

ENERGY VALVES S.R.L. Italy a Socio Unico

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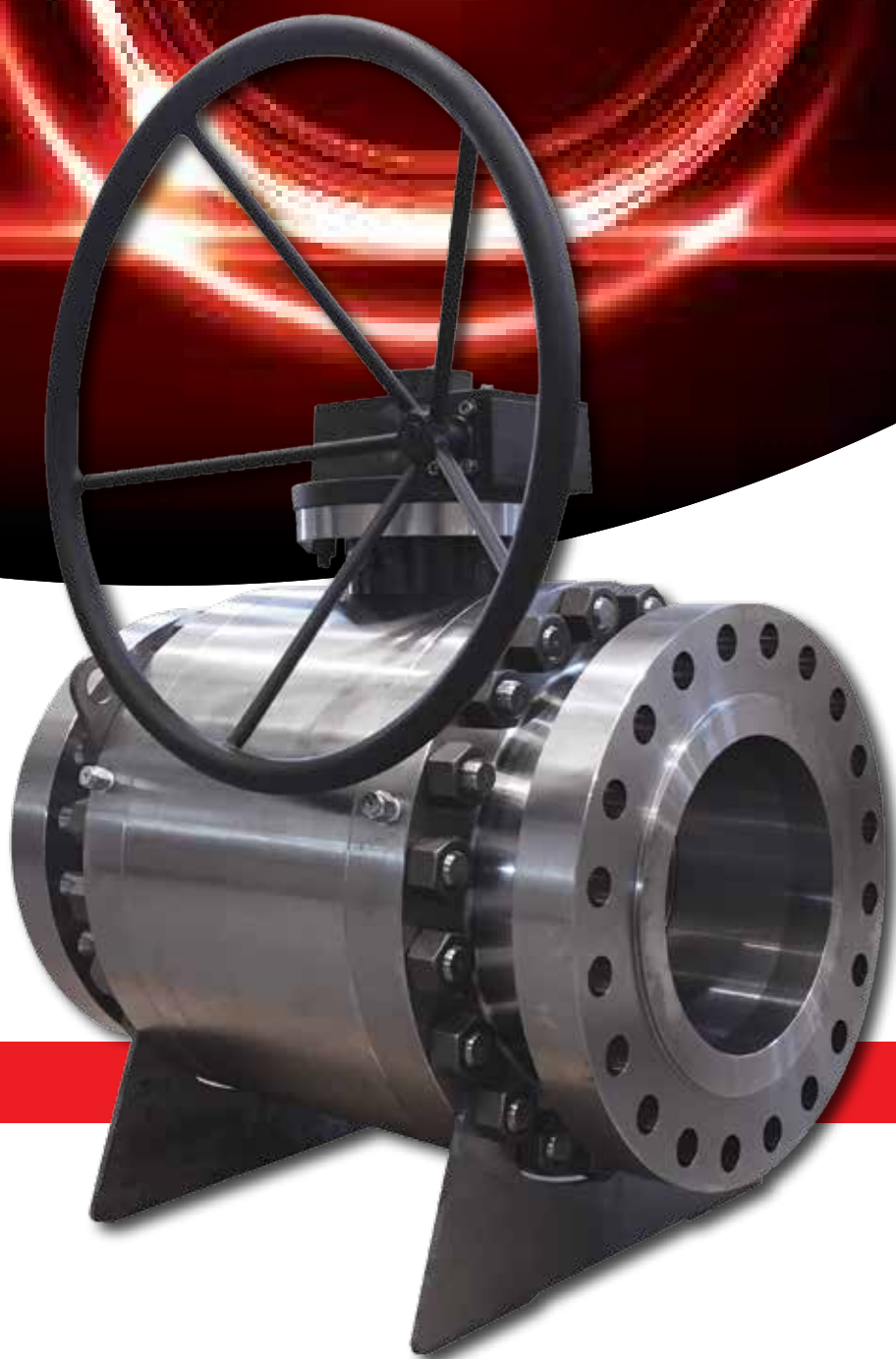
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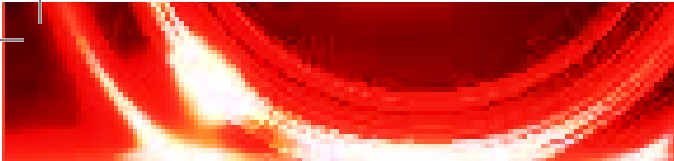
***Design and dimension are not bending, Energy Valves reserves the right to modify them without any notice, except the dimension established by international standard specifications.

 **ENERGY**
VALVES



TRUNNION

BALL VALVES



INTRODUCTION

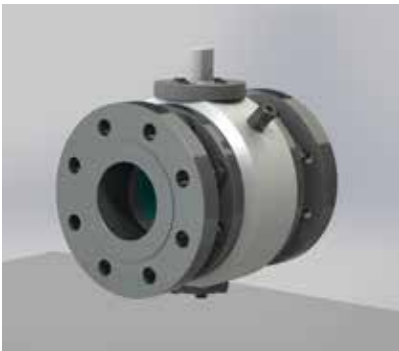
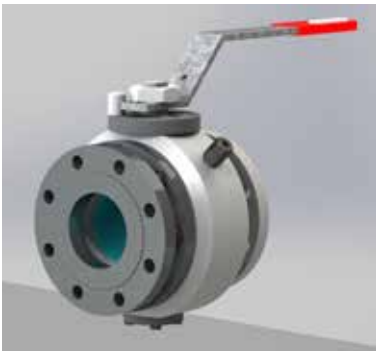
Energy Valves was founded in 2007 by engineers with over 30 years experience in the design and the construction of cutting edge valve technology.

Our mission is to provide design, manufacture, testing and certification based on your needs and your schedule, in accordance with any technical specification.

The Energy Valves design and prduction facility is located close to Milan and it's fully ISO 9001.



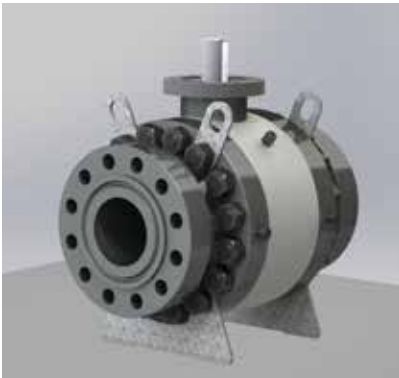
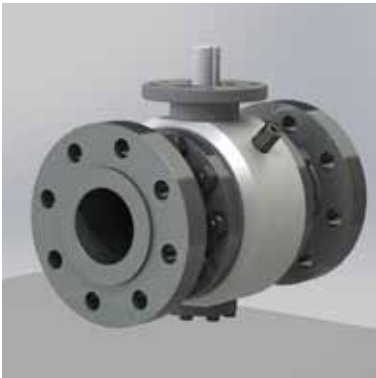
Side Entry - Bolted Design



Modular Dbb Design



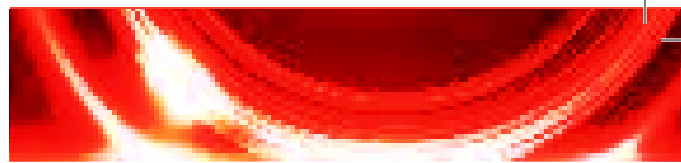
Top Entry Design



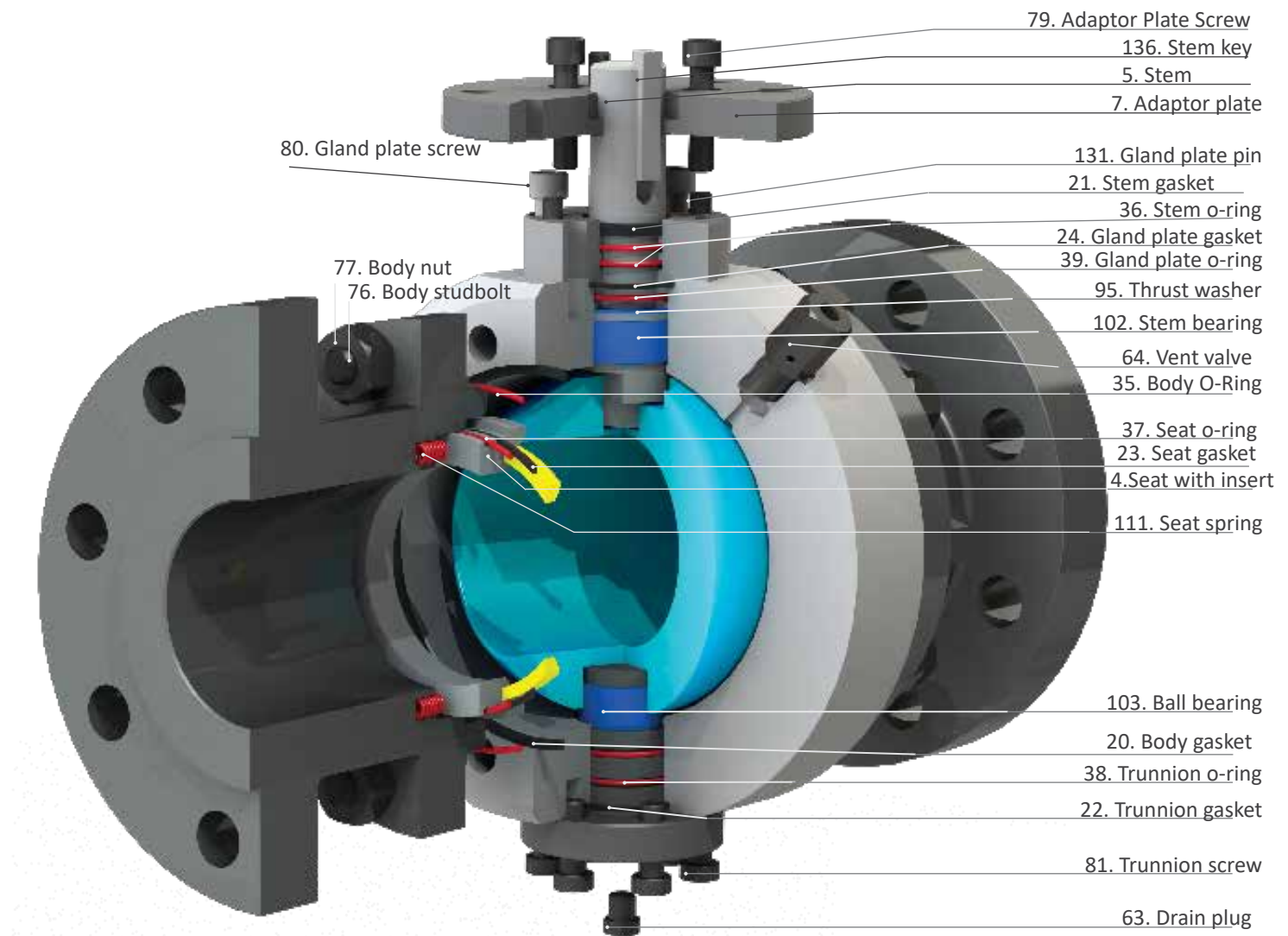
PRODUCT RANGE:

	CLASS 150 / PN 16	CLASS 300 / PN 50	CLASS 600 / PN 100	CLASS 900 / PN 150	CLASS 1500 / PN 250	CLASS 2500 / PN 420
1/2"						
3/4"						
1"						
1,1/2"						
2"						
3"						
4"						
6"						
8"						
10"						
12"						
14"						
16"						
18"						
20"						
22"						
24"						

lever
gear



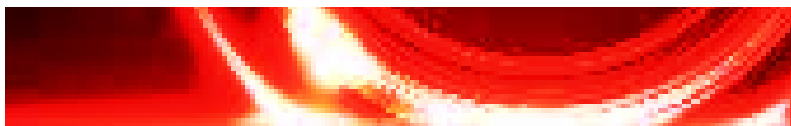
STANDARD MATERIALS and NORMATIVES



Pos.	Description	Carbon Steel	Stainless Steel
1	Body	A350 LF2	A479 TP316-L
2	Body connector	A350 LF2	A479 TP316-L
3	Ball	A479 TP316-L	
4	Seat with insert	A479 TP316-L + RPTFE	
5	Stem	A479 TP316-L	
6	Gland plate	A350 LF2	A479 TP316-L
7	Adaptor plate	A350 LF2	A479 TP316-L
8	Trunnion	A479 TP316-L	
20	Body gasket	GRAPHITE	
21	Stem gasket	GRAPHITE	
22	Trunnion gasket	GRAPHITE	
24	Gland plate gasket	GRAPHITE	
35	Body o-ring	VITON	
36	Stem o-ring	VITON	
37	Seat o-ring	VITON	

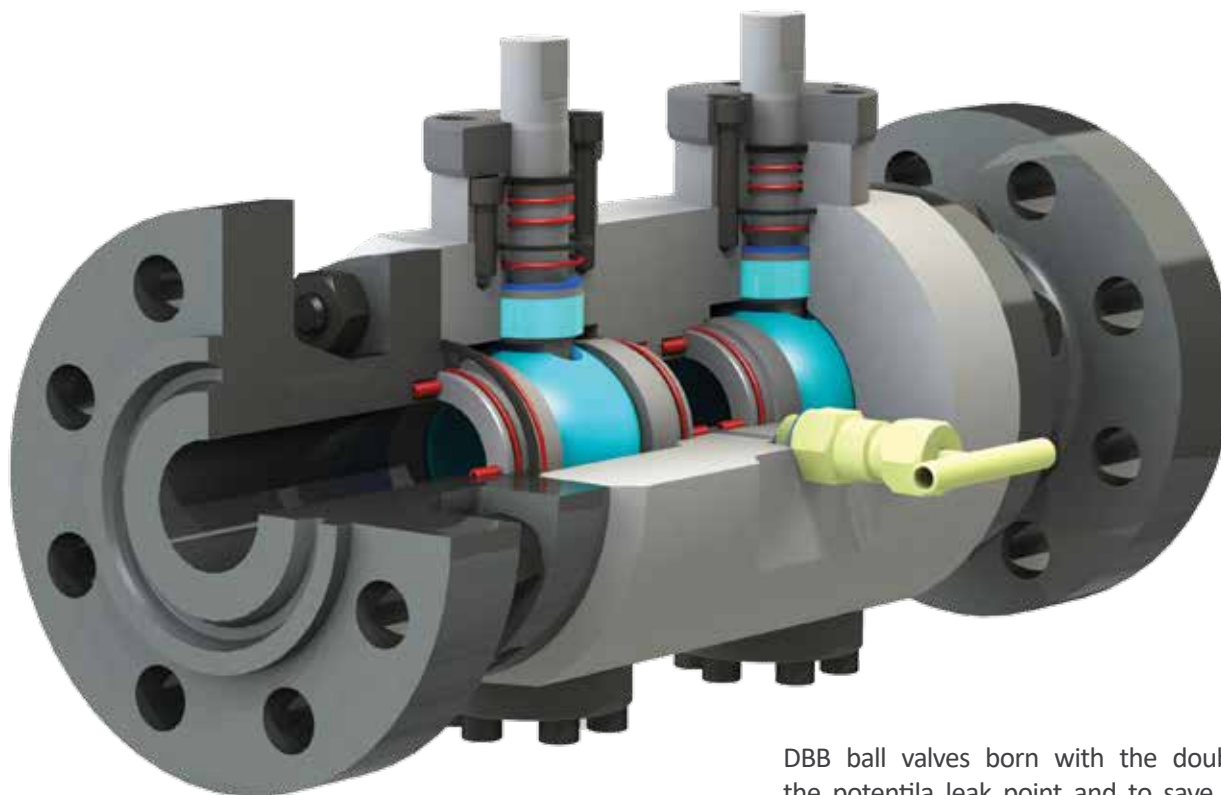
Pos.	Description	Carbon Steel	Stainless Steel
38	Trunnion o-ring	VITON	
39	Gland plate o-ring	VITON	
63	Drain plug	A350 LF2	A479 TP316-L
64	Vent valve	A350 LF2	A479 TP316-L
76	Body studbolt	ASTM A320 L7	ASTM A193 B8
77	Body nut	ASTM A194 Gr.7	ASTM A194 Gr.8
79	Adaptor plate screw	CLASS 8.8	A2.70
80	Gland plate screw	CLASS 8.8	A2.70
81	Trunnion screw	CLASS 8.8	A2.70
95	Thrust washer	MU	TF-F316
102	Stem bearing	MU	TF-F316
103	Ball bearing	MU	TF-F316
111	Seat spring	INCONEL X-750	
131	Gland plate pin	100 Cr6	
132	Adaptor plate pin	100 Cr6	
136	Stem key	AISI 4140	

Special materials: - Pressure containing parts: Duplex, Super duplex, Exotic alloys, Bronze, Titanium;
- Soft Seat: PTFE, Delrin, Vespel SP 21, Devlon, Peek, Kel'F, UHMWPE; - Metal seats: TCC, CCC coated, Stellite welded;- Seal: HNBR, FFKM, GFLT, Graphite, Lip-Seal.



DOUBLE BLOCK AND BLEED

DOUBLE BLOCK AND BLEED:



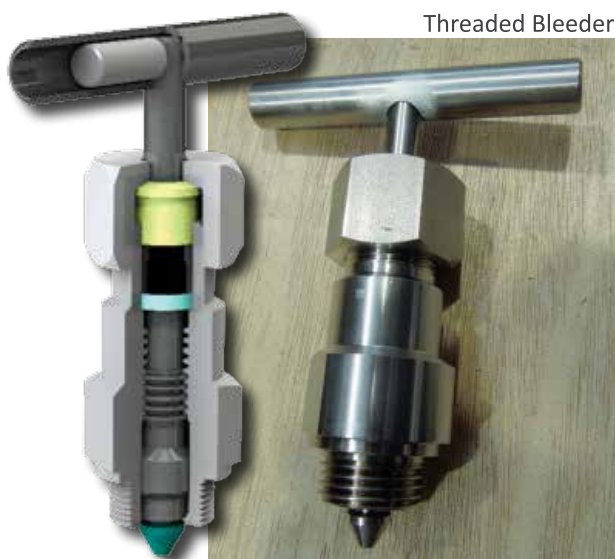
DBB ball valves born with the double scope to reduce the potential leak point and to save space and weight in comparison to previous standard solution, with two ball valve and a separate facility for bleeding the cavity between the two. The DBB ball valve consist of two independently operable ball valves for isolation service with an intermediate globe style needle valve for venting service.

BLEEDER:

DBB and SBB valves can be supplied with different kind of bleeder valves: threaded or bolted. For small valves (under 2") the face to face dimension could change according to the bleeder used. The table of this catalogue considers the threaded ones.

BLEEDER:

Outside Screw and Yoke



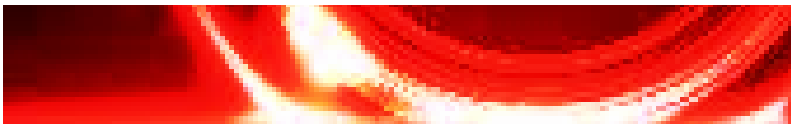
Threaded Bleeder





DOUBLE BLOCK AND BLEED:





TECHNICAL FEATURES

THREE WAY:



The 3-way ball valve provides greater flexibility in operation. It can function as a selector valve, accepting flow alternately from one of the two inlet sources and directing through a single outlet.

Or, it may be used to mix media, accepting flow from two inlet sources and directing it through a single outlet.

V PORT:



Ball valves manufactured by Energy Valves can be designed with special V port ball, to respect the customer's specific requirements.

ACTUATED:



The complete range of valves produced by Energy Valves can be supplied with any type of pneumatic, hydraulic, electric actuator; including control panels and accessories such as positive indicators, solenoid valves, emergency tanks, etc.. All valves are realized with iso top mounting for easy automation.

ACTUATED:



TEST and CRYO

QUALITY AND CERTIFICATION:

Energy Valves has been audited and approved by TUV Hessen to the PED (pressure equipment directive), Atex directive 94/9 EC, API and EAC. Dimensional and functional controls are carried out on every valve. Pressure test is performed following internal procedure and API6D, API 598, BS.6755 and eventually every other technical specifications.

Energy valves can execute in addition to standard hydraulic & pneumatic test. The following test in house:

- Cryogenic test
- Fugitive emission
- High pressure gas test
- Torque test

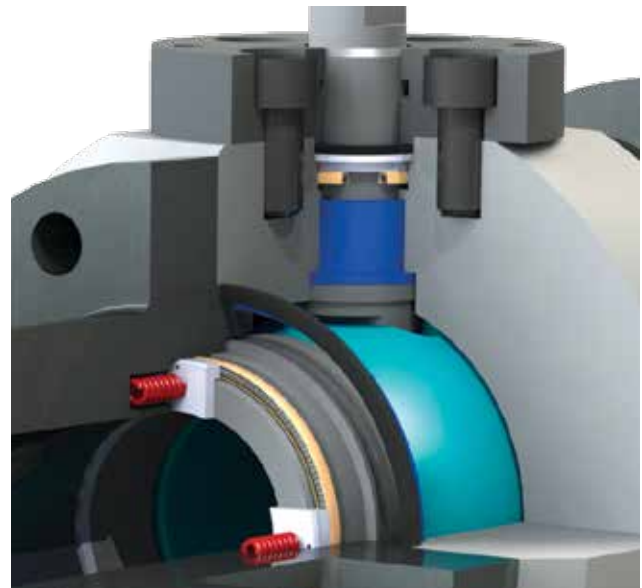


CRYOGENIC:



All ball valves manufactured by Energy Valves can be designed for use in Cryogenic service with working temperature up to -196°C . The design of the extended bonnet prevents the freezing of the stem seal packing and therefore allows the valve to operate with low torque. Energy Valves can test cryogenic valves in house at -196° with liquid nitrogen.

LIP - SEAL:



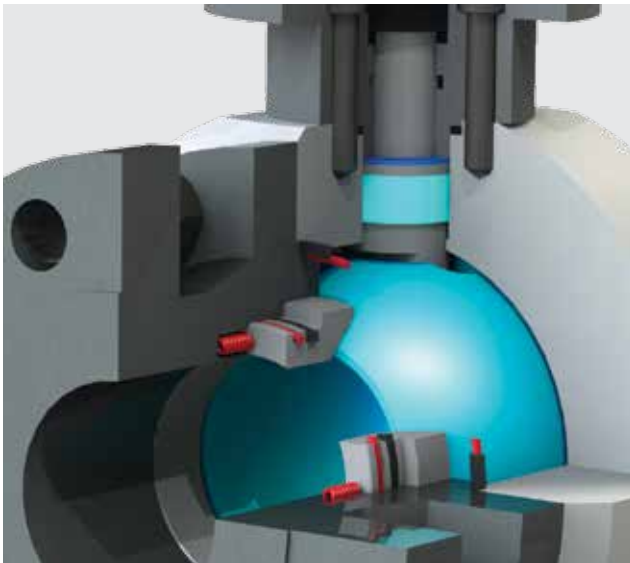
Valves where o-rings are not allowed can be provided with lip-seal sealing area on any static and dynamic. Stem sealing is designed to perform fugitive emission class B and with stand at very low temperature for service up to -196°C .

SEATS

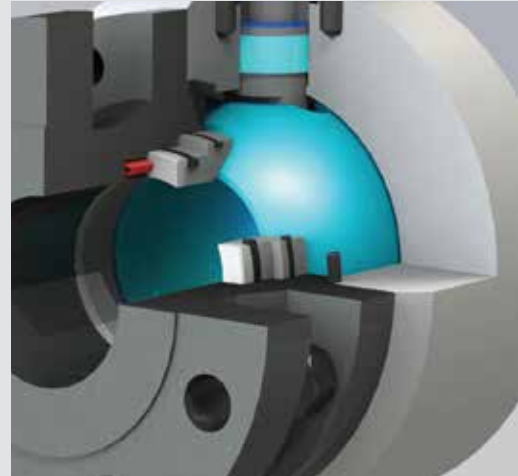
METAL SEATS:

In case of severe service with high temperature or abrasive service due to the presence of solid particle into the fluid, the seats are metal and specially hardened with Carbides of Chromium, Tungsten or with Stellite. All metal seats are treated with lapping to be in compliance with the different rates in gas test in accordance with API 598.

If the temperature is very high elastomeric seals can't be used, and all the seals are replaced with graphite rings.



Standard Temperature Metal Seat



High Temperature Metal Seat



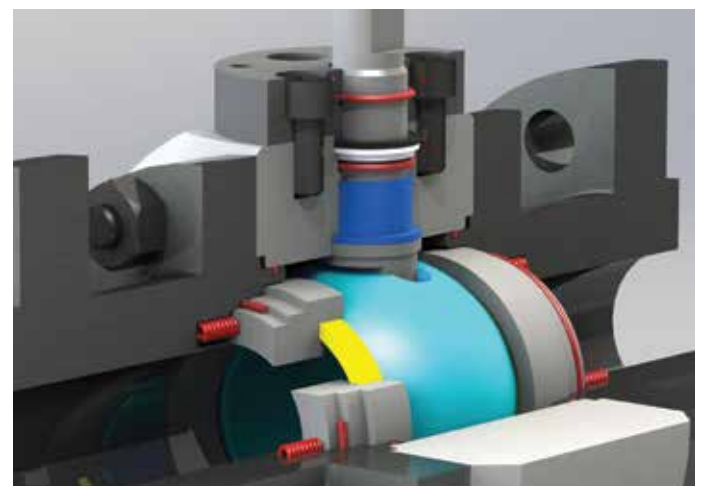
SAETS:

Two different seats design are possible:

- Single Piston Effect (SPE), which assures an unidirectional sealing and guarantees the self-relieving action in case of overpressure into valve body cavity;
- Double Piston Effect (DPE), which assures a bidirectional sealing. In case of overpressure into valve body cavity DPE seats will not release overpressure into the line, so normally a self relieving valve is adopted.

Three different seat configuration are available:

- Bi-directional self-relieving (standard, SPExSPE)
- Double Isolation and Bleed (DPExDPE)
- Double Isolation and Bleed (DPExSPE)

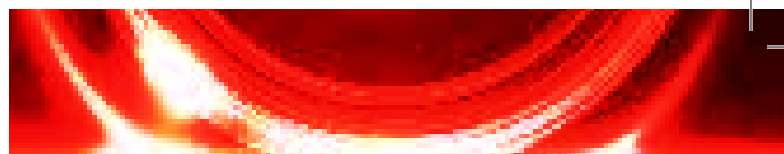


Seats DPExDPE

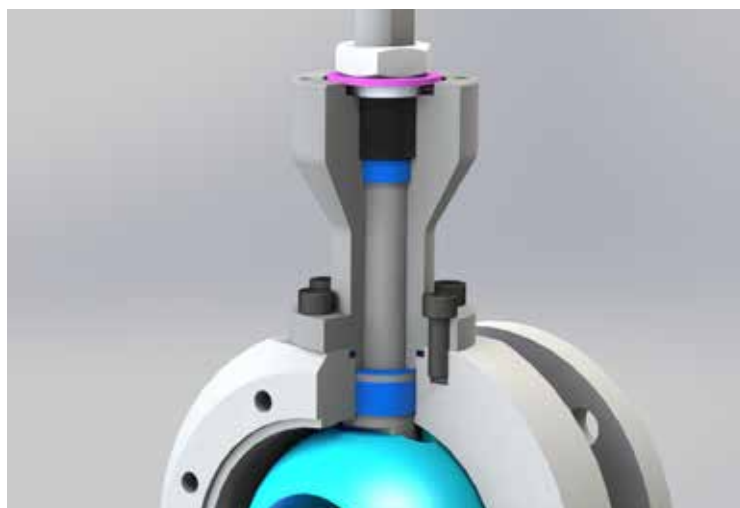
SPECIAL EXECUTION

WELDED BODY:

Fully welded trunnion ball valves are used mainly in Gas transmission and distribution pipeline, typical for underground and buried installation. This kind of valve is characterized by a compact design that eliminates body flanges reducing overall size and leak source.



STEM PACKING:



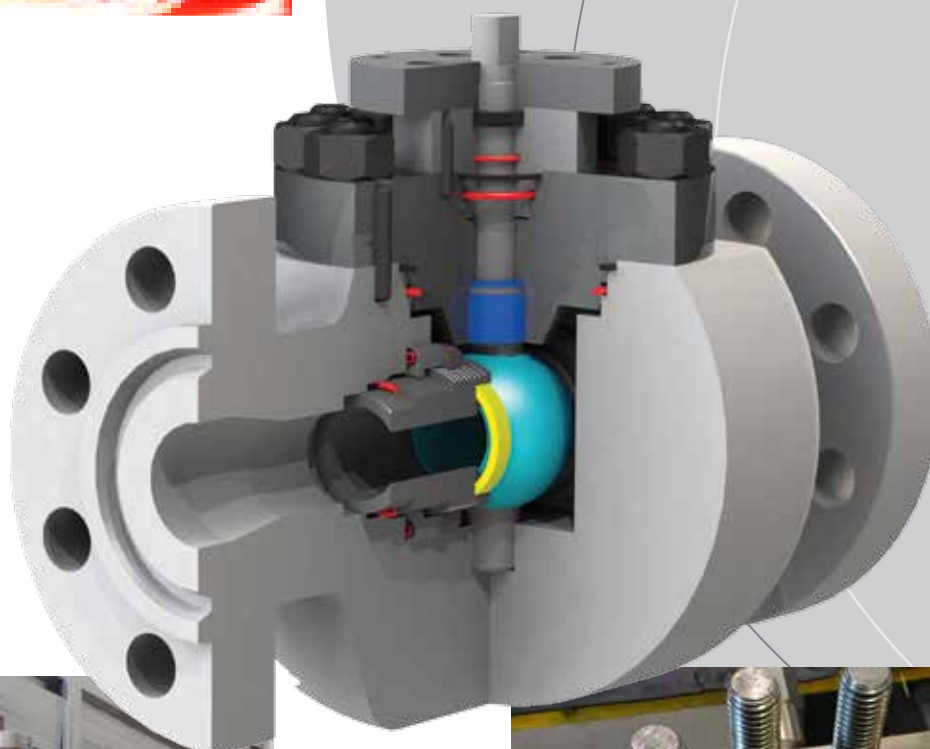
Energy Valves trunnion ball valves can be configured with different kinds of stem packing in order to respect all the customer's requirements. The standard stem packing is pressed graphite. For high temperature or in order to respect low emission test, stem packings are composed of flexible graphite with Inconel reinforcement. With all the packing the design is certified API 6FA – ISO 10497.

LOW FRICTION VALVE:

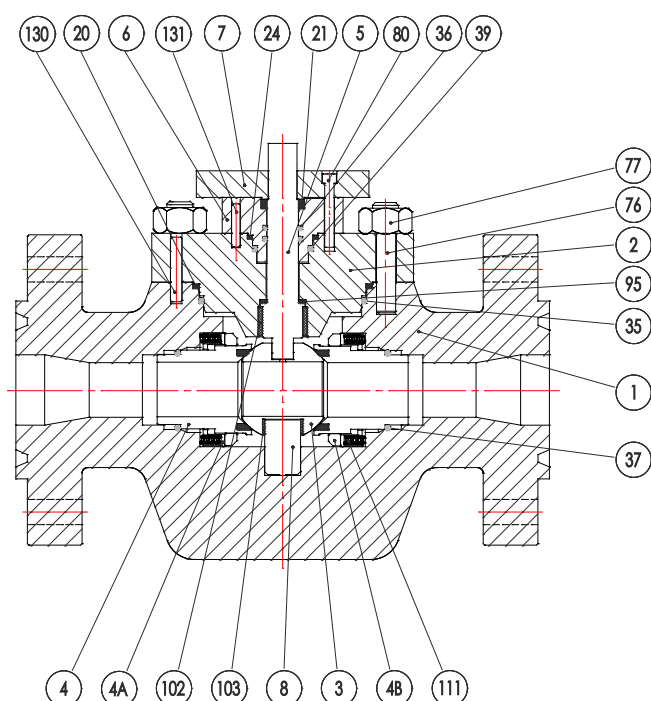


To satisfy all client particular requirements Energy Valves designs and produces special low friction trunnion ball valves with rolling bearings that allow higher loads while reducing friction, heat and wear in the bearing.

TOP ENTRY

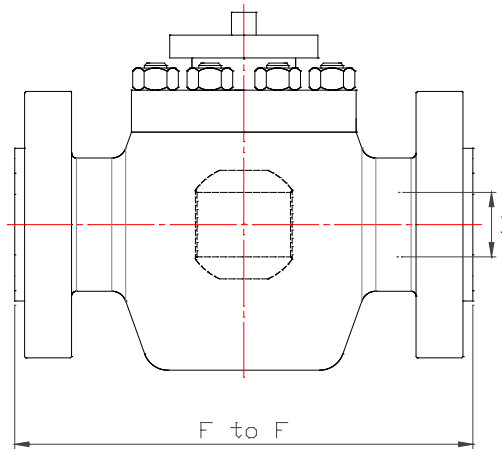


DESCRIPTIONS & MATERIALS:



Pos.	Description
1	Body
2	Body connector
3	Ball
4	Seat with insert
4A	Spring seat retainer
4B	Seat spacer
5	Stem
6	Gland plate
7	Adaptor plate
8	Trunnion
20	Body gasket
21	Stem gasket
24	Gland plate gasket
35	Body o-ring
36	Stem o-ring

Pos.	Description
37	Seat o-ring
39	Gland plate o-ring
63	Drain plug
64	Vent valve
76	Body studbolt
77	Body nut
79	Adaptor plate screw
80	Gland plate screw
95	Thrust washer
102	Stem bearing
103	Ball bearing
111	Seat spring
130	Body pin
131	Gland plate pin

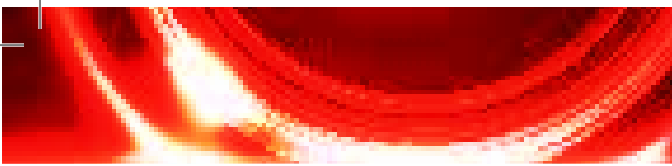


150/300/600						900				
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SIZE	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
1/2"	13	165	163	165	14	13	216	216	216	16
3/4"	19	190	190	190	16	19	229	229	229	20
1"	25	216	216	216	22	25	254	254	254	26
1.1/2"	38	241	241	241	26	38	305	305	305	40
2"	49	292	295	292	34	49	369	371	369	52
3"	78	356	359	356	66	78	381	384	381	80
4"	102	432	435	432	120	102	457	460	457	170
6"	153	559	562	559	275	153	610	613	610	390
8"	203	660	663	660	510	203	737	740	737	640
10"	254	787	790	787	800	254	838	841	838	1070
12"	305	838	841	838	1110	305	965	968	965	1610
14"	337	889	892	889	1310	322	1029	1039	1029	1560
16"	387	991	994	991	1580	375	1130	1140	1130	2240
18"	438	1092	1095	1092	2180	425	1219	1232	1219	3000
20"	489	1194	1200	1194	2780					
22"	540	1296	1305	1296	3930					
24"	591	1397	1407	1397	4880					

1500						2500				
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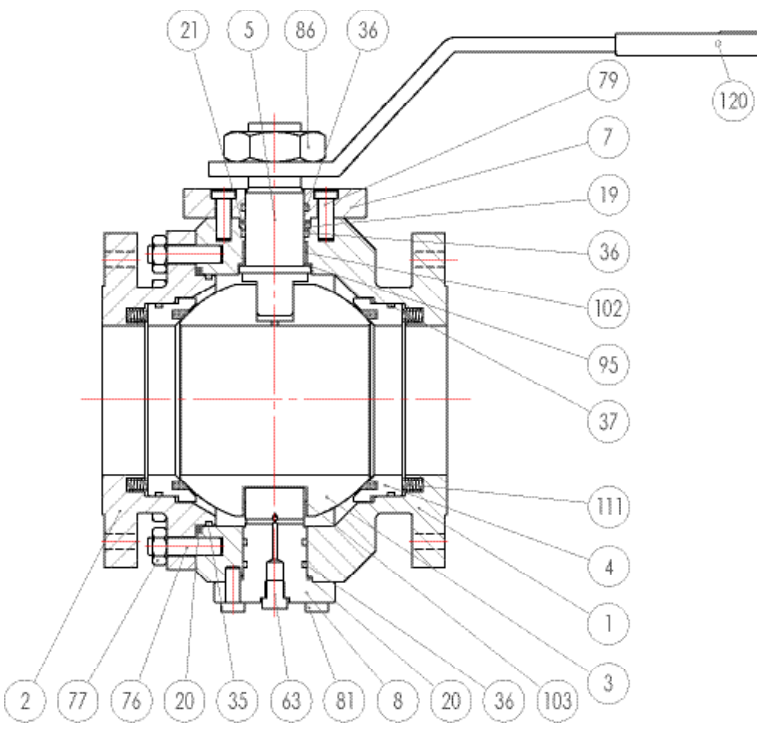
SIZE	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
1/2"	13	216	216	216	16	13	264	264	264	22
3/4"	19	229	229	229	20	19	273	273	273	28
1"	25	254	254	254	26	25	308	308	308	36
1.1/2"	38	305	305	305	40	38	384	387	384	48
2"	49	368	371	368	55	42	451	454	451	93
3"	76	470	473	470	105	63	578	584	578	215
4"	102	546	549	546	205	89	673	683	673	385
6"	147	705	711	705	525	133	914	927	914	830
8"	193	832	842	832	880	181	1022	1038	1022	1435
10"	254	991	1001	991	1560	226	1270	1292	1270	2220
12"	305	1130	1146	1130	2355	267	1422	1444	1422	3350
14"	322	1257	1276	1257	3020					
16"	362	1384	1406	1384	4260					



STANDARD EXECUTIONS:
ASME Class: 1/2" – 4" full bore

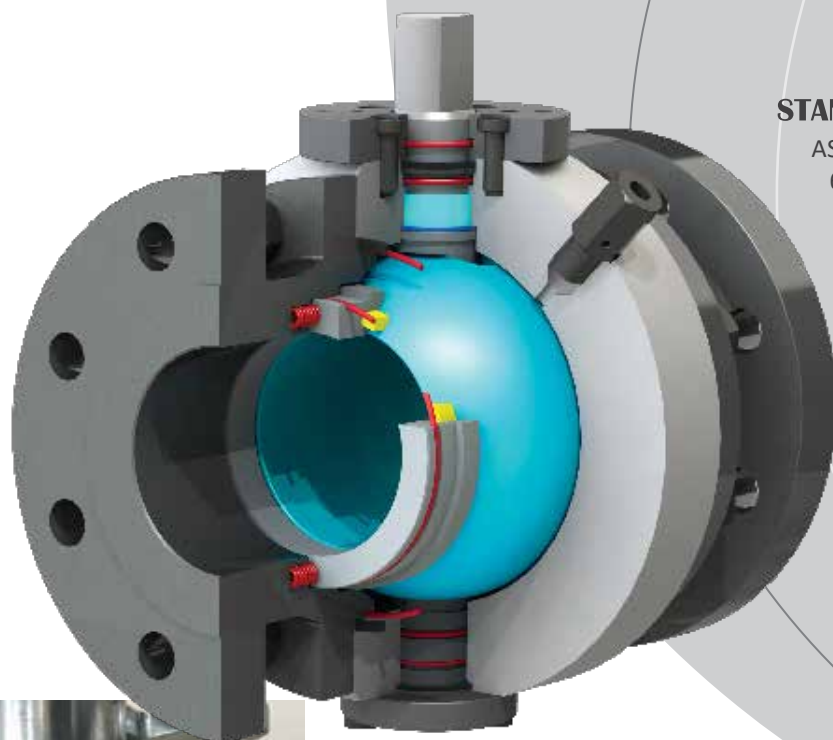


DESCRIPTIONS & MATERIALS:



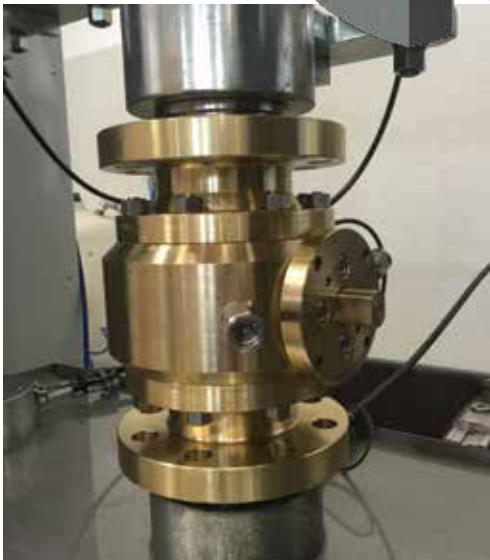
Pos.	Description
1	Body
2	Body connector
3	Ball
4	Seat with insert
5	Stem
7	Adaptor plate
8	Trunnion
20	Body gasket
21	Stem gasket
22	Trunnion gasket
24	Gland plate gasket
35	Body o-ring
36	Stem o-ring
37	Seat o-ring

Pos.	Description
37	Seat o-ring
38	Trunnion o-ring
63	Drain plug
64	Vent valve
76	Body studbolt
77	Body nut
79	Adaptor plate screw
81	Trunnion screw
86	Lever nut
95	Thrust washer
102	Stem bearing
103	Ball bearing
111	Seat spring
120	Lever
122	Stop pin

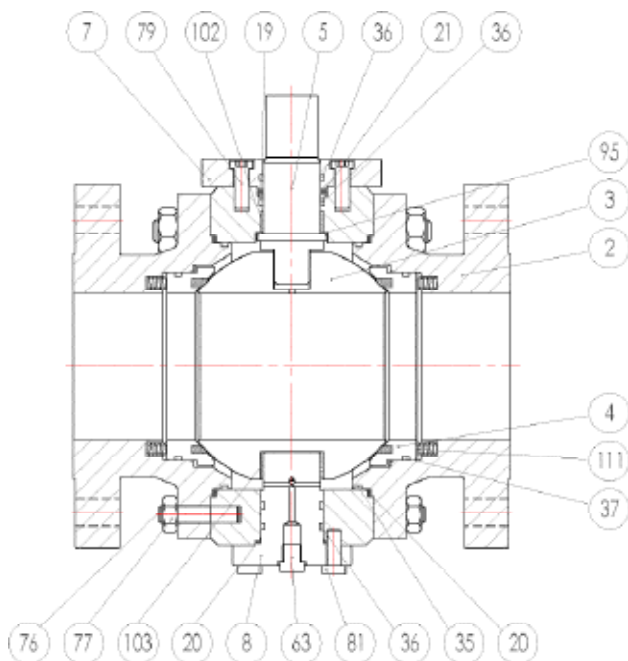


STANDARD EXECUTIONS:

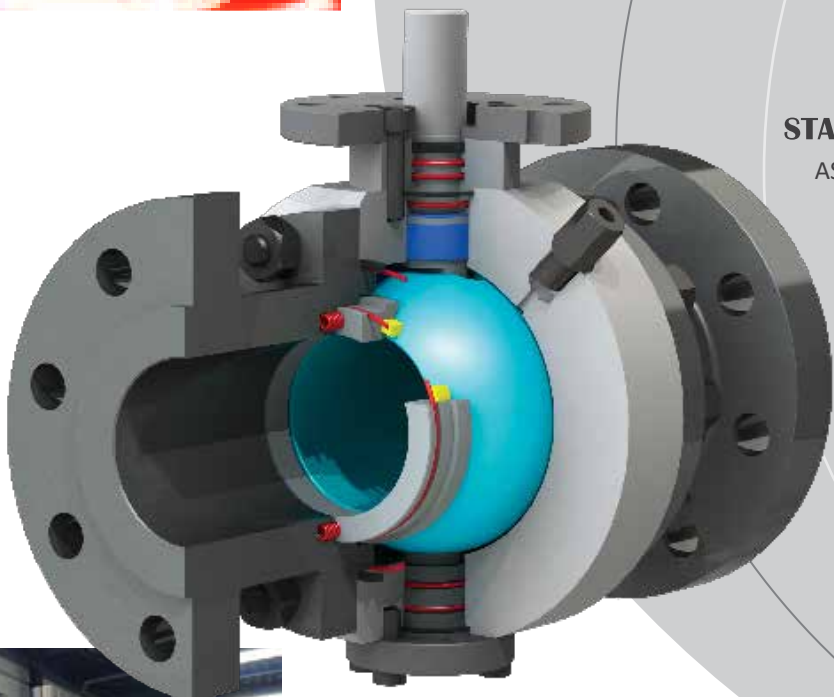
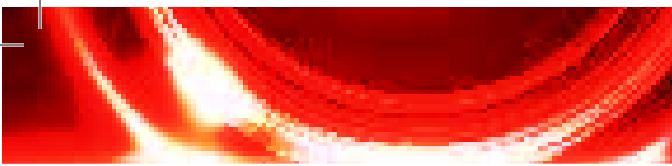
ASME Class 150: 1/2" –
6" reduced bore
ASME Class 300-600: 1/2" –
3" full and reduced bore
ASME Class 900/1500/
2500: 1/2" – 1"
full and reduced bore



DESCRIPTIONS & MATERIALS:



Pos.	Description	Pos.	Description
1	Body	37	Seat o-ring
2	Body connector	38	Trunnion o-ring
3	Ball	63	Drain plug
4	Seat with insert	64	Vent valve
5	Stem	76	Body studbolt
7	Adaptor plate	77	Body nut
8	Trunnion	79	Adaptor plate screw
20	Body gasket	81	Trunnion screw
21	Stem gasket	95	Thrust washer
22	Trunnion gasket	102	Stem bearing
24	Gland plate gasket	103	Ball bearing
35	Body o-ring	111	Seat spring
36	Stem o-ring		

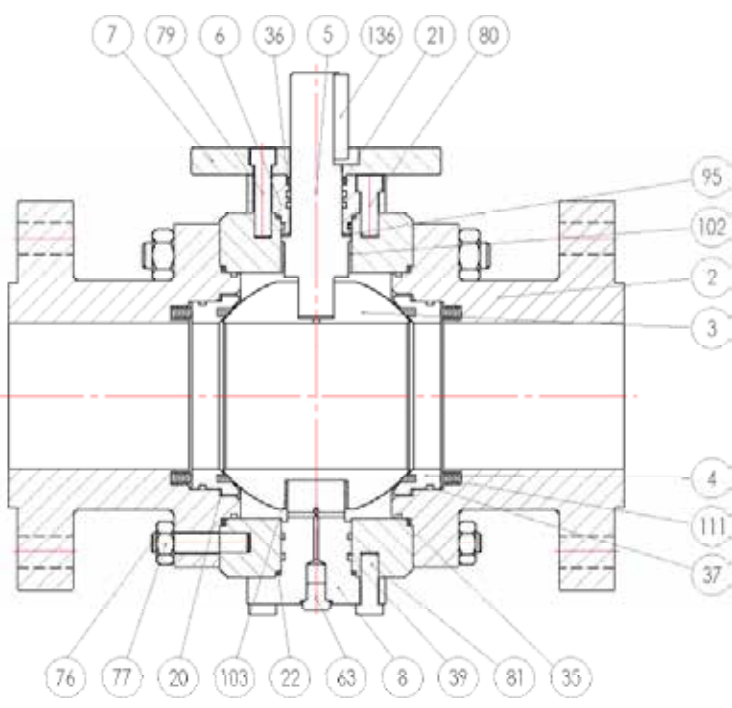


STANDARD EXECUTIONS:

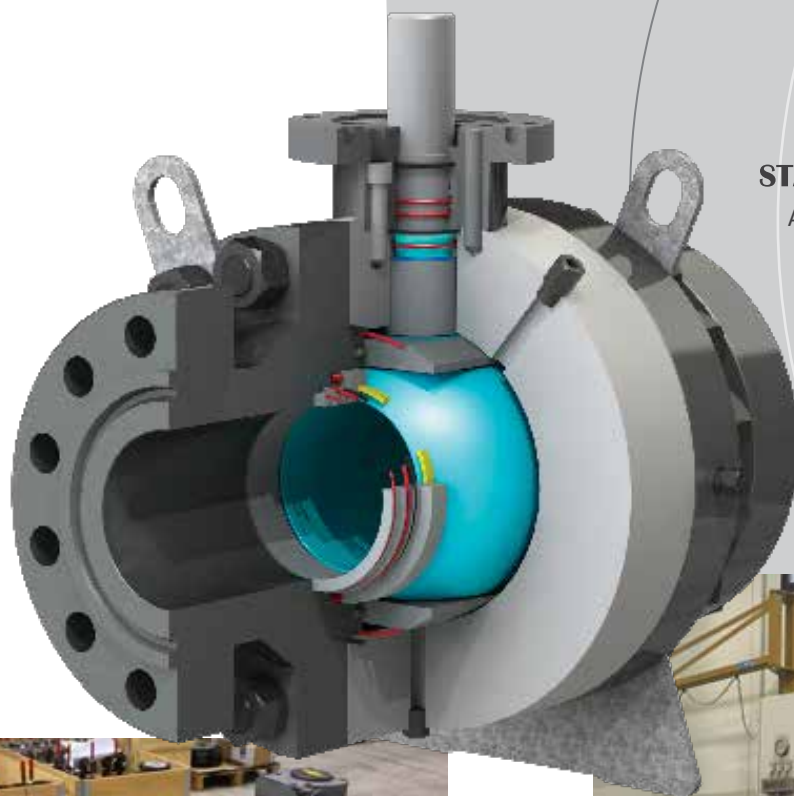
- ASME Class 300/600: 4" full bore
- ASME Class 900/1500/
2500: 1.1/2" – 4" full and
reduced bore
- ASME Class 900/1500/2500:
6" reduced bore



DESCRIPTIONS & MATERIALS:



Pos.	Description	Pos.	Description
1	Body	38	Trunnion o-ring
2	Body connector	39	Gland plate o-ring
3	Ball	63	Drain plug
4	Seat with insert	64	Vent valve
5	Stem	76	Body studbolt
6	Gland plate	77	Body nut
7	Adaptor plate	79	Adaptor plate screw
8	Trunnion	80	Gland plate screw
20	Body gasket	81	Trunnion screw
21	Stem gasket	95	Thrust washer
22	Trunnion gasket	102	Stem bearing
24	Gland plate gasket	103	Ball bearing
35	Body o-ring	111	Seat spring
36	Stem o-ring	131	Gland plate pin
37	Seat o-ring	132	Adaptor plate pin
		136	Stem key

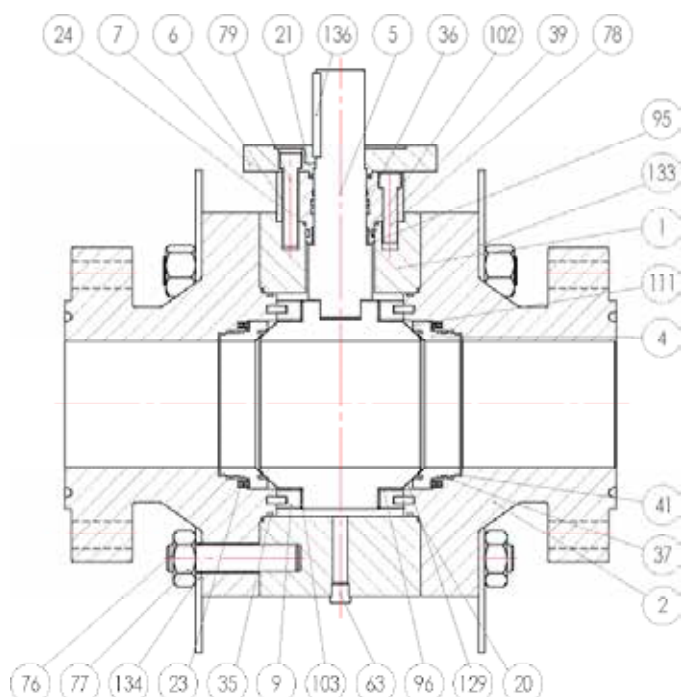


STANDARD EXECUTIONS:

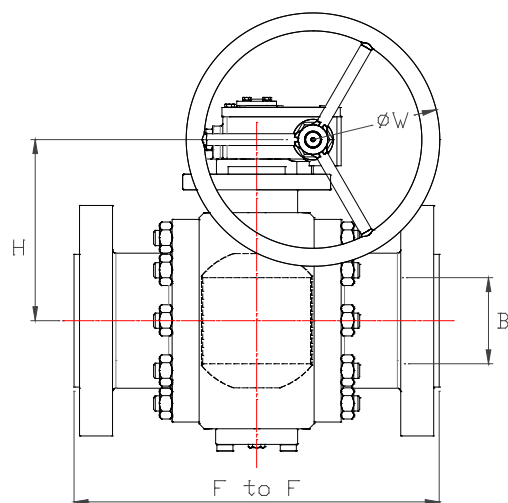
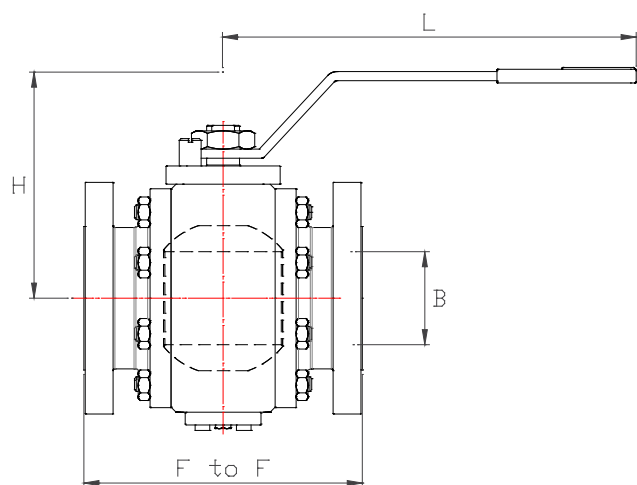
ASME Class 150/300/600/
900/1500/2500: 6" full bore
ASME Class 150/300/
600/900/1500/2500:
8"-24" full and reduced bore



DESCRIPTIONS & MATERIALS:



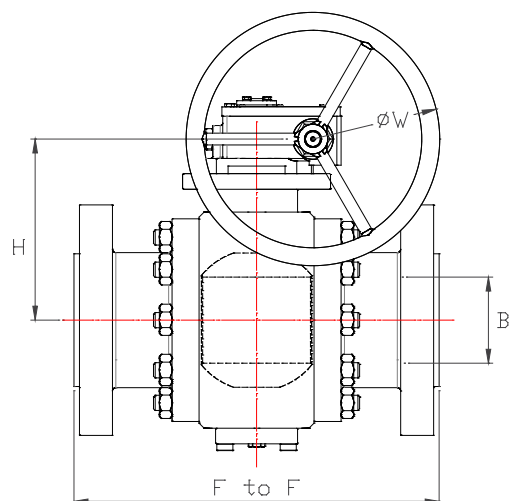
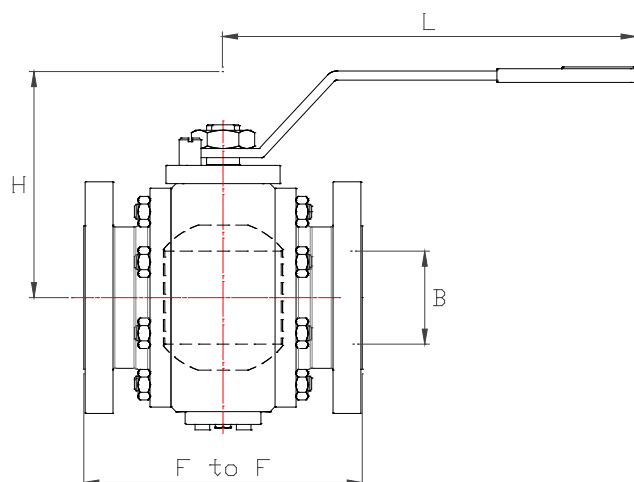
Pos.	Description	Pos.	Description
1	Body	38	Trunnion o-ring
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8	Trunnion	80	Gland plate screw
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21	Stem gasket	95	Thrust washer
22	Trunnion gasket	102	Stem bearing
24	Gland plate gasket	103	Ball bearing
35	Body o-ring	111	Seat spring
36	Stem o-ring	131	Gland plate pin
37	Seat o-ring	132	Adaptor plate pin
		136	Stem key



Dimension			150					300				
SIZE	H	L/W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
1/2"	80	160	13	108	-	165	10	13	140	151	165	12
3/4"	110	200	19	117	-	190	12	19	152	165	190	14
1"	130	260	25	127	140	216	18	25	165	178	216	20
1.1/2"	160	330	38	165	178	241	22	38	190	203	241	24
2"	170	330	49	178	191	216	28	49	216	232	216	28
3"	190	380	78	203	216	282	52	78	282	298	282	56
4"	250	480	102	229	242	305	92	102	305	321	305	98
6"	280	500	153	394	406	457	175	153	403	419	457	205
8"	340	500	203	457	470	521	270	203	502	518	521	310
10"	390	500	254	533	546	559	405	254	568	584	559	530
12"	415	500	305	610	622	635	585	305	648	664	635	780
14"	450	700	337	686	699	762	805	337	762	778	762	1090
16"	530	700	387	762	775	838	1070	387	838	854	838	1480
18"	570	700	438	864	877	914	1270	438	914	930	914	1685
20"	590	700	489	914	927	991	1850	489	991	1010	991	2290
22"	620	700	540	991	-	1092	2450	540	1092	1114	1092	2880
24"	640	700	591	1067	1080	1143	3180	591	1143	1165	1143	3610

Dimension			600					900				
SIZE	H	L/W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
1/2"	80	160	13	165	163	165	14	13	216	216	216	16
3/4"	130	260	19	190	190	190	16	19	229	229	229	20
1"	150	260	25	216	216	216	22	25	254	254	254	26
1.1/2"	160	330	38	241	241	241	26	38	305	305	305	40
2"	170	330	49	292	295	292	34	49	369	371	369	52
3"	210	480	78	356	359	356	66	78	381	384	381	80
4"	230	300	102	432	435	432	120	102	457	460	457	170
6"	280	500	153	559	562	559	275	153	610	613	610	390
8"	350	500	203	660	663	660	510	203	737	740	737	640
10"	390	500	254	787	790	787	800	254	838	841	838	1070
12"	460	700	305	838	841	838	1110	305	965	968	965	1610
14"	520	700	337	889	892	889	1310	322	1029	1039	1029	1560
16"	610	700	387	991	994	991	1580	375	1130	1140	1130	2240
18"	630	700	438	1092	1095	1092	2180	425	1219	1232	1219	3000
20"	650	700	489	1194	1200	1194	2780					
22"	710	700	540	1296	1305	1296	3930					
24"	760	700	591	1397	1407	1397	4880					

Dimension			1500					2500				
SIZE	H	L/W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
1/2"	120	200	13	216	216	216	16	13	264	264	264	22
3/4"	140	260	19	229	229	229	20	19	273	273	273	28
1"	150	260	25	254	254	254	26	25	308	308	308	36
1.1/2"	210	330	38	305	305	305	40	38	384	387	384	48
2"	210	380	49	368	371	368	55	42	451	454	451	93
3"	220	300	76	470	473	470	105	63	578	584	578	215
4"	280	500	102	546	549	546	205	89	673	683	673	385
6"	310	500	147	705	711	705	525	133	914	927	914	830
8"	410	700	193	832	842	832	880	181	1022	1038	1022	1435
10"	470	700	254	991	1001	991	1560	226	1270	1292	1270	2220
12"	570	700	305	1130	1146	1130	2355	267	1422	1444	1422	3350
14"	590	700	322	1257	1276	1257	3020					
16"	620	700	362	1384	1406	1384	4260					



Dimension			150					300				
SIZE	H	L / W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
3/4"x1/2"	80	160	13	117	-	190	11	13	152	165	190	13
1"x3/4"	110	200	19	127	140	216	14	19	165	178	216	16
1.1/2"x1"	130	260	25	165	178	241	20	25	190	203	241	22
2"x1.1/2"	160	330	38	178	191	216	25	38	216	232	216	26
3"x2"	170	330	49	203	216	282	40	49	282	298	282	34
4"x3"	190	380	78	229	242	305	62	78	305	321	305	64
6"x4"	250	480	102	394	406	457	100	102	403	419	457	120
8"x6"	280	500	153	457	470	521	220	153	502	518	521	250
10"x8"	340	500	203	533	546	559	330	203	568	584	559	330
12"x10"	390	500	254	610	622	635	490	254	648	664	635	640
14"x12"	415	500	305	686	699	762	670	305	762	778	762	870
16"x14"	450	700	337	762	775	838	880	337	838	854	838	1150
18"x16"	530	700	387	864	877	914	1150	387	914	930	914	1720
20"x18"	570	700	438	914	927	991	1400	438	991	1010	991	1850
22"x20"	590	700	489	991	-	1092	2180	489	1092	1114	1092	2450
24"x22"	620	700	540	1067	1080	1143	2150	540	1143	1165	1143	3410

Dimension			600					900				
SIZE	H	L / W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
3/4"x1/2"	80	160	13	190	190	190	15	13	229	229	229	18
1"x3/4"	130	260	19	216	216	216	18	19	254	254	254	23
1.1/2"x1"	150	260	25	241	241	241	24	25	305	305	305	32
2"x1.1/2"	160	330	38	292	295	292	30	38	369	371	369	45
3"x2"	170	330	49	356	359	356	44	49	381	384	381	58
4"x3"	210	480	78	432	435	432	90	78	457	460	457	110
6"x4"	230	300	102	559	562	559	160	102	610	613	610	230
8"x6"	280	500	153	660	663	660	310	153	737	740	737	470
10"x8"	350	500	203	787	790	787	570	203	838	841	838	530
12"x10"	390	500	254	838	841	838	850	254	965	968	965	1250
14"x12"	460	700	305	889	892	889	1200	305	1029	1039	1029	1540
16"x14"	520	700	337	991	994	991	1450	322	1130	1140	1130	1850
18"x16"	610	700	387	1092	1095	1092	1750	375	1219	1232	1219	2480
20"x18"	630	700	438	1194	1200	1194	2220					
22"x20"	650	700	489	1296	1305	1296	3650					
24"x22"	710	700	540	1397	1407	1397	4150					

Dimension			1500					2500				
SIZE	H	L/W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
SIZE	H	L / W	Bore	RF	RTJ	BW	Weight	Bore	RF	RTJ	BW	Weight
3/4"x1/2"	120	200	13	229	229	229	18	13	273	273	273	25
1"x3/4"	140	260	19	254	254	254	23	19	308	308	308	33
1.1/2"x1"	150	260	25	305	305	305	32	25	384	387	384	43
2"x1.1/2"	210	330	38	368	371	368	45	38	451	454	451	68
3"x2"	210	380	49	470	473	470	75	42	578	584	578	170
4"x3"	220	300	76	546	549	546	130	63	673	683	673	285
6"x4"	280	500	102	705	711	705	310	89	914	927	914	540
8"x6"	310	500	147	832	842	832	620	133	1022	1038	1022	1140
10"x8"	410	700	193	991	1001	991	1120	181	1270	1292	1270	1720
12"x10"	470	700	254	1130	1146	1130	1820	226	1422	1444	1422	2540
14"x12"	570	700	305	1257	1276	1257	2580					
16"x14"	590	700	322	1384	1406	1384	2950					