

F90 & F91 Series

1/2"-6"

ASME / ANSI 150 and 300 Lb.

Specifications: API 607; API 608; ASME B16.34/API 598; NACE MR0175; WW-V-35B, 11, C, 3, B; MSS-SP-72

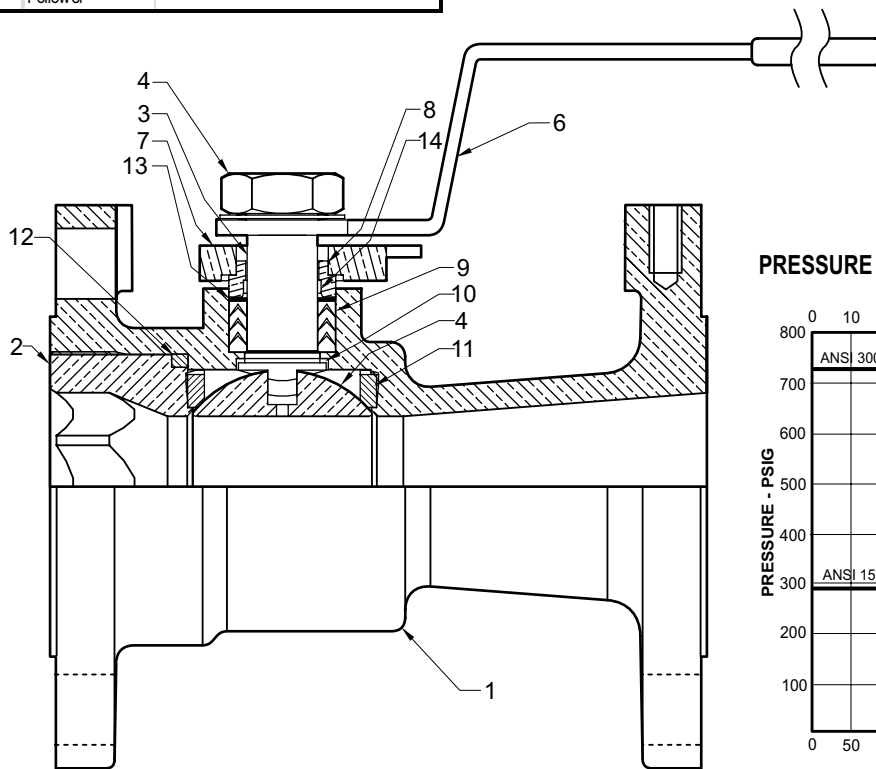
- Flanged Ball Valve
- Standard Port
- Fire Safe (91Series) API 607
- Grounded Stem & Ball
- Locking Handle
- Chevron PTFE Stem Packing (Graphite in 91 Series)
- Low Operating Torque
- Unibody Construction
- Various Seat Materials Available
- Wall Thickness to ASME Specifications
- NACE Sour Gas Service Compliant
- ASTM Grade Fasteners
- Drilled and tapped for Automation
- Gear Operators Available

MATERIALS

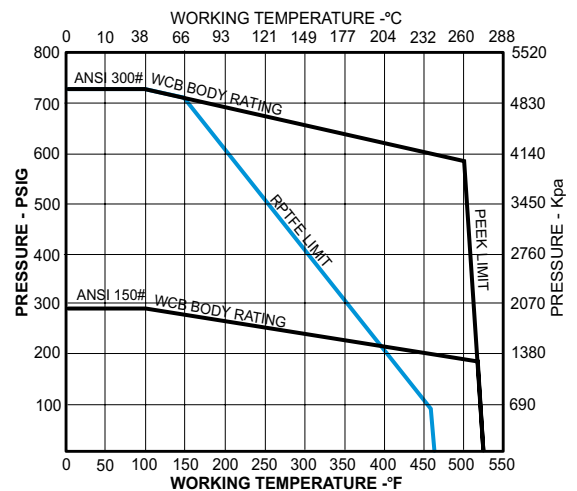
Item	Part Name	F90CS & F91CS	F90SS & F91SS
1	Body	Carbon Steel	Stainless Steel
2	Ball Retainer	ASTM-A216 WCB	ASTM-A351 / A744 GR.CF8M
3	Stem	Stainless Steel ASTM-A276 Type 316	
4	Ball	Stainless Steel ASTM-A276 Type 316	
5	Handle Nut	Stainless Steel Type 18-8	
6	Handle	1/2"-2" Stainless Steel Type 304 3"-6" Ductile Iron	
7	Packing Plate	1/2"-1" Stainless Steel Type 304 1-1/2"-6" ASTM A351 GR. CF8M	
8	Gland Follower	Stainless Steel Type 304	
9	F90 Packing	PTFE	
9	F91 Packing	Graphite	
10	Thrust Washer	Filled PTFE	
11	Seat	15% Glass Filled PTFE	
12	Retainer Seal	PTFE	
13	Grounding Washer	Graphite	
14	Bearing, Gland Follower	PTFE	

TORQUE RATINGS and FLOW CO-EFFICIENTS

VALVE SIZE	Class 150 (0-300 PSID) RECOM-MENDED ACTUATOR TORQUE (in. lbs. Nm)	Class 300 (301-740 PSID) RECOM-MENDED ACTUATOR TORQUE (in. lbs. Nm)	Cv
1/2	40 4.5	40 4.5	15
3/4	60 6.8	60 6.8	25
1	125 14.1	125 14.1	37
1-1/2	190 21.5	190 21.5	90
2	240 27.1	300 33.9	120
3	500 56.6	750 84.8	460
4	900 101.8	1000 113.1	640
6	1900 214.9	3525 398.8	1025



PRESSURE / TEMPERATURE CHART



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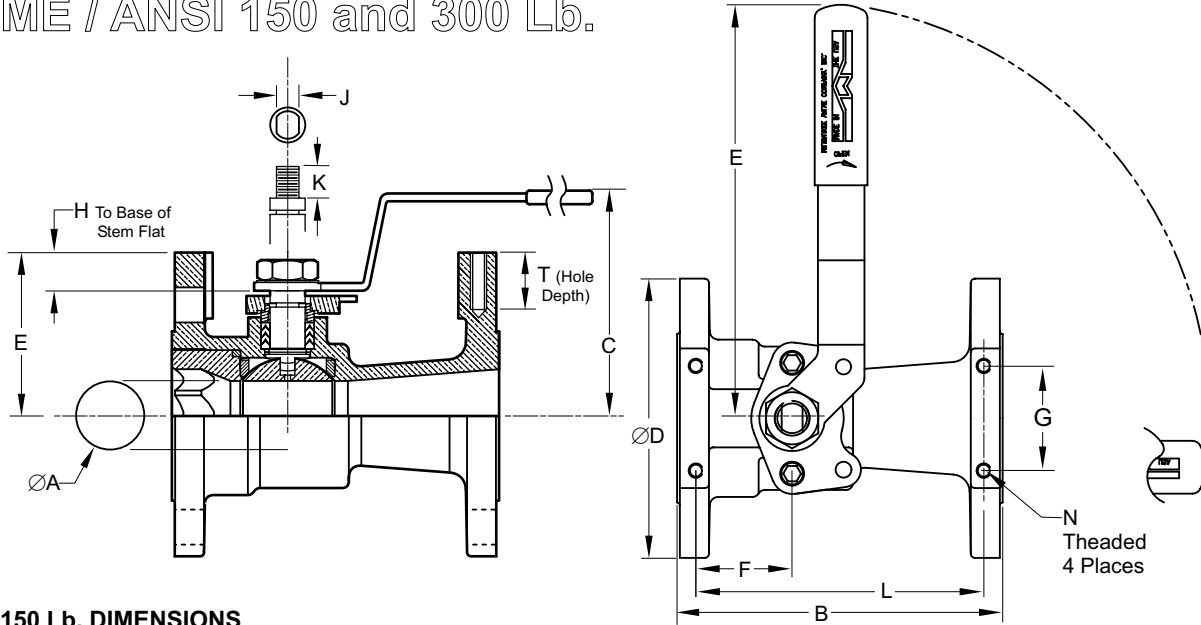
MILWAUKEE VALVE



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1/2"-6"

ASME / ANSI 150 and 300 Lb.



ANSI 150 Lb. DIMENSIONS

NPS		A	B	C	D	E	F	G	H	J	K	L	M	N	T
1/2"	IN.	.50	4.25	2.50	3.50	5.06	.81	1.75	.71	.20	.32	2.88	1.88	5/16-18	Through Hole
	mm	12.7	108.0	63.5	88.9	128.5	20.6	44.5	18.0	5.1	8.1	73.2	47.8		
3/4"	IN.	.69	4.62	3.65	3.88	5.97	.94	1.75	.57	.28	.48	3.13	2.06	5/16-18	Hole
	mm	17.5	117.3	92.7	98.6	151.6	23.9	44.5	14.5	7.1	12.2	79.5	52.3		
1"	IN.	.88	5.00	3.80	4.25	5.97	1.25	1.75	.82	.28	0.48	4.19	2.46	5/16-18	.50
	mm	22.4	127.0	96.5	108.0	151.6	31.8	44.5	20.8	7.1	12.2	106.4	62.5		
1-1/2"	IN.	1.25	6.50	4.77	5.00	8.85	1.81	1.75	.06	.45	.63	5.63	2.50	5/16-18	.50
	mm	31.8	165.1	121.2	127.0	224.8	46.0	44.5	1.5	11.4	16.0	143.0	63.5		
2"	IN.	1.50	7.00	4.72	6.00	8.85	2.07	2.25	.31	.45	.63	6.19	3.00	5/16-18	.50
	mm	38.1	177.8	119.9	152.4	224.8	52.6	57.2	7.9	11.4	16.0	157.2	76.2		
3"	IN.	2.31	8.00	6.80	7.50	11.00	3.09	3.50	.34	.45	1.20	7.13	3.75	3/8-16	.75
	mm	58.7	203.2	172.7	190.5	279.4	78.5	88.9	8.6	11.4	30.5	181.1	95.3		
4"	IN.	3.12	9.00	7.96	9.00	14.12	3.92	4.00	.30	.66	1.35	8.00	5.27	7/16-14	.75
	mm	79.2	228.6	202.2	228.6	358.6	99.6	101.6	7.6	16.8	34.3	203.2	133.9		
6"	IN.	4.50	10.50	9.44	11.00	18.00	4.70	4.00	.46	.91	1.87	9.44	6.63	7/16-14	.75
	mm	114.3	266.7	239.8	279.4	457.2	119.4	101.6	11.7	23.1	47.5	239.8	168.4		

ANSI 300 Lb. DIMENSIONS

NPS		A	B	C	D	E	F	G	H	J	K	L	M	N	T
1/2"	IN.	.50	5.50	2.50	3.75	5.06	.81	1.75	.71	.20	.32	4.00	1.88	5/16-18	Through Hole
	mm	12.7	139.7	63.5	95.3	128.5	20.6	44.5	18.0	5.1	8.1	101.6	47.8		
3/4"	IN.	.69	6.00	3.65	4.62	5.97	.94	1.75	.81	.28	.48	4.38	2.31	5/16-18	Hole
	mm	17.5	152.4	92.7	117.3	151.6	23.9	44.5	20.6	7.1	12.2	111.3	58.7		
1"	IN.	.88	6.50	3.80	4.88	5.97	1.25	1.75	.91	.28	0.48	5.69	2.56	5/16-18	.50
	mm	22.4	165.1	96.5	124.0	151.6	31.8	44.5	23.1	7.1	12.2	144.5	65.0		
1-1/2"	IN.	1.25	7.50	4.77	6.12	8.85	1.81	1.75	.62	.45	.63	6.56	3.06	5/16-18	.50
	mm	31.8	190.5	121.2	155.4	224.8	46.0	44.5	15.7	11.4	16.0	166.6	77.7		
2"	IN.	1.50	8.50	4.72	6.50	8.85	2.07	2.25	1.10	.45	.63	7.50	3.80	5/16-18	.50
	mm	38.1	215.9	119.9	165.1	224.8	52.6	57.2	27.9	11.4	16.0	190.5	96.5		
3"	IN.	2.31	11.12	6.80	8.25	11.00	3.09	3.50	1.18	.45	1.20	9.88	4.60	3/8-16	.75
	mm	58.7	282.4	172.7	209.6	279.4	78.5	88.9	30.0	11.4	30.5	251.0	116.8		
4"	IN.	3.12	12.00	7.96	10.00	14.12	3.92	4.00	.80	.66	1.35	10.68	5.77	7/16-14	.75
	mm	79.2	304.8	202.2	254.0	358.6	99.6	101.6	20.3	16.8	34.3	271.3	146.6		
6"	IN.	4.50	15.88	9.44	12.50	18.00	4.70	4.00	1.22	.91	1.88	14.38	7.38	7/16-14	.75
	mm	114.3	403.4	239.8	317.5	457.2	119.4	101.6	31.0	23.1	47.8	365.3	187.5		

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