

SPX[®]



M&J VALVE

Trunnion Mounted Ball Valve

Finding innovative ways to help the world meet its ever growing demand for energy is a key focus for SPX. As a multi-industry Fortune 500 manufacturer, we provide creative solutions that serve global energy markets in a myriad of ways. SPX is helping to meet that demand with a broad range of high-quality, custom-engineered systems and components that can also help improve efficiency and reduce the use of natural resources. We also supply a wide range of components — from air preheaters to filter systems. SPX off-the-shelf and customized solutions are supporting all phases of oil, gas and biofuel production, from exploration, extraction and processing to transport and storage.

M&J Valve was founded in 1962 by Marvin Grove and has been a leader in the pipeline valve industry since its inception. Now part of SPX Flow Technology, M&J Valve meets or exceeds the quality standards of our customers and the valve industry. With a product offering of slab and expanding through-conduit gate valves, axial surge valves and rotary control valves, piston, ball, and swing check valves. M&J Valve can provide a wide variety of flow control solutions for liquid, geothermal and gas markets. This combination of products, technical know-how and field experience has allowed for a history of product innovation which has positioned M&J Valve in a leadership position within the valve industry.

M&J Trunnion Mounted Ball Valve

The M&J Ball Valve is a three piece bolted body design, with internal trunnion blocks. The ball valve that provides an attractive solution for positive shut off requirements in oil & gas pipelines.

Product Benefits and Features:

Three Piece Bolted Body

The M&J Ball Valve is a three piece bolted body design. Internal trunnion blocks eliminate the need for the lower ball trunnion to penetrate the body cavity preventing a possible leak path.

Trunnion Mounted Ball

The valve's innovative design includes internal trunnion blocks which eliminate the need for the lower ball trunnion to penetrate the body cavity, preventing a possible leak path. The trunnions are integral with the ball and are precisely fitted into TFE lined bearing blocks supported within the body. The bearings absorb the side load generated by pressure acting on the ball. This design feature provides consistent torque and the exact location and support of the ball.

Double Block and Bleed

The valve possesses double block and bleed capability where the body cavity can be vented with the ball in the fully open or closed position. Vent fittings in the upper body and a combination vent / drain fitting in the bottom of the body provides this functionality.

Positive Stem Sealing Using Multiple Seals

The M&J Ball Valve standard stem seal design uses three seals to insure a positive seal. The primary seal is a backseated design made of reinforced TFE. Additionally, a secondary inner seal and an externally replaceable outer seal are used.

Unique "EN" Style Seat Ring Seal

The M&J Ball Valve incorporates a version of the patented "EN" style seat seal currently used on the M303 Gate Valve. A combination nylon and elastomer seal in the same face groove act as the primary seal in both high and low pressure differential conditions.

Emergency Seat Sealant Injection

Under standard operating conditions the M&J Ball Valve does not require any lubrication or routine maintenance. However, in the event the seat seal is damaged during operation, an emergency sealant injection system is standard on all valves. Sealant can be injected directly to the seat sealing area to effect a temporary emergency seal.

Anti-static Continuity for all Components

The M&J Ball Valve is designed to provide electrical continuity of all valve components to prevent the buildup of a static charge on internal components. Electrical continuity between parts such as the body and ball is ensured using springs.

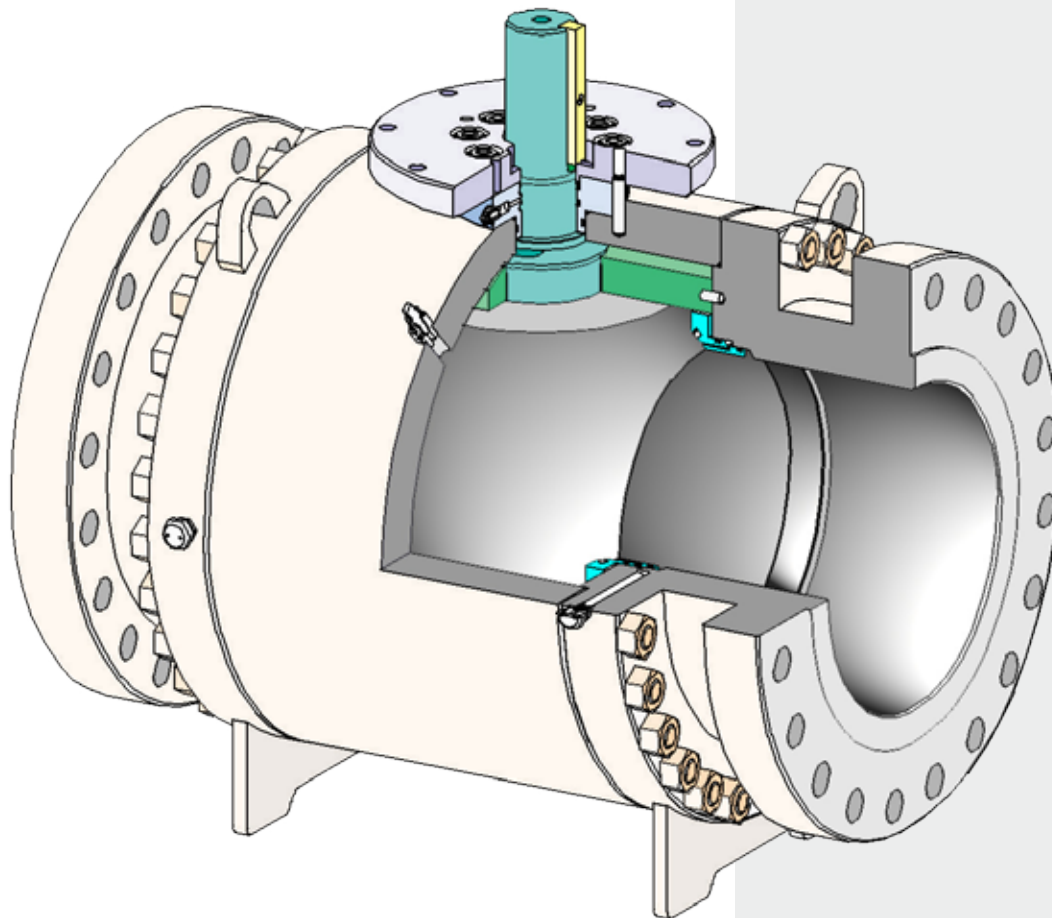
Meets API 6D

The through conduit full bore API 6D design assures unrestricted flow and allows both pigging and hot tapping.

Theory of Operation:

The M&J Ball Valve is a three piece bolted body trunnion mounted design based on our successful Ball-Trol™ control valve. Standard features include a positively retained stem, double block and bleed capability, anti-static design, and grease seal feature. The M&J Ball Valve is designed to provide ease of operation, low torque, and extended seal life and is available in both full and reduced bore design. The through conduit full bore API 6D design assures unrestricted flow and allows both pigging and hot tapping. All M&J Ball Valves are bi-directional and may be installed for flow in either direction. They are intended for use in horizontal or vertical pipelines with the valve stem in any direction.

The trunnion mounted design maintains the ball in an exact, fixed position supported by the trunnions. Bearings absorb the side load created by pressure acting on the ball. The seat rings float in the seat pocket and sealing force is generated both by springs and line pressure. The valve has double block and bleed capability in both open and closed position.



Typical Product Applications

Oil and Gas Production

Pressure Control
Water Injection
Cavern Storage



Gas Transportation

Metering & Regulating Stations
Temperature, Pressure and Flow Control
Launcher/Receiver
Natural Gas Pipelines
Emergency Shut Down
Off-Shore Platforms
Compressor Stations



Product Specifications:

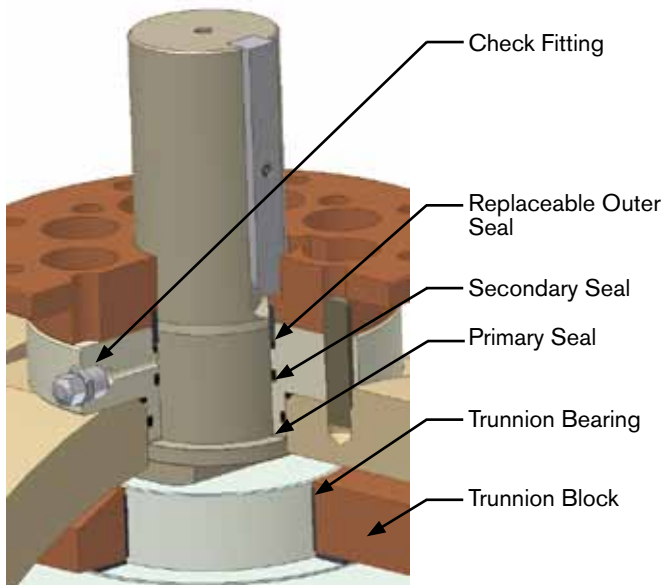
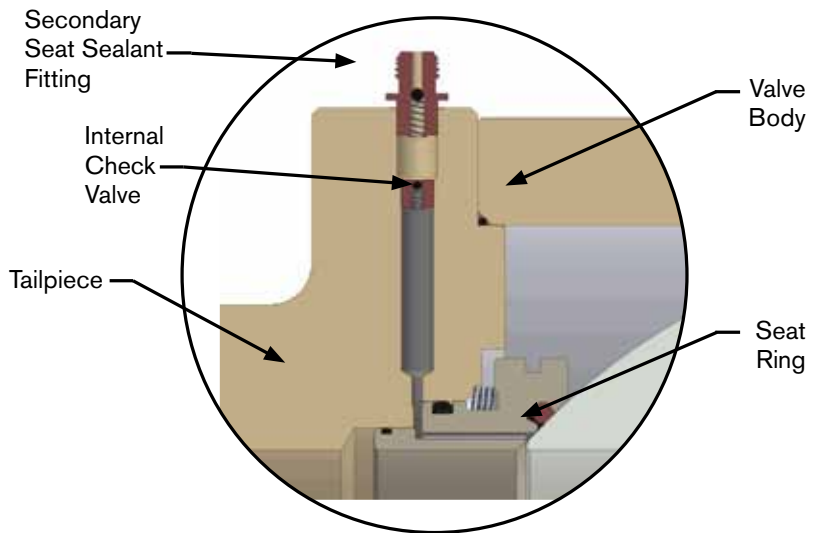
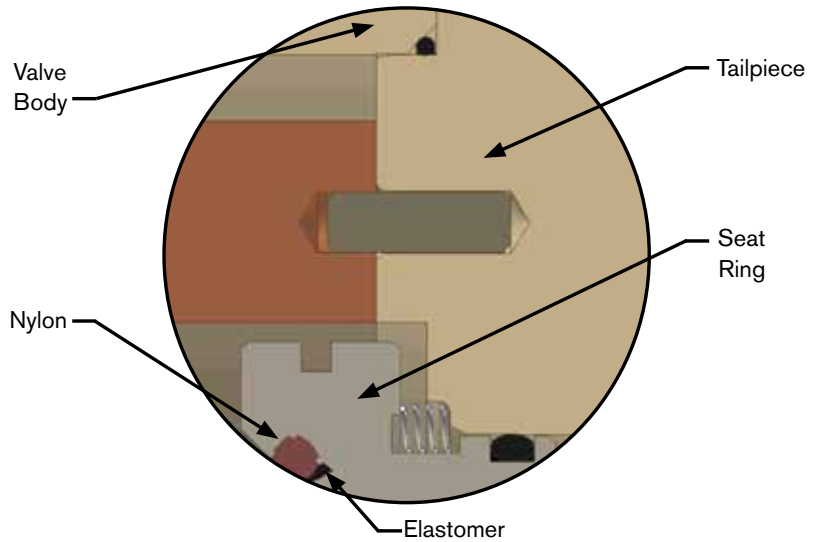
Seat Sealing Features

The standard seat seal is a patent pending pressure loaded floating seat design featuring coil or wave springs depending on valve size combined with both elastomer and nylon seals. This design provides excellent sealing capability at both high and low differential pressures.

The patent pending nylon/elastomer seal design acts as the primary seal in both high and low pressure differential. The nylon seal ring acts as a high pressure seal and as a resilient load bearing protective surface during ball rotation. The elastomer serves a dual purpose both as a low pressure seal and as a soft wiper to help minimize scoring of the ball by extraneous foreign particles.

The springs are used to provide an additional mechanical load to energize the seats under low pressure. Wave springs are used in valve sizes 6" through 14" while coil springs are used in 16" and larger sizes. For low pressure service the springs provide a uniform mechanical force exerted around the entire sealing surface of the seats as they are pressed against the ball. Coil springs used in the larger sizes are closely spaced around the seat ring in a special groove that allows compression of the springs. These springs are kept evenly spaced by a specially designed stainless steel band which also helps to protect the springs during installation and maintenance. Even spacing of the springs provides a uniform load of the seats on the ball.

Fluid and pressure are prevented from leaking past the seat ring by tail o-ring seals. This tail o-ring also acts as a piston seal allowing the seat ring to become pressure energized.



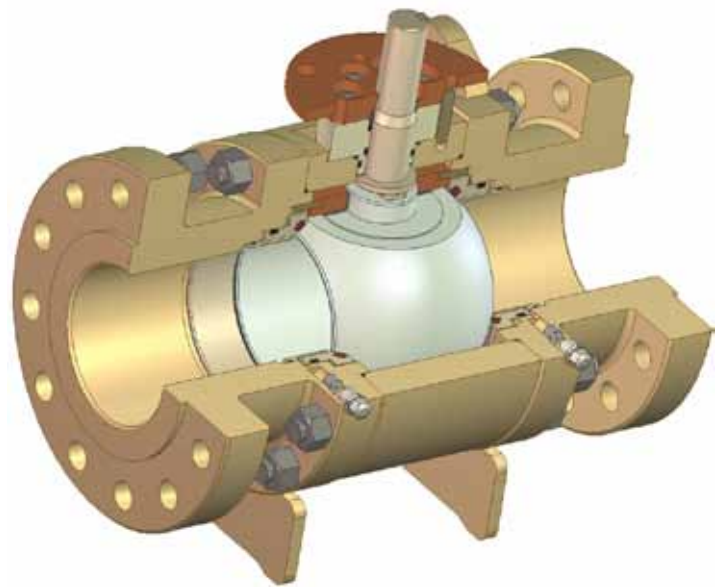
Emergency Seat Seal

Under standard operating conditions the M&J Ball Valve does not require any lubrication or routine maintenance. However, in the event the seat seal is damaged during operation, an emergency sealant injection system is standard on all valves. Sealant can be injected directly to the seat sealing area to affect a temporary emergency seal. If valves are to be buried, or are located in an inaccessible location, the grease sealant fittings can be extended per customer requirements.

Anti-Blowout Stem Design and Stem Seal

A positively retained anti-blowout stem is standard on all M&J Ball Valves. This feature allows the top works to be removed with the valve under pressure.

The standard stem seal design utilizes three seals to insure stem seal integrity. The primary seal is a backseated design using reinforced TFE. This seal is combined with a secondary inner seal and an externally replaceable outer seal. A port with a check fitting is provided between the inner and outer seals. This port allows seal integrity testing and venting prior to outer seal removal and replacement.



Trunnion Design

The M&J Ball Valve is a trunnion mounted design. The trunnions are fitted into TFE lined bearing blocks supported within the valve body. The trunnions are an integral part of the ball and precisely locate and support the ball while insuring low, consistent torque.

Double Block and Bleed Feature

The M&J Ball Valve is designed to allow for double block and bleed. The body cavity can be vented with the ball in either the full-open or full-closed position. This is possible with pressure on either or both the upstream or downstream sides of the valve. The valve body is furnished with a vent fitting located in the upper half of the body center section. There is a pipe plug in the bottom of the body for draining.

Fire Test Qualifications

The M&J Ball Valve has been designed to comply with international standards. This includes fire testing per ISO 10497. Fire test qualified design and certification can be provided when specified.

Valve Body Pressure Relief

When the M&J Ball Valve is in service, the flow media can be isolated and trapped in the body cavity when the valve is closed. At this time, the flow media can be subjected to thermal expansion and contraction. Thermal expansion can occur as the temperature rises causing the flow media to expand increasing the pressure of the isolated media in the body cavity. In order to avoid any excessive pressure build up in the body cavity, the M&J Ball Valve seats are designed to self relieve pressure build up allowing the trapped media to vent through the seat into the pipeline. This self-relieving feature is standard on all M&J Ball Valves.

Valve End Connections

The M&J Ball Valve can be supplied with a variety of end connections including flanged end, weld end, or flanged by weld end. Standard face to face dimensions are per API-6D. End flanges are supplied to meet B16.5, B16.47 Type A, or MSS-SP44 depending on valve size.

M&J Ball valves standard weld end is made from ASTM A105 having a specified minimum yield strength (SMYS) of 36,000 psi. This material can be field welded and matches the material of most common flanges. The standard weld preparation is bored to match the specified mating pipe. The bevel thickness is 1.5 times the mating pipe thickness allowing direct welding to mating pipe having a SMYS of 52,000 psi or less. Welding to higher strength pipe may require transition pieces (pups) or a change in specification of the valve end material.

Consult M&J Valve for special end connections including flanges and weld ends to match your requirements.

Spare Parts

While the M&J Ball Valve is designed to provide trouble free service, we recommend that the spare parts be inventoried in operations having numerous valves of a given size and an in-house maintenance program. Having spare parts on site will help to reduce downtime and maintain valves so that they provide years of service.

Spare parts may also be ordered directly from the factory. Please provide the valve serial number when contacting M&J Valve. The serial number can be found on the nameplate and is also stamped on the valve body, Identifying the serial number will expedite any request and ensure that correct information is provided.

Recommended Spare Parts

	Number of valves to be supported			
	<10	11-20	21-30	31-40
Ball	0	1	2	3
Seat Assembly	0	2	4	6
Stem	0	1	2	3
O-rings (set)	1	2	4	6
Wave Spring 6"-14"	0	2	4	6
Gear Box	0	0	1	1
Vent Fitting	1	1	2	2
Thrust Washer	2	4	4	6
Bearing	2	2	4	4


Warranty

M&J Valve warrants all equipment manufactured by it to be free from defects in workmanship and material, provided that such equipment was properly selected for the service intended, properly installed, and not misused. Equipment which is returned transportation prepaid to M&J Valve within 12 months from date of installation or 18 months from date of shipment, whichever expires first and if found by M&J Valve's inspection to be defective in workmanship or material will be repaired or replaced, at M&J Valve's option, free of charge and return-shipped lowest cost transportation prepaid.

NOTE: With exception to the warranty set forth above, M&J Valve makes no express or implied warranties, no warranty of merchantability, no warranty of fitness of purpose, and no other warranties which extend beyond the description on the face hereof.

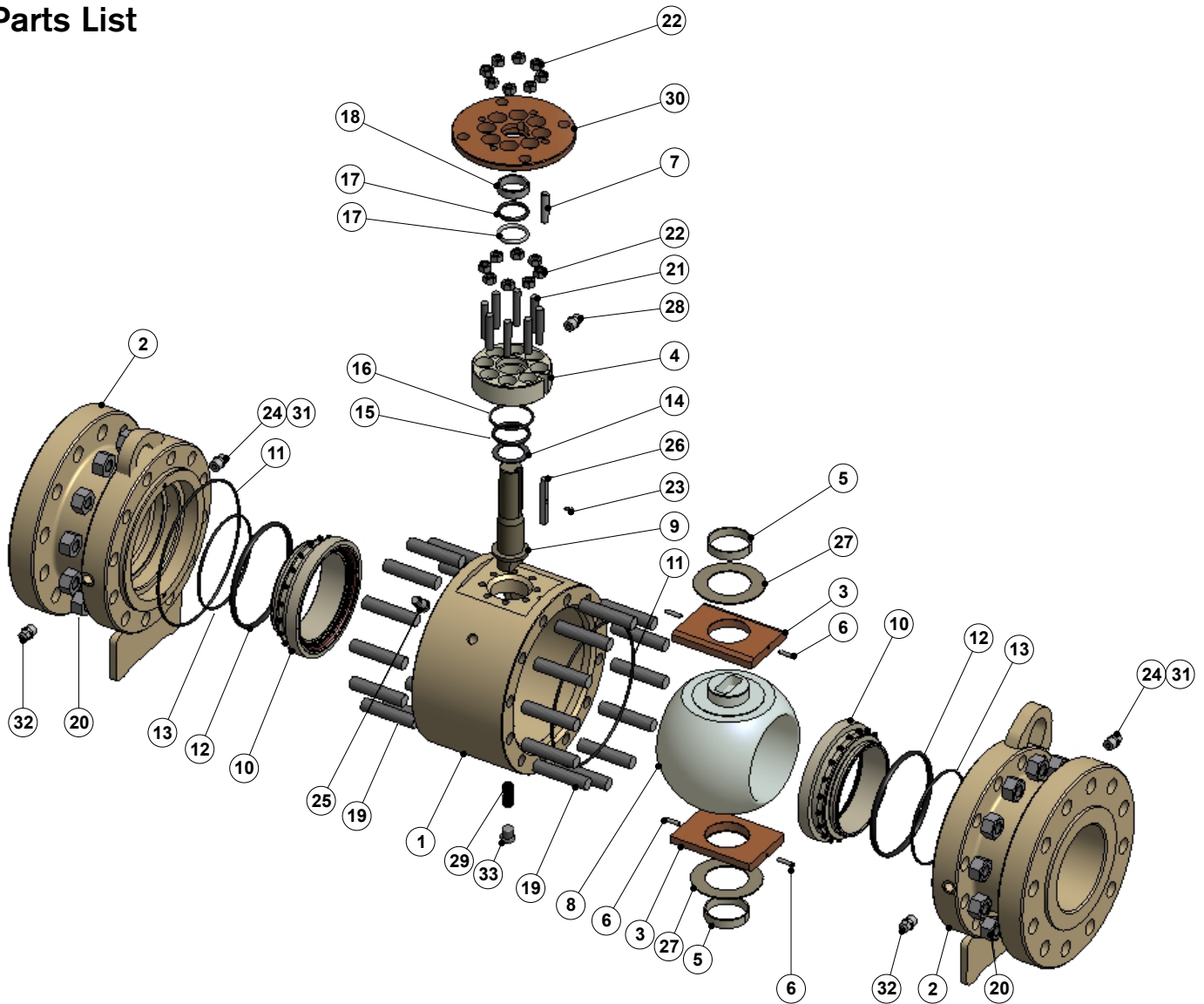
Nameplate

Nameplates on M&J Ball Valves provide all of the information necessary to identify the valve when contacting the factory for assistance or spare parts.

M & J Valve			Ball Valve			
AN SPX BRAND HOUSTON, TEXAS						
SIZE	CLASS	API	F/F	STYLE		
		6D				
BODY		BALL	SEAT	STEM	SEAL	
TEMP						
MOP						
DATE MFG	LICENSE NO		SERIAL NUMBER			
	6D-0079					
				ASSEMBLY NUMBER		

Exploded View

Parts List



1	BODY	1
2	TAILPIECE	2
3	BEARING BLOCK	2
4	STEM HOUSING	1
5	TRUNNION BEARING	2
6	DOWEL PIN (BEARING BLK)	4
7	DOWEL PIN (STEM HSG)	1
8	BALL	1
9	STEM	1
10	SEAT RING ASSEMBLY †	2
11	O-RING - BODY	2
12	O-RING - SEAT	2
13	O-RING - SEAT	2
14	STEM GASKET	1
15	O-RING - STEM HOUSING	1
16	O-RING - STEM HOUSING	1
17	O-RING - STEM	2

18	GLAND RING	1
19	STUD - BODY	VAR
20	HEX NUT - BODY	VAR
21	STUD - STEM HOUSING	VAR
22	HEX NUT - STEM HOUSING	VAR
23	SOCKET HEAD CAPSCREW	1
24	BUTTON HEAD FITTING	2
25	PRESSURE RELIEF VALVE	1
26	KEY	1
27	THRUST WASHER	2
28	PRESSURE RELIEF VALVE	1
29	SPRING (ANTI-STATIC)	1
30	ADAPTER PLATE	1
31	CHECK VALVE	2
32	HEX HEAD PIPE PLUG	2
33	HEX HEAD PIPE PLUG	1

† 6"-14" valves use wave springs, 16" and larger use coil springs.

Materials

Item No.	Part	Materials †			
		Standard Service -20°F to 180°F (-28°C to 82°C)	Sour Service NACE -20°F to 180°F (-28°C to 82°C)	Low Temp Service -50°F to 180°F (-45°C to 82°C)	Corrosive Service -20°F to 180°F (-28°C to 82°C)
1	Body	A105	A105	A350 LF2	A182 F316
2	Tailpiece	A105	A105	A350 LF2	A182 F316
3	Bearing Block	A516 Gr. 70	A516 Gr. 70	A516 Gr. 70	A240 F316
4	Stem Housing	A105	A105	A350 LF 2	A182 F316
5	Trunnion Bearing	DU	DU	DU	DU
6	Dowel Pin (Bearing Block)	Carbon Steel	Carbon Steel	316 SST	316 SST
7	Dowel Pin (Stem Housing)	Carbon Steel	Carbon Steel	316 SST	316 SST
8	Ball	A105/ENP	A105/ENP	A350 LF2	A182 F316
9	Stem	AISI 4140/ENP	AISI 4140/ENP	A564 17-4PH H1150	A564 17-4PH H1150
10	Seat Ring Assembly	A105/ENP Nylon/Elastomer	A105/ENP Nylon/Elastomer	A105/ENP Nylon/Elastomer	A105/ENP Nylon/Elastomer
11	O-Ring - Body	HNBR	HNBR	Low Temperature Nitrile	HNBR
12	O-Ring - Seat	HNBR	HNBR	Low Temperature Nitrile	HNBR
13	O-Ring - Seat	HNBR	HNBR	Low Temperature Nitrile	HNBR
14	Stem Gasket	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE
15	O-Ring - Stem Housing	HNBR	HNBR	Low Temperature Nitrile	HNBR
16	O-Ring - Stem Housing	HNBR	HNBR	Low Temperature Nitrile	HNBR
17	O-Ring - Stem	HNBR	HNBR	Low Temperature Nitrile	HNBR
18	Gland Ring	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE
19	Stud - Body	A193 B7	A193 B7M	A320 Gr. L7	A193 Gr. B8M
20	Hex Nut - Body	A194 2H	A194 2HM	A194 Gr. 7	A194 Gr. 8M
21	Stud - Stem Housing	A193 B7	A193 B7M	A320 Gr. L7	A193 Gr. B8M
22	Hex Nut - Stem Housing	A194 2H	A194 2HM	A194 Gr. 7	A194 Gr. 8M
23	Socket Head Capscrew	Alloy Steel	Alloy Steel	Alloy Steel	Alloy Steel
24	Button Head Fitting	AISI 4140	AISI 4140	18-8 SST	18-8 SST
25	Pressure Relief Valve	Carbon Steel	AISI 4140	18-8 SST	18-8 SST
26	Key	Steel	Steel	Steel	Steel
27	Thrust Washer	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE	Glass Filled TFE
28	Pressure Relief Valve	AISI 4140	AISI 4140	316 SST	316 SST
29	Springs	Inconel X750	Inconel X750	316 SST	316 SST
29	Spring (Anti-static)	302 SST	302 SST	302 SST	302 SST
30	Adapter Plate	Carbon Steel	Carbon Steel	A516 Gr. 70	Carbon Steel
31	Check Valve	316 SST	316 SST	316 SST	316 SST
32	Hex Head Pipe Plug	A105	A105	316 SST	316 SST
33	Hex Head Pipe Plug	A105	A105	316 SST	316 SST

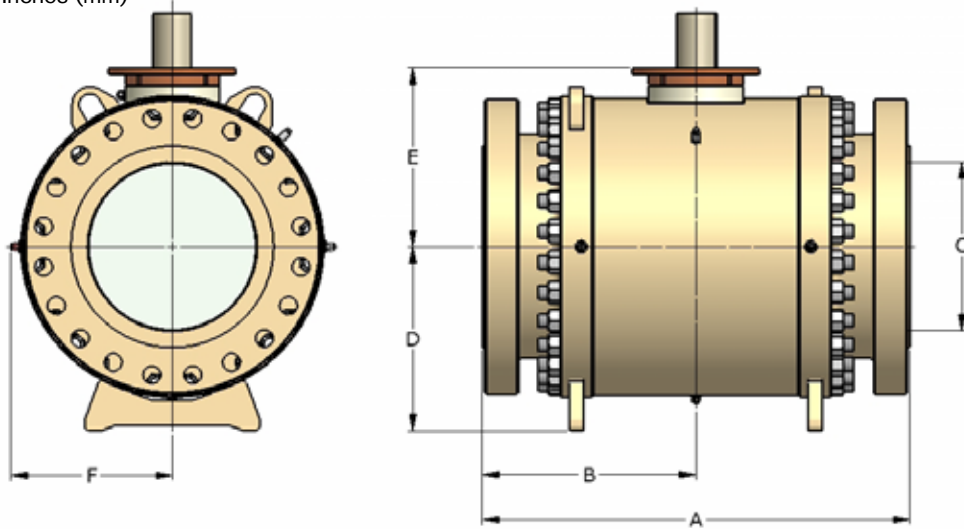
† Other materials and temperature ratings available, contact factory for additional information

SPX reserves the right to change materials without notice.

Dimensional Data

For M&J Full Bore Ball Valves

Dimensions in Inches (mm)



Size (DN)	A			B			C		D	E
	150	300	600	150	300	600	RF	WE		
6"	15.50	15.88	22.00	7.75	9	11.00	6.00	*	9.88	8.56
(150)	(394)	(403)	(559)	(197)	(229)	(279)	(152)	*	(251)	(217)
8"	18.00	19.75	26.00	9.00	9.88	13.00	8.00	*	11.19	10.23
(200)	(457)	(502)	(660)	(229)	(251)	(330)	(330)	*	(284)	(260)
10"	21.00	22.38	31.00	10.50	11.19	15.50	10.00	*	13.00	12.19
(250)	(533)	(569)	(787)	(267)	(284)	(394)	(254)	*	(330)	(310)
12"	24.00	25.50	33.00	12.00	12.75	16.50	12.00	*	14.63	13.88
(300)	(610)	(648)	(838)	(305)	(324)	(419)	(305)	*	(372)	(353)
14"	27.00	30.00	35.00	13.50	15.00	17.50	13.25	*	15.25	14.94
(350)	(686)	(762)	(889)	(343)	(381)	(445)	(337)	*	(387)	(379)
16"	30.00	33.00	39.00	15.00	16.50	19.50	15.25	*	16.81	16.38
(400)	(762)	(838)	(991)	(381)	(419)	(495)	(387)	*	(427)	(416)
18"	34.00	36.00	43.00	17.00	18.00	21.50	17.25	*	18.81	19.63
(450)	(864)	(914)	(1092)	(432)	(457)	(546)	(438)	*	(478)	(499)
20"	36.00	39.00	47.00	18.00	19.50	23.50	19.25	*	20.44	21.163
(500)	(914)	(991)	(1194)	(457)	(495)	(597)	(489)	*	(519)	(537)
24"	42.00	45.00	55.00	21.00	22.50	27.50	23.25	*	23.63	24.09
(600)	(1067)	(1143)	(1397)	(533)	(572)	(699)	(591)	*	(600)	(612)
30"	51.00	55.00	65.00	25.50	27.50	32.50	29.00	*	28.38	29.56
(750)	(1295)	(1397)	(1651)	(648)	(699)	(826)	(737)	*	(721)	(751)
36"	60.00	68.00	82.00	30.00	34.00	41.00	34.50	*	33.00	41.69
(900)	(1524)	(1727)	(2083)	(762)	(864)	(1041)	(876)	*	(838)	(1059)
42"	82.00	82.00	85.63	41.00	41.00	42.82	40.25	*	34.25	38.31
(1050)	(2083)	(2083)	(2175)	(1041)	(1041)	(1087)	(1022)	*	(870)	(973)

Note: Dimensions are subject to change without notice.

Face to face dimensions not listed in industry standards are subject to change without notice.

Weld end bevel and ID depends on pipe wall thickness per customer specifications

Weight Chart

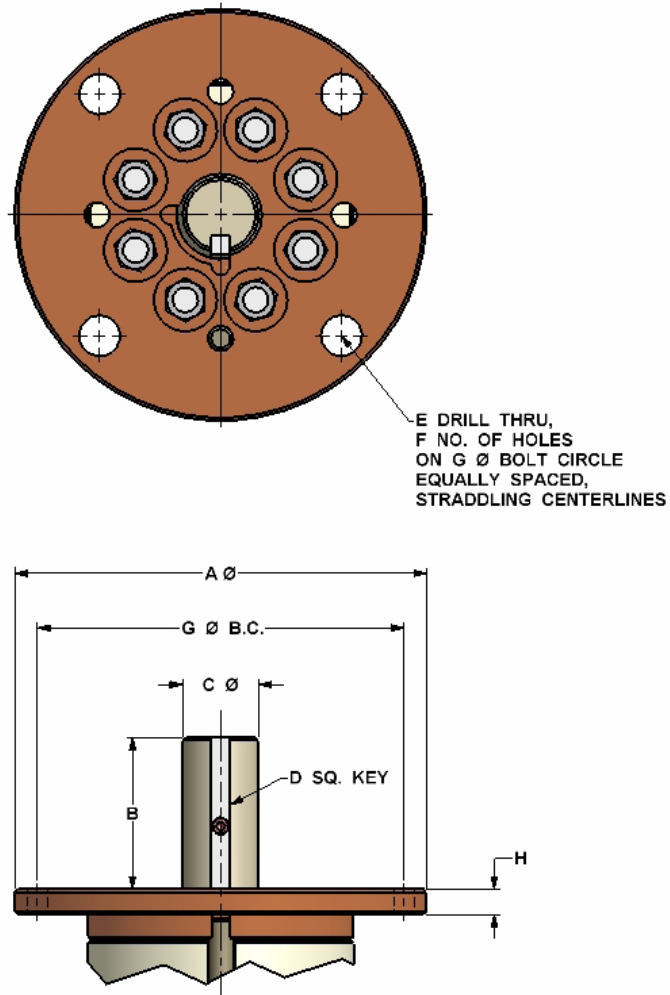
Bare Stem Ball Valve

Weight in Pounds (KGS)

Size (DN)	Class 150		Class 300		Class 600	
	RF	WE	RF	WE	RF	WE
6"	340	325	390	365	500	445
(150)	(154)	(147)	(177)	(166)	(227)	(202)
8"	670	650	750	710	965	890
(200)	(304)	(295)	(340)	(322)	(438)	(404)
10"	1195	1180	1275	1225	1650	1525
(250)	(542)	(535)	(578)	(556)	(748)	(692)
12"	1735	1700	1860	1775	2295	2155
(300)	(787)	(771)	(844)	(805)	(1041)	(977)
14"	2145	2090	2350	2235	2770	2600
(350)	(973)	(948)	(1066)	(1014)	(1256)	(1179)
16"	3010	2945	3280	3140	3875	3645
(400)	(1365)	(1336)	(1488)	(1424)	(1757)	(1653)
18"	4330	4255	4710	4545	5545	5490
(450)	(1964)	(1930)	(2136)	(2061)	(2515)	(2490)
20"	5765	5665	6205	6005	7405	7065
(500)	(2615)	(2570)	(2814)	(2723)	(3358)	(3204)
24"	9015	8905	9630	9335	11595	11085
(600)	(4088)	(4039)	(4367)	(4234)	(5259)	(5027)
30"	16493	16273	17348	16781	19884	19106
(750)	(7480)	(7380)	(7868)	(7610)	(9018)	(8665)
36"	26950	26707	28348	27541	32493	31357
(900)	(12222)	(12112)	(12856)	(12490)	(14736)	(14220)
42"	31450	27990	35481	31223	46994	41829
(1050)	(14265)	(12696)	(16093)	(14163)	(21316)	(18973)

Note: Weights are subject to change without notice.

Topworks
Class 150 – 600



Dimensions

Sizes	A	B	C	D	E	F	G	H
6	8.13	3.00	1.495	.375	.81	8	6.75†	.50
8	9.00	3.00	1.995	.500	.81	8	7.50†	.50
10	11.75	4.88	2.370	.625	.69	8	10.25†	.63
12	11.75	4.88	2.370	.625	.69	8	10.25†	.63
14	11.75	5.00	3.495	.875	.69	8	10.00	.63
16	11.75	5.00	3.495	.875	.69	8	10.00	.63
18	13.75	5.00	3.495	.875	.81	8	11.73	.75
20	13.75	5.00	3.495	.875	.81	8	11.73	.75
24	16.25	5.00	4.745	1.25	1.06	8	14.02	1.00
30	21.75	7.50	5.995	1.50	1.38	12	19.02	1.25
36	21.75	7.50	5.995	1.50	1.38	12	19.02	1.25
42	21.75	7.50	5.995	1.50	1.38	12	19.02	1.25

† Adapter flange required for ISO mounting.

Torque Chart

Torque in inch pounds (Torque in Newton-Meter)

Pressure in pounds per square inch - PSI (pressure in Kg/cm³)

Pressure	Valve Size											
	6	8	10	12	14	16	18	20	24	30	36	42
0	1910	3390	5300	7630	10300	13750	17170	21200	30550	47700	68700	93490
(0)	(216)	(383)	(599)	(862)	(1164)	(1554)	(1939)	(2395)	(3452)	(5389)	(7762)	(10563)
100	2180	3910	6105	8805	11870	15595	19295	25810	37520	59400	85900	113285
(7)	(246)	(442)	(690)	(995)	(1341)	(1762)	(2180)	(2916)	(4239)	(6711)	(9705)	(12800)
200	2450	4430	6920	9980	13350	17630	21420	30420	44520	71100	103100	133085
(14)	(277)	(501)	(782)	(1128)	(1508)	(1992)	(2420)	(3437)	(5030)	(8033)	(11649)	(15037)
300	3720	4950	7720	11160	14835	19650	23545	35030	51205	82800	120300	152880
(21)	(420)	(559)	(872)	(1261)	(1676)	(2220)	(2660)	(3958)	(5785)	(9355)	(13592)	(17273)
400	2995	5470	8530	12330	16315	21680	25665	39640	58500	94500	137500	172680
(28)	(338)	(618)	(964)	(1393)	(1843)	(2670)	(2900)	(4479)	(6610)	(10677)	(15535)	(19510)
500	3265	5985	9335	13505	17795	23705	27790	44250	65490	106200	157700	192475
(35)	(369)	(676)	(1055)	(1526)	(2011)	(2678)	(3140)	(5000)	(7399)	(11999)	(17818)	(21747)
600	3535	6505	10140	14680	19275	25735	29915	48860	72485	117900	171900	212270
(42)	(399)	(735)	(1146)	(1659)	(2178)	(2908)	(3380)	(5520)	(8090)	(13321)	(19422)	(23983)
700	3810	7025	10945	15855	20760	27760	32040	53470	79475	129600	189100	232070
(49)	(430)	(794)	(1237)	(1791)	(2346)	(3136)	(3620)	(6041)	(8979)	(14642)	(21365)	(26220)
800	4080	7545	11755	17030	22240	29790	34160	58080	86470	141300	206300	251865
(56)	(461)	(852)	(1328)	(1924)	(2512)	(3366)	(3860)	(6562)	(9770)	(15965)	(23309)	(28457)
900	4350	8060	12560	18205	23720	31820	36285	62690	93460	153000	223500	271660
(63)	(491)	(911)	(1419)	(2057)	(2680)	(3595)	(4100)	(7083)	(10560)	(17287)	(25252)	(30694)
1000	4625	8580	13365	19380	25205	33845	38410	67300	100455	164700	240700	291460
(70)	(523)	(969)	(1510)	(2190)	(2848)	(3824)	(4340)	(7604)	(11350)	(18609)	(27195)	(32931)
1100	4895	9100	14175	20555	26685	35875	40535	71910	107500	176400	257900	311255
(77)	(553)	(1028)	(1602)	(2322)	(3015)	(4053)	(4580)	(8125)	(12146)	(19931)	(29139)	(35167)
1200	5165	9620	14980	21730	28165	37900	42660	76515	114500	188100	275100	331050
(84)	(584)	(1087)	(1693)	(2455)	(3182)	(4282)	(4820)	(8645)	(12937)	(21252)	(31082)	(37404)
1300	5435	10140	15785	22905	29650	39930	44780	81125	121500	199800	292300	350850
(91)	(614)	(1146)	(1783)	(2588)	(3350)	(4511)	(5059)	(9166)	(13728)	(22574)	(33025)	(39641)
1400	5710	10655	16595	24080	31130	41955	46905	85735	128500	211500	309500	370645
(98)	(645)	(1204)	(1875)	(2721)	(3517)	(4740)	(5300)	(9687)	(14518)	(23896)	(34969)	(41877)
1500	5980	11175	17400	25255	32610	43985	49030	90345	135500	223200	326700	390440
(105)	(676)	(1263)	(1966)	(2853)	(3684)	(4970)	(5540)	(10208)	(15309)	(25218)	(36912)	(44114)

Torques listed above represent expected actual breakaway torque at temperatures from 0°F (-18°C) to 250°F (121°C). To obtain expected torques at lower temperatures, multiply the above values by 1.5.

NOTE: These torques do not contain service or safety factors. Actuator should be made based on experience and appropriate service/safety factors.

Model Number Key

The M&J trunnion mounted ball valve model number consist of three numbers. The first number from the left defines the base model, the second number defines the pressure class and the third number defines end connection type.

B	5	4
Model Identifier for Trunnion Mounted Ball Valve	1 = Class 150 2 = Class 300 4 = Class 400 5 = Class 600 6 = Class 900 7 = Class 1500	4 = RF 5 = RJ 6 = WE 7 = RF x WE 8 = RJ x WE

M&J Quality Policy

M&J Valve is committed to providing products and services that meet or exceed API and customer requirements, and strive to constantly improve customer satisfaction through employee participation.



Notes:

Notes:

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