

FPS Safety Shut-Off Valves

CSA and FM Approved



CSA & FM Approved Valves



Highly Visible Beacon/Indicator

Fail Safe Spring Return Actuator

On loss of air or control power, actuator will fully return the valve to its fail safe position

Direct Actuator To Valve Mounting

No couplings

Blow Out Proof Stem

Extra high cycle life: maintenance free, live loaded, triple sealing, high cycle stem packing systems provide extra long service life

Leak Watch Window

Early warning of stem leak

316 SS Ends

NPT, Butt Weld, Socket Weld Connections Available On 88 Series. 150lb and 300lb Flanges Available on 90D Series.



Series 90D: 2 Piece Flanged Valve Body



Series 88: 3 Piece Valve Body

Variety Of Solenoid Options Available

Refer to ordering information at the back of this brochure.

Fully Encapsulated Body Seals

Bi-directional valve seals prevent leaks in both directions. Maintains seal integrity by enabling in-line welding without disassembly.

FPS Valves

FPS is a leader in reliable, cost-effective shut-off valve technology. Our automatic and manual shut-off valves are in service in industries the world over. Be it pulp and paper, petrochemical or power boiler applications, FPS valves provide low maintenance, leak proof and fail safe operation.

FPS CSA Approved Valves

FPS CSA valves are approved for use on CSA B149.3 systems. Our CSA valve assemblies are registered with CSA and have undergone operational, durability, electrical and leak testing to comply with the following standards:

Automatic Valves:

- CSA 6.5 Automatic Shut-off Valves for Gas Appliances C/I

Manual Valves:

- CGA Interim Requirement No. 60 Lever Operated Gas Shut-off Valves
(This standard covers all requirements of CGA 3.16 but specifies a higher allowable process pressure.)

FPS Factory Mutual (FM) Approved Valves

FPS FM valves are registered with Factory Mutual, a requirement for any shutoff valve to be installed in an FM insured commercial or industrial application. Our FM valves are tested and approved to the following standard:

Automatic Valves:

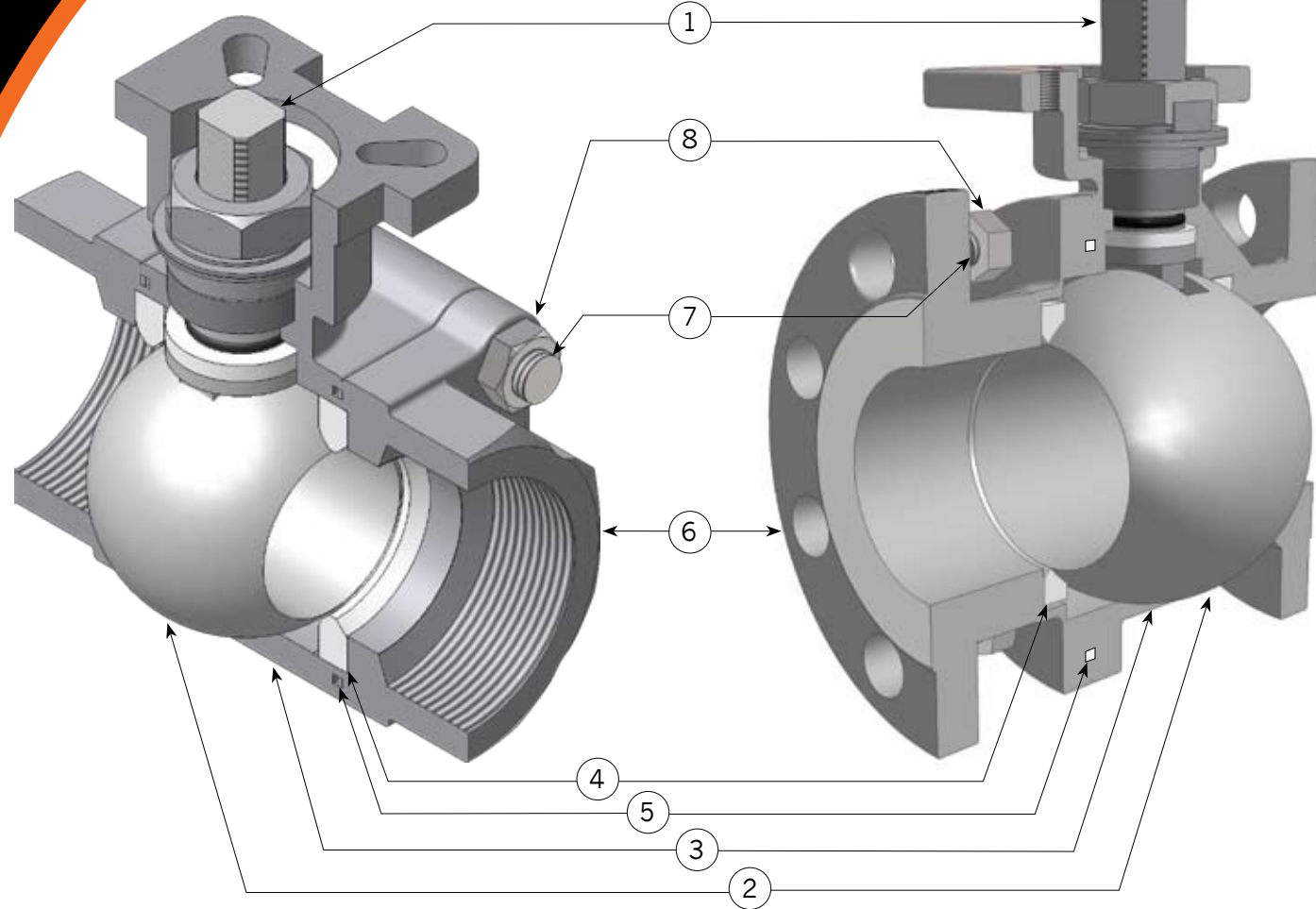
- FM Class 7400 Liquid and Gas Safety Shut-off Valves

FPS offers valves with dual approval, these models are registered with both CSA and FM. Please consult factory for configurations and component selection.

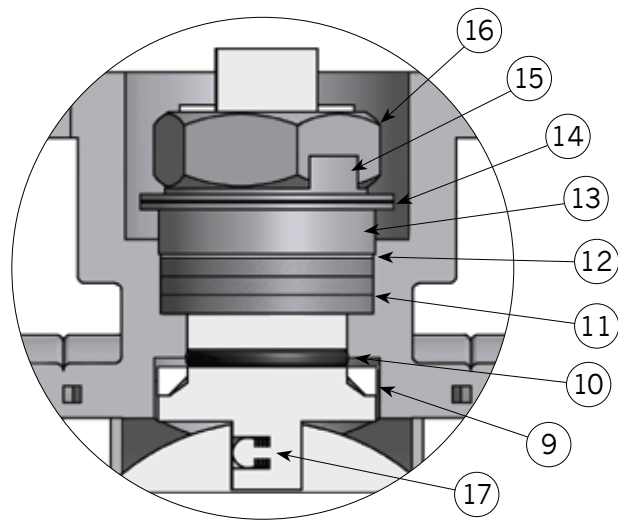


Series 88:
3 Piece
Valve Body

Series 90D:
2 Piece
Flanged Valve
Body



Valve Stem Sealing Detail



Bill of Materials

Item	Qty.	Description	Material	
1	1	Anti-Blowout Stem	SS316	Body
2	1	Ball	SS316	
3	1	Body	CF8M	
4	2	Seat	PTFE, RTFE*	
5	2	Joint Gasket	Graphite	
6	2	End Cap	CF8M	
7	4	Bolt	SS304	
8	4	Nut	SS304	
9	1	Pyramidal Stem Seal	RTFE	Stem
10	1	O-Ring	VITON	
11	1	Chevron™ V-Ring Stem Packing	MG1241	
12	1	Gland	15% Glass Fiber Filled PTFE	
13	1	Anti-Static Gland	SS304	
14	2	Belleville Washer	SS304	
15	1	Lock Saddle	SS304	
16	1	Stem Nut	SS304	
17	1	Anti Static Device	SS304	

* PTFE seats are used on CSA approved valves. FM valves available with either PTFE or RTFE Seats

Leak Proof Stem Features:

9. Pyramidal Stem With Stem Seal

First stage of defense against leakage. 45 degree stem slope accompanied by the stem seal effectively blocks all leak paths during rotation.

10. O-Ring Stem Packing

Second stage of defense against leakage. Enhances stem seal and maintains stem alignment, ensuring extra long service life.

11. V-Ring Stem Packing

Third stage of defense against leakage. Multi-layered V-Ring Chevron™ Packing expands sideways when compressed, blocking all air pockets to prevent a leak path.

12. Gland Bushing

RTFE bushing reduces stem seal friction.

13. Gland

Made of stainless steel, equally distributes compressive force on the packing and seal.

14. Belleville™ Washer

Automatic adjustment of stem sealing system compression for normal wear, pressure, and temperature fluctuations.

15. Lock Saddle

Stabilizes stem nut to prevent loosening during operation.

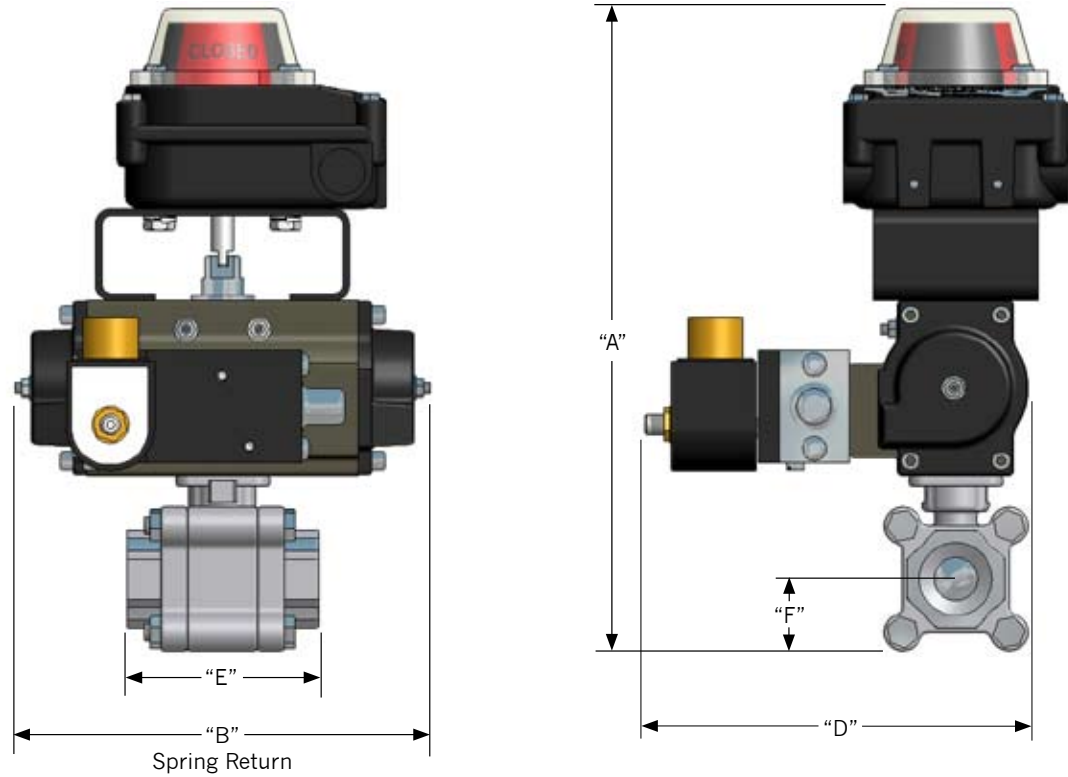
16. Stem Nut

Compresses entire stem system to block leakage.

17. Anti-Static Device

Ball-to-stem anti-static device.

88 Series Automatic Valve Dimensions



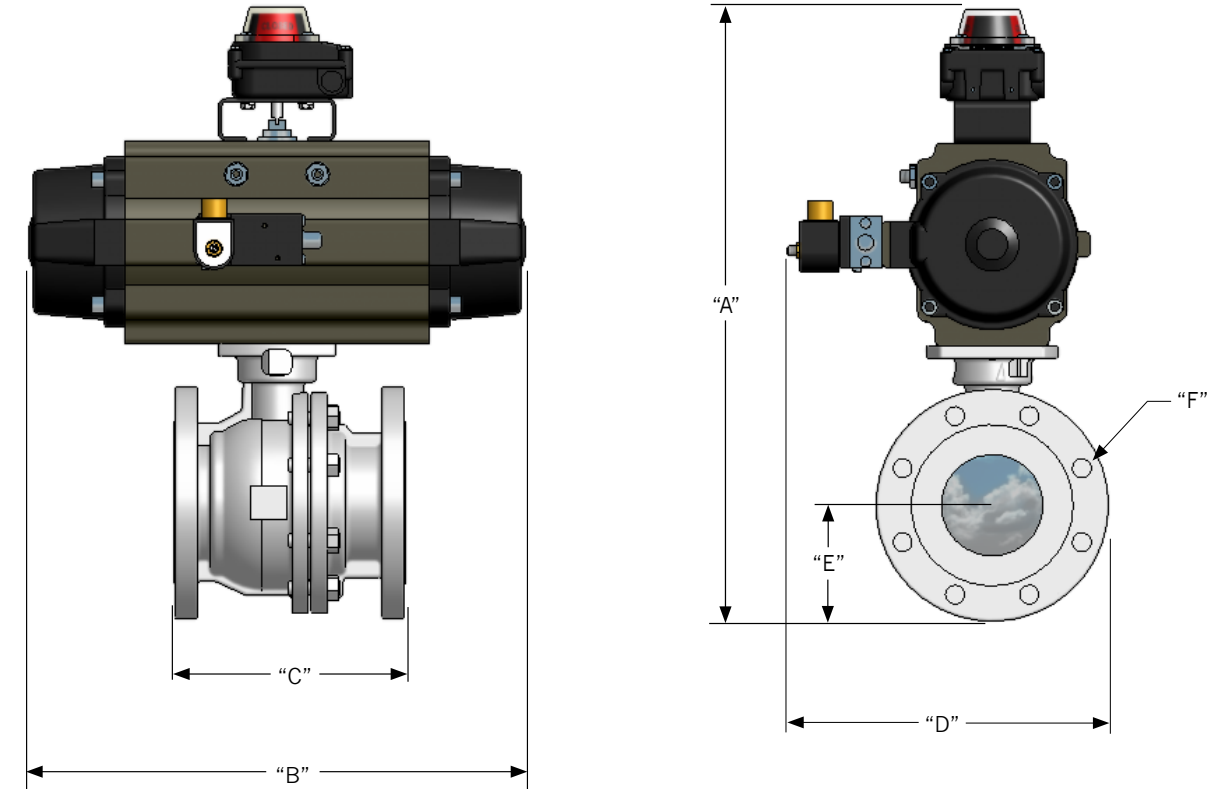
Dimensions

Size	CV	"A" * mm (in)	"B" Spring Return mm (in)	"D" ** mm (in)	"E" mm (in)	"F" mm (in)	Wt kg (lbs)
1/4"	8	282 (11.1)	188 (7.4)	186 (7.28)	74.9 (2.95)	26.2 (1.03)	5.4 (11.9)
3/8"	8	282 (11.1)	188 (7.4)	186 (7.28)	74.9 (2.95)	26.2 (1.03)	5.4 (11.9)
1/2"	8	282 (11.1)	188 (7.4)	186 (7.28)	74.9 (2.95)	26.2 (1.03)	5.4 (11.9)
3/4"	15	282 (11.1)	188 (7.4)	186 (7.28)	73.1 (2.88)	26.2 (1.03)	5.9 (13)
1"	34	292 (11.49)	188 (7.4)	186 (7.28)	86.6 (3.41)	32.6 (1.28)	7.6 (16.7)
1-1/4"	56	326 (12.83)	204 (8.03)	205 (8)	106 (4.17)	34 (1.34)	8.3 (18.2)
1-1/2"	85	358 (14.1)	250.8 (9.87)	228 (8.9)	109 (4.29)	38.6 (1.52)	11.8 (26.0)
2"	125	378 (14.88)	250.8 (9.87)	228 (8.9)	127 (5.0)	42.9 (1.69)	13.3 (29.3)

* Note: Height Dimension "A" Shown for Watertight Limit Switch. For Assemblies with Explosion-Proof Limit Switch add 25.4 mm (1") to Dimension "A".

** Note: Dimension "D" Approximate. Dimension varies depending on solenoid used.

90D Series Automatic Valve Dimensions



Dimensions

Size	CV	"A"* mm (in)	"B" mm (in)	"C" mm (in)	"D" ** mm (in)	"E" mm (in)	"F" Bolts			"M" Wt. kg (lbs)
							No.	F1 Dia. of Holes	F2 Dia. of Pattern	
1/2"	12	326 (12.84)	195 (7.8)	108 (4.3)	191 (7.5)	45 (1.75)	4	16 (0.62)	60 (2.38)	5.2 (11.5)
3/4"	32	335 (13.2)	195 (7.8)	117 (4.6)	196 (7.7)	49 (1.94)	4	16 (0.62)	70 (2.75)	5.6 (12.3)
1"	70	348 (13.7)	204 (8)	127 (5)	203 (8)	54 (2.12)	4	16 (0.62)	80 (3.12)	7.2 (15.9)
1-1/2"	240	408 (16.06)	251 (9.87)	165 (6.5)	226 (8.9)	64 (2.5)	4	16 (0.62)	98 (3.88)	13 (28.7)
2"	410	454 (17.74)	350 (13.8)	178 (7)	252 (9.9)	76 (3)	4	20 (0.75)	120 (4.75)	20.6 (45.5)
2-1/2"	680	485 (19.09)	350 (13.8)	190 (7.5)	264 (10.4)	89 (3.5)	8	20 (0.75)	140 (5.5)	25.7 (56.7)
3"	940	540 (21.26)	404 (15.9)	204 (8)	300 (11.8)	96 (3.75)	8	20 (0.75)	152 (6)	38 (86)
4"	1740	605 (23.82)	488 (19.2)	229 (9)	320 (12.6)	115 (4.5)	8	20 (0.75)	191 (7.5)	59.4 (130.9)
6"	5000	729 (28.7)	640 (25.2)	394 (15.5)	363 (14.3)	140 (5.5)	10	23 (0.88)	241 (9.5)	127.3 (280.6)

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* Note: Height Dimension "A" Shown for Watertight Limit Switch. For Assemblies with Explosion-Proof Limit Switch add 25.4 mm (1") to Dimension "A".
** Note: Dimension "D" Approximate. Dimension varies depending on solenoid used.

CSA & FM Approved Valves

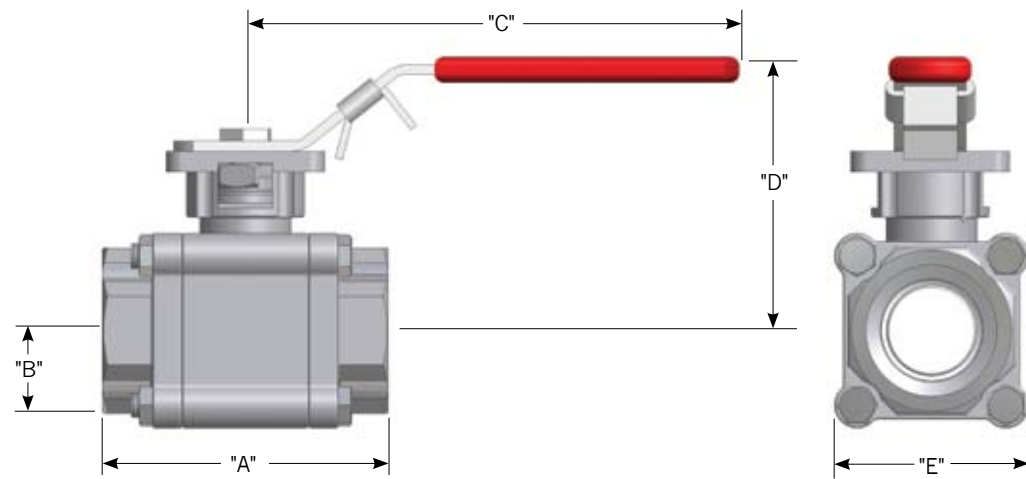
90D Series Automatic Valve Dimensions

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Size	CV	"A"	"B"	"C"	"D"	"E"	No.	"F1"	"F2"	"M"	#00#
1/2"	12	329 (12.95)	195 (7.8)	140 (5.5)	191 (7.5)	49 (1.94)	4	16 (0.62)	60 (2.38)	5.7 (12.6)	
3/4"	32	365 (14)	195 (7.8)	152 (6)	196 (7.7)	60 (2.36)	4	16 (0.62)	70 (2.75)	7.3 (16.1)	
1"	70	380 (14.9)	204 (8)	165 (6.5)	203 (8)	63 (2.48)	4	16 (0.62)	80 (3.12)	9.3 (20.5)	
1-1/2"	240	423 (16.65)	251 (9.87)	190 (7.5)	226 (8.9)	79 (3.11)	4	16 (0.62)	98 (3.88)	16.6 (36.6)	
2"	410	460 (18.1)	350 (13.8)	216 (8.5)	252 (9.9)	83 (3.27)	4	20 (0.75)	120 (4.75)	24 (52.9)	
2-1/2"	680	501 (19.72)	350 (13.8)	241 (9.5)	264 (10.4)	97 (3.82)	8	20 (0.75)	140 (5.5)	31.1 (68.6)	
3"	940	550 (21.65)	404 (15.9)	282 (11.1)	300 (11.8)	114 (4.49)	8	20 (0.75)	152 (6)	46 (101.4)	
4"	1740	618 (24.33)	488 (19.2)	305 (12)	320 (12.6)	127 (5.0)	8	20 (0.75)	191 (7.5)	76.6 (160)	
6"	5000	748 (29.45)	640 (25.2)	403 (15.8)	363 (14.3)	159 (6.25)	10	23 (0.88)	241 (9.5)	151.7 (334.4)	

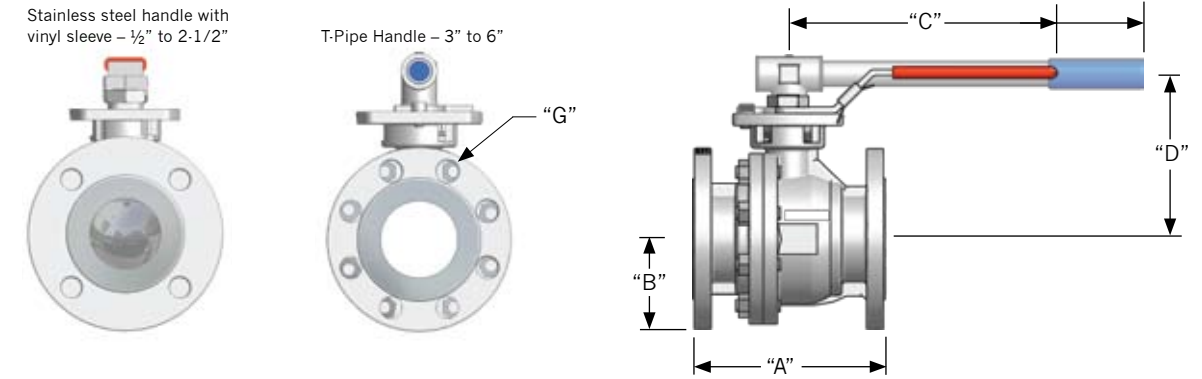
* Note: Height Dimension "A" Shown for Watertight Limit Switch. For Assemblies with Explosion-Proof Limit Switch add 25.4 mm (1") to Dimension "A"
 ** Note: Dimension "D" Approximate. Dimension varies depending on solenoid used.

88 Series Manual Valve Dimensions



Dimensions							
Size	CV	"A" mm (in)	"B" mm (in)	"C" mm (in)	"D" mm (in)	"E" mm (in)	Wt. kg/ lbs.
1/4"	8	74.9 (2.95)	26.2 (1.03)	133.3 (5.2)	73.9 (2.91)	51 (2.01)	0.86 (1.9)
3/8"	8	74.9 (2.95)	26.2 (1.03)	133.3 (5.2)	73.9 (2.91)	51 (2.01)	0.85 (1.85)
1/2"	8	74.9 (2.95)	26.2 (1.03)	133.3 (5.2)	73.9 (2.91)	51 (2.01)	0.79 (1.75)
3/4"	15	74.9 (2.95)	26.2 (1.03)	133.3 (5.2)	73.9 (2.91)	51 (2.01)	0.82 (1.8)
1"	34	86.6 (3.40)	32.6 (1.28)	133.3 (5.2)	73.9 (2.91)	61.4 (2.42)	1.38 (3.04)
1-1/4"	56	106 (4.17)	34 (1.34)	172.7 (6.8)	99 (3.9)	67.8 (2.67)	2.15 (4.74)
1-1/2"	85	1 (4.29)	38.6 (1.52)	172.7 (6.8)	99 (3.9)	77 (3.03)	2.79 (6.15)
2"	125	127 (5)	42.9 (1.69)	214.6 (8.45)	126.7 (5)	86.5 (3.4)	4.26 (9.4)

90D Series Manual Valve Dimensions



Dimensions										
Size	CV	"A"	"B"	"C"	"D"	"G" Bolts			"M"	#00#
						No.	G1 Dia of Holes	G2 Dia. of Pattern		
1/2"	12	108 (4.3)	45 (1.75)	165 (6.5)	82.7 (3.3)	4	16 (0.62)	60 (2.38)	1.81 (4)	
3/4"	32	117 (4.6)	49 (1.94)	165 (6.5)	87.2 (3.4)	4	16 (0.62)	70 (2.75)	2.19 (4.8)	
1"	70	127 (5)	54 (2.12)	165 (6.5)	94.8 (3.7)	4	16 (0.62)	80 (3.12)	2.91 (6.4)	
1-1/2"	240	165 (6.5)	64 (2.5)	262 (10.3)	147.1 (5.8)	4	16 (0.62)	98 (3.88)	6.4 (14.1)	
2"	410	178 (7)	76 (3)	262 (10.3)	154.6 (6.1)	4	20 (0.75)	120 (4.75)	9.19 (20.3)	
2-1/2"	680	190 (7.5)	89 (3.5)	262 (10.3)	174 (6.9)	8	20 (0.75)	140 (5.5)	14.3 (31.5)	
3"	940	204 (8)	96 (3.75)	365 (14.4)	178.7 (7)	8	20 (0.75)	152 (6)	19.5 (43)	
4"	1740	229 (9)	115 (4.5)	365 (14.4)	203.2 (8)	8	20 (0.75)	191 (7.5)	31.0 (68.3)	
6"	5000	394 (15.5)	140 (5.5)	750 (29.5)	276.7 (10.9)	10	23 (0.88)	241 (9.5)	75.0 (165.3)	
1/2"	12	140 (5.5)	49 (1.94)	165 (6.5)	84.7 (3.3)	4	16 (0.62)	60 (2.38)	5.7 (12.6)	
3/4"	32	152 (6)	60 (2.36)	165 (6.5)	99.5 (3.9)	4	16 (0.62)	70 (2.75)	7.3 (16.1)	
1"	70	165 (6.5)	63 (2.48)	165 (6.5)	99.5 (3.9)	4	16 (0.62)	80 (3.12)	9.3 (20.5)	
1-1/2"	240	190 (7.5)	79 (3.11)	262 (10.3)	147.1 (5.8)	4	16 (0.62)	98 (3.88)	16.6 (36.6)	
2"	410	216 (8.5)	83 (3.27)	262 (10.3)	154.6 (6.0)	4	20 (0.75)	120 (4.75)	24 (52.9)	
2-1/2"	680	241 (9.5)	97 (3.82)	262 (10.3)	174 (6.8)	8	20 (0.75)	140 (5.5)	31.1 (68.6)	
3"	940	282 (11.1)	114 (4.49)	365 (14.4)	179 (7)	8	20 (0.75)	152 (6)	46 (101.4)	
4"	1740	305 (12)	127 (5.0)	365 (14.4)	203 (8)	8	20 (0.75)	191 (7.5)	76.6 (160)	
6"	5000	403 (15.8)	159 (6.25)	750 (29.5)	267.7 (10.9)	10	23 (0.88)	241 (9.5)	151.7 (334.4)	

Pressure and Temperature Data

Pressure And Temperature Ratings		
Valve Approval	Ambient Temperature Rating*	Maximum Rated Process Pressure**
CSA 6.5 Automatic Valves for Gas Appliances C/I	-49°F to 122°F (-45°C to 50°C)	1380 kPa (200 psi)
CGA No. 60 Lever Operated Gas Shut-off Valves (Manual Valves)	-40°F to 149°F (-40°C to 65°C)	1380 kPa (200 psi)
FM Class 7400 Liquid and Gas Safety Shut-off Valves	-14°F to 140°F (-10°C to 60°C)	1380 kPa (200 psi)

*Note: CSA and FM temperature ranges are lower than actual valve operating temperature ranges please consult factory for more information
 **Note: CSA and FM pressures ratings are lower than actual maximum valve operating pressures please consult factory for more information

CSA & FM Approved Valves

Options and Configurations

88 Series End Connections



NPT End Connection



Socketweld End Connection



Buttweld End Connection

Spring Return ("Fail-Safe") Actuator

- Bracket free, direct mounting to valve
- Bi-directional pinion travel stops
- Minimum Air Pressure: 70 psig
- Maximum Air Pressure: 120 psig



Solenoid Options

- ASCO or Parker
- 12VDC through 240VAC. Low power options available.
- Water-tight (IP67)
- Hazardous Location Rated Available
- 18" wire leads and 1/4" air connection



ASCO ®



Parker ®

Limit Switch Options

- Watertight (IP67)
- Explosion Proof: (Class 1 Div.1, Groups A,B,C&D)
- Contact Rating: 250VAC-16A
125VDC-0.6A
250VDC-0.3A
- Mechanical Switches: 2-SPDT



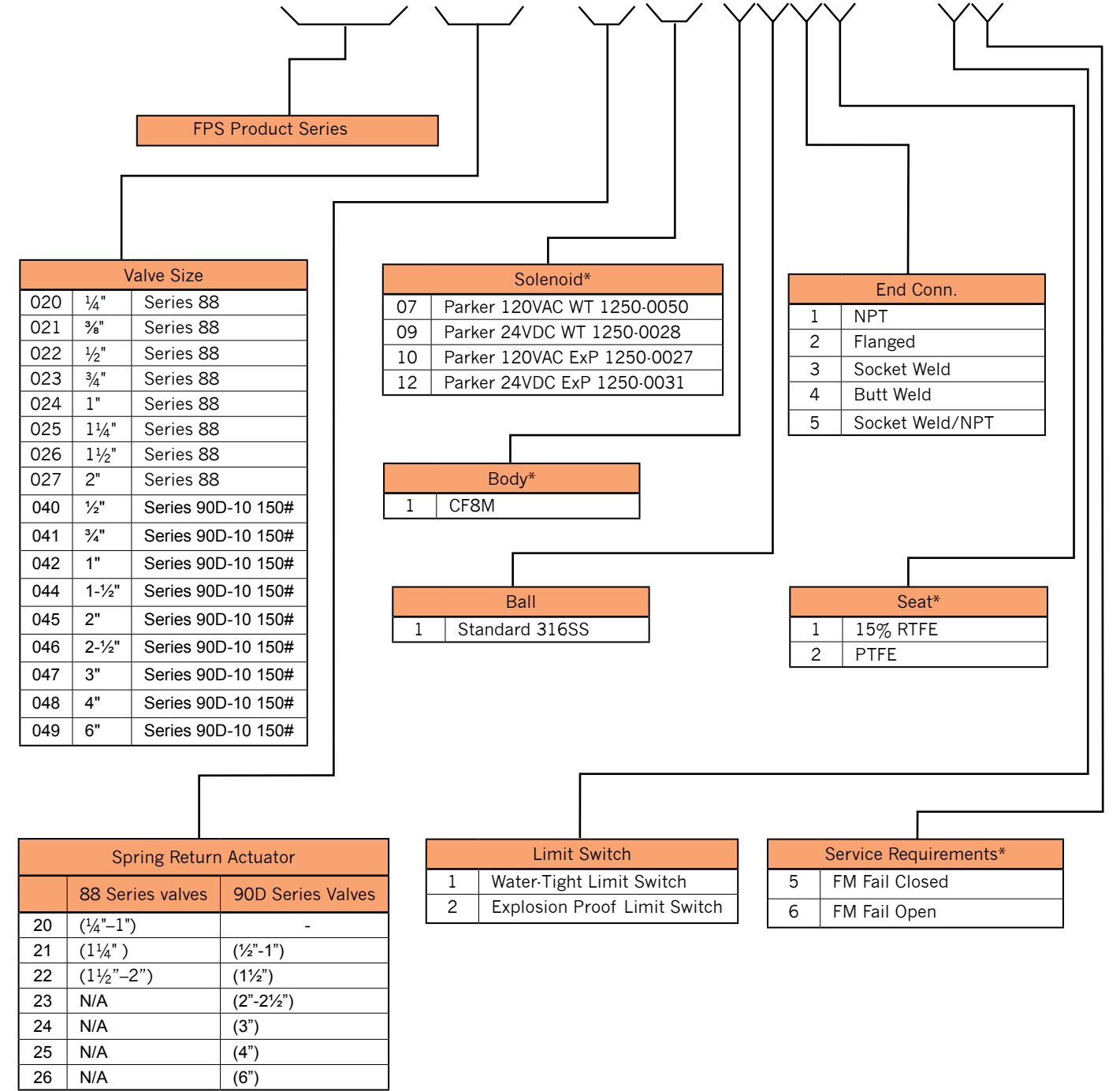
Standard Watertight



Explosion Proof

FM Valves - Ordering Information

9650-0000-0000-0000-0000



Legend			
Solenoid *WT=Water-tight Coil *ExP=Explosion-Proof Coil *LP=Low Power	Body *CF8M=DIN 1.4408= Cast Stainless Steel	Seat *RTFE=15% Glass Reinforced Virgin Teflon *PTFE=Virgin Teflon *PTFE/SS=50% Stainless Steel Filled Teflon *PEEK=Engineered Polymer	Approvals For Valve Assemblies requiring both CSA and FM Approvals Consult Factory.

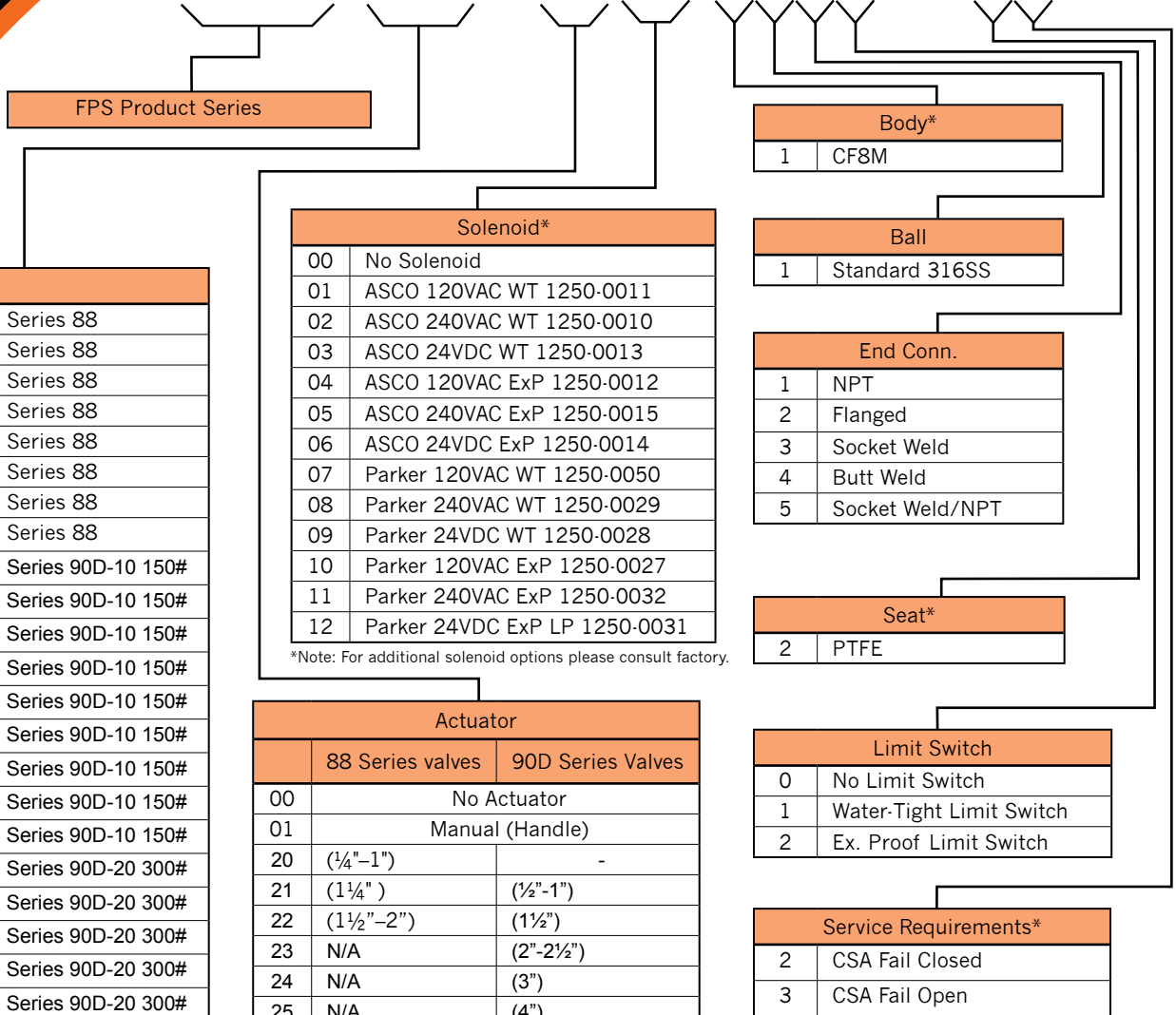


CSA & FM Approved Valves

CSA Valves - Ordering Information

9650-0000-0000-0000-0000

Valve Size		
020	¼"	Series 88
021	⅜"	Series 88
022	½"	Series 88
023	¾"	Series 88
024	1"	Series 88
025	1¼"	Series 88
026	1½"	Series 88
027	2"	Series 88
040	½"	Series 90D-10 150#
041	¾"	Series 90D-10 150#
042	1"	Series 90D-10 150#
044	1-½"	Series 90D-10 150#
045	2"	Series 90D-10 150#
046	2-½"	Series 90D-10 150#
047	3"	Series 90D-10 150#
048	4"	Series 90D-10 150#
049	6"	Series 90D-10 150#
060	½"	Series 90D-20 300#
061	¾"	Series 90D-20 300#
062	1"	Series 90D-20 300#
064	1-½"	Series 90D-20 300#
065	2"	Series 90D-20 300#
066	2-½"	Series 90D-20 300#
067	3"	Series 90D-20 300#
068	4"	Series 90D-20 300#
069	6"	Series 90D-20 300#



*Note: For additional solenoid options please consult factory.

Actuator		
	88 Series valves	90D Series Valves
00	No Actuator	
01	Manual (Handle)	
20	(¼"-1")	-
21	(1¼")	(½"-1")
22	(1½"-2")	(1½")
23	N/A	(2"-2½")
24	N/A	(3")
25	N/A	(4")
26	N/A	(6")

Legend			
Solenoid *WT=Water-tight Coil *Exp=Explosion-Proof Coil *LP=Low Power	Body *CF8M=DIN 1.4408= Cast Stainless Steel	Seat *PTFE=Virgin Teflon	Approvals For Valve Assemblies requiring both CSA and FM Approvals Consult Factory.



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