	4	0.71	4.92	4	0.71	4.75	4	0.75	4.72	4	0.75	4.72	8	0.75
2-1/2"	5.71	4	0.71	5.71	4	0.71	5.50	4	0.75	5.51	4	0.75	5.51	8	0.75
3"	6.30	8	0.71	6.30	8	0.71	6.00	4	0.75	5.91	8	0.75	6.30	8	0.91
4"	7.09	8	0.71	7.09	8	0.71	7.50	8	0.75	6.89	8	0.75	7.28	8	0.91
5"	8.27	8	0.71	8.27	8	0.71	8.50	8	0.87	8.27	8	0.91	8.86	8	0.98
6"	9.45	8	0.87	9.45	8	0.87	9.50	8	0.87	9.45	8	0.91	10.24	12	0.98
8"	11.61	8	0.87	11.61	12	0.87	11.75	8	0.87	11.42	12	0.91	12.01	12	0.98
10"	13.78	12	0.87	13.98	12	1.02	14.25	12	1.00	13.98	12	0.98	14.96	12	1.06
12"	15.75	12	0.87	16.14	12	1.02	17.00	12	1.00	15.75	16	0.98	16.93	16	1.06
14"	18.11	16	0.87	18.50	16	1.02	18.75	12	1.13	17.52	16	0.98	18.90	16	1.30
16"	20.28	16	1.02	20.67	16	1.18	21.25	16	1.13	20.08	16	1.06	21.26	16	1.30
18"	22.24	20	1.02	23.03	20	1.18	22.75	16	1.25	22.24	20	1.06	23.82	20	1.30
20"	24.41	20	1.02	25.59	20	1.30	25.00	20	1.25	24.41	20	1.06	25.98	20	1.30
24"	28.54	20	1.18	30.31	20	1.42	29.50	20	1.37	28.74	24	1.30	30.31	24	1.54

Note: 'n' Number of bolt holes
'h' Bolt hole diameter

Model 82 & 83 Series Butterfly Valves

DIMENSIONS: Model 83 Series Lug Type, Class 300



Size	H	H1	H2	H3	Ød	F	ØD	B.C.D1	L
2"	8.63	2.36	6.27	0.60	0.51	0.43	1.65	2.76	1.73
2-1/2"	9.54	2.76	6.78	0.60	0.63	0.55	2.40	2.76	1.81
3"	9.85	3.01	6.84	0.60	0.63	0.55	2.91	2.76	1.89
4"	11.07	3.54	7.53	0.70	0.63	0.55	3.70	2.76	2.13
5"	12.55	4.09	8.45	0.70	0.71	0.55	4.65	2.76	2.24
6"	13.62	4.53	9.09	0.75	0.87	0.67	5.51	2.76	2.28
8"	15.91	5.65	10.26	0.81	0.87	0.87	7.40	2.76	2.87
10"	18.44	6.69	11.75	0.81	1.10	0.87	9.39	4.02	3.82
12"	20.71	7.83	12.88	0.95	1.10	0.87	11.02	4.02	3.62

Model 82 & 83 Series Butterfly Valves

MATERIAL SELECTION: 83 Series Lug Type Class 300

No	Description	#300 CS-STHL		#300 SS-STHL		Qty
		Soft Seat	Metal Seat	Soft Seat	Metal Seat	
1	Body	A216 WCB		A351 CF8M		1
2	Disc	A 351 CF8M				1
3	Stem	A 564 Gr. 630				1
4	Gland Flange	A216 WCB		A351 CF8M		1
5	Packing Retainer	A276 Tp 316				1
6	Retainer Ring	A351 CF8M				1
7	Seat	PTFE / RTFE	A240 Tp 316	PTFE / RPTFE	A240 Tp 316	1
			A240 Tp 304		A240 Tp 304	
8	Top Retainer	A283D-A36		A276 Tp 316		1
9	Grand Packing	Graphite				3
10	Upper Bearing	R.TFE + 316SS				1
11	Lower Bearing	RTFE + 316SS				1
12	Disc Pin	A276 Tp 316				2
13	Hex Socket Bolt	A283D-A36		A276 316SS		4 - 14
14	Spring Washer	A283D-A36		A276 316SS		2
15	Hex Nut	A283D-A36		A276 316SS		2
16	Stud Bolt	A283D-A36		A276 316SS		2
17	Flat Head Screw	A283D-A36		A276 316SS		2

FLANGE DRILLING TABLE

Size	ANSI 300			J1S 16K/20K			JIS 30K			PN25			PN40		
	IN	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n
2"	5.00	8	0.75	4.72	8	0.75	5.12	8	0.75	4.92	4	0.71	4.92	4	0.71
2-1/2"	5.87	8	0.87	5.51	8	0.75	6.3	8	0.91	5.71	8	0.71	5.71	8	0.71
3"	6.63	8	0.87	6.30	8	0.91	6.69	8	0.91	6.30	8	0.71	6.30	8	0.71
4"	7.87	8	0.87	7.28	8	0.98	7.68	8	0.98	7.48	8	0.87	7.48	8	0.87
5"	9.25	8	0.87	8.86	8	0.98	9.06	8	0.98	8.66	8	1.02	8.66	8	1.02
6"	10.62	12	0.87	10.24	12	0.98	10.83	12	1.06	9.84	8	1.02	9.84	8	1.02
8"	13.00	12	1.00	12.01	12	0.98	12.60	12	1.06	12.20	12	1.02	12.60	12	1.18
10"	15.25	16	1.13	14.96	12	1.06	15.35	12	1.30	14.57	12	1.18	15.16	12	1.30
12"	17.75	16	1.25	16.93	16	1.06	17.72	16	1.30	16.93	16	1.18	17.72	16	1.30

Note: 'n' Number of bolt holes
'h' Bolt hole diameter

TORQUE DATA: HIGH PERFORMANCE BUTTERFLY VALVES

Lbs In	Class 150				Class 300			
	Actuated Torque: lbs/inches				Actuated Torque: lbs/inches			
Size	Teflon Seat		Metal Seat		Teflon Seat		Metal Seat	
In	150 psi	285 psi	150 psi	285 psi	150 psi	500 psi	150 psi	500 psi
2"	200	270	564	677	220	520	990	1550
2-1/2"	200	270	564	677	220	520	900	1550
3"	200	270	564	677	220	520	900	1550
4"	225	470	903	1128	250	670	1200	1850
5"	540	680	1467	2144	600	1120	2800	5700
6"	540	680	1467	2144	600	1120	2800	5700
8"	910	1620	2031	2595	1000	2440	4100	8100
10"	1620	2530	3385	4288	1800	4640	6800	14500
12"	2530	3600	4513	5190	2790	7480	9100	23600
14"	3720	5970			4130	10200		
16"	5530	9180			6140	17070		
18"	6840	11900			7600	20400		
20"	10020	16970			11140	31530		
24"	18330	32290			20370	58820		

Note: All torques shown on the chart were derived from test data using water at 41°F. For torques using dry gases, multiply these numbers by 1.6. Above table has additional 30% safety factor to average net torque. For severe services, or unusual fluids or slurries, consult J Flow Controls. For 600 & 700 psig torque, please consult J Flow Controls.

The torques listed are applicable to sea water, lubricating type of hydro carbons and most media at temperatures of 32°F to 180°F. The operating speed of the actuator must be considered in order to avoid water hammer when the valve is closed in conjunction with liquid.

The factors affect the torque required to operate butterfly valves:

- Valve diameter
- Shaft diameter
- Bearing friction coefficient
- Type of seat material
- Shut off pressure
- Velocity
- Shape of disc
- System head characteristics
- Piping arrangement

Caution: All Sizes: Not to Exceed 32 Feet Per Second in Modulating Service Damage can occur if exceeded.

Actuator torques can be calculated using the following formulas:

- $T_a = T_b + T_s + T_h = 1.2T_b \pm T_d$
- $T_s = C_s D^2$
- $T_b = 4.17 D^2 d f p$
- $T_d = C_t D^3 P$
- $T_h = 3.06 D^4$
- $V = C_f \sqrt{p} = \frac{Q}{0.785 D^2}$
- T_a : The required actuator torque (lb-ft)
- T_s = Seat or unseating torque (lb-ft)
- T_d = Dynamic torque (lb-ft)
- T_h = Hydrostatic torque (lb-ft)
- Q = Flow (cubic per second)
- V = Velocity (feet per second)
- D = Diameter of valve (feet)
- d = diameter of shaft (inch)
- P = Pressure drop across valve (psi)
- C_s = Coefficient of seating or unseating torque
- C_t = Coefficient of dynamic torque
- C_f = Coefficient of flow
- f = Bearing friction coefficient

Model 82 & 83 Series Butterfly Valves

CV FLOW COEFFICIENT CHARTS:

The size of butterfly valves used for control purpose should be calculated on the basis of the operating characteristics. In order to achieve optimum control, the flow coefficient (Cv) below need to be considered.

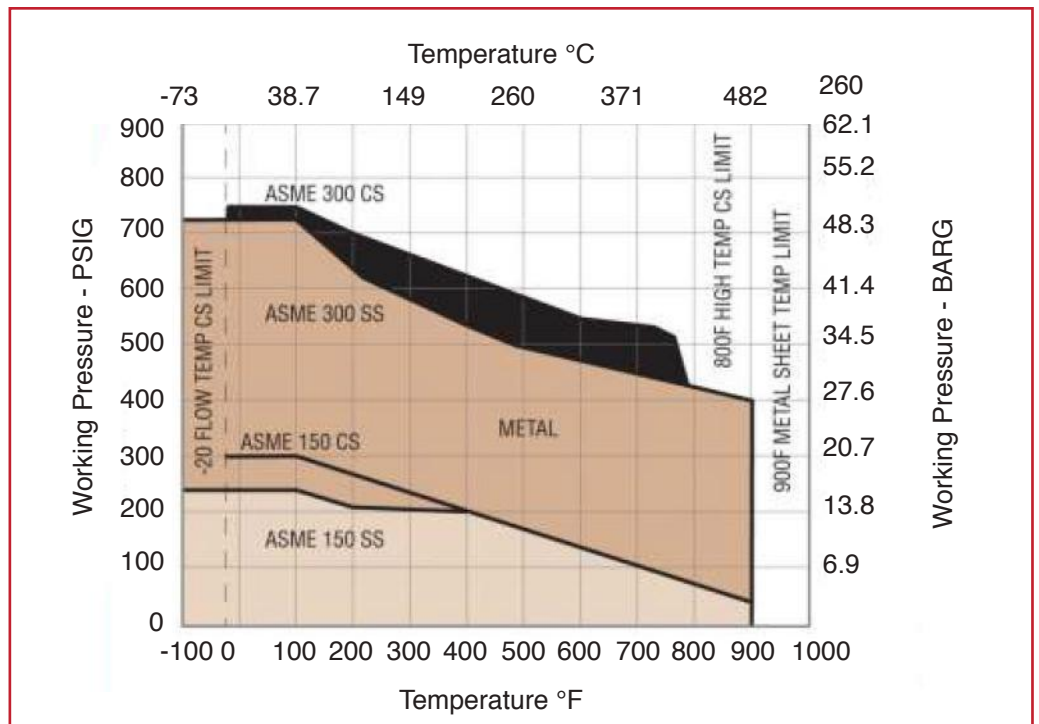
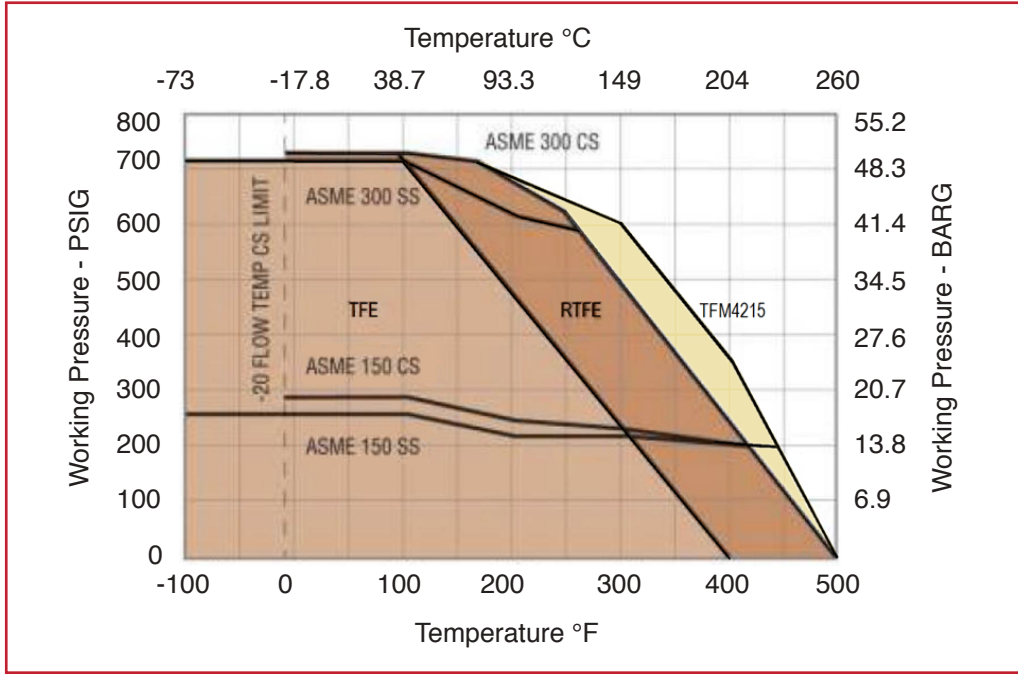
Flow Coefficient for J Flow Controls Butterfly Valves

Class 150 In	Disc Opening							
	20°	30°	40°	50°	60°	70°	80°	90°
2"	6	14	25	39	56	76	99	102
2-1/2"	9	21	37	56	80	110	142	146
3"	14	32	57	87	125	171	221	228
4"	27	63	114	171	248	338	437	451
5"	43	100	180	271	392	535	692	714
6"	66	154	278	419	607	827	1070	1103
8"	124	289	520	784	1135	1584	2002	2064
10"	211	492	886	1336	1934	2638	3411	3517
12"	290	677	1219	1838	2660	3628	4690	4837
14"	392	914	1646	2481	3592	4898	6530	6857
16"	531	1230	2229	3361	4865	6634	8845	9287
18"	684	1596	3873	4332	6270	8550	11270	11400
20"	828	1932	3478	5244	7590	10350	13800	14420
24"	1260	2940	5292	7890	11550	15750	21000	22050

Class 300 In	Disc Opening							
	20°	30°	40°	50°	60°	70°	80°	90°
2"	6	13	24	36	52	71	95	100
2-1/2"	8	19	34	52	75	102	136	143
3"	13	30	53	81	117	159	212	223
4"	25	58	104	157	228	310	414	435
5"	40	92	165	248	361	491	655	688
6"	60	139	250	377	546	744	992	1041
8"	109	255	459	692	1001	1365	1820	1911
10"	183	426	767	1156	1673	2282	3042	3194
12"	253	590	1063	1602	2319	3163	4217	4428
14"	326	760	1368	2063	2986	4072	5430	5702
16"	435	1015	1827	2755	3988	5438	7850	8243
18"	555	1295	2331	3515	5088	6938	9250	9712
20"	630	1470	2646	3990	5775	7875	10150	10658
24"	966	2254	4057	6118	8855	12075	16100	16205

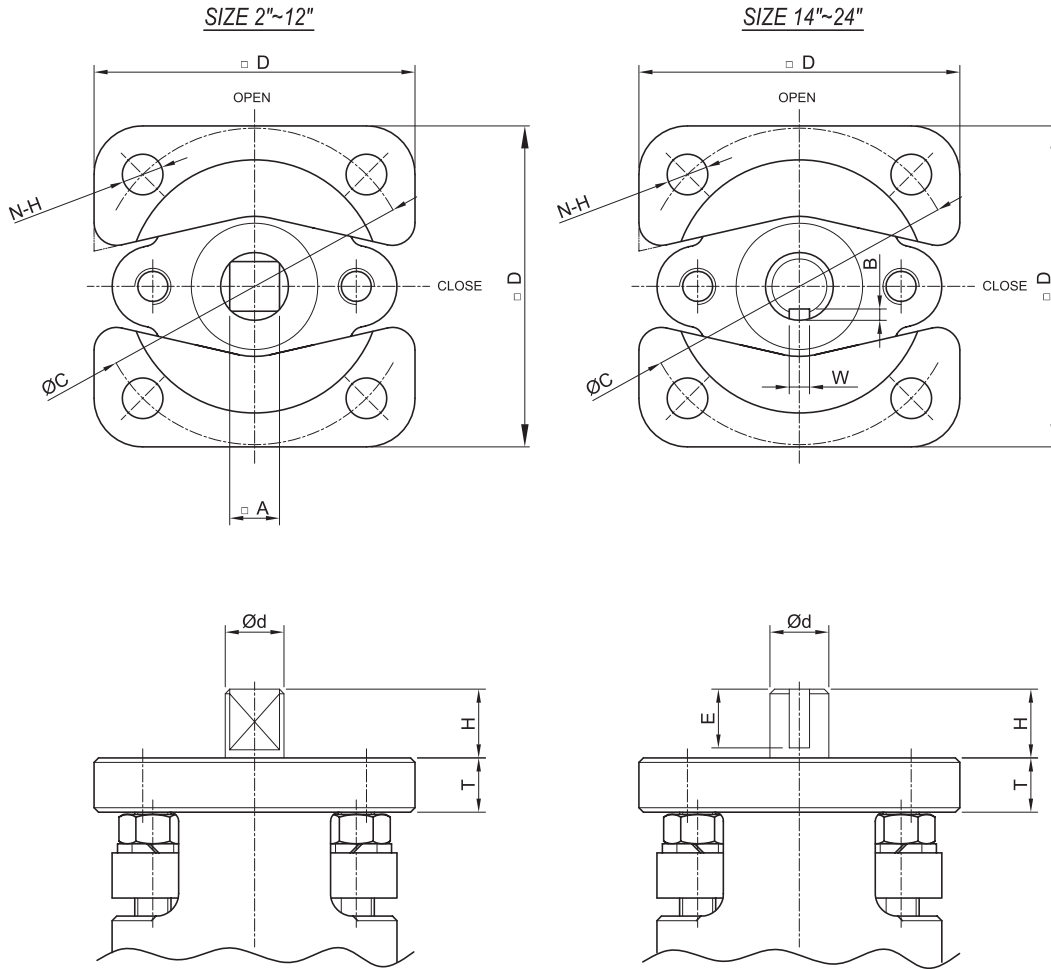
Cv is in imperial units, the water flow in U.S. gallons per minute which passes through the valve giving a pressure drop of 1 psi at a temperature of 68°F

TECHNICAL DATA
Pressure vs Temperature



Model 82 & 83 Series Butterfly Valves

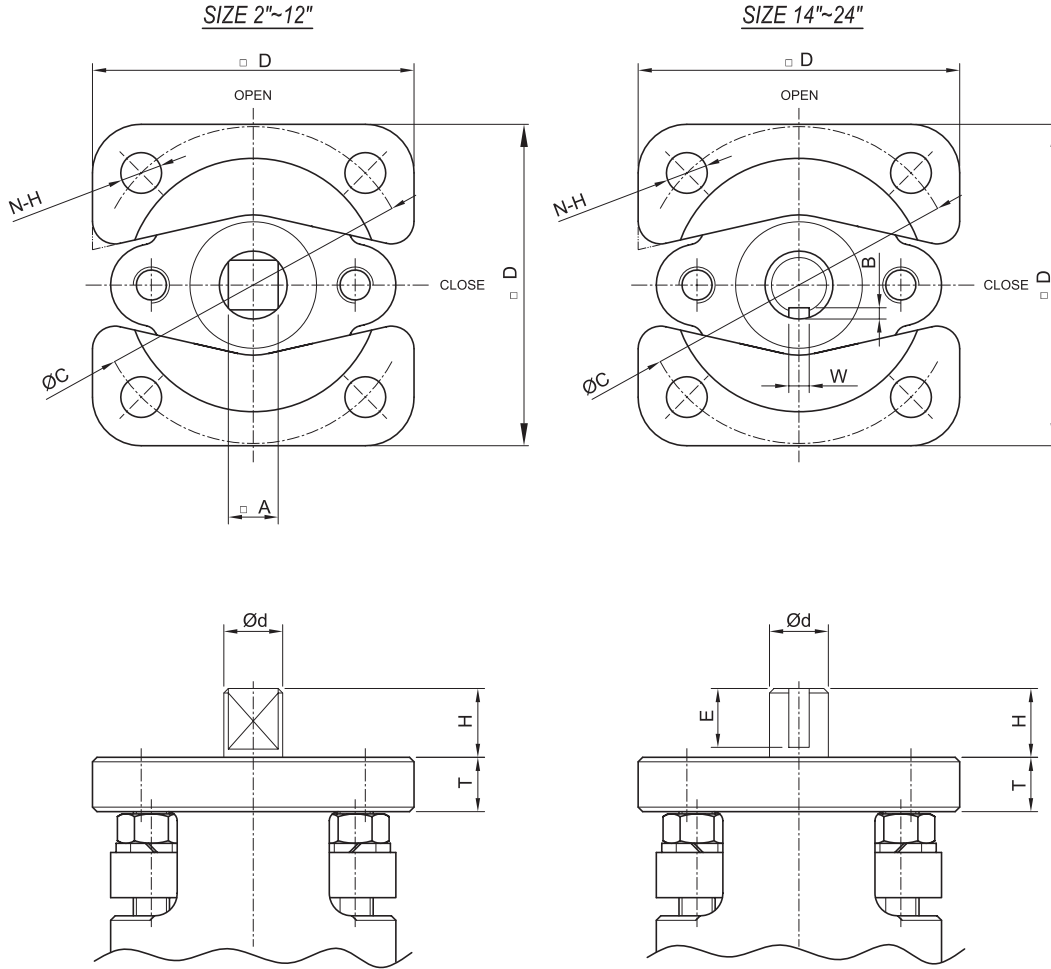
BUTTERFLY VALVE TOP FLANGE DIMENSION - CLASS 150



	Ød	T	ØC	N	Øh	A	DD	B	W	H	E	ISO
2"	0.51	0.47	2.76	0.55	0.35	0.43	2.80	-	-	0.60	-	F07
2-1/2"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.60	-	F07
3"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.60	-	F07
4"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.70	-	F07
5"	0.71	0.55	2.76	0.55	0.35	0.63	2.80	-	-	0.70	-	F07
6"	0.87	0.55	2.76	0.55	0.35	0.67	2.80	-	-	0.75	-	F07
8"	0.87	0.63	2.76	0.55	0.35	0.67	2.80	-	-	0.81	-	F07
10"	1.00	0.71	4.02	0.55	0.43	0.87	3.74	-	-	0.81	-	F10
12"	1.10	0.71	4.02	0.55	0.43	0.87	3.74	-	-	0.95	-	F10
14"	1.50	0.71	5.51	0.55	0.71	-	6.30	0.20	0.47	2.76	2.36	F14
16"	1.77	0.79	6.50	0.55	0.87	-	6.30	0.20	0.47	3.48	2.76	F16
18"	2.20	0.79	6.50	0.55	0.87	-	6.30	0.20	0.47	3.48	2.76	F16
20"	2.20	0.79	6.50	0.55	0.87	-	6.30	0.20	0.47	3.48	2.76	F16
24"	2.20	0.79	6.50	0.55	0.87	-	6.30	0.20	0.47	3.48	2.76	F16

Model 82 & 83 Series Butterfly Valves

BUTTERFLY VALVE TOP FLANGE DIMENSION - CLASS 300



	Ød	T	ØC	N	Øh	A	DD	B	W	H	E	ISO
2"	0.51	0.47	2.76	0.55	0.35	0.43	2.80	-	-	0.60	-	F07
2-1/2"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.60	-	F07
3"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.60	-	F07
4"	0.63	0.47	2.76	0.55	0.35	0.55	2.80	-	-	0.70	-	F07
5"	0.71	0.55	2.76	0.55	0.35	0.63	2.80	-	-	0.70	-	F07
6"	0.87	0.55	2.76	0.55	0.35	0.67	2.80	-	-	0.75	-	F07
8"	0.87	0.63	4.02	0.55	0.43	0.87	3.74	-	-	0.81	-	F10
10"	1.00	0.71	4.02	0.55	0.43	0.87	3.74	-	-	0.81	-	F10
12"	1.10	0.71	4.02	0.55	0.43	0.87	3.74	-	-	0.95	-	F10

Note:

1. Standard: ISO 5211 F05 ~ F16
2. ØC; Øh tolerance: +0.1 / -0.0
3. Others tolerance: +0.3 / -0.0

Model 82 & 83 Series Butterfly Valves

HOW TO ORDER

Valve Size	VALVE SERIES	Body Material	Ball / Plug Material	Stem Material	Port Size	Packing Material	Seat Material	Body Seal Material	End Connections	CODE	Operator	
1 (8 mm)	14 ²⁵	A1	A105	A105 Cr	F	Full Port	T	TFM1600	F1	ANSI 150 RF Flange	LD	Locking Lever Handle
2 (10 mm)	3/8 ²⁶	00	CF8-304S	CF8-304S	R	Reduced Port	C	TFM4215	F3	ANSI 300 RF Flange	OH	Oval Handle
3 (15 mm)	1/2 ²⁶	01	CF8-304S	CF3-304L	B	BFV	G	GRAPHITE	F6	ANSI 600 RF Flange	LA	Locking Lever Handle with 4" Stem Extension
4 (20 mm)	3/4 ²⁷	02	DM2700	DM2700	1	15 Degree V-Ball	P	PEEK	F9	ANSI 900 RF Flange	LA	Locking Lever Handle with 6" Stem Extension
5 (25 mm)	1 ³⁷	13	A105	316S	3	30 Degree V-Ball	R	RPITE	F5	ANSI 1500 RF Flange	LF	Locking Lever Handle w/ Flight Em. Bonnet
D (32 mm)	1-1/4 ³⁸	2L	WCB A216	316L	4	45 Degree V-Ball	F	PTFE	F2	ANSI 2500 RF Flange	GO	Manual Gear Operator
6 (40 mm)	1-1/2 ⁴⁵	22	WCB A216	A105 Cr	6	60 Degree V-Ball	N	NYLON	FF	FLAT FACE FLANGE	GL	Locking Gear Operator
7 (50 mm)	2 ⁴⁶	23	WCB A216	316S	9	90 Degree V-Ball	V	VITON	FT	FEMALE NPT	SC	Spring Return Handle-fail close
B (65 mm)	2-1/2 ⁴⁸	33	316S	316S	T	T PORT 3 WAY FP	U	UHMWPE	SW	SOCKET WELD	SO	Spring Return Handle-fail open
B (80 mm)	3 ^{CF}	44	ALLOY 20	ALLOY 20	L	L PORT 3 WAY FP	B	CF8M-STELLITE	B1	BUTT WELD 10	10	10 Position Locking Lever
A (125 mm)	4 ^{2A}	55	MONEL	MONEL	X	X PORT 4 WAY FP	L	DEVILON	B4	BUTT WELD 40	B1	304SS BRACKET 1.57" TALL W COUPLER
B (125 mm)	5 ^{CA}	6L	CF3M-316L	CF3M-316L	A	T PORT 3WAY FP	D	DELIRIN	D	DELIRIN	B8	BUTT WELD 80
C (150 mm)	6 ⁵⁰	99	DM5000	DM5000	B	L PORT 3WAY RP	0	CARBON PEEK	0	CARBON PEEK	TS	FEMALE NPT X SOCKET WELD
E (200 mm)	8 ⁶⁶	0L	304L	304L	C	Vertical L Port 3/4-Way	K	KEL-F	K	KEL-F	ES	EXTENDED SOCKET WELD
F (250 mm)	10 ⁷⁷	77	HASTELLOY C	HASTELLOY C	D	Vertical T Port 3/4-Way	A	KALREZ	A	KALREZ	EB	EXTENDED BUTT WELD
G (300 mm)	12 ³⁵	AA	AL6XN	AL6XN	S	1/16" SLOT	B	BUNA	B	BUNA	L1	LUG STYLE ANSI 150
H (350 mm)	14 ³⁹	BB	BRONZE	BRASS	B16	60 DEGREE J TRIM	E	EPDM	E	EPDM	L3	LUG STYLE ANSI 300
K (400 mm)	16 ⁸²	86	LF2/LCB	LF2/LCB	8	1/8" SLOT	W	WAFER	W	WAFER	WB	WAFER FLANGED ANSI 150
L (450 mm)	18 ^{B6}	88	LF2/LCB	LF2/LCB	Q	3/8" SLOT BALL	W	WAFER	W	WAFER	WB	WAFER FLANGED ANSI 600
M (500 mm)	20 ^{B8}	88	DM4800	DM4800	4105						B2	SW X FNPT (BLOCK), FNPT (BLEED)
N (550 mm)	22 ⁷³	D3	DUCTILE IRON	316S/CF8M	416SS						B3	SW X SW (BLOCK), FNPT (BLEED)
O (600 mm)	24 ⁹⁴	24	WCB A216	316S/CF8M	17-4						B5	SW X SW (BLOCK), SW (BLEED)
P (650 mm)	26 ⁹⁵	34	316S/CF8M	316S/CF8M	17-4						TC	TRU-CLAMP
S (1000 mm)	40 ⁹⁶	37	CF8M	HASTELLOY C							RT	RING TYPE JOINT
T (1050 mm)	42 ⁹⁷	57	317	317	317						WT	BUTT WELD TUBE END
SPECIAL	ZZ	99	9900 SEGMENTED SERIES								MI	METRIC THREAD
		CE	CE3 Sanitary Butterfly Valve								BT	BRITISH PIPE THREAD
		80	WAFER SERIES 80 CARTRIDGE STYLE RSBFV								E1	EXTENDED BUTT WELD SCH10
		81	LUG SERIES 81 CARTRIDGE STYLE RSBFV								E4	EXTENDED BUTT WELD SCH40
		82	WAFER STYLE 82 SERIES HP BFV								E6	EXTENDED BUTT WELD SCH160
		83	LUG STYLE 83 SERIES HP BFV								E8	EXTENDED BUTT WELD SCH80
		89	TRIPLE OFFSET LUG STYLE SERIES 89 HP BFV									
		98	9800 SERIES METAL SEATED TRUNION									
		55	5500 SERIES LUBRICATED PLUS VALVE SERIES									
		40	4000 SERIES CAGE GUIDED CONTROL GLOBE VALVE									
		30	3500 3 WAY MIXING GLOBE STYLE CONTROL VALVE									
		20	2000 SERIES TOP GUIDED CONTROL GLOBE VALVE									
		KE	KE SERIES THROUGH CONDUIT DOUBLE EXP GLOBE VALVE									
		S4	S400 SERIES TEFLOON OR PFA LINED SLEEVE PLUS VALVE									
		H6	HIGH PRESSURE 600 SERIES 6000PSI									
		HA	HIGH PRESSURE HP3L2A00 SERIES 3000 PSI									
		H4	HIGH PRESSURE HP4LL2A00 SERIES									
		SC	SC SERIES SWING CHECK VALVE									
		GB	GB SERIES GLOBE VALVE									
		KO	KO SERIES CAST STEEL GATE VALVE									
		KS	KS SERIES CONDUIT SLAB GATE VALVE									

82 & 83 SERIES VELOCITY RECOMENDATION
ALL SIZES: NOT TO EXCEED 32 FEET PER SECOND
IN MODULATING SERVICE AS DAMAGE CAN OCCUR.

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