



STANDARDS

- Valve design: ASME B16.34
- Material certification: EN10204-3.1 MT
- End connections: ASME B16.11, ASME B1.20.1, ASME B16.25
- Steel casting: MSS SP-55
- Valve marking: MSS SP-25
- Valve test: API 598
- Direct mount: ISO 5211
- Stem Connection: DIN 3337
- Class / Pressure Rating: 800/1000 psi
- Sulfide stress cracking: NAC MR-01-75

DM4500 / OBDM4500 Series

Three Piece Direct Mount Ball Valves

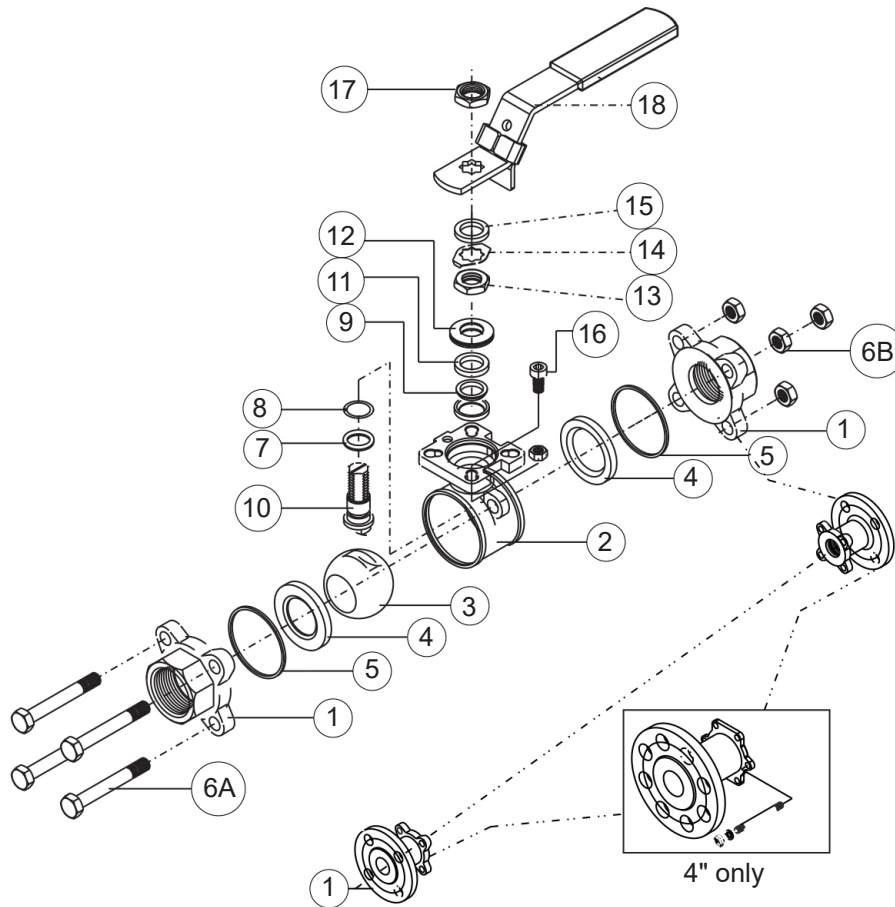
FEATURES & BENEFITS

- Body and end caps quality investment casting
- With ISO 5211 mounting pad
- With locking function
- Adjustable Stem Packing
- Available in Stainless Steel or Carbon Steel
- Blow-out proof stem design
- 100% air tested under water at 100 psi
- Working pressure: Class 150 / 800 1000 psi
- End type: threaded, socket weld, butt weld or flanged end ANSI 150

OPTIONS

- Spring return (dead man) handle
- Oval handle
- Automation applicable
- Handle with limit switch box
- Extended stem for isolation
- V-ball for control valve in 15°, 30°, 60°, 90°, slot or custom
- PTFE cavity fille
- Hastalloy C, Super Duplex, Alloy 20 and Monel
- Extended stem for isolation

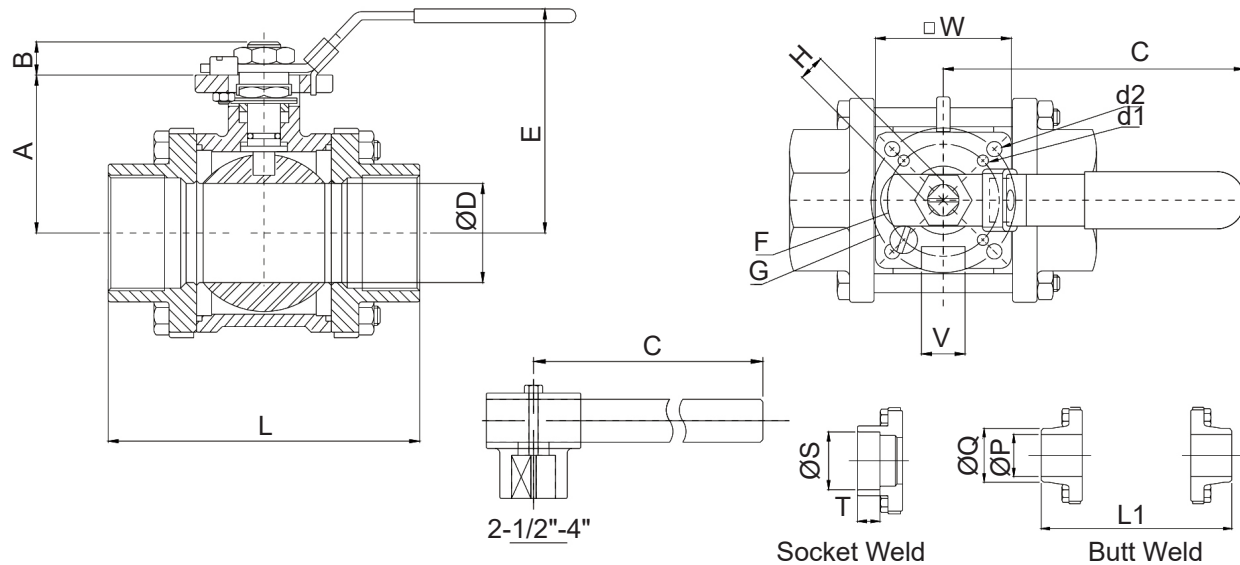
BILL OF MATERIALS



No	Part Name	Materials	No	Part Name	Materials
1	End Cap	CF8M/WCB	13	Stem Nut	SS304
2	Body	CF8M/WCB	14	Nut Stop	SS304
3	Ball	SS316	15	Space Washer	SS304
4	Seat	TFM	16	Plater	SS304
5	Gasket	TFM	17	Stop Pin	SS304
6A	Bolts	SS304	18	Handle Nut	SS304
6B	Nuts	SS304	19	Handle	SS304
7	Thrust Washer	TFM	20	Handle Cover	Plastic
8	O-Ring	Viton	21	Set Bolt	SS304
9	Stem Packing	TFM	22	Lever Head	CF8
10	Stem	SS316	23	Lever	Steel Pipe
11	Gland	SS304	24		
12	Disk Washer	SS301			

DM4500 Series Ball Valves

DIMENSIONS (THREADED)

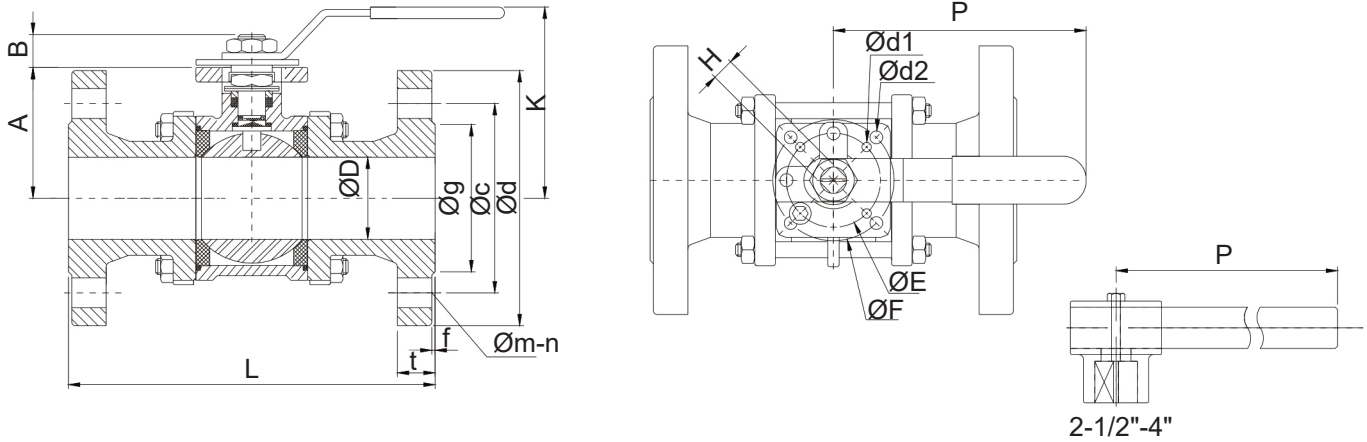


Size	A	B	C	D	d1	d2	E	F	G	H	L
1/4"	1.46	0.43	5.12	0.43	0.24	0.24	2.28	1.42	1.65	0.35	2.38
3/8"	1.46	0.43	5.12	0.49	0.24	0.24	2.28	1.42	1.65	0.35	2.38
1/2"	1.46	0.43	5.12	0.59	0.24	0.24	2.28	1.42	1.65	0.35	2.5
3/4"	1.57	0.43	5.12	0.79	0.24	0.24	2.52	1.42	1.65	0.35	2.97
1"	1.89	0.55	6.10	0.98	0.24	0.28	3.03	1.65	1.97	0.43	3.39
1-1/4"	2.11	0.55	6.10	1.26	0.24	0.28	3.26	1.65	1.97	0.43	3.78
1-1/2"	2.50	0.71	8.07	1.50	0.28	0.35	3.62	1.97	2.76	0.55	4.37
2"	2.83	0.71	8.07	1.97	0.28	0.35	3.94	1.97	2.76	0.55	5.08
2-1/2"	3.62	0.87	11.42	2.56	0.35	0.44	5.51	2.76	4.02	0.67	6.00
3"	4.02	0.87	11.42	3.15	0.35	0.44	5.91	2.76	4.02	0.67	6.63
4"	5.20	1.02	13.20	3.94	0.44	0.53	7.68	4.02	4.92	0.87	8.37

Size	S	T	P	Q	L1	V	W
1/4"	0.56	0.44	0.39	0.67	2.38	0.75	1.73
3/8"	0.69	0.44	0.52	0.75	2.38	0.75	1.73
1/2"	0.86	0.50	0.61	0.85	2.50	0.75	1.73
3/4"	1.07	0.56	0.81	1.08	2.97	0.75	1.73
1"	1.33	0.63	1.05	1.36	3.39	0.94	2.05
1-1/4"	1.67	0.69	1.38	1.69	4.09	0.94	2.05
1-1/2"	1.92	0.75	1.59	1.93	4.61	1.10	2.09
2"	2.41	0.87	2.06	2.40	5.43	1.10	2.09
2-1/2"	2.91	0.87	2.56	3.03	6.69	-	-
3"	3.54	1.00	3.15	3.58	7.56	-	-
4"	4.54	1.26	3.94	4.53	8.90	-	-

DM4500 Series Ball Valves

DIMENSIONS (FLANGED)



Size	A	B	D	d1	d2	K	E	F	H	P	L
1/2"	1.46	0.43	0.59	0.24	0.24	3.86	1.42	1.65	0.35	5.00	5.12
3/4"	1.57	0.43	0.79	0.24	0.24	3.98	1.42	1.65	0.35	5.00	5.91
1"	1.89	0.55	0.98	0.24	0.28	3.70	1.65	1.97	0.43	6.30	6.30
1-1/4"	2.09	0.55	1.26	0.24	0.28	3.90	1.65	1.97	0.43	6.30	7.09
1-1/2"	2.48	0.71	1.50	0.28	0.35	4.53	1.97	2.76	0.55	8.07	7.87
2"	2.83	0.71	1.97	0.28	0.35	4.88	1.97	2.76	0.55	8.07	9.06
2-1/2"	3.62	0.87	2.56	0.35	0.44	5.51	2.76	4.02	0.67	11.81	11.42
3"	4.02	0.87	3.07	0.35	0.44	5.91	2.76	4.02	0.67	11.81	12.20
4"	5.20	1.02	3.94	0.44	0.53	7.48	4.02	4.92	0.87	11.81	13.78

Size	Class 150 Flange Dimensions						
	g	c	d	f	t	m	n
1/2"	1.77	2.56	3.74	0.08	0.55	0.55	4
3/4"	2.28	2.95	4.13	0.08	0.63	0.55	4
1"	2.68	3.35	4.53	0.08	0.63	0.55	4
1-1/4"	3.07	3.94	5.51	0.08	0.63	0.71	4
1-1/2"	3.46	4.33	5.91	0.12	0.63	0.71	4
2"	4.02	4.92	6.50	0.12	0.71	0.71	4
2-1/2"	4.80	5.71	7.28	0.12	0.71	0.71	4
3"	5.43	6.30	7.87	0.12	0.79	0.71	8
4"	6.22	7.09	8.66	0.12	0.79	0.71	8

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"
Grease	31	31	44	49	62	97	150	204	310	407	637
Non-Grease	44	44	53	62	84	142	239	266	602	752	929

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

FLOW COEFFICIENT (FULL PORT VALVE)

Size	Cv Factor
1/4"	8.5
3/8"	8.5
1/2"	21
3/4"	50
1"	90
1-1/4"	110
1-1/2"	240
2"	400
2-1/2"	700
3"	980
4"	1700

FLOW COEFFICIENT (Slotted Ball) 3/4" and Smaller

1/16" Slotted	
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% Open	Cv Factor
0	0
10	0.02
20	0.08
30	0.23
40	0.38
50	0.52
60	0.68
70	0.83
80	1
90	1.13
100	1.25

1/8" Slotted	
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% Open	Cv Factor
0	0
10	0.00
20	0.15
30	0.23
40	0.62
50	0.97
60	1.30
70	1.58
80	1.85
90	1.98
100	2.08

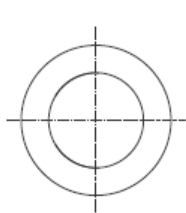
V-Control Ball Valve Flow Coefficient Cv Charts

Valve Size	V-Port Angle	Percent and Angle of Ball Rotation										
		0% 0°	10% 9°	20% 18°	30% 27°	40% 36°	50% 45°	60% 54°	70% 63°	80% 72°	90% 81°	100% 90°
1/2"	15°	0	0.04	0.17	0.43	0.68	0.98	1.62	2.09	2.84	3.61	4.18
1/2"	30°	0	0.04	0.23	0.47	0.77	1.19	1.83	2.47	3.43	4.65	5.55
1/2"	60°	0	0.04	0.28	0.73	1.11	1.83	2.92	4.29	7.00	9.43	12.78
1/2"	90°	0	0.06	0.47	0.85	1.28	2.05	3.24	4.74	8.26	11.61	14.72
3/4"	15°	0	0.05	0.20	0.51	0.88	1.30	2.13	2.75	3.74	4.75	5.51
3/4"	30°	0	0.07	0.30	0.61	0.99	1.57	2.42	3.25	4.52	6.12	7.30
3/4"	60°	0	0.07	0.35	0.93	1.46	2.42	3.85	5.64	9.21	12.41	16.25
3/4"	90°	0	0.08	0.59	1.11	1.69	2.69	4.27	6.24	10.85	15.28	19.37
1"	15°	0	0.06	0.30	0.93	1.49	2.31	3.75	4.67	6.47	8.46	9.84
1"	30°	0	0.08	0.45	1.25	2.06	3.54	5.30	7.70	10.49	12.84	15.48
1"	60°	0	0.09	0.68	1.74	2.78	5.13	8.00	11.88	18.71	23.22	32.81
1"	90°	0	0.11	0.93	2.78	5.09	7.74	12.20	17.33	24.48	26.79	43.89
1-1/4"	15°	0	0.03	0.27	0.83	1.64	2.78	4.07	5.88	7.99	10.81	12.82
1-1/4"	30°	0	0.05	0.48	1.37	2.47	4.12	6.08	8.82	11.76	14.87	17.37
1-1/4"	60°	0	0.07	0.67	2.04	3.41	6.47	10.80	15.39	22.35	33.37	43.45
1-1/4"	90°	0	0.08	0.78	2.92	5.41	10.23	17.28	19.48	34.93	51.76	65.81
1-1/2"	15°	0	0.05	0.37	1.15	2.26	3.82	5.59	8.08	10.99	14.86	17.62
1-1/2"	30°	0	0.07	0.65	1.88	3.39	5.66	8.36	12.12	16.17	20.44	23.88
1-1/2"	60°	0	0.09	0.92	2.81	4.69	8.89	14.85	21.16	30.73	45.88	59.74
1-1/2"	90°	0	0.10	1.07	4.01	7.44	14.06	23.76	26.78	48.03	71.17	90.49
2"	15°	0	0.06	0.69	2.23	4.45	7.24	10.68	15.38	21.39	28.75	34.69
2"	30°	0	0.09	1.18	3.79	7.53	12.26	17.83	26.44	36.45	48.09	55.85
2"	60°	0	0.11	1.51	5.80	10.39	20.60	33.98	48.75	69.04	104.23	135.75
2"	90°	0	0.16	1.89	7.28	13.58	25.38	42.30	55.56	87.04	129.75	167.34
2-1/2"	15°	0	0.07	0.77	2.40	5.23	8.06	11.73	16.42	22.31	27.24	31.30
2-1/2"	30°	0	0.09	1.15	4.42	7.91	13.39	20.05	30.43	41.92	69.75	76.95
2-1/2"	60°	0	0.13	1.46	5.91	11.90	23.24	37.92	59.31	83.29	113.65	162.50
2-1/2"	90°	0	0.17	1.83	7.29	16.45	31.16	53.53	77.89	118.29	177.32	239.45
3"	15°	0	0.08	0.89	2.96	6.65	9.58	13.42	19.47	26.67	31.79	38.31
3"	30°	0	0.12	1.20	4.15	9.49	15.96	26.78	38.91	53.31	69.77	85.91
3"	60°	0	0.15	2.89	6.70	15.82	29.36	46.32	73.60	106.74	149.88	193.20
3"	90°	0	0.20	4.12	8.65	21.09	41.09	69.27	105.91	161.04	237.23	359.21

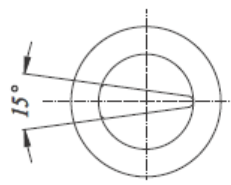
$K_v = 0.865 C_v$

$A_v = 24.0 \times 10^{-6} C_v$

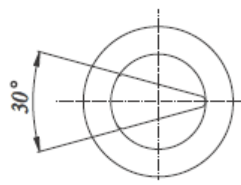
EP = Equal Percentage



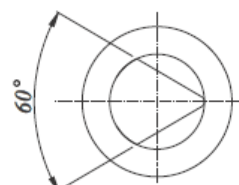
Straight Port



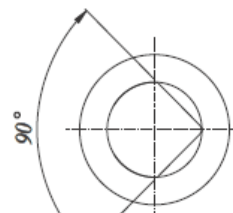
15° V-Port



30° V-Port



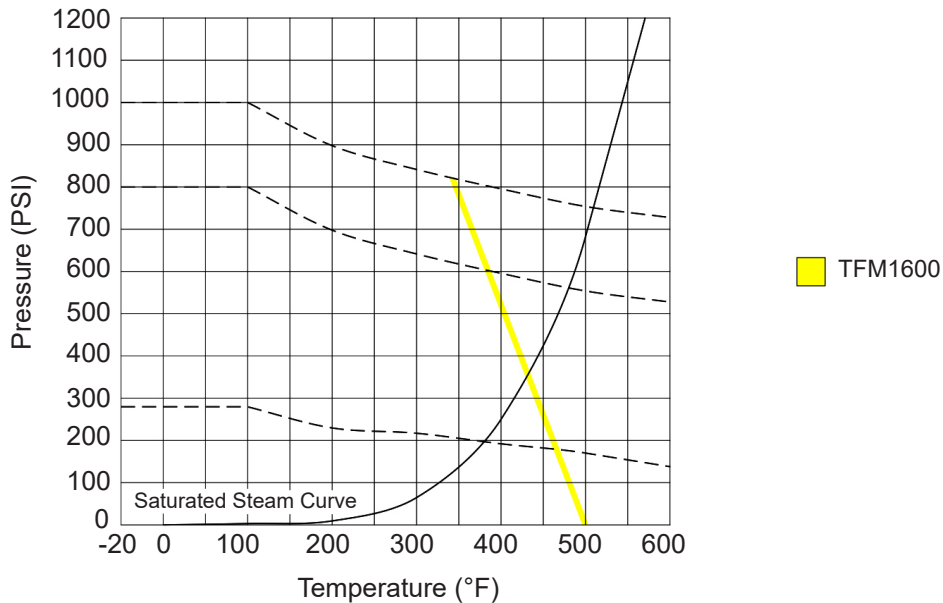
60° V-Port



90° V-Port

DM4500 / OBDM4500 Series Ball Valves

PRESSURE/TEMPERATURE CHART



HOW TO ORDER

Series	Body	Ball & Stem	Port	Packing/Body Seal Material	Seat
DM45	2 WCB/A015	3 316	FP Full Port	TM TFM1600	CF Cavity Filled (PTFE)
	3 316		15 15° V-Ball		TT PTFE
			30 30° V-Ball		TM TFM1600
			60 60° V-Ball		
			90 90° V-Ball		

End Connections	Material Options	Design Options
F15 ANSI 150 RF Flange F30 ANSI 300 RF Flange SCW Socket Weld FPT Female NPT W10 Butt Weld Sch 10 W40 Butt Weld Sch 40 W80 Butt Weld Sch 80 FSW Female NPT X Socket Weld FMT Female Metric THD	NA Standard	NA Standard

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