

ASME 600 / 900 / 1500 Limited Class

Applications

Boiler drains
 Feedwater drains
 Steam drum vents
 Isolation valve for bypass lines
 Economizer header drains

End Connections

Socketweld
 Buttweld
 Flanged¹

Sizes

3/4 to 2-1/2 inch

¹ Available Upon Request

Features

Ball and Seats

- Mate-lapped for 100% contact
- Ensures absolute shutoff
- Corrosion resistant
- Seats are protected from flow in open / closed position

Mechanical Precision Stop

- Prevents turning ball 180°
- Eliminates misalignment

Stem & Packing Arrangement

- Live Loading
- Quarter-turn non-rising stem does not deteriorate packing
- Extensive stuffing box
- Dual anti-extrusion rings keep packing in place

Rigid Mounting Bracket

- Designed to support actuator in any position

Seat Spring

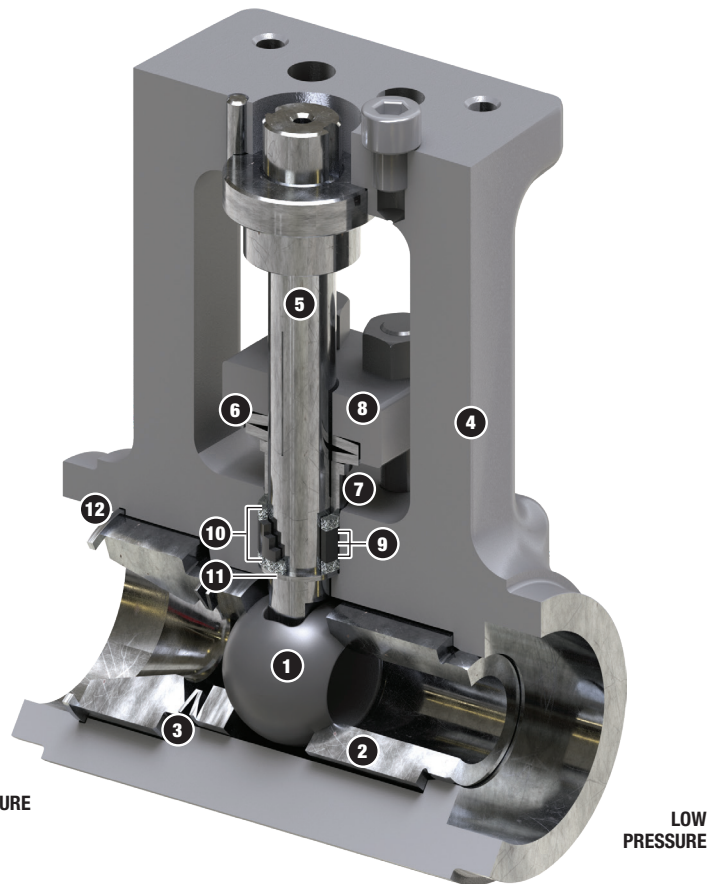
- Assisted by line pressure, provides a constant mechanical force on ball against seat to maintain seal

Bill of Materials

Item No.	Description	Material
1	Ball	410SS / CC Coated or Inconel 718 / Spray & Fuse
2	Seat	410SS / CC Coated or Inconel 718 / CC Coated
3	Spring	Inconel 718
4	Body	A182 F22 A105 A182 F91
5	Stem	Gr 660 / Inconel 718
6	Live Loading	Inconel 718
7	Gland Thruster	316 Nitrided
8	Gland Flange	410SS
9	Stem Packing	Expanded Graphite
10	Anti-Extrusion Rings	Braided Graphite with Inconel Wires
11	Metal Anti-Extrusion Ring	316SS
12	Retaining Ring	A638 660

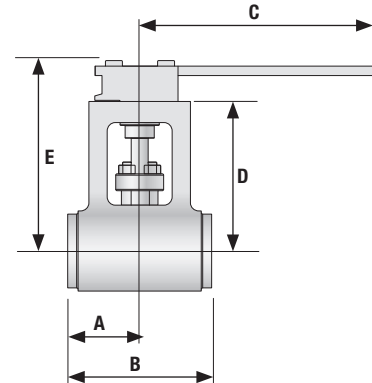
SS = Stainless Steel
 CC = Chromium Carbide

- Standard four-year warranty; one-year warranty on high-cycle applications (1 cycle per day, 365 days per year)
- Patented design



Dimensions² in (mm)

Model	Bore	SW End	A	B	C	D	E	Weight
IRSVP-UC	0.63 (16)	3/4 (20)	3.73 (95)	6.25 (159)	13.63 (346)	5.03 (128)	6.50 (165)	15 lb 7 Kg
		1, 1-1/2 (25, 40)	2.50 (63.5)	5.00 (127)	13.87 (352)	5.03 (128)	6.50 (165)	15 lb 7 Kg
IRSVP-UF	1.00 (25)	1-1/2, 2 (40, 50)	3.19 (81)	6.38 (162)	18.34 (466)	6.63 (168)	8.80 (224)	32 lb 15 Kg
IRSVP-UL	1.30 (33)	2 (50)	3.51 (89)	7.5 (191)	17.94 (456)	7.63 (194)	10.12 (257)	54 lb 24 Kg
		2-1/2 (65)	3.75 (95)	7.5 (191)	17.94 (456)	7.63 (194)	10.12 (257)	53 lb 24 Kg
IRSVP-UM ³	1.50 (38)	2 (50)	5.59 (142)	9.59 (244)	17.94 (456)	7.63 (194)	9.73 (247)	61 lb 28 Kg
		2-1/2 (65)	3.88 (99)	7.75 (197)	17.94 (456)	7.63 (194)	9.73 (247)	58 lb 26 Kg
IRSVP-UT	1.87 (47.5)	2, 2-1/2 (50, 65)	6.32 (1605)	11.07 (281)	17.94 (456)	7.63 (194)	9.56 (243)	66 lb 30 Kg



² Consult factory for F91 dimensions.

³ IRSVP-UM is designed to meet ASME TDP-1 2013 full-bore and reliability requirements.

Temperature vs Pressure — Limited Class Ratings

Class	Mat'l.	Temperature (°F)																		
		-20 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100			
ASME 600 Maximum Pressure (psig)	F22 ⁴	1500	1500	1480	1455	1450	1440	1430	1415	1415	1415	1355	1200	953	688	447	277			
	A105 ⁵	1500	1500	1480	1465	1465	1465	1430	1380	1270	1030	—	—	—	—	—	—			
	F91	1500	1500	1500	1500	1500	1500	1500	1465	1460	1440	1355	1200	953	862	862	765			
ASME 900 Maximum Pressure (psig)	F22 ⁴	2250	2250	2220	2185	2175	2165	2145	2120	2120	2120	2030	1800	1433	1045	681	415			
	A105 ⁵	2250	2250	2220	2200	2200	2200	2145	2075	1905	1545	—	—	—	—	—	—			
	F91	2250	2250	2250	2250	2250	2250	2250	2200	2185	2160	2030	1800	1433	1311	1311	1165			
ASME 1500 Maximum Pressure (psig)	F22 ⁴	3750	3750	3695	3640	3620	3605	3580	3535	3535	3535	3385	3000	2412	1785	1170	700			
	A105 ⁵	3750	3750	3700	3665	3665	3665	3575	3455	3170	2570	—	—	—	—	—	—			
	F91	3750	3750	3750	3750	3750	3750	3750	3665	3645	3600	3385	3000	2412	2250	2250	1993			
Class	Mat'l.	Temperature (°C)																		
		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600
ASME 600 Maximum Pressure (barg)	F22 ⁴	103	103	103	102	100	100	100	99	98	98	98	98	94	86	72	48	40	27	—
	A105 ⁵	103	103	103	102	101	101	101	100	98	94	87	72	—	—	—	—	—	—	—
	F91	103	103	103	103	103	103	103	103	103	101	101	99	94	86	72	62	59	59	48
ASME 900 Maximum Pressure (barg)	F22 ⁴	155	155	155	153	151	150	149	149	148	146	146	146	141	128	107	73	61	41	—
	A105 ⁵	155	155	155	153	152	152	152	150	147	141	130	108	—	—	—	—	—	—	—
	F91	155	155	155	155	155	155	155	155	154	152	151	149	141	128	107	94	90	89	73
ASME 1500 Maximum Pressure (barg)	F22 ⁴	259	259	258	255	251	250	249	248	246	244	244	244	236	214	179	125	104	70	—
	A105 ⁵	259	259	258	255	253	253	253	251	245	236	217	180	—	—	—	—	—	—	—
	F91	259	259	259	259	259	259	259	259	257	253	251	248	236	214	179	161	155	153	124

⁴F22 not recommended for prolonged use above 1100°F / 593°C per ASME B16.34.

⁵A105 not recommended for prolonged use above 800°F / 427°C per ASME B16.34.

Cv

Bore (inches)	Pipe Size (inches) / Schedule									
	3/4 Sch 160	3/4 Sch XXS	1 Sch 160	1 Sch XXS	1-1/2 Sch 160	1-1/2 Sch XXS	2 Sch 160	2 Sch XXS	2-1/2 Sch 160	2-1/2 Sch XXS
0.63	40	19	18	38	11	13	—	—	—	—
1.00	—	—	—	—	43	70	33	37	—	—
1.30	—	—	—	—	—	—	90	117	66	82
1.50	—	—	—	—	—	—	144	242	103	145
1.87	—	—	—	—	—	—	173	145	205	175