



Steinbock valves

BALL VALVES

BALL VALVE MODEL SCHEDULE ILLUSTRATION

1. Codes of Nominal Diameter
British series indicated by Axx in value, and metric series indicated by Gxx mm value.
2. Codes of Driving Modes (For handle or lever drive, this code can be omitted.)
3 - Manual Operator; 6 - Pneumatic; 6S - Pneumatic Spring Return; 6A - Pneumatic Control;
5 - Bevel Gear Drive; 7 - Hydraulic; 8 - Airdraulic; 8H - Airdraulic with Emergency Cutoff;
9 - Electric
3. Codes of Valve Types
FB - Float Ball Valve; TB - Fixed Ball Valve
4. Codes of Nominal Pressure Class
1 - PN16 class 150; 2 - PN25; 3 - class 300; 4 - PN40 class 400; 6 - PN64 class 600;
9 - class 900; 10 - PN100; 15 - class 1500; 16 - PN160; 20 - PN200; 25 - class2500
5. Codes of Connecting Modes
RF - Raised Face Flange; FF - Fully Flat Face Flange; MFM - Male and Female Flange; TG - Tongued and Grooved Flange;
RJ - Ring Joint Flange; BW - Butt Welding; SW - Socket Welding; NPT - Threaded Connection
6. Codes of Structural Modes
1 - Full Bore Straightway; 2 - Reducing Straightway; T - T-shaped Three-Way; 3L - L-shaped Three-Way; 4 - Four - Way;
5 - Overall Top Installed(Full Bore); 5A - Overall Top Installed(Reducing); 6 - Track Ball Valve(Full Bore);
6A - Track Ball Valve(Reducing); 7H - Eccentric Half Ball; 8 - All Welded(Full Bore); 8A - All Welded(Reducing)
7. Code of Casing Materials
C - WCB; C5 - CF; C6 - WC6; BL - LCB; CL - LCC;
8 - CF8; 8M - CF8M; 3 - CF3; 3M - CF3M; ML - MONEL
8. Code of Ball Materials
1 - WCB; 2 - CF8; 3 - CF8M; 4 - CF3; 5 - CF3M;
1F - A105; 2F - 304; 3F - 316; 4F - 304L; 5F - 316L
9. Codes of Seat Material
F - PTFE; N - Nylon; G - Carbon Fiber; P - PPL; E - PEEK; M - MOLON

Note: The letters of "K", "E", "O" and "J" are placed in front of the codes of valve types, respectively representing hydrogen sulphide resistant, extension bar, oxygen and jacketed ball valve.

Example: A8"TB3RF1C2F means API 8" worm gear drive, fixed ball, 300Lb, raised face flange, full bore, body material WCB, ball material CF8 and seat of F4.

*The figures mentioned hereunder don't have the codes of caliber and valve material, they are to be specified by users.

Technical Specification

Technical Specification	API
Design Specification	API6D, API608, BS5351
Pressure and Temperature Class	ASME B16.34
Face - to - face	ASME B16.10
Flange Type and Dimensions	ASME B16.5, ASME B16.47
Butt Welded	ASME B16.25
Socket Welded	ASME B16.11
Threaded	ASME B16.1.20
Inspection and Test	API598, API6D

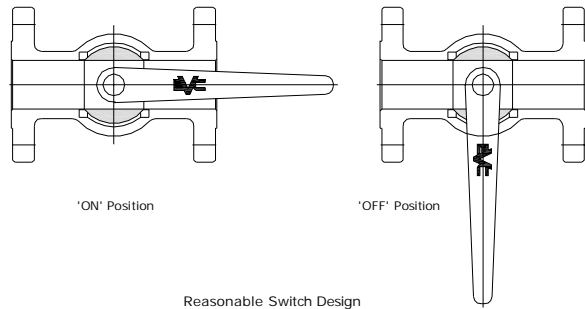
FLOATING BALL VALVE

Structural Features

Floating ball valves are superior products developed upon the advance technology home and abroad. Provided with updated design general industrial standards.

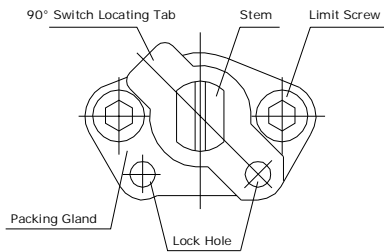
1. Switch Indication of Hand Operated Floating Ball Valve

As the moving parts of valve, ball, valve stem and handle are an assembly unit. The head of valve stem is shaped a diploid, thus to easily distinguish whether valve is in the 'ON' position or 'OFF' position from handle position. When handle or stem diploid is in parallel with the pipe axis, valve is 'ON' position, when handle or stem diploid is vertical to the pipe axis, valve is in 'OFF' position.



2. Hand Operating Ball Valve

To prevent misoperation, the fully opened or closed position of valve can be locked, especially when valves are mounted outdoors or when valves are not allowed to be opened or closed by technical process. To prevent misoperation by other persons, it is very important to have valve position locked. Thereby, lockhole locating tab is designed if requested by users to meet the technical requirement of users.



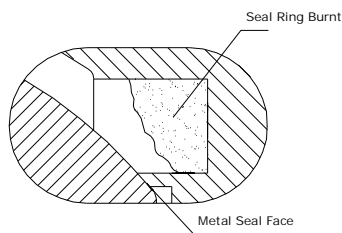
90° Switch with Lockhole Locating Tab

3. Anti Blow Out Stem

When medium passes through the valve, the pressure in valve body may possibly push the stem out, or when the valve is in repair, if there is pressure in the middle cavity, which can cause injuries to human being. To prevent this possibilities, a dummy club is placed at the lower part of the stem. In this way, even if there is fire, packing and thrust bearing are burnt or packing is damaged due to other causes, the pressure of medium in valve body will make the dummy club of valve stem in close contact with the upper seal face of valve body, thus to prevent medium leaking out from the damaged packing position.

4. Anti Static Device

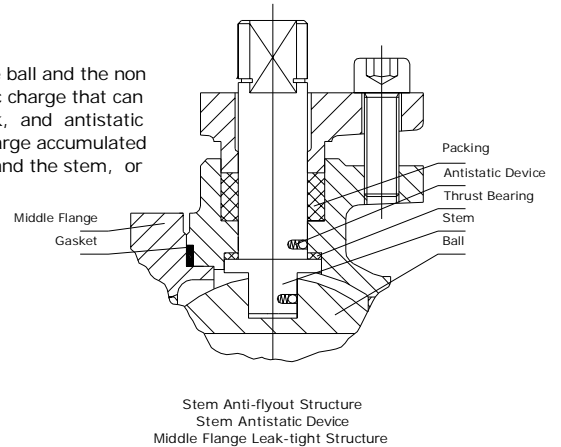
When operating the valve, the friction between the ball and the non metal seat, like PTFE or etc, will produce electrostatic charge that can be accumulated on the ball. To prevent static spark, and antistatic device is placed on the valve to derive the electric charge accumulated on the ball from the static channel between the ball and the stem, or between the stem and valve body.



Fire Protection Structure of Float Ball Valve

5. Firesafe

In case of fire, the nonmetal packing or seat(non-fireproof material) will be burned, the considerable medium leakage may possibly cause fire spread. Here, the fire protection structure functions to prevent medium from mass leakage. As shown in the figure, once the seat is burnt, the ball will directly contact the metal face on valve body, thus to prevent medium leaking out from the burnt seat. The design of fire protection and antistatic structure shall conform to the requirement of API607, JB/T6899 and the second part of BS 6755.



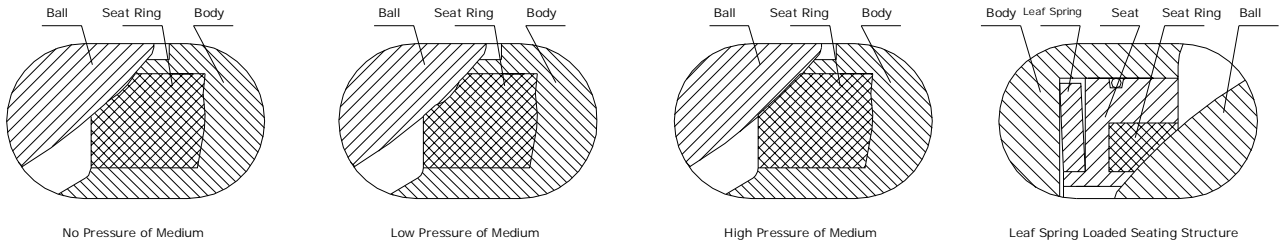
Structural Features

Dependable Seating Structure

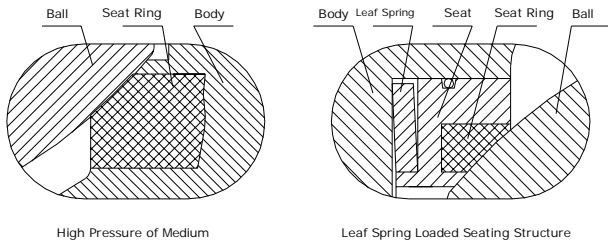
The two-way sealing structure embodying the years of our manufacturing experience in ball valves and the internationally advanced technology can release the pressure at valve seat and ensure reliable seal under high or low pressure and vacuum state. When the pressure of medium is low, the contact area between valve seat insert and ball is relatively small, thus providing high sealing load to ensure dependable seating seal. When the pressure of medium is high, the contact area between valve seat insert and ball is relatively large, so that the valve seat insert can endure the considerable medium thrust and cannot be damaged.

Regarding ball valves of very low working pressure, in consideration that the pressure of medium cannot guarantee the dependable seal of valve seat, and that the pretightening force will decrease after a long time of service, so we apply leaf spring loaded seating structure for valves working under low and ultralow pressure or under vacuum conditions, thus to ensure persistent and dependable seal.

The seating structure of medium and high temperature ball valves use PPL for seal ring that can serve a temperature of 300°C. Ball valves with metal seal and high temperature resisting materials can be used to deal with even higher temperature. This structure takes the function of one-way seal.



Double Bevel Elastic Seal Ring of Float Ball Valve

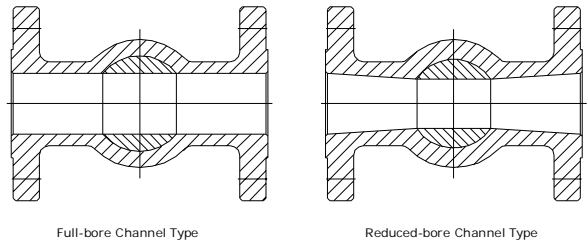


Self-releasing Structure

In case of abnormal rise of pressure in the middle cavity of valve resulted from the medium left there suffered from changes of pipeline pressure of medium temperature, automatic pressure relief of valve seat can be affected under the pressure of the medium itself, thus to guarantee the safety of valve.

Full and Reduced Bore

We have ball valves of full and reduced bore to meet users' different needs. Full-bore ball valves have the same inside diameter as that of pipeline, with the lowest fluid resistance for the convenience of cleaning the pipeline. While reduced-bore ball valves weighs only 70% of full-bore valve with the same calibre, a saver of cost and price, and its fluid resistance coefficient is only 1/7 of that of the globe valve with the same caliber, so that reduced-bore ball valves are widely used abroad.



FLOATING BALL VALVE

Structural Features

No.		PN(Barg)					Class			
DN	inch	1.6	2.5	4.0	6.3	10.0	150	300	400	600
15	1/2			●/△					●/△	
20x15	3/4x1/2			●/△					●/△	
20	3/4			●/△					●/△	
25x20	1x3/4			●/△					●/△	
25	1			●/△					●/△	
32	1			-					-	
40x32	1½x1¼			●/△					●/△	
40	1½			●/△					●/△	
50x40	2x1½			●/△					●/△	
50	2			●/△/★					●/△/★	
65x50	2½x2			●/△/★					●/△/★	
65	2½			●/△/★					●/△/★	
80x65	3x2½			●/△/★					●/△/★	
80	3			●/△/★					●/△/★	
100x80	4x3			●/△/★					●/△/★	
100	4			●/△/★					●/△/★	
125/100	5x4	●/△/★			/		●/△/★			/
125	5	●/△/★			/		●/△/★			/
150x100	6x4			●/△/★					●/△/★	
150	6	●/☆/△/★			/		●/☆/△/★			/
200x150	8x6	●/☆/△/★			/		●/☆/△/★			/
200	8	●/☆/△/★			/		●/☆/△/★			/

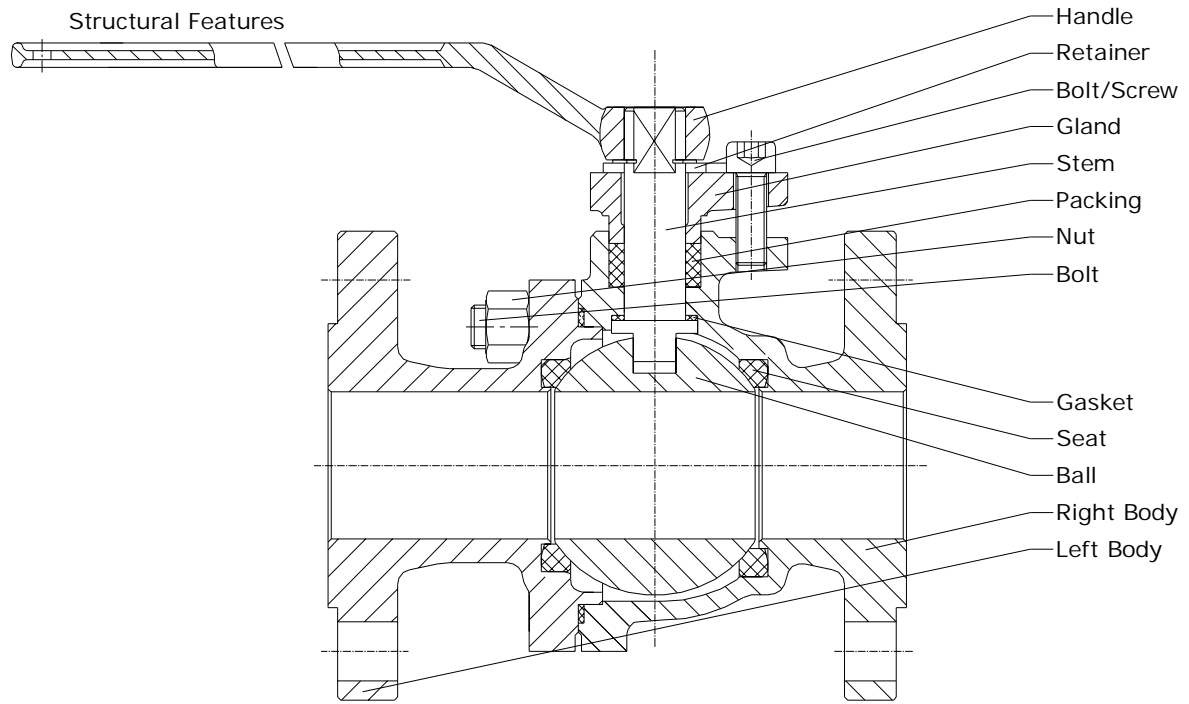
Remarks: ● stands for handle operated valves;
 ☆ stands for gearbox operated valves;
 △ stands for air operated valves;
 ★ stands for electrical operated valves;
 / stands for no option of this.

Those not covered in the table can be custom made to users' requirements.

Technical Specification

Performance Criterion		Class			
		150	300	400	600
Test Pressure (Barg)	Shell Test	29.3	75.8	100	150
	Seal Test	20.7	55.2	73.1	110.3
	Air Test	6.0Barg			
Suitable Temperature		-196°C - 550°C <small>Note: Different materials are chosen according to the temperature of the different working situation.</small>			
Suitable Medium	Common Type	water, steam, petroleum, LPG, natural gas, etc			
	Anti-sulphur type	Natural gas, petroleum (they include H ₂ S, CO), etc			

FLOATING BALL VALVES



TYPICAL MATERIAL OF MAIN PARTS

No.	Part Name	Carbon Steel Series	Stainless Steel Series	Low Temperature Steel Series	Low Temperature Steel Series	
					Carbon Steel Series	Stainless Steel Series
1	Left Body	ASTM A216 WCB	A351-CF8, CF8M, CF3, CF3M	ASTM A352 LCB, LCC	ASTM A216 WCB	ASTM A351 CF8M
2	Right Body	ASTM A216 WCB	A351-CF8, CF8M, CF3, CF3M	ASTM A352 LCB, LCC	ASTM A216 WCB	ASTM A351 CF8M
3	Ball	ASTM A105+HCr/ENP	A351-CF8, CF8M, CF3, CF3M	A352 LCB, LCC+ENP	ASTM A105+HCr/ENP	ASTM A351 CF8M+ENP
4	Seat	PTFE, RPTFE				
5	Gasket	Graphite				
6	Bolt	ASTM A193 B7	ASTM A193 B8, B8M	ASTM A320 L7	ASTM A193 B7M	ASTM A193 B8M
7	Nut	ASTM A194 2H	ASTM A194 8M	ASTM A194 4	ASTM A194 2HM	ASTM A194 8M
8	Packing	RPTFE				
9	Stem	ASTM A216 WCB	A351-CF8, CF8M, CF3, CF3M	ASTM A352 LCB, LCC	GB/T12229 A216 WCB	ASTM A351 CF8M
10	Gland	ASTM A216 WCB	ASTM A351, CF8, CF8M	ASTM A351 CF8	ASTM A216 WCB	ASTM A351 CF8M
11	Bolt/Screw	ASTM A193 B7	ASTM A193 B8, B8M	ASTM A320 L7	ASTM A193 B7M	ASTM A193 B8M
12	Retainer	GB/T 1222 65Mn				
13	Handle	ASTM A216 WCB				

* Different materials are available upon request.

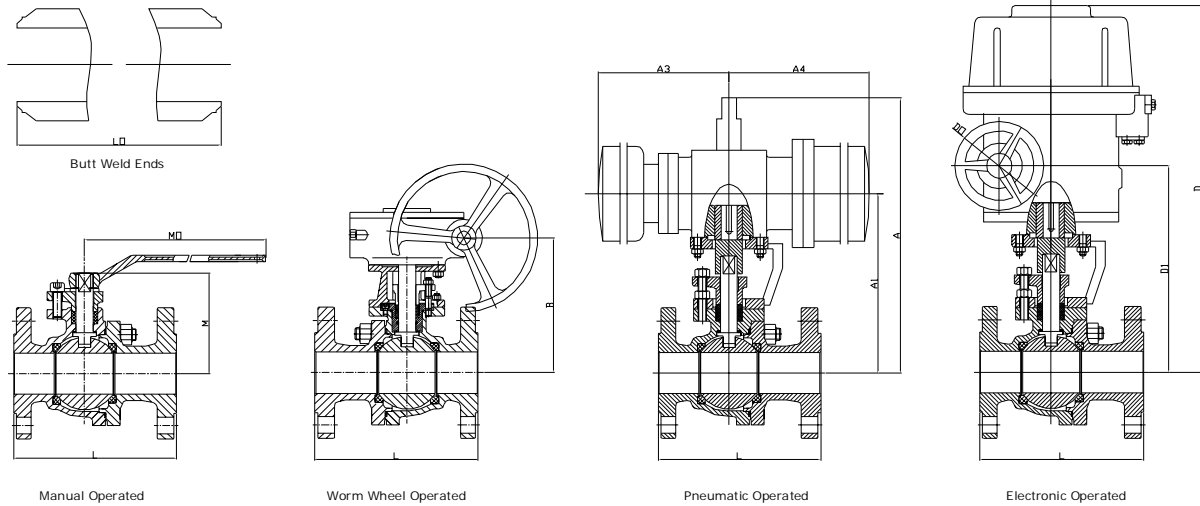
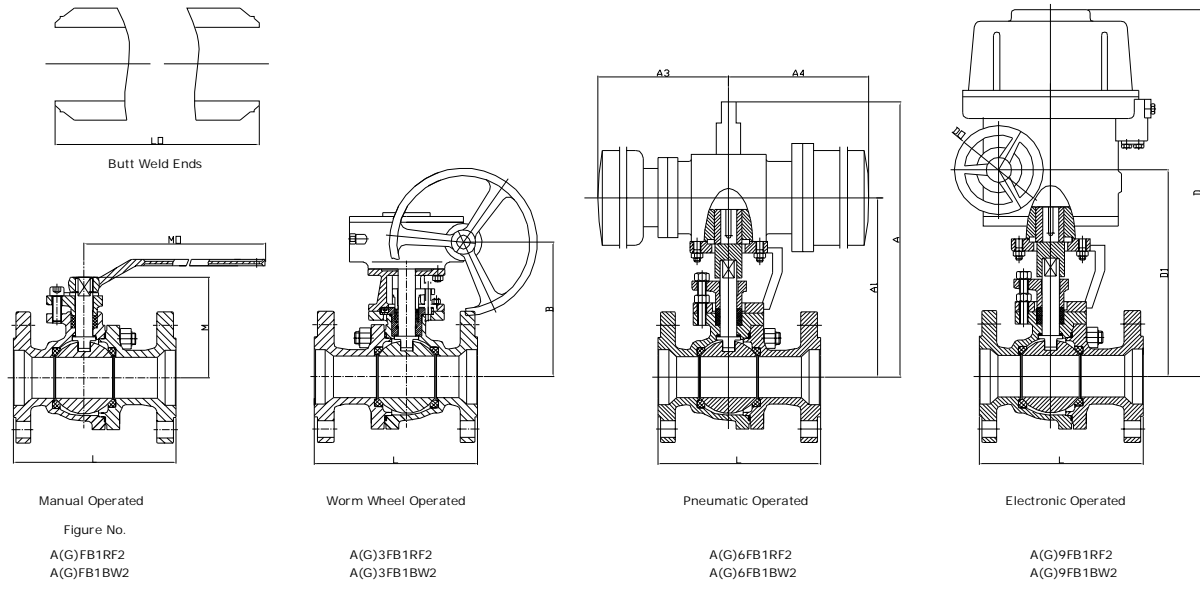


Figure No. A(G)FB1RF1 A(G)FB1BW1 A(G)3FB1RF1 A(G)3FB1BW1 A(G)6FB1RF1 A(G)6FB1BW1 A(G)9FB1RF1 A(G)9FB1BW1

Technical Specification

NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
L	RF	108	117	127	165	178	190	203	229	356	394	457
LO	BW	140	152	165	190	216	241	283	305	381	457	521
Manual Operated	M	59	63	75	95	107	142	152	178	252	272	342
	MO	130	130	160	230	230	400	400	650	1050	1050	1410
Worm Wheel Operated	B	/	/	/	/	/	/	/	/	/	292	387
	B0	/	/	/	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	/	/	/	350	350
	B2	/	/	/	/	/	/	/	/	/	115.5	115.5
Pneumatic Operated	A	200	204	257	264	340	370	389	594	646	646	781
	A1	122	126	162	169	209	239	258	337	437	437	537
	A3	326	326	347	420	426	426	590	523	610	610	885
	A4	136	136	181	181	257	257	257	287	378	378	530
Electric Operated	D	/	/	/	/	472	486	579	595	650	739	799
	D1	/	/	/	/	377	391	484	500	500	589	649
	D0	/	/	/	/	190	190	190	190	400	400	400
Kg (RF)	-	2.5	3	5	7	10	15	19	23	58	93	160
	-	10	15.7	19.5	42.8	46.9	50.5	70	92.7	160.7	183.5	276
	-	/	/	/	/	32	35.6	44	55	93	128	195



Technical Specification

NPS	in	¾ x ½	1x¾	1½x1¼	2x1½	2½x2	3x2½	4x3	5x4	6x4	8x6
do		15	20	32	40	50	65	80	100	100	100
L	RF	117	127	165	178	190	203	229	356	394	457
LO	BW	152	165	190	216	241	283	305	381	457	521
Manual Operated	M	59	63	75	95	107	142	152	178	178	272
	MO	130	130	160	230	230	400	400	650	650	1050
Worm Wheel Operated	B	/	/	/	/	/	/	/	/	/	292
	B0	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
Pneumatic Operated	A	200	204	264	264	340	370	389	594	594	646
	A1	122	126	169	169	209	239	259	337	337	437
	A3	326	326	420	420	426	426	590	523	523	610
	A4	136	136	181	181	257	257	257	287	287	378
Electric Operated	D	/	/	/	/	472	486	579	595	595	739
	D1	/	/	/	/	377	391	484	500	500	589
	D0	/	/	/	/	190	190	190	190	190	400
Kg (RF)	-	3	4	9	9	14	19	25	32	40	84.0
	-	10	15.7	40.9	40.9	45.9	50.9	68	87.4	95.4	186.5
	-	/	/	/	/	31	36	42	49	57	119

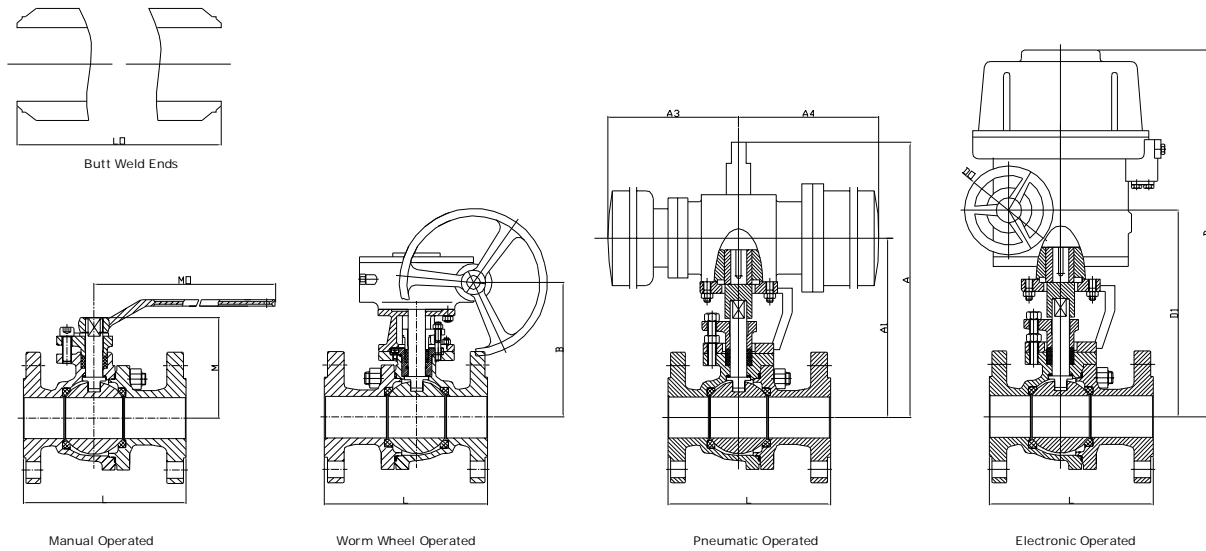


Figure No.
A(G)FB1RF1
A(G)FB1BW1

A(G)3FB1RF1
A(G)3FB1BW1

A(G)6FB1RF1
A(G)6FB1BW1

A(G)9FB1RF1
A(G)9FB1BW1

Technical Specification

NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
L	RF	142	152	165	190	216	241	283	305	381	403	502
LO	BW	140	152	165	190	216	241	283	305	381	457	521
Manual Operated	M	59	63	75	95	107	142	152	178	252	272	342
	M0	130	130	160	230	230	400	400	650	1050	1050	1410
Worm Wheel Operated	B	/	/	/	/	/	/	/	/	/	292	398
	B0	/	/	/	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	/	/	/	115.5	171
Pneumatic Operated	A	200	204	257	264	340	379	452	594	646	744	920
	A1	122	126	162	169	209	248	295	375	437	500	615
	A3	326	326	347	420	426	426	590	523	610	610	885
	A4	136	136	181	181	257	257	257	287	378	378	530
Electric Operated	D	/	/	/	/	472	486	579	595	650	739	799
	D1	/	/	/	/	377	391	484	500	500	589	649
	D0	/	/	/	/	190	190	190	190	400	400	400
Kg (RF)	-	3	4	6	11	155	24	30	55	81	118	200
	-	10	15.7	20	40.9	43.9	51.9	68	99.4	177.5	207.5	381
	-	/	/	/	1	29	37	42	77	116	143	235

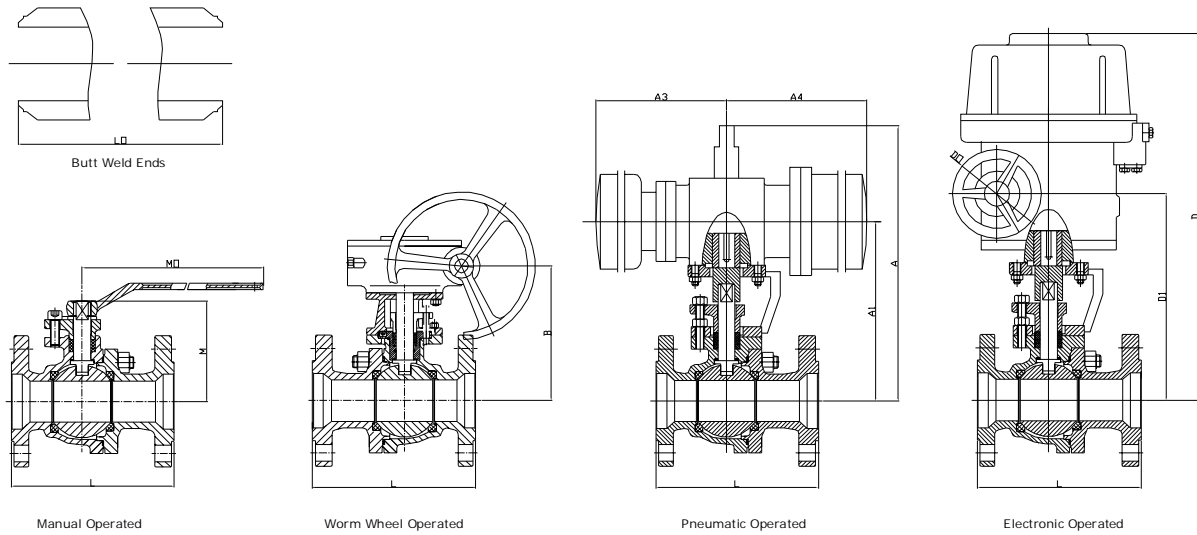


Figure No.

A(G)FB2(F24)1RF2
A(G)FB2(BW2)1BW2

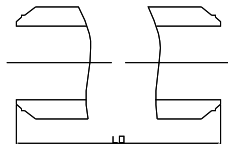
A(G)3FB2(F24)RF2
A(G)3FB2(BW2)BW2

A(G)6FB2(F24)RF2
A(G)6FB2(BW2)BW2

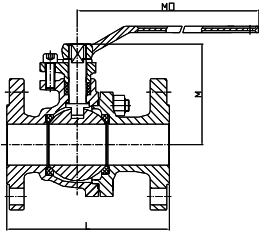
A(G)9FB2(F24)RF2
A(G)9FB2(BW2)BW2

Technical Specification

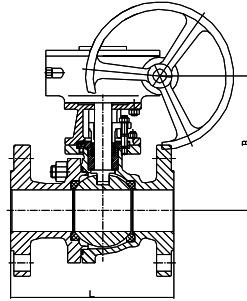
NPS	in	¾ x ½	1x¾	1½x1¼	2x1½	2½x2	3x2½	4x3	5x4	6x4	8x6
do		15	20	32	40	50	65	80	100	100	100
L	RF	152	165	190	216	241	283	305	381	403	502
LO	BW	152	165	190	216	241	283	305	381	457	521
Manual Operated	M	59	63	75	95	107	142	152	178	178	272
	MO	130	130	160	230	230	400	400	650	650	1050
Worm Wheel Operated	B	/	/	/	/	/	/	/	/	/	292
	B0	/	/	/	/	/	/	/	/	/	400
	B1	/	/	/	/	/	/	/	/	/	350
	B2	/	/	/	/	/	/	/	/	/	115.5
Pneumatic Operated	A	200	204	257	264	340	379	452	594	594	744
	A1	122	126	162	169	209	248	295	375	375	500
	A3	326	326	347	420	426	426	590	523	523	610
	A4	136	136	181	181	257	257	275	287	287	378
Electric Operated	D	/	/	/	/	472	486	579	595	595	739
	D1	/	/	/	/	377	391	484	500	500	589
	DO	/	/	/	/	190	190	190	190	190	400
Kg (RF)	-	3	4	7	9	14	19	25	32	40	84.0
	-	10	15.7	21	40.9	45.9	50.9	68	87.4	95.4	186.5
	-	/	/	/	/	31	36	42	49	57	119



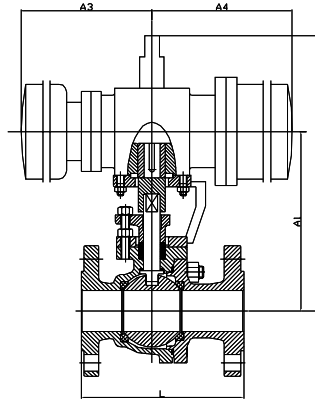
Butt Weld Ends



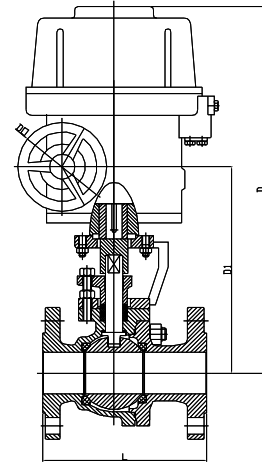
Manual Operated



Worm Wheel Operated



Pneumatic Operated



Electric Operated

Figure No.
A(G)FB6RF1
A(G)FB6BW1

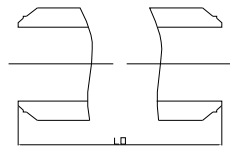
A(G)3FB6RF1
A(G)3FB6BW1

A(G)6FB6RF1
A(G)6FB6BW1

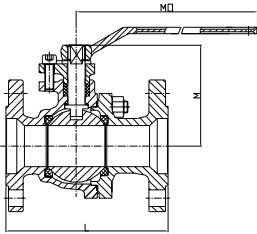
A(G)9FB6RF1
A(G)9FB6BW1

Technical Specification

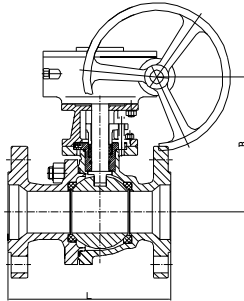
NPS	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4
L	RF	165	190 165	216	241	292	330	356	406(432)
LO	BW	165	190 165	216	241	292	330	356	406(432)
Manual Operated	M	59	63	75	95	142	154	184	209
	MO	160	160 160	230	400	400	650	650	1050
Worm Wheel Operated	B	/	/	/	/	/	/	295	398
	BO	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	115.5	171
Pneumatic Operated	A	200	204 257	241	264	340	379	452	584
	A1	122	145 162	146	169	209	248	295	375
	A3	283	283 347	283	350	590	590	523	610
	A4	136	181 181	181	181	257	257	287	287
Electric Operated	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	449	449	472
	D0	/	/	/	/	190	190	190	190
Kg (RF)	-	8	11	15	19	25	32	48	76
	-	17.2	21	24	32	68	75	101.3	177.5
	-	/	/	/	1	60	67	83	111



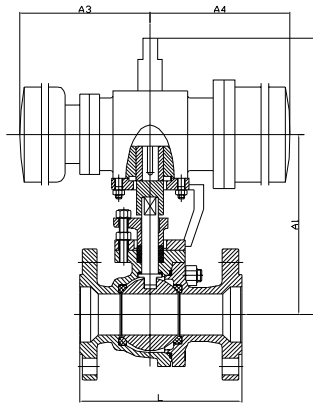
Butt Weld Ends



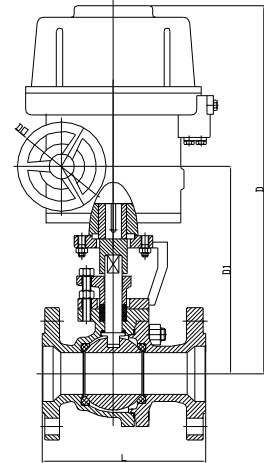
Manual Operated



Worm Wheel Operated



Pneumatic Operated



Electronic Operated

Figure No.

A(G)FB2(RF24)1RF2
A(G)FB2(BW2)1BW2

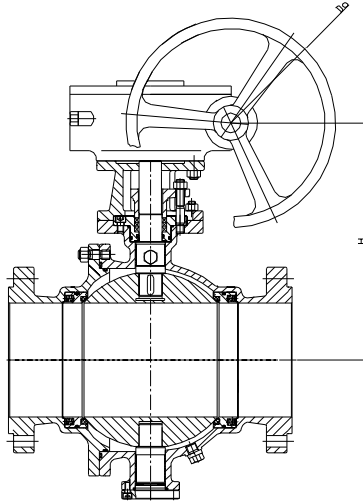
A(G)3FB2(RF24)RF2
A(G)3FB2(BW2)BW2

A(G)6FB2(RF24)RF2
A(G)6FB2(BW2)BW2

A(G)9FB2(RF24)RF2
A(G)9FB2(BW2)BW2

Technical Specification

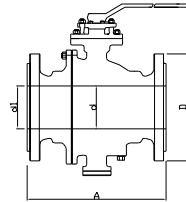
NPS	in	3/4 x 1/2	1x3/4	1 1/2 x 1 1/4	2x1 1/2	2 1/2 x 2	3x2 1/2	4x3	6x4
do		15	20	32	40	50	65	80	100
L	RF	190	216	241	292	330	356	406(432)	495(559)
LO	BW	190	216	241	292	330	356	406(432)	495(559)
Manual Operated	M	59	63	75	95	142	154	184	209
	MO	160	160	230	400	400	650	650	1050
Worm Wheel Operated	B	/	/	/	/	/	/	292	398
	B0	/	/	/	/	/	/	400	600
	B1	/	/	/	/	/	/	350	421
	B2	/	/	/	/	/	/	115.5	171
Pneumatic Operated	A	200	204	241	264	340	379	452	584
	A1	122	145	146	169	209	248	295	375
	A3	283	283	283	350	590	590	523	610
	A4	136	181	181	181	257	257	287	378
Electric Operated	D	/	/	/	/	472	599	599	632
	D1	/	/	/	/	377	449	449	472
	DO	/	/	/	/	190	190	190	190
Kg (RF)	-	8	11	15	19	25	48	76	85
	-	15	22.7	29	33	39	91	119	187.5
	-	/	/	/	/	60	83	111	120



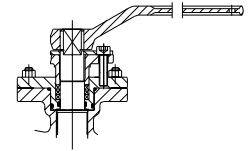
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



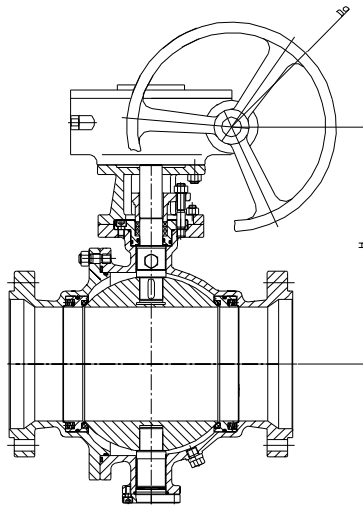
Manual Operated



LEVER OPERATED 8" AND BELOW

Technical Specification

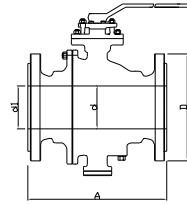
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	178	190	216	51	51	152	153	400	28
3"	80	203	216	283	77	77	190	195	600	52
4"	100	229	241	305	102	102	230	213	850	79
6"	150	394	406	457	152	152	279.5	272	1100	155
8"	200	457	470	521	203	203	343	342	1500	250
10"	250	533	546	559	254	254	406	495	*350	385
12"	300	610	622	635	305	305	483	580	*350	565
14"	350	686	698	762	337	337	535	625	*600	770
16"	400	762	775	838	387	387	597	720	*600	1026
18"	450	864	876	914	438	438	635	790	*800	1226
20"	500	914	927	991	489	489	700	840	*800	1806
24"	600	1067	1079	1143	591	591	813	1050	*800	3121



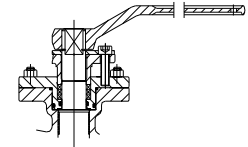
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS ≤ 24") , ASME B16.47(NPS > 24")
5. Inspection and Test Standard: API 598 or API6D



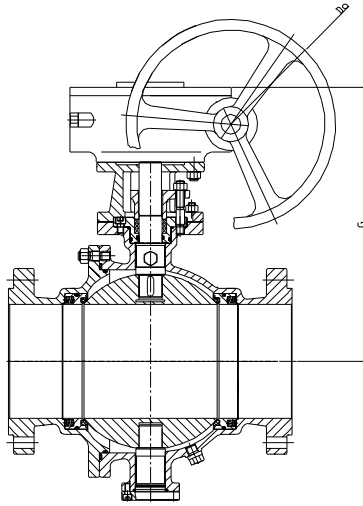
Manual Operated



LEVER OPERATED 8" AND BELOW

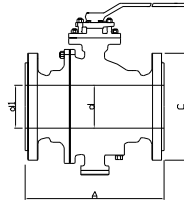
Technical Specification

Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2x1½"	50x40	178	190	216	38	51	152	183	400	25
3x2"	80x50	203	216	283	51	77	191	193	600	28
4x3"	100x80	229	241	305	77	102	230	213	850	48
6x4"	150x100	394	406	457	102	152	279.5	234	1100	87
8x6"	200x150	457	470	521	152	203	343	274	1500	180
10x8"	250x200	533	546	559	203	254	406	495	*350	290
12x10"	300x250	610	622	635	254	305	483	580	*350	465
14x12"	350x300	686	698	762	305	337	535	625	*600	625
16x14"	400x350	762	622	635	337	387	597	720	*600	835
18x16"	450x400	864	876	914	387	438	635	790	*800	1076
20x18"	500x450	914	927	991	438	489	700	840	*800	1306
24x20"	600x500	1067	1079	1143	489	591	813	1050	*800	2056

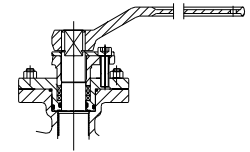


Gear Operated

- Design Standard**
1. Design and Manufacture Standard: API6D or BS5351
 2. Material Pressure-Temp Standard: ANSI B16.34
 3. End to End Standard: ANSI B16.10
 4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
 5. Inspection and Test Standard: API 598 or API6D



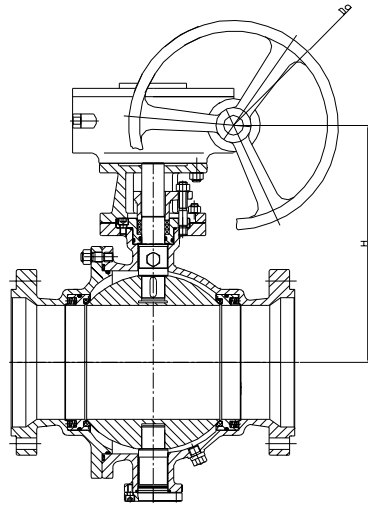
Manual Operated



LEVER OPERATED 6" AND BELOW

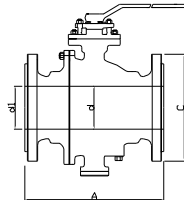
Technical Specification

Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	216	232	216	51	51	165	153	400	28
3"	80	283	298	283	77	77	210	195	600	56
4"	100	305	321	305	102	102	254	213	850	98
6"	150	403	419	457	152	152	318	272	1100	185
8"	200	502	517	521	203	203	381	342	1500	290
10"	250	568	584	559	254	254	444.5	495	*350	500
12"	300	648	664	635	305	305	520	580	*350	750
14"	350	762	778	762	337	337	585	625	*600	1046
16"	400	838	854	838	387	387	650	720	*600	1436
18"	450	914	930	914	438	438	710	790	*800	1685
20"	500	991	1010	991	489	489	775	840	*800	2231
24"	600	1143	1165	1143	591	591	915	1050	*800	3512

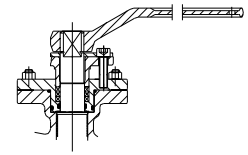


Gear Operated

- Design Standard
1. Design and Manufacture Standard: API6D or BS5351
 2. Material Pressure-Temp Standard: ANSI B16.34
 3. End to End Standard: ANSI B16.10
 4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
 5. Inspection and Test Standard: API 598 or API6D



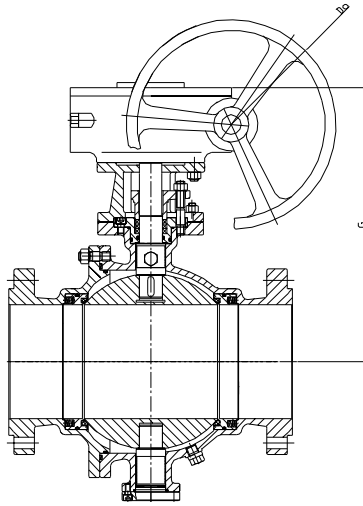
Manual Operated



LEVER OPERATED 6" AND BELOW

Technical Specification

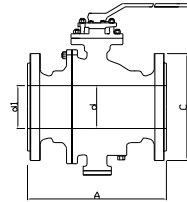
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2x1½"	50x40	216	232	216	38	51	165	153	400	26
3x2"	80x50	283	298	283	51	77	210	195	600	34
4x3"	100x80	305	321	305	77	102	254	213	850	64
6x4"	150x100	403	419	457	102	152	318	272	1100	120
8x6"	200x150	502	517	521	152	203	381	342	1500	225
10x8"	250x200	568	584	559	203	254	444.5	495	*350	300
12x10"	300x250	648	664	635	254	305	520	580	*350	590
14x12"	350x300	762	778	762	305	337	585	625	*600	830
16x14"	400x350	838	854	838	337	387	650	720	*600	1146
18x16"	450x400	914	930	914	387	438	710	790	*800	1606
20x16"	500x400	991	1010	991	438	489	775	840	*800	1650
24x20"	600x500	1143	1165	1143	489	591	915	1050	*800	2690



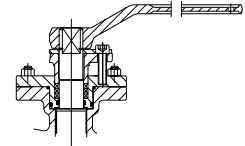
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



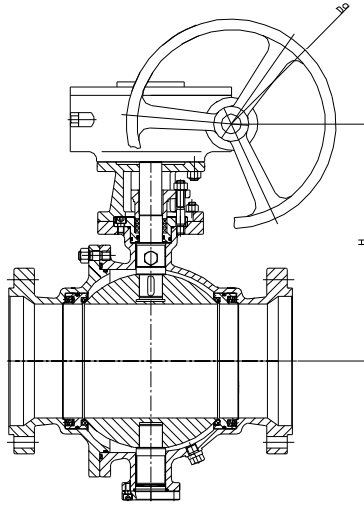
Manual Operated



LEVER OPERATED 6" AND BELOW

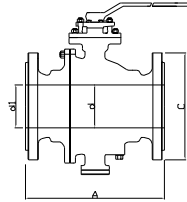
Technical Specification

Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	292	295	292	51	51	165	153	600	47
3"	80	356	359	356	77	77	210	195	1250	80
4"	100	432	435	432	102	102	273	213	1300	133
6"	150	559	562	559	152	152	356	272	1500	275
8"	200	660	664	660	203	203	419	342	*350	510
10"	250	787	791	787	254	254	510	495	*350	800
12"	300	838	841	838	305	305	559	580	*600	1110
14"	350	889	892	889	337	337	605	630	*600	1130
16"	400	991	994	991	387	387	685	725	*800	1580
18"	450	1092	1095	1092	438	438	745	800	*800	2180
20"	500	1194	1200	1194	489	489	815	850	*800	2780

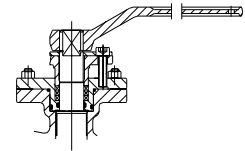


Gear Operated

- Design Standard
1. Design and Manufacture Standard: API6D or BS5351
 2. Material Pressure-Temp Standard: ANSI B16.34
 3. End to End Standard: ANSI B16.10
 4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
 5. Inspection and Test Standard: API 598 or API6D



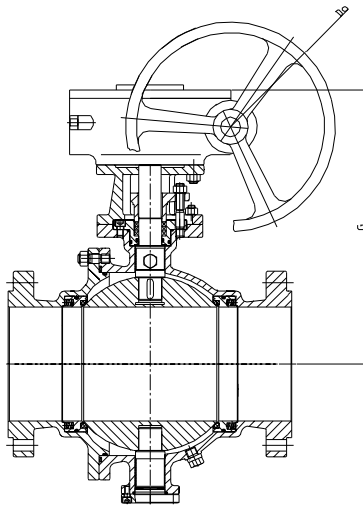
Manual Operated



LEVER OPERATED 6" AND BELOW

Technical Specification

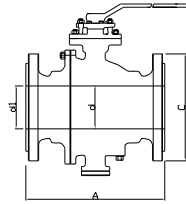
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2x1½"	50x40	292	295	292	38	51	165	153	600	43
3x2"	80x50	356	359	356	51	77	210	195	1250	57
4x3"	100x80	432	435	432	77	102	273	213	1300	102
6x4"	150x100	559	562	559	102	152	356	272	1500	173
8x6"	200x150	660	664	660	152	203	419	342	*350	310
10x8"	250x200	787	791	787	203	254	510	495	*350	570
12x10"	300x250	838	841	838	254	305	559	580	*600	850
14x12"	350x300	889	892	889	305	337	605	630	*600	1180
16x14"	400x350	991	994	991	337	387	685	725	*800	1360
18x16"	450x400	1092	1095	1092	387	438	745	800	*800	1765
20x18"	500x450	1194	1200	1194	438	489	815	850	*800	2460



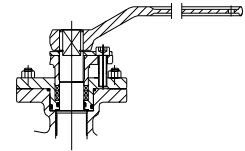
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



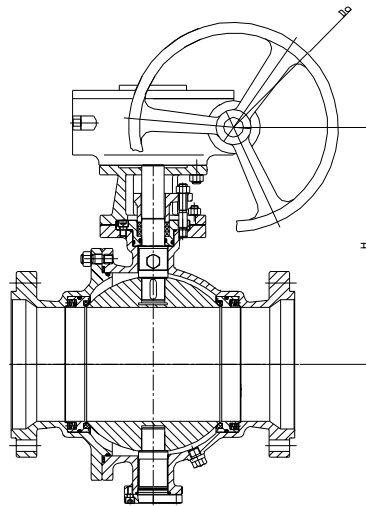
Manual Operated



LEVER OPERATED 6" AND BELOW

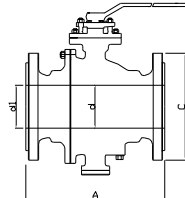
Technical Specification

Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	368	371	368	51	51	216	162	600	65
3"	80	381	384	381	77	77	241	205	1250	93
4"	100	457	460	457	102	102	292	239	1300	170
6"	150	610	613	610	152	152	381	290	1500	390
8"	200	737	740	737	203	203	470	355	*350	530
10"	250	838	841	838	254	254	544.5	510	*350	1070
12"	300	965	968	965	305	305	610	595	*600	1610
14"	350	1029	1038	1029	324	324	641.5	650	*600	1560
16"	400	1130	1140	1130	375	375	705	750	*800	2240
18"	450	1219	1232	1219	425	425	785	835	*800	3000
20"	500	1321	1333	1321	473	473	858	900	*800	4360

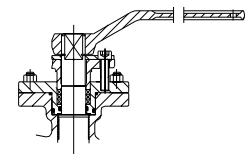


Gear Operated

- Design Standard
1. Design and Manufacture Standard: API6D or BS5351
 2. Material Pressure-Temp Standard: ANSI B16.34
 3. End to End Standard: ANSI B16.10
 4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
 5. Inspection and Test Standard: API 598 or API6D



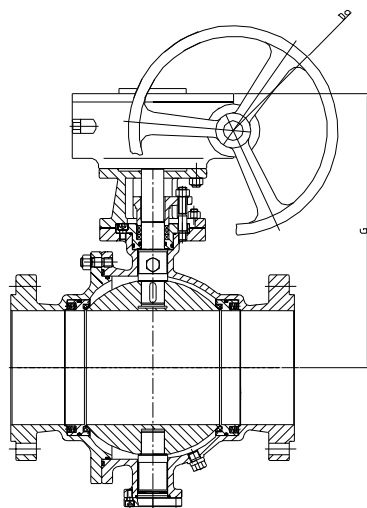
Manual Operated



LEVER OPERATED 6° AND BELOW

Technical Specification

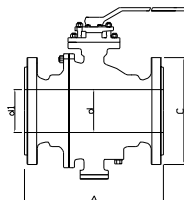
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2x1½"	50x40	368	371	368	38	51	216	162	600	58
3x2"	80x50	381	384	381	51	77	241	205	1250	71
4x3"	100x80	457	460	457	77	102	292	239	1300	118
6x4"	150x100	610	613	610	102	152	381	290	1500	230
8x6"	200x150	737	740	737	152	203	470	355	*350	470
10x8"	250x200	838	841	838	203	254	544.5	510	*350	640
12x10"	300x250	965	968	965	254	305	610	595	*600	1200
14x12"	350x300	1029	1038	1029	305	324	641.5	650	*600	1695
16x14"	400x350	1130	1140	1130	324	375	705	750	*800	1800
18x16"	450x400	1219	1232	1219	375	425	785	835	*800	2520
20x18"	500x450	1321	1333	1321	425	473	858	900	*800	3400



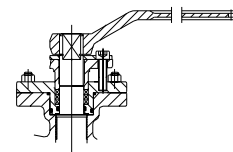
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



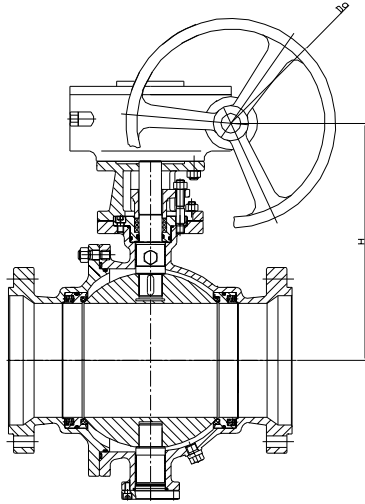
Manual Operated



LEVER OPERATED 6" AND BELOW

Technical Specification

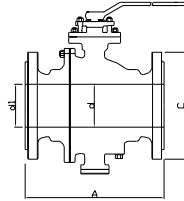
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	368	371	368	51	51	216	153	600	68
3"	80	470	473	470	77	77	267	195	1250	118
4"	100	546	549	546	102	102	311	213	1300	225
6"	150	705	711	705	146	146	394	272	1500	525
8"	200	832	841	832	194	194	483	342	*350	880
10"	250	991	1000	991	241	241	585	495	*350	1560
12"	300	1130	1146	1130	289	289	675	580	*600	2355
14"	350	1257	1276	1257	317	317	750	630	*600	3020
16"	400	1384	1406	1384	362	362	825	725	*800	4260



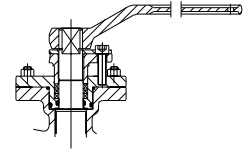
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



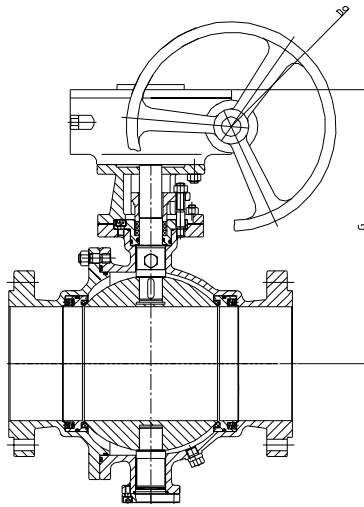
Manual Operated



LEVER OPERATED 6" AND BELOW

Technical Specification

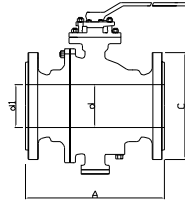
Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2x1½"	50x40	368	371	368	38	51	216	153	600	58
3x2"	80x50	470	473	470	51	77	267	195	1250	65
4x3"	100x80	546	549	546	77	102	311	213	1300	143
6x4"	150x100	705	711	705	102	152	394	272	1500	300
8x6"	200x150	832	841	832	146	194	483	342	*350	615
10x8"	250x200	991	1000	991	194	241	585	495	*350	1085
12x10"	300x250	1130	1146	1130	241	289	674	580	*600	1850
14x12"	350x300	1257	1276	1257	289	317	750	630	*600	2620
16x12"	400x300	1384	1406	1384	317	362	825	725	*800	2890



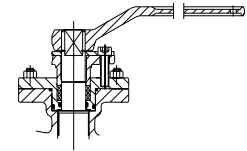
Gear Operated

Design Standard

1. Design and Manufacture Standard: API6D or BS5351
2. Material Pressure-Temp Standard: ANSI B16.34
3. End to End Standard: ANSI B16.10
4. Flange End Dimension Standard: ANSI B16.5(NPS<=24") , ASME B16.47(NPS>24")
5. Inspection and Test Standard: API 598 or API6D



Manual Operated



LEVER OPERATED 6" AND BELOW

Technical Specification

Size		L			d	d1	D	H	Do(W)	Weight (Kg)
Inch	mm	RF	RTJ	WE						
2"	50	251	251	251	44.5	44.5	145	198	300	93
3"	80	578	584	578	63.5	63.5	305	245	700	215
4"	100	673	683	673	89	89	356	305	700	385
6"	150	914	927	914	133	133	483	362	700	830
8"	200	1022	1038	1022	181	181	550	475	700	1435
10"	250	1270	1292	1270	226	226	675	560	700	2220
12"	300	1422	1445	1422	267	267	543	690	900	3350