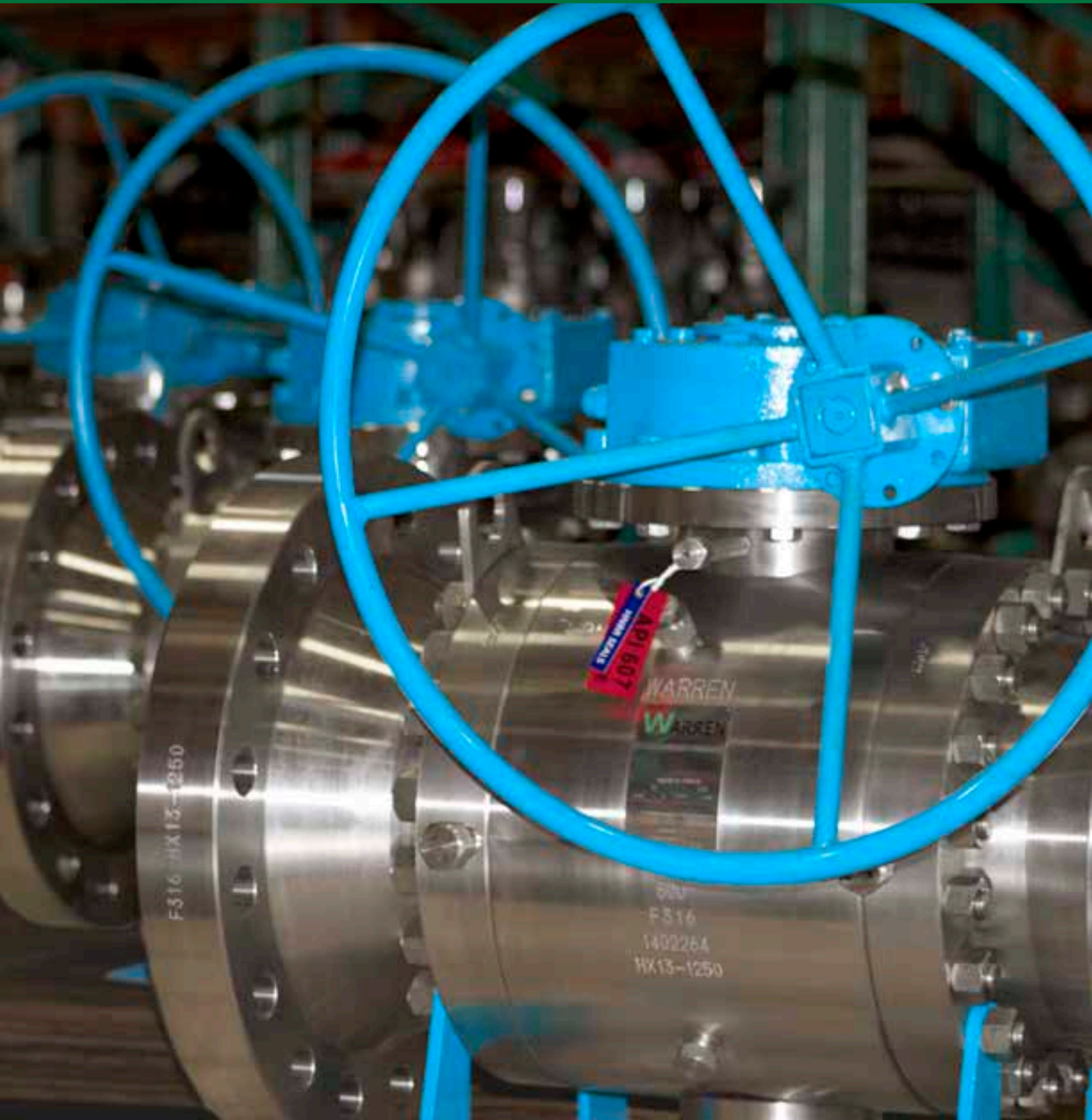


TRUNNION MOUNTED BALL VALVES



F316 HX13-1250

API 607
WARREN VALVE

WARREN
WARREN

60W
F316
140226A
HX13-1250

Trunnion Mounted Ball Valves

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General Design Features

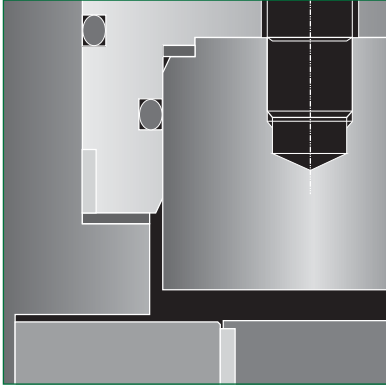
- Double block and bleed
- Fire Safe to API 607
- Standard or Full Port
- Blow-out proof stem
- API 6D Certified
- ISO 5211 Mounting Pad
- Trunnion supported design reduces operating torque
- Antistatic device for grounding of the ball, stem and body
- Two sets of O-Rings plus firesafe stem packing prevents leakage
- Corrosion resistant low friction bearings
- Inconel seat springs
- Sealant injection fittings for emergency stem and seal sealing
- Direct mount topworks pad for actuator or gear operator
- NACE Compliant
- CE/PED
- CSA Z-245.15
- ANSI B16.34 Compliant

Warren Valve manufactures a high quality valve, designed to meet oil & gas industry standards, satisfying the strict requirements of petroleum refineries, chemical plants, upstream, midstream and gas transmission applications.

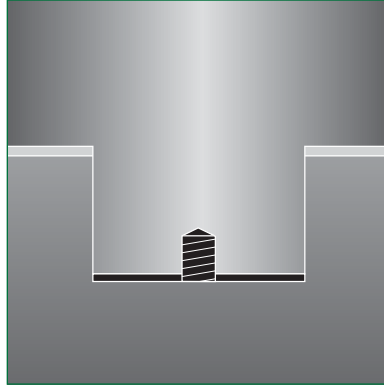
Our QA Team performs extensive testing and material inspections throughout the manufacturing processes to ensure our customers get only the highest quality products.



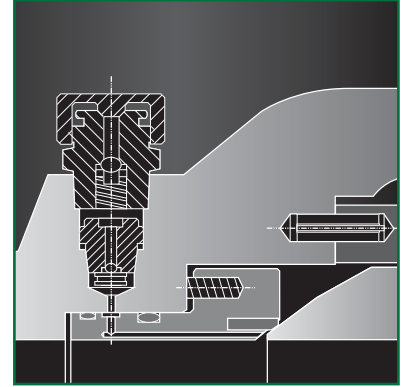
DESIGN FEATURES

**1 ANTI-BLOWOUT STEM DESIGN**

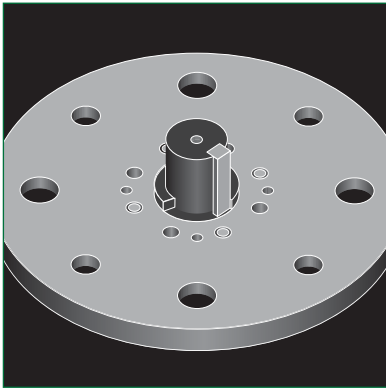
Stem seal integrity is achieved by the use of three o-rings (or two o-rings and a graphite gasket). Upper o-ring and graphite gasket can be replaced with the valve in line and under pressure.

**2 ANTI-STATIC DEVICE**

A spring loaded ball between the trunnion and the ball or between the stem and the bonnet permits electrical continuity between all valve components.

**3 EMERGENCY SEAT INJECTION**

If a seat is damaged you can inject sealant directly into the seat area through special fittings in the body and restore sealing integrity. A buried check valve is provided beneath each fitting.

**4 INTERNAL STOPS**

Integral internal stop is a permanent reference designed to indicate open and closed positions. It may be considered as a secondary stop ensuring control over ball rotation and permitting accurate mounting of an actuator or gear operator.

**5 STEM SEALANT INJECTION**

The emergency sealant injection system on the bonnet can be utilized in case of o-ring damage or if stem leakage occurs.

**6 HEAVY DUTY BEARINGS**

Trunnions are supported by heavy duty Teflon® coated steel bearings resulting in reduced operating torque and seat wear.

TECHNICAL SEATING FEATURES

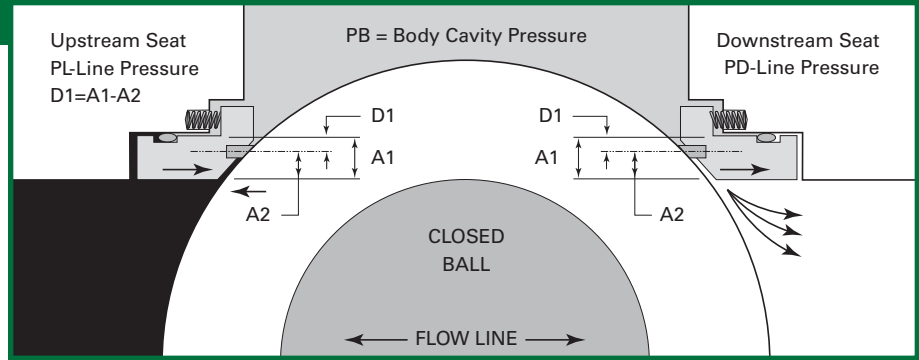
Self Relieving Seat Design

Upstream Seat

The difference in the area ($D1$) times the line pressure creates a “piston effect” which forces the seat against the ball surface. Spring loaded seats provide a low pressure seal behind the seat by keeping the seat in contact with the ball.

Downstream Seat

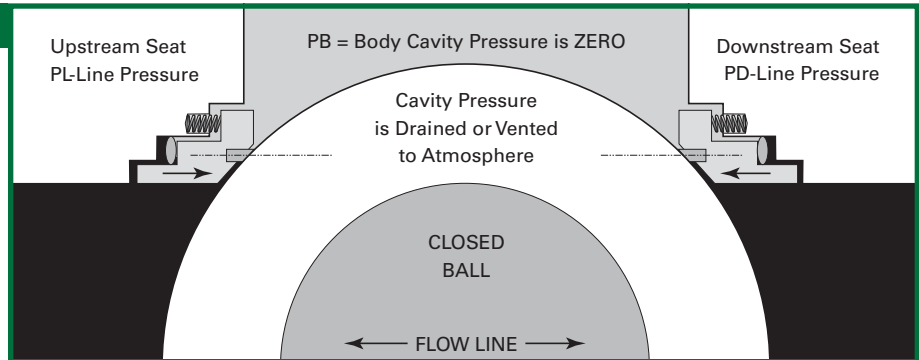
When the body cavity pressure exceeds the spring pressure, automatic pressure relief will occur by relieving the body cavity pressure past the downstream seat. This eliminates the need for a body relief valve.



Self Relieving Seat Design

Double Block and Bleed

The double block and bleed condition is available in all seat design configurations. When the ball is in the open or closed position, the body cavity pressure may be bled down to ‘zero’ by opening the bleed valve and bleeding off all pressure. Each seat works independently assuring a tight shut off seal against the ball on the upstream and downstream side.



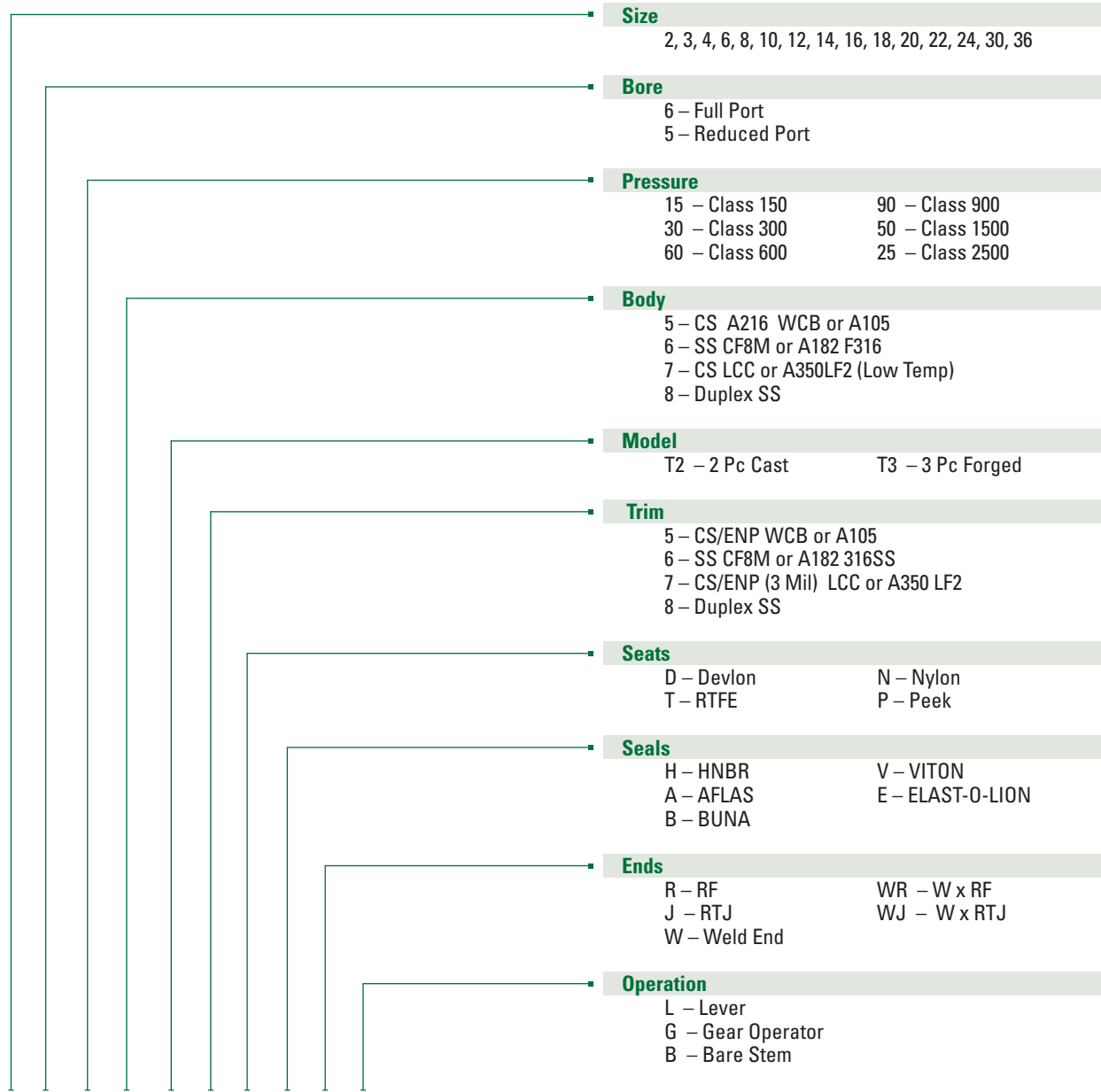
Double Block & Bleed

Maintenance Recommendation

Warren Valve uses and recommends Val-Tex Light Lube 2000, a biodegradable synthetic lubricant. It has resistance to natural gas, mineral oils, light hydrocarbons, LPG’s, most aromatics, crude oil, H₂S, CO₂, water, and instrument air. The lubricant’s light viscosity and moly-disulfide helps to reduce valve operating torque and protect against corrosion. Val-Tex 2000 is suitable for use from -45° F to +450° F.



ORDERING GUIDE



8 6 60 5 T2 5 D H R G

Example

NOTE: All Warren Trunnion Mounted Ball Valves meet NACE MR 0175/ISO 15156 Latest Edition and API 607 Fire Safe as a standard.

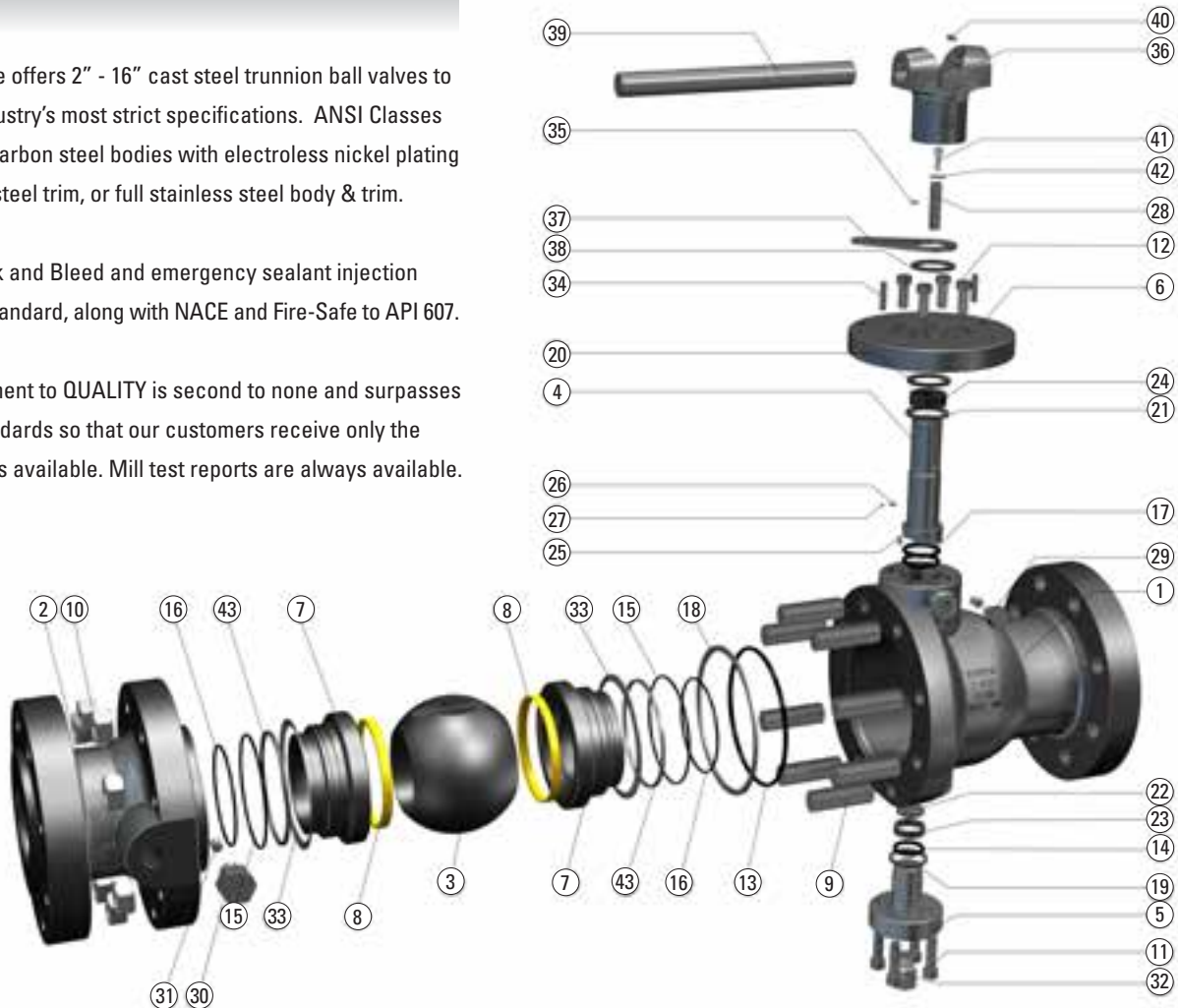
2-Piece Cast Trunnion

2"-4" Sizes

Warren Valve offers 2" - 16" cast steel trunnion ball valves to meet the industry's most strict specifications. ANSI Classes 150-1500 in carbon steel bodies with electroless nickel plating or stainless steel trim, or full stainless steel body & trim.

Double Block and Bleed and emergency sealant injection fittings are standard, along with NACE and Fire-Safe to API 607.

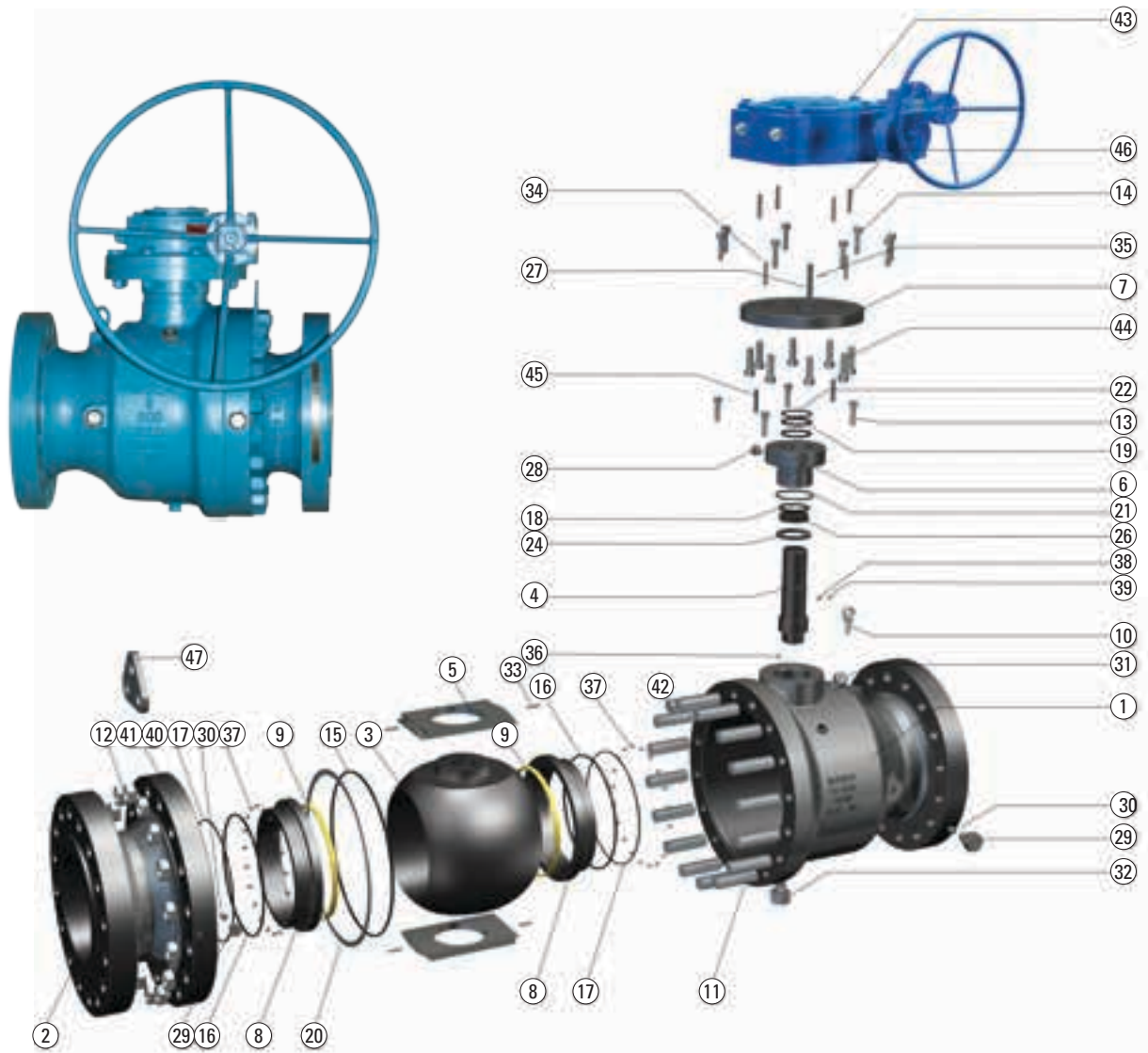
Our commitment to QUALITY is second to none and surpasses industry standards so that our customers receive only the best products available. Mill test reports are always available.



Material List: 2" - 4" Sizes

No.	Part Name	No.	Part Name	No.	Part Name	No.	Part Name
1	BODY	12	SCREW	23	BEARING	34	PIN
2	ADAPTER	13	O-RING	24	BEARING	35	PIN
3	BALL	14	O-RING	25	ANTISTATIC DEVICE	36	WRENCH
4	STEM	15	O-RING	26	ANTISTATIC DEVICE	37	LOCKING PLATE
5	TRUNNION	16	O-RING	27	ANTISTATIC BALL	38	WASHER
6	MOUNTING PLATE	17	O-RING	28	SQUARE KEY	39	PIPE
7	SEAT RETAINER	18	GASKET	29	INJECTION VALVE	40	SCREW
8	SEAT INSERT	19	GASKET	30	INJECTION VALVE	41	SCREW
9	BOLT	20	GASKET	31	CHECK VALVE	42	WASHER
10	NUT	21	THRUST WASHER	32	DRAIN PLUG	43	PACKING
11	SCREW	22	WASHER	33	SEAT SPRING		

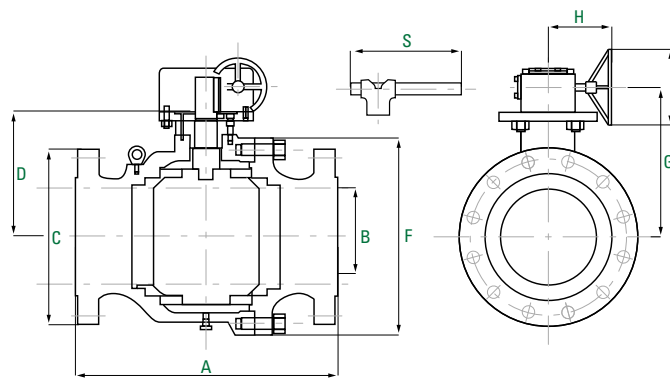
6" - 16" Sizes



Material List: 6" - 16" Sizes

No.	Part Name	No.	Part Name	No.	Part Name	No.	Part Name
1	BODY	13	SCREW	25	BEARING	37	SEAT SPRING
2	ADAPTER	14	SCREW	26	WASHER	38	ANTISTATIC DEVICE
3	BALL	15	O-RING	27	SQUARE KEY	39	ANTISTATIC BALL
4	STEM	16	O-RING	28	INJECTION VALVE	40	NAME PLATE
5	BEARING RETAINER	17	O-RING	29	INJECTION VALVE	41	RIVET
6	BONNET	18	O-RING	30	CHECK VALVE	42	BOLT
7	MOUNTING PLATE	19	O-RING	31	VENT VALVE	43	GEARBOX
8	SEAT RETAINER	20	GASKET	32	DRAIN PLUG	44	BOLT
9	SEAT INSERT	21	GASKET	33	PIN	45	NUT
10	LIFTING LUG	22	GASKET	34	PIN	46	PIN
11	BOLT	23	WASHER	35	PIN	47	LIFTING LUG
12	NUT	24	THRUST WASHER	36	ANTISTATIC DEVICE		

2-PIECE DIMENSIONS CLASS 150–300



Class 150 – Dimensions

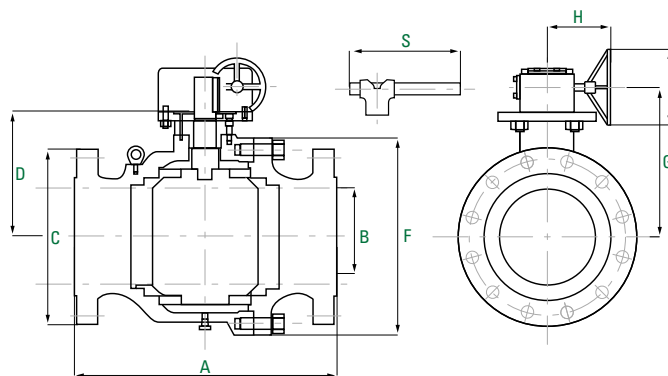
SIZE	A		B	C	D	F	G	S	H	I	WEIGHT (lbs)	ISO5211
	RF	RTJ									RF/RTJ	
2"	7	-	1.93	6	4.37	7.48	6.53	13.78			35 *	F10
3"	8	-	2.99	7.5	5.51	7.40	8.13	15.75			58	F10
4"	9	-	3.94	9	7.15	9.65	10.14	17.72			75	F14
6"	15.5	-	5.98	11	9.35	12.91	11.52		9	14.96	350	F16
8"	18	-	7.99	13.5	10.81	15.75	13.37		9	17.91	545	F16
10"	21	-	10	16	12.48	19.06	14.65		15.8	19.69	891	F16
12"	24	-	12	19	14.49	22.24	16.65		15.8	23.62	1030	F16
14"	27	-	13.15	21	15.61	23.62	17.78		15.8	23.62	1760	F25
16"	30	-	15.16	23.5	17.13	26.77	20.16		21.4	29.53	2640	F25

Class 300 – Dimensions

SIZE	A		B	C	D	F	G	S	H	I	WEIGHT (lbs)	ISO5211
	RF	RTJ									RF/RTJ	
2"	8.5	-	1.93	6.5	4.37	7.87	6.53	15.75			62	F10
3"	11.12	-	2.99	8.25	5.51	7.48	8.13	19.68			99	F10
4"	12	-	3.94	10	7.15	9.92	10.14	23.62			121	F14
6"	15.88	-	5.98	12.5	9.78	13.43	11.95		14.2	14.96	395	F16
8"	19.75	-	7.99	15	11.40	16.42	13.76		10.6	15.75	630	F16
10"	22.38	-	10	17.5	12.87	19.45	15.04		15.8	19.69	990	F16
12"	25.5	-	12	20.5	14.92	23.23	17.09		15.8	23.62	1760	F16
14"	30	-	13.15	23	15.61	24	17.78		21.4	23.62	2760	F25
16"	33	-	15.16	25.5	17.13	26.97	20.16		21.4	29.53	3140	F25



NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.



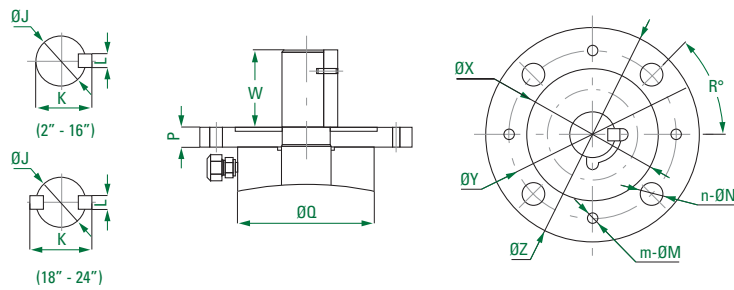
Class 600 – Dimensions												
SIZE	A		B	C	D	F	G	S	H	I	WEIGHT (lbs)	ISO5211
	RF	RTJ									RF/RTJ	
2"	11.5	-	1.97	6.5	4.84	7.5	7.44	19.69			70	F10
3"	14	-	2.99	8.25	5.5	8.46	8.39	21.65			121	F12
4"	17	-	3.94	10.75	7.36	10.26	10.36	27.56			245	F16
6"	22	-	5.91	14	10.31	13.15	12.47		14.2	19.69	620	F16
8"	26	-	7.99	16.5	11.97	17.5	14.14		15.8	23.62	860	F25
10"	31	-	10	20	13.78	21.06	16.81		15.8	29.53	1340	F25
12"	33	-	12	22	15.67	24.65	18.70		21.4	29.53	1890	F25
14"	35	-	13.15	23.75	15.61	25.59	18.64		21.4	29.53	2970	F25
16"	39	-	15.16	27	18.30	29.13	21.33		21.4	29.53	3520	F25

Class 900 – Dimensions												
SIZE	A		B	C	D	F	G	S	H	I	WEIGHT (lbs)	ISO5211
	RF	RTJ									RF/RTJ	
2"	14.5	14.62	1.97	8.5	4.84	7.5	7.28	23.62			160	F10
3"	15	15.12	2.99	9.5	7.91	9.53	10.07		9	14.96	209	F12
4"	18	18.12	3.94	11.5	7.36	10.75	9.52		9	17.91	410	F16
6"	24	24.12	5.91	15	10.30	13.39	12.46		15.8	23.62	770	F25
8"	29	29.12	7.99	18.50	11.97	17.56	14.13		15.8	23.62	1100	F25
10"	33	33.12	10	21.50	13.90	20.87	16.93		21.4	29.53	2156	F25
12"	38	38.12	12	24	15.67	25.12	18.70		21.4	29.53	3210	F25

Class 1500 – Dimensions												
SIZE	A		B	C	D	F	G	S	H	I	WEIGHT (lbs)	ISO5211
	RF	RTJ									RF/RTJ	
2"	14.5	14.62	1.97	8.5	4.84	7.48	7.28	23.62			238	F10
3"	18.5	18.62	2.99	10.5	5.59	9.53	8.54	27.56			286	F12
4"	21.5	21.62	3.94	12.25	7.72	11.44	9.88		14.2	19.69	510	F16
6"	27.75	28	5.67	15.5	11.85	15.55	14.02		15.8	23.62	1210	F25
8"	32.75	33.13	7.56	19	14.76	19.69	17.79		21.4	29.53	1994	F25

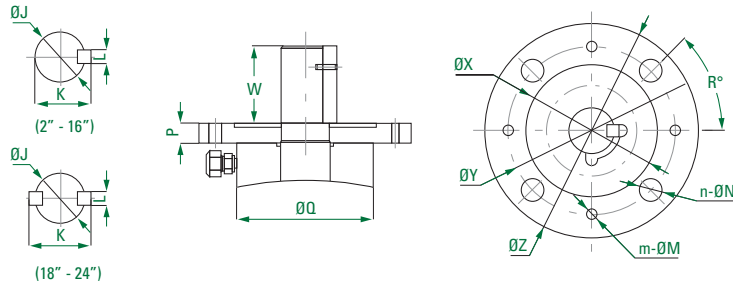
NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

2-PIECE TOPWORKS 2" - 6"



Topworks – Inches

SIZE (in.)	ANSI Class	J	K	L	W	P	Q	X	Y	Z	m-ØM	n-ØN	R°	ISO Pad
2	150	0.79	0.89	0.24	1.18	0.63	2.76	2.76	4.02	4.92		4-Ø0.43	45	F10
2	300	0.79	0.89	0.24	1.18	0.63	2.76	2.76	4.02	4.92		4-Ø0.43	45	F10
2	600	1.1	1.24	0.31	1.42	0.79	3.62		4.02			4-Ø0.39	45	F10
2	900	1.1	1.24	0.31	1.42	0.79	3.62		4.02			4-Ø0.39	45	F10
2	1500	1.1	1.24	0.31	1.42	0.79	3.35		4.02			4-Ø0.39	45	F10
3	150	1.1	1.24	0.31	1.44	0.79	3.03	2.76	4.02	4.92	4-Ø0.24	4-Ø0.43	45	F10
3	300	1.1	1.24	0.31	1.44	0.79	3.03	2.76	4.02	4.92	4-Ø0.24	4-Ø0.43	45	F10
3	600	1.1	1.24	0.31	1.44	0.79	3.03	3.35	4.92	5.91	4-Ø0.24	4-Ø0.55	45	F12
3	900	1.34	1.51	0.39	1.46		4.41		4.92		4-Ø0.24	4-Ø0.51	45	F12
3	1500	1.34	1.51	0.39	1.46	0.83	4.61		4.92			4-Ø0.47	45	F12
4	150	1.34	1.51	0.39	1.50	0.98	3.94	3.94	5.51	6.89	4-Ø0.39	4-Ø0.71	45	F14
4	300	1.34	1.51	0.39	1.50	0.98	3.94	3.94	5.51	6.89	4-Ø0.39	4-Ø0.71	45	F14
4	600	1.34	1.51	0.39	1.52	0.98	3.43	5.12	6.5	8.27	4-Ø0.39	4-Ø0.87	45	F16
4	900	1.50	1.67	0.39	1.52	0.98	3.94	5.12	6.5	8.27	4-Ø0.39	4-Ø0.87	45	F16
4	1500	1.50	1.67	0.39	1.63	0.98	3.94	5.12	6.5	8.27	4-Ø0.39	4-Ø0.87	45	F16
6	150	1.57	1.77	0.47	2.56	1.02	4.02	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
6	300	1.57	1.77	0.47	2.56	1.02	4.53	5.12	6.5	8.27	4-Ø0.39	4-Ø0.87	45	F16
6	600	1.77	2.03	0.55	3.15	1.18	4.65	5.12	6.5	8.27	4-Ø0.39	4-Ø0.87	45	F16
6	900	1.77	2.03	0.55	3.15	1.18	5.91	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
6	1500	2.17	2.46	0.63	3.74	1.57	7.09	7.87	10	11.81	4-Ø0.47	8-Ø0.71	22.5	F25



Topworks – Inches

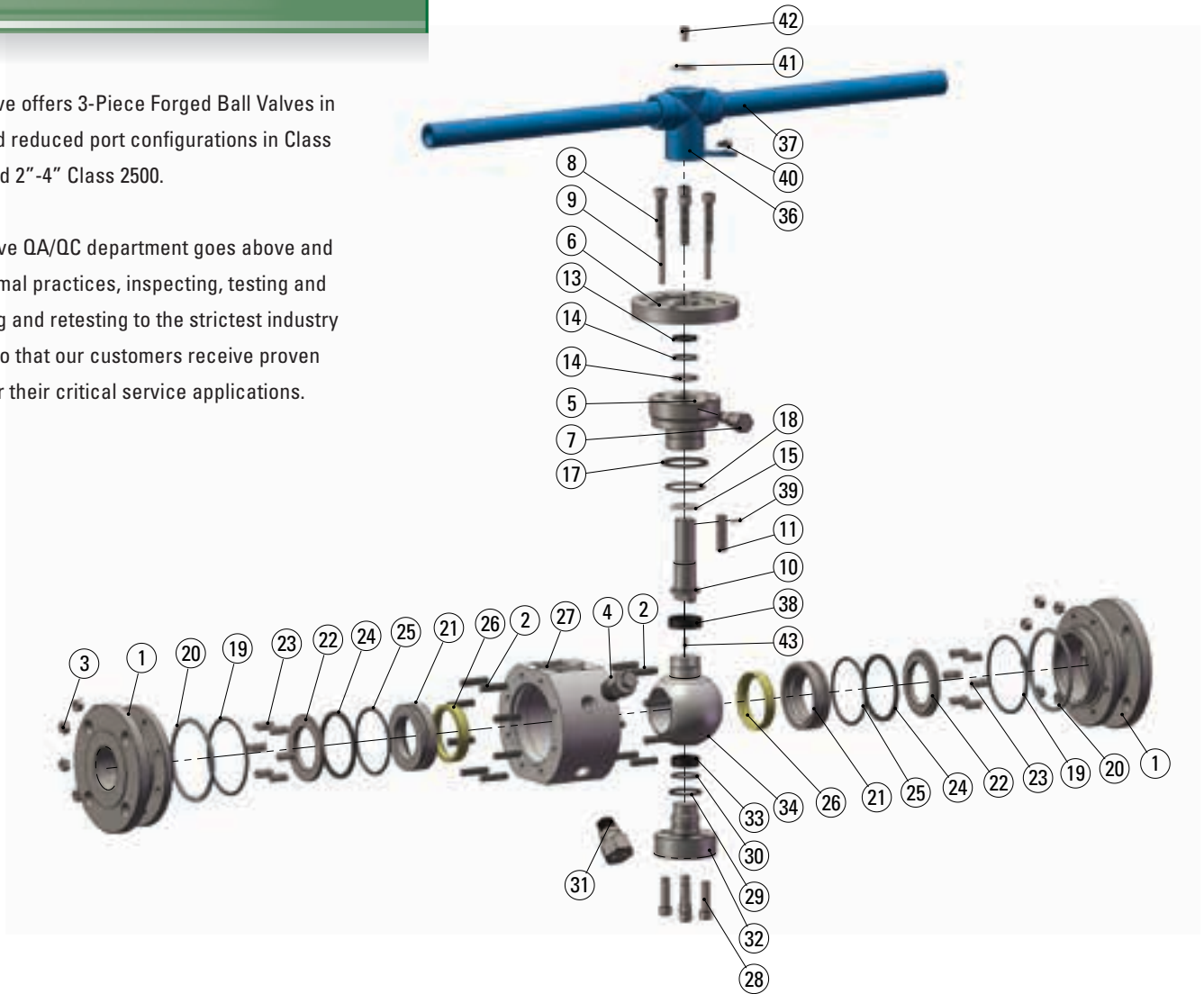
SIZE (in.)	ANSI Class	J	K	L	W	P	Q	X	Y	Z	m-ØM	n-ØN	R°	ISO Pad
8	150	1.57	1.77	0.47	2.56	1.02	4.02	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
8	300	1.77	1.97	0.47	3.15	1.18	4.45	5.12	6.5	8.27	4-Ø0.63	4-Ø0.87	45	F16
8	600	2.28	2.58	0.63	3.15	1.1	5.71	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
8	900	2.28	2.58	0.63	3.15	1.1	5.79	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
8	1500	3.07	3.49	0.87	5.31	1.93	8.86	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
10	150	2.28	2.58	0.63	3.23	1.18	5.12	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
10	300	2.28	2.58	0.63	3.23	1.18	5.12	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
10	600	2.68	3.05	0.79	3.15	1.18	5.98	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
10	900	2.68	3.05	0.79	4.33	1.1	7.56	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
12	150	2.28	2.58	0.63	3.27	1.18	5.12	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
12	300	2.28	2.58	0.63	3.27	1.18	5.12	5.12	6.5	8.27	4-Ø0.39	4-Ø0.83	45	F16
12	600	2.68	3.09	0.79	4.33	1.1	7.95	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
12	900	2.68	3.09	0.79	4.33	1.1	7.56	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
14	150	3.07	3.49	0.87	3.84	1.26	7.87	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
14	300	3.07	3.49	0.87	3.84	1.26	7.87	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
14	600	3.07	3.49	0.87	4.43	1.26	7.72	7.87	10	11.81	4-Ø0.39	8-Ø0.71	22.5	F25
16	150	3.35	3.76	0.87	3.84	1.5	8.07	7.87	10	11.81	4-Ø0.47	8-Ø0.71	22.5	F25
16	300	3.35	3.76	0.87	3.84	1.5	8.07	7.87	10	11.81	4-Ø0.47	8-Ø0.71	22.5	F25
16	600	3.35	3.76	0.87	4.43	1.5	8.07	7.87	10	11.81	4-Ø0.47	8-Ø0.71	22.5	F25

3-Piece Forged Trunnion

2" - 4" Sizes

Warren Valve offers 3-Piece Forged Ball Valves in both full and reduced port configurations in Class 150-1500 and 2" - 4" Class 2500.

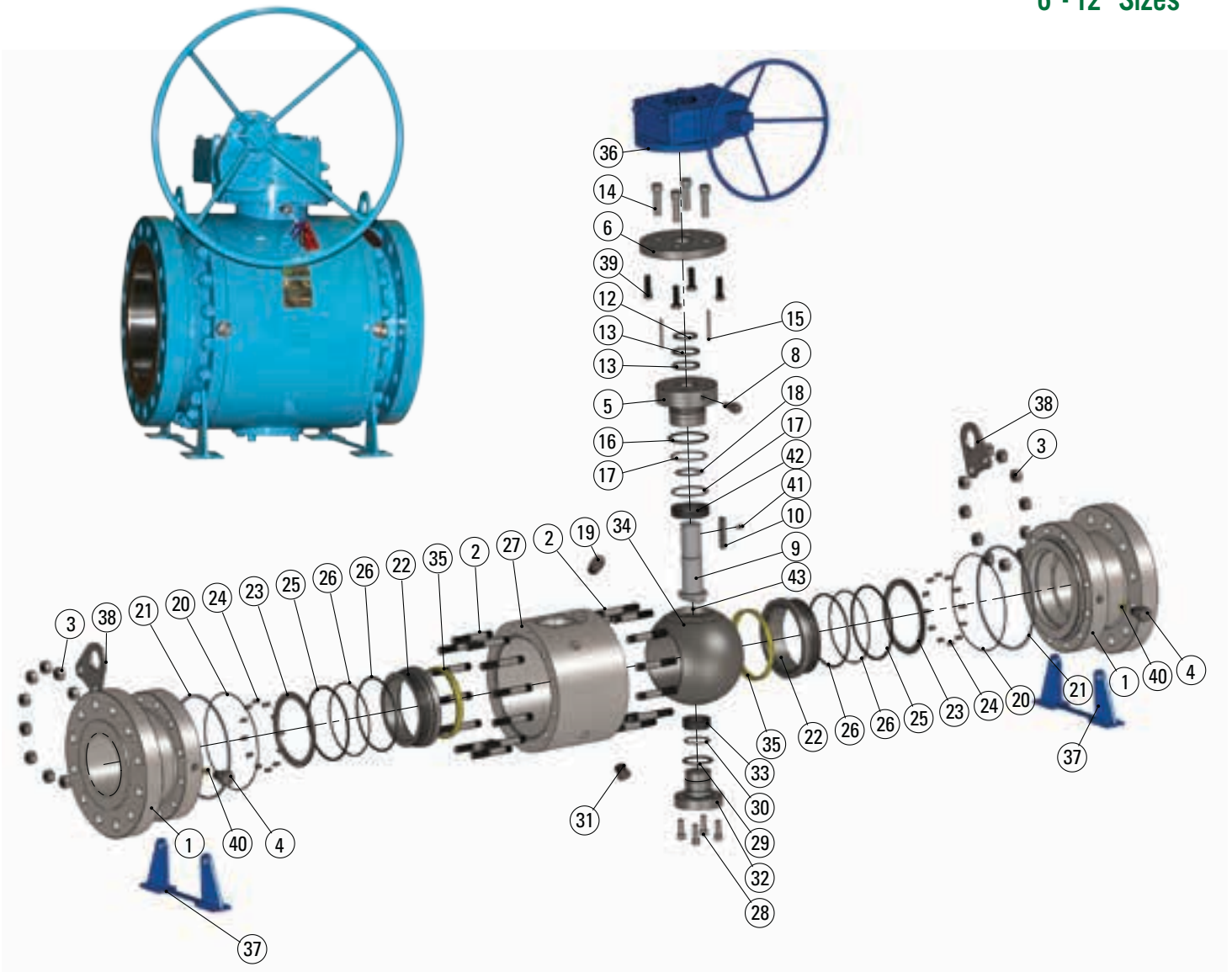
Our extensive QA/QC department goes above and beyond normal practices, inspecting, testing and reinspecting and retesting to the strictest industry standards so that our customers receive proven products for their critical service applications.



Material List: 2" - 4" Sizes

No.	Part Name	No.		No.		No.	
1	BODY END	11	KEY	23	SPRING	33	BEARING
2	BOLT	13	GASKET	24	GASKET	34	BALL
3	NUT	14	O-RING	25	O-RING	36	WRENCH
4	VENT VALVE	15	WASHER	26	SEAT INSERT	37	HANDLE
5	GLAND	17	GASKET	27	BODY	38	BEARING
6	MOUNTING PLATE	18	O-RING	28	BOLT	39	PIN
7	INJECTION FITTINGS	19	O-RING	29	GASKET	40	BOLT
8	BOLT	20	GASKET	30	O-RING	41	INDICATOR
9	PIN	21	SEAT RETAINER	31	DRAIN PLUG	42	BOLT
10	STEM	22	SPRING HOLDER	32	TRUNNION	43	ANTISTATIC DEVICE

6" - 12" Sizes

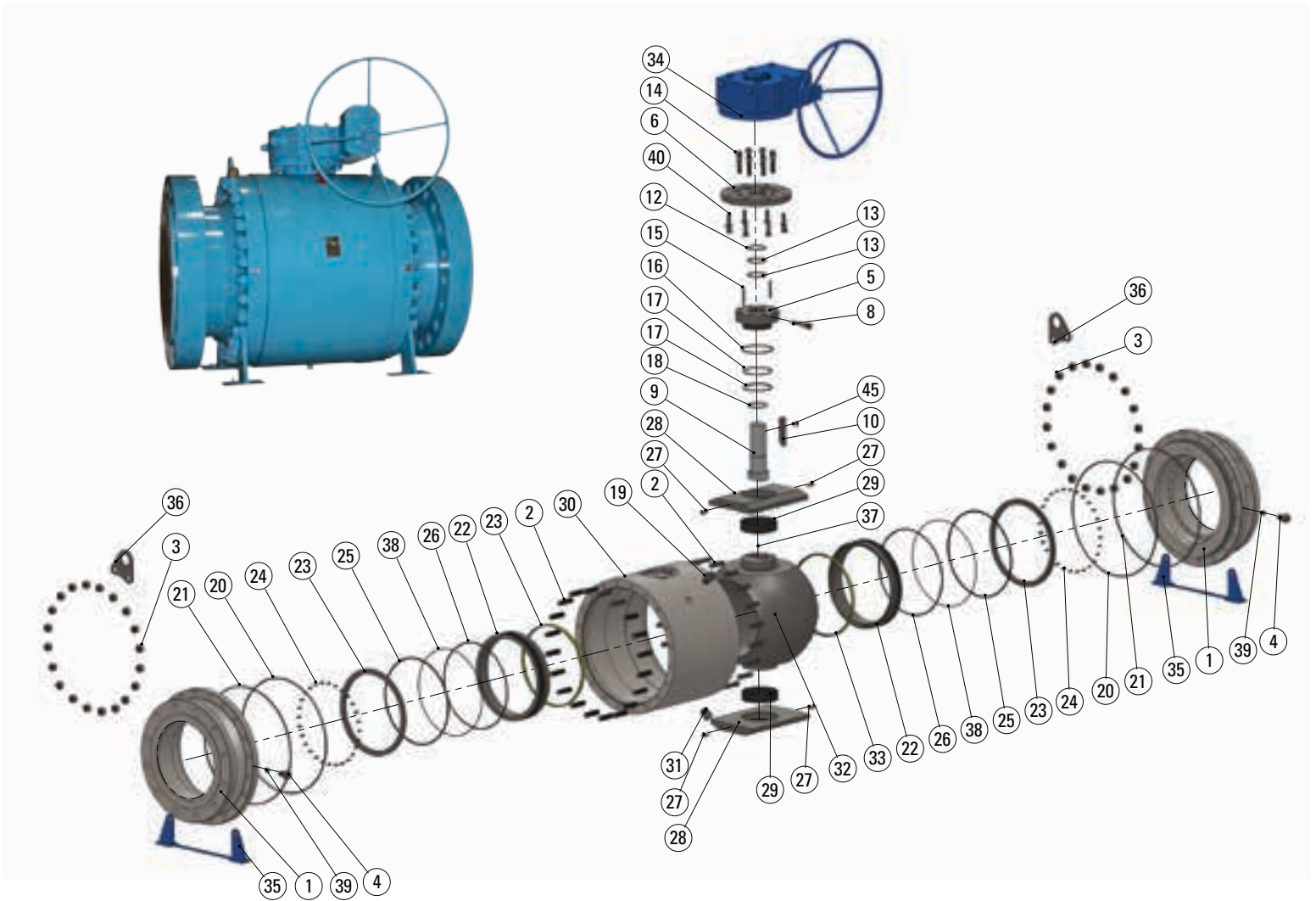


Material List: 6" - 12" Sizes

No.	Part Name	No.	Part Name	No.	Part Name	No.	Part Name
1	BODY END	13	O-RING	23	SPRING HOLDER	33	BEARING
2	BOLT	14	BOLT	24	SPRING	34	BALL
3	NUT	15	PIN	25	GASKET	35	SEAT INSERT
4	INJECTION FITTINGS	16	GASKET	26	O-RING	36	GEAR BOX
5	GLAND	17	O-RING	27	BODY	37	SUPPORT
6	MOUNTING PLATE	18	WASHER	28	BOLT	38	LIFTING LUG
8	INJECTION FITTINGS	19	VENT VALVE	29	GASKET	39	BOLT
9	STEM	20	O-RING	30	O-RING	40	CHECK VALVE
10	KEY	21	GASKET	31	DRAIN PLUG	41	BOLT
12	GASKET	22	SEAT RETAINER	32	TRUNNION	42	BEARING
						43	ANTISTATIC DEVICE

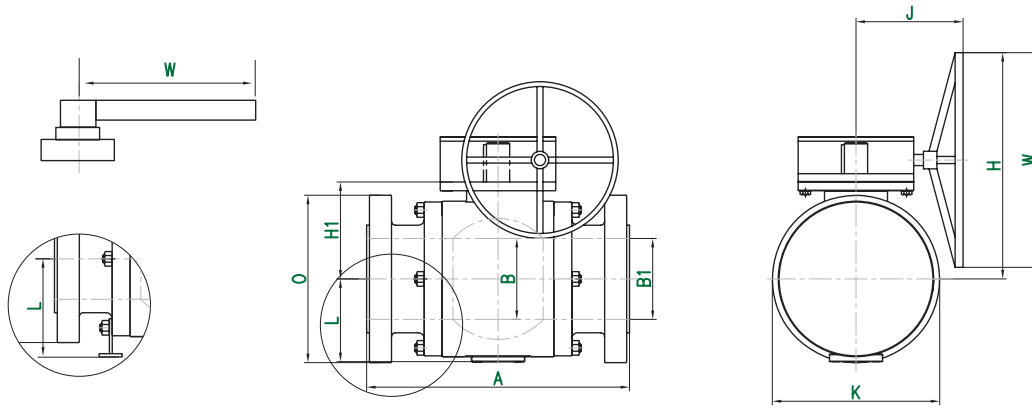
TRUNNION MOUNTED BALL VALVES

14" - 24" Sizes



Material List: 14" - 24" Sizes

No.	Part Name	No.	Part Name	No.	Part Name	No.	Part Name
1	ADAPTER	12	GASKET	21	GASKET	31	DRAIN PLUG
2	BOLT	13	O-RING	22	SEAT RETAINER	32	BALL
3	NUT	14	BOLT	23	SPRING HOLDER	33	SEAT INSERT
4	INJECTION FITTINGS	15	PIN	24	SPRING	34	GEAR BOX
5	GLAND	16	GASKET	25	GASKET	35	SUPPORT
6	MOUNTING PLATE	17	O-RING	26	O-RING	36	LIFTING LUG
8	INJECTION FITTINGS	18	WASHER	27	PIN	37	ANTISTATIC DEVICE
9	STEM	19	VENT VALVE	28	SUPPORT PLATE	38	O-RING
10	KEY	20	O-RING	29	BEARING	39	CHECK VALVE
		30	BODY	40	BOLT		

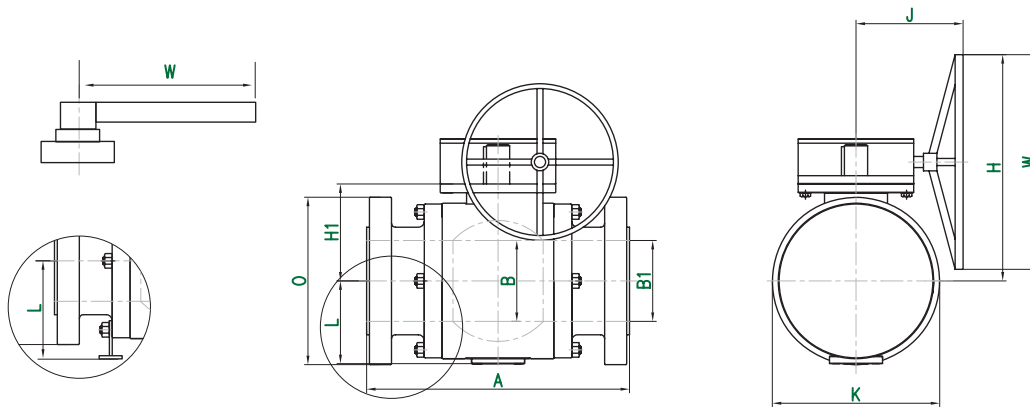


Class 150 – Dimensions

SIZE	A			B	B1	O	H1	L	K	H	J	W	WEIGHT (lbs)
	RF	RTJ	WE										RF/RTJ
2x1.5"	7.00	7.50	8.50	1.50	2.01	6.00	4.37	3.89	6.00	7.2	-	9.9	55
2"	7.00	7.50	8.50	2.01	2.01	6.00	4.52	3.97	6.00	7.91	-	9.9	61.6
3x2"	8.00	8.50	11.12	2.01	3.03	7.50	4.52	3.97	7.50	7.91	-	9.9	66
3"	8.00	8.50	11.12	3.03	3.03	7.50	5.35	4.68	7.50	8.74	-	9.9	114.4
4x3"	9.00	9.50	12.00	3.03	4.02	9.00	5.35	4.68	9.00	8.74	-	9.9	134.2
4"	9.00	9.50	12.00	4.02	4.02	9.00	6.36	5.59	9.06	10.35	-	13.8	202.4
6x4"	15.50	16.00	18.00	4.02	5.99	11.00	6.36	5.59	11.00	10.35	-	13.8	220
6"	15.50	16.00	18.00	5.99	5.99	11.00	8.43	8.18	12.44	17.53	9.45	13.8	385
8x6"	18.00	18.50	20.50	5.99	7.99	13.50	8.43	8.18	13.50	17.53	9.45	13.8	440
8"	18.00	18.50	20.50	7.99	7.99	13.50	10.06	9.76	15.35	19.19	14.56	13.8	594
10x8"	21.00	21.50	22.00	7.99	10.00	16.00	10.06	9.76	16.00	21.34	14.56	18.1	682
10"	21.00	21.50	22.00	10.00	10.00	16.00	11.30	11.22	18.50	22.56	15.83	18.1	891
12x10"	24.00	24.50	25.00	10.00	12.01	19.00	11.30	11.22	19.00	25.31	15.83	23.6	1067
12"	24.00	24.50	25.00	12.01	12.01	19.00	12.83	12.36	21.18	26.85	15.83	23.6	1287
14x12"	27.00	27.50	30.00	12.01	13.27	21.00	12.83	12.36	21.18	26.85	15.83	23.6	1420
14"	27.00	27.50	30.00	13.27	13.27	21.00	13.78	12.59	23.23	32.52	21.38	23.6	1771
16x14"	30.00	30.50	33.00	13.27	15.24	23.50	13.78	12.69	23.50	35.47	21.38	29.5	1914
16"	30.00	30.50	33.00	15.24	15.24	23.50	15.78	15.15	26.77	37.48	21.38	29.5	2354
18x16"	34.00	34.50	36.00	15.24	17.25	25.00	15.78	15.15	26.77	37.48	21.38	29.5	2464
18"	34.00	34.50	36.00	17.25	17.25	25.00	17.20	16.53	29.53	39.00	21.38	29.5	2794
20x18"	36.00	36.50	39.00	17.25	19.25	27.50	17.20	16.53	29.53	39.00	21.38	29.5	2970
20"	36.00	36.50	39.00	19.25	19.25	27.50	18.82	18.14	32.76	40.51	21.38	29.5	4070
24x20"	42.00	42.50	45.00	19.25	23.27	32.00	18.82	18.14	32.76	40.51	21.38	29.5	4620
24"	42.00	42.50	45.00	23.27	23.27	32.00	22.32	21.45	39.37	43.97	25.27	29.5	6996

NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

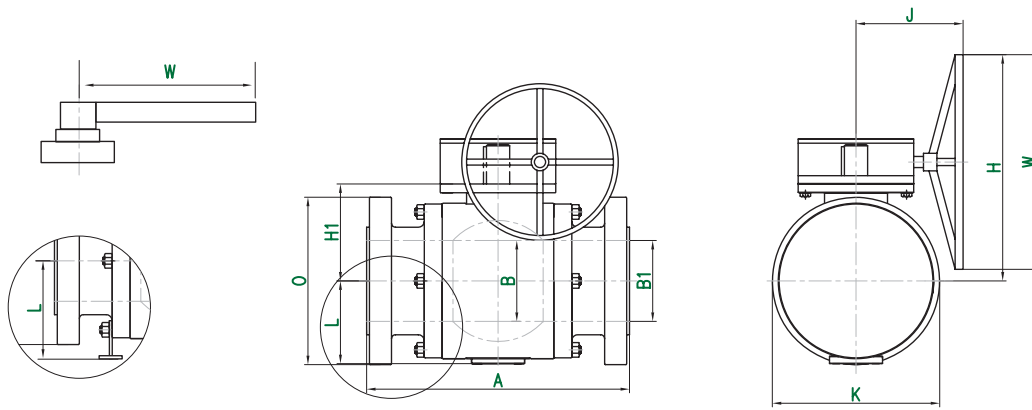
3-PIECE DIMENSIONS CLASS 300



Class 300 – Dimensions

SIZE	A			B	B1	O	H1	L	K	H	J	W	WEIGHT (lbs)
	RF	RTJ	WE										RF/RTJ
2x1.5"	8.50	9.12	8.50	1.50	2.01	6.50	4.37	3.89	6.50	7.20	-	9.90	57.2
2"	8.50	9.12	8.50	2.01	2.01	6.50	4.52	3.97	6.50	7.91	-	9.90	61.6
3x2"	11.12	11.74	11.12	2.01	3.03	8.25	4.52	3.97	8.25	7.91	-	9.90	74.8
3"	11.12	11.74	11.12	3.03	3.03	8.25	5.35	4.68	8.25	8.74	-	9.90	123.2
4x3"	12.00	12.62	12.00	3.03	4.02	10.00	5.35	4.68	10.00	8.74	-	9.90	140.8
4"	12.00	12.62	12.00	4.02	4.02	10.00	6.36	5.59	10.00	10.35	-	13.80	215.6
6x4"	15.88	16.50	18.00	4.02	5.99	12.50	6.36	5.59	12.50	10.35	-	13.80	264
6"	15.88	16.50	18.00	5.99	5.99	12.50	8.43	8.18	12.50	17.53	9.45	13.80	451
8x6"	19.75	20.37	20.50	5.99	7.99	15.00	8.43	8.26	15.00	19.68	9.45	18.10	539
8"	19.75	20.37	20.50	7.99	7.99	15.00	10.06	9.76	15.35	21.34	14.56	18.10	682
10x8"	22.38	23.00	22.00	7.99	10.00	17.50	10.06	9.76	17.50	21.34	14.56	18.10	836
10"	22.38	23.00	22.00	10.00	10.00	17.50	11.30	11.22	18.50	22.56	15.83	18.10	1166
12x10"	25.50	26.12	25.00	10.00	12.01	20.50	11.30	11.22	20.50	25.31	15.83	23.60	1364
12"	25.50	26.12	25.00	12.01	12.01	20.50	12.83	12.36	21.18	29.17	20.47	23.60	1716
14x12"	30.00	30.62	30.00	12.01	13.27	23.00	12.83	12.36	23.00	29.17	20.47	23.60	1892
14"	30.00	30.62	30.00	13.27	13.27	23.00	13.78	12.59	23.23	35.47	21.38	29.50	2398
16x14"	33.00	33.62	33.00	13.27	15.24	25.50	13.78	13.80	25.50	35.47	21.38	29.50	2618
16"	33.00	33.62	33.00	15.24	15.24	25.50	15.78	15.15	26.77	37.48	21.38	29.50	3256
18x16"	36.00	36.62	36.00	15.24	17.25	28.00	15.78	15.15	28.00	37.48	21.38	29.50	3630
18"	36.00	36.62	36.00	17.25	17.25	28.00	17.20	16.53	^{29.53} 29.53	39.00	21.38	29.50	3707
20x18"	39.00	39.75	39.00	17.25	19.25	30.50	17.20	16.53	30.50	39.00	21.38	29.50	4136
20"	39.00	39.75	39.00	19.25	19.25	30.50	18.82	18.14	32.76	40.51	21.38	29.50	5038
24x20"	45.00	45.88	45.00	19.25	23.27	36.00	18.82	18.99	^{36.00} 36.00	40.51	21.38	29.50	6050
24"	45.00	45.88	45.00	23.27	23.27	36.00	22.32	21.55	39.57	41.06	25.27	29.50	7942

NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

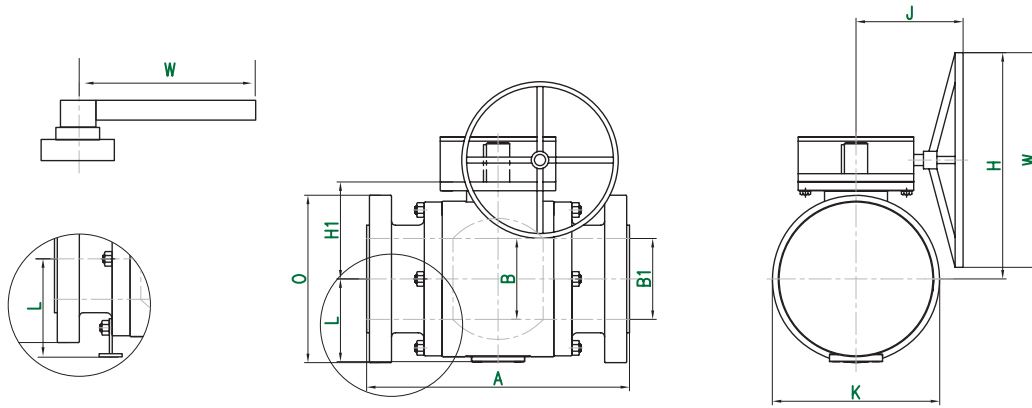


Class 600 – Dimensions

SIZE	A			B	B1	O	H1	L	K	H	J	W	WEIGHT (lbs)
	RF	RTJ	WE										RF/RTJ
2x1.5"	11.50	11.62	11.50	1.50	2.01	6.50	4.37	3.89	6.50	7.20	-	9.90	66
2"	11.50	11.62	11.50	2.01	2.01	6.50	4.53	3.97	6.50	7.91	-	9.90	74.8
3x2"	14.00	14.12	14.00	2.01	3.03	8.25	4.53	3.97	8.25	7.91	-	9.90	96.8
3"	14.00	14.12	14.00	3.03	3.03	8.25	5.83	4.88	8.25	9.64	-	13.80	143
4x3"	17.00	17.12	17.00	3.03	4.02	10.75	5.83	4.88	10.75	9.64	-	13.80	195.8
4"	17.00	17.12	17.00	4.02	4.02	10.75	6.48	5.94	10.75	10.23	-	13.80	264
6x4"	22.00	22.12	22.00	4.02	5.99	14.00	6.48	5.94	14.00	10.23	-	13.80	352
6"	22.00	22.12	22.00	5.99	5.99	14.00	8.43	8.18	14.00	19.68	9.45	18.10	605
8x6"	26.00	26.12	26.00	5.99	7.99	16.50	8.43	9.08	16.50	19.68	9.45	18.10	682
8"	26.00	26.12	26.00	7.99	7.99	16.50	9.78	9.76	16.50	23.81	15.83	23.60	1122
10x8"	31.00	31.12	31.00	7.99	10.00	20.00	9.78	10.82	20.00	23.81	15.83	23.60	1254
10"	31.00	31.12	31.00	10.00	10.00	20.00	11.61	11.49	20.00	27.95	20.47	23.60	1760
12x10"	33.00	33.12	33.00	10.00	12.01	22.00	11.61	11.81	22.00	27.95	20.47	23.60	1870
12"	33.00	33.12	33.00	12.01	12.01	22.00	13.23	12.75	22.00	34.92	21.38	29.50	2156
14x12"	35.00	35.12	35.00	12.01	13.27	23.75	13.23	12.75	23.75	34.92	21.38	29.50	2596
14"	35.00	35.12	35.00	13.27	13.27	23.75	14.37	13.11	24.21	36.06	21.38	29.50	2728
16x14"	39.00	39.12	39.00	13.27	15.24	27.00	14.37	14.50	27.00	36.06	21.38	29.50	2992
16"	39.00	39.12	39.00	15.24	15.24	27.00	16.04	15.47	27.36	37.71	21.38	29.50	3476
18x16"	43.00	43.12	43.00	15.24	17.25	29.25	16.04	15.64	29.25	37.71	21.38	29.50	3883
18"	43.00	43.12	43.00	17.25	17.25	29.25	17.83	17.12	30.71	39.56	21.38	29.50	4796
20x18"	47.00	47.25	47.00	17.25	19.25	32.00	17.83	17.12	32.00	39.56	21.38	29.50	5412
20"	47.00	47.25	47.00	19.25	19.25	32.00	19.69	18.70	33.86	38.43	25.27	29.50	6116
24x20"	55.00	55.38	55.00	19.25	23.27	37.00	19.69	19.49	37.00	38.43	25.27	29.50	7458
24"	55.00	55.38	55.00	23.27	23.27	37.00	22.93	22.05	40.55	41.70	25.27	29.50	10736

NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

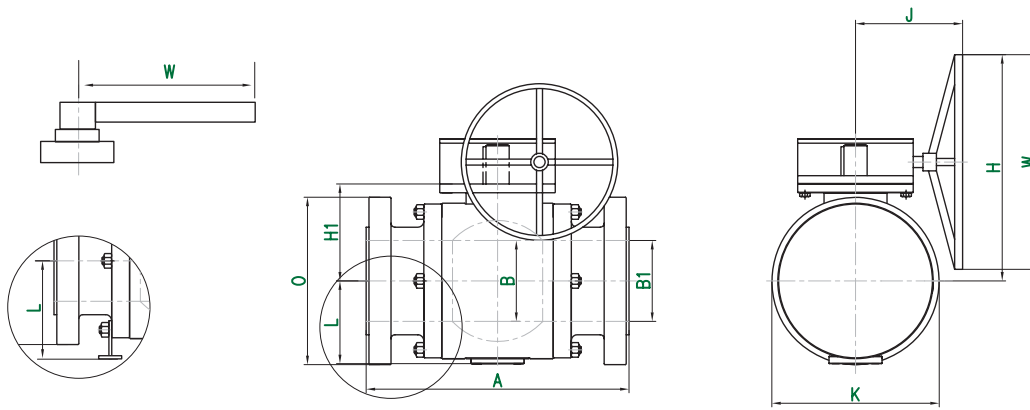
3-PIECE DIMENSIONS CLASS 900



Class 900 – Dimensions

SIZE	A			B	B1	O	H1	L	K	H	J	W	WEIGHT (lbs)
	RF	RTJ	WE										RF/RTJ
2x1.5"	14.50	14.62	14.50	1.50	2.01	8.50	4.37	3.89	8.50	7.20	-	9.90	99
2"	14.50	14.62	14.50	2.01	2.01	8.50	4.53	3.97	8.50	7.91	-	13.80	114.4
3x2"	15.00	15.12	15.00	2.01	3.03	9.50	4.53	3.97	9.50	7.91	-	13.80	127.6
3"	15.00	15.12	15.00	3.03	3.03	9.50	5.83	4.88	9.50	9.64	-	13.80	176
4x3"	18.00	18.12	18.00	3.03	4.02	11.50	5.83	4.88	11.50	9.64	-	13.80	231
4"	18.00	18.12	18.00	4.02	4.02	11.50	6.48	5.94	11.50	10.23	-	17.70	374
6x4"	24.00	24.12	24.00	4.02	5.99	15.00	6.48	5.94	15.00	10.23	-	17.70	506
6"	24.00	24.12	24.00	5.99	5.99	15.00	8.43	8.32	15.00	22.44	15.83	23.60	858
8x6"	29.00	29.12	29.00	5.99	7.99	18.50	8.43	10.06	18.50	22.44	15.83	23.60	1034
8"	29.00	29.12	29.00	7.99	7.99	18.50	10.18	10.15	18.50	26.51	20.47	23.60	1408
10x8"	33.00	33.12	33.00	7.99	10.00	21.50	10.18	11.52	21.50	26.51	20.47	23.60	1870
10"	33.00	33.12	33.00	10.00	10.00	21.50	11.93	11.92	21.50	33.62	21.38	29.50	2354
12x10"	38.00	38.12	38.00	10.00	12.01	24.00	11.93	12.80	24.00	33.62	21.38	29.50	2640
12"	38.00	38.12	38.00	12.01	12.01	24.00	13.94	13.46	24.00	35.39	21.38	29.50	3542
14x12"	40.50	40.88	40.50	12.01	12.76	25.25	13.94	13.38	25.25	35.39	21.38	29.50	3729
14"	40.50	40.88	40.50	12.76	12.76	25.25	15.00	13.58	25.25	36.73	21.38	29.50	3872
16x14"	44.50	44.88	44.50	12.76	14.77	27.75	15.00	14.90	27.75	36.73	21.38	29.50	3960
16"	44.50	44.88	44.50	14.77	14.77	27.75	16.46	15.74	27.95	38.30	21.38	29.50	4928
18x16"	48.00	48.50	48.00	14.77	16.73	31.00	16.46	16.50	31.00	38.30	21.38	29.50	5544
18"	48.00	48.50	48.00	16.73	16.73	31.00	18.27	17.51	31.50	37.00	25.27	29.50	6600
20x18"	52.00	52.50	52.00	16.73	18.62	33.75	18.27	17.81	33.75	37.00	25.27	29.50	7480
20"	52.00	52.50	52.00	18.62	18.62	33.75	19.88	19.17	34.76	38.62	25.27	29.50	9592
24x20"	61.00	61.75	61.00	18.62	22.48	41.00	19.88	21.46	41.00	38.62	25.27	29.50	12276
24"	61.00	61.75	61.00	22.48	22.48	41.00	23.46	22.63	41.73	42.12	25.27	29.50	15466

NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

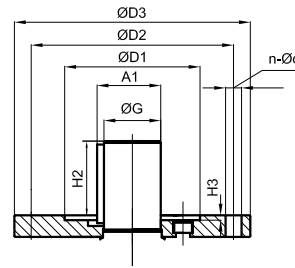
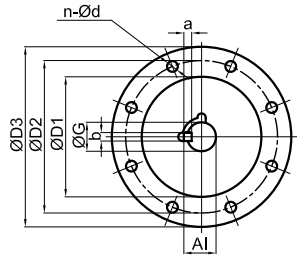


Class 1500 – Dimensions

SIZE	A			B	B1	O	H1	L	K	H	J	W	WEIGHT (lbs)
	RF	RTJ	WE										RF/RTJ
2x1.5"	14.50	14.62	14.50	1.50	2.01	8.50	4.37	3.89	8.50	7.20	-	9.90	107.8
2"	14.50	14.62	14.50	2.01	2.01	8.50	4.88	4.21	8.50	8.22	-	13.80	121
3x2"	18.50	18.62	18.50	2.01	3.03	10.50	4.88	4.21	10.50	8.22	-	13.80	165
3"	18.50	18.62	18.50	3.03	3.03	10.50	5.94	5.35	10.50	9.76	-	17.70	231
4x3"	21.50	21.62	21.50	3.03	4.02	12.25	5.94	5.35	12.25	9.76	-	17.70	286
4"	21.50	21.62	21.50	4.02	4.02	12.25	7.40	6.61	12.25	11.22	-	21.70	451
6x4"	27.75	28.00	27.75	4.02	5.75	15.50	7.40	6.61	15.50	11.22	-	21.70	660
6"	27.75	28.00	27.75	5.75	5.75	15.50	9.53	8.30	15.50	23.55	15.83	23.60	1155
8x6"	32.75	33.13	32.75	5.75	7.64	19.00	9.53	10.33	19.00	23.55	15.83	23.60	1353
8"	32.75	33.13	32.75	7.64	7.64	19.00	11.48	10.36	19.00	33.16	21.38	29.50	1936
10x8"	39.00	39.38	39.00	7.64	9.49	23.00	11.48	12.30	23.00	33.16	21.38	29.50	2387
10"	39.00	39.38	39.00	9.49	9.49	23.00	13.21	12.40	23.00	34.94	21.38	29.50	3432
12x10"	44.50	45.12	44.50	9.49	11.38	26.50	13.21	14.07	26.50	34.94	21.38	29.50	4070
12"	44.50	45.12	44.50	11.38	11.38	26.50	15.71	14.37	26.77	37.44	21.38	29.50	5181
14x12"	49.50	50.25	49.50	11.38	12.49	29.50	15.71	15.55	29.50	37.44	21.38	29.50	5764
14"	49.50	50.25	49.50	12.49	12.49	29.50	17.17	15.75	29.50	38.81	21.38	29.50	6644
16x14"	54.50	55.38	54.50	12.49	14.26	32.50	17.17	17.22	32.50	38.81	21.38	29.50	8008
16"	54.50	55.38	54.50	14.26	14.26	32.50	19.49	18.58	33.62	38.20	25.27	29.50	9372
18x16"	60.50	61.38	60.50	14.26	16.03	36.00	19.49	19.00	36.00	38.20	25.27	29.50	11720
18"	60.50	61.38	60.50	16.03	16.03	36.00	20.33	19.29	36.00	38.87	25.27	29.50	14080
20x18"	65.50	66.38	65.50	16.03	18.00	38.75	20.33	20.37	38.75	38.87	25.27	29.50	17270
20"	65.50	66.38	65.50	18.00	18.00	38.75	23.90	23.03	42.52	42.44	25.27	29.50	20460
24x20"	76.50	77.62	76.50	18.00	21.03	46.00	23.90	24.02	46.00	42.44	25.27	29.50	26230
24"	76.50	77.62	76.50	21.03	21.03	46.00	27.80	26.90	50.20	47.08	29.68	29.50	32010

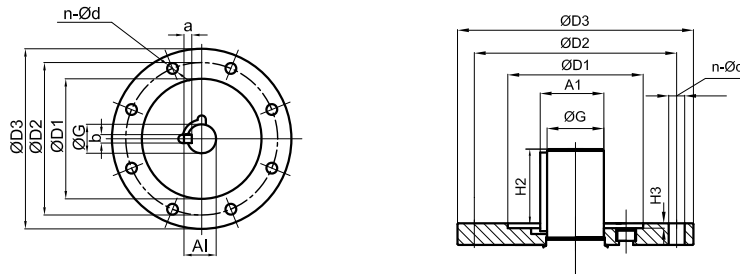
NOTE: Lever operator for 6x4" and below, Gear Box operator for 6" and above.
Larger sizes available on request.

3-PIECE TOPWORKS 2" - 6"



Topworks – Inches

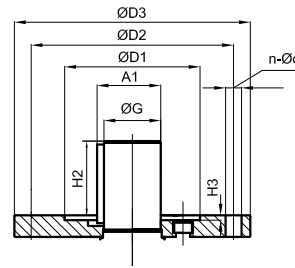
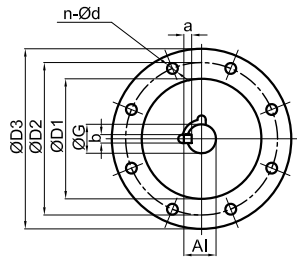
SIZE	Class	D3	D2	D1	G	a	b	A1	H2	H3	n-Ød	ISO Pad
2x1.5"	150	4.92	4.02	2.76	0.75	0.32	0.32	0.87	0.96	0.12	4-Ø0.47	F10
2x1.5"	300	4.92	4.02	2.76	0.75	0.32	0.32	0.87	0.96	0.12	4-Ø0.47	F10
2x1.5"	600	4.92	4.02	2.76	0.75	0.32	0.32	0.87	0.96	0.12	4-Ø0.47	F10
2x1.5"	900	4.92	4.02	2.76	0.75	0.32	0.32	0.87	0.96	0.12	4-Ø0.47	F10
2x1.5"	1500	4.92	4.02	2.76	0.75	0.32	0.32	0.87	0.96	0.12	4-Ø0.47	F10
2"	150	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
2"	300	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
2"	600	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
2"	900	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
2"	1500	5.90	4.92	3.35	0.91	0.32	0.32	1.02	1.22	0.12	4-Ø0.55	F12
3x2"	150	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
3x2"	300	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
3x2"	600	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
3x2"	900	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.38	0.12	4-Ø0.47	F10
3x2"	1500	5.90	4.92	3.35	0.91	0.32	0.32	1.02	1.22	0.12	4-Ø0.55	F12
3"	150	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.34	0.12	4-Ø0.47	F10
3"	300	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.34	0.12	4-Ø0.47	F10
3"	600	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.65	0.16	4-Ø0.71	F14
3"	900	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.65	0.16	4-Ø0.71	F14
3"	1500	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.62	0.16	4-Ø0.71	F14
4x3"	150	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.34	0.12	4-Ø0.47	F10
4x3"	300	4.92	4.02	2.76	0.91	0.32	0.32	1.02	1.34	0.12	4-Ø0.47	F10
4x3"	600	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.65	0.16	4-Ø0.71	F14
4x3"	900	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.65	0.16	4-Ø0.71	F14
4x3"	1500	6.89	5.51	3.93	1.30	0.40	0.40	1.46	1.62	0.16	4-Ø0.71	F14
4"	150	5.90	4.92	3.35	1.30	0.40	0.40	1.46	1.77	0.12	4-Ø0.55	F12
4"	300	5.90	4.92	3.35	1.30	0.40	0.40	1.46	1.77	0.12	4-Ø0.55	F12
4"	600	8.26	6.49	5.11	1.30	0.40	0.40	1.46	1.65	0.20	4-Ø0.87	F16
4"	900	8.26	6.49	5.11	1.30	0.40	0.40	1.46	1.65	0.20	4-Ø0.87	F16
4"	1500	8.26	6.49	5.11	1.50	0.40	0.40	1.65	1.75	0.20	4-Ø0.87	F16
6x4"	150	5.90	4.92	3.35	1.30	0.40	0.40	1.46	1.77	0.12	4-Ø0.55	F12
6x4"	300	5.90	4.92	3.35	1.30	0.40	0.40	1.46	1.77	0.12	4-Ø0.55	F12
6x4"	600	8.26	6.49	5.11	1.30	0.40	0.40	1.46	1.65	0.20	4-Ø0.87	F16
6x4"	900	8.26	6.49	5.11	1.30	0.40	0.40	1.46	1.65	0.20	4-Ø0.87	F16
6x4"	1500	8.26	6.49	5.11	1.50	0.40	0.40	1.65	1.75	0.20	4-Ø0.87	F16
6"	150	11.81	10.00	7.87	1.50	0.40	0.40	1.65	2.12	0.20	8-Ø0.71	F25
6"	300	11.81	10.00	7.87	1.50	0.40	0.40	1.65	2.12	0.20	8-Ø0.71	F25
6"	600	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.12	0.20	8-Ø0.71	F25
6"	900	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.32	0.20	8-Ø0.71	F25
6"	1500	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25



Topworks – Inches

SIZE	Class	D3	D2	D1	G	a	b	A1	H2	H3	n-Ød	ISO Pad
8x6"	150	11.81	10.00	7.87	1.50	0.40	0.40	1.65	2.12	0.20	8-Ø0.71	F25
8x6"	300	11.81	10.00	7.87	1.50	0.40	0.40	1.65	2.12	0.20	8-Ø0.71	F25
8x6"	600	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.12	0.20	8-Ø0.71	F25
8x6"	900	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.32	0.20	8-Ø0.71	F25
8x6"	1500	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25
8"	150	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25
8"	300	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25
8"	600	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
8"	900	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
8"	1500	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
10x8"	150	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25
10x8"	300	11.81	10.00	7.87	1.81	0.55	0.55	2.01	2.75	0.20	8-Ø0.71	F25
10x8"	600	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
10x8"	900	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
10x8"	1500	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
10"	150	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
10"	300	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
10"	600	11.81	10.00	7.87	2.68	0.79	0.79	2.99	3.15	0.20	8-Ø0.71	F25
10"	900	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
10"	1500	11.81	10.00	7.87	3.07	0.79	0.79	3.39	4.31	0.20	8-Ø0.71	F25
12x10"	150	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
12x10"	300	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
12x10"	600	11.81	10.00	7.87	2.68	0.79	0.79	2.99	3.15	0.20	8-Ø0.71	F25
12x10"	900	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
12x10"	1500	11.81	10.00	7.87	3.07	0.79	0.79	3.39	4.31	0.20	8-Ø0.71	F25
12"	150	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
12"	300	11.81	10.00	7.87	2.28	0.71	0.71	2.56	4.25	0.20	8-Ø0.71	F25
12"	600	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
12"	900	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
12"	1500	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
14x12"	150	11.81	10.00	7.87	2.28	0.71	0.71	2.56	2.95	0.20	8-Ø0.71	F25
14x12"	300	11.81	10.00	7.87	2.28	0.71	0.71	2.56	4.25	0.20	8-Ø0.71	F25
14x12"	600	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
14x12"	900	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
14x12"	1500	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
14"	150	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
14"	300	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
14"	600	11.81	10.00	7.87	3.07	0.79	0.79	3.39	4.41	0.20	8-Ø0.71	F25
14"	900	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
14"	1500	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30

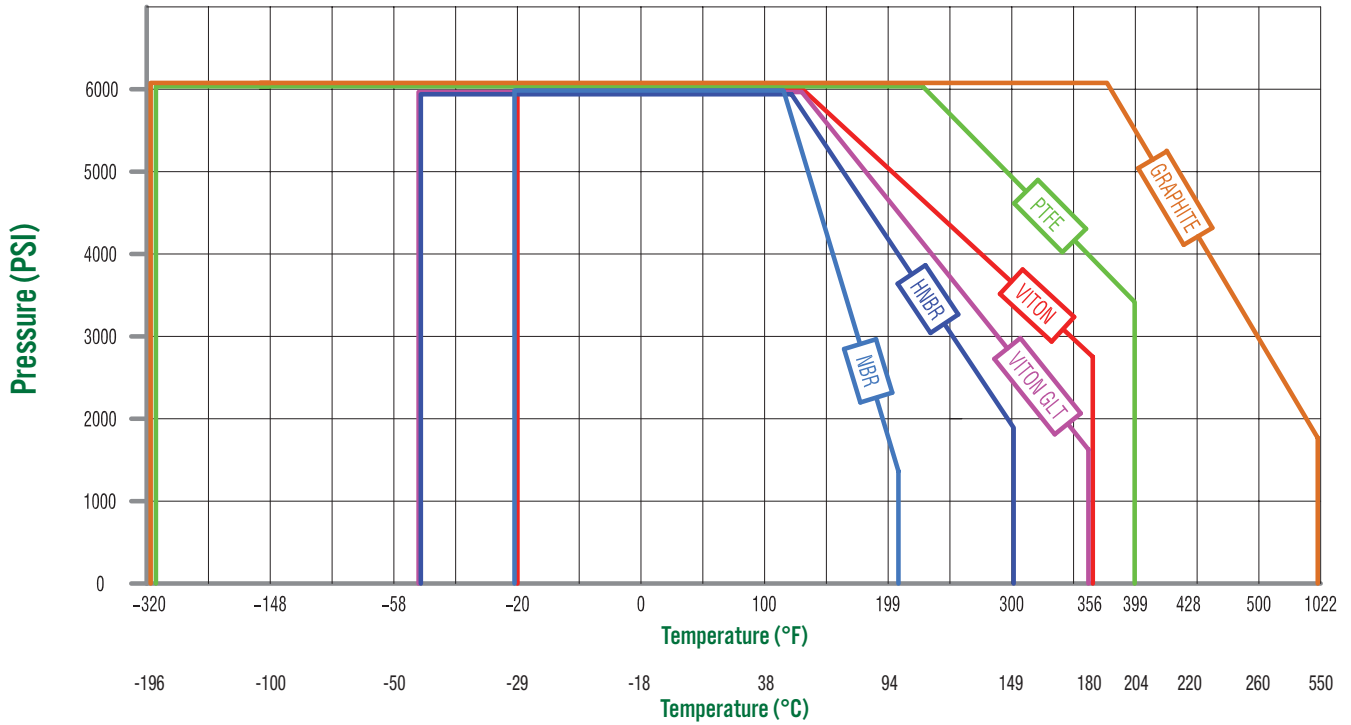
3-PIECE TOPWORKS 16x14" - 24"



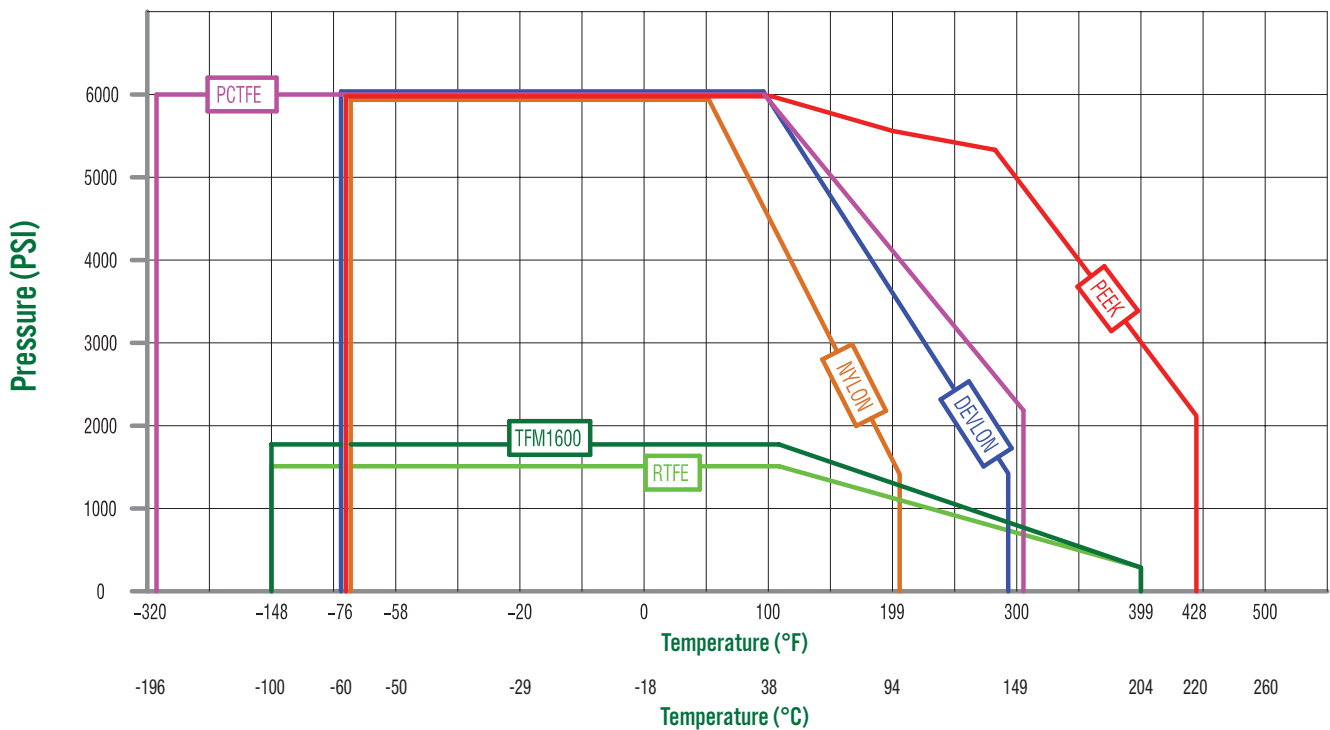
Topworks – Inches

SIZE	Class	D3	D2	D1	G	a	b	A1	H2	H3	n-Ød	ISO Pad
16x14"	150	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
16x14"	300	11.81	10.00	7.87	2.68	0.79	0.79	2.99	4.41	0.20	8-Ø0.71	F25
16x14"	600	11.81	10.00	7.87	3.07	0.79	0.79	3.39	4.41	0.20	8-Ø0.71	F25
16x14"	900	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
16x14"	1500	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
16"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
16"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
16"	600	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
16"	900	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
16"	1500	16.34	14.02	10.24	3.94	1.10	1.10	3.86	4.31	0.20	8-Ø1.30	F35
18x16"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
18x16"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
18x16"	600	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
18x16"	900	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.31	0.20	8-Ø0.87	F30
18x16"	1500	16.34	14.02	10.24	3.94	1.10	1.10	3.86	4.31	0.20	8-Ø1.30	F35
18"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
18"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
18"	600	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.87	F30
18"	900	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
18"	1500	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
20x18"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
20x18"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
20x18"	600	13.78	11.73	9.05	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.87	F30
20x18"	900	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
20x18"	1500	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
20"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
20"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
20"	600	16.34	14.02	10.24	3.94	1.10	1.10	4.37	4.96	0.20	8-Ø1.30	F35
20"	900	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
20"	1500	16.34	14.02	10.24	5.83	1.26	1.26	6.30	5.12	0.20	8-Ø1.30	F35
24x20"	150	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
24x20"	300	11.81	10.00	7.87	3.47	0.95	0.95	3.86	4.21	0.20	8-Ø0.71	F25
24x20"	600	16.34	14.02	10.24	3.94	1.10	1.10	4.37	4.96	0.20	8-Ø1.30	F35
24x20"	900	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
24x20"	1500	16.34	14.02	10.24	5.83	1.26	1.26	6.30	5.12	0.20	8-Ø1.30	F35
24"	150	16.34	14.02	10.24	3.94	1.10	1.10	4.37	4.21	0.20	8-Ø1.30	F35
24"	300	16.34	14.02	10.24	3.94	1.10	1.10	4.37	5.12	0.20	8-Ø1.30	F35
24"	600	16.34	14.02	10.24	4.73	1.26	1.26	5.20	5.12	0.20	8-Ø1.30	F35
24"	900	16.34	14.02	10.24	5.83	1.26	1.26	6.30	5.12	0.20	8-Ø1.30	F35
24"	1500	18.70	15.98	11.81	5.83	1.26	1.26	6.30	5.12	0.31	8-Ø1.30	F40

O-Ring Material Chart



Seat Insert Material Chart



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