



Gate Valves

DECON

DECON INDUSTRIES LIMITED



Company Profile

Decon Industries Limited is a supplier of engineered valve products and associated equipment for the Nuclear Power, Conventional Power and Petrochemical Industries.

Our company headquarters are located in the prestigious North East Science & Technology Park (NETPark) in Sedgefield, United Kingdom. We have a subsidiary company in Hong Kong, and a representative office in Beijing China. Our manufacturing resources are located in the UK, mainland Europe and the USA.

We supply high pressure, high temperature and critical service isolation, non return and control valves for the steam, feedwater and cooling water systems in nuclear, conventional utility and industrial power plants, plus hydrocarbon processing systems.

We also specialize in isolation and non return valves in exotic materials for critical services in the coal liquefaction and associated industries.

We take pride in our technical competence and we can provide a range of services to valve users, specifiers and manufacturers..

These services include:

- Solving valve performance problems;
- Valve selection and supply for critical service applications;
- Assistance in performance based specification writing;
- Aftermarket service and repair;
- Valve design and performance enhancement.



Gate Valves

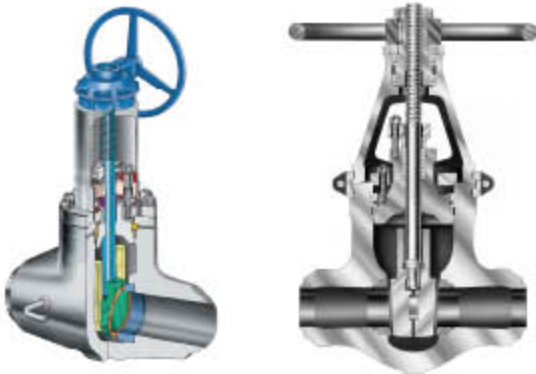
We specialise in supplying Gate Valves for high pressure and high temperature applications. We can provide both Parallel Slide , and Wedge Gate designs based on the specific application or customer preference. We offer both forged and cast bodies to the international design standards such as ASME, EN and API.

Applications in the power generation industry include high pressure superheated steam , and high pressure feedwater isolation. In the petrochemical industry our valves are used in services such as hot flue gas, and oil crude oil transfer.

Materials of construction include high strength and high temperature alloy steels, austenitic and duplex stainless steels, plus nickel alloys such as inconel, hastelloy and monel for corrosive and erosive fluid service.

We also supply medium and low pressure valves in a variety of materials when a complete package is required.

All forms of actuation are available, electric, pneumatic and hydraulic including quick acting for emergency shut off or venting.





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Pressure - Temperature Ratings

Class 150 (ASME B16.34 2004) Standard Class, Butt Weld and Flanged

ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)															
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538
A105	A216 WCB	Std	19.6	19.2	17.7	15.8	13.8	12.1	10.2	9.3	8.4	7.4	6.5	5.5*	4.6*	3.7*	2.8*	1.4*

Class 300 (ASME B16.34 2004) Standard Class, Butt Weld and Flanged

ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)															
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538
A105	A216 WCB	Std	51.1	50.1	45.6	45.1	43.8	41.9	39.8	36.7	37.6	36.4	34.7	28.8*	23*	17.4*	11.8*	5.9*

Class 600 (ASME B16.34 2004) Butt Weld & Flanged. NB. Flanged applies to standard class ONLY

ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)																					
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600	625	650	
A105	A216 WCB	Std	103.4	103.4	103.3	102.1	101.1	101.1	101.1	100.2	97.8	94.2	86.8	71.9	57.5	43.6	29.4	14.8	—	—	—	—	—	—
		Spec	103.4	103.4	103.3	102.1	101.1	101.1	101.1	100.2	97.8	94.2	86.8	71.9	57.5	43.6	29.4	14.8	—	—	—	—	—	—
—	A217 WC6	Std	103.4	103.4	103.0	99.5	95.9	92.7	85.7	82.6	80.4	77.6	73.3	70.0	67.7	63.4	51.5	29.8	25.4	17.6	12.2	8.5	5.7	—
		Spec	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	102.8	101.0	100.6	99.3	94.4	85.5	64.3	37.2	31.8	22.0	15.3	10.6	7.1	—
A182-F22	A217 WC9	Std	103.4	103.4	103.0	100.3	97.2	92.7	85.7	82.6	80.4	77.6	73.3	70.0	67.7	63.4	56.5	36.9	31.3	21.1	13.8	8.8	5.7	—
		Spec	103.4	103.4	103.2	101.9	100.4	100.0	99.6	99.2	98.4	97.5	97.5	97.5	94.4	85.5	71.5	46.1	39.1	26.3	17.2	11.2	7.1	—

Class 900 (ASME B16.34 2004) Butt Weld & Flanged. NB. Flanged applies to standard class ONLY

ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)																					
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600	625	650	
A105	A216 WCB	Std	153.2	150.4	139.8	135.2	131.4	125.8	119.5	116.1	112.7	109.1	104.2	86.3	69.0	52.3	35.3	17.7	—	—	—	—	—	—
		Spec	155.1	155.1	154.9	153.1	151.7	151.6	151.6	150.3	146.7	141.3	130.2	107.9	86.3	65.4	44.1	22.2	—	—	—	—	—	—
—	A217 WC6	Std	155.1	155.1	154.4	149.2	143.9	139.0	128.6	124.0	120.7	116.5	109.8	105.1	101.4	95.1	77.2	44.7	38.1	26.4	18.3	12.8	8.5	—
		Spec	155.1	155.1	155.1	155.1	155.1	155.1	155.1	155.1	155.1	154.3	151.5	150.6	148.9	141.4	128.2	96.5	55.8	47.7	33.0	22.9	16.0	10.6
A182-F22	A217 WC9	Std	155.1	155.1	154.6	150.6	145.8	139.0	128.6	124.0	120.7	116.5	109.8	105.1	101.4	95.1	84.7	55.3	46.9	31.6	20.7	13.4	8.5	—
		Spec	155.1	155.1	154.9	152.9	150.7	149.9	149.3	148.8	147.6	146.3	146.3	146.3	141.4	128.2	107.1	69.1	58.6	39.5	25.8	16.7	10.6	—

Class 1500 (ASME B16.34 2004) Butt Weld & Socket

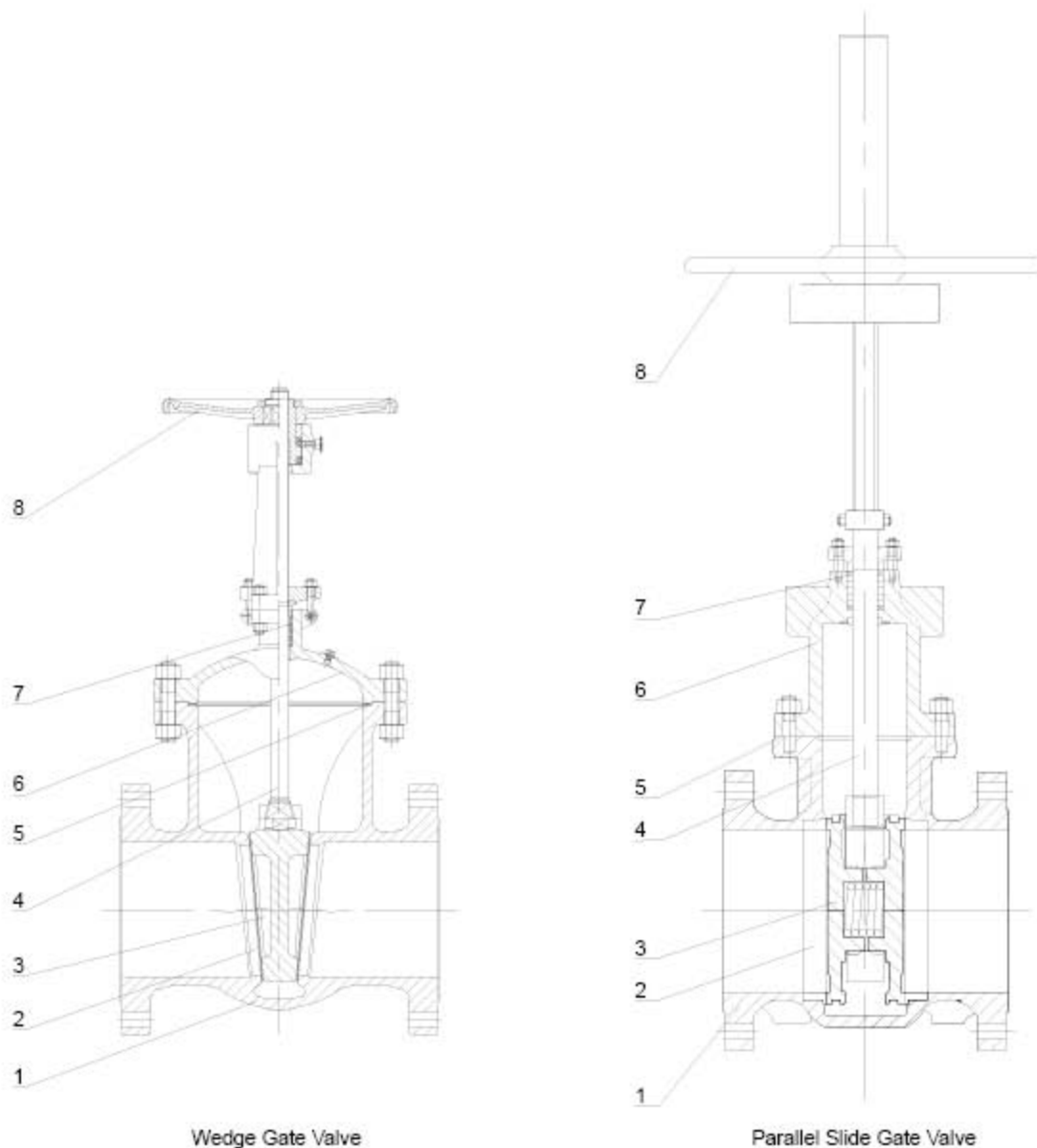
ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)																					
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600	625	650	
A105	A216 WCB	Std	255.3	250.6	233.0	225.4	219.0	209.7	199.1	193.6	187.8	181.8	173.6	143.8	115.0	87.2	58.8	29.5	—	—	—	—	—	—
		Spec	258.6	258.6	258.2	255.2	252.9	252.6	252.6	250.6	244.6	235.5	217.0	179.8	143.8	109.0	73.5	36.9	—	—	—	—	—	—
—	A217 WC6	Std	258.6	258.6	257.4	248.7	239.8	231.8	214.4	206.6	201.1	194.1	183.1	175.1	169.0	158.2	128.6	74.5	63.5	44.0	30.5	21.3	14.2	—
		Spec	258.6	258.6	258.6	258.6	258.6	258.6	258.6	258.6	258.6	257.1	252.5	251.2	248.2	235.8	213.7	160.8	93.1	79.4	55.0	38.2	26.6	17.7
A182-F22	A217 WC9	Std	258.6	258.6	257.6	250.8	243.4	231.8	214.4	206.6	201.1	194.1	183.1	175.1	169.0	158.2	140.9	92.2	78.2	52.6	34.4	22.3	14.2	—
		Spec	258.6	258.6	258.1	254.8	251.1	249.8	248.9	248.0	246.0	243.8	243.8	243.8	235.8	213.7	178.6	115.2	97.7	65.8	43.0	27.9	17.7	—

Class 2500 (ASME B16.34 2004) Butt Weld & Socket

ATSM Body Material		ASME B16.34	Pressure in barg at Temp. °C (For intermediate ratings use linear interpolation)																					
Forged	Cast		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600	625	650	
A105	A216 WCB	Std	425.5	417.5	388.3	375.6	365.0	349.5	331.8	322.6	313.0	303.1	289.3	239.7	191.7	145.3	97.9	49.2	—	—	—	—	—	—
		Spec	430.9	430.9	430.3	425.3	421.4	421.1	421.1	417.6	407.6	392.5	361.7	299.6	239.6	181.6	122.4	61.6	—	—	—	—	—	—
—	A217 WC6	Std	430.9	430.9	429.0	414.5	399.6	386.2	357.1	344.3	335.3	323.2	304.9	291.6	281.8	263.9	214.4	124.1	105.9	73.4	50.9	35.5	23.6	—
		Spec	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	428.6	420.9	418.3	413.7	393.1	356.3	268.0	155.1	132.4	91.7	63.6	44.4	29.5
A182-F22	A217 WC9	Std	430.9	430.9	429.4	418.2	405.4	386.2	357.1	344.3	335.3	323.2	304.9	291.6	281.8	263.9	235.0	153.7	130.3	87.7	57.4	37.2	23.6	—
		Spec	430.9	430.9	430.2	424.6	418.5	416.5	414.8	413.3	410.0	406.3	406.3	406.3	393.1	356.3	297.5	192.1	162.6	109.7	71.7	46.5	29.5	—



Full Bore Wedge Gate & Parallel Slide Gate With Bolted Bonnet



Wedge Gate Valve

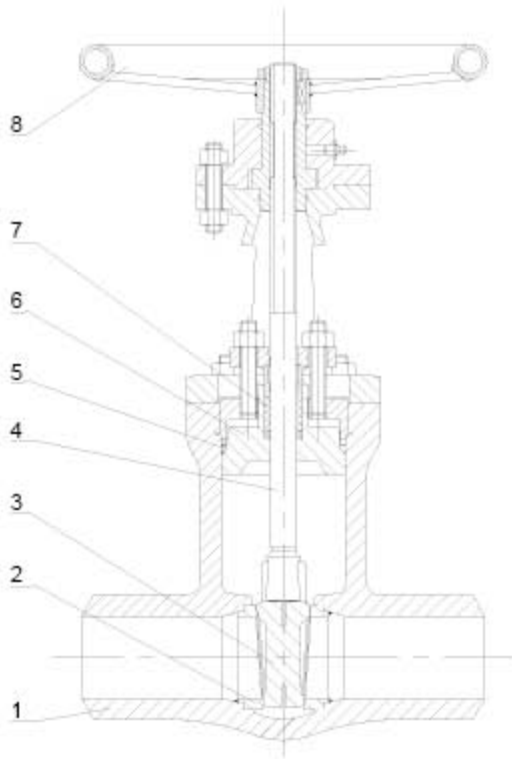
Parallel Slide Gate Valve

Full Bore Wedge Gate and Parallel Slide Gate Valve with Bolted Bonnet

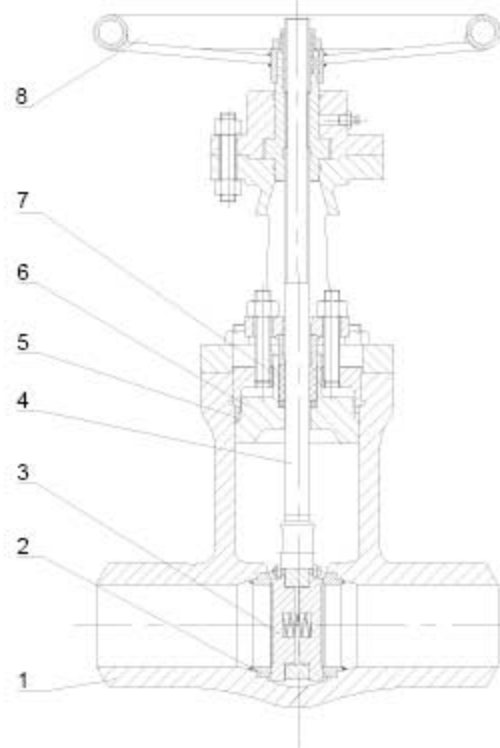
Ref.	Description	Body Mat: WCB	Body Mat: WC6	Body Mat: WC9
1	Body	A216 WCB	A217 WC6	A217 WC9
2	Seat	A105 + Stl 6	A182 F22 + Stl 6	A182 + Stl 6
3	Disc	A105 + Stl 6	A182 F22 + Stl 6	A182 F22 + Stl 6
4	Stem	A182 F6a Cl2	A 565 gr 616HT	A 565gr 616HT
5	Gasket	A 304 +Graphite	A 304 +Graphite	A 304 +Graphite
6	Bonnet	A216 WCB	A217 WC6	A217 WC9
7	Gland Packing	Graphite	Graphite	Graphite
8	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel



Full Bore Wedge Gate & Parallel Slide Gate With Pressure Seal Bonnet



Wedge Gate Valve



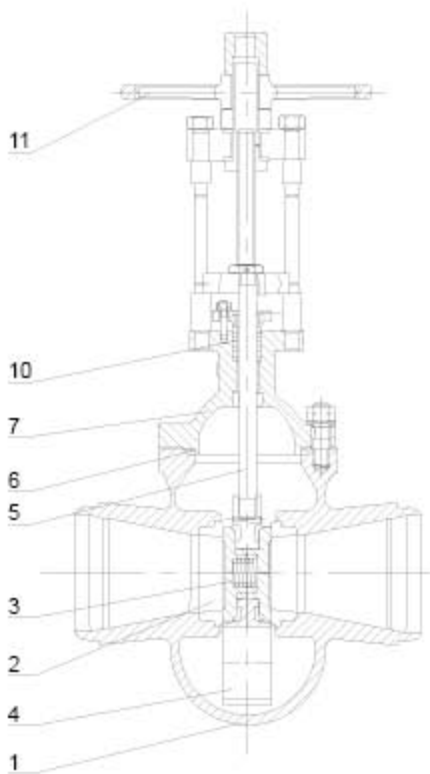
Parallel Slide Gate Valve

Full Bore Wedge Gate and Parallel Slide Gate Valve with Pressure Seal Bonnet

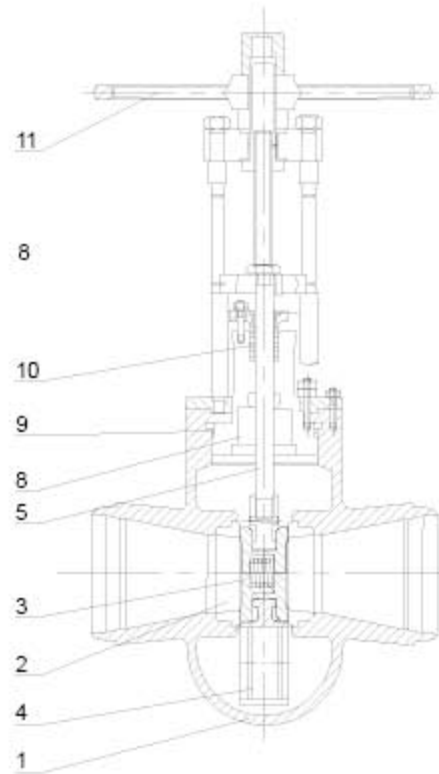
Ref.	Description	Body Mat: WCB/A105	Body Mat: WC6/F12	Body Mat: WC9/F22
1	Body	A216 WCB/A105	A217 WC6/A182 F12	A217 WC9/A182 F12
2	Seat	A105 + Stl 6	A182 F22 + Stl 6	A182 F22 + Stl 6
3	Disc	A105 + Stl 6	A182 F22 + Stl 6	A182 F22 + Stl 6
4	Stem	A182 F6a Cl2	A 565 gr 616HT	A 565gr 616HT
5	Gasket	316 reinforced graphite	316 reinforced graphite	316 reinforced graphite
6	Bonnet (Pressure Seal)	A105	A182 F22	A182 F22
7	Gland Packing	Graphite	Graphite	Graphite
8	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel



Venturi Bore Parallel Slide Gate With Bolted & Pressure Seal Bonnet



Parallel Slide Gate Valve With Bolted Seal Bonnet



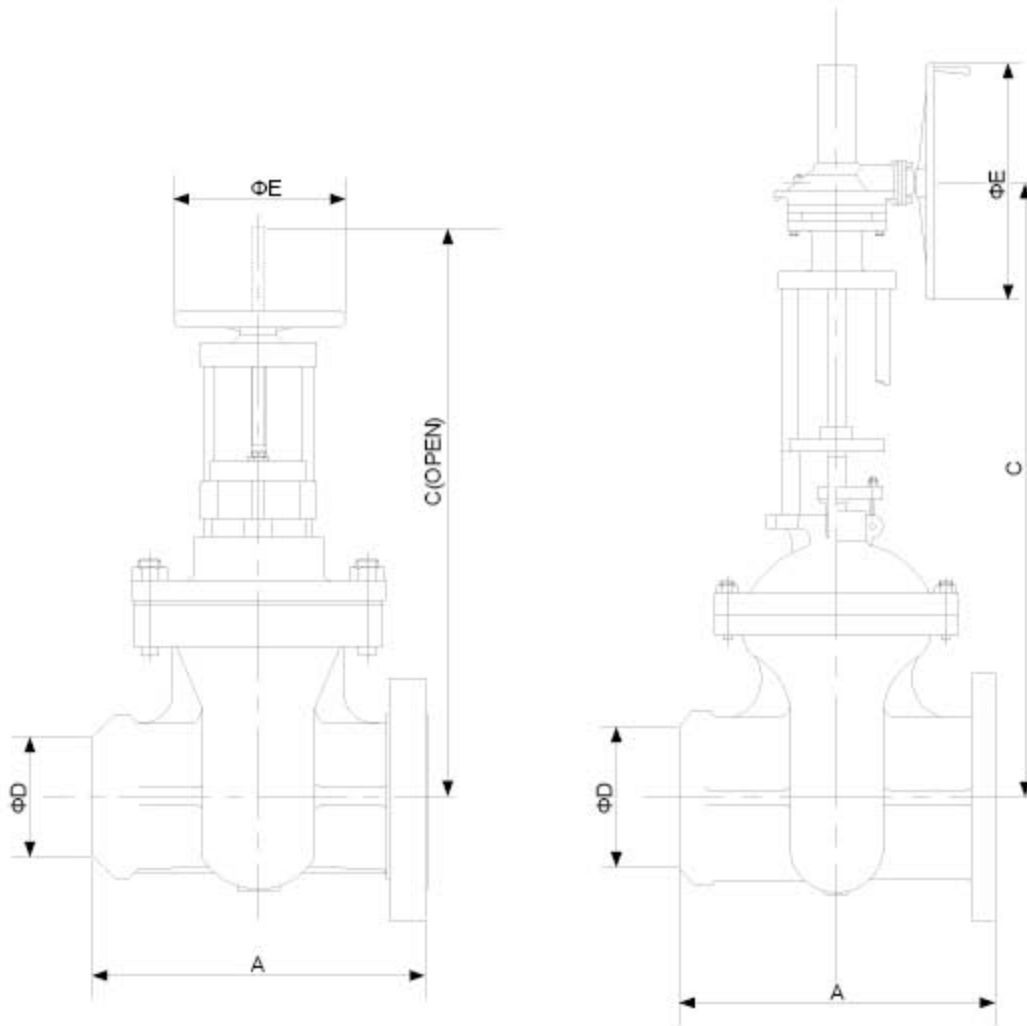
Parallel Slide Gate Valve With Pressure Seal Bonnet

Venturi Bore Parallel Slide Gate Valve with Bolted & Pressure Seal Bonnet

Ref.	Description	Body Mat: WCB	Body Mat: WC6	Body Mat: WC9
1	Body	A216 WCB	A217 WC6	A217 WC9
2	Seat	A105 + Stl 6	A182 F22 + Stl 6	A182 F22 + Stl 6
3	Disc	A105 + Stl 6	A182 F22 + Stl 6	A182 F22 + Stl 6
4	Follower Eye	A216 WCB	A217 WC6	A217 WC9
5	Stem	A182 F6a Cl2	A 565 gr 616HT	A 565gr 616HT
6	Gasket	316 reinforced graphite	316 reinforced graphite	316 reinforced graphite
7	Bonnet (Bolted)	A216 WCB	A217 WC6	A217 WC9
8	Bonnet (Pressure Seal)	A105	A182 F22	A182 F22
9	Pressure Seal	Graphite	Graphite	Graphite
10	Gland Packing	Graphite	Graphite	Graphite
11	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel



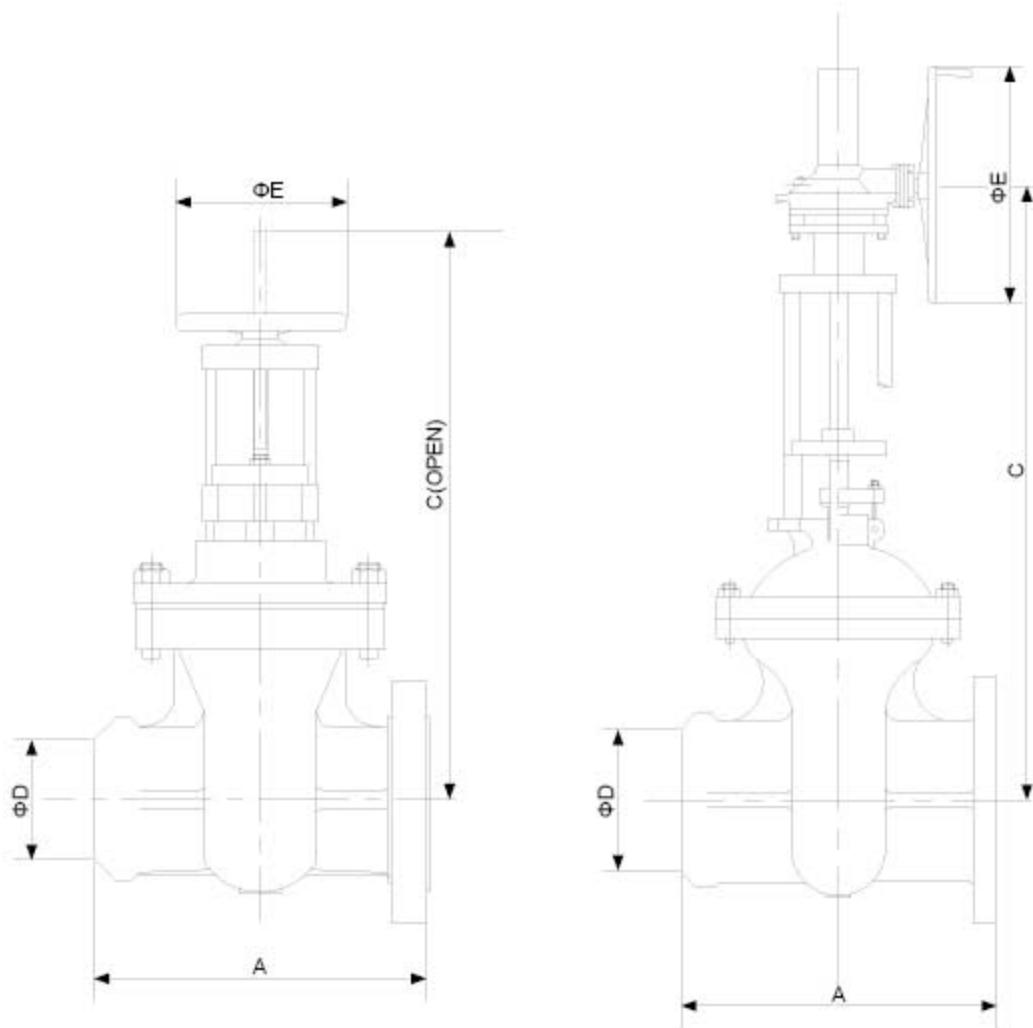
Full Bore Gate Valves Dimensions(Class 150)



Full Bore Gate Valve Dimension (Class 150)

Nominal Size		A		C		E		W (R.F)	
mm	in	mm	in	mm	in	mm	in	Kg	lb
50	2	178	7	405	16	205	8	23	51
65	2 1/2	190	7 1/2	480	19	205	8	28.5	63
80	3	203	8	510	20	230	9	33	73
100	4	229	9	605	24	280	11	49	108
125	5	254	10	685	27	280	11	62	136
150	6	267	10 1/2	815	32	345	13 1/2	84	185
200	8	292	11 1/2	1085	42 3/4	420	16 1/2	153	337
250	10	330	13	1320	52	510	20	239	526
300	12	356	14	1500	59	560	22	305	671
350	14	381	15	1690	66 1/2	610	24	410	902
400	16	406	16	1900	74 7/8	610	24	504	1109
450	18	432	17	2120	83 1/2	710	28	656	1443
500	20	457	18	2280	89 3/4	710	28	806	1773
600	24	508	20	2750	108 1/4	710	28	1268	2790

Full Bore Gate Valves Dimensions(Class 300)

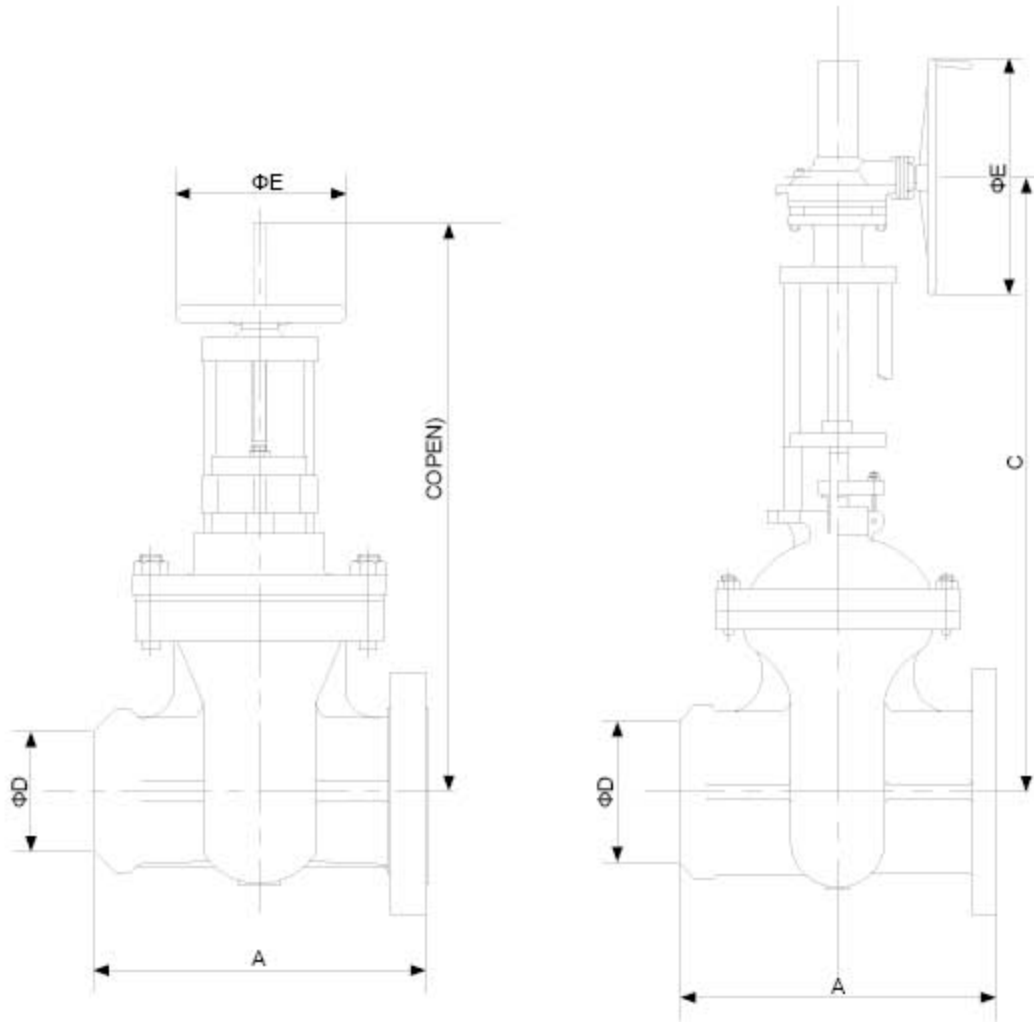


Full Bore Gate Valve Dimension (Class 300)

Nominal Size		A		C		E		W (R.F)	
mm	in	mm	in	mm	in	mm	in	Kg	lb
50	2	216	8.5	405	16	175	6.89	24	53
65	2 1/2	241	9.5	480	19	175	6.89	33	73
80	3	283	11 1/8	524	20 3/4	250	9.84	49	108
100	4	305	12	640	25 1/4	250	9.84	73	161
150	6	403	15 7/8	882	34 3/4	350	13.78	150	220
200	8	419	16.5	1120	44 1/4	400	15.75	269	592
250	10	457	18	1380	54 3/4	450	17.72	377	829
300	12	502	19 3/4	1550	61	500	19.69	550	1210
350	14	762	30	1550	61	400	15.75	656	1443
400	16	838	33	1810	71 1/4	400	15.75	964	2121
450	18	914	36.00	1647	64.84	500	19.69	1272	2804
500	20	919	39.00	1902	74.88	500	19.69	1492	3289
600	24	1143	45.00	2313	91.06	630	24.8	2055	4531



Full Bore Gate Valves Dimensions(Class 600)

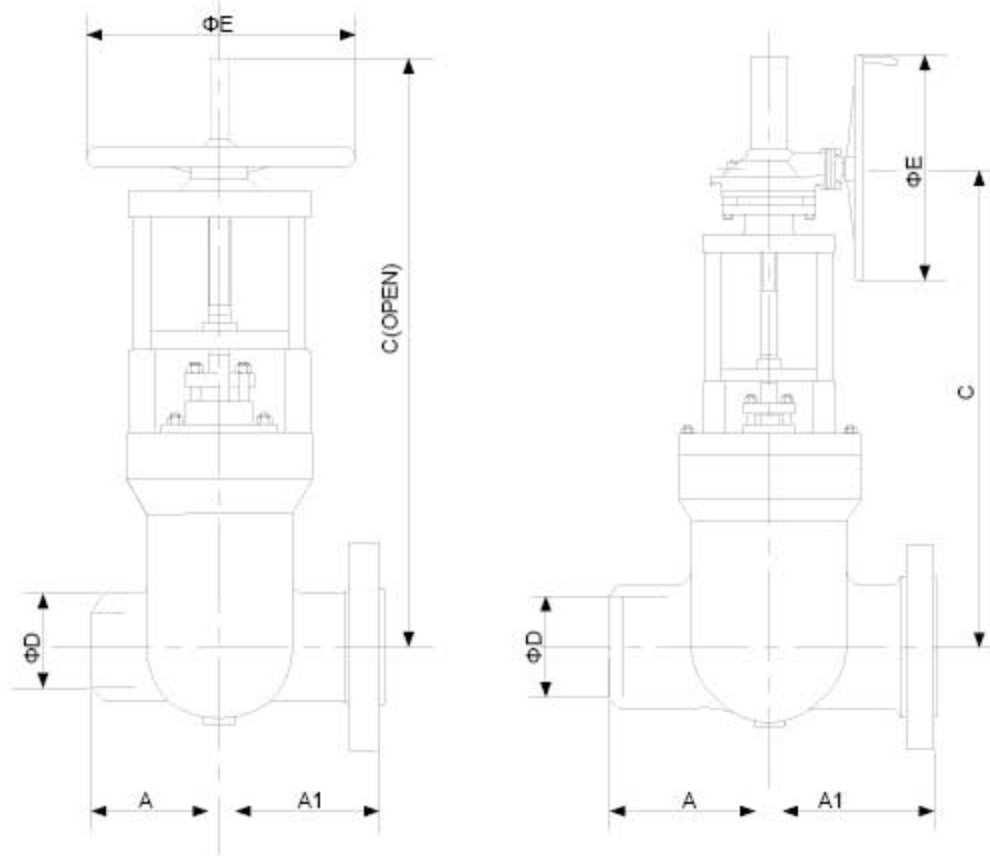


Full Bore Gate Valve Dimension (Class 600)

Nominal Size		A		C		E		Weight (B.W/R.F)	
mm	in	mm	in	mm	in	mm	in	Kg	lb
65	2 1/2	216	8.50	505	19.88	250	9.84	42/47	93/104
80	3	254	10.00	565	22.24	250	9.84	53/57	114/130
100	4	305	12.00	780	30.71	350	13.78	92/222	203/489
150	6	457	18.00	1140	44.88	450	17.72	210/555	463/562
200	8	584	23.00	1400	55.12	500	19.69	380/456	838/1005
250	10	711	28.00	1182	46.54	400	15.75	648/793	1429/1748
300	12	813	32.00	1264	49.76	500	19.69	710/865	1565/1907
350	14	889	35.00	1542	60.71	500	19.69	938/1093	2068/2410
400	16	991	39.00	1730	68.11	630	24.80	1487/1735	3278/3825
450	18	1092	43.00	1776	69.92	710	27.95	1980/2250	4365/4960
500	20	1194	47.00	1834	72.20	710	27.95	2635/3010	5809/6636
600	24	1397	55.00	2105	82.87	800	31.50	3730/4260	8223/9392



Full Bore Gate Valves Dimensions(Class 900)

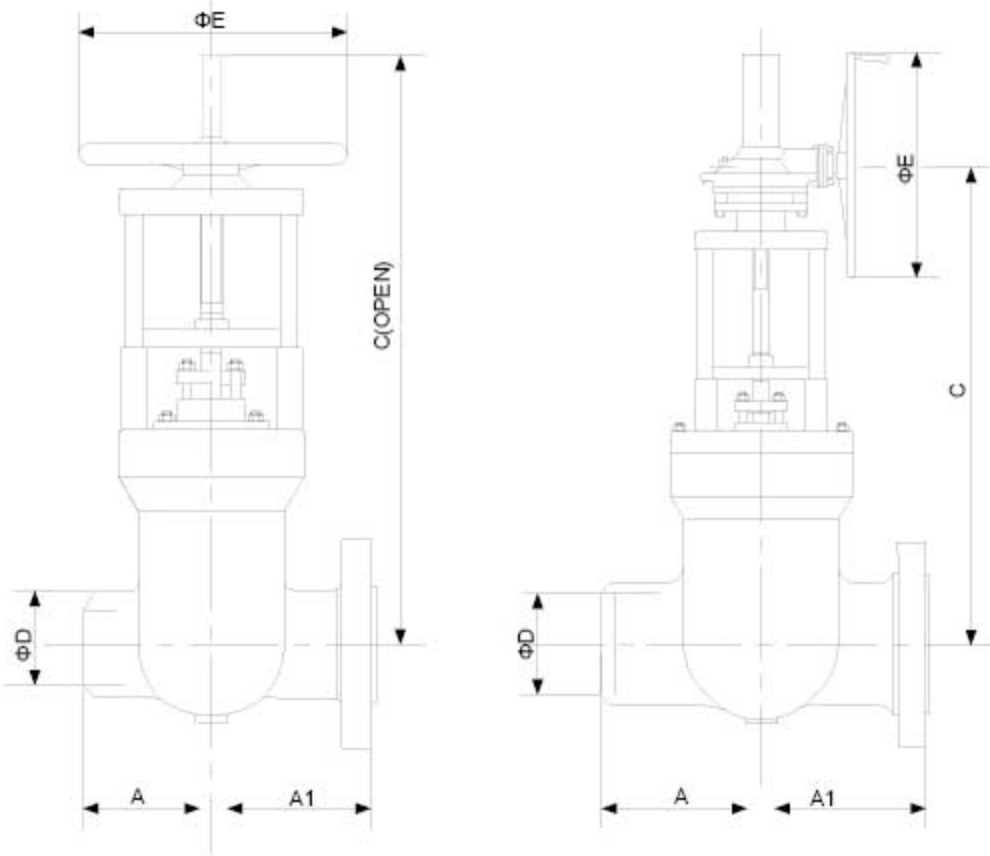


Full Bore Gate Valve Dimension (Class 900)

Nominal Size		A		A1		C		E		Weight (B.W/R.F)	
mm	in	mm	in	mm	in	mm	in	mm	in	Kg	lb
65	2 1/2	254	10.00	419	16.50	495	19.49	250	9.84	45/55	99/121
80	3	305	12.00	381	15.00	650	25.59	350	13.78	80/92	176/203
100	4	356	14.00	457	18.00	810	31.89	400	15.75	140/185	309/408
150	6	508	20.00	610	24.00	1080	42.52	500	19.69	282/367	622/809
200	8	660	26.00	737	29.00	1260	49.61	500	19.69	410/560	904/1235
250	10	787	31.00	838	33.00	1205	47.44	500	19.69	694/860	1530/1896
300	12	914	36.00	965	38.00	1330	52.36	630	24.80	1027/1252	2264/2760
350	14	991	39.00	1029	40.50	1500	59.06	630	24.80	1213/1475	2674/3252
400	16	1092	43.00	1130	44.50	1625	63.95	710	27.95	1510/1885	3329/4156
450	18	1219	48.00	1219	48.00	1720	67.72	800	31.50	1750/2020	3858/4453
500	20	1321	52.00	1321	52.00	1840	72.44	800	31.50	2380/2680	5247/5908
600	24	1549	61.00	1549	61.00	2310	90.94	900	35.43	3650/4260	8047/9392



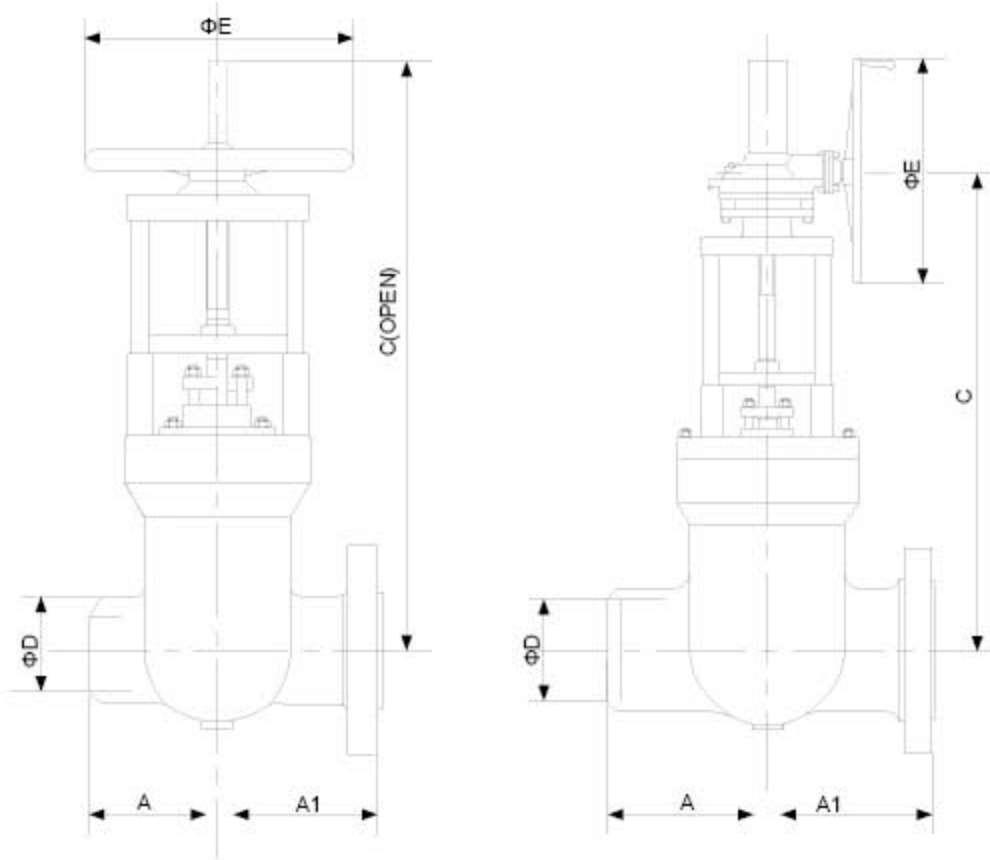
Full Bore Gate Valves Dimensions(Class 1500)



Full Bore Gate Valve Dimension (Class 1500)

Nominal Size		A1		C		E		Weight (B.W)	
mm	in	mm	in	mm	in	mm	in	Kg	lb
65	2 1/2	254	10.00	495	19.49	250	9.84	55	121
80	3	305	12.00	650	25.59	350	13.78	80	176
100	4	406	16.00	810	31.89	400	15.75	142	313
150	6	559	22.00	1095	43.11	500	19.69	350	772
200	8	711	28.00	1052	41.42	500	19.69	540	1190
250	10	864	34.00	1260	49.61	630	24.80	963	2123
300	12	991	39.00	1320	51.97	630	24.80	1182	2606
350	14	1067	42.00	1395	54.92	710	27.95	1410	3109
400	16	1194	47.00	1660	65.35	800	31.50	2230	4916
450	18	1346	53.00	1705	67.13	900	35.43	2915	6426
500	20	1473	58.00	1890	74.41	900	35.43	4040	8907
600	24	1676(2)	66.00(2)	2020	79.53	1000	39.37	6375	14054

Full Bore Gate Valves Dimensions(Class 2500)

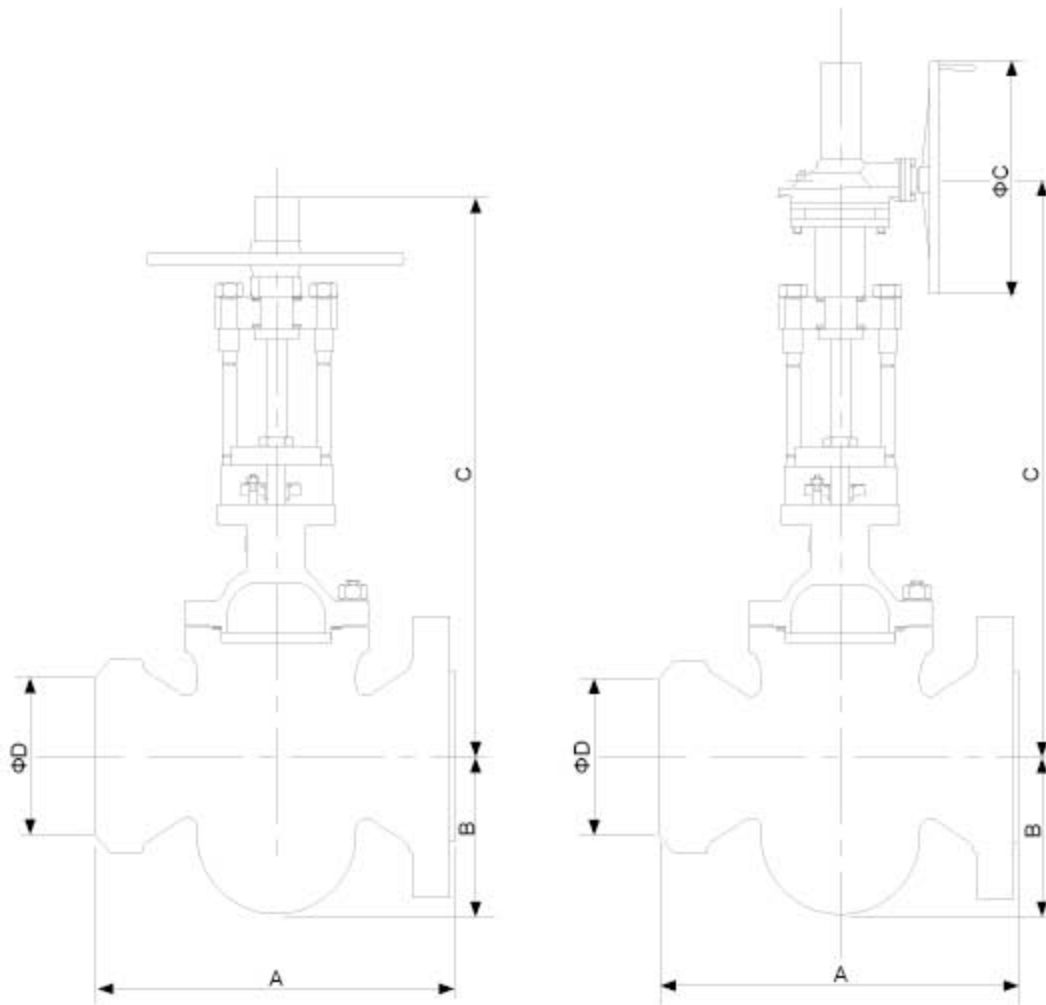


Full Bore Gate Valve Dimension (Class 2500)

Nominal Size		A1		C		E		Weight (B.W)	
mm	in	mm	in	mm	in	mm	in	Kg	lb
65	2 1/2	330	13.00	505	19.88	250	9.84	76	168
80	3	368	14.50	620	24.41	400	15.75	110	243
100	4	457	28.00	775	30.51	450	17.72	160	353
150	6	610	24.00	1055	41.53	500	19.69	446	983
200	8	762	30.00	975	38.38	630	24.80	615	1356
250	10	914	36.00	1145	45.08	710	27.95	1050	2315
300	12	1041	41.00	1330	52.36	800	31.50	1650	3638
350	14	1181	44.00	1395	54.92	800	31.50	1910	4211
400	16	1245	29.00	1490	58.66	900	35.43	2915	6426
450	18	1397	55.00	1660	65.35	900	35.43	3880	8554
500	20	1473(2)	58.00(2)	1800	70.87	1000	39.37	5250	11574



Venturi Bore Gate Valves - Dimensions(Class 600)

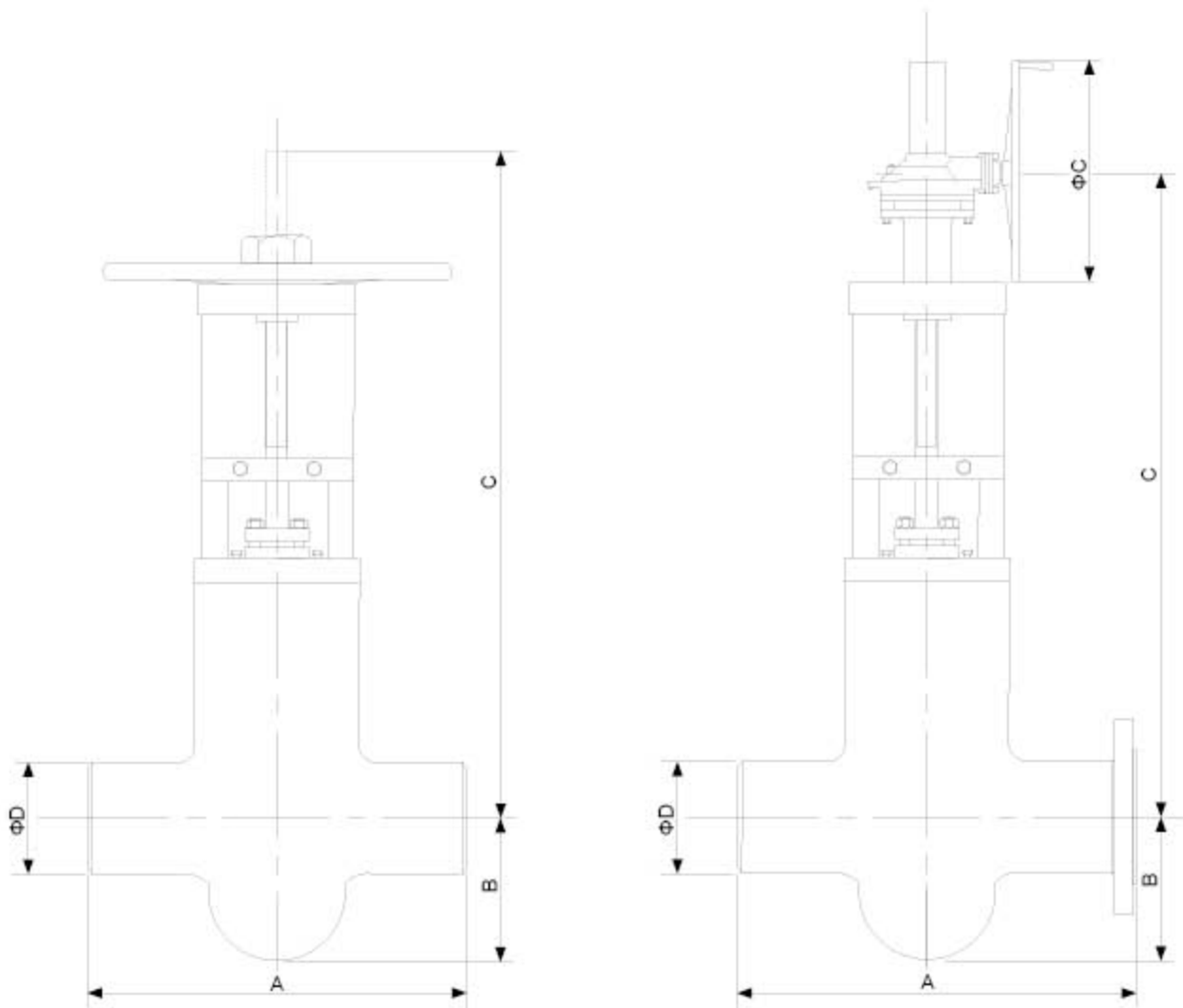


Venturi Bore Gate Valve Dimension (Class 600)

Nominal Size		A		B		C		WEIGHT	
mm	in	mm	in	mm	in	mm	in	kg	Lb
50	2	330	13	89	3 1/2	565	22 1/4	63	139
65	2 1/2	343	13 1/2	89	3 1/2	565	22 1/4	64	141
80	3	356	14	89	3 1/2	565	22 1/4	85	187
100	4	406	16	175	6 7/8	680	26 3/4	118	260
125	5	457	18	215	8 1/2	781	30 3/4	181	399
150	6	483	19	254	10	890	35	233	513
200	8	610	24	317	12 1/2	1118	44	376	827
250	10	660	26	375	14 3/4	1295	51	653	1437
300	12	711	28	438	17 1/4	1460	57 1/2	823	1811
350	14	762	30	470	18 1/2	1536	60 1/2	1095	2409
400	16	864	34	570	22 1/2	1765	69 1/2	1270	2794
450	18	965	38	570	22 1/2	1765	69 1/2	1537	3382
500	20	1194	47	755	29 3/4	2134	84	1807	3976



Venturi Bore Gate Valves - Dimensions(Class 900)

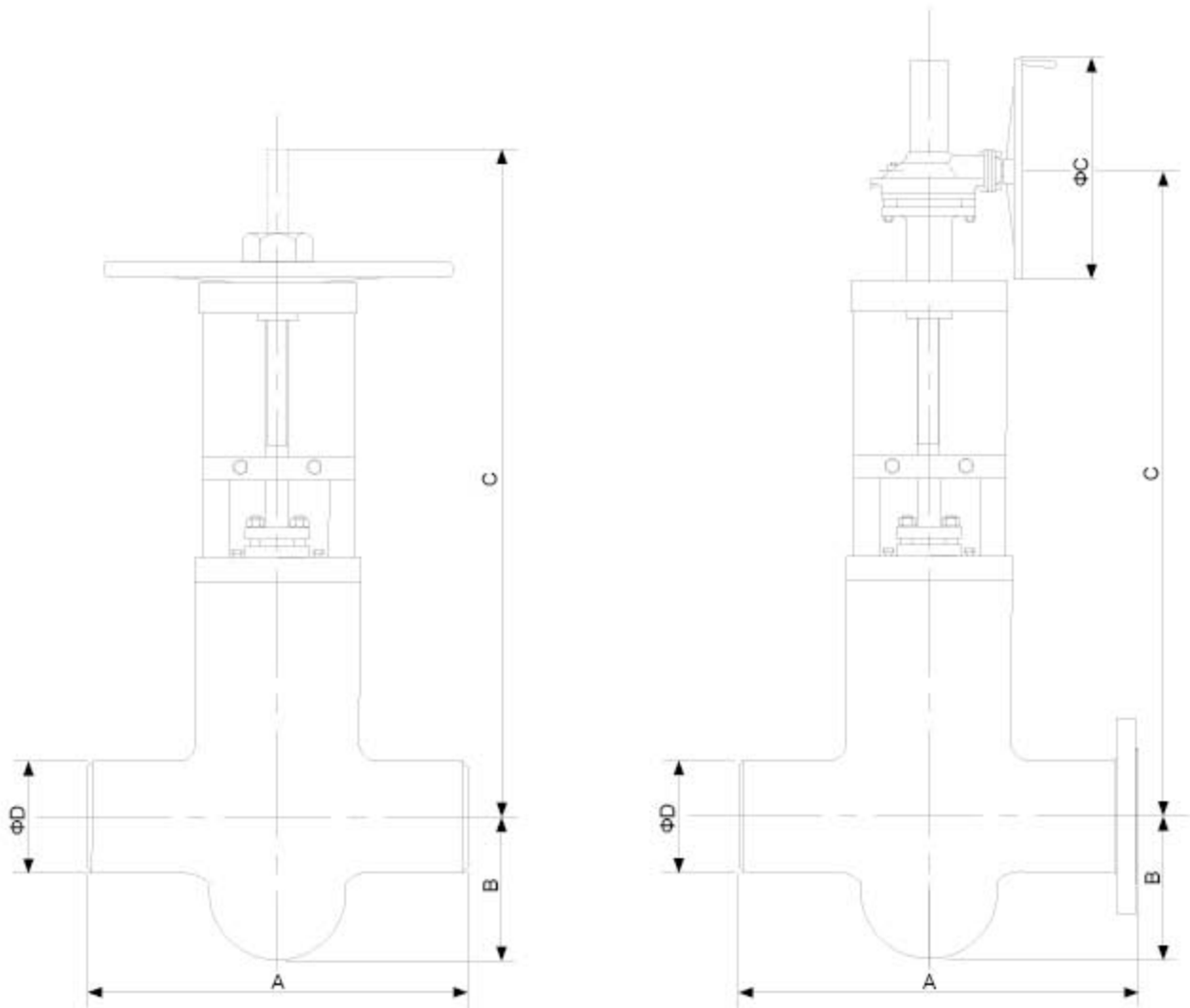


Venturi Bore Gate Valve Dimension (Class 900)

Nominal Size		A		B		C		WEIGHT	
mm	in	mm	in	mm	in	mm	in	kg	Lb
50	2	343	13 1/2	89	3 1/2	572	22 1/2	72	159
65	2 1/2	356	14	146	5 3/4	584	23	79	174
80	3	381	15	146	5 3/4	584	23	90	198
100	4	495	19 1/2	184	7 1/4	737	29	141	310
125	5	559	22	222	8 3/4	876	34 1/2	190	418
150	6	635	25	267	10 1/2	927	36 1/2	286	629
200	8	787	31	330	13	1155	45 1/2	540	1188
250	10	889	35	387	15 1/4	1330	52 1/4	915	915
300	12	991	39	457	18	1480	58 1/4	1159	2013
350	14	1016	40	495	19 1/2	1610	63 1/4	1417	3118
400	16	1219	48	590	23 1/4	1805	71	1707	3756



Venturi Bore Gate Valves - Dimensions(Class 1500)

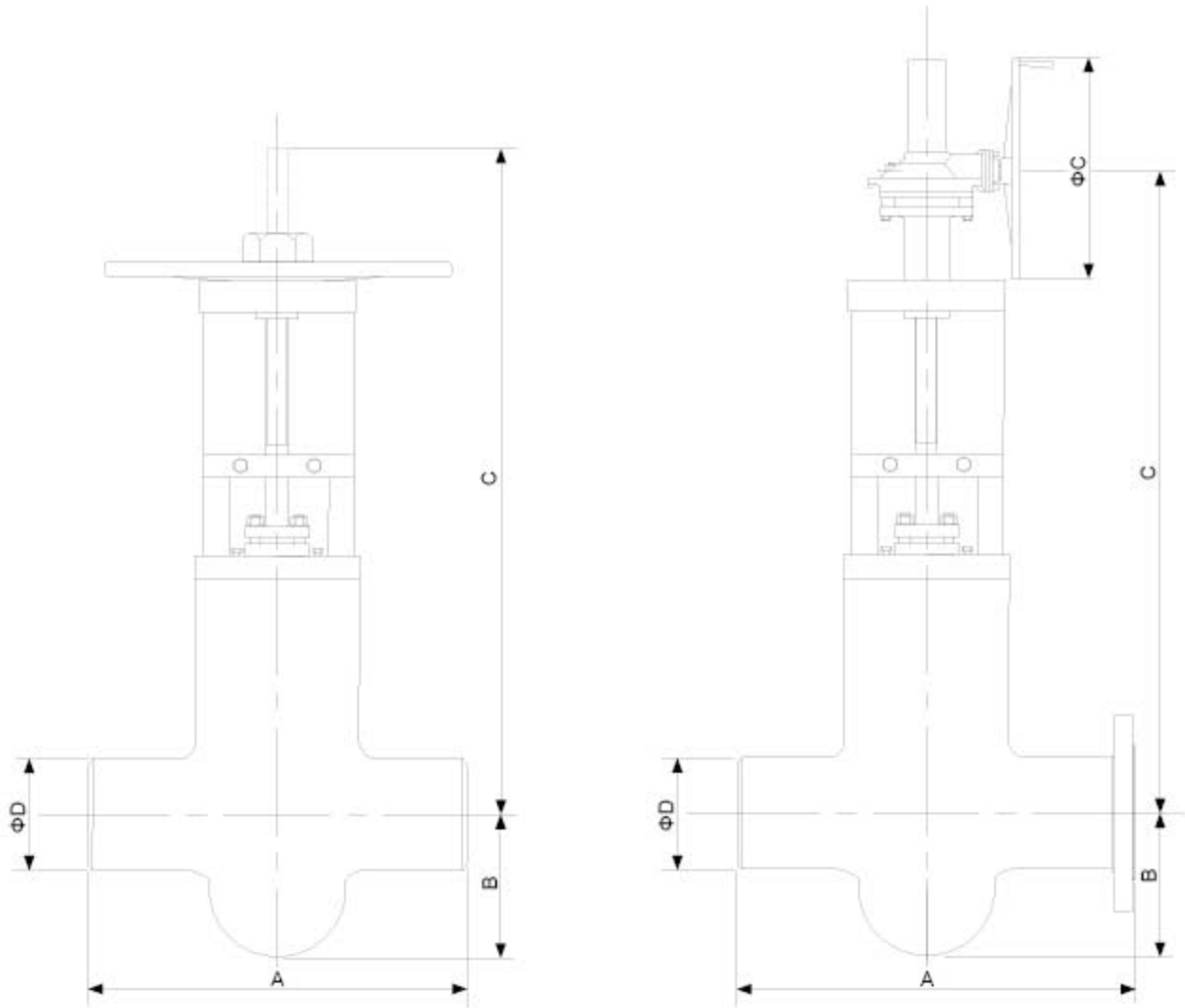


Full Bore Gate Valve Dimension (Class 1500)

Nominal SIZE		A		B		C		WEIGHT	
mm	in	mm	in	mm	in	mm	in	kg	Lb
50	2	368	14 1/2	95	3 3/4	568	22 3/8	74	163
80	3	470	18 1/2	146	5 3/4	568	22 3/8	82	181
100	4	546	21 1/2	197	7 3/4	733	28 7/8	157	346
150	6	705	27 3/4	267	10 1/2	918	36 1/8	330	726
200	8	832	32 3/4	337	13 1/4	1156	45 1/2	568	1250
250	10	991	39	432	17	1334	52 1/2	1136	2500
300	12	1130	44 1/2	508	20	1518	59 3/4	1803	3967



Venturi Bore Gate Valves - Dimensions(Class 2500)



Venturi Bore Gate Valve Dimension (Class 2500)

Nominal Size		A		B		C		WEIGHT	
mm	in	mm	in	mm	in	mm	in	Kg	Lb
125	5	533	21	197	7.75	770	30.31	163	359
150	6	610	24	232	9.12	798	31.42	258	568
200	8	762	30	285	11.25	1091	42.95	470	1036
250	10	914	36	349	13.75	1273	50.12	833	1835
300	12	1041	41	417	16.43	1461	57.52	1327	2926
350	14	1117	44	453	17.87	1491	58.70	1732	3819
400	16	1245	49	523	20.62	1711	67.36	2584	5696
450	18	1397	55	592	23.31	2013	79.25	3958	8725
500	20	1524	60	636	25.06	2079	81.85	4646	10243
600+	24+	1727	68	760	29.93	2430	95.67	7273	16034

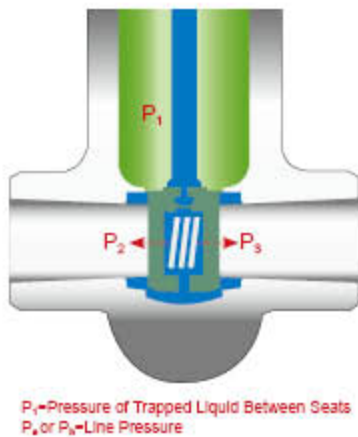
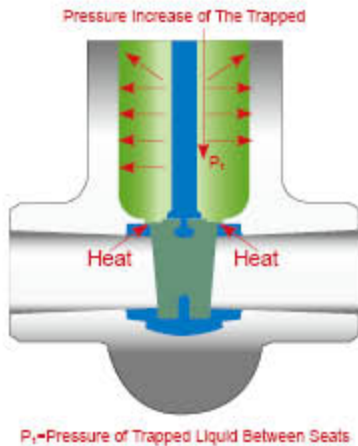


Options, Accessories & Actuation

Equalising & Bypass Equipment

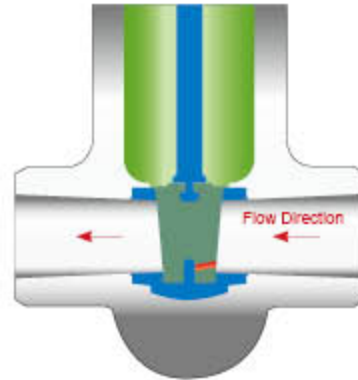
1. Over Pressurization & Pressure Locking

Pressure locking (or as sometimes referred to as intergate over pressurization) can occur with both wedge gate and parallel slide valves. This is described in ASME B16.34 under paragraph 2.3.3. Fluid Thermal Expansion. pressure locking occurs when a fluid at ambient temperature is trapped in the intergate cavity of the valve body. If heat, as associated with plant warm up is applied and the valve is in the closed position excessive pressure can be generated. The pressure is generated in the intergate cavity and can build up to a value in excess of the pressure rating of the valve.

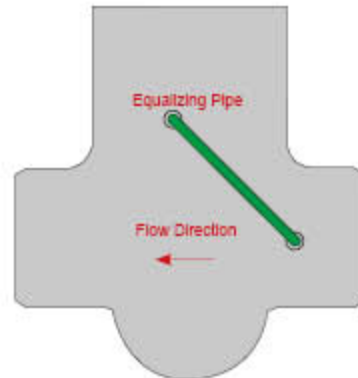


If the valve is open or part open during warm up then pressure locking cannot occur. If pressure locking is a possibility, then the following solutions can be applied.

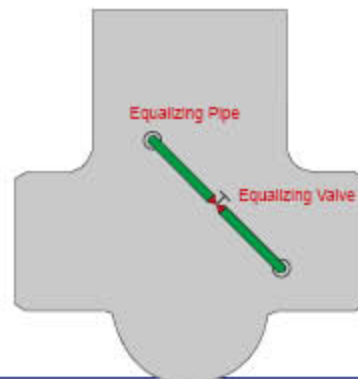
- The provision of a small hole drilled in the up stream seat is an inexpensive means of preventing pressure locking. As the valve would then be unidirectional the inlet and outlet of the valve then have to be clearly marked with identifying plates and a flow direction arrow.



- The fitting of an equalizing pipe connecting the intergate cavity to the highest pressure side of the valve body provides a simple and clearly visible means of preventing pressure lock. This arrangement would also render the valve unidirectional.

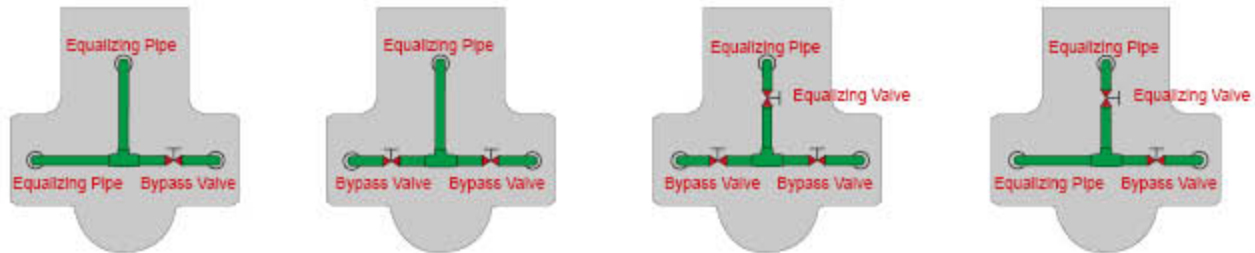


- The fitting of an equalizing pipe as previously described, but with the addition of an isolating globe valve prevents pressure locking with the added advantage of making the main valve bidirectional. During normal plant operation, the globe isolator would be closed and open during pipeline warm up or in any other circumstance where pressure locking might occur.





- Provision of Equalizing Bypass Valve, which in addition to acting as a Bypass also provides a means of preventing pressure build up in the intergate cavity. During normal plant operation, the equalizing bypass would be closed. And it would open during main valve closure, pipeline warm up, or in any other circumstance where pressure locking might occur.



2. Thermal Binding

For high temperature, high pressure steam applications such as the Main Steam Stop Valve, Decon strongly recommend the use of the parallel slide gate valves rather than wedge type gate valves, because the parallel slide valve is not susceptible to thermal binding.

Thermal binding is the inability to reopen a valve that was closed while hot and allowed to cool. Thermal binding has two primary causes: 1. a relatively cool valve stem is inserted into a hot valve. After closing on torque, the stem then warms up and grows further increasing the seating force. 2. As the valve body cools down, the seats contract on the valve wedges, locking them in place.

In wedge type gate valves, whether solid or flexible wedge, thermal binding is caused by dimensional interference between wedge and seat, due to temperature differences and/or thermal – expansion – coefficient differences. This can cause inoperability of the valve closure member. Figure 1 illustrates a typical case. Therefore, wedge gate valves are subject to thermal binding and the severity of the binding depends upon the specific magnitude of change in the operating conditions. Thermal binding is more common at high temperature operation.

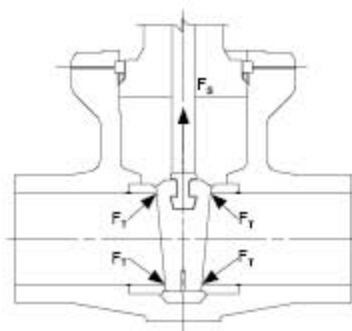


Figure 1

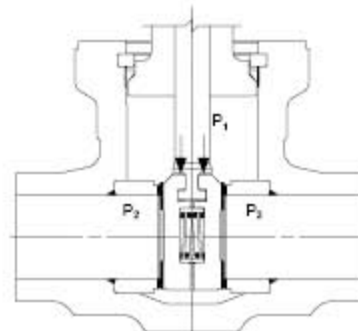


Figure 2

Due to its inherent design, Figure 2 illustrates a typical design, the parallel slide valve is not subject to thermal binding concerns, resulting in a distinct safety advantage in high temperature service. The parallel slide valves are position seated. If the stem grows after insertion into the valve, it only moves the disks down slightly. The seats are still in firm contact with each other. As the body cools, and squeezes in on the seats, the spring between the disks is compressed slightly. The sealing force remains constant. Therefore, Parallel Slide Gate Valves cannot bind thermally.



Product Ordering Information

Products	Direction	Connection	Connection Size		Pressure Rating	Material(Body)	Operation																																																																							
			Metric	Imperial																																																																										
32	1	10	0250	9004	1150	01	1																																																																							
<ul style="list-style-type: none"> 31 - Parallel Slide Gate Valve 32 - Wedge Gate Valve 		<ul style="list-style-type: none"> 1 - Straight Thro 2 - Angle Pattern 3 - Three Way 		<ul style="list-style-type: none"> 1 - Handwheel 2 - Lever 3 - Gearbox 4 - Electric 5 - Pneumatic 6 - Hydraulic 		<ul style="list-style-type: none"> 10 - Butt Weld 11 - Socket Weld 20 - FF 21 - RJ 22 - RTJ 30 - Wafer 31 - Wafer Lugged 40 - Screwed 50 - Threaded 60 - Clam Hub 																																																																								
			<table border="1"> <thead> <tr> <th>Metric</th> <th>Imperial</th> </tr> </thead> <tbody> <tr><td>0010 - DN10</td><td>9001 - 3/8"</td></tr> <tr><td>0015 - DN15</td><td>9002 - 1/2"</td></tr> <tr><td>0020 - DN20</td><td>9003 - 3/4"</td></tr> <tr><td>0025 - DN25</td><td>9004 - 1"</td></tr> <tr><td>0032 - DN32</td><td>9005 - 1 1/4"</td></tr> <tr><td>0040 - DN40</td><td>9006 - 1 1/2"</td></tr> <tr><td>0050 - DN50</td><td>9007 - 2"</td></tr> <tr><td>0065 - DN65</td><td>9008 - 2 1/2"</td></tr> <tr><td>0080 - DN80</td><td>9009 - 3"</td></tr> <tr><td>0100 - DN100</td><td>9010 - 4"</td></tr> <tr><td>0125 - DN125</td><td>9011 - 5"</td></tr> <tr><td>0150 - DN150</td><td>9012 - 6"</td></tr> <tr><td>0200 - DN200</td><td>9013 - 8"</td></tr> <tr><td>0225 - DN225</td><td>9014 - 9"</td></tr> <tr><td>0250 - DN250</td><td>9015 - 10"</td></tr> <tr><td>0300 - DN300</td><td>9016 - 12"</td></tr> <tr><td>0350 - DN350</td><td>9017 - 14"</td></tr> <tr><td>0400 - DN400</td><td>9018 - 16"</td></tr> <tr><td>0450 - DN450</td><td>9019 - 18"</td></tr> <tr><td>0500 - DN500</td><td>9020 - 20"</td></tr> <tr><td>0600 - DN600</td><td>9021 - 24"</td></tr> <tr><td>0700 - DN700</td><td>9022 - 28"</td></tr> <tr><td>0800 - DN800</td><td>9023 - 32"</td></tr> <tr><td>0900 - DN900</td><td>9024 - 36"</td></tr> <tr><td>1000 - DN1000</td><td>9025 - 40"</td></tr> </tbody> </table>		Metric	Imperial	0010 - DN10	9001 - 3/8"	0015 - DN15	9002 - 1/2"	0020 - DN20	9003 - 3/4"	0025 - DN25	9004 - 1"	0032 - DN32	9005 - 1 1/4"	0040 - DN40	9006 - 1 1/2"	0050 - DN50	9007 - 2"	0065 - DN65	9008 - 2 1/2"	0080 - DN80	9009 - 3"	0100 - DN100	9010 - 4"	0125 - DN125	9011 - 5"	0150 - DN150	9012 - 6"	0200 - DN200	9013 - 8"	0225 - DN225	9014 - 9"	0250 - DN250	9015 - 10"	0300 - DN300	9016 - 12"	0350 - DN350	9017 - 14"	0400 - DN400	9018 - 16"	0450 - DN450	9019 - 18"	0500 - DN500	9020 - 20"	0600 - DN600	9021 - 24"	0700 - DN700	9022 - 28"	0800 - DN800	9023 - 32"	0900 - DN900	9024 - 36"	1000 - DN1000	9025 - 40"	<table border="1"> <tbody> <tr><td>01 - A105</td></tr> <tr><td>02 - WCB</td></tr> <tr><td>03 - F11</td></tr> <tr><td>04 - WC6</td></tr> <tr><td>05 - F22</td></tr> <tr><td>06 - WC9</td></tr> <tr><td>07 - F91</td></tr> <tr><td>08 - C12A</td></tr> <tr><td>09 - F92</td></tr> <tr><td>10 - WB36</td></tr> <tr><td>11 - 304</td></tr> <tr><td>12 - CF8</td></tr> <tr><td>13 - 304L</td></tr> <tr><td>14 - CF3</td></tr> <tr><td>15 - 316</td></tr> <tr><td>16 - CF8M</td></tr> <tr><td>17 - 316L</td></tr> <tr><td>18 - CF3M</td></tr> <tr><td>19 - 15NiCuMoNb-5</td></tr> <tr><td>20 - 321</td></tr> </tbody> </table>		01 - A105	02 - WCB	03 - F11	04 - WC6	05 - F22	06 - WC9	07 - F91	08 - C12A	09 - F92	10 - WB36	11 - 304	12 - CF8	13 - 304L	14 - CF3	15 - 316	16 - CF8M	17 - 316L	18 - CF3M	19 - 15NiCuMoNb-5	20 - 321
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