



## STANDARDS

- Valve body: ASME B16.34
- Material certification: EN10204-3.1 MTR
- Quality assurance: ISO 9001:2008
- Steel casting: MSS SP-55
- Valve marking: MSS SP-25
- Valve test: API 598
- Direct mount: ISO 5211
- End connection: ASME B1.20.1, ASME B16.11, ASME B16.25, ASME B16.5
- Sulfide stress cracking: NACE MR-01-75

# DM3(4)L(T)2A00 Series

## Direct Mount Three Way Ball Valves

### FEATURES & BENEFITS

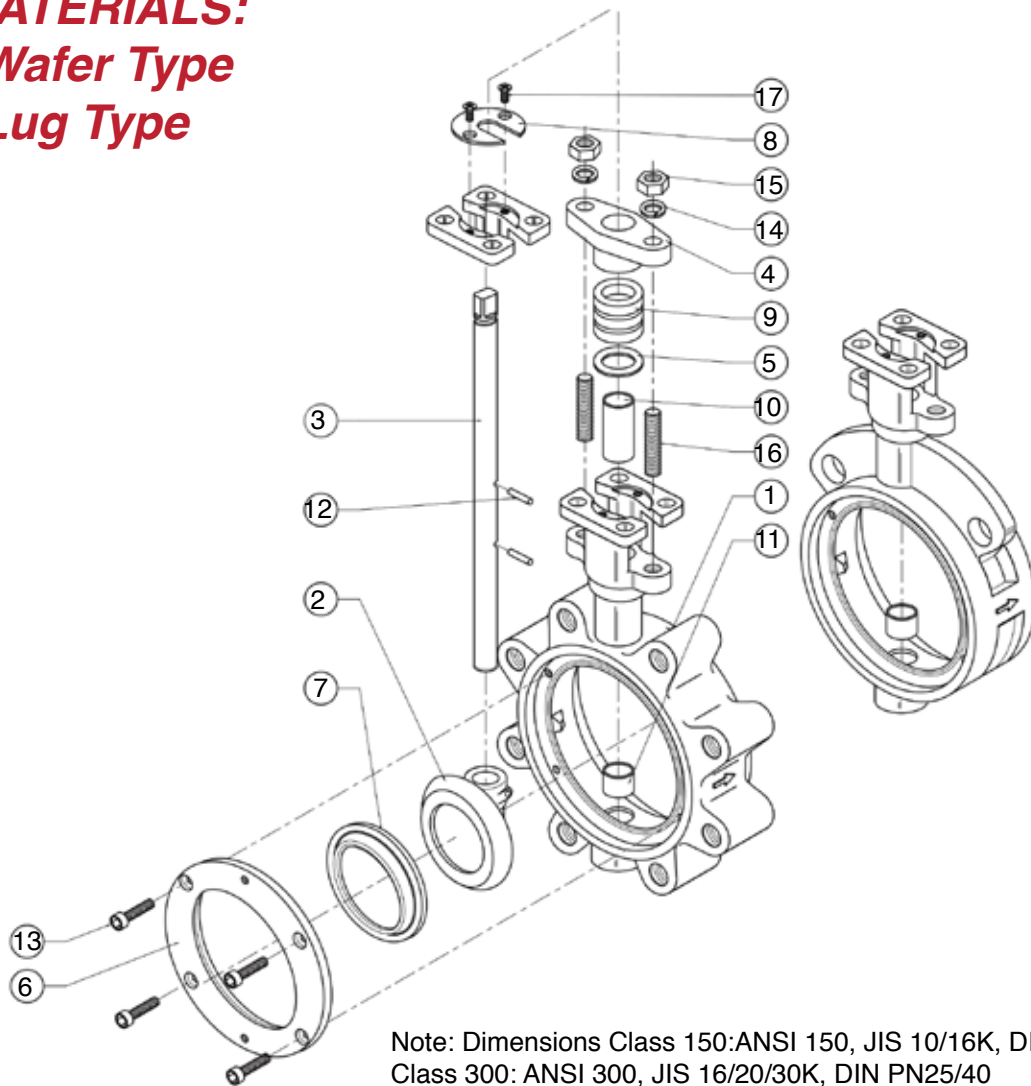
- Body and end caps quality investment casting (1/4" - 4") / Sand Casting (5" - 8")
- Available in Stainless Steel and Carbon Steel
- With ISO 5211 direct mounting pad (1/4" - 4")
- Floating (1/4" - 2") / Trunnion (2-1/2"+) design
- Available in L / T / X / I-Port
- Available in 3 / 4 / 5 -way in block body type
- 100% air tested under water at 80 - 100 psi
- Temperature range from -20°F to 600°F
- End type: butt weld, flanged, socket weld, threaded
- Locking function
- Adjusting stem packing

### OPTIONS

- Automation applicable
- PTFE / PFA coating (40 - 70 um)
- TFM1600 / TFM4215 / PTFE
- PTFE Cavity Filler
- 180 degree operation stop plate
- Hastalloy C / Alloy 20 / Super Duplex / Monel
- Fire safe design
- Refer to DMHP3(4)L(T)2A00 Series for high pressure

## Model 82 & 83 Series Butterfly Valves

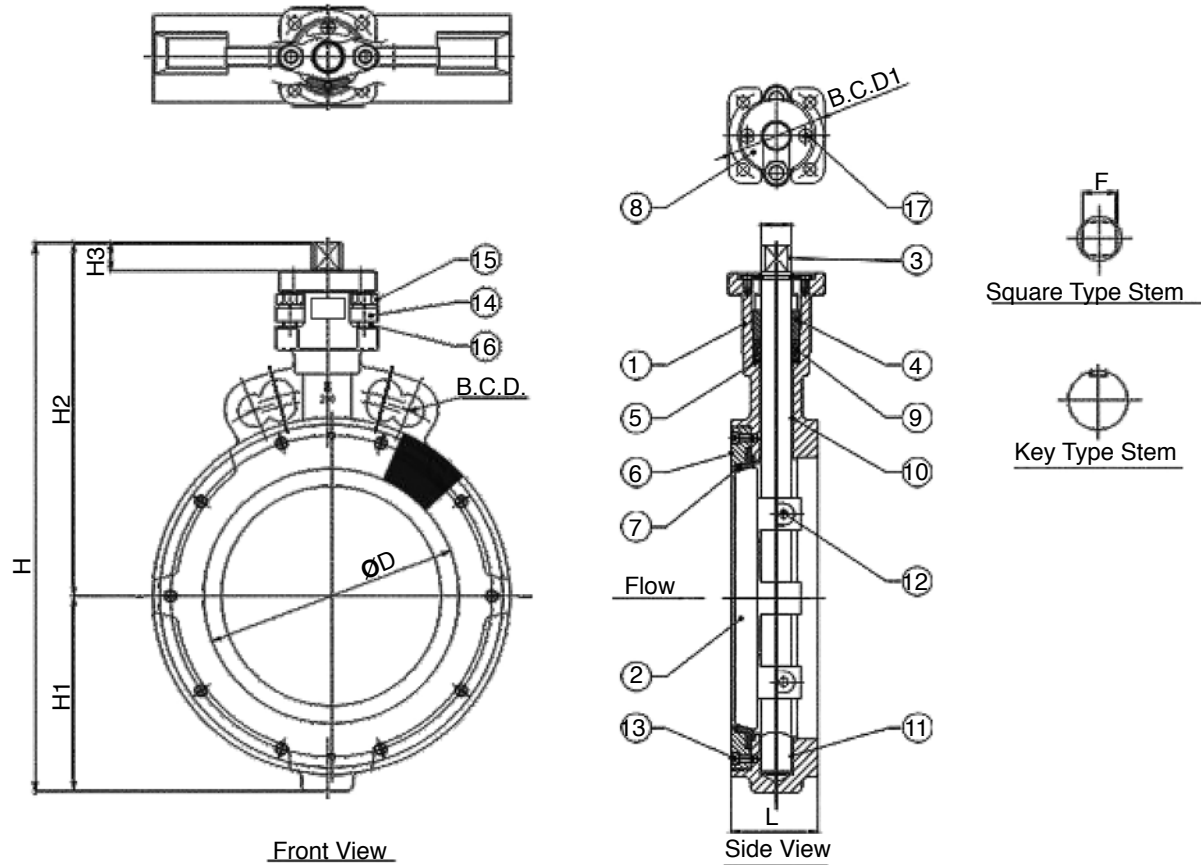
### **BILL OF MATERIALS:** 82 Series Wafer Type 83 Series Lug Type



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	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

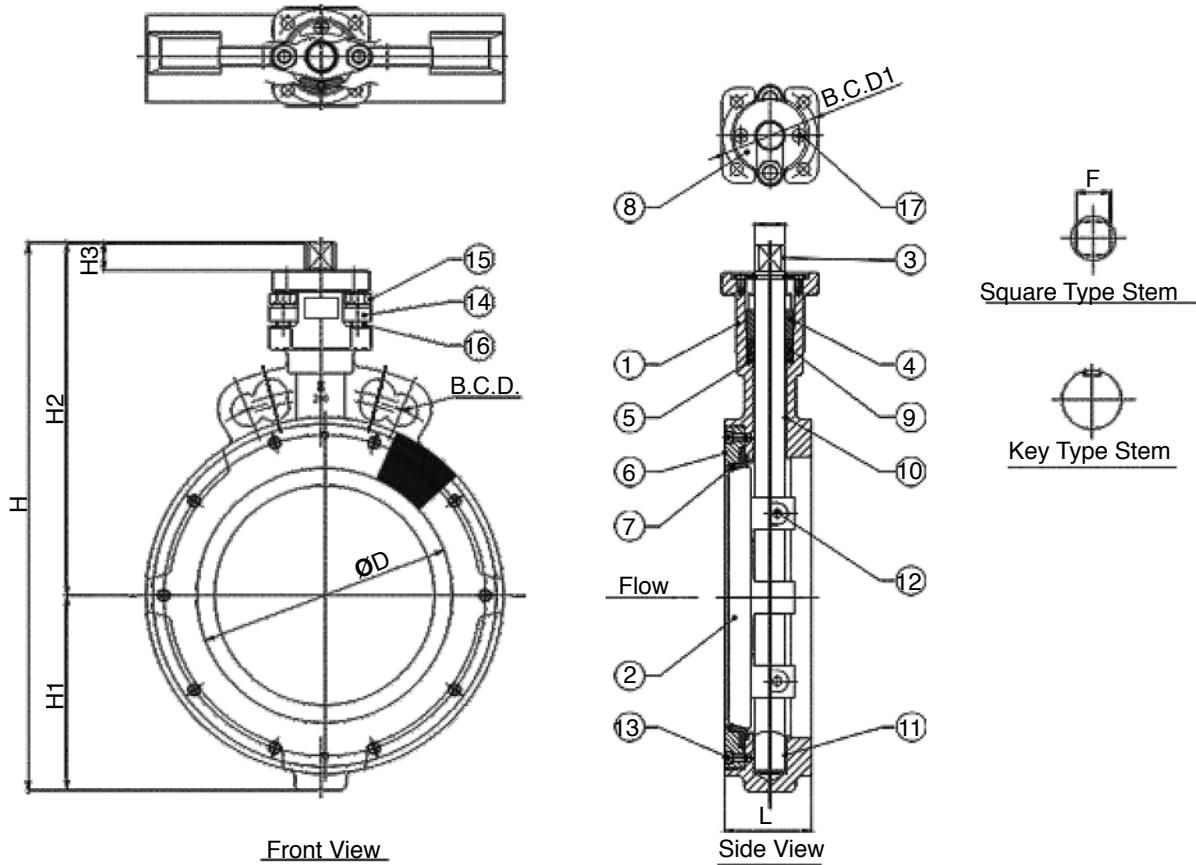
### FLANGE DRILLING TABLE

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

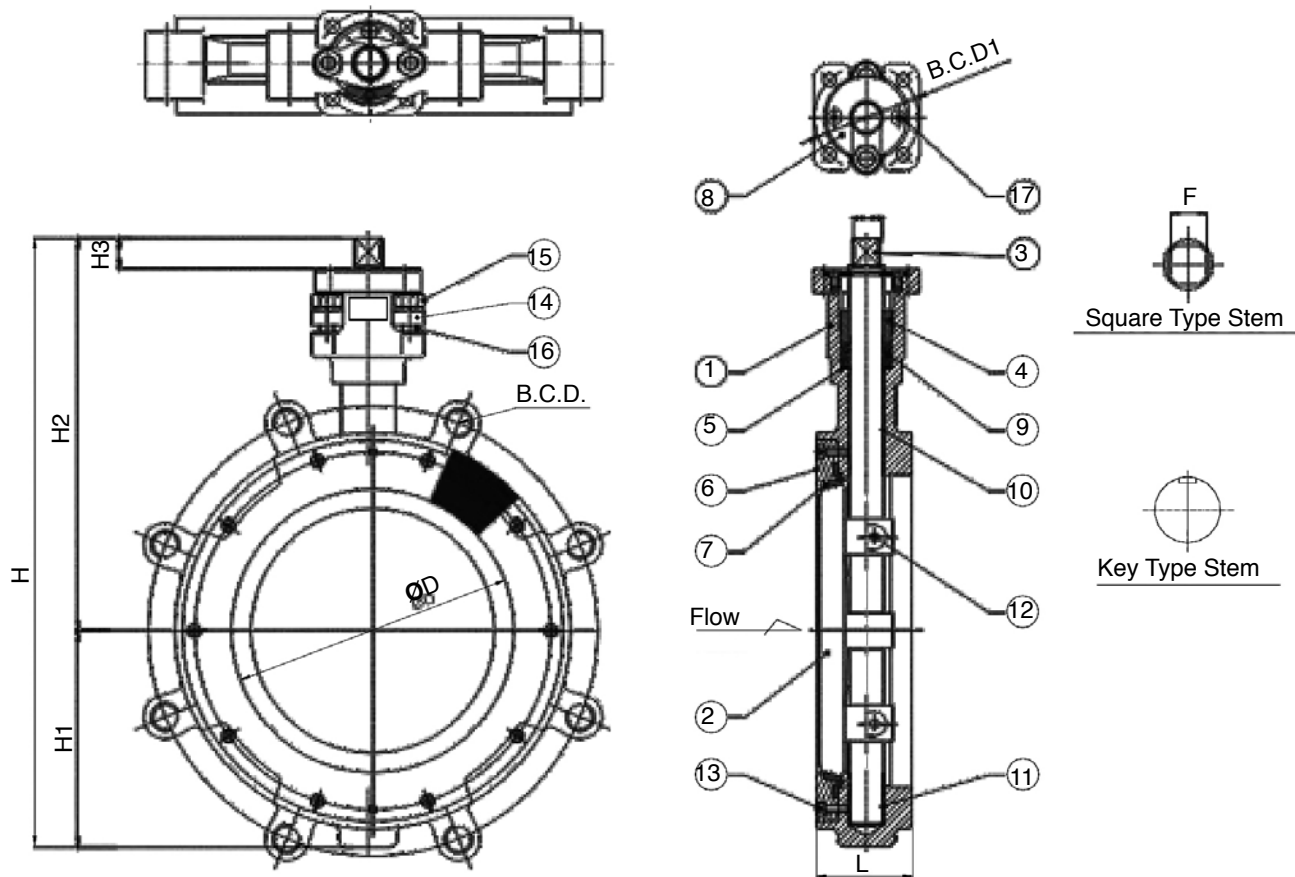
### FLANGE DRILLING TABLE

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	1.81
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



## 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

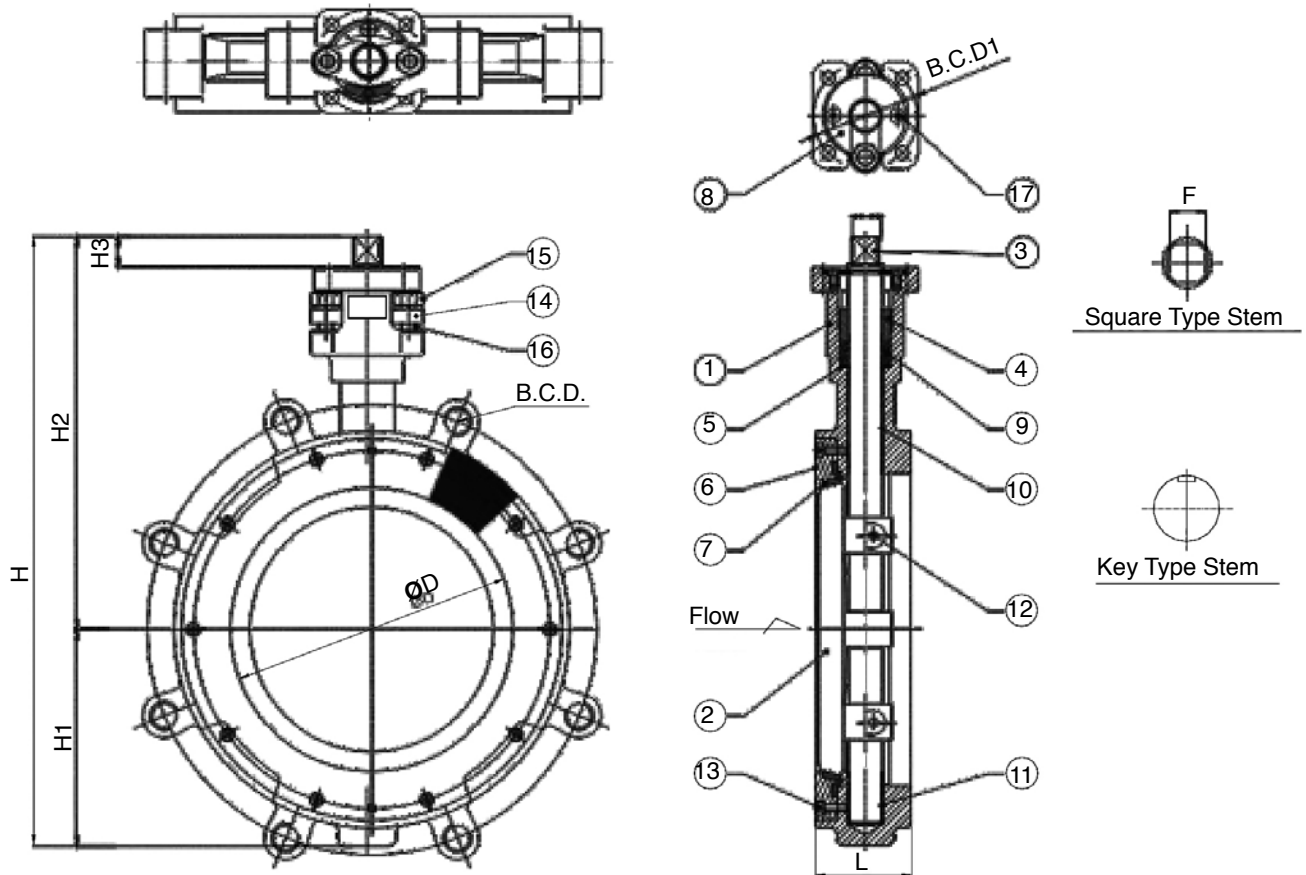
Size IN	ANSI 300			J1S 16K/20K			JIS 30K			PN25			PN40		
	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h	B.C.D.	n	h
2"	5.00	8	0.75	4.72	8	0.75	5.12	8	0.75	4.92	4	0.71	4.92	4	0.71
2-1/2"	5.87	8	0.87	5.51	8	0.75	6.3	8	0.91	5.71	8	0.71	5.71	8	0.71
3"	6.63	8	0.87	6.30	8	0.91	6.69	8	0.91	6.30	8	0.71	6.30	8	0.71
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 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 150

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 seed 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

### 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.

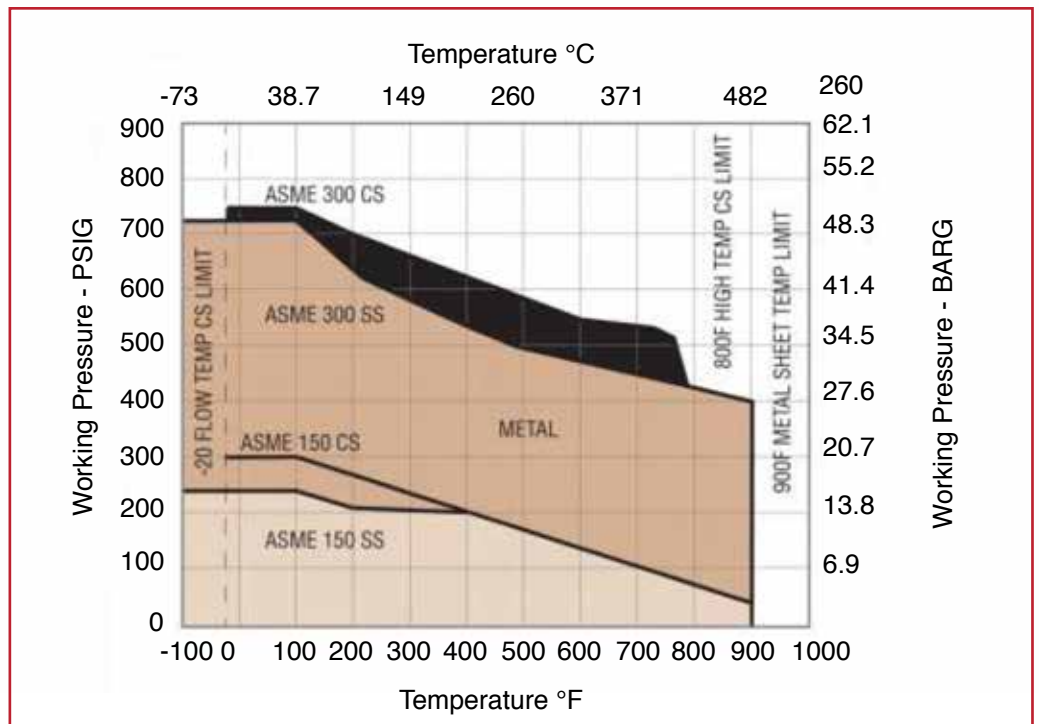
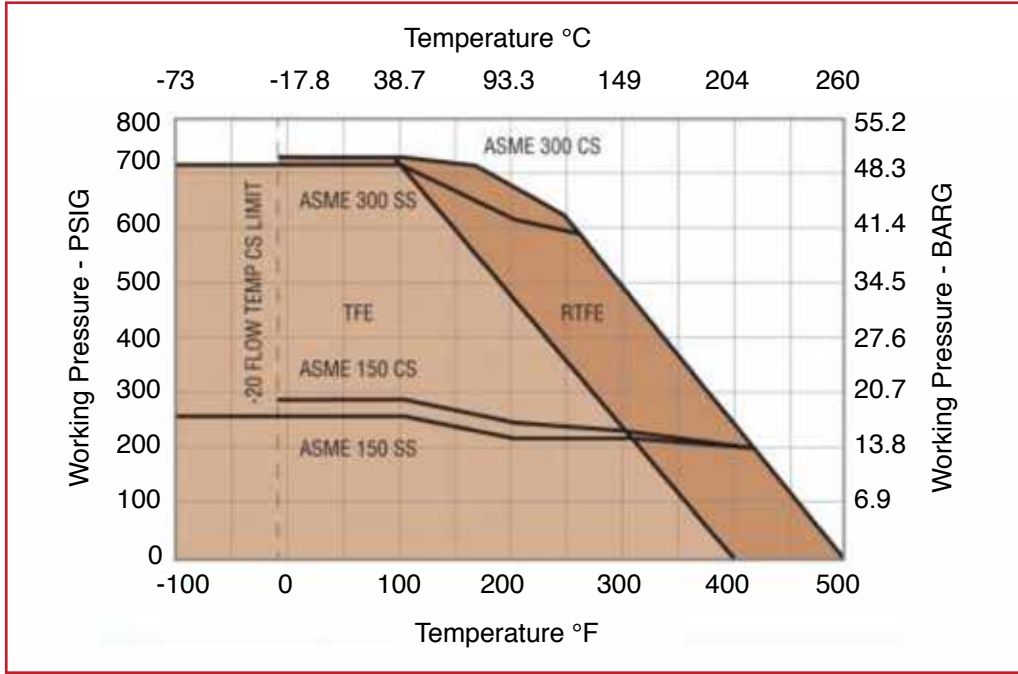
Flow Coefficient for J Flow Controls Butterfly Valves

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

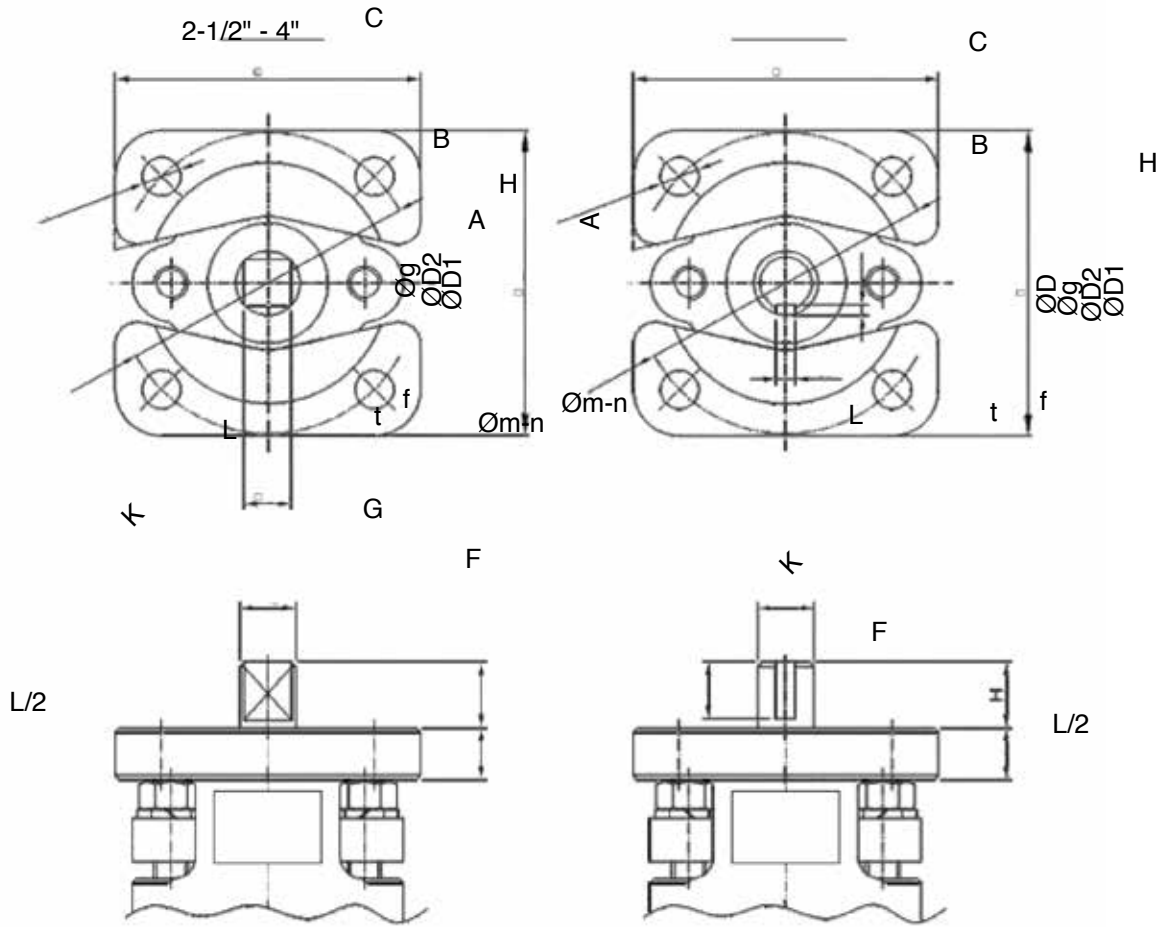
Class 300 In	Disc Opening							
	20°	30°	40°	50°	60°	70°	80°	90°
2"	6	13	24	36	52	71	95	100
2-1/2"	8	19	34	52	75	102	136	143
3"	13	30	53	81	117	159	212	223
4"	25	58	104	157	228	310	414	435
5"	40	92	165	248	361	491	655	688
6"	60	139	250	377	546	744	992	1041
8"	109	255	459	692	1001	1365	1820	1911
10"	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**



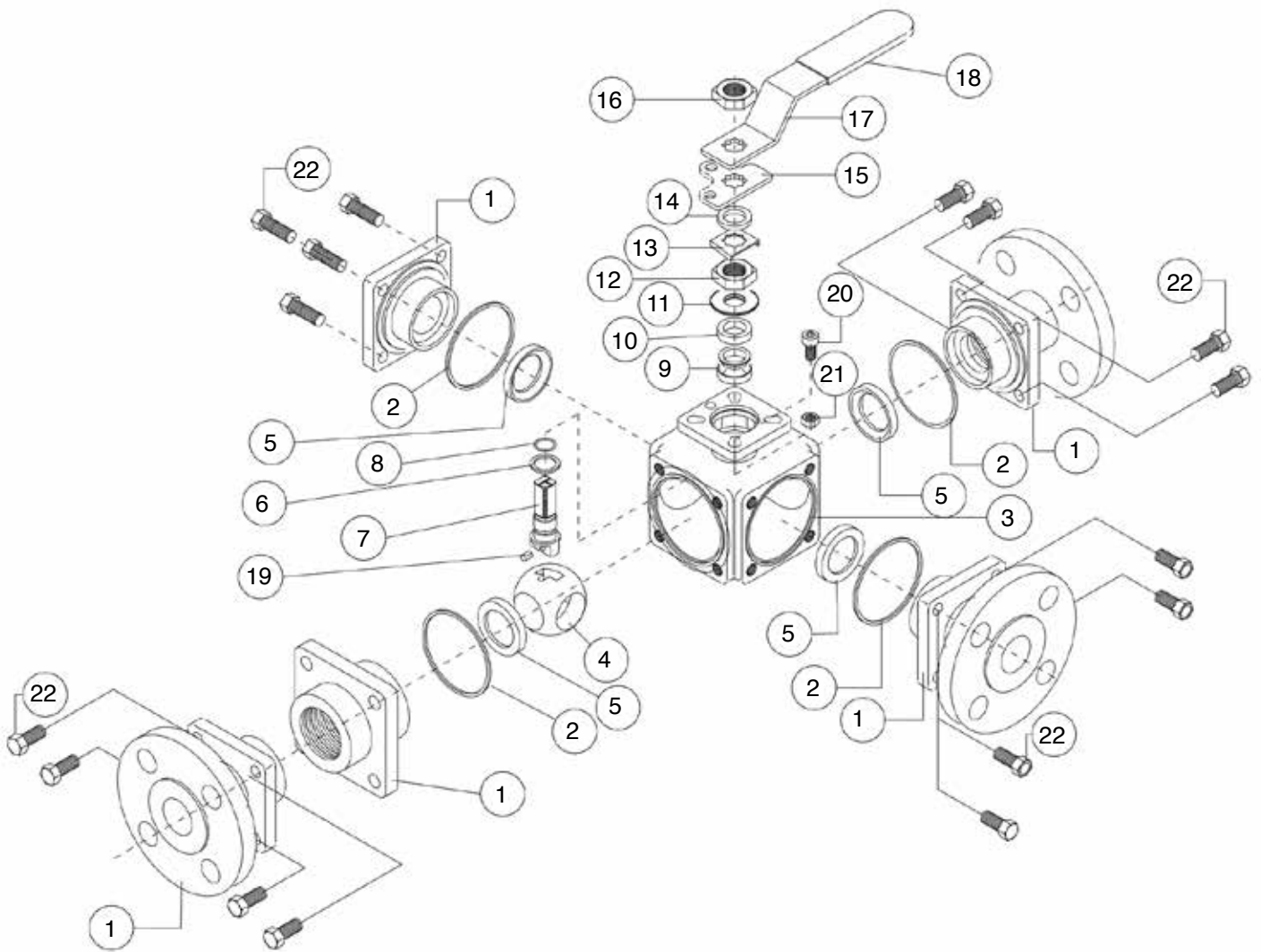
**BUTTERFLY VALVE TOP FLANGE DIMENSION - CLASS 150**



	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

### BILL OF MATERIALS (1/4" - 2")

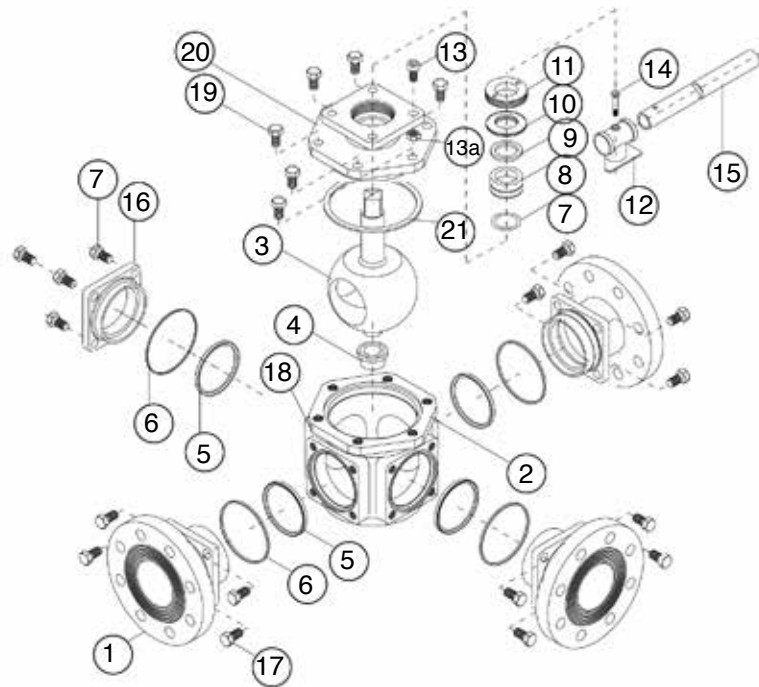


No	Part Name	Materials	No	Part Name	Materials
1	End Cap	CF8M/WCB	12	Stem Nut	SS304
2	Gasket	PTFE	13	Nut Stop	SS304
3	Body	CF8M/WCB	14	Space Washer	SS304
4	Ball	SS316	15	Stopper Plate	SS304
5	Seat	PTFE	16	Handle Nut	SS304
6	Thrust Washer	RPTFE	17	Handle	SS304
7	Stem	SS316	18	Sleeve	Plastic
8	O-Ring	Viton	19	Insert Pin	SS304
9	Stem Packing	SS304	20	Stop Pin	SS316
10	Gland	SS301	21	Stop Pin Nut	SS304
11	Disk Washer	SS304	22	Bolts	SS304



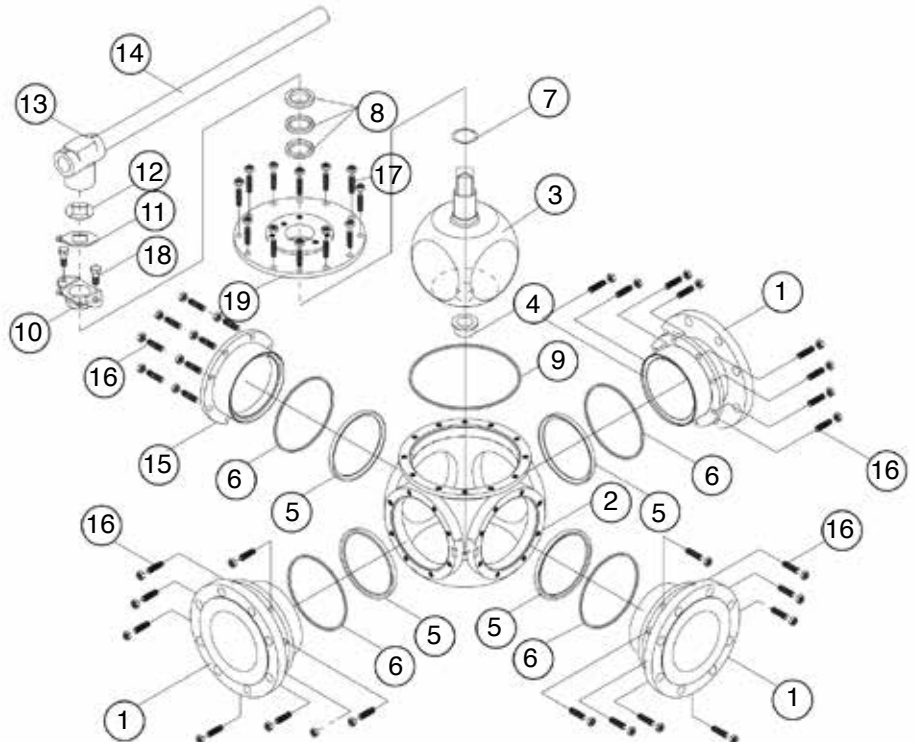
## DM3(4)L(T)2A00 Series Ball Valves

### BILL OF MATERIALS



No	Part Name	Materials
1	End Cap	CF8M/WCB
2	Body	CF8M/WCB
3	Ball & Stem	SS316
4	Housing	PTFE + Stainless
5	Seats	PTFE
6	Gasket	PTFE
7	O-Ring	Viton
8	Stem Packing	PTFE
9	Gland Washer	SS304
10	Disk Washer	SS301
11	Gland	SS304
12	Handle Head	CF8M/WCB
13	Stop Pin	SS304
13a	Stop Pin Nut	SS304
14	Bolt	SS304
15	Handle	Steel Pipe
16	Blank Cap	CF8M/WCB
17	Bolt	SS304
18	Bolt Nuts	SS304
19	Bonnet Bolt	SS304
20	Bonnet	CF8M/WCB
21	Bonnet Gasket	PTFE

No	Part Name	Materials
1	End Cap	CF8M/WCB
2	Body	CF8M/WCB
3	Ball & Stem	SS316
4	Housing	PTFE + Stainless
5	Seats	PTFE
6	Gasket	PTFE
7	O-Ring	Viton
8	Stem Packing	PTFE
9	Bonnet Gasket	PTFE
10	Gland	SS304
11	Stop	SS304
12	Stop Ring	SS304
13	Handle Head	Ductile Iron
14	Handle	Steel Pipe
15	Blank Cap	CF8M/WCB
16	Flange End Bolt	SS304
17	Bonnet Bolt	SS304
18	Gland Bolt	SS304
19	Bonnet	CF8M/WCB



# DM3(4)L(T)2A00 Series Ball Valves

## FLOW PATTERN

### 3-WAY

L3-90°  
STANDARD



T3-90°  
STANDARD



T4-90°



T5-90°



T6-90°



### 4-WAY

L5-180°



T5-180°



X-90°



I-90°



T-Port 90° operation (T3 / T4 / T5 / T6) can be suitable for 4-way valve

## FLOW COEFFICIENT

Size	3-Way, L-Port, Full Bore	3-Way, T-Port (Through), Full Bore	3-Way, T-Port (Branch), Full Bore	4-Way, X-Port, Full Bore
1/4"	7	15	6	-
3/8"	7	15	6	-
1/2"	13	25	9	7
3/4"	23	46	20	12
1"	35	70	25	18
1-1/4"	54	109	47	28
1-1/2"	81	162	62	42
2"	153	309	112	80
2-1/2"	186	376	140	97
3"	290	589	248	151
4"	466	941	414	243
6"	1595	3222	1140	832
8"	2162	4368	1751	1128
10"	3105	6272	2585	1620

## BREAK-TORQUE VALUE (IN-LB AT 0 PSI)

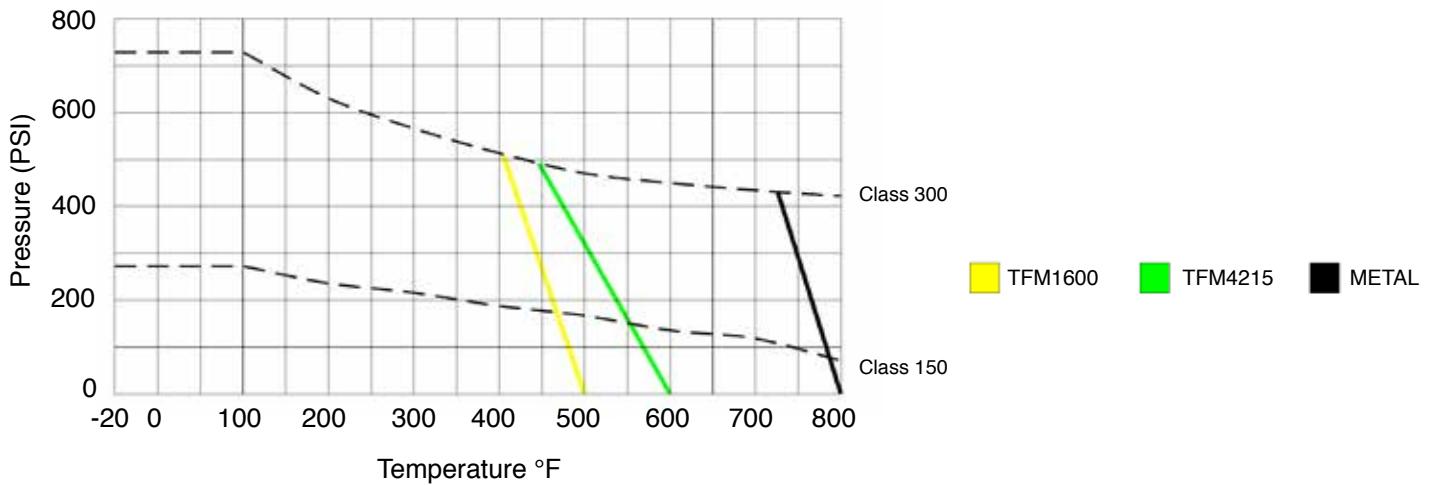
Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	12"
Grease	91	91	113	136	221	306	489	635	1192	1305	2100	3983	4222	5160	7789
Non-Grease	136	136	142	170	266	363	545	851	1133	2214	2838	-	-	-	12834

Note 1: The greases J Flow Controls uses include lubricants and anti-seize that are both SILICONE-FREE

Note 2: J Flow Controls strongly suggests increasing the torque at least 30% - 40% for safety factor when mounting an actuator

# DM3(4)L(T)2A00 Series Ball Valves

## PRESSURE/TEMPERATURE CHART



## HOW TO ORDER

Series	Body <sup>1</sup>	Ball & Stem	Port	Packing/Body Seal Material	Seat
DM3L2A	2 WCB/A015	3 316	FP Full Port	TT PTFE	CF Cavity Filled (PTFE)
DM3T2A	3 316	4 Alloy 20	RP Red. Port	TM TFM1600	TM TFM1600
DM4LL2A	A 304	5 Monel		TC TFM4215	TC TFM4215
	AL 304L	7 Hastelloy C276			
	3L 316L	9 Duplex 2507			

End Connections		Material Options		Design Options	
<b>F15</b>	ANSI 150 RF Flange	<b>NA</b>	Standard	<b>NA</b>	Standard
<b>F30</b>	ANSI 300 RF Flange	<b>BC</b>	TFM4215 Body Seal	<b>L2</b>	3-Way Port L2 - 90°
<b>F60</b>	ANSI 600 RF Flange	<b>BG</b>	Graphite Body	<b>L3</b>	3-Way Port L3 - 90°
<b>F90</b>	ANSI 900 RF Flange	<b>SF</b>	Self Flushing	<b>T3</b>	3-Way Port T3 - 90°
<b>F1X</b>	ANSI 1500 RF Flange			<b>T4</b>	3-Way Port T4 - 90°
<b>F2X</b>	ANSI 2500 RF Flange			<b>T5</b>	3-Way Port T5 - 90°
<b>SCW</b>	Socket Weld			<b>T6</b>	3-Way Port T6 - 90°
<b>FPT</b>	Female NPT				
<b>W10</b>	Butt Weld Sch 10				
<b>W40</b>	Butt Weld Sch 40				
<b>W80</b>	Butt Weld Sch 80				

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 513-731-2900  
[jflowcontrols.com](http://jflowcontrols.com)

<sup>1</sup> Please see the J Flow Controls Configurator for a full list of body materials

Class 600 / 900 / 1500 / 2500 valves are available, factory will advise on sizes and dimensions

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