



2PC Reduced Bore Flanged End Ball Valve

EZ Series

Easy Maintenance Design

Features a 2PC Bolted Body

Models:

RF15 - Short Pattern

RF150 - Long Pattern

V-RF15 & V-RF150 - Control Type Ball

Size Range 6" - 14"

ANSI Class 150

ANSI Reduced Bore
Take - out



10" Model RF15 - Short



10" Model RF150 - Long

ANSI Full Bore
Take - out

Versatile Design - Offers

- Ease of Seat Replacement or Seat Change-Outs
- Ease of Maintenance
- Custom V-Port Control Options
- Improved Flow Control
- Lighter Weight than Full Port
- Lower Cost than Full Port
- Lower Operating Torques
- Fire Safe Design
- Comply with API & ANSI Standards

Simplicity & Performance, An Ideal Choice for Applications that Require Easy to Repair Reduced Port Flanged End Ball Valves

DESIGN FEATURES AND STANDARDS

Standards and Specifications

Valves covered in this bulletin are available to conform to the following industry standards and specifications.

All valves are manufactured to ISO 9001 quality standards.

WW-V-35C	Federal Specification: Valve, Ball
ANSI/ASME B16.10	Face-to-Face/End-to-End Dimensions of Ferrous Valves
ANSI/ASME B16.5	Steel Pipe Flanges and Flange Fittings
ANSI/ASME B16.34	Steel Valves - Flanged and Butt-welded End
ANSI/ASME B31.1	Power Piping
ANSI/ASME B31.3	Chemical Plant & Petroleum Refinery Piping
ANSI/FCI 70-2-1976	For Control Valve Leakage
BS 6755, Part 2	Testing of Valves - Specification for Fire Type Testing
ISO 5752:1982	Metal Valves for use in Flanged Piping Systems
ISA 75.02	Valve Sizing Coefficient Cv, Piping Geometry Factor Fp and Pressure Drop Limitation XT
ISA S75.19	Hydrostatic Testing of Control Valves
ISO 5211	Dimensions for Attachment of Actuators/Gear Boxes to Valves (ISO Mounting)
MSS-SP-25	Standard Marking Systems for Valves
MSS-SP-55	Quality Standards for Steel Castings

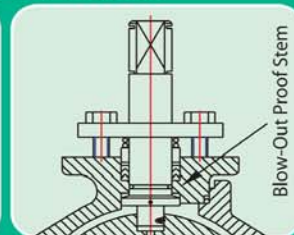
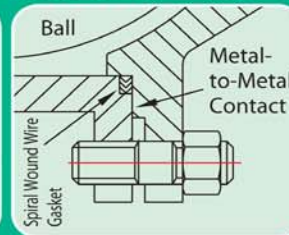
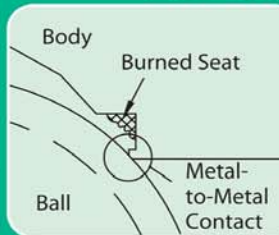
MSS-SP-6	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
MSS-SP-44	Steel Pipe Line Flanges
MSS-SP-61	Pressure Testing of Steel Valves
MSS-SP-72	Flanged or Butt and Weld End Ball Valves Having Full or Reduced Bores for General Liquid and Gas Service
MSS-SP-96	Terminology for Valves and Fittings
NACE MR01-76	Sulfide Stress Cracking Resistant Materials Oilfield Equipment.

Optional Standards & Specification

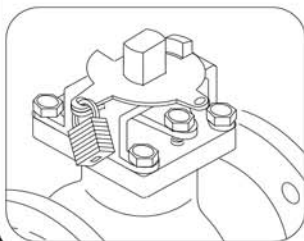
API 608	Metal Ball Valves Used in On-Off Service that have Butt-welded or Flanged Ends for Size 1/2" NPS-12" NPS
API 6D	Specifications for Pipeline Valves
API 598	Valve Inspection and Testing
MSS-SP-53	Quality Standard for Steel Casting and Forging for Valves, Flanges and Fittings and Other Piping Components-Magnetic Particle Examination Method
MSS-SP-93	Quality Standard for Steel Casting and Forging for Valves, Flanges and Fittings and Other Piping Components-Liquid Penetrant Method

Stayflow's Flanged series valves with graphite stem packing meet the highest fire safety standards under extreme conditions. In the event of a fire, after heat destroys the primary resilient seat, the ball makes contact with the secondary metal seat, forming a secure seal. The body seal, composed of stainless steel and graphite wound into a spiral, prevents external leakage. The graphite stem rings prevent stem leakage.

Fire Safe: API 607-4 & 5 Certified



Tamper Proof Locking Device Standard



Valve topworks incorporate a tamper proof locking device, which locks in open or closed positions. When valve stop housing is removed, four bolts remain to mount actuator bracket. Size: 6" - 14"

Pressure Relieving & Equalizing Seat Design

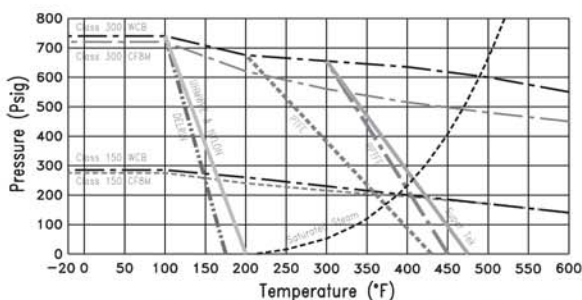
Specially Designed Seats allow equalization of pressure in the ball cavity which reduces operating torque and increases seat life.



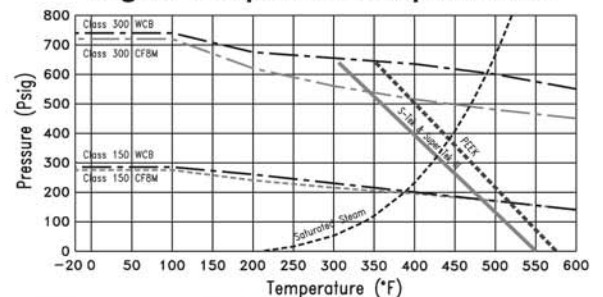
Ball Design Added Safety Feature

All balls are provided with a 1/8" hole drilled into the stem slot of each ball to prevent excessive pressure build up in the cavity from trapped liquid when the valve is in the open position.

Pressure Temperature Rating



Higher Temperature Requirements



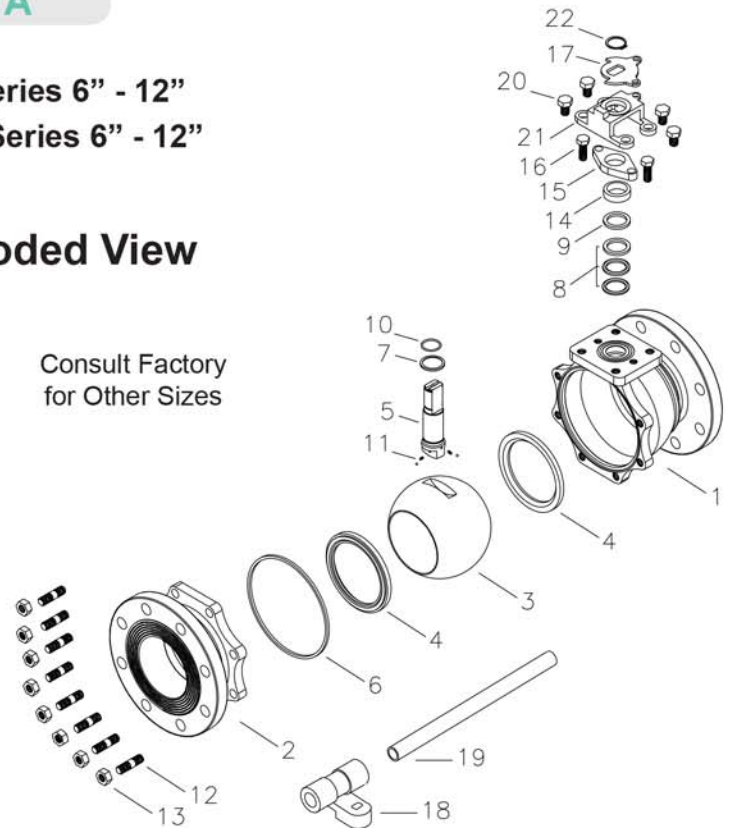
Saturated steam services above 150 psi use either Super Tek III or S-Tek. Saturated steam services above 250 psi use metal seats. Metal Seated Ball Valve will take full ANSI body metal material ratings.

DIMENSIONS AND TECHNICAL DATA

No.	Name	Stainless Steel	Carbon Steel
1	Body	ASTM A351 CF8M	ASTM A216 WCB
2	Cap	ASTM A351 CF8M	ASTM A216 WCB
3	Ball	SS316	SS316/SS304
4	Seat	TFM	TFM
5	Stem	SS316/17-4Ph	SS316/17-4Ph
6	Gasket	RPTFE / Graphite	RPTFE / Graphite
7	Thrust Washer	25%Carbon+TFM	25%Carbon+TFM
8	Stem Packing	TFM / Graphite	TFM / Graphite
9	Packing Protector	50%PTFE+SS316	50%PTFE+SS316
10	O-Ring	Viton	Viton
11	Anti-Static	SS304	SS304
12	Body Stud	ASTM A193 B8	ASTM A193 B7
13	Body Nut	ASTM A194 Gr. 8	ASTM A194 2H
14	Packing Follower	SS304	SS304
15	Packing Gland	SS304 / 17-4Ph	SS304 / 17-4Ph
16	Gland Bolt	SS304	Steel
17	Travel Stopper	SS304	Steel
18	Junction Head	Ductile Iron	Ductile Iron
19	Pipe Grip	Carbon Steel	Carbon Steel
20	Housing Bolt	SS304	SS304
21	Stop Housing	SS304	SS304
22	Snap Ring	Plated Steel	Plated Steel

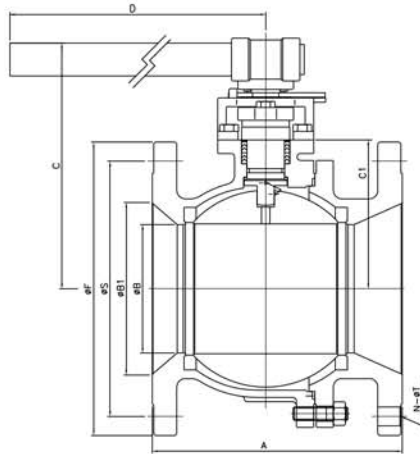
RF15 Series 6" - 12"
RF150 Series 6" - 12"

Exploded View

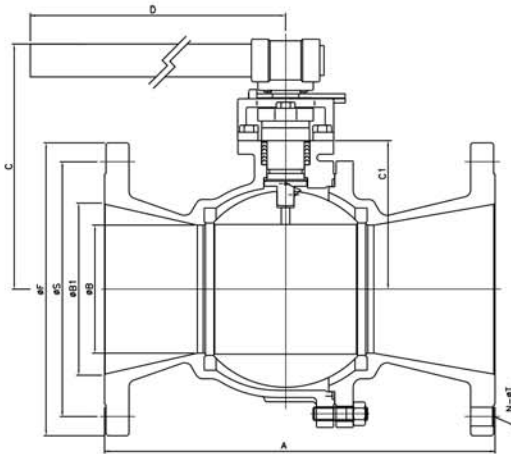


For 6" size, packing gland is lived loaded, and handle is one Piece design;

For size 12" & 14", packing gland serves as stop housing.
 Sizes 1 1/2" through 4" are available in our standard 1 pc body design, consult factory.

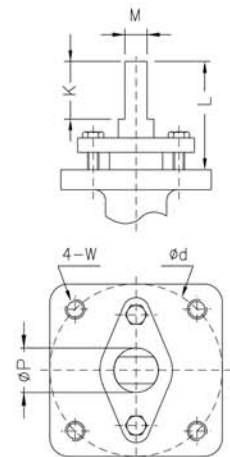


RF15 / Short



RF150 / Long

Mounting Dimensions



Verify Mouting Dimensions prior to making hardware

Dimensions and Weights

Size	RF15		RF150																Torque	Weight	Lbs	
	A	B	A	B	B1	C	C1	D	d	F	K	L	M	N	P	S	T	W	Cv	in-lb	RF15	RF150
6"	10.5	4.02	15.5	4.02	5.98	7.68	4.47	15.4	4.02	11.0	1.75	3.07	0.669	8	1.10	9.50	0.88	1/2-13unc	1090	1785	82.5	C/F
8"	11.5	5.98	18.0	5.98	7.87	11.31	7.17	25.4	4.92	13.5	1.65	3.58	1.024	8	1.71	11.75	0.88	1/2-13unc	2300	4830	186	C/F
10"	13.0	7.87	21.0	7.87	9.84	12.1	7.60	25.4	4.92	16.0	1.65	3.58	1.024	12	1.71	14.25	1.00	1/2-13unc	4000	10395	279.5	310
12"	14.0	9.53	24.0	9.84	11.81	13.22	9.88	43.1	5.51	19.0	2.13	3.86	1.378	12	1.97	17.0	1.00	5/8-11unc	7700	17850	426.5	C/F
14"	15.0	9.84	--	--	14.00	13.22	9.88	43.1	5.51	21.0	2.13	3.86	1.378	12	1.97	18.75	1.12	5/8-11unc	5100	23000	C/F	C/F

Customize Your Flow Control Options!

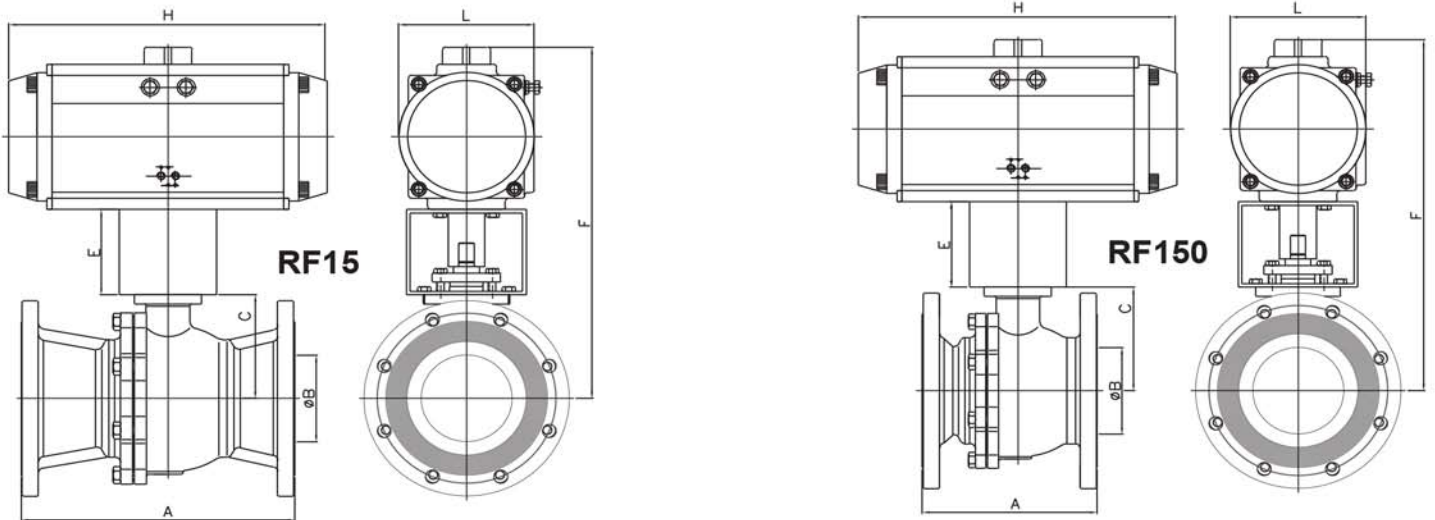
2PC Valve Design Offers Easy Conversion from a Standard Valve to a specialized V Port Control Valve. Reduction in Valve Size, Actuator Size, Valve Weight, Space Reduction Providing Greater Cost Savings and Improved Flow Conditions.

V-Port Control Ball Valve Cv Chart

Valve Size	V Port Angle	Percent and Angle of Ball Rotation										
		0% 0°	10% 9°	20% 18°	30% 27°	40% 36°	50% 45°	60% 54°	70% 63°	80% 72°	90% 81°	100% 90°
6"	15°	0	0.07	0.34	2.27	3.58	6.52	11.80	17.18	26.75	40.12	59.58
	30°	0	0.10	0.64	2.71	6.62	13.17	23.14	33.74	52.56	79.23	117.28
	60°	0	0.16	1.47	6.59	16.27	34.41	53.61	78.15	121.75	183.52	272.50
	90°	0	0.24	2.66	11.86	29.28	53.16	96.09	140.67	215.93	330.48	489.00
8"	15°	0	0.16	0.76	5.26	8.35	15.25	27.40	39.88	62.04	93.40	138.35
	30°	0	0.24	1.48	6.29	15.39	30.59	53.77	78.38	122.11	184.07	272.47
	60°	0	0.35	3.45	15.30	37.79	82.27	124.55	181.38	282.85	426.36	633.00
	90°	0	0.47	6.18	27.55	68.02	123.50	223.25	326.80	501.66	767.79	1136.20
10"	15°	0	0.35	1.45	10.25	16.24	29.30	53.50	77.66	120.90	182.30	269.40
	30°	0	0.44	2.89	12.88	31.75	57.72	104.71	152.63	237.80	358.46	530.63
	60°	0	0.67	6.66	29.79	73.59	160.21	242.53	353.57	550.82	830.28	1232.90
	90°	0	0.89	12.03	53.65	150.00	300.00	500.00	725.00	1020.00	1495.20	2212.78
12"	15°	0	0.60	2.80	19.75	31.20	56.60	102.80	149.40	232.60	350.50	520.20
	30°	0	0.80	5.56	24.79	61.12	111.11	201.57	293.81	457.77	690.04	1021.90
	60°	0	1.30	12.82	57.35	141.66	308.40	466.87	680.62	1060.33	1598.29	2373.30
	90°	0	1.73	24.10	104.30	465.10	838.10	1230.1	1565.1	1900.10	2880.10	4300.50

Actuator Sizing Chart

Important: Actuators are sized for applications with clean wet media up to line pressure 285 psi.



SIZE	A		B	C	E	SPRING RETURN 80 PSI					SPRING RETURN 60 PSI					DOUBLE ACTING 80 PSI					DOUBLE ACTING 60 PSI				
	RF15	RF150				Actuator	F	H	J	L	Actuator	F	H	J	L	Actuator	F	H	J	L	Actuator	F	H	J	L
6"	10.5	15.5	5.98	4.47	4.00	SR140	16.01	15.35	7.54	5.98	SR160	17.01	18.03	8.54	6.86	DA140	16.01	15.35	7.54	5.98	DA125	15.36	11.65	6.89	5.59
8"	11.5	18.0	7.87	7.17	6.00	SR210	24.39	22.20	11.22	8.90	SR210	24.39	22.20	11.22	8.90	DA160	21.71	18.03	8.54	6.86	DA160	21.71	18.03	8.54	6.86
10"	13.0	21.0	9.84	7.60	6.00	SR270	27.61	27.80	14.01	11.58	SR270	27.61	27.80	14.01	11.58	DA240	26.16	23.70	12.56	10.24	DA240	26.16	23.70	12.56	10.24
12"	14.0	24.0	11.81	9.88	6.00	SR350	32.88	33.90	17.00	15.00	SR350	32.88	33.90	17.00	15.00	DA270	29.89	27.80	14.01	11.58	DA270	29.89	27.80	14.01	11.58



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