

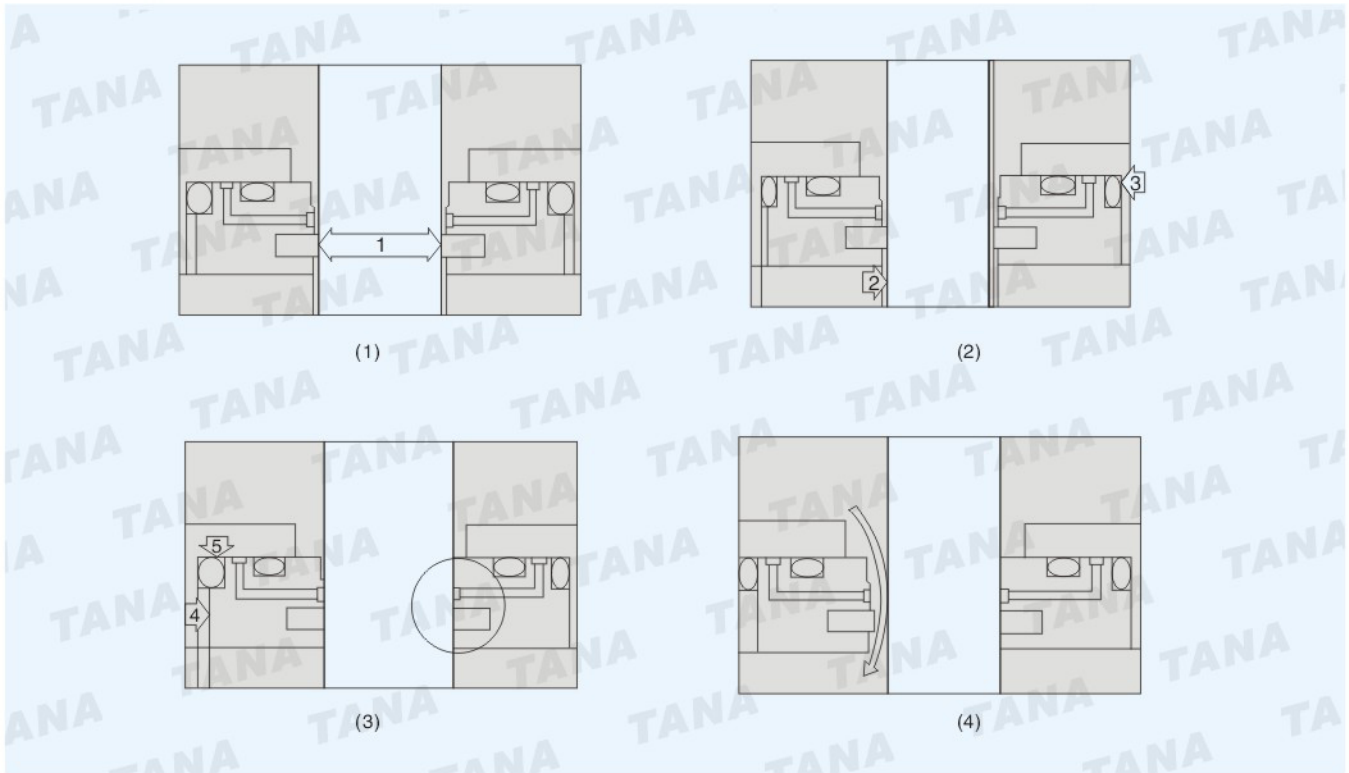
■ **Products design features**

- 1)、The valve body adopts molten and welded structures
- 2)、PTFE is inlaid on the seal face of the seat,and it has double seal of PTFE to metal and metal to metal. At the same time, PTFE seal face has the function of cleaning the dirt of disc.
- 3)、The seat adopts O ring and the floating seat structure with pre-tightening force,so the inlet and outlet of valve are double seal And the torque of the starting and closing force is only half of one of the common valve, so it can easily turn on or off the valve.
- 4)、Injecting seal grease structure is set outside of the valve with metal to metal seal, and the seal grease enter the seal face by injecting grease and seat. that has urgent seal effect. So the valve can reach zero leakage.
- 5)、The disc of the valve with diversion hole is always inosculating with the seal of the seat whenever it is full open or full close And that can make the seal face get protection. So the seal face is not directly washed out by the medium and prolongs its life.
- 6)、When the valve with diversion hole is fully open, the channels is smooth like a beeline. The coefficient of flew resistance is very small and there is no loss of pressure, so it can use hair bulb to clean pipeline.
- 7)、When the valve is closed it can automatically release high pressure of the inner cavity of the body to ensure the safety(See working principle drawing.)
- 8)、The valve adopts full closed structure, so the defending performance is very good and it is suitable for all day's demands.
- 9)、The observing window or open indicator or pointer is set on the valve so it can show the opening or closing of the valve.
- 10)、The seal of the stem adopts the packing structure with self-seal sbility,so it doesn't need usual adjusting and it is very portable when closing or opening. Also the seal is very reliable, and packing culvert has injecting seal grease structure, it has secondary and urgent seal function. So the seal performance is very reliable and really reach zero leakage. And that solves the disadvantage(easyleakage)of the packing of common valve.
- 11)、Outside face of direct burial valve adopts epoxy coal tar as anticorrosive treatment, so its longevity is same as the pipeline.

■ **Products performance specification**

Pressure(LB)		Test pressure			Applicable temperature ℃	Applicable medium	
		Shell test	High-Pressure seal test	Low-Pressure seal test		Ordinary type	Antisulphur type
Class (Lb)	150	3.0	2.2	0.6	-29-121℃	Petroleum Natural gas Water	Natural gas and Petroleum with H2S、 and Co2
	300	7.5	5.5				
	400	10.2	7.48				
	600	15.0	11.0				
	900	22.5	17.5				

■ Working principle



1). With equal pressure throughout the valve (and the gate in closed position), and initial seal (1) is formed with the raised PTFE ring on the faces of the seats (The seat-inserts clean both sides of the gate each time the valve is opened or closed)

2). As line pressure (2) is applied to the valve. It acts on the gate, forcing it against the PTFE ring on the downstream seat, compressing it until the seat against the steel seat. Thus, a double seal is formed, first a PTFE-to-metal seal; then, metal-to-metal. The seat is also forced firmly into its recess. The O-ring (3) prevents any downstream flow at this point.

3). Upstream seal is provided when valve cavity pressure is bled off. This is caused by the force of line pressure acting against the upstream seat (4) moving the seat against the gate and providing a tight PTFE-to-metal seal as this point. At the same time, the O-ring (5) forms a tight seal with the seat recess.

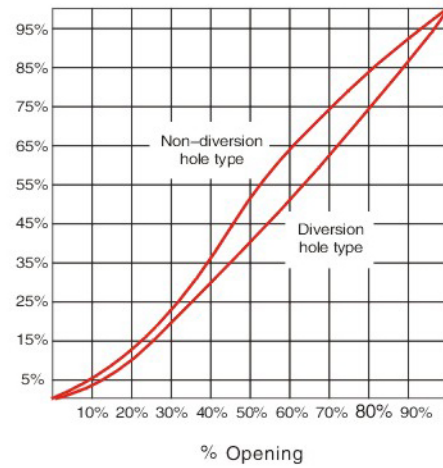
4). Valve automatically relieves itself of excessive valve cavity pressure. When valve cavity pressure exceeds line pressure from such causes as thermal expansion the upstream seat is forced back into its recess and the excess pressure in the valve cavity is bled between the seat and the gate into the line.

■ Main parameter of the products

Serial models	(k)Z43WF、(k)Z43WY、(k)Z43WD、(k)Z44WF、(k)Z44WY、(k)Z44WD、 (k)Z543WF、(k)Z543WY、(k)Z543WD、(k)Z544WF、(k)Z544WY、(k)Z544WD、 (k)Z643WF、(k)Z643WY、(k)Z643WD、(k)Z644WF、(k)Z644WY、(k)Z644WD、 (k)Z943WF、(k)Z943WY、(k)Z943WD、(k)Z944WF、(k)Z944WY、(k)Z944WD、			
Pressure grade range	Class 150-900			
Drift diameter range	--	DN25-1000mm	--	1"-40"
Driving manner	--	Hand wheel driving	--	Gear driving, air-operating, hydrodynamic driving and electric driving
Scope of application	Class 150-300 (PN1.6-4.0)	Class 400 (PN6.4)	Class 600-900 (PN10.0-15.0)	Class 150-900
	1"-40" (DN25-1000mm)	1"-28" (DN25-700mm)	1"-12" (DN25-300mm)	1"-40" (DN25-1000mm)

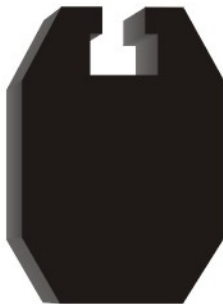
■ **Flow characteristic**

The flow characteristic of flat gate valves with a diversion hole is equal to that of pipelines of the same specification. The characteristic is shown in per centum form. As for valves without a diversion hole its cavity fly span is smaller than that of wedge gate valves and it is a regular cylindrical object. Therefore, characteristics of the valves are similar except that they have a larger pressure loss. Besides their flux adjustment behavior is better than of the ones with a diversion hole.



Valve-opening—Cv characteristic graph

■ **Outside drawing of different types of shutter**



Ordinary type

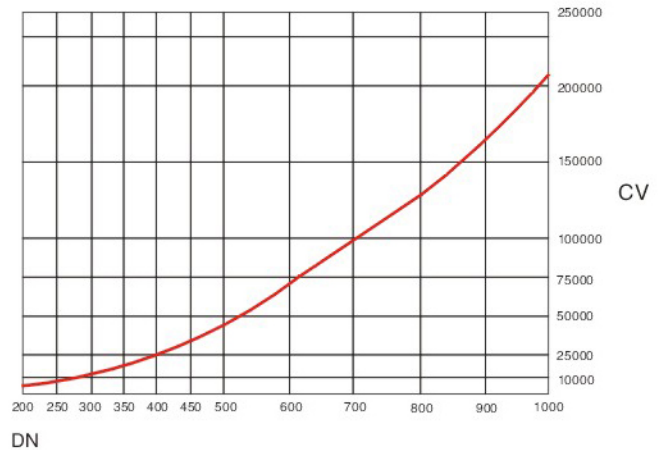
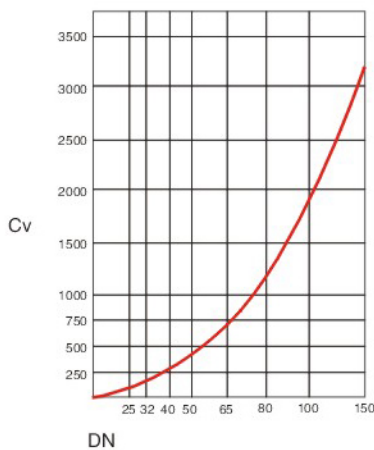


Adjustment type



Type diversion hole

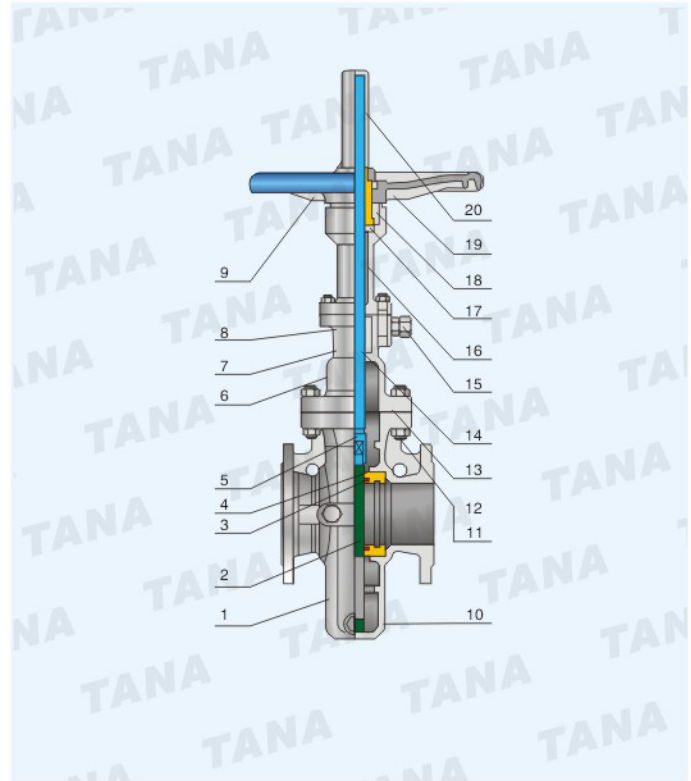
■ **DN—Cv graph of flat valves with a diversion hole**



■ Technical specification

Design reference		API
Design standard		API 6D ASME B 16.34
Structural length	Flanged	API 6D ASME B 16.10
	Welded connection	
Flanged ends		API B16.5 MSS SP44
Butt-welding ends		ASME B16.25
Test & inspection		API 16D API 598

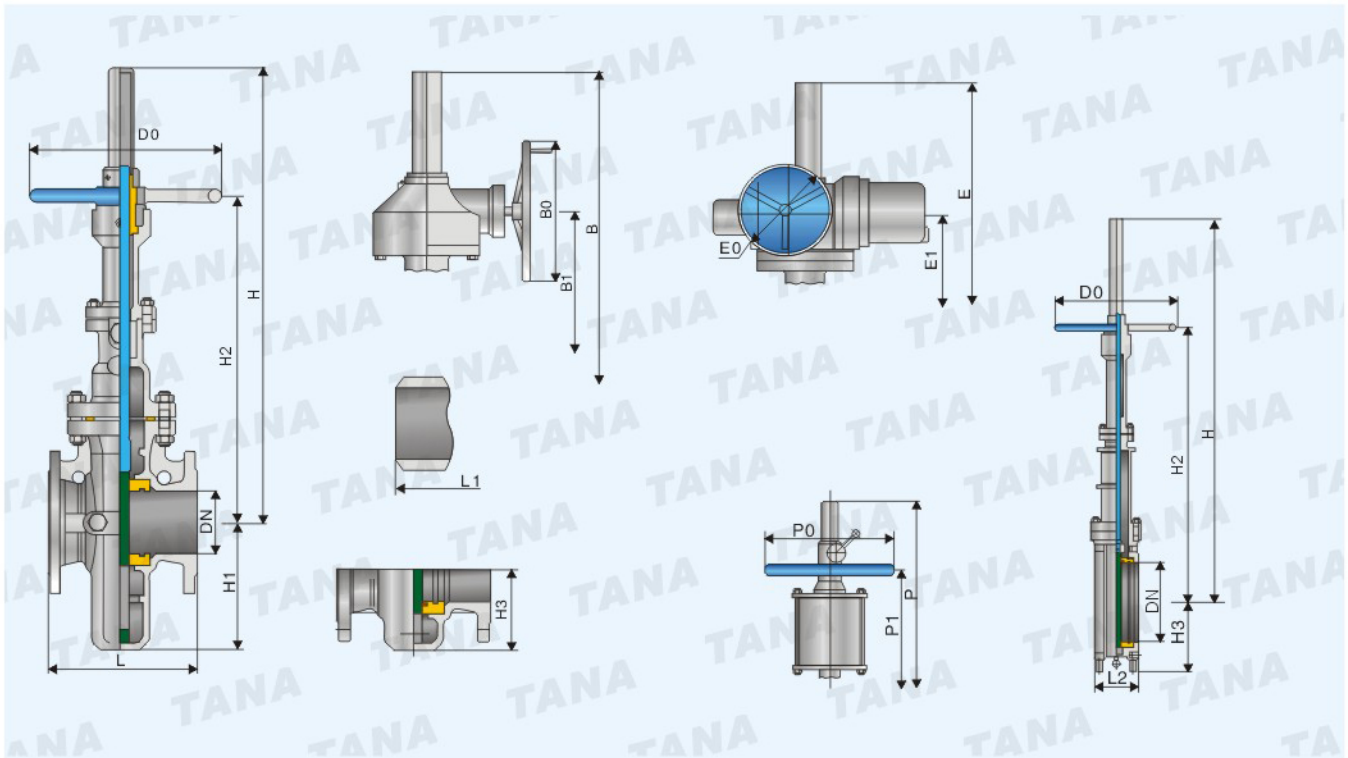
Notes: The sizes of valve connecting flange can be designed according to customers' requirement.



■ Major parts material form

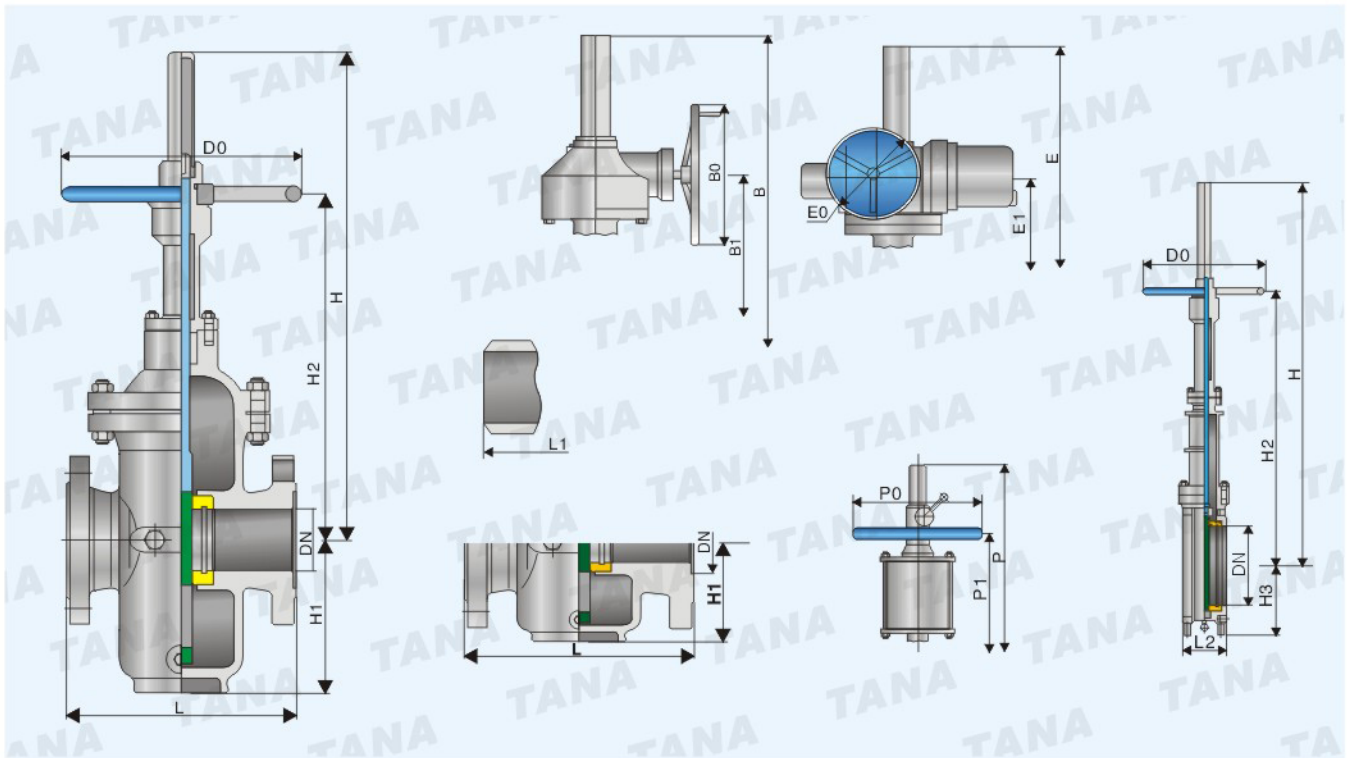
No	Accessory name	Material			
		Ordinary type		Antisulphur type	
		GB	ASTM	GB	ASTM
1	Body	WCB	A216-WCB	WCB	A216-WCB
2	Gate disc	16Mn+ENP	A105+ENP	1Cr18Ni9	AZ76-304
3	Seat	16Mn+PTFE	A105+PTFE	1Cr18Ni9+PTFE	AZ76-304+PTFE
4	O-Ring	NBR	NBR	FPM	FPM
5	Stem	2Cr13	A276-420	1Cr18Ni9	AZ76-304
6	Packing seat	2Cr13	A276-420	2Cr13	A276-420
7	"Y"ring	NBR	NBR	FPM	FPM
8	Sealing shroud	2Cr13	A276-420	2Cr13	A276-420
9	Indicating window	Film	Film	Film	Film
10	Blowdown stops	25+Zn	A105+Zn	1Cr18Ni9	A1276-304
11	Grease injection joint	25+Zn	A105+Zn	25+Zn	A105+Zn
12	Stud	35CrMoA	A194-B7	35CrMoA	A193-B7
13	Nut	45	A194-2H	45	A194-2H
14	Gasket	Graphite+1Cr18Ni9	Graphite+304	Graphite+1Cr18Ni9	Graphite+304
15	Bonnet	WCB	A216-WCB	WCB	A216-WCB
16	Yoke	WCB	A216-WCB	WCB	A216-WCB
17	Stem nut	ZQA 19-4	C95500	ZQA 19-4	C95500
18	Gland	25	A105	25	A1065
19	Hand wheel	25	A536-60-40-18	25	A536-60-40-18
20	Indicating cover	25	A105	25	A105

Notes: The major parts of the valves can be designed and selected according to actual work condition or customers' specific requirement.



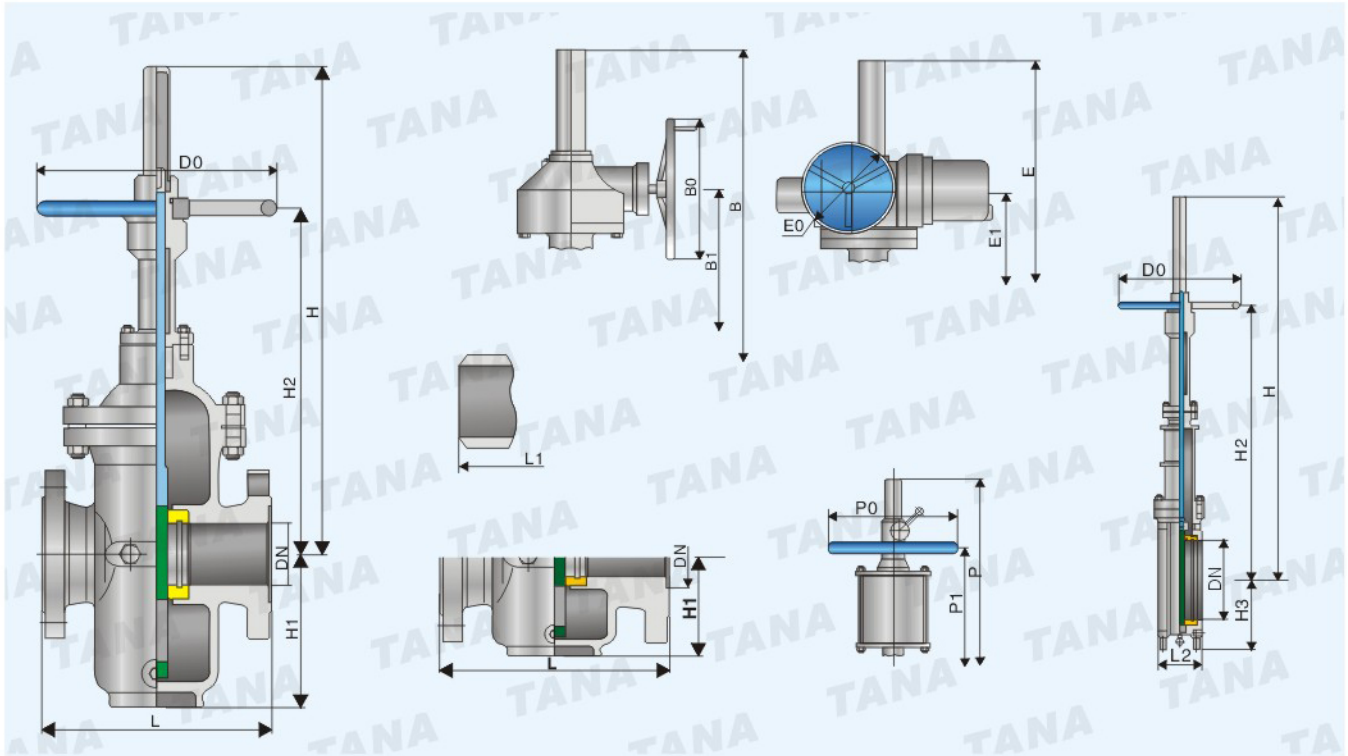
■ Main Connection Dimensions 150LB

Specifications	Flange	Light-duty	Hand-operated			Geared driving			Geared driving	Air-operating and Fluid driving			Electric driving device			Electric driving device	Non-diversion hole type	Diversion hole type	
			H	H2	Ho	B	B1	Bo		P	P1	Po	E	E1	Eo				H3
1	25	127	--	360	250	180	--	--	--	--	--	--	--	--	--	--	60	85	
11/4	32	140	--	375	260	180	--	--	--	--	--	--	--	--	--	--	71	103	
11/2	40	165	--	410	290	250	--	--	--	--	--	--	--	--	--	--	75	115	
2	50	178	108	450	315	250	--	--	--	525	430	250	--	--	--	--	85	122	
21/2	65	190	112	550	420	300	--	--	--	648	560	300	--	--	--	--	91	154	
3	80	203	114	610	428	300	--	--	--	730	630	300	--	--	--	--	109	169	
4	100	229	127	700	494	300	770	650	310	BA-0	850	720	300	912	790	200	SMC-04	121	193
6	150	267	140	895	625	350	965	800	310	BA-0	1120	920	350	1107	920	500	SMC-03	178	283
8	200	292	152	1130	784	350	1200	960	310	BA-0	1430	1160	350	1390	1120	500	SMC-03	211	352
10	250	330	165	1290	937	400	1360	1080	310	BA-0	1665	1380	400	1550	1250	500	SMC-03	215	440
12	300	356	178	1480	1080	450	1560	1200	310	BA-0	1930	1550	450	1740	1400	305	SMC-00	245	514
14	350	381	190	1660	1283	500	1740	1350	460	BA-1	2185	1750	450	1913	1550	305	SMC-00	280	602
16	400	406	216	1850	1417	500	1930	1500	460	BA-1	2450	2000	500	2103	1620	305	SMC-00	310	678
18	450	432	222	2080	1489	600	2160	1680	460	BA-1	2755	2250	500	2365	1830	305	SMC-0	346	785
20	500	457	229	2300	1672	700	2420	1850	460	BA-2	3050	2450	600	2585	1980	305	SMC-0	363	855
24	600	508	267	2680	2012	800	2800	2120	460	BA-2	3580	2900	800	2990	2300	305	SMC-1	442	1045
28	700	610	292	3080	2250	800	3200	2450	460	BA-2	4130	3350	800	3390	2600	305	SMC-1	505	1190
32	800	660	318	3491	2550	1000	3640	2800	460	BA-2	--	--	--	3850	2980	305	SMC-1	560	1350
36	900	711	330	3897	2850	1000	4050	3080	600	BA-3	--	--	--	4260	3200	458	SMC-2	610	1510
40	1000	811	460	4317	3250	1200	4467	3400	600	BA-3	--	--	--	4677	3600	458	SMC-2	715	1715
42	1050	1124	--	--	--	--	4650	3550	600	BA-3	--	--	--	4870	3790	458	SMC-2	785	1795
44	1100	1219	--	--	--	--	4870	3700	620	BA-3	--	--	--	5060	3950	610	SMC-3	867	1894
48	1200	1264	--	--	--	--	5350	4100	620	BA-3	--	--	--	5500	4250	610	SMC-3	993	2150



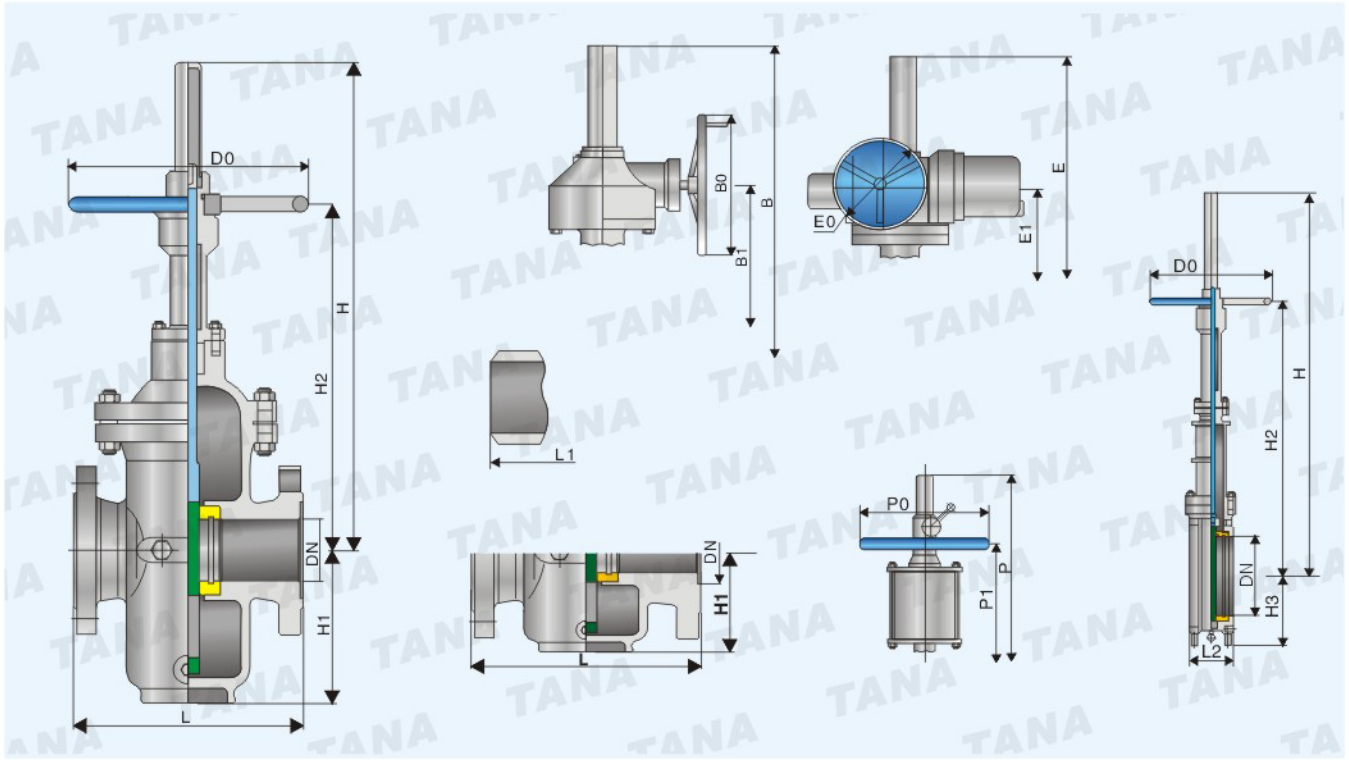
■ Main Connection Dimensions 300LB

Specifications	Flange	Butt welding	Light-duty	Hand-operated			Geared driving			Geared driving	Air-operating and Fluid driving			Electric driving device			Electric driving device	Non-diversion hole type	Diversion hole type	
				H	H2	Ho	B	B1	Bo		P	P1	Po	E	E1	Eo				H3
1	25	165	165	--	370	260	180	--	--	--	--	--	--	--	--	--	--	70	90	
1 1/4	32	178	178	--	385	270	180	--	--	--	--	--	--	--	--	--	--	80	115	
1 1/2	40	190	190	--	420	300	250	--	--	--	--	--	--	--	--	--	--	85	130	
2	50	216	216	--	458	325	250	--	--	--	--	533	435	200	--	--	--	100	137	
2 1/2	65	241	241	--	555	420	300	--	--	--	--	653	565	200	--	--	--	106	169	
3	80	282	282	--	615	430	300	--	--	--	--	735	635	200	--	--	--	124	184	
4	100	305	305	150	710	500	300	770	650	310	BA-0	860	730	250	912	790	200	SMC-04	146	218
6	150	403	403	150	900	625	350	965	800	310	BA-0	1125	925	350	1155	960	500	SMC-03	206	311
8	200	419	419	180	1135	790	350	1200	960	310	BA-0	1435	1165	350	1390	1120	305	SMC-00	241	382
10	250	457	457	180	1401	1040	400	1360	1090	310	BA-0	1776	1450	400	1543	1240	305	SMC-00	303	476
12	300	502	502	200	1580	1150	450	1560	1200	310	BA-1	2030	1620	450	1745	1400	305	SMC-0	372	545
14	350	762	762	200	--	--	--	1740	1350	460	BA-1	2305	1900	500	1945	1580	305	SMC-0	405	645
16	400	838	838	218	--	--	--	1930	1540	460	BA-1	2558	2100	600	2135	1640	305	SMC-0	450	728
18	450	914	914	218	--	--	--	2160	1700	460	BA-1	2835	2320	700	2385	1840	305	SMC-1	490	800
20	500	991	991	229	--	--	--	2420	1850	460	BA-2	3120	2510	800	2660	2050	305	SMC-1	520	930
24	600	1143	1143	248	--	--	--	2800	2120	460	BA-2	3670	2980	800	3010	2310	305	SMC-1	600	1100
28	700	1346	1346	286	--	--	--	3200	2460	460	BA-2	--	--	--	3480	2680	458	SMC-2	665	1260
32	800	1524	1524	286	--	--	--	2640	2800	460	BA-2	--	--	--	3890	3020	458	SMC-2	720	1420
36	900	1727	1727	--	--	--	--	4050	3080	600	BA-3	--	--	--	4260	3200	458	SMC-2	820	1580
40	1000	1880	1880	--	--	--	--	4467	3400	600	BA-3	--	--	--	4677	3600	610	SMC-2	950	1720
42	1050	1981	1981	--	--	--	--	4650	3550	600	BA-3	--	--	--	4870	3790	610	SMC-3	1070	1800



■ Main Connection Dimensions 600LB

Specifications		Flange	Hand-operated			Geared driving			Geared driving	Air-operating and Fluid driving			Electric driving device			Electric driving device	Non-diversion hole type	Diversion hole type
NPS	DN	L	H	H2	Ho	B	B1	Bo		P	P1	Po	E	E1	EO			
2	50	292	468	335	300	505	430	310	BA-0	543	445	200	647	560	200	SMC-04	108	158
11/2	65	330	565	430	300	560	470	310	BA-0	663	570	200	702	610	200	SMC-04	125	190
3	80	356	625	440	350	610	510	310	BA-0	745	640	250	752	650	500	SMC-03	145	225
3	100	432	720	510	350	770	650	310	BA-0	870	740	250	950	820	500	SMC-03	165	255
6	150	559	910	630	400	965	800	310	BA-0	1135	930	350	1138	950	305	SMC-0	220	330
8	200	660	1145	800	500	1200	960	460	BA-1	1445	1170	350	1403	1130	305	SMC-0	280	410
10	250	787	1411	1050	500	1370	1090	460	BA-1	1786	1460	400	1575	1280	305	SMC-0	330	490
12	300	838	1590	1160	600	1560	1200	460	BA-1	2040	1630	450	1750	1410	305	SMC-1	380	570
14	350	889	--	--	--	1740	1350	460	BA-2	--	--	--	1930	1570	305	SMC-1	430	650
16	400	991	--	--	--	1970	1540	460	BA-2	--	--	--	2210	1700	305	SMC-1	480	735
18	450	1092	--	--	--	2260	1700	460	BA-2	--	--	--	2500	1940	458	SMC-2	530	810
20	500	1194	--	--	--	2420	1850	460	BA-2	--	--	--	2630	2020	458	SMC-2	580	905
22	550	1295	--	--	--	2685	2010	600	BA-3	--	--	--	2840	2240	610	SMC-3	640	1075
24	600	1397	--	--	--	2985	2190	600	BA-3	--	--	--	3100	2450	610	SMC-3	700	1160
26	650	1448	--	--	--	3160	2390	600	BA-3	--	--	--	3310	2610	610	SMC-3	760	1220
28	700	1549	--	--	--	3350	2550	600	BA-3	--	--	--	3500	2740	610	SMC-3	830	1330
30	750	1651	--	--	--	3470	2680	600	BAA-3	--	--	--	3690	2890	610	SMC-3	900	1415
32	800	1778	--	--	--	3880	2910	600	BAA-3	--	--	--	3900	3050	610	SMC-3	--	1540
36	900	2083	--	--	--	4250	3115	620	BAA-4	--	--	--	4330	3380	610	SMC-4	--	1650
40	1000	2150	--	--	--	4580	3395	620	BAA-4	--	--	--	4760	3710	610	SMC-4	--	1760
42	1050	2300	--	--	--	4885	3655	620	BAA-4	--	--	--	4970	3860	760	SMC-5	--	1840



■ Main Connection Dimensions 900LB

Specifications		Flange	Butt welding	Hand-operated			Geared driving			Geared driving	Air-operating and Fluid driving			Electric driving device			Electric driving device	Non-diversion hole type	Diversion hole type
NPS	DN	L	L1	H	H2	Ho	B	B1	Bo		P	P1	Po	E	E1	Eo		H3	H1
2	50	368	368	473	335	300	525	450	310	BA-0	548	450	250	647	560	500	SMC-03	108	158
11/2	65	419	419	570	435	300	585	490	310	BA-0	668	580	300	702	610	500	SMC-03	125	190
3	80	381	381	630	445	350	635	530	310	BA-0	750	650	350	752	650	305	SMC-00	145	225
4	100	457	457	725	515	350	800	680	310	BA-0	875	745	400	950	820	305	SMC-00	165	255
6	150	610	610	915	640	400	995	830	360	BA-1	1140	940	500	1138	950	305	SMC-0	220	330
8	200	737	737	1150	800	500	1250	1000	460	BA-1	1450	1180	550	1403	1130	305	SMC-0	280	410
10	250	838	838	1416	1055	500	1420	1140	460	BA-1	1791	1465	600	1575	1280	305	SMC-1	330	490
12	300	965	965	1595	1165	600	1600	1230	460	BA-2	2045	1635	700	1750	1410	305	SMC-1	380	570
14	350	1029	1029	--	--	--	1890	1450	460	BA-2	--	--	--	1930	1570	305	SMC-1	--	690
16	400	1130	1130	--	--	--	2175	1660	600	BA-3	--	--	--	22210	1700	458	SMC-2	--	800
18	450	1219	1219	--	--	--	2355	1800	600	BA-3	--	--	--	2500	1940	458	SMC-2	--	890
20	500	1321	1321	--	--	--	2520	1920	600	BA-3	--	--	--	2630	2020	610	SMC-3	--	985
24	600	1549	1549	--	--	--	3050	2240	620	BA-4	--	--	--	3100	2450	610	SMC-3	--	1150