



# ***McCANNA/MARPAC J-Series Regular Port and Full Port Flanged Ball Valves***



*Experience In Motion*

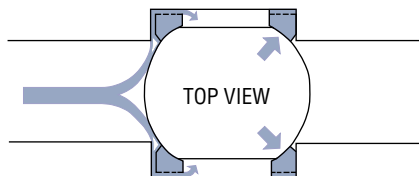


## ***J-Series Flanged Ball Valves: Designed to Automate, Control, Contain and Shut Off Your Process***

*Flowserve McCANNA/MARPAC J-Series is a standardized line of flanged ball valves in sizes ½"–10" with flange ratings of ANSI Class 150 and 300. The combination of elements of this standardization provides a manually operated or automated valve which exceeds the production requirements of your process. Such requirements include high cycle operation, pressure integrity, material compatibility, speed of operation, automatic control and high temperature endurance.*

### ***Tight Shutoff***

J-Series valves are two-way flow ball valves designed to seal bi-directionally against resilient seats. The ball is forced downstream under pressure against the downstream seat to effect and maintain a seal. The resiliency of the seats is a result of design as well as the characteristics of materials used. Consequently, the valve will give bubble-tight shutoff throughout a long service life. The seats are also designed to perform a wiping action during each cycle. This wiping action cleans foreign materials off both the seat and ball assuring leak-tight sealing.



A pair of patented seats with relief slots makes downstream sealing possible. The result is less friction, lower operating torque, less seat wear, and longer service life. The patented seats also permit the valve to operate at a higher pressure differential with lower torques than double sealing valves in which there is sealing between both seats and the ball.

Downstream sealing prevents seat damage and lowers operating torque while providing full bidirectional capability. The McCANNA/MARPAC design results in smoother, more efficient valve operation.

### ***Leak Tight Stem Design***

McCANNA/MARPAC J-Series valves outperform globe and gate valves. Not only are they easier to automate, but best of all, they won't leak as sliding stem valves often do. The no-leak rotary stem seal features a bottom entry, adjustable, self-compensating stem design. A hole in the ball's stem slot prevents any possibility of damage due to trapped cavity pressure when the ball is open. The stem seal package consists of one or two thrust washers and one or a series of stem seal rings, depending on valve size. On ½"–2" valves, a pair of Belleville washers acts as a spring to compensate for wear and thermal expansion. On larger valves, the deep stuffing box with additional packing provides resiliency.



### ***Fire Rated Valves***

In recent years, many factors have contributed to an increased demand for fire safe valves. Engineers and plant managers have faced the rising cost of insurance against liability and property damage. There has been an across the board tightening of environmental and safety regulations.

Special models of J-Series flanged ball valves meet virtually all fire safety standards for structural integrity and external and through-valve shutoff:

- API 607 Edition 4
- BS-5351 – Anti-Static
- FM 7440 – Fire Safe Valves

### ***Automation Pneumatic, Electric and Computer Compatible Controls***

Easy modulating or on/off automation is assured by our Series 39 pneumatic or Series 75 electric actuators.

Both are backed by our exclusive two-year warranty. The Series 39 actuator is the toughest and most reliable rotary actuator available. Also available with positioners (including the new Pulsair® loop-powered positioner), that provides accurate control for your system.

Mount a Series 75 electric actuator and you have a high-performance automated valve package specifically designed for computer or PLC control. For proportional control, the Series 75 can be operated by pulses or with an analog signal. A variety of options allow you to select the performance criteria and feedback information you desire. The Series 75 is available with TYPE 1, 4, 7 or 9 enclosures.



### ***The Standards***

API 6D approval has been granted to Flowserve McCANNA/MARPAC for 2"–8" carbon steel and stainless steel flanged valves. These valves meet the American Petroleum Institute's rigid requirements. Available as an option by specifying API 6D when ordering. Certification is available upon request.

NACE MR-01-75 a material standard developed by the National Association of Corrosion Engineers, requires that metallic components of oil field equipment exposed to sour environments be sulfide stress cracking (SSC) resistant. Prevention of SSC is assured by proper selection of materials of controlled composition and hardness.

API 607 Edition 4 is a fire test developed by the Refinery Division of the American Petroleum Institute (API). This standard measures the ability of a ball valve in the closed position to retard fire propagation. Valves meeting API 607 are designed to inhibit and control fires that are fueled by volatile fluids.



## Design Features

### Design Benefits

Flowserve McCANNA/MARPAC J-Series Flanged Ball Valves provide simple, compact, economical solutions to the majority of flow control applications. These end-entry valves offer important advantages, including quick-turn operation, minimum pressure drop, two-way flow, plus preloaded seats for positive, leak-tight closure.

### New! Reduced Torque Seats

McCANNA/MARPAC's new seat configuration offers positive shut-off and significantly reduced torque. This combination continues McCANNA's well known reputation of sealing difficult applications with the added benefit of a lower torque requirement. This reduction also allows smaller actuators to be used in automated process systems.

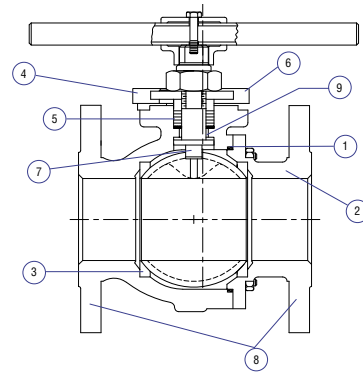
### Superior Sealing

#### Protected Seats

McCANNA/MARPAC's J-Series Flanged Ball Valves are designed seats in recesses, to control seat movement and increase seat life.

#### The End/Body Seals

J-Series Flanged Ball Valves feature enclosed end/body seals to prevent cold flow, improve sealing and isolate the spacer from media.



### J-Series Flanged, Full Port

#### Sizes 2"–8"

1. Encapsulated body seal improves sealing and prevents cold flow.
2. Flange connector standards complies with international.
3. Seats in machined body recesses extend seat life. Design automatically compensates for work and thermal fluctuations.
4. OSHA lockout
5. Packing sets maximize seal integrity and eliminate problems commonly associated with multiple top loaded packing designs.
6. Integral mounting pad ISO5211.
7. Internal entry stem for maximum safety, blowout proof.
8. Standard flange finish 125–250 microinches (Ra) compatible with industry approved gaskets.
9. Anti-static stem ensures electrical continuity between ball and body.

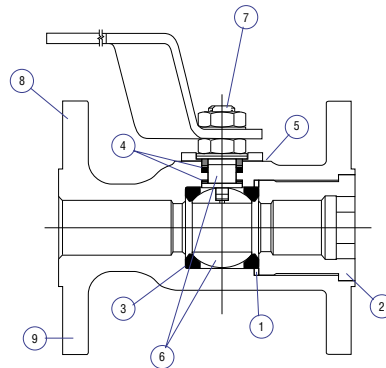


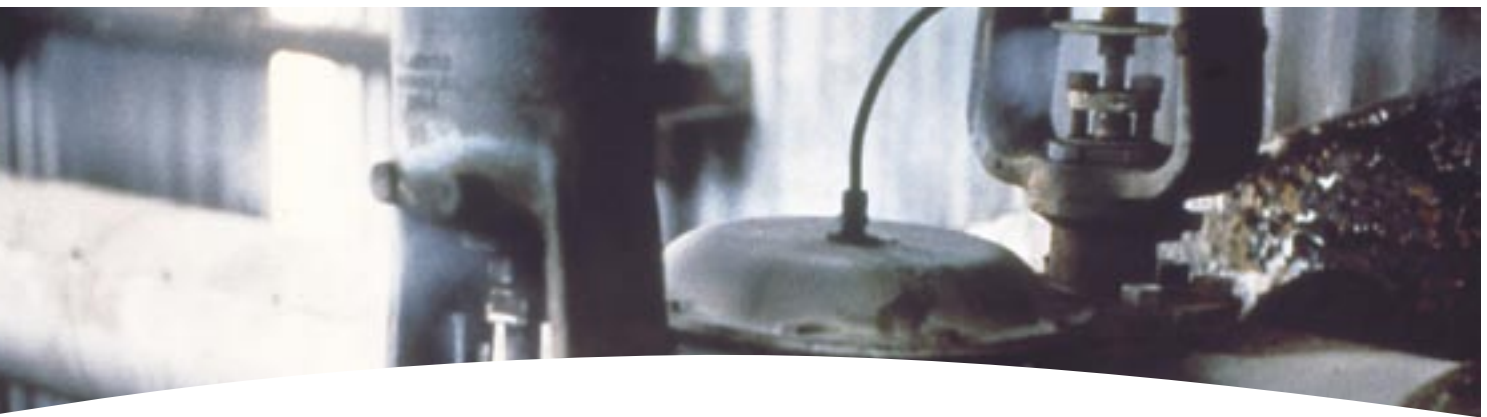


### ***J-Series Flanged Unibody***

#### **Regular Port ½"-10" and Full Port ½"-1½"**

1. Encapsulated body seal improves sealing and prevents cold flow.
2. Notched insert allows easy access to valve components for valve maintenance; encapsulated insert seal ensures sealing.
3. TFE or RTFE seats for maximum sealing and minimized maintenance.
4. RTFE stem thrust seal and flexible graphite packing rings ensure tight sealing at low compressive force.
5. Integral mounting pad allows easy automation.
6. Stainless steel trim standard.
7. Internal entry stem for maximum safety.
8. Unibody design for maximum seal integrity.
9. Standard flange finish 125–250 microinches (Ra) compatible with industry approved gaskets.
10. FIRE-GARD® version standard to requirements of API 607 4th Edition.





## **Applications and Services**

### **Performance to Match Your Process**

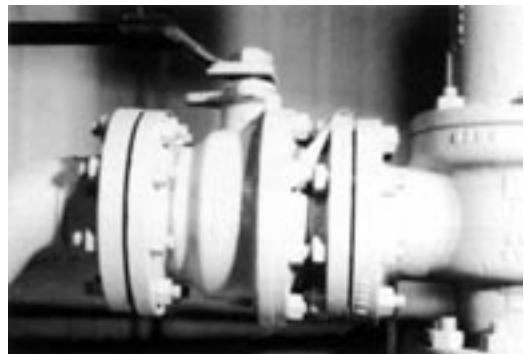
A wide variety of body, seat and seal materials coupled with our advanced seat technology means dependable, high cycle control on steam, petroleum products, chemicals, and abrasive liquids.

Flowserve McCANNA/MARPAC J-Series flanged ball valves are used for manual on/off operation with lever handles or gear operators. They are also easy to automate pneumatically or electrically. In addition, these valves can be very flexible in operation. You can open and close them as frequently as necessary and at any speed you choose. Closing too rapidly, however, may cause pressure shock (hammer) in the piping system.

As for special applications, McCANNA/MARPAC can provide flanged valves to handle them. Special applications include toxic chemicals, cryogenics, viscous fluids, vacuum sealing, chlorine, steam and high cycle production. For the J-Series flanged valve solution to your control problems, contact your local McCANNA/MARPAC stocking distributor or area sales manager.

### **Secondary Metal Seats Provide Fire Safety**

Machined into the seat area of the body cavity are raised metal lips which perform several functions. In normal service they help support the seat, to prevent them from deforming and also help shield them from abrasive media. If the valve should be subjected to a fire, the lip acts like a dam to prevent the softening downstream seat from being forced into the port and creating a leak. When the seat is totally sublimated in a fire, the lip acts as a secondary seat forming the metal to metal seal with the ball.



### **Services**

Specifically designed and prepared McCANNA/MARPAC J-Series Flanged Valves are available for special services, including:

#### **Chlorine Service**

McCANNA/MARPAC J-Series Flanged Ball Valves are available prepared for chlorine service. Chlorine service preparation includes ball cavity-to-upstream pressure relief (which makes the valve unidirectional), internal entry stems, port position indication, flow direction markings, dry assembly, dry leak testing and cleaning and polyethylene packaging. Ball and stem material selection is dependent upon moisture content (Monel or Hastelloy C).

#### **Oxygen Service**

McCANNA/MARPAC J-Series Flanged Ball Valves are available prepared for oxygen service. Oxygen service preparation includes removal of all burrs, chips and other foreign matter. All valves are then subjected to degreasing and 100% "black light" inspection. The valves are then assembled and



nitrogen tested. All oxygen service assemblies are then polyethylene packaged. While other materials are available upon request, 316 stainless steel is the standard material for oxygen service.

#### **Sour Gas Service (NACE)**

McCANNA/MARPAC J-Series Flanged Ball Valves are available prepared for sour gas service. Such valves are designed and manufactured in accordance with NACE Standard MR-01-75 Class 3 (current revision). The valves' materials of construction and their processing are such that maximum hardness requirements of any wetted or critical part are controlled by NACE Standards. Carbon Steel valves are provided with 316 Stainless Steel balls, stems and glands. For buried or insulated service or certification beyond general design and manufacturing considerations, please contact Flowserve.

#### **Flammable or Hazardous Service**

All standard McCANNA/MARPAC J-Series Flanged Ball Valves are available in FIRE-GARD configuration. Designed and tested to the exacting requirements of API 607 4th Edition, MARPAC FIRE-GARD Ball Valves feature secondary metal-to-metal seating and high temperature body seals and packing.

#### **Steam Service**

Standard J-Series Flanged Ball Valves with certain body, seat and trim materials handle low-pressure saturated steam services to 150 psig at 366°F and, when supplied in the thermopac version, up to 250 psig at 406°F.

J-Series Flanged Ball Valves have a 1/8" hole in the ball stem slot to ensure cavity pressure relief in the open position.

Generally, application restrictions are based on the type of seat and seal materials used. Seat materials available on McCANNA/MARPAC J-Series Flanged Ball Valves allow you to use ball valves in steam or other services to take advantage of the many inherent ball valve benefits (positive shutoff, easy maintenance and convenient automation). For valve and seat recommendations, please contact Flowserve with specific application information.

Some successful applications are:

- Hot Oil
- Thermal Fluid Service
- Hydrocarbons
- Solvents
- Vacuum
- Pump Isolation

### *E-Series Flanged Ball Valve Model Identification*

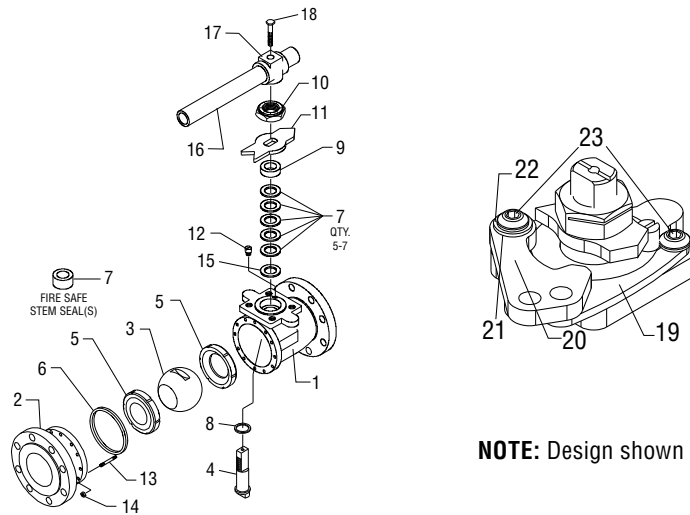
Size		Class 150		Class 300	
in.	mm	Regular Port	Full Port	Regular Port	Full Port
½	15	JRP1	JFP1	JRP3	JFP3
¾	20	JRP1	JFP1	JRP3	JFP3
1	25	JRP1	JFP1	JRP3	JFP3
1½	40	JRP1	JFP1	JRP3	JFP3
2	50	JRP1	JFP1	JRP3	JFP3
2½	63.5	N/A	JFP1	N/A	JFP3
3	80	JRP1	JFP1	JRP3	JFP3
4	100	JRP1	JFP1	JRP3	JFP3
6	150	JRP1	JFP1	JRP3	JFP3
8	200	JRP1	JFP1	JRP3	JFP3
10	250	JRP1	JFP1	JRP3	JFP3

### *C<sub>v</sub> Values*

Size	RP	FP
½"	8	32
¾"	12	54
1"	32	105
1½"	82	275
2"	120	501
2½"	N/A	780
3"	350	1,158
4"	720	2,118
6"	1,020	5,047
8"	1,800	9,337
10"	2,970	18,500



## JFP1/JFP3 Parts Identification and Materials of Construction

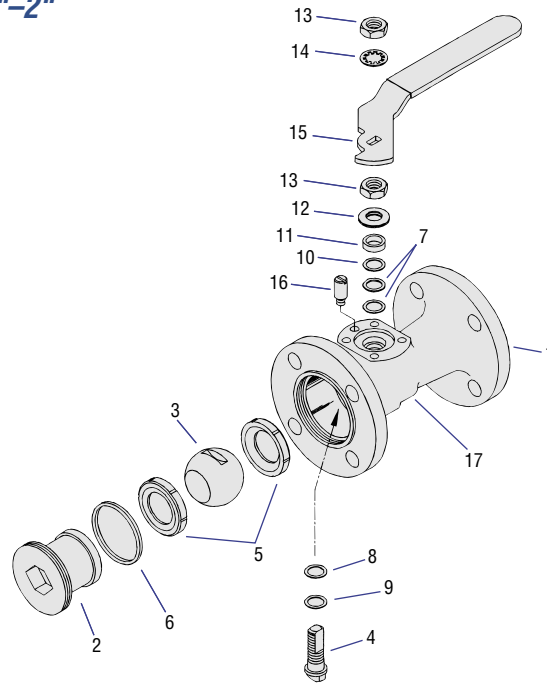


**NOTE:** Design shown is for 3"–8" sizes.

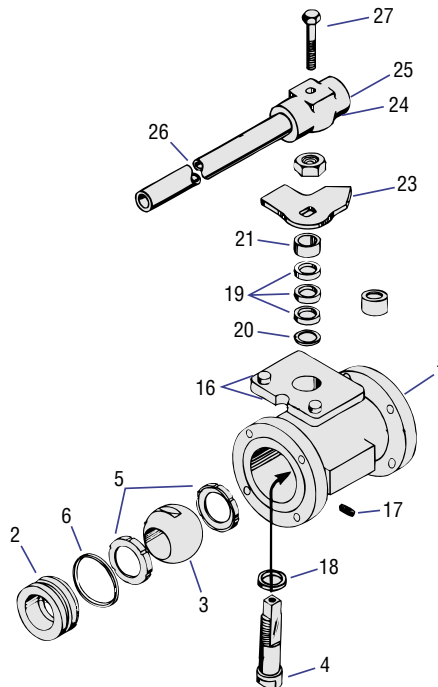
Part No.	Part Name	Materials
1	Body	Carbon Steel ASTM-A216 WCB Stainless Steel ASTM-A351 CF8M
2	End Connector	Carbon Steel ASTM-A216 WCB Stainless Steel ASTM-A351 CF8M
3	Ball	Stainless Steel ASTM-A351 CF8M or ASTM A479-316, Cond. A
4	Stem	Stainless Steel ASTM-A479-316 Condition A
5	Seat	TFE, Reinforced TFE, Polyfill
6	Body Seal	TFE, Z (Graphite) Seal
7	Stem Seals	Reinforced TFE, Graphite
8	Thrust Bearing	Reinforced TFE, Graphite
9	Follower	Stainless Steel ASTM-A276-316 Condition A or A269-300
10	Retaining Nut	Carbon Steel, Zinc Plated Stainless Steel AISI 303, Zinc Plated
11	Stop	Stainless Steel, 300 Series
12	Stop Screw	Stainless Steel ASTM-A276, 300 Series
13	Body Studs	Carbon Steel ASTM-A193 GR. B7, Black Oxide Coated Stainless Steel ASTM-A93 GR. B8
14	Body Nuts	Carbon Steel ASTM-A194-GR. 2H, Zinc Plated Stainless Steel ASTM-A194 GR. 8
15	Centering Washer	Stainless Steel AISI 316
16	Wrench Extension	Carbon Steel ASTM-A53, Galvanized Stainless Steel ASTM-A312, 300 Series
17	Wrench Block	Stainless Steel ASTM-A743-CF8
18	Hex Head Bolt	Stainless Steel AISI 300 Series
19	Fixed Lockplate	Stainless Steel AISI 300 Series
20	Moving Lockplate	Stainless Steel ASTM-A743-CF8 (304)
21	Lock Spacer	Stainless Steel AISI 300 Series
22	Washer	Stainless Steel AISI 300 Series
23	Button Head Screw	Stainless Steel AISI 300 Series

## *JRP1/JRP3 Parts Identification and Materials of Construction*

**1/2"-2"**



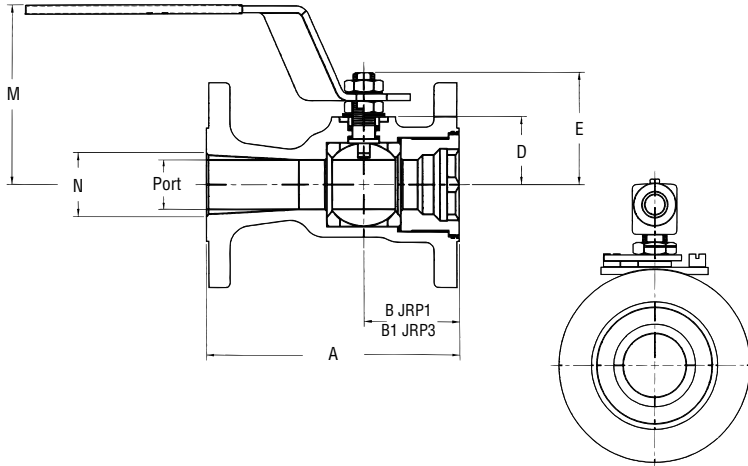
**3"-8"**



Part No.	Part Name	Quantity	Materials
1	Body	1	Carbon Steel ASTM A216-WCB, Black Oxide Coated; S.S. ASTM A351-CF8M; Ductile Iron (3"-8" JRP1 Series Only)
2	End Plug	1	Carbon Steel, Black Oxide Coated; Stainless Steel, Ductile Iron (3"-8" JRP1 Series Only)
3	Ball	1	316 S.S.; Monel, Hastelloy C, Alloy 20
4	Stem	1	Stainless Steel ASTM A479-316 COND. A., Monel, Hastelloy C, Alloy 20
5	Seat	2	TFE, Reinforced TFE, Polyfill, UHMWPE
6	Body Seal	1	TFE, Buna, Viton, EPR, UHMWPE, 316 "S" Gasket; Graphite
7	Stem Seals (½"-2")	2	Polyfill or UHMWPE
8	Thrust Bearing	1	Polyfill
9	Thrust Bearing Protector	1	PEEK
10	Seal Protector	1	PEEK
11	Follower	1	Stainless Steel AISI 316L
12	Belleville Washers	2 (manual)	Carbon Steel, Zinc Plated on Carbon Steel Valves; 301 Stainless Steel on Stainless Steel Valves
		4 (automated)	
13	Retaining Nuts	2	Carbon Steel, Zinc Plated on Carbon Steel Valves; AISI-300 Stainless Steel, Zinc Plated on Stainless Steel Valves
14	Lockwasher	1	Carbon Steel, Zinc Plated on Carbon Steel Valves; AISI-300 Stainless Steel on Stainless Steel Valves
15	Handle	1	Carbon Steel, Zinc Plated, Vinyl Coated, on Carbon Steel Valves; ASTM A167-300 Stainless Steel, Vinyl Coated on Stainless Steel Valves
16	Stop Screw	2 (½"-1")	Carbon Steel, Zinc Plated on Carbon Steel Valves; AISI 300 Stainless Steel, Zinc Plated on Stainless Steel Valve
		1 (1½"-2")	
		2 (3"-8")	
17	Nameplate	1	AISI 304 Stainless Steel
18	Thrustbearing	1	TFE – 25% Glass Filled
19	Stem Seals (3"-10")	3	TFE – 15% Glass Filled
20	Centering Washer	1	AISI 316 Stainless Steel
21	Follower	1	ASTM A276-316 Condition A Stainless Steel
22	End Plug Retention Screw	4-12	Stainless Steel, Zinc Plated on Carbon Steel Valves; AISI 304 Stainless Steel on Stainless Steel Valves
23	Stop Plate	1	ASTM A366 Carbon Steel, Zinc Plated
24	Retaining Nut	1	Carbon Steel, Zinc-Plated on Carbon Steel Valves; AISI 303 Stainless Steel, Zinc Plated on Stainless Steel Valves
25	Wrench Block	1	Carbon Steel
26	Wrench Extension	1	Carbon Steel
27	Hex Head Bolt	1	Carbon Steel, Black Oxide Coated

## JRP1/JRP3 Dimensions

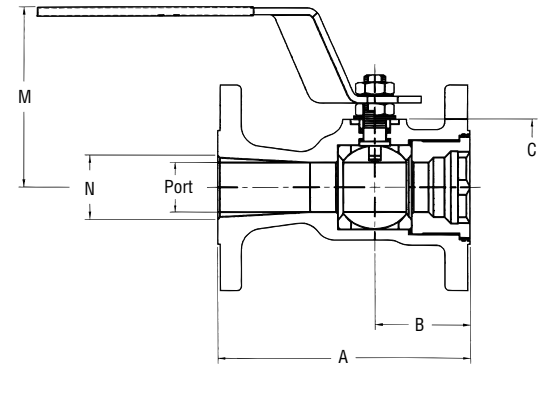
### ½"–2" Threaded End Plug Retention



### 3"–10" Bolted End Plug Retention

(Threaded Retention available)

(shown with antistatic option 3"–10" Fire Safe only)

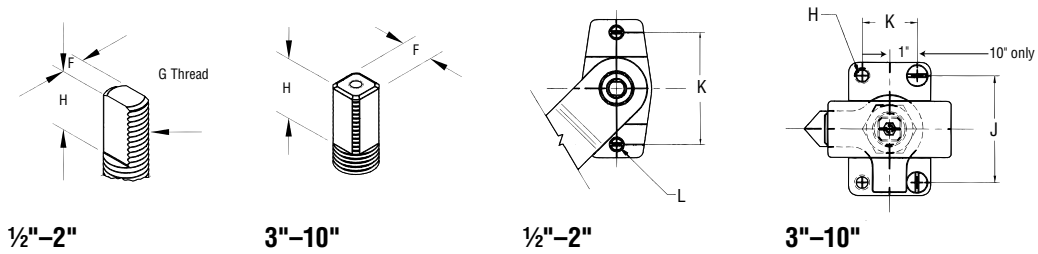


inches (mm)

Size	Port	A	A	B	B1	C	D	E	M	N	Weight lb. (kg)	
											JRP1	JRP3
½"	.44	4.25	5.50	1.81	2.31	5.53	.94	1.55	2.88	.59	4.5	5.5
	(11.2)	(108.0)	(139.7)	(46.0)	(58.7)	(140.5)	(23.9)	(39.4)	(73.2)	(15.0)	(2.0)	(2.5)
¾"	.56	4.62	6.00	1.94	2.44	5.53	1.03	1.64	2.98	.83	6.6	7.5
	(14.2)	(117.4)	(152.4)	(49.3)	(62.0)	(140.5)	(26.2)	(41.7)	(75.7)	(21.1)	(3.0)	(3.4)
1"	.81	5.00	6.50	2.25	2.75	6.53	1.27	2.19	3.40	1.05	7.9	9.5
	(20.1)	(127.0)	(165.1)	(57.0)	(70.0)	(165.9)	(32.3)	(55.6)	(86.4)	(26.7)	(3.6)	(4.3)
1½"	1.25	6.50	7.50	2.45	2.95	8.10	1.73	2.88	4.58	1.63	13.0	16.1
	(31.8)	(165.0)	(109.5)	(62.2)	(74.9)	(205.7)	(43.9)	(73.1)	(116.3)	(41.4)	(5.9)	(7.3)
2"	1.50	7.00	8.50	2.67	3.17	8.10	1.92	3.06	4.77	2.01	18.1	22.1
	(38.1)	(178.0)	(215.9)	(67.8)	(80.5)	(205.7)	(48.8)	(77.8)	(121.2)	(51.1)	(8.2)	(10.0)
3"	2.50	8.00	11.12	3.62	—	22.0	3.88	5.69	7.22	3.06	39.5	50
	(63.5)	(203.2)	(282.6)	(92.0)	—	(558.8)	(98.6)	(144.5)	(183.4)	(77.7)	(17.9)	(22.7)
4"	3.25	9.00	12.00	4.00	—	22.0	4.48	6.31	7.84	4.03	62	80
	(82.6)	(228.6)	(304.8)	(101.6)	—	(558.8)	(113.8)	(160.3)	(199.1)	(102.4)	(28.1)	(36.3)
6"	4.38	10.50	15.88	4.25	—	26.0	6.19	8.96	11.21	6.06	125	150
	(111.3)	(266.7)	(403.3)	(108.0)	—	(660.4)	(157.2)	(227.6)	(284.7)	(153.9)	(56.7)	(68.0)
8"	5.69	11.50	16.50	5.69	—	26.0	7.28	10.05	12.31	8.00	184	225
	(144.5)	(292.0)	(419.1)	(144.5)	—	(660.4)	(184.9)	(255.3)	(312.7)	(203.2)	(83.5)	(102.1)
10"	7.38	13.00	18.00	7.12	—	—	9.28	12.76	—	10.00	310	490
	(187.5)	(330.2)	(457.0)	(180.9)	—	—	(235.7)	(324.1)	—	(254.0)	(139.5)	(220.5)

NOTE: Dimensions are for layout purposes only. For tolerances contact McCANNA/MARPAC.

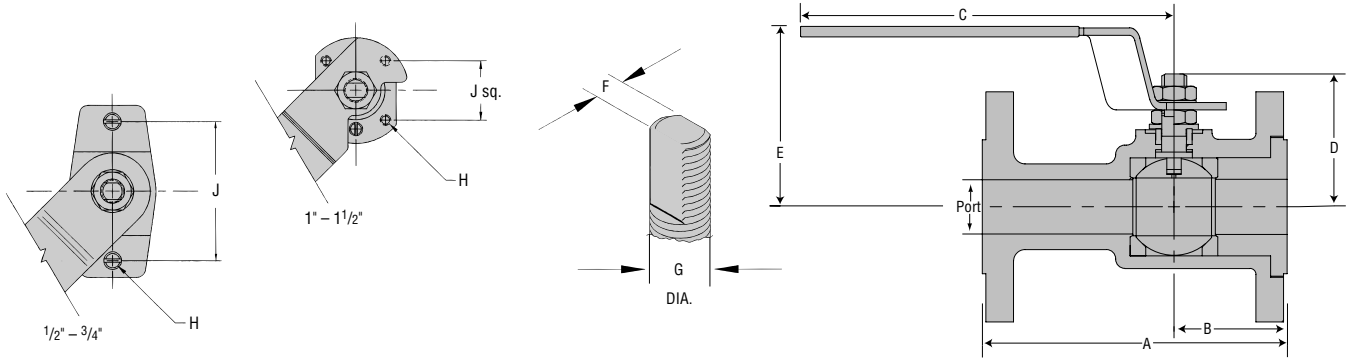




inches (mm)

Valve Size	F	G	H	J	K	L
1/2"	.217	3/8 UNF	.28	—	1.89	1/4-20
	(5.51)		(7.11)		(48.01)	
3/4"	.28	3/8 UNF	2.13	—	2.13	1/4-20
	(5.51)		(7.11)		(54.10)	
1"	.296	7/16 UNF	.43	—	2.50	1/4-20
	(7.52)		(10.92)		(63.50)	
1/2"	.343	9/16 UNF	.61	—	1.39	1/4-20
	(8.71)		(15.49)		(35.31)	
2"	.343	9/16 UNF	.61	—	1.39	1/4-20
	(8.71)		(15.49)		(35.31)	
3"	.745	—	.653	1.75	3.38	M10
	(18.92)		(16.6)	(44.45)	(85.85)	
4"	.745	—	.653	1.75	3.38	M10
	(18.92)		(16.6)	(44.45)	(85.85)	
6"	1.120	—	1.031	3.00	4.00	M12
	(28.45)		(26.2)	(76.2)	(101.6)	
8"	1.120	—	1.031	3.00	4.00	M12
	(28.45)		(26.2)	(76.2)	(101.6)	
10"	1.375	—	1.252	2.25	8.25	5/8-11
	(34.93)		(31.8)	(57.15)	(209.5)	

## JFP1/JFP3 Dimensions 1/2"-1 1/2"

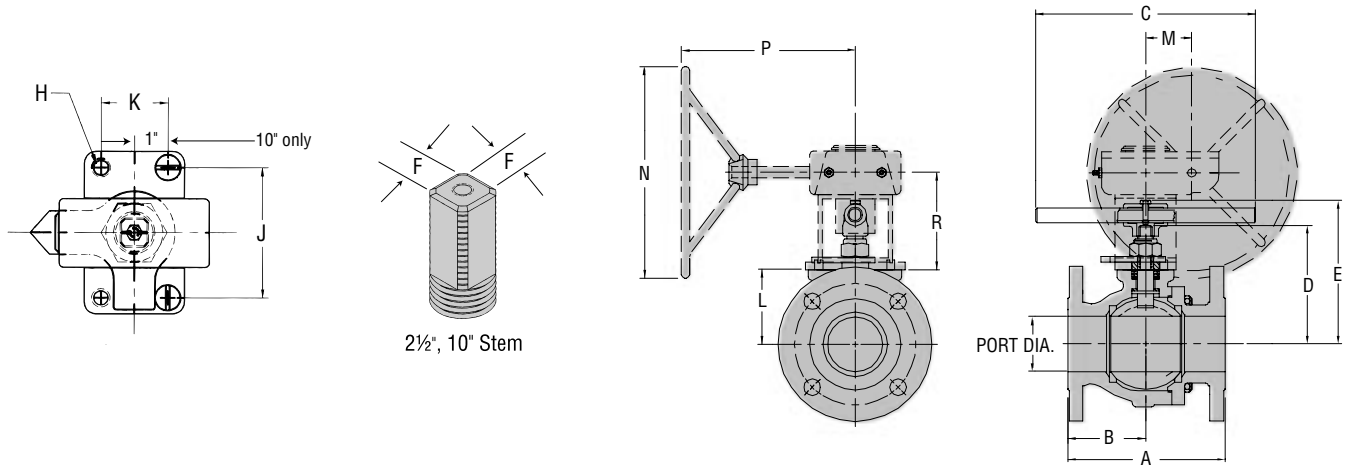


inches (mm)

Valve Size		JFP1 150 #	JFP3 300 #	A	B	C	D	E	F	G	H	J
Inches	Port	A	B									
1/2	.56	4.25	1.81	5.50	1.81	5.53	1.66	2.98	.22	.38	1/4-20	2.13
	(14.2)	(108)	(46.0)	(140)	(46.0)	(140.5)	(41.7)	(75.7)	(5.6)	(9.7)		(54.1)
3/4	.81	4.62	2.31	6.00	2.31	6.53	2.19	3.40	.30	.44	1/4-20	2.50
	(20.6)	(117.5)	(58.6)	(152.4)	(58.6)	(165.9)	(755.6)	(86.4)	(7.6)	(11.2)		(63.5)
1	.1	5	2.56	6.5	2.56	6.31	2.38	3.78	.30	.44	1/4-20	1.17
	(25.40)	(127)	(65.0)	(165.1)	(65.0)	(160.3)	(60.5)	(96.0)	(7.6)	(11.2)		(29.7)
1 1/2	1.5	6.5	2.74	7.5	2.74	8.10	3.06	4.77	.34	.56	1/4-20	1.39
	(38.1)	(165.1)	(69.6)	(190.5)	(69.6)	(205.7)	(77.7)	(121.2)	(8.6)	(14.2)		(35.3)

NOTE: Dimensions are for layout purposes only. For tolerances contact McCANNA/MARPAC.

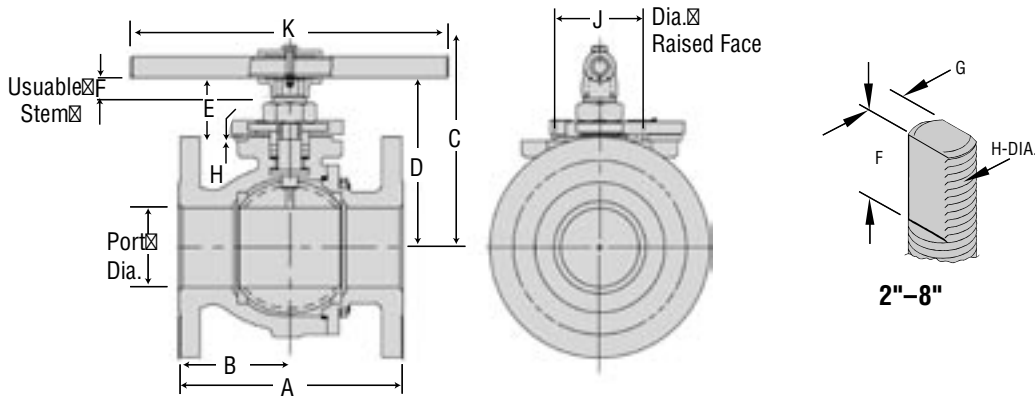
## JFP1/JFP3 Dimensions 2½", 10"



inches (mm)

Valve Size		JRP1 150#		JRP3 300#		C	D	E	F	H	J	K	L	M	N	P	R	Weight lb. (kg)			
		A	B	A	B													JFP1		JFP3	
Inches	Port	A	B	A	B													C.S.	S.S.	C.S.	S.S.
2½"	2.5	7.5	3.54	9.5	3.67	24.00	5.67	7.20	.75	M10	3.38	1.75	3.86	—	—	—	—	44	41	50	47
	(63.5)	(190.5)	(90)	(241.3)	(93.2)	(610)	(144)	(183)	(19)		(86)	(44)	(98)	—	—	—	—	—	(20)	(19)	(23)
10"	10	21	10.51	22.37	11.2	—	15.50	—	1.38	5/8-11	8.25	2.25	12.13	4.37	18.00	10.19	18.44	559	497	792	726
	(254)	(533.4)	(267.0)	(568.2)	(284.4)	—	(394)	—	(35)		(210)	(57)	(308)	(111)	(457)	(259)	(468)	(254)	(226)	(360)	(330)

## JFP1/JFP3 Dimensions



Valve Size	Weight lb. (kg)	
	JFP1	JFP3
2"	55	65
	(25.0)	(29.5)
3"	75	100
	(34.0)	(45.4)
4"	110	150
	(50.0)	(68.0)
6"	210	275
	(95.3)	(125)
8"	375	525
	(170)	(238)

inches (mm)

Valve Size	JFP1-ANSI Class 150 Ball Valves										JFP3-ANSI Class 300 Ball Valves									
	A	B	C	D	E	F Usable Stem	G	H	K	ISO Mtg.	A	B	C	D	E	F Usable Stem	G	H	K	ISO Mtg.
2"	7.00	2.90	6.16	5.12	1.68	.70	.549	.787	10.00	F07	8.50	2.90	6.16	5.11	1.68	.70	.549	.787	10.00	F07
	(178)	(73.7)	(157)	(130)	(42.7)	(17.8)	(13.9)	(20.0)	(254)		(216)	(73.7)	(157)	(130)	(42.7)	(17.8)	(13.9)	(20.0)	(254)	
3"	8.00	3.68	7.89	6.37	1.96	.68	.592	.831	15.8	F07	11.1	3.68	8.41	6.85	2.15	.84	.758	1.07	24.0	F10
	(203)	(93.5)	(200)	(162)	(49.8)	(17.3)	(15.0)	(21.1)	(401)		(282)	(93.5)	(214)	(174)	(54.6)	(21.3)	(19.3)	(27.2)	(610)	
4"	9.00	4.61	9.23	7.67	2.15	.84	.758	1.07	24.0	F10	12.0	5.20	10.8	8.60	2.82	1.13	1.04	1.30	39.5	F12
	(229)	(117)	(234)	(195)	(54.6)	(21.3)	(19.3)	(27.2)	(610)		(305)	(132)	(274)	(218)	(71.6)	(28.7)	(26.4)	(33.0)	(1003)	
6"	15.5	7.03	12.2	9.98	2.82	1.13	1.04	1.30	39.5	F12	15.9	7.03	12.8	10.6	2.99	1.17	1.19	1.49	39.5	F14
	(394)	(179)	(310)	(254)	(71.6)	(28.7)	(26.4)	(33.0)	(1003)		(404)	(179)	(325)	(269)	(75.9)	(29.7)	(30.2)	(37.9)	(1003)	
8"	18.0	8.10	—	12.3	2.99	1.17	1.19	1.49	—	F14	16.5	8.10	—	13.5	3.42	1.42	1.35	1.67	—	F16
	(457)	(206)		(313)	(76.0)	(29.7)	(30.2)	(37.9)			(419)	(206)		(343)	(86.9)	(36.1)	(34.3)	(42.4)		

NOTE: McCANNA/MARPAC flanged valves are designed to conform to ASME B16.5-1996 standards. Dimensions are for layout purposes only. For tolerances contact McCANNA/MARPAC.



## TFM Teflon (Polyfill "5" Seats)

TFM is a new Teflon product sometimes referred to as Super Teflon. This modified PTFE called Hastaflon, developed by Hoechst Celanese, has been marketed for approximately five years. McCANNA has been in the process of incorporating TFM seats into most of the McCANNA valves. The Reinforced Teflon seats use virgin TFM and the Polyfill seats use fiber filled TFM.

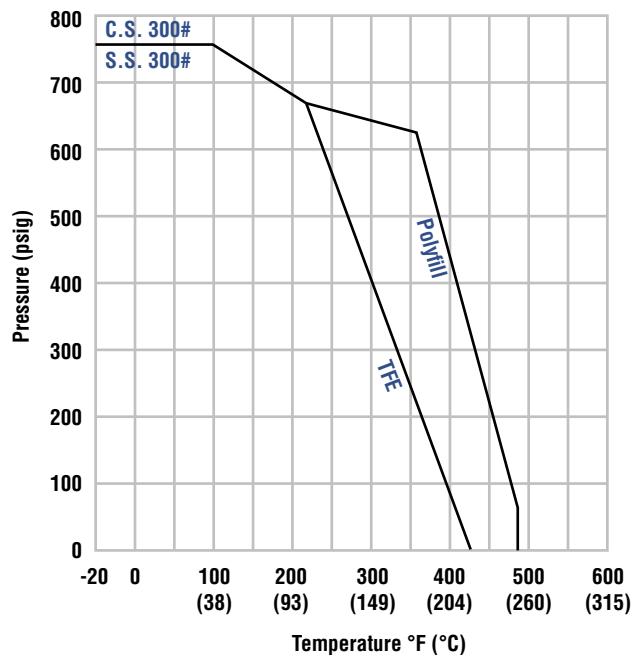
There are several advantages of this seat material. It retains all the chemical and physical properties of the existing PTFE. The material is still considered Teflon yet has higher temperature capability. Same chemical resistance. Exhibits, no embrittlement or ageing. Has a low coefficient of friction. TFM has the mechanical strength of TFE and the physical properties of FEP, so it can be used in chemical applications where permeability would normally affect the seat. Generally TFM has the following advantages:

### TFM vs. PTFE

Mechanical Strength	30% Stronger
Temperature Stability	10% More Stable
Permeability	20% Less permeable
Smoothness	15% Smoother
Seat Torque Reduction	20% Less torque required
Crack Propagation	35% Less susceptible to cracking
Void Free Polymer	50% Less voids
Load Deformation	15% More resistant to deformations at Temperature
Chemical Resistance	same
Toughness (Abrasion)	better

### Seat Pressure/Temperature Ratings

#### TFE vs. Polyfill



## Cavity Filled Valves

### *Valves For Stick-Free Operation on Rubber Polymers, Monomers, Styrene, Butadiene, Slurries*

Flowserve McCANNA/MARPAC offers the quality solution to sticking valve problems, cavity filled ball valves. Some of the roughest process control problems involve those in butadiene and styrene services. These and other fluids such as rubber polymers can polymerize in place. That means they can polymerize inside valve body cavities effectively immobilizing the valves.

In applications where product can polymerize, FEP seats are available to reduce “popcorning” which can occur in TFE or Reinforced TFE seats.

A unique seat design using TFE, Polyfill® or FEP eliminates most of the volume between the ball, stem and body. This reduces area for product build up associated with conventional ball valves.

These cavity-filled valves offer excellent performances in control of pharmaceuticals, food products, sticky and viscous fluids and slurries. They are available in J-series McCANNA/MARPAC valves.

### **Automation**

Cavity-filled valves may be completely automated with Flowserve Worcester Series 39 pneumatic or 75 electric actuators.

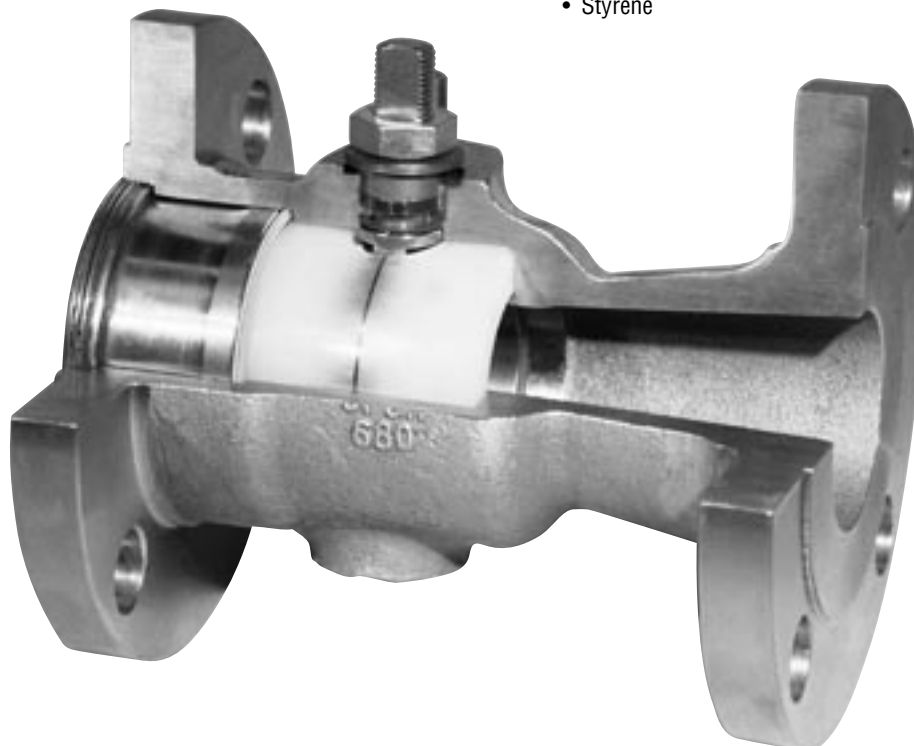
Both actuators can be optionally equipped with process monitoring equipment and/or positioners for modulating applications. Special automation packages available for PLC/computer controlled systems.

### **Fire Safety**

McCANNA/MARPAC offers a fire-rated version of the cavity-filled valve. FEP cavity filler seats are qualified per API 607. Grafoil® stem seals and body seals (suitable for butadiene processes) are used on fire-rated valves.

### **Applications**

- Butadiene
- Detergent Slurry
- Fermentation Process
- Fire Safe Applications
- Food Process
- Monomers
- Pharmaceuticals
- Styrene



## How to Specify and Order

Category	Codes	Description	Example
Size		4 inch	4
Valve Figure Number	JFP1	J-Series Flanged Unibody Full Port 150#	JFP3
	JFP3	J-Series Flanged Unibody Full Port 300#	
	JRP1	J-Series Flanged Unibody Regular Port 150#	
	JRP3	J-Series Flanged Unibody Regular Port 300#	
Body Material	CS	Carbon Steel (WCB)	S6
	S6	Stainless Steel (316)	
Seat	T	TFE	R
	R	Reinforced TFE	
	5	PolyFill®	
Seal	T	TFE	T
	F	FIRE-GARD® (Flexible Graphite)	
Ball and Stem	S6	Stainless Steel (316)	S6
Automation	PAA	Preparation for Automation	

*Ordering Example: A 4" Series JFP3 full port flanged valve with stainless steel body, 316 stainless steel ball and stem, reinforced TFE seats, TFE body seal, ANSI Class 300 flanges and manual lever or handle.*

*Note: Standard McCANNA/MARPAC valves are assembled with silicon based break-in lubricant. For other options, consult your distributor or Flowserve.*

- ▲ CAUTION:** Ball valves can retain pressurized media in the body cavity when closed. Use care when disassembling. Always open valve to relieve pressure prior to disassembly.



**United States**  
Flowserve Corp.  
Flow Control  
Flowserve McCANNA/MARPAC  
1978 Foreman Drive  
Cookeville, Tennessee 38501  
Phone: 1 931 432 4021  
Fax: 1 931 432 5518

FCD MMABR1006-00 Printed in USA. (Replaces V511)

***To find your local Flowserve representative:***

For more information about Flowserve Corporation, visit  
[www.flowserve.com](http://www.flowserve.com) or call USA 1 800 225 6989

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