



Product Application Manual

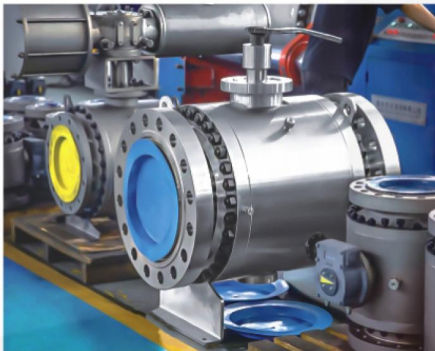
XHVAL GROUP VALVE CO., LTD.



XHVAL GROUP VALVE CO.,LTD.is located in Sangiao Industrial Zone, Wenzhou City, China. established in 1986, With API 6D, ISO, CE, API 607 etc. Certificates engaged in professional valve development, manufacture and sale of professional valve manufacturers. The enterprise is orientated towards clients' satisfaction; in this way, it adapts its valves to your requirements and delivers them in deadlines rigorously established. The technical and human staff, highly qualified, works every day in order to offer you the most innovative solutions and to strengthen the commitment with the customers



About XHVAL



Gate Valve Series

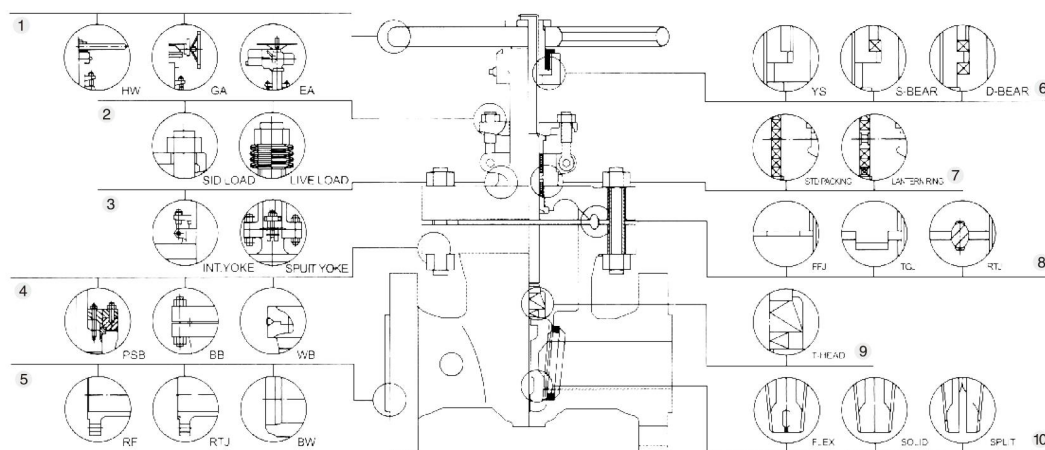


Design

Casting steel gate valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum Institute Standard API 600 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers Standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Available Modifications For Cast Steel Valves

- Trim changes
- End connection Modifications
- Packing and Gasket Changes
- Operator Mounting
- Handwheel Extensions
- Pressure Equalizing
- By-pass
- Customer specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Cleaning & Packaging



1 Operating

Large hand wheels for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

2 Live Load Packing

In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less frequent packing gland adjustments. Belleville springs are employed to provide constant packing gland stress.

3 OS&Y

Outside Screw and Yoke. Cast steel gate valve yoke. Integral with bonnet for 150Lb-8", 300Lb-8", 600Lb-6", 900Lb-4" & Small.

4 BB

Bolted bonnet. Welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

5 End Connections

A choice of Flanged, RTJ flanged or Butt welding end for piping flexibility.

6 Yoke Sleeve

Extra long thread engagement between yokes sleeve and stem provide long thread life. Valves of sizes larger than 150Lb-12", 300Lb-10", 600Lb-6", 900Lb/1500Lb/2500Lb-4" are regularly provided with roll bearing yokes.

7 Lantern Ring and Double Packing set

Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.

8 Body-to-Bonnet Joint

A flat face gasket joint is used in the 150Lb valves. A male and female joint is used in 300Lb to 600Lb valves. Ring joint is used in the body to bonnet connection in 900Lb & higher rated valves.

9 Stem

All wedge gate valves are provided with upset forged T-head stems. By forging the T-head, the stem at the stem-wedge connection is strengthened. This design also allows the wedge to self-align, eliminating the possibility of a bent stem jamming the wedge.

10 Wedge

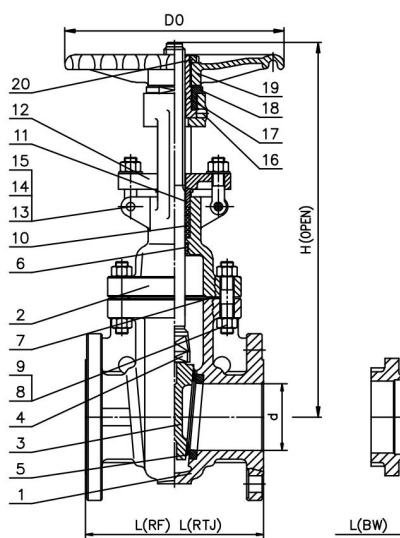
Integral guide rib faces assure self centering of wedge. Flexible wedge gate valve has a one-piece, twin disc wedge, which is designed so that each half flexes independently. Available in solid, flex split and HIS designs.

Applicable Standards

- Steel Gate Valves, API 600/API 6D
- Steel Valves, ASME B16.34
- Face to Face, ASME B16.10
- End Flanges, ASME B 16.5/ASME B16.47
- Buttwelding Ends, ASME B 16.25
- Inspection and Test, API 598/API 6D

Design Description

- Full Port Design
- OS & Y, outside screw and yoke
- BB, bolted bonnet
- Flexible wedge
- Renewable seat rings
- Rising stem and non-rising handwheel
- Flanged or buttwelding ends
- Available with BG operator



Materials of parts

No.	Part Name	ASTM Material		
1	Body	ASTM A216-WCB	ASTM A217-WC6	ASTMA352-LCB
2	Bonnet	ASTM A216-WCB	ASTM A217-WC6	ASTMA352-LCB
3	Wedge	ASTM A216-WCB+Cr13	ASTM A217-WC6+HF	ASTMA352-LCB+Cr13
4	Stem	ASTM A182-F6a	CR-MO-V	ASTMA182-F304
5	Seat Ring	ASTM A105+Cr13	ASTM A182-F11+HF	ASTM A350-LF2+Cr13
6	Stem Back Seat	ASTM A276-420	ASTM A276-304	ASTM A276-420
7	Bonnet Gasket	SS304+Graphite	SS304+Graphite	SS304+Graphite
8	Bonnet Stud	ASTMA193-B7	ASTMA193-B16	ASTMA320-L7
9	Bonnet Stud Nut	ASTMA194-2H	ASTMA194-4	ASTMA194-7
10	Packing	Graphite	Graphite	Graphite
11	Gland	ASTM A276-420	ASTM A276-304	ASTM A276-420
12	Gland Flange	ASTM A216-WCB	ASTM A217-WC6	ASTMA352-LCB
13	Eyebolt Pin	Carbon Steel	ASTM A276-420	Carbon Steel
14	Eyebolt	Carbon Steel	ASTMA193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	ASTMA194-2H	Carbon Steel
16	Grease Fitting	Cu alloy	Cu alloy	Cu alloy
17	Yokesleeve	Cu alloy	Cu alloy	Cu alloy
18	Yokesleeve Jam Nut	CS	CS	CS
19	Handwheel	Malleable Iron	Malleable Iron	Malleable Iron
20	Handwheel Nut	CS	CS	CS

Noted: The chart above only lists our some common composition of steel valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	40 1000	42 1050	48 1200	in mm
ANSI Class 150Lb																							
L (RF)	7.00 178	7.50 190	8.00 203	9.00 229	10.00 254	10.50 267	11.50 292	13.00 330	14.00 356	15.00 381	16.00 406	17.00 432	18.00 457	20.00 508	22.00 559	24.00 610	24.00 610	25.98 660	28.00 711	31.50 800	32.00 813	34.00 864	in mm
L1 (BW)	8.50 216	9.48 241	11.10 282	12.00 305	15.00 381	15.86 403	16.49 419	17.99 457	19.76 502	22.51 572	24.04 610	25.98 660	27.99 711	32.00 813	34.01 864	35.98 914	35.98 914	37.99 965	40.00 1016	—	—	—	in mm
L2 (RTJ)	7.50 191	8.00 203	8.50 216	9.50 242	10.51 267	11.00 280	12.00 305	13.50 343	14.50 369	15.50 394	16.50 419	17.50 445	18.50 470	20.50 521	—	—	—	—	—	—	—	—	in mm
H (Open)	15.25 386	17.00 434	18.88 480	23.00 584	20.47 520	30.50 765	37.62 956	45.50 1149	53.12 1350	59.38 1508	67.00 1703	74.50 1892	83.50 2119	98.25 2500	110.50 2806	116.50 2960	124.00 3150	129.00 3280	146.50 3720	130.00 3302	136.96 3479	161.70 3962	in mm
(d)	50	63	76	100	127	150	200	250	300	336	387	438	488	590	641	692	743	781	876	976	1020	1166	mm
D0	8 200	8 200	9 220	9 220	11 280	12 300	14 350	16 400	18 450	20 500	22 550	24 600	26 700	29 800	—	—	—	—	—	—	—	—	in mm
WT (kg)	18 15	25 18	32 26	50 41	56 47	77 69	121 108	178 156	265 248	363 330	463 424	621 587	792 752	1190 1144	1521 1570	1838 1900	2261 3310	2490 2540	3310 3380	4650 —	5100 —	6500 —	RF BW

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	40 1000	48 1200	in mm
ANSI Class 300Lb																					
L (RF/BW)	8.50 216	9.50 241	11.10 282	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	74.40 1890	90.00 2286	in mm
L2 (RTJ)	9.12 232	10.12 257	11.74 298	12.62 321	16.50 419	17.12 435	18.62 473	20.37 518	30.62 778	33.62 854	36.62 930	39.75 1010	45.88 1165	50.00 1270	54.00 1371	56.00 1422	61.12 1552	69.12 1755	—	—	in mm
H (Open)	16.12 410	17.88 453	20.00 509	24.00 612	31.75 805	59.38 1000	47.62 1210	55.75 1415	62.25 1580	67.88 1725	77.12 1960	86.38 2195	102.00 2590	117.00 2975	122.00 3100	126.00 3200	130.00 3300	152.00 3860	146.18 3713	177.20 4501	in mm
(d)	50	63	76	100	150	200	250	300	336	387	431	482	584	635	686	737	781	876	976	1166	mm
D0	8 200	9 220	10 250	11 280	14 350	16 400	18 450	20 500	24 600	24 600	—	—	—	—	—	—	—	—	—	—	in mm
WT (kg)	23 17	35 26	50 39	71 53	144 113	209 164	322 256	482 390	683 565	950 805	1145 965	1635 1410	2660 2305	3090 2540	3310 2725	3595 3055	3720 3360	3985 3630	8100 —	13050 —	RF/RTJ BW

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
ANSI Class 600Lb																			
L (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	65.00 1651	70.00 1778	82.00 2082	in mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	65.50 1664	70.62 1794	82.62 2098	in mm
H (Open)	16.50 418	18.75 476	20.38 518	25.50 646	33.00 840	40.38 1025	48.38 1230	57.00 1450	62.00 1575	70.62 1795	76.00 1930	87.00 2210	101.50 2580	105.00 2665	109.50 2780	114.00 2895	124.00 3150	140.00 3560	in mm
(d)	50	63	76	100	150	199	247	298	326	374	419	463	558	603	648	695	781	876	mm
D0	11 280	12 300	12 300	14 350	20 500	24 600	29 800	—	—	—	—	—	—	—	—	—	—	—	in mm
WT (kg)	36 29	52 42	67 53	112 83	170 125	393 310	610 472	890 730	1245 1055	1530 1240	1965 1625	2450 2030	2995 2590	3475 2855	3725 3065	4045 3440	4185 3780	4480 4085	RF/RTJ BW

Dimensions are for reference only

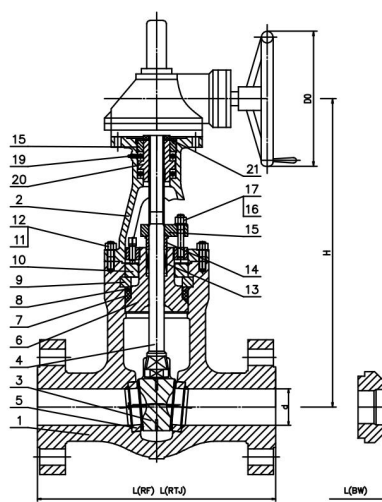
NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1039	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H (Open)	19.62 498	21.50 547	22.50 573	26.62 678	35.50 900	43.50 1103	53.00 1345	60.00 1525	74.88 1900	81.00 2055	87.00 2215	101.00 2565	104.00 2640	in mm
(d)	47	57	72	98	146	190	238	282	311	355	400	444	533	mm
D0	11 280	12 300	14 300	14 350	20 500	24 600	26 800	—	—	—	—	—	—	in mm
WT (kg)	74 54	131 105	101 78	172 135	335 260	640 515	1100 920	1600 1380	2250 2010	2850 2565	3060 2485	3935 3250	4900 4065	RF/RTJ BW

Applicable Standards

- Steel Gate Valves, API 600/API 6D
- Steel Valves, ASME B16.34
- Face to Face, ASME B16.10
- End Flanges, ASME B 16.5
- Buttwelding Ends, ASME B 16.25
- Inspection and Test, API 598/API 6D

Design Description

- PS B, pressure seal bonnet
- Flexible wedge
- Renewable seat rings
- Rising stem and non-rising handwheel
- Flanged or buttwelding ends
- Available with BG operator



Materials of parts

No.	Part Name	Material			
1	Body	ASTM A216-WCB	ASTM A217-WC6	ASTM A351-CF8M	
2	Yoke	ASTM A216-WCB	ASTM A217-WC6	ASTM A351-CF8M	
3	Wedge	ASTM A216-WCB+HF	ASTM A217-WC6+HF	ASTM A351-CF8M+HF	
4	Stem	ASTM A182-F6a	ASTM CR-MO-V	ASTM A182-F316	
5	Seat Ring	ASTM A105+HF	ASTM A182-F11+HF	ASTM A240-316+HF	
6	Bonnet	ASTM A105	ASTM A182-F11	ASTM A240-316	
7	Bonnet Gasket ¹⁾	SS304+Graphite	SS304+Graphite	SS316+Graphite	
8	Adapter Ring	Carbon Steel	ASTM A276-420	ASTM A276-316	
9	Retainer	Carbon Steel	ASTM A276-420	ASTM A276-316	
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel	
11	Bonnet Stud	ASTM A193-B7	ASTM A193-B16	ASTM A193-B8M	
12	Bonnet Stud Nut	ASTM A194-2H	ASTM A194-7	ASTM A194-8M	
13	Packing	Graphite	Graphite	Graphite	
14	Gland	ASTM A276-420	ASTM A276-304	ASTM A276-316	
15	Gland Flange	ASTM A216-WCB	ASTM A217-WC6	ASTM A351-CF8M	
16	Eyebolt Pin	Carbon Steel	ASTM A276-420	ASTM A276-316	
17	Eyebolt	Carbon Steel	ASTM A193-B7	ASTM A193-B8	
18	Eyebolt Nut	Carbon Steel	ASTM A194-2H	ASTM A194-8	
19	Grease Fitting	Cu alloy	Cu alloy	Cu alloy	
20	Yokesleeve	Cu alloy	Cu alloy	Cu alloy	
21	Yokesleeve Jam Nut	CS	CS	CS	
22	Handwheel	Malleable Iron	Malleable Iron	Malleable Iron	
23	Handwheel Nut	CS	CS	CS	

Noted: The chart above only lists our some common composition of steel valve parts. We may provide other different parts material composition according to the customer's request or the actual valve working condition.

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L (RF)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L (BW)	8.50 216	10.00 254	12.00 305	14.00 356	20.00 508	26.00 660	31.00 787	36.00 914	39.00 991	43.00 1092	48.00 1219	52.00 1321	61.00 1549	in mm
L (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1039	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H (Open)	17.62 448	17.62 448	19.5 495	22.88 580	32.62 830	67.62 955	45.5 1155	53.12 1350	59 1500	70.5 1790	93.74 2381	96.49 2451	116.96 2971	in mm
D0	10 250	12 310	12 310	12 310	18 460	18 460	21 530	21 530	24 600	24 600	24 600	24 600	24 600	in mm
WT (kg)	39 69	39 69	48 72	69 110	158 253	289 430	482 710	710 1025	998 1452	1390 1960	2340 2750	2800 3400	3420 4400	BW RF/RTJ

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 1500Lb														
L BW(P SB)	8.50 216	10.00 254	12.00 305	16.00 406	22.00 559	28.00 711	34.00 864	39.00 991	42.00 1067	47.00 1194	53.00 1346	58.00 1473	76.50 1943	in mm
L RF/BW(BB)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	60.50 1537	65.50 1664	76.50 1943	in mm
L (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.13 842	39.38 1000	45.12 1146	50.25 1276	55.38 1407	61.38 1559	66.38 1686	77.62 1972	in mm
H (Open)	17.62 448	17.62 448	21.62 550	25.25 640	33.5 850	38.62 980	46.5 1180	62.25 1580	70.5 1790	78 1980	86.96 2209	93.97 2387	110.00 2794	in mm
D0	10 250	12 310	12 310	12 310	18 460	21 530	21 530	24 600	24 600	24 600	24 600	24 600	31 800	in mm
WT (kg)	39 69	45 80	55 95	77 123	175 283	323 481	540 795	795 1148	1115 1626	1556 2195	4000 5225	4800 6310	7500 9050	BW

Dimensions are for reference only

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 2500Lb									
L BW(P SB)	11.00 279	13.00 330	14.50 368	18.00 457	24.00 610	30.00 762	36.00 914	41.00 1041	in mm
L RF/BW(BB)	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	in mm
L (RTJ)	17.88 454	20.25 514	23.00 584	26.88 683	36.50 927	40.87 1038	50.88 1292	56.88 1444	in mm
H (Open)	22.5 570	22.5 570	25.62 650	30 760	36.62 930	41.38 1050	44.88 1140	60.25 1530	in mm
D0	12 310	12 310	12 310	12 310	18 460	21 530	24 600	24 600	in mm
WT (kg)	110 165	110 195	150 235	175 316	380 635	575 910	980 1780	1570 2680	BW

Applicable Standards

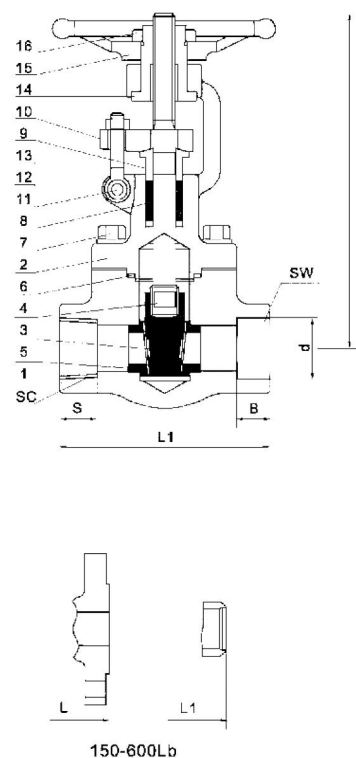
- Steel gate valves, API 602
- Steel valves, ASME B16.34
- End to end, manufacturer standard
- End flanges, ASME B16.5
- Butt welding ends, ASME B16.25
- Socket-welding ends, ASME B16.11
- Thread ends, ASME B 1.20.1
- Inspection and test, API 598

Design Description

- Outside screw and yoke(OS&Y)
- Bolted bonnet
- Choice of welding bonnet
- Renewable seat rings
- Yoke integral with bonnet
- Rising stem and non-rising handwheel
- SW, socket-welding ends
- NPT, thread ends
- BW, butt welding ends
- Flanged ends

Materials of parts

No.	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 ¹ / ₄ Cr-1/2Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Wedge	A182-F6a	A182-F316	A182-F6a+HF
4	Stem	A276-410	A276-316	A276-410
5	Seat Ring	A276-410	A182-F316	A276-410+HF
6	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16
8	Packing	Graphite		
9	Gland	A276-410	A276-316	A276-410
10	Gland Flange	A105	A182-F316	A182-F11
11	Eyebolt Pin	A276-410	A276-316	A276-410
12	Eyebolt	A193-B7	A193-B8M	A193-B7
13	Eyebolt Nut	A194-2H	A194-8M	A194-2H
14	Yoke sleeve	A276-410		
15	Handwheel	Malleable Iron		
16	Handwheel Nut	Carbon Steel		



Dimensions are for reference only

NPS DN	Unit	L1 SW/BW/NPT 150Lb-800Lb	L (Flanged Ends)			d	SW		NPT		H (Open)	D0	WT ²⁾ (kg)
			150Lb	300Lb	600Lb		D	B	NPT	S			
3/8 10	in mm	3.12 79	4.00 102	5.50 140	6.50 165	0.394 10	0.693 17.6	0.378 9.6	3/8	0.540 13.6	6.00 151	4.00 100	4.5/4
1/2 15	in mm	3.12 79	4.25 108	5.50 140	6.50 165	0.394 10	0.858 21.8	0.378 9.6	1/2	0.535 13.6	6.00 151	4.00 100	5.1/4
3/4 20	in mm	2.63 92	4.62 117	6.00 152	7.50 190	0.531 13.5	1.067 27.1	0.500 12.7	3/4	0.547 13.9	6.25 158	4.00 100	8.2/4.3
1 25	in mm	4.38 111	5.00 127	6.50 165	8.50 216	0.709 18	1.331 33.8	0.500 12.7	1	0.681 17.3	7.25 185	5.00 125	10.5/6.6
1 1/4 32	in mm	4.75 120	5.50 140	7.00 178	9.00 229	0.945 24	1.677 42.6	0.500 12.7	1 1/4	0.709 18	9.38 239	6.25 160	12.4/9.5
1 1/2 40	in mm	4.75 120	6.50 165	7.50 190	9.50 241	1.181 30	1.917 48.7	0.500 12.7	1 1/2	0.724 18.4	9.50 243	6.25 160	20.1/11
2 50	in mm	5.55 140	7.00 178	8.50 216	11.50 292	1.437 36.5	2.406 61.1	0.626 15.9	2	0.756 19.2	11.00 279	7.00 180	28/14.5

Notes: 1) BW, SW or NPT.

2) 900Lb~2500Lb can produce.