

BALL VALVES

BOLTED CAP

TRUNNION BALL VALVE

STANDARD

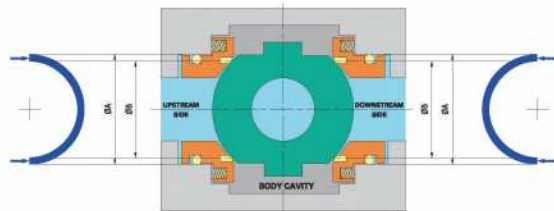
SINGLE PISTON EFFECT (SELF-RELIEVING SEATS)

Fluid pressure, both upstream and downstream, creates a resultant thrust that pushes the seat rings against the ball.

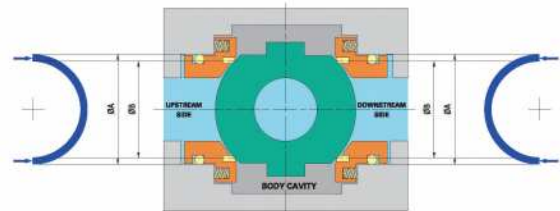
Fluid pressure acting in the body cavity creates a resultant thrust that pushes the seat rings away from the ball.

The single piston design permits the automatic release of any overpressure in the body cavity when the valve is in the fully open or fully closed position, therefore the seat rings are "self-relieving"

SINGLE PISTON EFFECT



PRESSURE ACTING UPSTREAM AND / OR DOWNSTREAM



PRESSURE ACTING IN THE BODY CAVITY

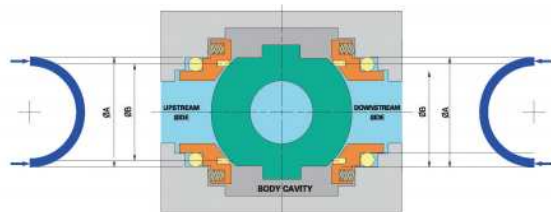
OPTIONAL

DOUBLE PISTON EFFECT

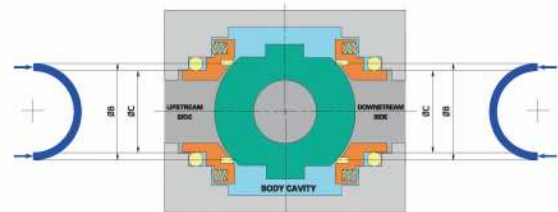
Fluid pressure, both upstream and down-stream, as well as in the body cavity creates a resultant thrust that pushes the seat rings towards the ball.

Valves with double piston effect seat rings require a relief valve in order to reduce the build-up of overpressure in the body cavity.

DOUBLE PISTON EFFECT



PRESSURE ACTING UPSTREAM AND / OR DOWNSTREAM



PRESSURE ACTING IN THE BODY CAVITY

BALL VALVES

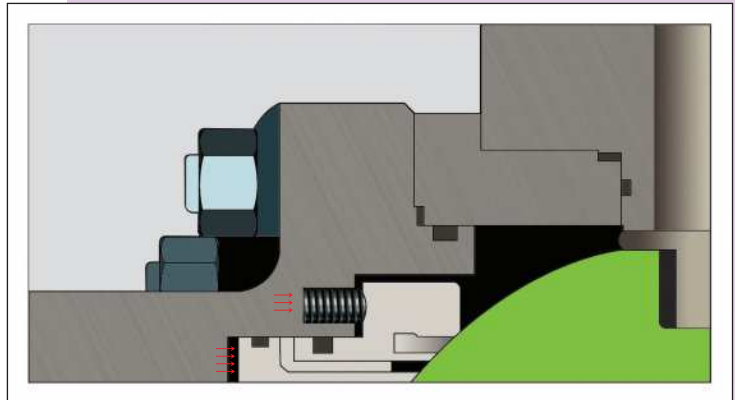
BOLTED CAP

FEATURES

SEAT SEALING

Soft seats are standard. Seat inserts of synthetic material such as Nylon, PTFE, RTFE or Peek are contained within a one-piece metal seat ring.

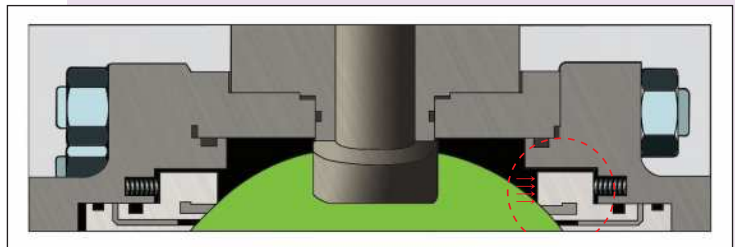
With no or very low line pressure, sealing between the seats and ball is achieved by seat springs. With higher line pressure, the line pressure, in conjunction with the spring load, forces the upstream seat ring against the ball, which results in tighter sealing.



SELF RELIEVING SEAT

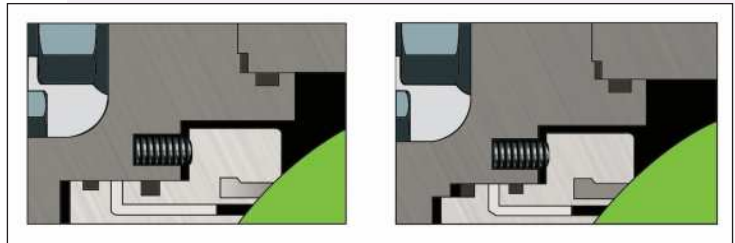
This standard feature is designed to prevent excessive pressure buildup within the valve by automatically relieving pressure when body cavity pressure exceeds the spring load on the seats.

Double Piston Seat is also available as an option.



SEAT RING SEALING

Two o-rings or one each of an o-ring and graphite ring are used for pressure classes 150 through 600. One lip seal with an o-ring or graphite ring is used for the pressure class 900 up to 2500.

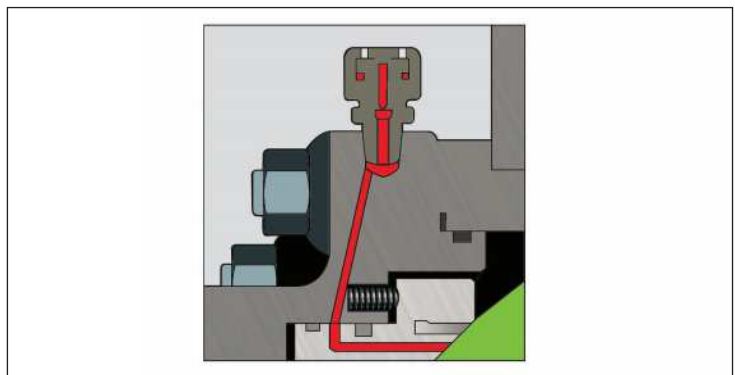


SEALANT INJECTION FITTING

This feature is standard except in sizes 2"-4" for pressure classes 150, 300 and 600.

In case of seat ring damage, sealant injection provides a fast, reliable way to restore tight sealing.

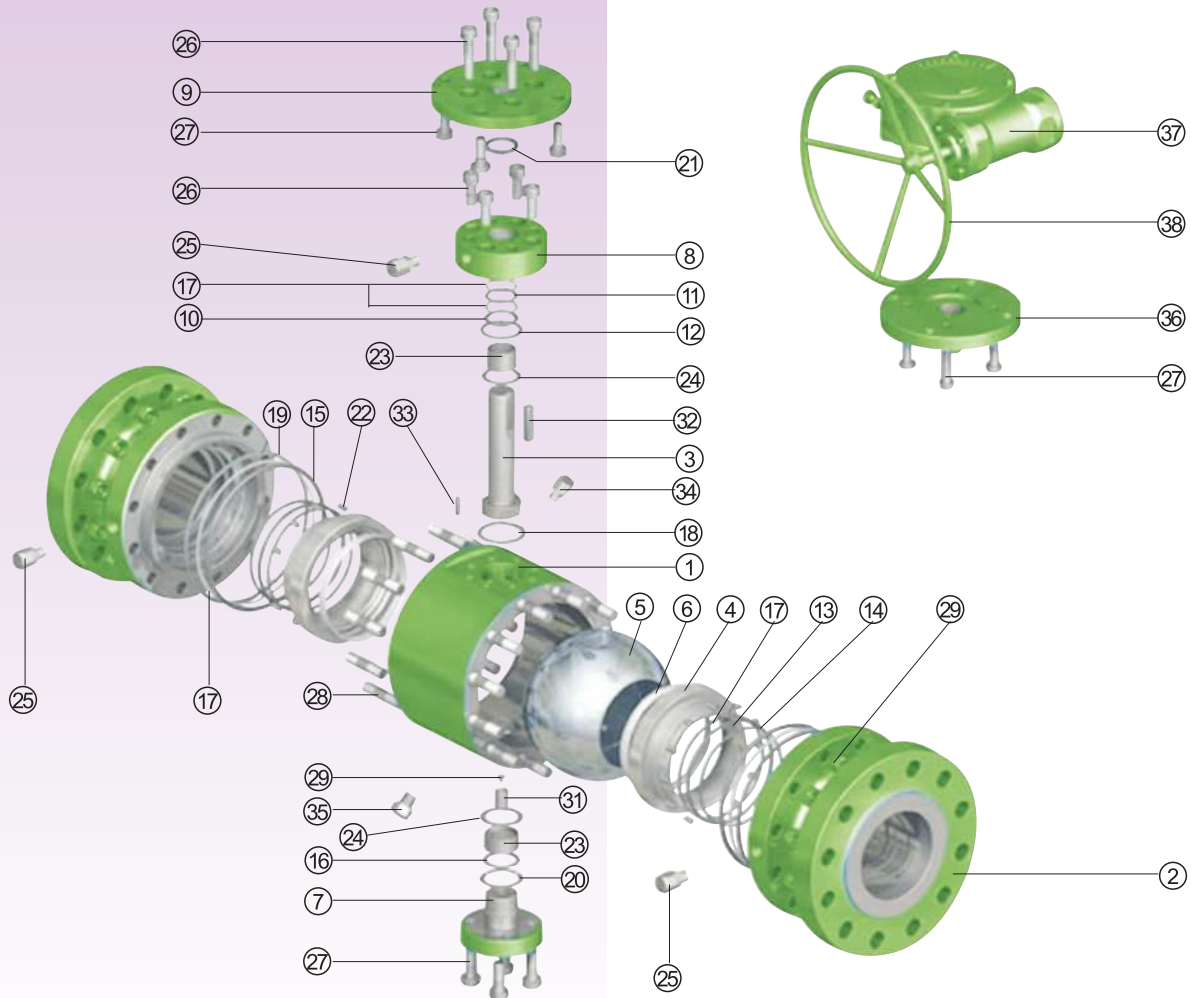
This injection system can also be used for routine flushing or the seat ring area while in service.



BALL VALVES

BOLTED CAP

PART LIST AND MATERIAL SPECIFICATIONS (TYPICAL)

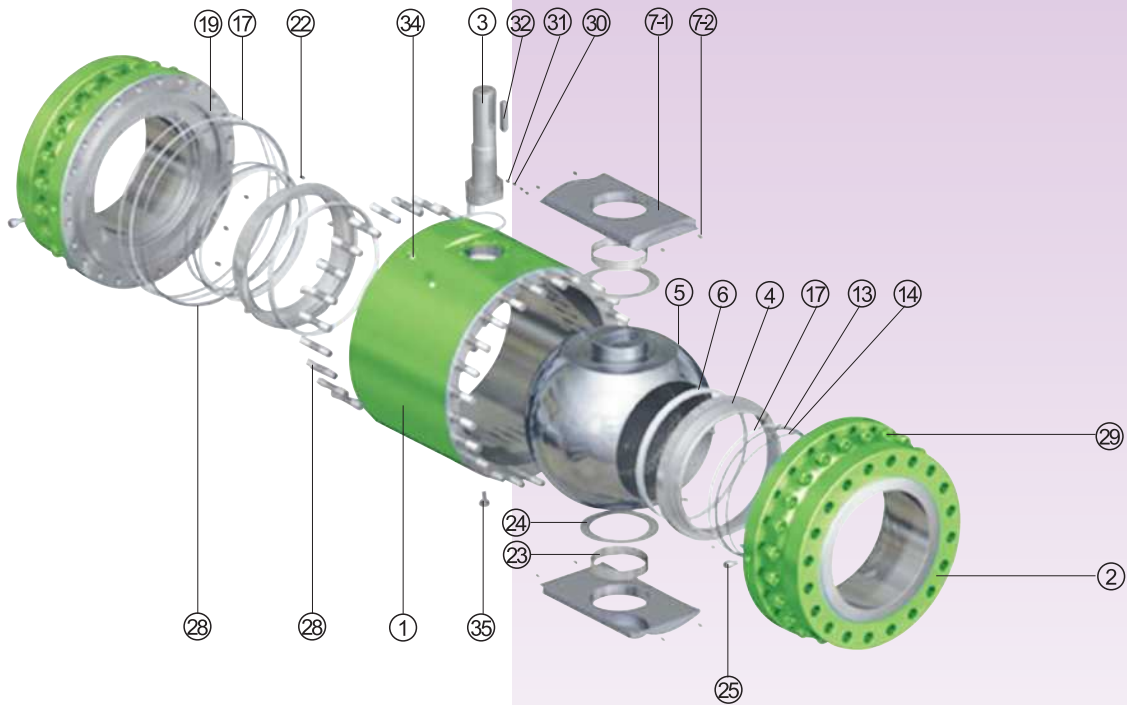


NO	PART NAME	CARBON STEEL NACE	LOW TEMP NACE	STAINLESS STEEL NACE
1	BODY	A105, A216 WCB	A350 LF2, A352 LCB	A182 F316, A351 CF8M
2	CAP	A105, A216 WCB	A350 LF2, A352 LCB	A182 F316, A351 CF8M
3	STEM	AISI 1045 ENP, AISI 4140 ENP	AISI 4140 ENP	316SS, 17-4 PHSS
4	SEAT RING	A105 ENP, A216 WCB ENP	A350 LF2 ENP, A352 LCB ENP	316SS
5	BALL	A105 ENP, A216 WCB ENP	A350 LF2 ENP, A352 LCB ENP	A182 F316, A351 CF8M
6	SEAT INSERT	Nylon, PTFE, PEEK	NYLON, PTFE, PEEK	Nylon, PTFE, PEEK
7	TRUNNION	AISI 1045, AISI 4140		316SS
7-1	TRUNNION BLOCK	AISI 1045, AISI 4140		316SS
7-2	TRUNNION BLOCK PIN	AISI 410		316SS
8	GLAND	AISI 1045		316SS
9	ADAPTER PLATE	AISI 1045		316SS
10	STEM O-RING / LIPSEAL	Viton / Polymite	Viton GLT / Polymite	Viton / Polymite
11	STEM O-RING	Viton	Viton GLT	Viton
12	GLAND O-RING	Viton	Viton GLT	Viton

BALL VALVES

BOLTED CAP

PART LIST AND MATERIAL SPECIFICATIONS (TYPICAL)

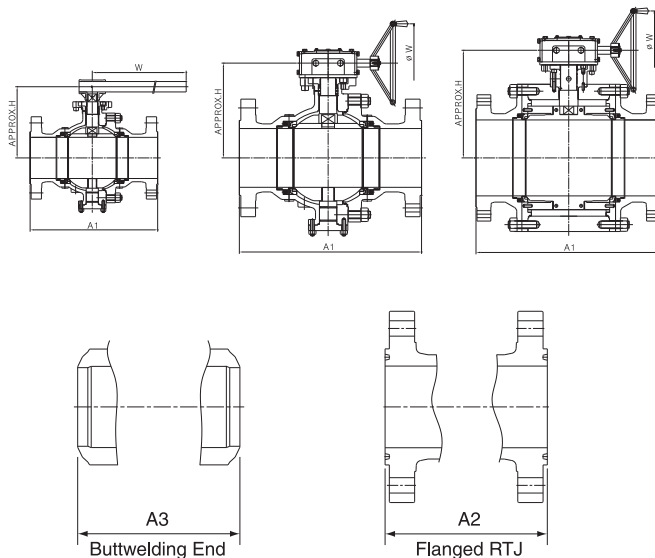
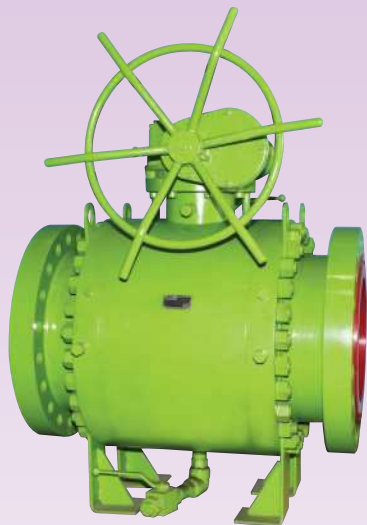


NO	PART NAME	CARBON STEEL NACE	LOW TEMP NACE	STAINLESS STEEL NACE
13	SEAT O-RING / LIPSEAL	Viton / Polymite	Viton GLT / Polymite	Viton / Polymite
14	SEAT SUBSEAL	Viton, Graphite	Viton GLT, Graphite	Viton, Graphite
15	CLOSURE O-RING	Viton	Viton GLT	Viton
16	TRUNNION O-RING	Viton	Viton GLT	Viton
17	BACKUP RING	PTFE, Nylon	PTFE, Nylon	PTFE, Nylon
18	GLAND SEAL	Spiral Wound Gasket 316SS + Graphite		
19	BODY SEAL	Spiral Wound Gasket 316SS + Graphite		
20	TRUNNION SEAL	Spiral Wound Gasket 316SS + Graphite		
21	STEM PACKING	Graphite		
22	SEAT SPRING	Inconel X-750, 17-7 PHSS		
23	BEARING	PTFE / Carbon Steel		PTFE / 316 SS
24	THRUST WASHER	PTFE / Carbon Steels		PTFE / 316 SS
25	SEALANT FITTING	Carbon Steel / SS Ball Check		316SS / SS Ball Check
26	SOCKET BOLT	A574		316SS
27	HEX / SOCKET BOLT	A574		316SS
28	STUD BOLT	A193 B7	A320L 7	A193 B8
29	HEX NUT	A194 2H	A194 7	A194 8
30	GROUNDING PIN	Stainless Steel		
31	GROUNDING SPRING	Stainless Steel		
32	KEY	Carbon Steel	Carbon Steel	Stainless Steel
33	DOWEL PIN	Carbon Steel	Carbon Steel	Stainless Steel
34	RELIEF PLUG	Carbon Steel	Carbon Steel	Stainless Steel
35	DRAIN PLUG	Carbon Steel	Carbon Steel	Stainless Steel
36	MOUNTING PLATE	Carbon Steel	Carbon Steel	Stainless Steel
37	GEAR OPERATOR	Ductile Iron Case / Carbon Steel Worm Gear		
38	HAND WHEEL	Carbon Steel, Ductile Iron		

BALL VALVES

BOLTED CAP

BC, TRUNNION BALL



CLASS 150

VALVE SIZE	in	6	8	10	12	14	16	18	20	24	28	30	36	
	mm	150	200	250	300	350	400	450	500	600	700	750	900	
A1	in	15.5	18.0	21.0	24.0	27.0	30.0	34.0	36.0	42.0	49.0	51.0	60.0	
	mm	393.7	457.2	533.4	609.6	685.5	762	863.6	914.4	1066.8	1245	1295	1524	
H	in	29.5	36.7	46.3	52.2	60.0	71.2	87.2	99.3	112.2	129.3	139.0	156.7	
	mm	749	931	1176	1326	1525	1809	2214	2522	2850	3284	3530	3980	
W	in	23.6	15.7	15.7	17.7	19.7	22.0	19.7	24.8	24.8	28.0	28.0	31.5	
	mm	600	400	400	450	500	560	500	630	630	710	710	800	
WEIGHT	RF	lb	277.8	423.3	588.6	1003.1	1730.6	2275.2	3053.4	4695.8	6172.9	8035.8	10670.4	1642.4
		kg	126	192	267	455	785	1032	1385	2130	2800	3645	4840	7450

CLASS 300

VALVE SIZE	in	4	6	8	10	12	14	16	18	20	24	28	30	36	
	mm	100	150	200	250	300	350	400	450	500	600	700	750	900	
A1 & A3	in	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	55.0	68.0	
	mm	305	403	419	457	502	762	838	914	991	1143	1346	1397	1727	
H	in	9.3	12.0	13.6	16.1	17.9	19.0	20.1	21.7	24.0	27.4	30.8	33.7	37.8	
	mm	235	305	345	410	455	482	510	550	610	695	782	855	960	
W	in	23.6	19.7	22.0	24.8	24.8	28.0	31.5	31.5	31.5	31.5	31.5	31.5	31.5	
	mm	600	500	560	630	630	710	800	800	800	800	800	800	800	
WEIGHT	RF	lb	174.2	341.7	529.1	665.8	1135.4	21991.1	2623.5	3042.4	4343.1	6613.9	9336.6	12897.0	18386.5
		kg	79	155	240	302	515	9975	1190	1380	1970	3000	4235	5850	8340

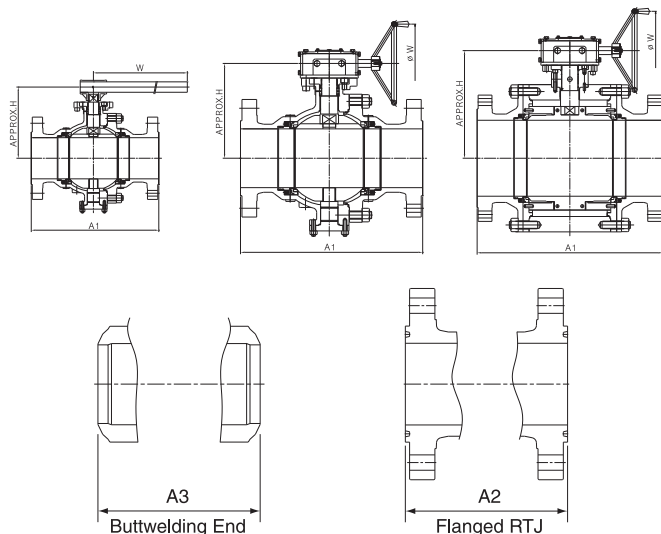
CLASS 600

VALVE SIZE	in	2	3	4	6	8	10	12	14	16	18	20	24	
	mm	50	80	100	150	200	250	300	350	400	450	500	600	
A1 & A3	in	11.5	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397	
A2	in	11.6	14.1	17.1	22.1	26.1	31.1	33.1	35.1	39.1	43.1	47.2	55.4	
	mm	295	359	435	562	663	790	841	892	994	1095	1200	1407	
H	in	6.9	8.8	10.0	12.1	14.6	16.3	18.1	19.7	21.9	21.5	24.8	28.0	
	mm	175	223	255	308	372	415	460	500	556	545	630	710	
W	in	23.6	23.6	23.6	15.7	19.7	24.8	24.8	24.8	28.0	31.5	31.5	31.5	
	mm	600	600	600	400	500	630	630	630	710	800	800	800	
WEIGHT	RF	lb	94.8	154.3	295.4	628.3	987.7	1499.1	2398.6	2892.5	4146.9	5216.1	7050.4	10472.0
		kg	43	70	134	285	448	680	1088	1312	1881	2366	3198	4750

BALL VALVES

BOLTED CAP

BC, TRUNNION BALL



CLASS 900

VALVE SIZE	in	2	3	4	6	8	10	12	14	16	
	mm	50	80	100	150	200	250	300	350	400	400
A1 & A3	in	14.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5	
	mm	368	381	457	610	737	838	965	1029	1130	
A2	in	14.6	15.1	18.1	24.1	29.1	33.1	38.1	40.9	44.9	
	mm	371	384	460	613	740	841	968	1038	1140	
H	in	7.4	9.1	10.3	12.6	15.2	17.9	21.9	22.6	23.2	
	mm	188	230	262	320	385	455	555	575	590	
W	in	23.6	23.6	15.7	22.0	19.7	24.8	31.5	31.5	31.5	
	mm	600	600	400	560	500	630	800	800	800	
WEIGHT	RF	lb	165.3	209.4	451.9	738.5	1415.4	1653.5	2425.1	3417.2	4365.2
		kg	75	95	205	335	642	750	1100	1550	1980

CLASS 1500

VALVE SIZE	in	2	3	4	6	8	10	12	
	mm	50	80	100	150	200	250	300	300
A1 & A3	in	14.5	18.5	21.5	27.8	32.8	39.0	44.5	
	mm	368	470	546	705	832	991	1130	
A2	in	14.6	18.6	21.6	28.0	33.1	39.4	45.1	
	mm	371	473	549	711	842	1000	1146	
H	in	7.4	9.1	10.3	12.6	15.2	17.8	23.0	
	mm	188	230	262	320	385	452	583	
W	in	23.6	23.6	19.7	22.0	24.8	28.0	31.5	
	mm	600	600	500	560	630	710	800	
WEIGHT	RF	lb	165.3	297.6	573.2	1135.4	1569.7	2711.7	3957.3
		kg	75	135	260	515	712	1230	1795

CLASS 2500

VALVE SIZE	in	2	3	4	6	8	10	
	mm	50	80	100	150	200	250	250
A1 & A3	in	17.8	22.8	26.5	36.0	40.2	50.0	
	mm	451	578	673	914	1022	1270	
A2	in	17.9	23.0	26.9	36.5	40.9	50.9	
	mm	454	584	683	927	1038	1292	
H	in	9.5	11.2	13.2	16.9	19.9	29.5	
	mm	241.3	284.5	335.2	429.3	505.5	749.3	
W	in	15.7	19.7	22.0	24.8	28.0	31.5	
	mm	400	500	560	630	710	800	
WEIGHT	RF	lb	220.5	540.1	826.7	882.7	3858.1	6018.6
		kg	100	245	375	854	1750	2730