



Design & Technology in **Valves**



The image features a black and white photograph of industrial machinery, likely a valve or actuator, in the foreground. The machinery is metallic and has several large, hexagonal bolts around its flange. In the background, there are tall, cylindrical industrial structures with platforms and ladders, set against a cloudy sky. A white rectangular text box is overlaid on the right side of the image, containing the Ibor logo and a short paragraph of text.

Ibor

has been involved in many large international projects with the world's leading EPC

Company overview

Ibor manufacture **Ball valves, Butterfly valves, Gate Valves, Check Valves and Globe Valves**. Specialist on forged materials valves, High strength carbon steels, stainless steel forgings, including duplex and super duplex, nickel alloy, copper alloy and titanium alloy forgings.

It extends over 7,500 square meters for the production of over 100,000 valves per year; day by day is getting one of the most specialized manufacturers of **BALL VALVES in the world**, from commodities to engineered items.

It's possible thanks to an experienced engineering team, working to desing **better products and offer best service**.





Ibor

is a company with over 40 years
experience in the field of Industrial valves.

quality

During these years, besides developing new products, IBOR VALVES has continued on its program of qualification, certification and extension of the testing systems.

We are daily working to obtain new certifications in the sectors of Oil, Gas and Shipyards; we are also endeavoring to obtain a direct recognition from the largest worldwide Users and Engineering Companies. Top Quality materials, European Origin to comply with the most exigent needs, MR0175, Norsok.

Testings in house as NDT, Liquid etc.. Fire safe, Cryogenic testing, Hydrotest up to 800 Bars, High pressure GAS test with Nitrogen or Helio.



markets

Ibor Valves has been involved in many large international projects with the world's leading EPC (Engineering Procurement and Construction).

We export more than 90% of our production around the world. Worldwide customer service, we provide to our customers anywhere.

Our valves are used in many diferents applications such as Conventional Power Plants, Oil & Gas industry, upstream and downstream, Offshore , Onshore, Chemical, Cryogenic Service etc...

MARKETS:

- ✓ Oil & Gas
- ✓ Chemical & Petrochemical
- ✓ Energy sector
- ✓ Mining industries
- ✓ Off-shore, subsea
- ✓ Others

CUSTOMERS:

- ✓ End users (Oil and gas companies, Chemical plants, etc.)
- ✓ EPC (Engineering Procurement Construction)
- ✓ Process Equipment Manufacturers
- ✓ Main / sub contractors for projects
- ✓ Trading companies



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01

Standards & Specifications



Our ball valve program covers floating type ball valves, and trunnion mounted. Side entry and Top Entry constructions are available. Ball valves are intended for a wide range of applications such as oil & gas (both upstream & downstream) chemical, petrochemical, energy and process industries.

Ball Valve Standards

Valves are mainly designed to conform the following standards:

- ✓ API 6D (Specification for pipeline Valves)
- ✓ ANSI B16.34 (Valves Flanged, Threaded and Welding ends)
- ✓ ANSI B16.5 (Pipe flanges and flanged fittings)
- ✓ ANSI B16.25 (Buttwelding ends)
- ✓ ANSI B16.10 (Face to Face and End to End)

Also our ball valves are designed to meet FIRE SAFE as BS6755 and API607.

Testing conform to:

- ✓ API 598 (Valve inspection and testing)
- ✓ MSS-SP-61 (Pressure testing and steel valves)
- ✓ API 6D (Specification for pipeline valves)

Materials are from best quality European origin, selected to ASTM standards, when SOUR service is specified to meet NACE MR0175 (Sulfide Stress Cracking resistant Metallic Materials for oil Equipment).



Range of Valves (Sizes & Pressure)

BALL VALVE SERIES							
SIZE	API 6D						
	150	300	600	800	900	1500	2500
Floating (Top entry & Side entry)	From 1/2 to 6"	From 1/2 to 6"	From 1/2 to 6"	From 1/2 to 2"			
Trunnion (Top entry & Side entry)	From 2" to 56"	From 2" to 56"	From 2" to 56"		From 2" to 42"	From 2" to 36"	From 2" to 24"

SIZE	API 6A						
	2000	3000	5000	10.000	15.000		
Trunnion	From 2-1/6" to 7- 1/16"	From 2-1/6" to 7- 1/16"	From 1-13/16" to 7- 1/16"	From 1-13/16" to 7- 1/16"	From 1-13/16" to 5- 1/8"		



02

Features & Benefits

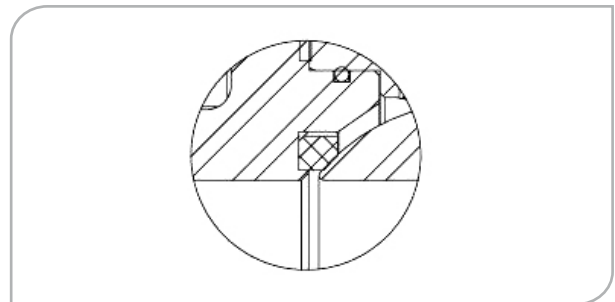


Trunnion ball valves

- ✓ Features a fixed ball and floating seat rings. Bearings absorb the side load generated by the pressure acting on the ball.
- ✓ Independent ball and stem: The ball and stem are independent to minimize the effect of side thrust from pressure acting on the ball.
- ✓ Self-relieving seat rings, two seat rings assure bi-directional sealing of the valves.

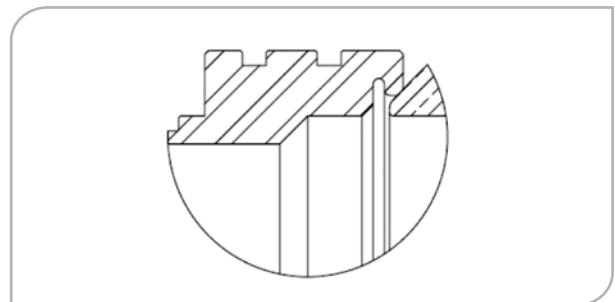
Soft Seat

Soft-seated Valves: In valves designed for standard service, a resilient material is inserted into the metal seat holder to provide a soft-seating acting in addition to the metal-to-metal seating between the ball and seat rings.



Metal Seat

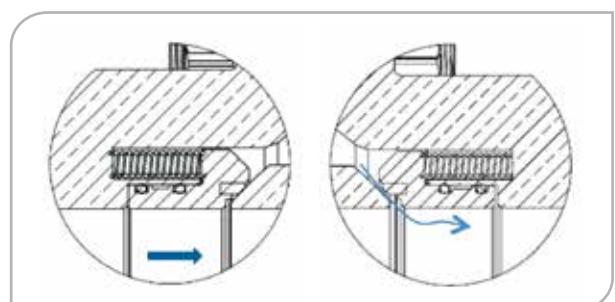
Metal seated valves: Similar construction is done in case of metal seated valves. However the seat consist only in a metallic seat ring without any soft insert. The surface in contact with ball is hardfaced normally with Tungsten Carbide, Stellite... with minimum hardness of 45 HRC to stellite or conventional hardfaced and 85 HRC to Tungsten Carbide. Metal seat ball valves are suitable to leaking class VI.



Automatic Cavity Realief

All standard trunnion ball valves shall be provided with self relieving seats allowing automatic body cavity relief exceeding 1,33 times the valve pressure rating at 38°C.

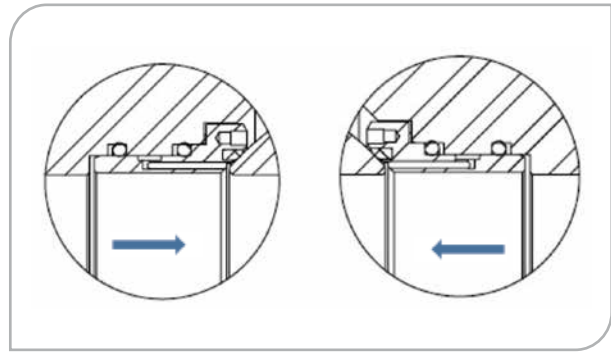
If pressure increases in body cavity Due to fluid expansion, automatic Relief of excess pressure to the downstream side is Provided.



Double Block and Bleed (DBB)

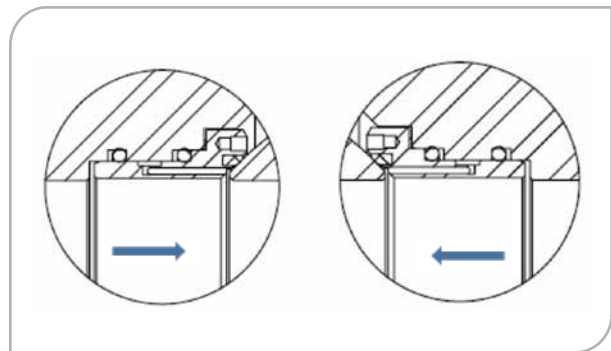
According to API 6D definition: valve with two seating surfaces which, in the closed position, blocks flow from both valve ends when the cavity between the seating surfaces is vented through a bleed connection provided on the body cavity.

Both seats hold their respective pressures independent of the body cavity pressure which is ideal to verify that the seats are sealing.



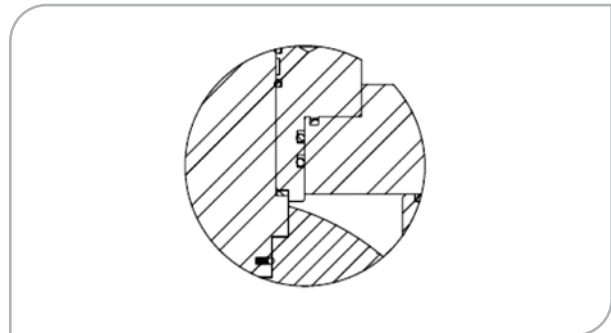
Double effect piston

Bi-directional, twin seats valve (with two seats, both seats are bi-directional). This means valves designed for blocking the fluid in both downstream and upstream directions, with two seats, each sealing in both directions: from the valve ends to the valve body cavity and from the body cavity to the valve ends. This seats design improves the sealing capacity of the valve adding a seating surface in line, but an external safety relief valve is needed to allow the release of the cavity over-pressure



Anti Blow Out Stem

All valves are design with anti-blow out stem, wick secure total safety.

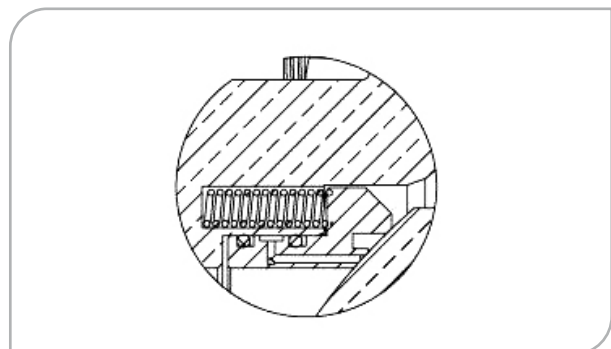


Fire Safe Design

IBOR valves are of FIRE SAFE design, which substantially prevent the leakage when valve is subject to high temperatures.

In case of fire accident inside the valve, seals, and seat inserts (for soft seated valves) are melted and then a metal to metal seat is made between the metallic seat and the ball ensuring a degree internal sealing tightness.

All o-ring are also disappeared and only graphite back-up rings remain in seats and valve stem, making the valve tight for leakages to the atmosphere. IBOR valve designs conform requirements of API 6FA, API607 and BS6755.



03

Materials



Valve Material

IBOR valves are manufactured using a wide selection of materials such as:

- ✓ **Carbon steel.**
- ✓ **Killed carbon steel for low temperature applications.**
- ✓ **High resistance alloy steels for API 6A applications.**
- ✓ **Stainless Steel.**
- ✓ **Duplex & Superduplex steel.**
- ✓ **Nickel alloys.**

Materials also meet the requirements of NACE MR-0175/ISO15156 when sour gas services are specified. Our technical staff is ready and available to provide customized material selection for those special customer applications, IBOR always provides the customer with suitable information of material selection which is agreed prior valves are manufactured.

For majority of industry applications the following table gives the main guidelines of material selection.

TRIM	SERVICE	TEMPERATURE	CLASS	BODY	INTERNAL	SEAT	SEAL
A	General Purpose	-29° to 150°	150-300-600 900-1500-2500	A105	A105+ENP	PTFE Devlon	Viton
B	General Purpose	-29° to 250°	150-300-600 900-1500-2500	A105	A105+ENP	Peek	Viton
C	Moderate Corrosive	-29° to 150°	150-300-600 900-1500-2500	A105	316SS or 321SS	RPTFE Devlon	Viton
D	Low Temperature	-46° to 150°	150-300-600 900-1500-2500	LF2	LF2+ENP	RPTFE Devlon	Viton
E	High Corrosive	-29° to 150°	150-300-600 900-1500-2500	F316/F321/F51	F316/F321/F51	RPTFE Devlon	Viton
F	Sour service	-29° to 150°	150-300-600 900-1500-2500	A105	A105+ENP	RPTFE Devlon	Viton
G	Offshore	-29° to 150°	150-300-600 900-1500-2500	F51	F51	RPTFE Devlon	Viton
H	Seawater	-29° to 150°	150-300-600 900-1500-2500	F44	F44	RPTFE Devlon	PTFE
I	Cryogenic	-196° to 150°	150-300-600 900-1500-2500	F316/F321	F316/F321	KEL-F	PTFE

Remarks

- The above table is orientative and intended only for information.
- In case of Metal to Metal valves seat and ball are both hardfaced with different materials such as stellite, TungstenCarbide, Chromium Carbide, etc, being the base materials selected upon the valve application and the design pressure/temperatures.

Sealing Material

Commonly O-rings or Lip Seals as used as sealing element of ball valves. The most commonly used materials are **O-RINGS:**

- ✓ BUNA-N (Nitrilic rubber).
- ✓ VITON including its alternatives of high temperature VITON (up to 210/°C) and VITON for explosive de compression. Others depending on application.

Lip Seals

Lip seals are used normally for more severe applications such as cryogenic services, high temperature or also in nuclear valve application (when the seal must be radiation resistant).

The lip seal is made of different materials such as **PTFE, KEL-F**, etc, and it is self energized by an internal spring of stainless or inconel alloy.

Lip seals must be mounted in the positive direction of pressure in such a way that fluid improves the sealing load of spring.

SEAT MATERIALS • Soft Seated Valves

- **PTFE** or Teflon suitable up to ANSI Class 600.
- **PTFE** reinforced by graphite.
- **Nylon** suitable for high pressure, and for temperature range up to 120°C.
- **Devlon** suitable for high pressure, and for a wider range from low to high temperature.
- **PCTFE or KEL-F** suitable for low temperature, up to -196°C.
- **PEEK** suitable for high temperature up to 260°C.

Metal Seated Valves

- Stellite _____ Hardness up to 45 HRC
- Tungsten Carbide _____ Hardness up to 85 HRC
- Chromium Carbide _____ Hardness up to 70 HRC



04 IBOR Ball Valves



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FIG. 19000

General Description

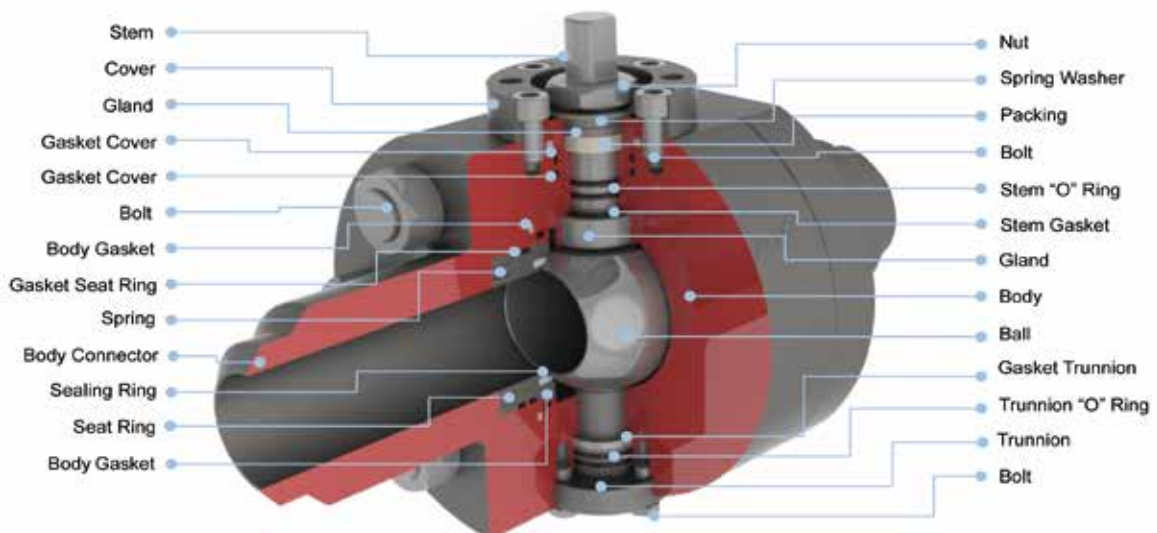
Three pieces ball valve with full bore, trunnion type flanged. Design for high pressure, with relief seats, anti-static device, fire safe, pressure balance hole in ball, blow-out proof stem. Internal wetted parts are acc. Nace Standard MR0175. Marking CE.: INCH 2" - 8". Class 600-900-1500.

Main Applications

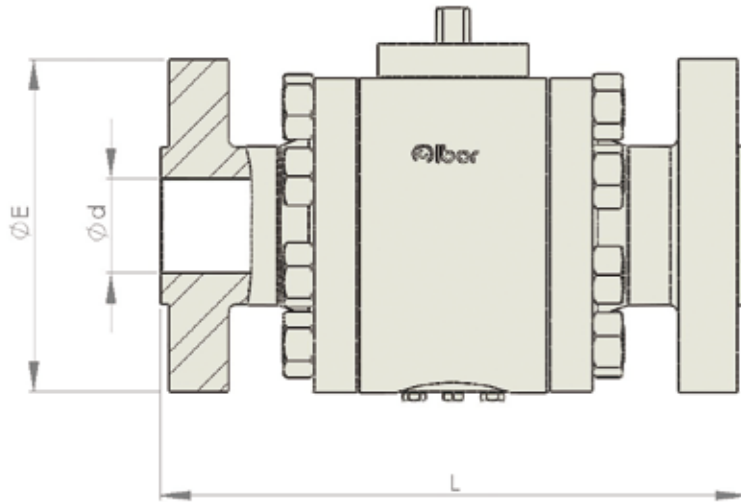
- ✓ Hydrocarbons
- ✓ Gas
- ✓ Oil



Part List



General Dimensions



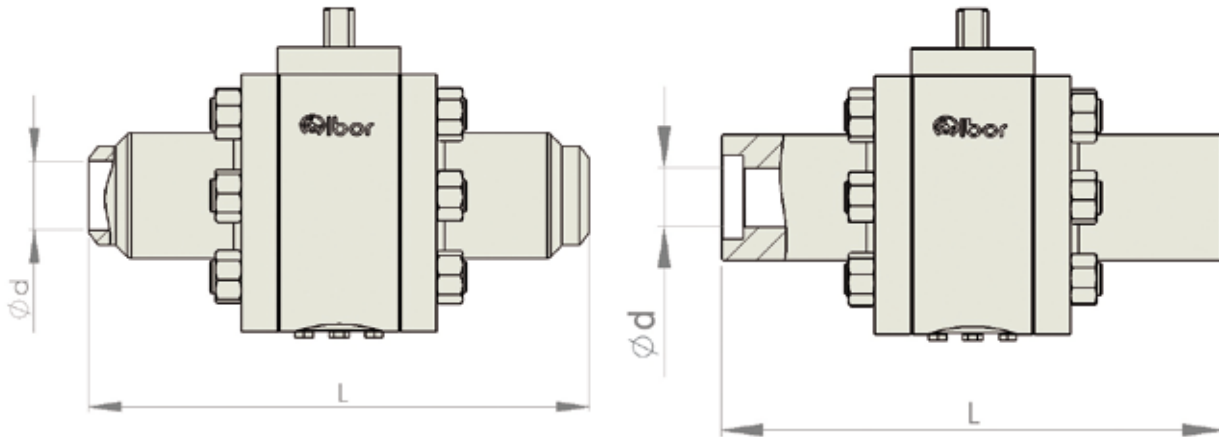
Dimensional 150-300-600

NPS		D		L (RF)			L1(RTJ)							
FB	RB	150-600 FB	150-600 RB	150	300	600	150	300	600	150	300	600		
2"		50		178	216	292	191	232	295	152	165	165		
3"	3"x2"	75	50	203	283	356	215	300	359	191	210	210		
4"	4"x3"	100	75	229	305	432	241	321	435	229	254	273	254	273
6"	6"x4"	150	100	394	403	559	406	419	562	279	318	356		
8"	8"x6"	201	150	457	502	660	470	518	663	343	381	419		
10"	10"x8"	252	201	533	568	787	545	584	790	406	445	508		
12"	12"x10"	303	252	610	648	838	622	664	841	483	521	559		
14"	14"x12"	334	303	686	762	889	698	778	891	535	585	605	585	605
16"	16"x14"	385	334	762	838	991	774	854	877	595	650	685	650	685
18"	18"x16"	438	385	864	914	1092	877	930	1095	635	710	745	710	745
20"	20"x18"	487	436	914	991	1194	927	1007	1200	700	775	815	775	815
24"	24"x20"	589	487	1067	1143	1397	1080	1165	1407	815	915	940	915	940

Dimensional 900-1500-2500

NPS		CLASS 900					CLASS 1500					CLASS 2500				
FB	RB	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211
2"	3"x2"	243	300	263	50	F10	243	300	263	50	F10	267	300	263	50	F12
3"	4"x3"	268	300	263	70	F12	278	400	296	70	F12	313	400	305	70	F14
4"	6"x4"	345	400	296	70	F12	372	400	305	70	F14	332	500	305	86	F16
6"	8"x6"	387	500	305	86	F16	475	500	305	86	F16	410	500	305	86	F25
8"	10"x8"	463	500	305	86	F16	525	600	364	104	F25	633	600	364	104	F25
10"	12"x10"	532	500	364	104	F16	666	600	364	104	F25	723	600	420	104	F30
12"	14"x12"	620	600	364	104	F25	729	600	364	104	F30	780	800	420	104	F35
14"	16"x14"	660	600	364	130	F30	780	800	420	182	F30					
16"	18"x16"	730	600	364	130	F30	857	800	420	182	F35					
18"	20"x18"	768	800	420	182	F35										
20"	24"x20"	806	800	600	430	F35										
24"		856	800	600	430	F35										

General Dimensions



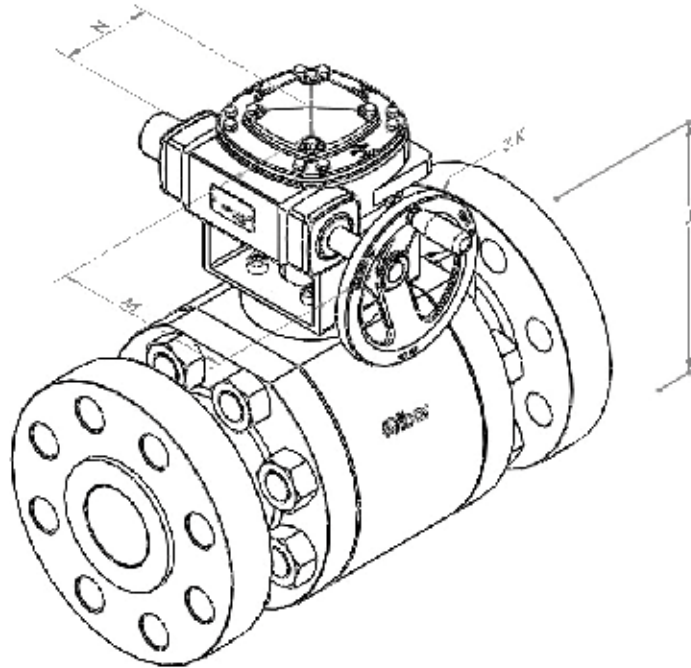
Dimensional 150-300-600

NPS		D		BW			SW		
FB	RB	150-600-FB	150-600-RB	150	300	600	150	300	600
2"		50		216	216	292	216	216	292
3"	3"x2"	75	50	283	283	356	283	283	356
4"	4"x3"	100	75	305	305	432	305	305	432
6"	6"x4"	150	100	457	457	559	457	457	559
8"	8"x6"	201	150	521	521	660	521	521	660
10"	10"x8"	252	201	559	559	787	559	559	787
12"	12"x10"	303	252	635	635	838	635	635	838
14"	14"x12"	334	303	762	762	889	762	762	889
16"	16"x14"	385	334	838	838	991	838	838	991
18"	18"x16"	438	385	914	914	1092	914	914	1092
20"	20"x18"	487	436	991	991	1194	991	991	1194
24"	24"x20"	589	487	1143	1143	1397	1143	1143	1397

Dimensional 900-1500-2500

NPS		D						BW			SW		
FB	RB	900 FB	900 RB	1500 FB	1500 RB	2500 FB	2500 RB	900	1500	2500	900	1500	2500
2"		50		50		42		368	368	451	368	368	451
3"	3"x2"	75	50	75	50	62	42	381	470	578	381	470	578
4"	4"x3"	100	75	100	75	87	62	457	546	673	457	546	673
6"	6"x4"	150	100	144	100	131	87	610	705	914	610	705	914
8"	8"x6"	201	150	192	144	179	131	737	832	1022	737	832	1022
10"	10"x8"	252	201	239	192	223	179	838	991	1270	838	991	1270
12"	12"x10"	303	252	287	239	265	233	955	1130	1422	955	1130	1422
14"	14"x12"	334	303	315	287			1029	1250		1029	1250	
16"	16"x14"	373	334	360	315			1130	1384		1130	1384	
18"	18"x16"	423	373					1219			1219		
20"	20"x18"	471	423					1321			1321		
24"	24"x20"	570	471					1549			1549		

General Dimensions



Dimensional 150-300-600

NPS		CLASS 150					CLASS300					CLASS600				
FB	RB	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211
2"	3"x2"	226	300	276	50	F07	226	300	276	50	F07	226	300	276	50	F07
3"	4"x3"	258	300	276	50	F10	258	300	276	50	F10	258	300	276	50	F10
4"	6"x4"	277	300	276	50	F10	277	300	276	50	F10	295	400	317	71	F12
6"	8"x6"	330	400	317	71	F12	330	400	317	71	F12	361	500	305	86	F14
8"	10"x8"	395	500	305	86	F14	395	500	305	86	F14	463	500	305	104	F16
10"	12"x10"	433	500	305	86	F14	439	500	305	86	F14	505	600	346	130	F16
12"	14"x12"	506	500	346	104	F14	506	500	305	104	F14	635	600	346	130	F25
14"	16"x14"	574	500	346	104	F16	574	600	346	104	F16	700	600	412	182	F25
16"	18"x16"	608	600	346	130	F16	608	600	447	130	F16	749	600	500	203	F25
18"	20"x18"	695	600	387	130	F25	700	600	412	130	F25	769	700	578	278	F30
20"	24"x20"	722	600	412	182	F25	700	600	412	182	F25	809	700	578	278	F30
24"		890	600	412	182	F30	900	600	412	182	F30	860	700	578	278	F30

Dimensional 900-1500-2500

NPS		CLASS 900					CLASS 1500					CLASS 2500				
FB	RB	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211	J	K	M	N	ISO 5211
2"	3"x2"	243	300	263	50	F10	243	300	263	50	F10	267	300	263	50	F12
3"	4"x3"	268	300	263	70	F12	278	400	296	70	F12	313	400	305	70	F14
4"	6"x4"	345	400	296	70	F12	372	400	305	70	F14	332	500	305	86	F16
6"	8"x6"	387	500	305	86	F16	475	500	305	86	F16	410	500	305	86	F25
8"	10"x8"	463	500	305	86	F16	525	600	364	104	F25	633	600	364	104	F25
10"	12"x10"	532	500	364	104	F16	666	600	364	104	F25	723	600	420	104	F30
12"	14"x12"	620	600	364	104	F25	729	600	364	104	F30	780	800	420	104	F35
14"	16"x14"	660	600	364	130	F30	780	800	420	182	F30					
16"	18"x16"	730	600	364	130	F30	857	800	420	182	F35					
18"	20"x18"	768	800	420	182	F35										
20"	24"x20"	806	800	600	430	F35										
24"		856	800	600	430	F35										

Technical Data



TORQUE Nm	NPS FB	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	
	NPS RB	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"		
	Class 150	70	80	120	160	910	1500	1800	2800	3215	5100	6400	7480	8540	
	Class 300	115	302	490	890	1540	2020	2460	4165	5780	7830	9830	13100	16300	
	Class 600	166	320	711	1580	2520	3400	4650	6820	8600	13120	17800	22500	28400	
	Class 900	205	560	880	2050	3205	4070	4800	8200	10900	17100	23880	29800	38500	
	Class 1500	310	875	1340	3340	5050	6520	7670	13100	17500					
	Class 2500	470	1360	2070	5250	8240	10820	12050							

	NPS	CLASS 150	CLASS 300	CLASS 600	CLASS 900	CLASS 1500	CLASS 2500
PESO/WEIGHT FULL BORE	2"	21	22	30	60	75	118
	3"	55	57	60	80	110	220
	4"	105	110	110	180	185	370
	6"	225	185	235	390	430	755
	8"	305	240	460	650	780	1970
	10"	455	575	680	980	1200	3005
	12"	630	660	1020	1400	1620	4150
	14"	770	800	1220	1640	1980	
	16"	850	1215	1510	1980	2370	
	18"	1450	1710	2410	2805		
PESO/REDUCED BORE	20"	1870	2450	3115	3738		
	3"x2"	30	34	39	65	76	150
	4x3"	75	78	85	109	141	281
	6x4"	115	130	160	222	285	567
	8x6"	268	265	328	370	515	989
	10x8"	395	314	550	560	790	2250
	12"x10"	615	625	720	798	1070	3110
	14"x12"	712	730	920	934	1300	
	16"x14"	880	890	1120	1128	1560	
	18"x16"	905	1200	2050	1300		
20"x18"	1420	1850	2600	2460			

Kv (m³/3/H)	DN	1/2"	3/4"	1"	1,1/2"	2"	2,1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
	Full Bore		20	44	88	200	310	480	960	1700	4100	8200	11500	18340	26300	30200	35400	54100	62500
Reduced bore			20	44	88	200	310	480	960	1700	4100	8200	11500	18340	26300	41200	45200	51520	58200

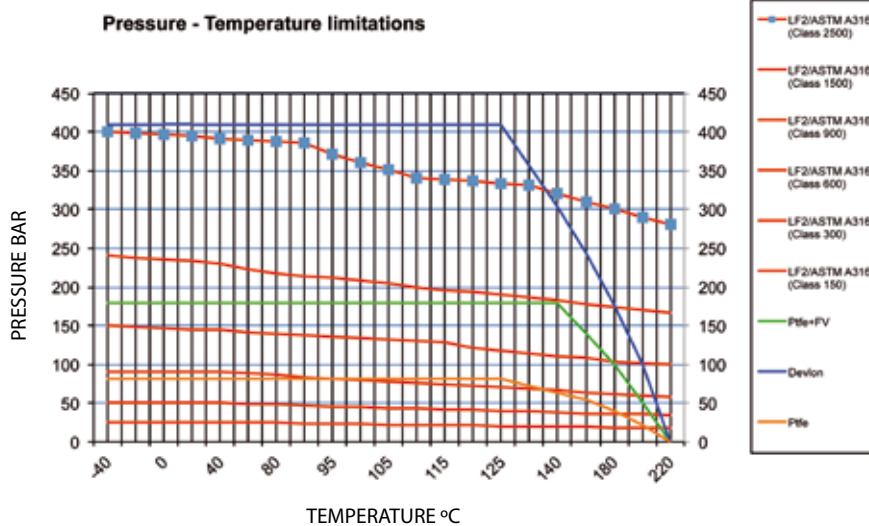


FIG. 32000

General Description

Two pieces ball valve with full bore, floating type "SPLIT BODY". Design for high pressure, with relief seats, anti-static device, fire safe, pressure balance hole in ball, blow-out proof stem. Internal wetted parts are acc. Nace Standard MR0175.

Marking CE.
INCH 1/2" - 8". Class 150-300-600-900

Main Applications

- ✓ Hydrocarbons
- ✓ Gas
- ✓ Oil
- ✓ Water treatments
- ✓ Sea and fresh water



Technical Data

Kv	DN	15	20	25	32	40	50	65	80	100	125	150	200
	NPS	1/2"	3/4"	1"	1,1/4"	1,1/2"	2"	2,1/2"	3"	4"	5"	6"	8"
	Full Bore	20	44	60	105	170	255	480	910	1500	2500	3900	8200

WEIGHT	DN	NPS	PN16	PN40	PN100	PN160	PN250
			CLASS 150	CLASS 300	CLASS 600	CLASS 900	CLASS 1500
	15	1/2"	4	8	11	11	13
20	3/4"	6	10	13	17	19	
25	1"	7	13	17	20	22	
32	1,1/5"	10	17	22	25	27	
40	1,1/2"	15	22	28	33	39	
50	2"	25	33	44	50	55	
65	2,1/2"	34	42	52	63		
80	3"	40	50	66	78		
100	4"	77	90	110			
125	5"	106	130				
150	6"	135	190				
200	8"	195	230				



TORQUE NM	NPS	1/2"	3/4"	1"	1,1/4"	1,1/2"	2"	2,1/2"	3"	4"	6"	8"
	DN	15	20	25	32	40	50	65	80	100	125	200
Class 150	9	11	16	22	32	34	48	75	88	248	320	
Class 300	14	16	19	30	40	35	50	78	90	250	330	
Class 600	16	18	40	46	60	64	60	100	110	275	500	
Class 900	20	22	42	60	70	75	65	115	115	300	580	
Class 1500	25	27	45	68	75	82	72	120	120	320	640	

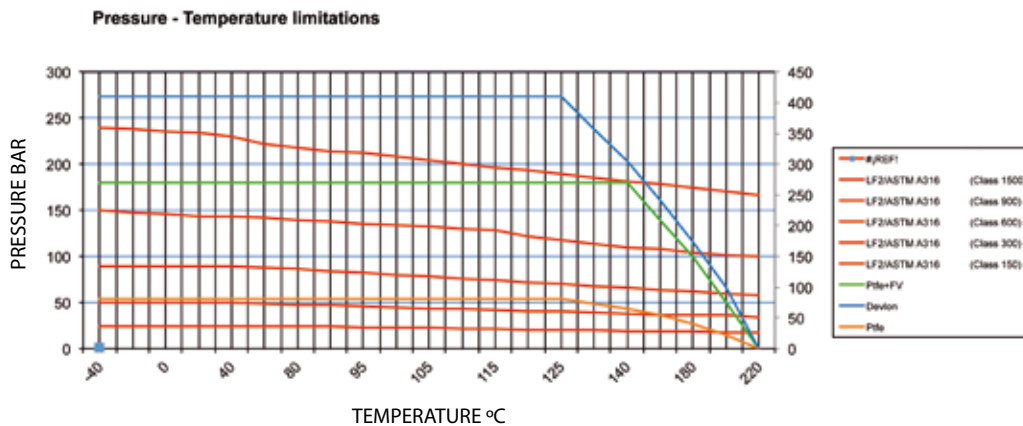


FIG. 13000

General Description

Ball valve three pieces, design for big pressure.

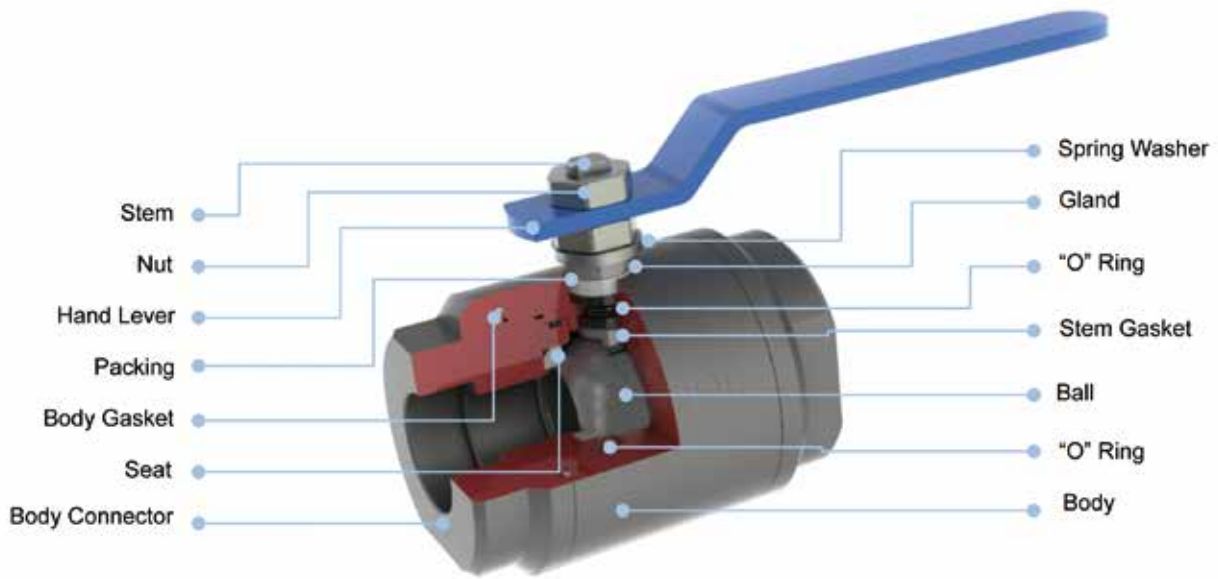
Fire Safe construction, floating ball, non eject able stem, threaded NPT. Antistatic device, assure the electric continuities between ball and body throw the stem. All the pieces in contact with the fluid are accordingly under standard NACE MR0175 last edition us standard construction. CE marking.

Main Applications

- ✓ Hidrocarbons
- ✓ Gas

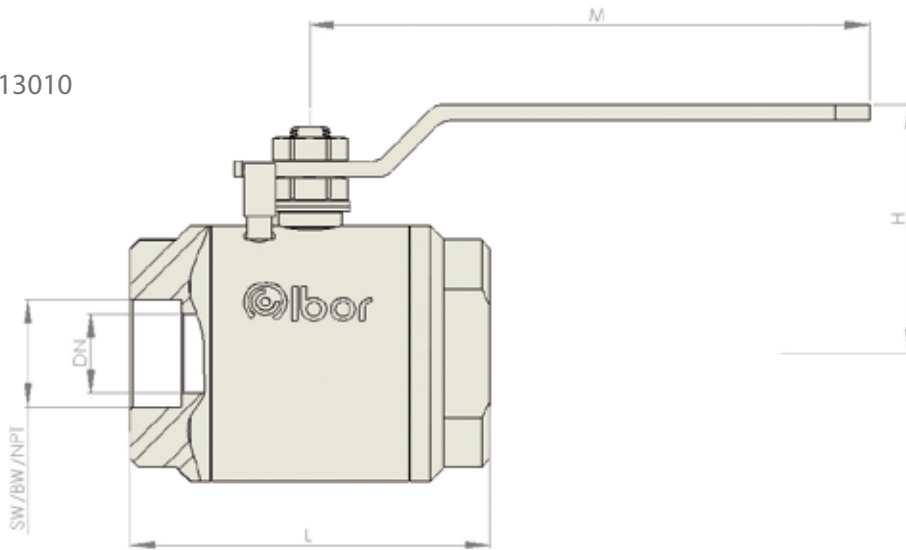


Part List

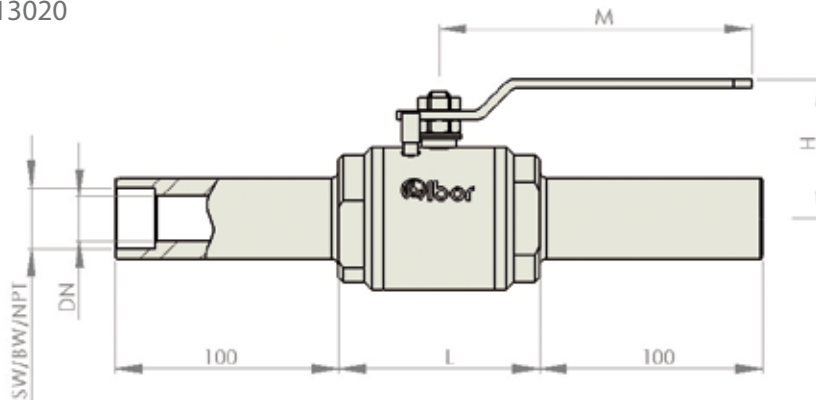


General Dimensions

Dimensional Fig.13010



Dimensional Fig.13020



General Dimensions

Dimensional 13010

DIMENSIONES / DIMENSIONS				
DN	INCH	H	L	M
15	1/2"	53	85	140
15	3/4"x1/2"	53	85	140
20	3/4"	58	90	140
20	1"x3/4"	58	90	140
25	1"	63	110	152
25	1.1/4"x1"	63	110	152
32	1.1/4"	70	125	211
32	1.1/2"x1.1/4"	70	125	211
40	1.1/2"	78	130	211
40	2"x1.1/2"	78	130	211
50	2"	102	155	272
50	2.1/2"x2"	102	155	272

Dimensional 13020

DIMENSIONES / DIMENSIONS				
DN	INCH	H	L	M
15	1/2"	53	85	140
15	3/4"x1/2"	53	85	140
20	3/4"	58	90	140
20	1"x3/4"	58	90	140
25	1"	63	110	152
25	1.1/4"x1"	63	110	152
32	1.1/4"	70	125	211
32	1.1/2"x1.1/4"	70	125	211
40	1.1/2"	78	130	211
40	2"x1.1/2"	78	130	211
50	2"	102	155	272
50	2.1/2"x2"	102	155	272

Technical Data

IV	1/2"	3/4"-1/2"	3/4"	1"-3/4"	1"	1.1/4"-1"	1.1/4"	1.1/2"-1.1/4"	1.1/2"	2"-1.1/2"	2"	2.1/2"-2"
	16	16	33	33	56	56	93	93	130	130	160	160

WEIGHT	1/2"	3/4"-1/2"	3/4"	1"-3/4"	1"	1.1/4"-1"	1.1/4"	1.1/2"-1.1/4"	1.1/2"	2"-1.1/2"	2"	2.1/2"-2"
	1,4	1,2	1,7	1,4	3	2,5	4	3,4	6	5	9,5	7,5

TORQUE (NM)	1/2"	3/4"-1/2"	3/4"	1"-3/4"	1"	1.1/4"-1"	1.1/4"	1.1/2"-1.1/4"	1.1/2"	2"-1.1/2"	2"	2.1/2"-2"
	16	16	16	16	20	20	35	35	45	45	70	70

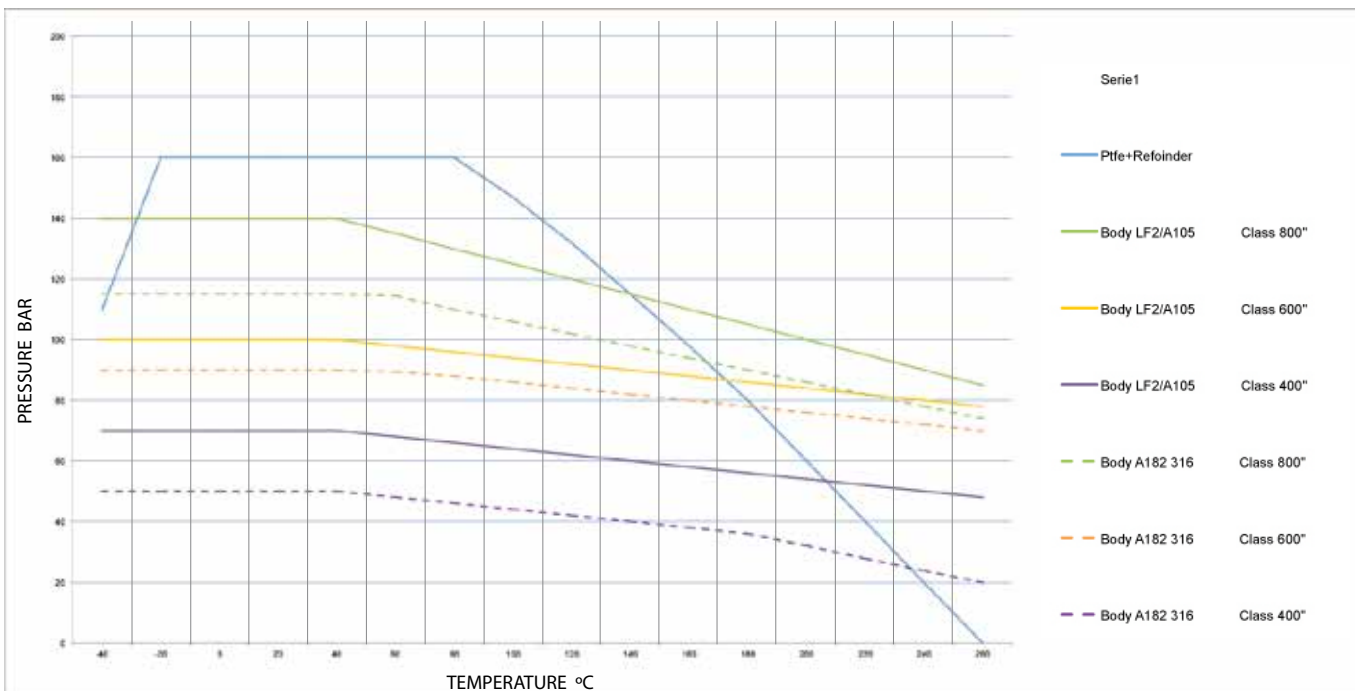


FIG. 18000

General Description

Three pieces ball valve with full bore, floating type. Design for high pressure, with relief seats, anti-static device, fire safe, pressure balance hole in ball, blow-out proof stem. Internal wetted parts are acc. Nace Standard MR0175.

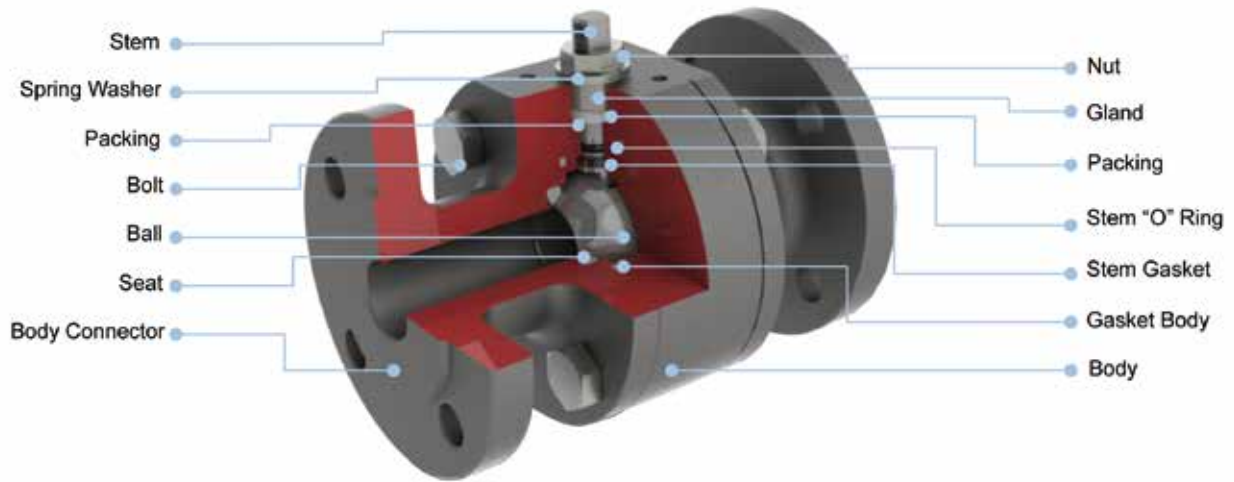
Marking CE.
INCH 1/2" - 8". Class 150-300-600-900.

Main Applications

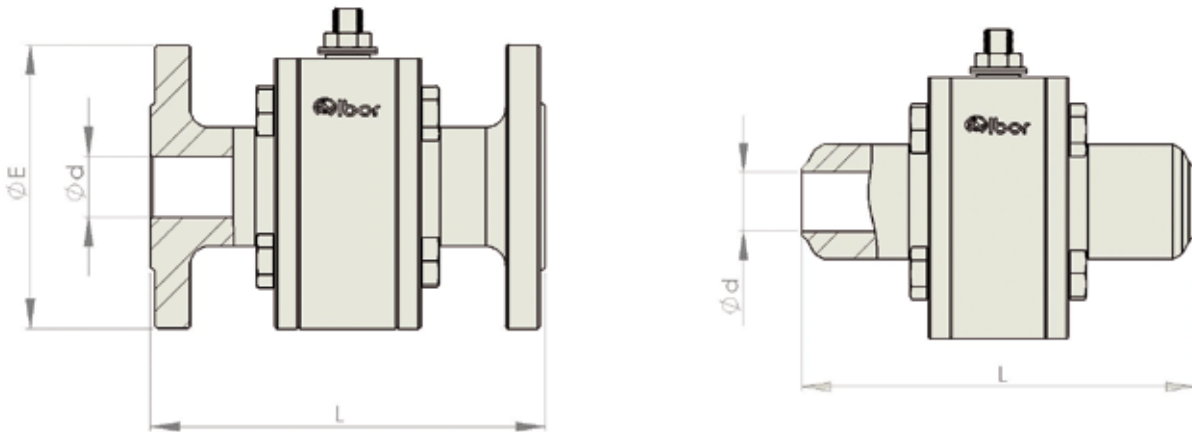
- ✓ Hydrocarbons
- ✓ Gas
- ✓ Oil



Part List



General Dimensions



CLASS 150"					CLASS 300"					CLASS 600"					CLASS 900"					CLASS 1500"									
DIMENSIONES / DIMENSION		SD	IMENSIONES / DIMENSIONS		DIMENSIONS / DIMENSIONS		DIMENSIONES / DIMENSIONS		DIMENSIONS / DIMENSIONS		DIMENSIONES / DIMENSIONS		DIMENSIONS / DIMENSIONS		DIMENSIONES / DIMENSIONS		DIMENSIONS / DIMENSIONS												
DN	NPSD	L/RF	L/RTJB	WD	NN	PS	DL	/RFL	/RTJ	BW	DN	NPSD	L/RFL	/RTJ	BW	DN	NPSD	L/RF	L/RTJB	WD	NN	PS	DL	/RFL	/RTJ	BW			
15	1/2"	90	108	119	108	15	1/2"	95	140	151	140	15	1/2"	95	165	164	165	15	1/2"	120	216	216	216	15	1/2"	120	216	216	216
20	3/4"	100	117	130	117	20	3/4"	115	152	165	152	20	3/4"	115	190	190	190	20	3/4"	130	229	229	229	20	3/4"	130	229	229	229
25	1"	110	127	140	127	25	1"	125	165	178	165	25	1"	125	216	216	216	25	1"	150	254	254	254	25	1"	150	254	254	254
32	1.1/4"	115	140	153	140	32	1.1/4"	135	178	191	178	32	1.1/4"	135	229	229	229	32	1.1/4"	160	279	279	279	32	1.1/4"	160	279	279	279
40	1.1/2"	125	165	178	165	40	1.1/2"	155	190	203	190	40	1.1/2"	155	241	241	241	40	1.1/2"	180	305	305	305	40	1.1/2"	180	305	305	305
50	2"	150	178	191	216	50	2"	165	216	232	216	50	2"	165	292	295	292	50	2"	215	368	371	368	50	2"	215	368	371	368
65	2.1/2"	180	190	203	241	65	2.1/2"	190	241	257	241	65	2.1/2"	190	330	333	3306	52	1.1/2"	245	419	419	419						
80	3"	190	203	216	283	80	3"	210	283	299	283	80	3"	210	356	358	356	80	3"	265	381	384	381						
1004	"	215	229	242	305	100	4"	255	305	321	305	100	4"	275	432	435	432												
1255	"	230	356	369	381	125	5"	280	381	397	381																		
1506	"	255	394	407	457	150	6"	320	403	419	457																		
2008	"	280	457	470	521	200	8"	380	502	518	521																		

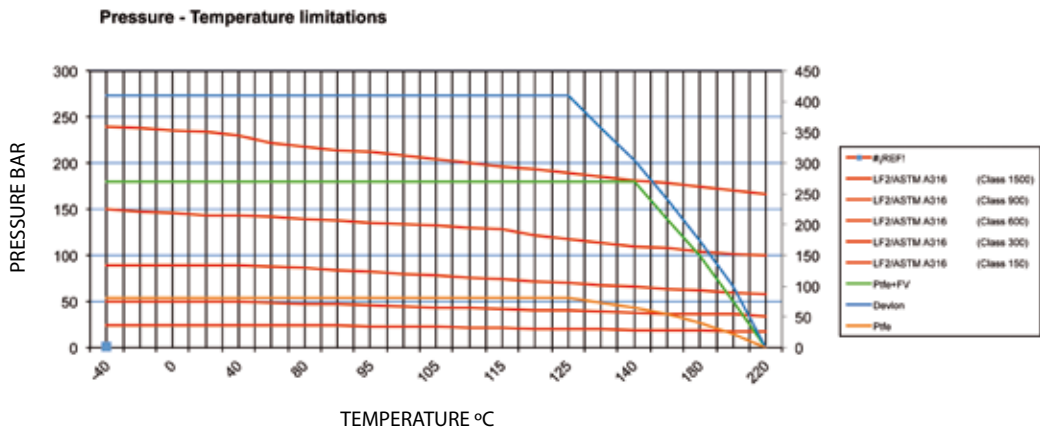
Technical Data

Kv	DN	15	20	25	32	40	50	65	80	100	125	150	200
	NPS	1/2"	3/4"	1"	1,1/4"	1,1/2"	2"	2,1/2"	3"	4"	5"	6"	8"
	Full Bore	20	44	60	105	170	255	480	910	1500	2500	3900	8200

WEIGHT	DN	NPS	PN16	PN40	PN100	PN160	PN250
			CLASS 150	CLASS 300	CLASS 600	CLASS 900	CLASS 1500
	15	1/2"	4	8	11	11	13
20	3/4"	6	10	13	17	19	
25	1"	7	13	17	20	22	
32	1,1/5"	10	17	22	25	27	
40	1,1/2"	15	22	28	33	39	
50	2"	25	33	44	50	55	
65	2,1/2"	34	42	52	63		
80	3"	40	50	66	78		
100	4"	77	90	110			
125	5"	106	130				
150	6"	135	190				
200	8"	195	230				



TORQUE (NM)	NPS	1/2"	3/4"	1"	1,1/4"	1,1/2"	2"	2,1/2"	3"	4"	6"	8"
	DN	15	20	25	32	40	50	65	80	100	125	200
	Class 150	9	11	16	22	32	34	48	75	88	248	320
Class 300	14	16	19	30	40	35	50	78	90	250	330	
Class 600	16	18	40	46	60	64	60	100	110	275	500	
Class 900	20	22	42	60	70	75	65	115	115	300	580	
Class 1500	25	27	45	68	75	82	72	120	120	320	640	



Top Entry API 6D Dimensions



Top entry, cast steel, full bore
ASME Class 150

ASME Class 150 dimensional data, mm

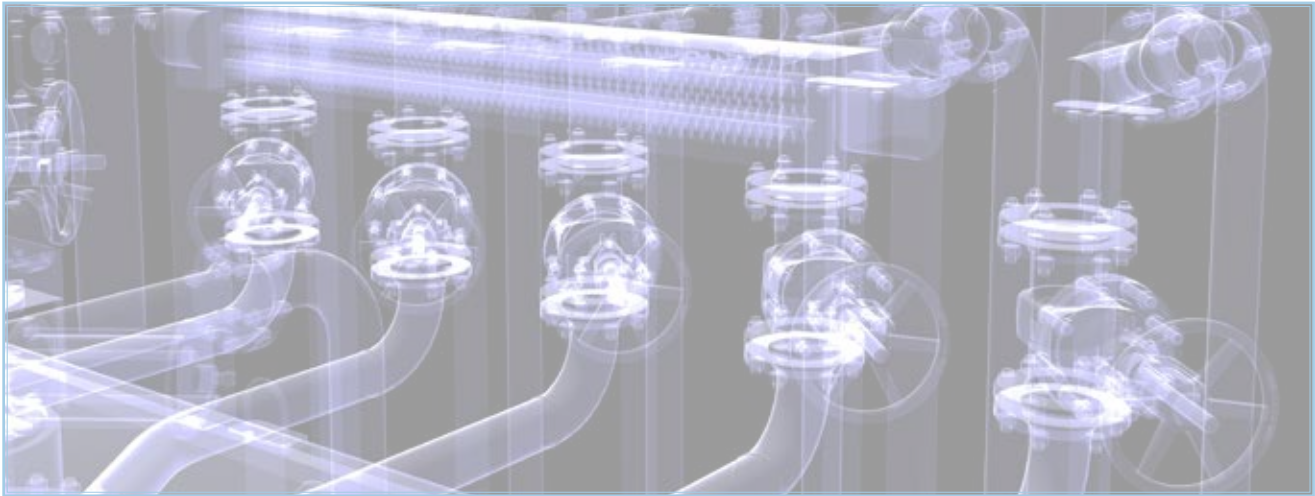
NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	292	295	292	51	161
3 x 2	356	359	356	51	161
3	356	359	356	76	227
4 x 3	432	435	432	76	227
4	432	435	432	102	292
6 x 4	559	562	559	102	292
6	559	562	559	152,5	334
8 x 6	661	664	661	152,5	334
8	661	664	661	204	357
10 x 8	788	791	788	204	357
10	788	791	788	254	403
12 x 10	838	841	838	254	403
12	838	841	838	305	460
14 x 12	889	893	889	305	460
14	889	893	889	336,5	495
16 x 12	991	994	991	305	460
16	991	994	991	387,5	598
18	1093	1096	1093	438	644
20 x 16	1194	1200	1194	387,5	598
20	1194	1200	1194	489	759
24 x 20	1397	1407	1397	489	759
24	1397	1407	1397	590	863
26	1448	1461	1448	635	920
28	1550	1562	1550	686	989
30 x 24	1651	1664	1651	590	863
30	1651	1664	1651	737	1081
36 x 30	2083	2099	2083	737	1081
36	2083	2099	2083	876	1265
40 x 36	2337		2337	876	1265
40	2337		2337	978	1323
42 x 36	2240		2240	876	1265
42	2240		2240	1020	1495
48	2845		2845	1168	1702

Top entry, cast steel, full bore
ASME Class 300

ASME Class 300 dimensional data, mm

NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	292	295	292	51	161
3 x 2	356	359	356	51	161
3	356	359	356	76	227
4 x 3	432	435	432	76	227
4	432	435	432	102	292
6 x 4	559	562	559	102	292
6	559	562	559	152,5	334
8 x 6	661	664	661	152,5	334
8	661	664	661	204	357
10 x 8	788	791	788	204	357
10	788	791	788	254	403
12 x 10	838	841	838	254	403
12	838	841	838	305	460
14 x 12	889	893	889	305	460
14	889	893	889	336,5	495
16 x 12	991	994	991	305	460
16	991	994	991	387,5	598
18	1093	1096	1093	438	644
20 x 16	1194	1200	1194	387,5	598
20	1194	1200	1194	489	759
24 x 20	1397	1407	1397	489	759
24	1397	1407	1397	590	863
26	1448	1461	1448	635	920
28	1550	1562	1550	686	989
30 x 24	1651	1664	1651	590	863
30	1651	1664	1651	737	1081
36 x 30	2083	2099	2083	737	1081
36	2083	2099	2083	876	1265
40 x 36	2337		2337	876	1265
40	2337		2337	978	1323
42 x 36	2240		2240	876	1265
42	2240		2240	1020	1495
48	2845		2845	1168	1702

Dimensions of larger sizes & rating upon request.



Top entry, cast steel, full bore
ASME Class 600

ASME Class 600 dimensional data, mm

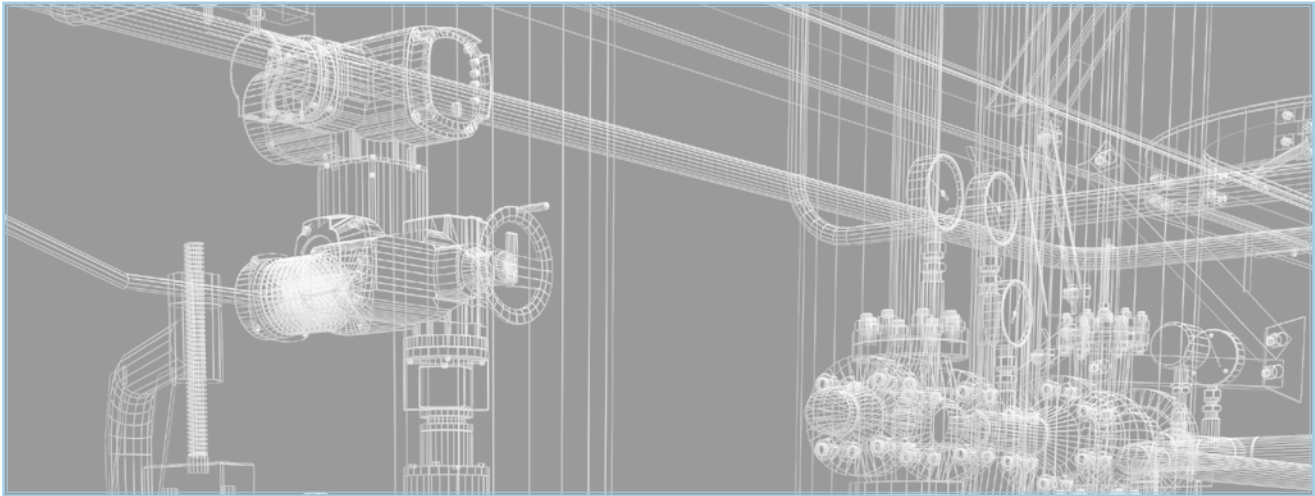
NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	292	296	292	51	161
3 x 2	356	359	356	51	161
3	356	359	356	76	227
4 x 3	432	435	432	76	227
4	432	435	432	102	292
6 x 4	559	562	559	102	292
6	559	562	559	152,5	334
8 x 6	661	664	661	152,5	334
8	661	664	661	204	357
10 x 8	788	791	788	204	357
10	788	791	788	254	403
12 x 10	838	841	838	254	403
12	838	841	838	305	460
14 x 12	889	893	889	305	460
14	889	893	889	336,5	495
16 x 12	991	994	991	305	460
16	991	994	991	387,5	598
18	1093	1096	1093	438	644
20 x 16	1194	1200	1194	387,5	598
20	1194	1200	1194	489	759
24 x 20	1397	1407	1397	489	759
24	1397	1407	1397	590	863
26	1448	1461	1448	635	920
28	1550	1562	1550	686	989
30 x 24	1651	1664	1651	590	863
30	1651	1664	1651	737	1081
36 x 30	2083	2099	2083	737	1081
36	2083	2099	2083	876	1265
40 x 36	2337		2337	876	1265
40	2337		2337	978	1323
42 x 36	2240		2240	876	1265
42	2240		2240	1020	1495
48	2845		2845	1168	1702

Top entry, cast steel, full bore
ASME Class 900

ASME Class 900 dimensional data, mm

NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	369	372	369	51	161
3 x 2	381	385	381	51	161
3	381	385	381	76	195
4 x 3	458	461	458	76	195
4	458	461	458	102	213
6 x 4	610	613	610	102	213
6	610	613	610	152,5	275
8 x 6	737	740	737	152,5	275
8	737	740	737	204	357
10 x 8	838	841	838	204	357
10	838	841	838	254	456
12 x 10	965	968	965	254	456
12	965	968	965	305	460
14 x 12	1029	1038	1029	305	460
14	1029	1038	1029	324	523
16 x 12	1130	1140	1130	305	460
16	1130	1140	1130	375	627
18	1219	1232	1219	425	687
20 x 16	1321	1334	1321	375	627
20	1321	1334	1321	473	820
24 x 20	1549	1568	1549	473	820
24	1549	1568	1549	572	935
26	1650		1650	620	
28	1778		1778	667	
30 x 24	1880		1880	572	
30	1880		1880	715	
36 x 30	2286		2286	715	
36	2286		2286	857	

Dimensions of larger sizes & rating upon request.



Top entry, cast steel, full bore
ASME Class 1500

ASME Class 1500 dimensional data, mm

NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	369	372	369	51	161
3 x 2	470	473	470	51	161
3	470	473	470	76	196
4 x 3	546	550	546	76	196
4	546	550	546	102	288
6 x 4	705	711	705	102	288
6	705	711	705	146	322
8 x 6	832	841	832	146	322
8	832	841	832	194	483
10 x 8	991	1000	991	194	483
10	991	1000	991	241	540
12 x 10	1130	1146	1130	241	540
12	1130	1146	1130	289	598
14 x 12	1257	1276	1257	289	598
14	1257	1276	1257	318	690
16 x 12	1384	1407	1384	289	598
16	1384	1407	1384	362	805
18	1537	1559	1537	410	1024
20 x 16	1664	1686	1664	362	805
20	1664	1686	1664	456	1082
24 x 20	1943	1972	1943	456	1082
24	1943	1972	1943	548	1315

Dimensions of larger sizes & rating upon request.

Top entry, cast steel, full bore
ASME Class 2500

ASME Class 2500 dimensional data, mm

NOMINAL	FACE TO FACE			VALVE BORE	VALVE HEIGHT
	RF	RTJ	BW		
NPS	RF	RTJ	BW	B	H
inch	mm	mm	mm	mm	mm
2	451	454	451	44	270
3 x 2	578	584	578	44	270
3	578	584	578	64	345
4 x 3	673	683	673	64	345
4	673	683	673	90	395
6 x 4	914	927	914	90	395
6	914	927	914	135	512
8 x 6	1022	1038	1022	135	512
8	1022	1038	1022	180	584
10 x 8	1270	1292	1270	180	584
10	1270	1292	1270	225	672
12 x 10	1422	1445	1422	225	672
12	1422	1445	1422	267	790

Ball Valve CV Values



BALL FB	150, 300 & 600	900	1500	2500
1/2	26	26	26	26
3/4	61	61	61	61
1	114	114	114	114
1-1/2	268	268	268	186
2	501	501	501	384
3	1158	1158	1158	804
4	2118	2118	2118	1622
6	5074	5074	4660	3885
8	9337	9337	8483	7407
10	14590	14590	13167	11492
12	21009	21009	18875	16085
14	26581	24613	23657	20903
16	35211	32940	30745	28625
18	46892	44213	41613	39091
20	58396	54665	51770	48261
22	71160	67036	63825	59922
24	85186	79778	76272	69496
26	102871	97792	93821	
28	119989	113416	108079	
30	138424	130196	127892	
32	155634	148135	144454	
34	176537	167230	160736	
36	195908	187483	1179243	
38	219280	210361		
40	243970	231460		
42	266653	253567		

BALL RB	150, 300 & 600	900	1500	2500
3x2x3	212	212	212	180
4x3x4	629	629	629	393
6x4x6	895	895	980	685
8x6x8	2755	2755	2560	2031
10x8x10	5821	5821	5325	4652
12x10x12	9925	9925	9000	8058
14x12x14	17065	18510	15490	12700
16x14x16	19768	18105	17955	15005
18x16x18	27171	25208	23319	21506
20x18x20	37241	35383	33084	31333
22x20x22	47458	44130	41557	38450
24x22x24	58932	55863	52955	51316
26x24x26	73188	67469	64266	58773
28x26x28	87567	83746	80920	
30x28x30	103331	98180	90610	
32x30x32	122483	113770	112619	
34x32x34	136436	130516	129223	
36x34x36	158370	148420	143460	
38x36x38	174167	166250		
40x38x40	196181	190411		
42x40x42	222384	210470		
16x12x16	13119	14090	12156	
20x16x20	21496	20095	18466	
24x20x24	39180	36661	34369	
30x24x30	53351	49735		
36x30x36	95927	88572		
40x36x40	155589			
42x36x42	141539			

05

Other valves



Butterfly

Standards	Sizes	Features Design - Materials
EN 593	- 40" - 120" - CLASS 150 - 300	HPV CENTER LINE
API 609	- 3" - 40" - CLASS 150 - 300	



Globe

Standards	Sizes	Features Design - Materials
ANSI B16-34 BS-1873	- 24" ANSI 150/300 - 16" ANSI 600/900 - 8" ANSI 1500/2500	Bolted Bonnet Pressure seal Cast and forged Zero steam leakage Non return "Y" pattern globe Bellows seal globe Stop check globe Angle globe valve



Gate

Standards	Sizes	Features Design - Materials
ANSI B16.34 API 600 API 6D BS - 1414	- 24" ANSI 150/300 - 16" ANSI 600/900 - 8" ANSI 1500/2500	Bolted bonnet Cast and forged Solid Wedge Flexible Split Wedge Parallel Slide Through conduit Special Designs



Cryogenic Service

Standards	Sizes	Class	Temperature
API 6D ASME B16.34 ASME B31.1	1/2" TO 8"	- CLASS 150 - 300 - 600 - 900	-196°C UP TO 150°C



Multiport

Standards	Sizes	Class
ASME B16.34 ASME B31.1 API 6D	1/4" TO 3"	- CLASS 150 - 300 - 600



Check

Standards	Sizes	Features Design - Materials
API 6D BS-1868 ANSI B16-34	- 64" ANSI 150 / 300 - 48" ANSI 600/900 - 36" ANSI 1500/2500 - 24" ANSI 4500	Cast and forged Piston check Tilting disc Swing check Emergency assisted Duo Check
API 6A	2-1/16" to 11" class 2000 2-1/16" to 11" class - 3000 2-1/16" to 11" class - 5000 1-13/16" to 7-1/16" class 10000 1-13/16" to 4-1/16" class 15000	



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IBOR VALVES INTERNACIONAL
C/ Montsià, 2 - 8 · Pol. Ind. Can Carner
08211 Castellar del Vallès · Barcelona (SPAIN)
Tel. +34 937 470 827 · Fax. +34 93 747 08 29
info@iborvalves.com

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