

Cast Steel Gate Valve



Contents

Model Code System Instructions(1)

Design Features&Specifications for API Cast Steel Gate Valve (2-3)

Bolted Bonnet API Cast Steel Gate Valve(4-8)

Pressure Seal API Cast Steel Gate Valve(9-12)

Model Code System Instructions

□	□	□	□	□	□	□
Code of valve type	Code of pressure	Code of structure	Code of driving manner	Code of connect tube wall thickness	Code of connection end	Code of body material

- Valve type code: D - Gate valve
- Pressure code: 2-CL150 3-CL300 5-CL600 7-CL900 8-CL1500 9-CL2500
- Structure code: 6-BB-BG-OS&Y(bolted bonnet-bolted gland-outside yoke)
 - 6R-BBR-BG-OS&Y(bolted bonnet_(ring joint)-bolted gland-outside yoke)
 - 8-PS-BG-OS&Y(pressure seal bonnet-bolted gland-outside yoke)
- Driving manner code: A-Electric B-Pneumatic C-Bevel gear transmission
- Connecting pipe wall thickness:

Code	Wall Thickness	Code	Wall Thickness	Code	Wall Thickness
S1	SCH10	S4	SCH40	S7	SCH120
S2	SCH20	S5	SCH60	S8	SCH140
S3	SCH30	S6	SCH80	S9	SCH160

- Connection code: R-RF (raised face flange) J-RJ (ring joint flange)
 - F-FM (male-female face flange) W-BW (butt weld)
- Body material code:
 - 1) Cast carbon steel: CC10—ASTM A216 WCB CF11—ASTM A352 LCB
 - 2) Cast alloy steel: CA20—ASTM A217 WC1 CA21—ASTM A217 WC6 CA22—ASTM A217 WC9
CA23—ASTM A217 C5 CA24—ASTM A217 C12
 - 3) Cast stainless steel: CS30—ASTM A351 CF8 CS31—ASTM A351 CF8M CS32—ASTM A351 CF8C
CS33—ASTM A351 CF3 CS34—ASTM A351 CF3M

Flange&Butt Weld API Cast Steel Gate Valve

Products Design Features

API cast steel gate valves are usually applied to cut or connect pipeline medium under pressure CL150-2500 and w temperature $\leq 600^{\circ}\text{C}$ working conditions. The applicable fields include oil industry, chemical industry, fossile-fired power plants etc.

1. The design is in accordance with API6D, featuring rational structure, reliable sealing,excellent performance and better appearance;
2. Co hard alloy welded sealing surface (for valves of pressure $\geq \text{CL}600$) is resistant in wearing, erosion and abrasion, hence has longer service life;
3. Nitrogenized stem surface is resistant in erosion and abrasion;
4. The centralvalvity with pressure $\geq \text{CL}900$ adopts self-tightening seal structure in which sealing ability rises with internal pressure to ensure sealing reliability;
5. Back seal is designed with the valve and can ensure good seal performance;
6. Spare parts material, flange, welding end sizes are optional per working conditions and customer's requirement ;

Products Specifications

Model	Pressure (CL)	Driving manner&Structure	Connection end	Nominal size
Z26RFS	150	Manual&bolted bonnet	Flange	2" ~ 36"
Z36RFS	300			2" ~ 24"
Z56RFS	600			2" ~ 24"
Z76JFS	900			2" ~ 12"
Z26CRFS	150	Electric,Gear&bolted bonnet	Flange	14" ~ 48"
Z36CRFS	300			14" ~ 48"
Z56A(C)RFS	600			6" ~ 48"
Z76A(C)RFS	900			3" ~ 16"
Z86A(C)RFS	1500			3" ~ 16"
Z78AJPS	900	Manual&pressure seal bonnet	Flange	2" ~ 6"
Z88AJPS	1500			2" ~ 4"
Z98AJPS	2500			2" ~ 4"
Z78S7(1)WPS	900	Manual&pressure seal bonnet	Butt weld	2" ~ 6"
Z88S9(7)WPS	1500			2" ~ 4"
Z98S9WPS	2500			2" ~ 4"
Z78A(C)JPS	900	Electric,Gear&pressure seal bonnet	Flange	3" ~ 20"
Z88A(C)JPS	1500			3" ~ 20"
Z98A(C)JPS	2500			6" ~ 8"
Z78A(C)S(7)WPS	900	Electric,Gear&pressure seal bonnet	Butt weld	3" ~ 20"
Z88A(C)S9(7)WPS	1500			3" ~ 20"
Z98A(C)S9WPS	2500			6" ~ 8"

Notes: Products can be provided at customers' request.

Products Performance Specifications

Pressure (CL)	Shell test pressure (Mpa)	Seal test pressure (Mpa)	Back test pressure(Mpa)	Air test pressure(Mpa)	Temp.	Medium
150	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas
300	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas
600	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas
900	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas
1500	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas
2500	1.5×PN	1.1×PN	1.1×PN	0.4—0.7Mpa	≤600℃	Water,oil,gas

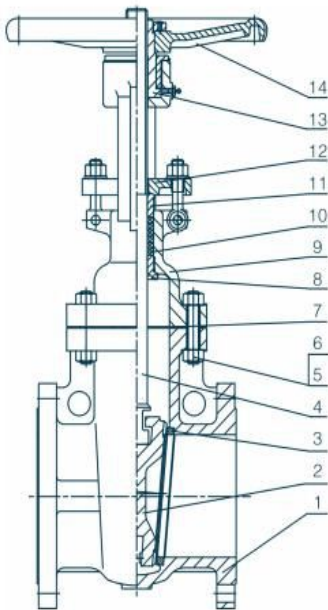
Note: PN is the requested pressure for the body material under 38℃

Bolted Bonnet API Cast Steel Gate Valve

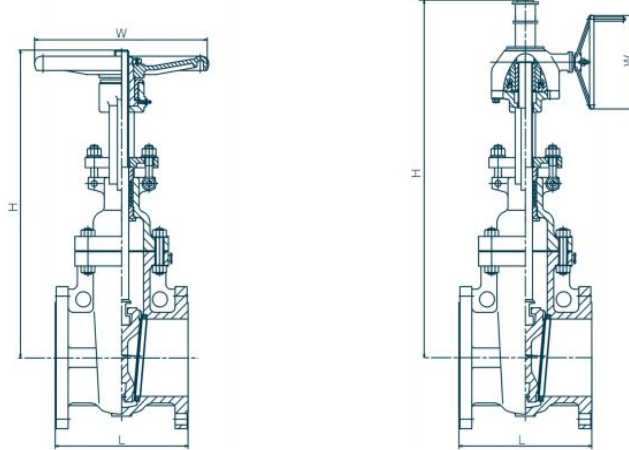


Technical Specification	
Structure formation	BB-BG-OS&Y
Driving manner	Manual, gear,electric
Design standard	API 600
Face to face	ASME B16.10,MSS-SP-44
Flange connection	ASME B16.5,ASME B16.47
Test&inspection	API 600,API598,ISO5208

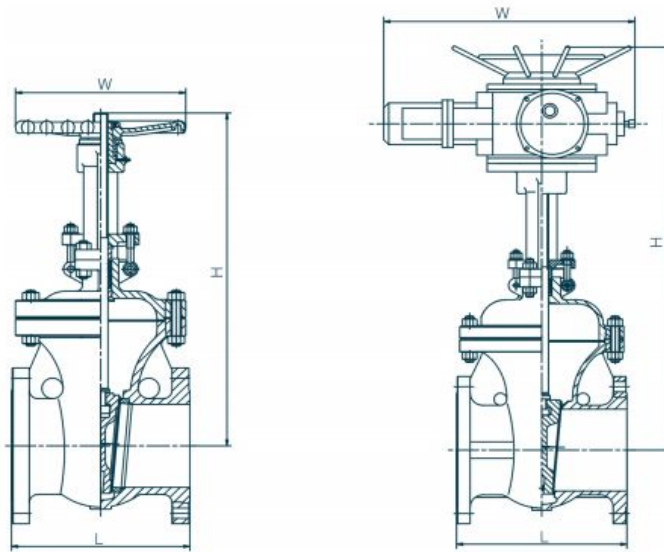
Note: The size of flange connection can be designed per customer's requirement.



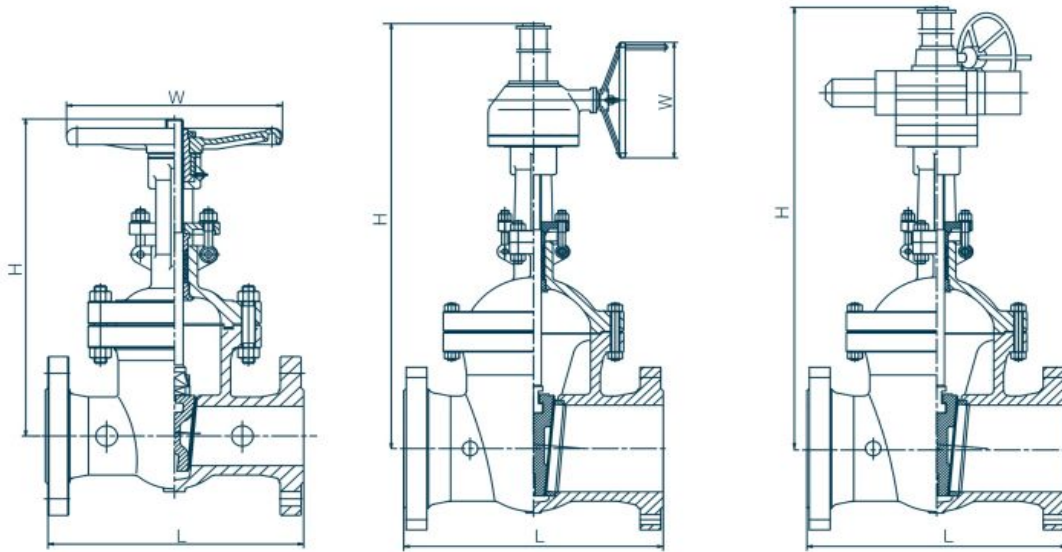
Major Parts Material		
No.	Name	Material
1	Body	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
2	Wedge	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
3	Seat	ASTM A105,ASTM A350 LF2 ASTM A182 F11,F22,F5,F9
4	Stem	ASTM A182 F6a,ASTM A182 F22 ASTM A182 F304,F316,F321,F304L,F316L
5	Stud	ASTM A193 B7,A320 B8,A193 B8M,A193 4
6	Nut	ASTM A194 2H,A194 8,A194 8M,A193 4
7	Gasket	Graphite + stainless steel
8	Back seal seat	ASTM A182 F6a,ASTM A182 F22 ASTM A182 F304,F316,F321,F304L,F316L
9	Bonnet	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
10	Packing	Flexible graphite
11	Gland	ASTM A276 410 ASTM A276 304,316,321,304L,316L
12	Gland flange	ASTM A216 WCB ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
13	Stem nut	ASTM A439 D2C
14	Hand wheel	ASTM A47 32510



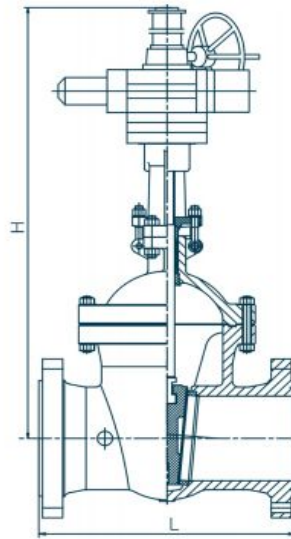
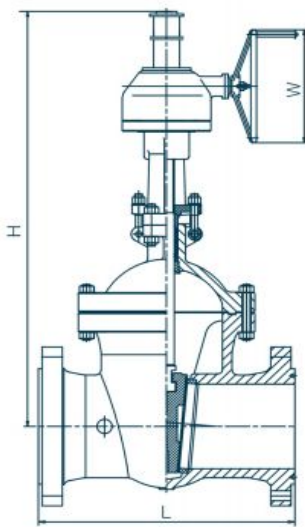
Size&Weight										CL150
Model					Z26(C)R—CC10,CA20,CS30					
Hand operated					Gear operated					
Size	L	H	W	Weight		L	H	W	Gear device	Weight
2	178	360	200	22		-	-	-	-	-
2 1/2	190	410	200	31		-	-	-	-	-
3	203	440	250	45		-	-	-	-	-
4	229	500	250	61		-	-	-	-	-
5	254	580	300	89		-	-	-	-	-
6	267	660	300	121		-	-	-	-	-
8	292	775	350	134		-	-	-	-	-
10	330	925	450	280		-	-	-	-	-
12	356	1100	500	321		-	-	-	-	-
14	381	1295	600	450		381	1651	310	BA-0	455
16	406	1435	600	605		406	1879	460	BA-1	645
18	432	1626	650	810		432	2184	460	BA-1	850
20	457	1829	650	880		457	2431	610	BA-2	950
24	508	2175	700	1490		508	2873	610	BA-2	1460
26	559	2235	750	1750		559	3086	610	BA-2	1830
28	610	2310	750	2010		610	3327	610	BA-2	2080
30	610	2695	800	2268		610	3606	610	BAA-3	2565
32	-	-	-	-		660	3708	610	BAA-3	3100
36	-	-	-	-		711	3924	610	BAA-3	3950
40	-	-	-	-		762	4318	610	BAA-3	4650
42	-	-	-	-		813	4546	610	BAA-3	5100
48	-	-	-	-		864	5181	610	BAA-3	6500
54	-	-	-	-		1016	5501	610	BAA-3	7900
60	-	-	-	-		1067	6066	610	BAA-3	9300



Size&Weight										CL300
Model					Z36(C)R—CC10,CA20,CS30					
Hand operated					Gear operated					
Size	L	H	W	Weight		L	H	W	Gear device	Weight
2	216	380	200	24		-	-	-	-	-
2 1/2	241	410	250	34		-	-	-	-	-
3	282	450	250	49		-	-	-	-	-
4	305	530	300	70		-	-	-	-	-
5	381	700	300	115		-	-	-	-	-
6	403	730	350	133		-	-	-	-	-
8	419	820	450	231		-	-	-	-	-
10	457	1010	500	329		-	-	-	-	-
12	502	1130	560	530		-	-	-	-	-
14	762	1489	600	730		762	1790	460	BA-1	850
16	838	1580	650	930		838	1968	460	BA-1	1105
18	914	2017	700	1250		914	2273	610	BA-2	1300
20	991	2228	700	1520		991	2482	610	BA-2	1625
24	1143	2650	750	2340		1143	3054	610	BA-2	2800
26	-	-	-	-		1245	3219	610	BA-2	3100
28	-	-	-	-		1346	3378	610	BAA-3	3600
30	-	-	-	-		1397	3530	610	BAA-3	4200
32	-	-	-	-		1524	3695	610	BAA-3	4850
36	-	-	-	-		1727	3987	610	BAA-3	5900
40	-	-	-	-		1955	4445	610	BAA-3	8100
42	-	-	-	-		2032	4699	610	BAA-3	9750
48	-	-	-	-		2966	5435	610	BAA-3	13050



Size&Weight													CL600	
Model													Z56(A,C)R—CC10,CA20,CS30	
Hand operate					Gear operated					Electric operated				
Size	L	H	W	Weight	L	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight	
2	292	425	250	42	-	-	-	-	-	292	550	200	112	
2 1/2	330	485	300	62	-	-	-	-	-	330	600	200	135	
3	356	510	300	85	-	-	-	-	-	356	660	300	294	
4	432	610	400	120	-	-	-	-	-	432	780	300	223	
5	508	700	450	176	-	-	-	-	-	508	850	400	296	
6	559	820	500	230	559	840	310	BA-0	255	559	990	600	385	
8	660	920	600	390	660	930	310	BA-0	418	660	1130	900	541	
10	787	1080	600	620	787	1105	460	BA-1	674	787	1360	1200	816	
12	838	1220	650	880	838	1220	460	BA-1	935	838	1520	1800	1090	
14	889	1473	700	1350	889	1380	610	BA-2	1440	889	1730	2500	1560	
16	991	1651	800	1700	991	1435	610	BA-2	1790	991	1840	3500	1950	
18	1092	1727	800	2140	1092	1915	610	BA-2	2230	1092	2370	5000	2390	
20	1194	2019	800	2450	1194	2095	610	BAA-3	2540	1194	2600	8000	2580	
24	-	-	-	-	1397	2155	610	BAA-3	4550	1397	3160	12000	4580	
26	-	-	-	-	1448	2271	610	BAA-3	5260	-	-	-	-	
28	-	-	-	-	1549	2436	610	BAA-3	5960	-	-	-	-	
30	-	-	-	-	1651	2577	610	BAA-3	6700	-	-	-	-	
32	-	-	-	-	1778	2781	610	BAA-3	8312	-	-	-	-	
36	-	-	-	-	2083	3113	610	BAA-3	10125	-	-	-	-	
40	-	-	-	-	2149	3241	610	BAA-3	14300	-	-	-	-	
42	-	-	-	-	2260	3572	610	BAA-3	16460	-	-	-	-	
48	-	-	-	-	2667	4261	610	BAA-3	22900	-	-	-	-	



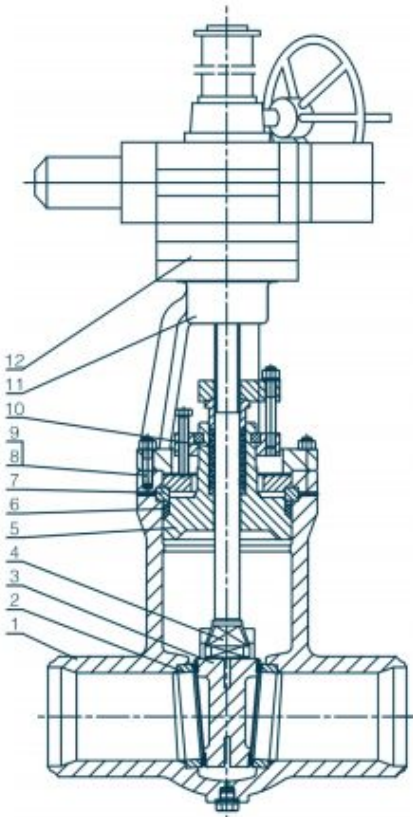
Size&Weight													CL900	
Model													Z76(A,C)J—CC10,CA20,CS30	
Hand operated					Gear operated					Electric operated				
Size	L	H	W	weight	L	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight	
2	368	540	300	65	-	-	-	-	-	-	-	-	-	
2 1/2	419	555	350	83	-	-	-	-	-	-	-	-	-	
3	381	625	350	115	-	-	-	-	-	384	910	300	300	
4	457	730	400	195	-	-	-	-	-	460	1020	450	325	
6	610	860	600	410	610	895	460	BA-1	440	613	1060	900	570	
8	737	930	600	720	737	1070	460	BA-1	720	740	1150	1200	885	
10	838	1090	650	1090	838	1290	610	BA-2	1140	841	1320	1800	1300	
12	965	1245	700	1625	965	1540	610	BA-2	1720	968	1580	2500	1870	
14	-	-	-	-	1029	1620	610	BAA-3	2400	1038	1660	3500	2370	
16	-	-	-	-	1130	1730	610	BAA-3	3040	1140	1780	5000	3010	

Size&Weight											CL1500	
Model											Z86A(C)J—CC10,CA20,CS30	
Gear operated						Electric operated						
Size	L	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight			
3				-	-	473	960	450	335			
4				-	-	549	1040	450	445			
6	705	1250	460	BA-1	640	711	1250	1800	785			
8	832	1600	460	BA-1	990	841	1600	1800	1140			
10						1000	1860	1800	1790			
12						1146	2150	2500	2810			
14						1276	2380	8000	4190			
16						1407	2580	12000	4970			

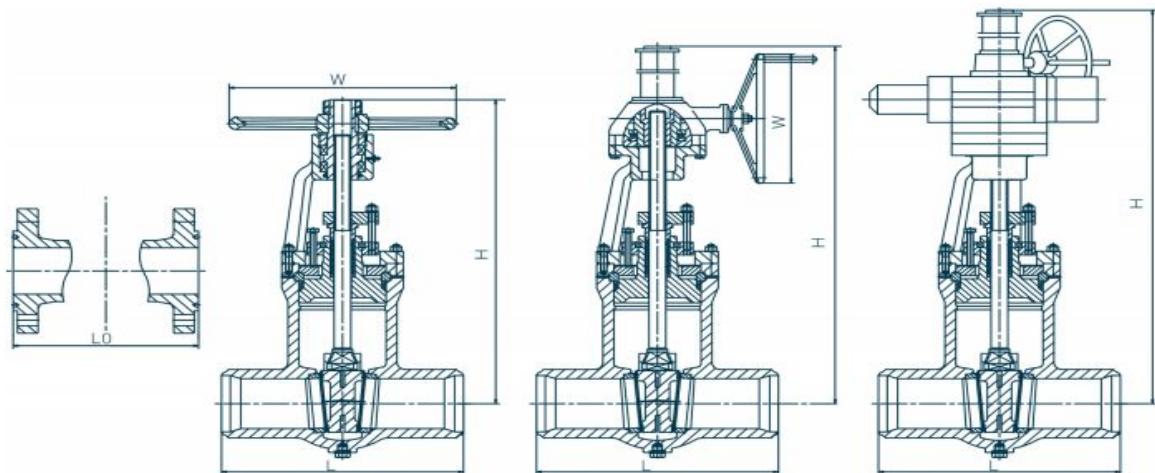
Pressure Seal API Cast Steel Gate Valve



Technical Specification	
Structure formation	PS-BG-OS&Y
Driving manner	Manual, gear,electric
Design standard	API 600
Face to face	ASME B16.10
Flange connection	ASME B16.5,MSS-SP-44
Butt weld	ASME B16.25
Test&inspection	API 600,API598,ISO5208



Major Parts Material		
No.	Name	Material
1	Body	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
2	Seat	ASTM A105,ASTM A350 LF2 ASTM A182 F11,F22,F5,F9
3	Wedge	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
4	Stem	ASTM A182 F6a,ASTM A182 F22 ASTM A182 F304,F316,F321,F304L,F316L
5	Bonnet	ASTM A216 WCB,ASTM A352 LCB ASTM A217 WC1,WC6,WC9,C5 ASTM A351 CF8,CF8M,CF8C,CF3,CF3M
6	Seal ring	Flexible graphite
7	Quarter ring	ASTM A182-F6a,ASTM A182-F22
8	Stud	ASTM A193 B7,A320 B8,A193 B8M
9	Nut	ASTM A194 2H,A194 8,A194 8M
10	Packing	Flexible graphite
11	Yoke	ASTM A216 WCB ASTM A351-CF8,CF8M,CF8C,CF3,CF3M
12	Driving device	Electric driving

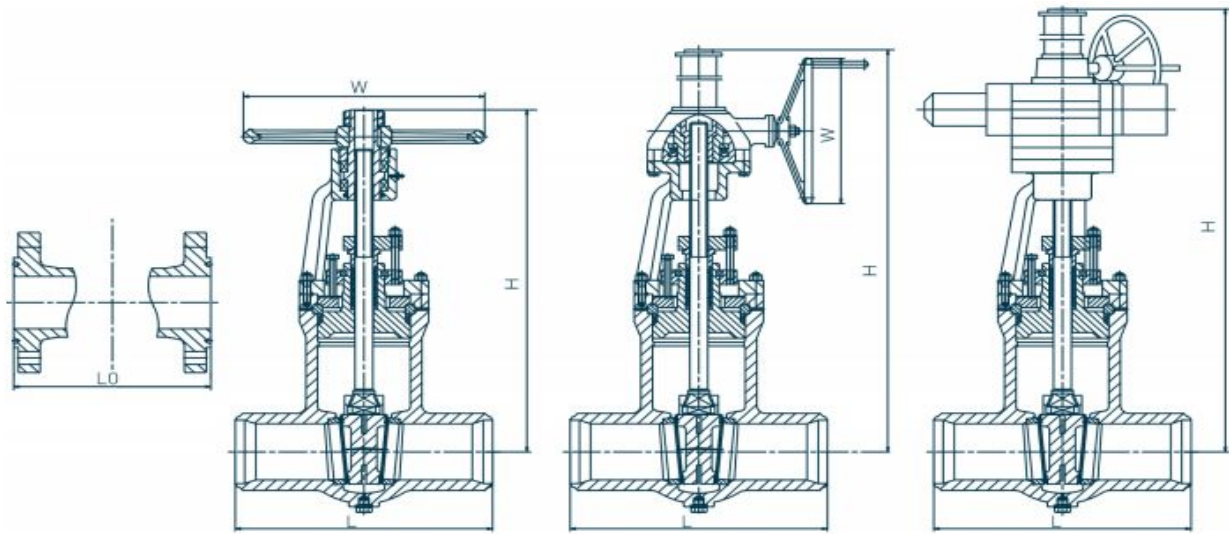


Size&Weight													CL900	
Model													Z78(A,C)J—CC10,CA20,CS30	
Flanged Connection(RTJ)														
Hand operated					Gear operated					Electric operated				
Size	L0	H	W	Weight	L0	H	W	Gear	Weight	L	H	Torque(N.m)	Weight	
2	371	550	250	88	-	-	-	-	-	-	-	-	-	
3	384	605	350	105	-	-	-	-	-	384	975	300	142	
4	460	750	400	140	-	-	-	-	-	460	1200	450	204	
6	613	840	500	300	613	895	460	BA-1	350	613	1280	900	356	
8	-	-	-	-	740	1370	460	BA-1	530	740	1372	1200	530	
10	-	-	-	-	841	1495	610	BA-2	950	841	1495	1800	950	
12	-	-	-	-	968	1830	610	BA-2	1400	968	1830	2500	1400	
14	-	-	-	-	1038	2145	610	BA-2	2010	1038	2144	3500	1800	
16	-	-	-	-	1140	2405	610	BAA-2	2700	1140	2406	5000	3000	
20	-	-	-	-	1334	2750	610	BAA-2	4400	1334	2800	6500	3800	

Size&Weight													CL900	
Model													Z78(A,C)S7(1)W—CC10,CA20,CS30	
Butt Weld (BW)														
Hand operated					Gear operated					Electric operated				
Size	L0	H	W	weight	L0	H	W	Gear	Weight	L	H	Torque(N.m)	Weight	
2	216	550	250	68	-	-	-	-	-	-	-	-	-	
3	305	605	350	85	-	-	-	-	-	305	975	300	135	
4	356	750	400	102	-	-	-	-	-	356	1200	450	202	
6	508	840	500	200	508	895	460	BA-1	280	508	1280	900	293	
8	-	-	-	-	660	1370	460	BA-1	460	660	1372	1200	472	
10	-	-	-	-	787	1495	610	BA-2	820	787	1495	1800	844	
12	-	-	-	-	914	1830	610	BA-2	1150	914	1830	2500	1184	
14	-	-	-	-	991	2145	610	BA-2	1500	991	2144	3500	1579	
16	-	-	-	-	1092	2405	610	BAA-2	2100	1092	2406	5000	2136	
20	-	-	-	-	1320	2750	610	BAA-2	3400	1320	2800	6500	3485	

Connecting pipe wall thickness: 2"~6"SCH120, 8"~20"SCH100

Note: The size of pipe can be selected per user's requirement.

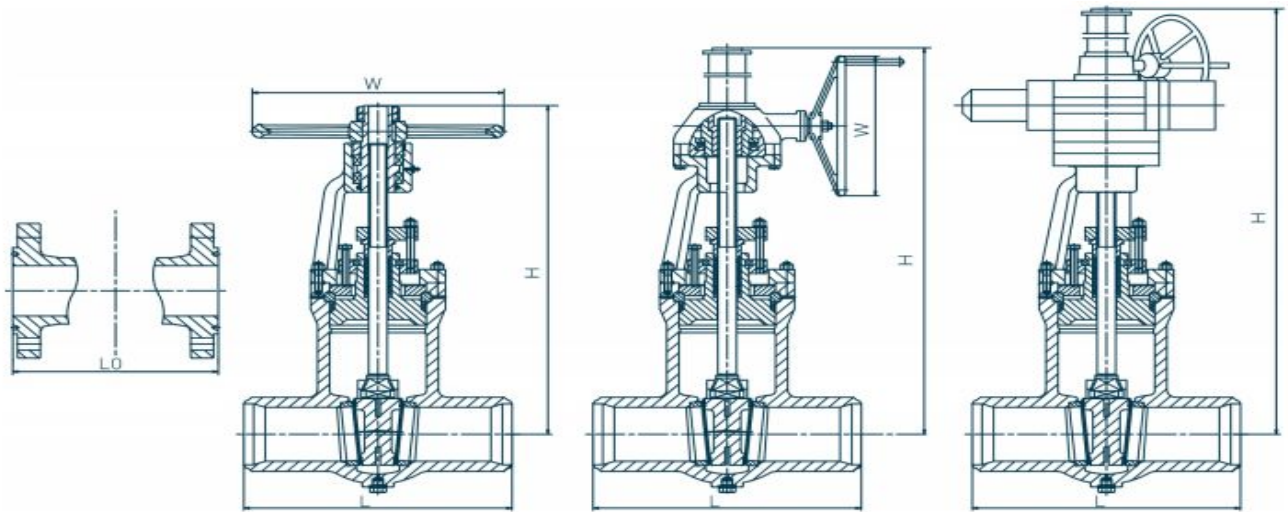


Size&Weight													CL1500	
Model											Z88(A,C) J—CC10,CA20,CS30			
Flanged Connection(RTJ)														
Hand operated				Gear operated					Electric operated					
Size	L0	H	W	weight	L0	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight	
2	371	590	300	100	-	-	-	-	-	-	-	-	-	
3	473	711	350	130	-	-	-	-	-	473	736	450	210	
4	549	774	450	200	-	-	-	-	-	549	831	450	290	
6	-	-	-	-	711	1170	610	BA-2	544	711	1054	1800	560	
8	-	-	-	-	841	1370	610	BA-2	825	841	1422	1800	980	
10	-	-	-	-	1000	1655	610	BA-2	1375	1000	1714	1800	1470	
12	-	-	-	-	1146	1810	610	BA-2	2085	1146	1905	2500	2220	
14	-	-	-	-	1276	1981	610	BAA-2	2940	1276	1990	8000	2970	
16	-	-	-	-	1407	2108	610	BAA-2	3790	1407	2210	12000	3900	
20	-	-	-	-	1686	2387	610	BAA-2	5130	1686	2432	20000	5250	

Size&Weight													CL1500	
Model											Z88(A,C)S7(1)W—CC10,CA20,CS30			
Butt Weld (BW)														
Hand operated				Gear operated					Electric operated					
Size	L0	H	W	Weight	L0	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight	
2	216	550	250	89	-	-	-	-	-	-	-	-	-	
3	305	620	350	110	-	-	-	-	-	305	736	450	185	
4	406	750	400	180	-	-	-	-	-	406	831	450	268	
6	-	-	-	-	559	1170	610	BA-2	370	559	1054	1800	472	
8	-	-	-	-	711	1370	610	BA-2	610	711	1422	1800	754	
10	-	-	-	-	864	1655	610	BA-2	1300	864	1714	1800	1411	
12	-	-	-	-	991	1810	610	BA-2	2000	991	1905	2500	2133	
14	-	-	-	-	1067	1981	610	BAA-2	2900	1067	1990	8000	2912	
16	-	-	-	-	1194	2108	610	BAA-2	3490	1194	2210	12000	3516	
20	-	-	-	-	1473	2387	610	BAA-2	4800	1473	2432	20000	4922	

Connecting pipe wall thickness: 2"~6"SCH120, 8"~20"SCH100

Note: The size of pipe can be selected per user's requirement.



Size&Weight													CL2500	
Model										Z98(A,C)J—CC10,CA20,CS30				
Flanged Connection(RTJ)														
Hand operated					Gear operated					Electric operated				
Size	L0	H	W	Weight	L0	H	W	Gear device	Weight	L	H	Torque(N.m)	Weight	
2	454	570	450	185	-	-	-	-	-	-	-	-	-	
3	584	596	500	215	-	-	-	-	-	584	654	500	315	
4	683	698	600	335	-	-	-	-	-	683	781	500	445	
6	-	-	-	-	927	876	610	BAA-2	890	927	977	1800	970	
8	-	-	-	-	1038	1493	610	BAA-2	1420	1038	1523	1800	1520	
10	-	-	-	-	1292	1600	610	BAA-2	2560	1292	1645	1800	2630	
12	-	-	-	-	1455	1752	610	BAA-2	3740	1445	1802	2700	3823	
Size&Weight													CL2500	
Model										Z98(A,C)S7(1)W—CC10,CA20,CS30				
Butt Weld (BW)														
Hand operated					Gear operated					Electric operated				
Size	L0	H	W	Weight	L0	H	W	Gear device	Weight	L	H	Torque (N.m)	Weight	
2	279	502	450	110	-	-	-	-	-	-	-	-	-	
3	368	596	500	135	368	654	610	BA-2	203	368	683	500	199	
4	457	698	600	215	457	781	610	BA-2	305	457	806	500	294	
6	-	-	-	-	610	977	610	BAA-2	650	610	1024	1800	664	
8	-	-	-	-	762	1493	610	BAA-2	900	762	1508	1800	924	
10	-	-	-	-	914	1600	610	BAA-2	1600	914	1620	1800	1674	
12	-	-	-	-	1041	1752	610	BAA-2	2300	1041	1790	2700	2312	
14	-	-	-	-	1118	1879	610	BAA-2	3200	1118	1893	8000	3245	
16	-	-	-	-	1245	1981	610	BAA-2	4100	1245	1997	12000	4112	
20	-	-	-	-	1397	2111	10	BAA-2	6800	1397	2355	20000	6867	
Connecting pipe wall thickness: SCH160														
Note: The size of pipe can be selected per user's requirement.														