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PIPELINE VALVE

Top -entry ball valve



ZHEJIANG BOTELI TECHNOLOGY CO.,LTD.

Brief Introduction



Zhejiang Boteli Technology Co., Ltd. is a specialized valve manufacturing enterprise, which integrates R&D, production and sales, wholly controlled by Boteli Valve Group. Covering an area of 96000 square meters, it has more than 700 employees. Equipped with a three-dimensional simulation manufacturing test design system, various processing centers, intelligent mechanical arms, CNC machine tools, plasma welding, ultra-frequency vacuum heat treatment equipment; It has established a valve performance inspection and test center with first-class testing capability, which has comprehensive testing capability of physical and chemical performance, high-low temperature, non-destructive testing, life test, torque, explosion-proof, micro-leakage, pipeline load test, strength, micro-leakage seal and so on.

As the digital factory production base of Boteli, it has a perfect information management system, make full use of the integration of industry and information technology to achieve intelligent production. It makes orders from incoming to after-sales service quality, accounting to achieve complete integration of the information and control, provides a strong support for open high-

end market at home and abroad.

Boteli as a national torch plan key high-tech enterprises, China's most growth enterprises, China national machinery industry 500 strong enterprise, zhejiang industry leading backbone enterprises, green enterprises in zhejiang province, zhejiang pump valve association unit, zhejiang patent demonstration enterprises, wenzhou industry leading enterprises, wenzhou large taxpayer, with perfect quality assurance system, certificated by ISO9001, API-6D, CE, ISO14001, ISO45001, National special equipment manufacturing license (TS), ABS, CUTR, ATEX, etc.

Boteli always adhere to the brand construction, obtaining many honors such as the Chinese well-known trademark, the zhejiang province famous brand products, zhejiang famous trademark, well-known firms in zhejiang province. Supported by parent company, Zhejiang Boteli Technology co., LTD. has been the class a suppliers and vendor of CNPC, CPDC, Cnooc oil fields, refining, pipelines, storage and transportation sector framework, and has a high reputation in natural gas, chemical,



coal chemical industry, electric power industry.

In international markets, Boteli has also been approved by Honeywell, GE, Gazprom, LUKOIL, Rosneft Oil, BASF, Petrobras, Columbia's state oil company, ENAP, EIL, PDO, ADCO, ATLA, Scopco, South Korea Sk group, Petronas, etc.

Together with parent company, is always committed to relying on scientific and technological innovation and constantly applying new technologies, new processes and new materials to develop new products of high quality. In recent years, its research products such as ultra-low temperature valve, hydrogen-faced valve, pipeline ball valve, HP two-way sealing butterfly valve and Marine valve, have been widely used in various related industries. It is equipped with large cryogenic material test, cold processing, product performance testing, micro leak detection test measure, apply to -196°C ball valve, butterfly valve, gate valve, and other products has been widely used in the ethylene, air separation such as LNG, LPG project, at present, the company produces the product maximum size up to 48".

At the same time, equipped with the ultra high pressure

hydrogenation valve shell and seal high pressure gas testing equipment, it offers quality reliable safety valves. Products are batch used in hydrogen device in the petroleum and petrochemical industry, independent research and development of the mobile platform is special valve, operation of mobile platforms at sea and towing security plays a key role, and won two national invention patents, fill the gaps at home and abroad, the product has been successfully applied in cnooc offshore platform, Iraq offshore platform, etc.

Zhejiang Boteli Technology Co., Ltd. relies on scientific and technological progress, adheres to brand construction, and actively expands two markets at home and abroad, and achieves sustained, rapid and healthy development, which has been recognized by users at home and abroad. Stick to the development strategy of independent innovation and stick to scientific development. Seek improvement in stability strives to catch up with the world level, improve the brand competitiveness and influence, and achieve rapid development.

Production Equipment

"Science is regarded as the powerful historiclever and the revolutionary force with significance at the highest level." It is certain that with the continuous innovation of knowledge and rapid progress of science and technology, great changes have taken place in the world. In the economic field, scientific and technological innovation has become the leading force. Looking back to the development course of BTL, through endless scientific and technological progress and innovation, the enterprise is growing from small to big, from big to strong, moving towards the world from countryside, and has become a shiny star in the world industrial valve industry.

Scientific and technological innovation has become the core of current competition of international economy. With the increasingly sharp competition in the global market, to enhance the capacity of the enterprise in resisting various impacts of risks, the scientific and technological progress and innovation is a must for improving quality and benefits.

In a word,without scientific and technological progress and innovation, we cannot win in a new round of competition, and cannot maintain the continual and healthy development of the enterprise.

during the scientific and technological innovation, insisting on oriented by market demands,btl is increasing varieties, improving quality and enhancing benefit to further reform and promote the traditional industry of valve through high technology, as well as making all efforts to master core technology and to stand on the top of technology. furthermore, it is also accelerating the introduction, digestion and absorption of the latest technology results in world valve industry so as to intensify independent innovation ability. btl has now the foundation and ability for promoting development through technology. when learning advanced technology from abroad, it will never blindly follow others, or be too dependent on the existing technology from abroad, but carry out independent exploration and innovation to form unique features and competitive advantages of btl.



BOTELI is fully competent in mass production of the full series of API 6D ball valves and meeting the requirement of quality control, its fabrication facilities including:

- 4 Nos. of CNC Vertical Lathe with max. machining dia. 3000mm
- 10 Nos. of Machining Center with max. machining dia. 2000mm
- 3 Nos. of CNC Milling machines
- 3 Nos. of Turning-Grinding Integrated Machining Center of Steel Ball, which is capable of machining steel ball from dia. 2000mm through dia. 4000 mm.
- 102 Nos. of various CNC lathes
- 8 Nos. of Automatic SAW Machine with Double Wire Nozzle, which is capable of welding ball valve of max. size 60" and max. weight 1000 Tons
- 3 Nos. of 3000Tons Pressure Test Bench with max. test pressure Class 2500 and max. ball valve size 60"
- 4 Nos. of Cranes with lifting weight 50 Tons.
- 20m³ of 16.0MPa High Pressure Source



Quality Determines Survival

On the basis of strictly implementing ISO9001 Quality Management System, BTL also passed CE European Union Safety Certification in 2002. It passed American Petroleum Institute API-6D certification in 2003. It passed ISO14001 Environmental System Certification and ISO45001 Occupational Health and Safety Certification as well as National Pressure Vessel Safety Registration (TS) Certification in 2003, all of which pro-

vide Passport for the company to enter international market. BTL not only makes full Use of domestic scientific research resources, but also employs first class technical talents from abroad. Through continuous improvement and development, it has formed complete quality control system, which provides reliable quality guarantee for "BTL manufacturing" From spare parts inspection, on-site inspection to

complete machine inspection, BTL implements quality control in every chain in inspection instruments, strictly controls The production. The BTL quality control center, equipped with first class inspection instruments, strictly controls every product to consistently carry out the "Fine Product" strategy.



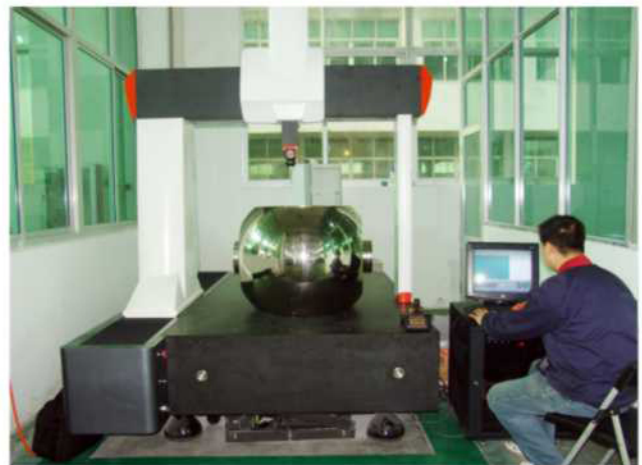
Spectrograph



tensile test machine



ultrasonic test device



metallographic analyzer

Technical Features



STANDARD FEATURES	Type F	Type X	COMMENTS
Size range	2"FB up to 10" RB	10" FB up to 60"	Special sizes available on request
Pressure	ANSI150-2500	ANSI150-2500	
Top Entry body design	YES	YES	
Anti-static device	YES	YES	
Self relieving seats	YES	YES	
Double Piston Effect seats	YES(*)	YES(*)	
Primary metal to metal seal, secondary protection with o-ring	NO	YES	
Plastic polymer insert on seat sealing	YES	NO	X-optional features(*)
Lubricated stem	YES	YES	
Lubricated seat	NO	YES	F-optional features(*)
Double block and bleed	YES	YES	Open/closed position
Metal to metal seats	YES(*)	YES(*)	
Trunion mounted ball	YES	YES	
Full or Reduced bore	YES	YES	
Bi-directional	YES	YES	
Stem anti-blow out proof design	YES	YES	
Stem extension	YES(*)	YES(*)	
N.D.T.verification on body casting (dye examination)	YES	YES	Other N.D.T.verification as per Ultrasonic examination or X-Ray(*)
N.D.T.verification on welding ends (dye penetrant)	YES	YES	According to ASME VIII Div.I
Minimum thickness ASME B16.34	YES	YES	
RF or RTJ flanges to ASME B16.5	YES	YES	Other flange design(*)
BW(butt-weld)ends to ASME B16.25	YES	YES	Other code for BW design(*)
Bore and end -to-end dimensions to API 6D	YES	YES	Dimensions other than API 6D(*)
Manufacture in accordance with API spec.6D/ASME B 16.34	YES	YES	
Materials certification to EN10204 type3.1B for pressure containing parts,ball,stem and seats	YES	YES	Type3.1.c materials certification level(*)
Fire safe design to API 6FA(BS6755Pt.2)	YES	YES	Other fire safe code(e.g.API607) (*)
Operation by gear, w/handwheel or actuator	YES	YES	



Type F/X



(*)Available with extra cost

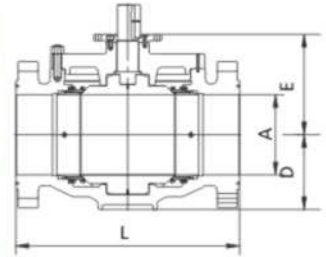


Top Entry Ball Valves



Class ANSI 150 - Full bore

Size inch	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	48	52
A	76	102	152	203	254	305	337	387	438	489	590	686	736	781	876	978	1168	1263
E	240	255	305	320	380	420	450	485	625	700	755	850	900	1000	1150	1250	1530	1670
D	115	125	185	215	275	330	360	420	450	490	580	680	730	790	890	970	1160	1255
LBW	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
LRF	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
Weight kg	43	65	115	220	890	1230	1530	2040	3060	4050	6750	7100	8500	10070	12070	14025	30390	33675

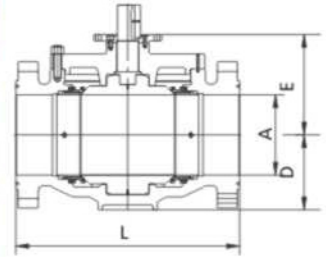


Class ANSI 150 - Reduced bore

Size inch	4×3	6×4	8×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	28×24	30×24	32×28	36×30	40×36	48×40	52×48	56×52	
A	76	102	152	203	203	254	254	305	305	337	337	387	489	590	590	686	736	876	978	1168	1163	
E	240	255	305	320	320	380	380	420	420	450	450	485	700	765	765	850	900	1150	1250	1530	1470	
D	115	125	185	215	215	275	280	330	330	360	360	420	490	580	580	680	730	890	970	1160	1255	
LBW	432	559	660	787	838	838	889	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
LRF	432	559	660	787	838	838	889	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
Weight kg	50	75	130	235	260	1070	1160	1565	1565	1835	1990	2450	4590	7650	8290	8520	10200	14485	16830	36465	40410	

Class ANSI 300 - Full bore

Size inch	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	48	52
A	76	102	152	203	254	305	337	387	438	489	590	686	736	781	876	978	1168	1263
E	240	255	305	320	380	420	450	485	625	700	755	850	900	1000	1150	1250	1530	1670
D	115	125	185	215	275	330	360	420	450	490	580	680	730	790	890	970	1160	1255
LBW	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
LRF	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
Weight kg	48	74	122	260	945	1305	1620	2160	3240	4050	6750	7500	9000	10660	12780	14850	32175	35650



Class ANSI 300 - Reduced bore

Size inch	4×3	6×4	8×6	10×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	28×24	30×24	32×28	36×30	40×36	48×40	52×48	56×52
A	76	102	152	152	203	203	254	254	305	305	337	337	387	489	590	590	686	736	876	978	1168	1163
E	240	255	305	305	320	320	380	380	420	420	450	450	485	700	765	765	850	900	1150	1250	1530	1470
D	115	125	185	185	215	215	275	280	330	330	360	360	420	490	580	580	680	730	890	970	1160	1255
LBW	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
LRF	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
Weight kg	50	75	130	145	235	260	1135	1160	1230	1630	1945	2025	2590	4860	8100	8775	9020	10800	15335	17820	30610	42780

Please note that end to end dimensions for Top Entry Ball Valves Class150and300 many vary due to maintenance/installation requirements.

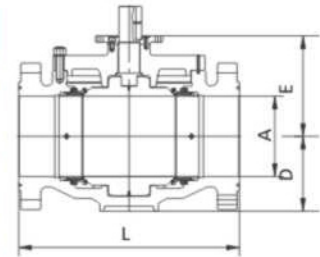


Top Entry Ball Valves



Class ANSI 400 - Full bore

Size inch	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	48	52
A	76	102	152	203	254	305	337	387	438	489	590	686	736	781	876	978	1168	1263
E	240	255	305	320	380	420	450	485	625	700	755	850	900	1000	1150	1250	1530	1670
D	115	125	185	215	275	330	360	420	450	490	580	680	730	790	890	970	1160	1255
LBW	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
LRF	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
Weight kg	54	86	155	358	1000	1380	1710	2280	3420	4275	7125	7930	9500	11260	13490	15670	33960	37630

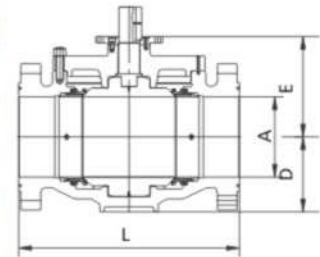


Class ANSI 400 - Reduced bore

Size inch	4×3	6×4	8×6	10×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	28×24	30×24	32×28	36×30	40×36	48×40	52×48	56×52
A	76	102	152	152	203	203	254	254	305	305	337	337	387	489	590	590	686	736	876	978	1168	1263
E	240	255	305	305	320	320	380	380	420	420	450	450	485	700	765	765	850	900	1150	1250	1530	1470
D	115	125	185	185	215	215	275	280	330	330	360	360	420	490	580	580	680	730	890	970	1160	1255
LBW	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
LRF	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
Weight kg	54	86	155	165	360	380	1200	1300	1650	1790	2050	2225	2745	5130	8550	9260	9520	11400	16190	18810	40755	45163

Class ANSI 600 - Full bore

Size inch	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	48	52
A	76	102	152	203	254	305	337	387	438	489	590	686	736	781	876	978	1168	1263
E	240	255	305	320	380	420	450	485	625	700	755	850	900	1000	1150	1250	1530	1670
D	115	125	185	215	275	330	360	420	450	490	580	680	730	790	890	970	1160	1255
LBW	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
LRF	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000
LRJ	359	435	562	664	791	841	892	994	1095	1200	1407	-	-	-	-	-	-	-
Weight kg	60	92	187	400	1050	1450	1800	2400	3600	4500	7500	8350	10000	11850	14200	16500	35750	39617



Class ANSI 600 - Reduced bore

Size inch	4×3	6×4	8×6	10×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	28×24	30×24	32×28	36×30	40×36	48×40	52×48	56×52
A	76	102	152	152	203	203	254	254	305	305	337	337	387	489	590	590	686	736	876	978	1168	1263
E	240	255	305	305	320	320	380	380	420	420	450	450	485	700	765	765	850	900	1150	1250	1530	1470
D	115	125	185	185	215	215	275	280	330	330	360	360	420	490	580	580	680	730	890	970	1160	1255
LBW	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
LRF	432	559	660	787	787	838	838	889	889	991	991	1092	1194	1397	1549	1651	1778	2083	2330	2778	3000	3230
LRJ	435	562	664	791	791	841	841	892	892	994	994	1095	1200	1407	1562	1664	1794	2099	-	-	-	-
Weight kg	60	92	187	198	400	420	1260	1365	1740	1885	2160	2340	2880	5400	9000	9750	10020	12000	17040	19800	42900	47540

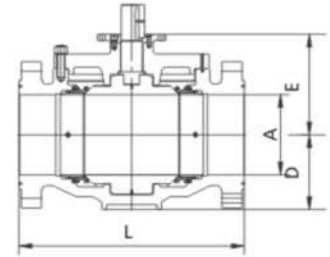


Top Entry Ball Valves



Class ANSI 900 - Full bore

Size inch	2	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40
A	51	76	102	152	203	254	305	324	374	425	473	572	667	715	762	857	935
E	220	250	255	320	380	400	475	500	530	650	700	870	1040	1125	1210	1380	1550
D	110	120	125	200	250	285	345	390	430	465	510	600	690	736	780	870	960
LBW	368	381	457	610	737	838	965	1029	1130	1219	1321	1549	1807	1963	2066	2324	2582
LRF	368	381	457	610	737	838	965	1029	1130	1219	1321	1549	1807	1936	2066	2324	2582
LRJ	372	384	460	613	740	842	968	1038	1140	1232	1334	1569	1826	1955	2085	2343	2601
Weight kg	85	120	170	380	650	1250	1830	2000	3300	4800	5700	10000	12700	15520	18430	26250	36000

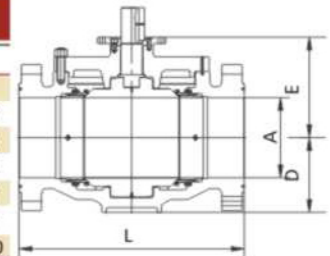


Class ANSI 900 - Reduced bore

Size inch	3×2	4×3	6×4	8×6	10×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	30×24	32×28	36×30	40×36	48×40
A	51	76	102	152	152	203	203	254	254	305	305	324	324	374	473	572	667	715	857	935
E	220	250	255	320	320	380	380	400	400	475	475	500	500	530	700	870	1040	1125	1380	1550
D	110	120	125	200	200	250	250	285	285	345	345	390	390	430	510	600	690	735	870	960
LBW	381	457	610	737	838	838	965	965	1029	1029	1130	1130	1219	1321	1549	1880	2066	2324	2582	3099
LRF	381	457	610	737	838	838	965	965	1029	1029	1130	1130	1219	1321	1549	1880	2066	2324	2582	3099
LRJ	384	460	613	740	842	842	968	968	1038	1038	1140	1140	1232	1334	1569	1902	2085	2343	2601	3118
Weight kg	95	140	200	420	460	720	780	1500	1570	2200	2290	2400	2500	3960	6840	12000	15240	18624	31500	43200

Class ANSI1500 - Full bore

Size inch	2	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40
A	51	76	102	146	194	241	289	318	362	410	461	548	644	690	736	828	920
E	230	250	255	500	550	690	720	800	900	950	990	1300	1610	1765	1920	2230	2540
D	120	130	135	320	350	400	420	460	500	550	590	900	1210	1365	1520	1830	2140
LBW	368	470	546	705	832	991	1130	1257	1384	1537	1664	1943	2420	2593	2769	3111	3457
LRF	368	470	546	705	832	991	1130	1257	1384	1537	1664	1943	2420	2593	2769	3111	3457
LRJ	372	473	550	711	842	1000	1146	1276	1407	1559	1686	1972	2442	2615	2791	3133	3479
Weight kg	98	145	243	925	1625	1940	2820	5460	6120	7650	9180	15870	23845	30710	37270	53070	72800



Class ANSI 1500 - Reduced bore

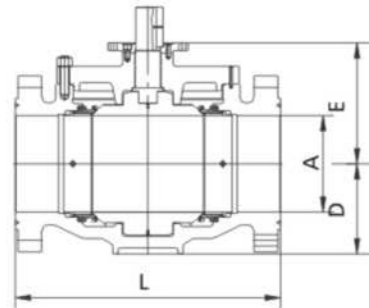
Size inch	3×2	4×3	6×4	8×6	10×6	10×8	12×8	12×10	14×10	14×12	16×12	16×14	18×14	20×16	24×20	30×24	32×28	36×30	40×36	48×40
A	51	76	102	146	146	194	194	241	241	289	289	318	318	362	456	548	644	690	828	920
E	230	250	255	500	500	550	550	690	690	720	720	800	800	900	990	1300	1610	1765	2230	2540
D	120	130	135	320	320	350	350	400	400	420	420	460	460	500	560	990	1210	1365	1830	2140
LBW	470	546	-	832	991	991	1130	1130	1257	1257	1384	1384	1537	1664	1943	2593	2769	3111	3457	4174
LRF	470	546	705	832	991	991	1130	1130	1257	1257	1384	1384	1537	1664	1943	2593	2769	3111	3457	4174
LRJ	473	549	711	842	1000	1000	1146	1146	1276	1276	1407	1407	1559	1686	1972	2615	2791	3133	3479	4219
Weight kg	110	170	255	1110	1160	1950	2030	2330	2430	3390	3525	6550	6825	7345	11020	19045	28615	36850	63690	87360



Top Entry Ball Valves

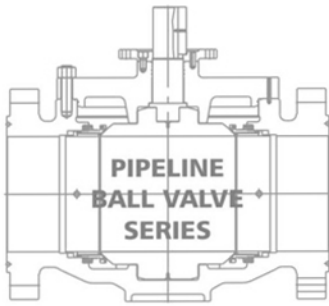


Class ANSI 2500 - Full bore											
Size inch	2	3	4	6	8	10	12	14	16	18	20
A	45	64	89	133	181	226	266	311	356	400	445
E	250	300	350	700	780	1035	1125	1215	1305	1395	1485
D	140	150	180	465	530	745	825	905	985	1065	1145
LBW	451	578	373	914	1022	1270	1422	1659	1896	2133	2369
LRF	451	578	673	914	1022	1270	1422	1659	1896	2133	2369
LRI	454	584	683	927	1038	1292	1445	1681	1918	2155	2391
Weight kg	120	180	420	1225	2060	4060	9020	14375	20625	27500	35000



Class ANSI 400 - Reduced bore															
Size inch	3x2	4x3	6x4	8x6	10x6	10x8	12x8	12x10	14x10	14x12	16x12	16x14	18x14	20x16	24x20
A	46	64	189	133	133	181	181	226	226	266	266	311	311	356	445
E	250	300	350	700	700	780	780	1035	1035	1125	1125	1215	1215	1305	1485
D	140	150	180	465	465	530	530	745	745	825	825	905	905	985	1145
LBW	578	673	914	1022	1270	1270	1422	1422	1660	1660	1896	1896	2133	2369	2845
LRF	578	673	914	1022	1270	1270	1422	1422	1660	1660	1896	1896	2133	2369	2845
LRI	584	683	927	1038	1292	1292	1445	1445	1682	1682	1918	1918	2155	2391	2883
Weight kg	140	220	500	1470	1530	2470	2575	4870	5075	10825	11275	17250	17970	24750	42000





BTL

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