

FPS 90D Series Automatic Valves



90D SERIES VALVES

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FPS is a leader in reliable, cost-effective shut-off valve technology. Our 90D series 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.

The 90D series design ensures safety, reliability and ease of maintenance. The valve features a two piece split body design and is available with 150lb. or 300lb. flanges. Our pneumatic actuators allow fast reliable valve cycling. The spring return option provides fail open or fail closed security in the event of a power or compressed air failure. Directly mounting the actuators to the valve body allows rapid removal of the actuator and eliminates the need for couplings. Seat materials are available to suit a variety of applications and temperature ranges.

Our technical sales staff can advise you on the valve solutions for your application from pricing and model number inquiries to engineered valve skid design and fabrication.



Power Generation



Petrochemical



Engineered Valve Racks



Highly Visible Beacon/Indicator

Direct Actuator To Valve Mounting

No couplings

Variety Of Solenoid Options Available

Refer to Options and Configurations

Leak Watch Window

Early warning of stem leak

316 SS Ends

Fully Machined Flange Surfaces. 150 lb. and 300 lb. Flanges Available.

Fully Encapsulated Body Seals

Bidirectional valve seals prevent leaks in both directions.



Blow Out Proof Stem

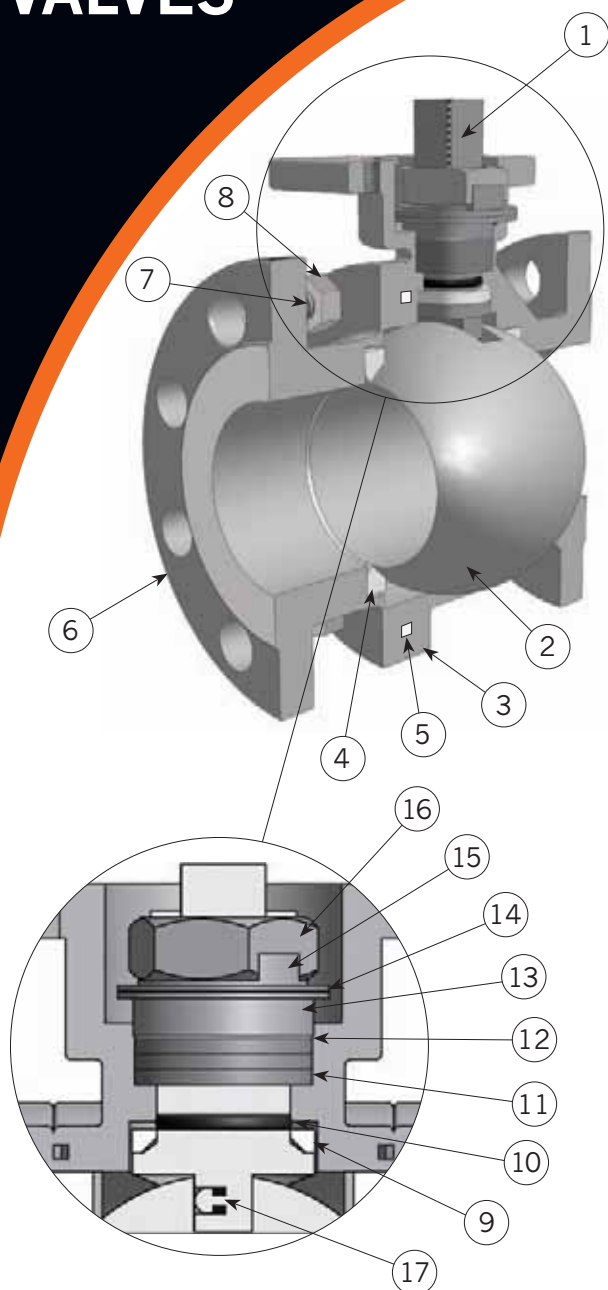
Extra high cycle life: maintenance free, live loaded, triple sealing, high cycle stem packing systems provide extra long service life.

2 Piece Body Construction

Allows quick disassembly of valve for maintenance.

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Bill of Materials



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, SS/PTFE, Peek *	
5	2	Joint Gasket	Graphite	
6	2	Flanged End	CF8M	
7	**	Bolt	SS304	
8	**	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	

* Other seat materials available — Consult Factory

** For 1/2" to 2" Valves: Qty. 4 Bolts and Nuts.

For 2 1/2" to 6" Valves: Qty. 8 Bolts and Nuts.

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.

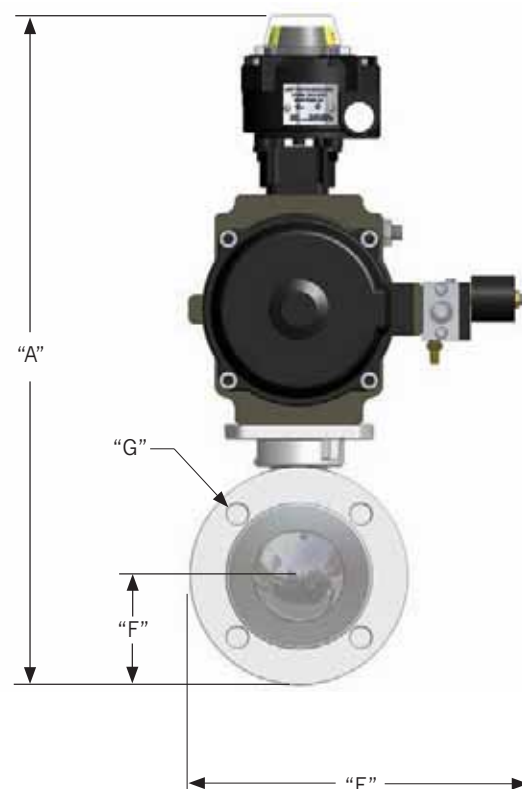
16. Stem Nut

Compresses entire stem system to block leakage.

17. Anti-Static Device

Ball-to-stem anti-static device.

Dimensions



Dimensions

Size	CV	"A" mm (in)	"B" Spring Return mm (in)	"C" Double Acting mm (in)	"D" mm (in)	"E" mm (in)	"F" mm (in)	"G" Bolts			"M" Wt. kg (lbs)	
								No.	G1 Dia. of Holes	G2 Dia. of Pattern		
1/2"	12	358 (14.1)	195 (7.8)	120 (4.72)	108 (4.3)	191 (7.5)	45 (1.75)	4	16 (0.62)	60 (2.38)	5.2 (11.5)	150#
3/4"	32	368 (14.5)	195 (7.8)	147 (5.79)	117 (4.6)	196 (7.7)	49 (1.94)	4	16 (0.62)	70 (2.75)	5.6 (12.3)	
1"	70	380 (14.9)	204 (8)	147 (5.79)	127 (5)	203 (8)	54 (2.12)	4	16 (0.62)	80 (3.12)	7.2 (15.9)	
1-1/2"	240	443 (17.5)	251 (9.87)	183 (7.2)	165 (6.5)	226 (8.9)	64 (2.5)	4	16 (0.62)	98 (3.88)	13 (28.7)	
2"	410	463 (18.2)	350 (13.8)	183 (7.2)	178 (7)	252 (9.9)	76 (3)	4	20 (0.75)	120 (4.75)	20.6 (45.5)	
2-1/2"	680	515 (20.3)	350 (13.8)	183 (7.2)	190 (7.5)	264 (10.4)	89 (3.5)	8	20 (0.75)	140 (5.5)	25.7 (56.7)	
3"	940	539 (21.2)	404 (15.9)	262 (10.3)	204 (8)	300 (11.8)	96 (3.75)	8	20 (0.75)	152 (6)	38 (86)	
4"	1740	584 (23)	488 (19.2)	262 (10.3)	229 (9)	320 (12.6)	115 (4.5)	8	20 (0.75)	191 (7.5)	59.4 (130.9)	
6"	5000	725 (28.5)	640 (25.2)	302 (11.9)	394 (15.5)	363 (14.3)	140 (5.5)	10	23 (0.88)	241 (9.5)	127.3 (280.6)	
1/2"	12	358 (14.1)	195 (7.8)	120 (4.72)	140 (5.5)	191 (7.5)	45 (1.75)	4	16 (0.62)	60 (2.38)	5.7 (12.6)	300#
3/4"	32	368 (14.5)	195 (7.8)	147 (5.79)	152 (6)	196 (7.7)	49 (1.94)	4	16 (0.62)	70 (2.75)	7.3 (16.1)	
1"	70	380 (14.9)	204 (8)	147 (5.79)	165 (6.5)	203 (8)	54 (2.12)	4	16 (0.62)	80 (3.12)	9.3 (20.5)	

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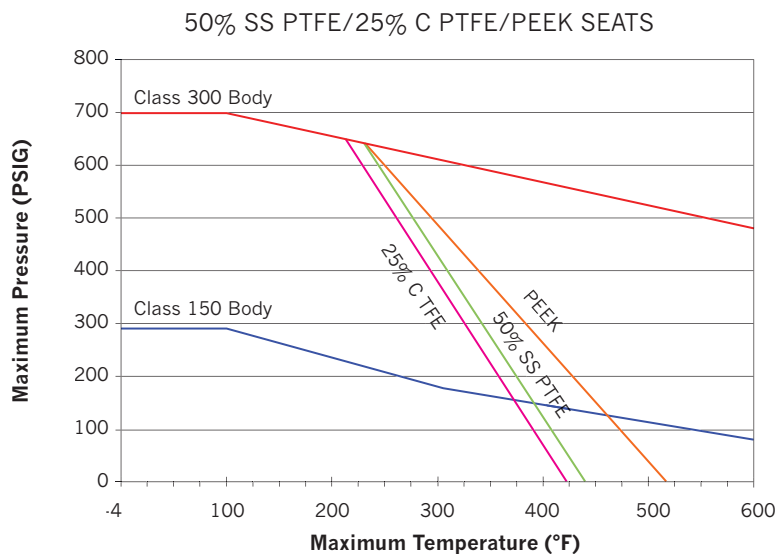
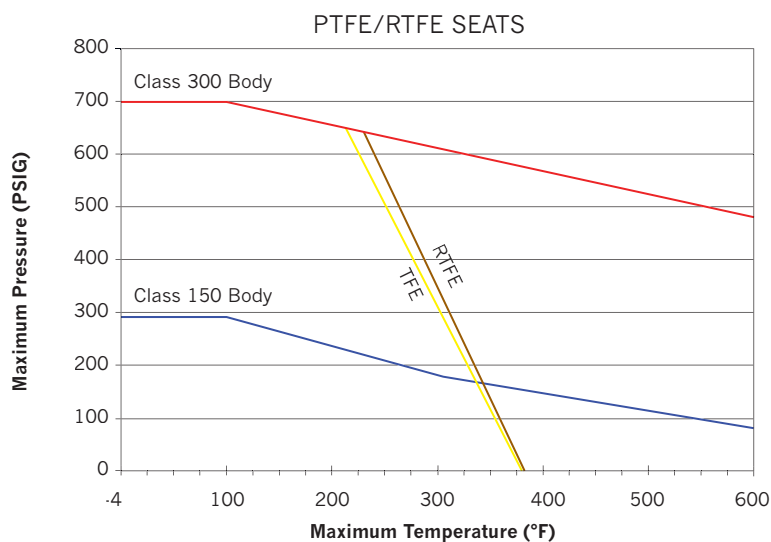
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Dimensions

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Size	CV	"A"	"B"	"C"	"D"	"E"	"F"	No.	"G1"	"G2"	"M"	#300
1-1/2"	240	443 (17.5)	251 (9.87)	183 (7.2)	190 (7.5)	226 (8.9)	64 (2.5)	4	16 (0.62)	98 (3.88)	16.6 (36.6)	
2"	410	463 (18.2)	350 (13.8)	183 (7.2)	216 (8.5)	252 (9.9)	76 (3)	4	20 (0.75)	120 (4.75)	24 (52.9)	
2-1/2"	680	515 (20.3)	350 (13.8)	183 (7.2)	241 (9.5)	264 (10.4)	89 (3.5)	8	20 (0.75)	140 (5.5)	31.1 (68.6)	
3"	940	539 (21.2)	404 (15.9)	262 (10.3)	282 (11.1)	300 (11.8)	96 (3.75)	8	20 (0.75)	152 (6)	46 (101.4)	
4"	1740	584 (23)	488 (19.2)	262 (10.3)	305 (12)	320 (12.6)	115 (4.5)	8	20 (0.75)	191 (7.5)	76.6 (160)	
6"	5000	725 (28.5)	640 (25.2)	302 (11.9)	403 (15.8)	363 (14.3)	140 (5.5)	10	23 (0.88)	241 (9.5)	151.7 (334.4)	

Pressure and Temperature Data



Seat Materials

Material	Temperature Range	Colour	Details
PTFE	-50°F to 400°F (-45°C to 200°C)	White	Virgin Teflon. Chemical compatibility excellent.
RTFE	-50°F to 450°F (-45°C to 230°C)	Off-White	15% glass reinforced Teflon. Chemical compatibility excellent, improved wear factor over PTFE.
50% SS PTFE	-50°F to 470°F (-45°C to 240°C)	Dark Grey	Stainless steel filled Teflon. 50% stainless steel powder filled 50% PTFE. Good abrasion resistance.
25% C PTFE	-50°F to 470°F (-45°C to 240°C)	Black	Carbon graphite filled Teflon. 25% Carbon with 75% PTFE. Wide temperature range with better cycle life than RTFE.
PEEK	-70°F to 550°F (-57°C to 290°C)	Beige	Polyetheretherketone. High temperature applications and good corrosion resistance.

Options and Configurations

Spring Return (“Fail-Safe”) Actuator or Double Acting Actuator

- Bracket free, direct mounting to valve
- Bidirectional pinion travel stops
- Minimum Air Pressure: 60 psig
- Maximum Air Pressure: 120 psig

For Stand-alone Actuator Design Features, Torque and Operating Pressure — See Actuator Bulletin No. 9640-1057



Spring Return



Double Acting

Solenoid Options

- ASCO or Parker
- 12VDC through 240VAC. Low power options available.
- Water-tight (IP67)
- Explosion-Proof
- 18” wire leads and 1/4” air connection



ASCO ®



Parker ®

Limit Switch Options

- Water-tight (IP67)
- Explosion-Proof (Exd 11-C T6)
- Contact Rating: 250VAC-16A
125VDC-0.6A
250VDC-0.3A
- Mechanical Switches: 2-SPDT

For Stand-alone Limit Switch Design Features and wiring information — See Limit Switch Bulletin No. 9640-1058



Standard Watertight



Explosion Proof

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Ordering Information

9650-0000-0000-0000-0000

FPS Product Series

Valve Size

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#

Actuator

00	No Actuator
01	Manual (Handle)
10	Double-Acting (½")
11	Double-Acting (¾"-1")
13	Double-Acting (1½"-2½")
14	Double-Acting (3"-4")
15	Double-Acting (6")
20	Spring Return (½")
21	Spring Return (¾"-1")
22	Spring Return (1½")
23	Spring Return (2"-2½")
24	Spring Return (3")
25	Spring Return (4")
26	Spring Return (6")

Solenoid*

00	No Solenoid
01	ASCO 120VAC WT 1250-0011
02	ASCO 240VAC WT 1250-0010
03	ASCO 24VDC WT 1250-0013
04	ASCO 120VAC ExP 1250-0012
05	ASCO 240VAC ExP 1250-0015
06	ASCO 24VDC ExP 1250-0014
07	Parker 120VAC WT 1250-0050
08	Parker 240VAC WT 1250-0029
09	Parker 24VDC WT 1250-0028
10	Parker 120VAC ExP 1250-0027
11	Parker 240VAC ExP 1250-0032
12	Parker 24VDC ExP LP 1250-0031
13	ASCO 12VDC WT 1250-0016
14	ASCO - 12VDC ExP 1250-0017
15	Parker 12VDC WT 1250-0009
16	Parker 12VDC ExP 1250-0033
17	ASCO 120VDC WT 1250-0053
18	ASCO 120VAC Dual Coil w/DIN 1250-0039
19	ASCO 125 VDC WT 1250-0055
20	ASCO 120VAC ExP Hi Temp 1250-0056

Body*

1	CF8M
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Ball

1	Standard 316SS
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End Conn.

2	Flanged
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Seat*

1	15% RTFE
2	PTFE
3	PTFE/SS
4	25% Carbon
6	PEEK

Limit Switch

0	No Limit Switch
1	Water-Tight Limit Switch
2	Ex. Proof Limit Switch

Service Requirements*

0	No Approvals-Fail Closed
1	No Approvals-Fail Open
4	Steam

*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	Service Requirements Available in CSA or FM approved versions, see bulletin 9640-1055
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