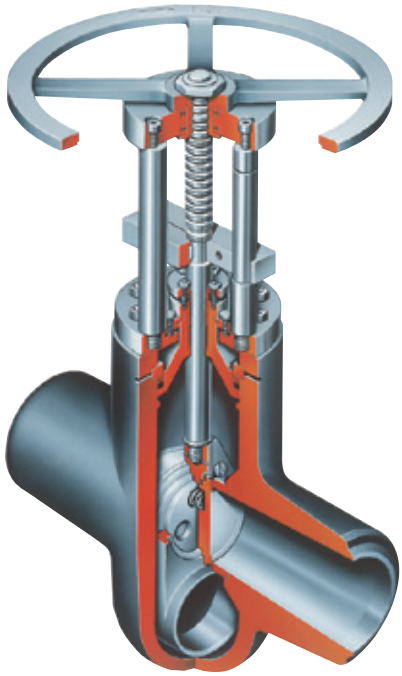
SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

High pressure and temperature parallel slide gate valve. The eyelet follower (conduit) design provides long reliable service life and allows for high seat velocities without detriment to service life.



GENERAL APPLICATION

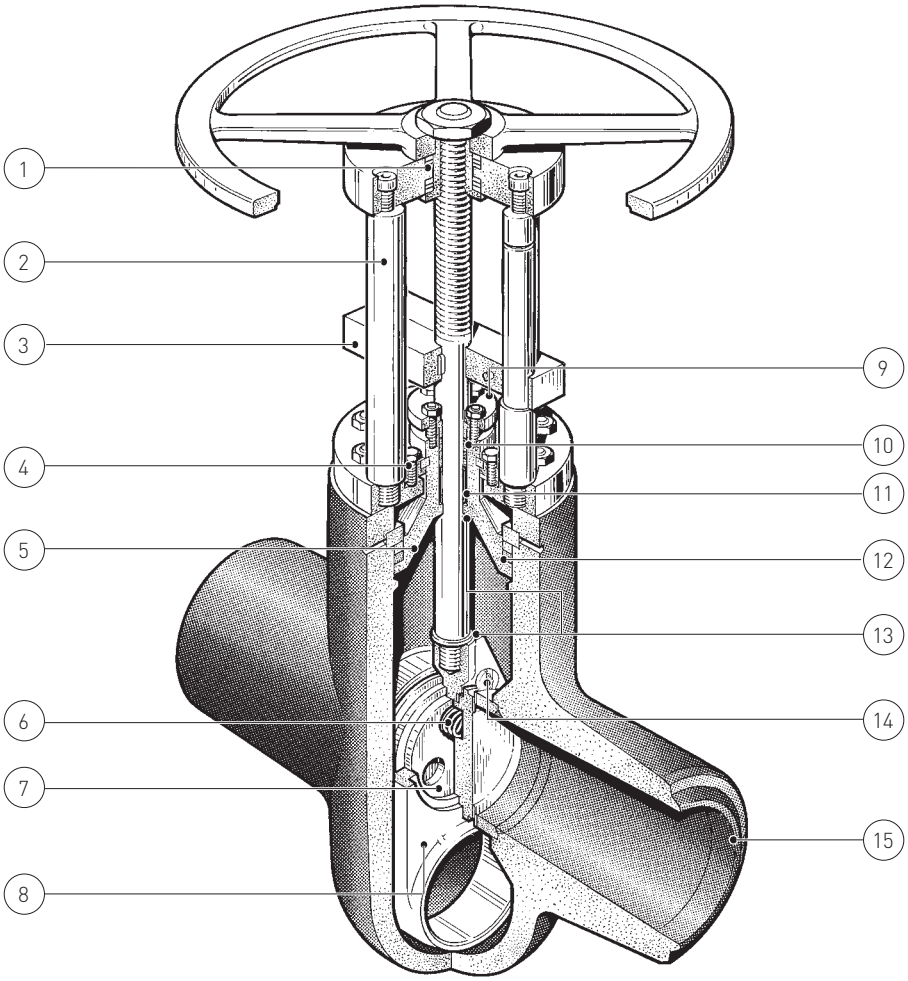
The Dewrance high pressure parallel slide gate valves featuring 'eyelet follower' design are specifically designed for use in high pressure water and steam applications, such as main steam isolation, boiler feed-pump isolation, feed heater isolation, spray water and general service isolation duty. Due to the eyelet follower design, the Dewrance parallel slide gate valve can be a solution in high velocity service applications where seat erosion and damage is problematic such as steam blow.

TECHNICAL DATA

Sizes:	NPS 5 - 24 (DN 125 - 600)
ASME:	ASME B16.34
Valve overall lengths to:	ASME B16.10
Pressure class:	1000, 1690, 1715, 2260, 2500, 2850

FEATURES

- Excellent reliability
  - Eyelet follower providing a smooth flow path and maximum performance
  - Self cleaning action between disk and seat
  - Welded-in seats hard-faced with Stellite® or equivalent
  - Seat surface protection provides extended life
- Low cost maintenance
  - Expanded graphite pressure seal and gland packing
  - Lower operating forces than wedge gate design
  - Interchangability of parts
  - Simplified seat refurbishment (only requires flat lapping, no critical angles to be matched to ensure sealing capability)
  - Longer seat life with eyelet follower, due to reduced erosion
- Improved performance
  - Lower pressure drop characteristic than wedge gate valve
  - Minimized flow turbulence
  - Reduced actuator size/cost by 30% when compared to wedge gate
  - Higher allowable seat velocity
  - Improved sealing assisted by line pressure
  - Low operating torque, seals on position not torque



LEGENDA

1 Anti-friction bearings are fitted for direct handwheel operation.
2 Four pillar design for rigidity and accessibility.
3 Stem stop clearly indicates valve position and prevents stem rotation.
4 Jacking screws to pre-load pressure seal.
5 Pressure seal closure improves as pressure increases.
6 Springs or spring to hold disc against seat face for initial sealing.
7 Hard faced Stellite®/ or equivalent discs and seats.
8 Combined eyelet/conduit and belt-eye/disc holder.
9 Two piece gland.
10 Specially designed stuffing box to suit expanded graphite packing.
11 Neck bushing for stem support.
12 Expanded graphite pressure seal ring.
13 Hard faced Stellite®/ or equivalent back seat.
14 Disc retainer.
15 Butt weld ends.

NOTE

Drain can be fitted as required

Please note valves up to and including NPS 4 are Forged, Carbon or Alloy Steel and are not fitted with an eyelet/conduit.

VALVE OPERATION

When a parallel slide is opened or closed, the positioning of two flat spring loaded discs will either seal or open the pipeline passage.
Closure is achieved by positioning the discs between the seat faces in the valve body. The pressure differential across the disc forces the outlet disc against the outlet seat, creating a tight seal which is far superior to that of a wedge gate valve.
The two separate spring loaded discs mounted in the belteye/disc holder have sufficient loading and freedom of movement to allow accurate contact between the flat lapped faces over the range of expansion and contraction regardless of the valve orientation.
During valve closure the self wiping action of the discs ensures that debris is not trapped between the sealing faces.
Stem travel is limited by the back seat in open position and the stem stop in the closed position. The stem stop prevents stem rotation and acts as a position indicator.
Unlike a wedge gate valve it is line pressure and POSITION, not excessive mechanical force at the end of stroke that is required to make a seal.
When the position indicator is in the closed position the valve is fully isolated.
DO NOT APPLY ANY ADDITIONAL FORCE.
Because the discs are free to slide between the seat faces it is virtually impossible to create an overstressed condition under normal operation.

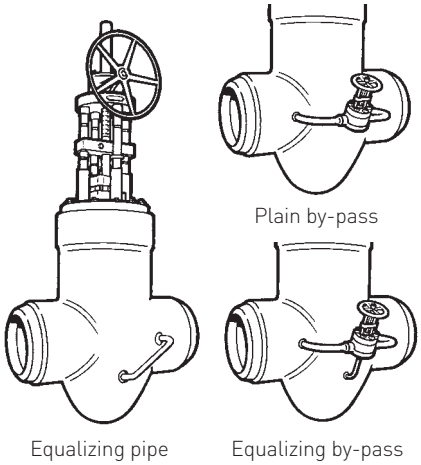
Valves NPS 5 and greater have an eyelet/conduit as part of the belteye/disc holder.
The advantages of this eyelet are.

1 It produces a smoother flow between the seat faces by effectively eliminating the body cavity and the turbulence which it causes.
2 It protects the seat faces from impingement of the line fluid or anything suspended in it.
3 It prevents debris in the fluid being thrown out of suspension into the valve body.

When the eyelet/conduit is positioned between the seats, the bottom of the disc faces are still in contact with seat faces. No body guides are required.

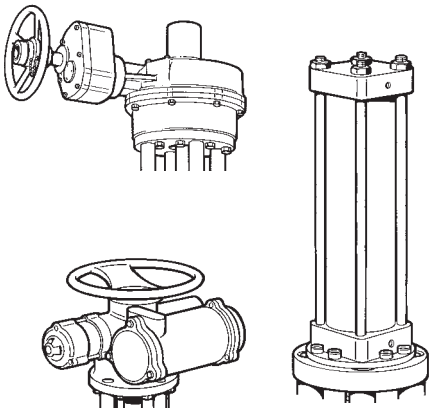
BY-PASS AND EQUALIZING DEVICES

By-pass valves are used to reduce the traversing differential pressure across the valve seat. This reduces the size of the operating gear, resulting in considerable savings. By-passes also provide a convenient means for the initial warming through of pipe lines.
Equalizing devices are used to relieve the fluid trapped between the seat faces, and to provide an outlet for the fluid displaced by the valve stem traversing to the shut position. This situation is quite common in valves used on non compressible fluids such as feed systems etc., but it can also arise on steam valves due to the collection of condensate inside the valve body during shut down, and fluctuating ambient temperature conditions.
When a by-pass is used, it provides a means of fitting an equalizing connection from the main valve, through the by-pass and to the main line. This is a most convenient arrangement, as it does not make the main valve unidirectional.
When a by-pass is not required and external small bore pipe loop, connecting the inside of the valve body to one of the branches, can be used as an equalizing device. Alternatively a hole drilled through one of the seats can serve the same purpose. These devices are quite satisfactory but require correct orientation. To prevent water discharge during trip conditions the valve should be equalized towards the source of pressure.



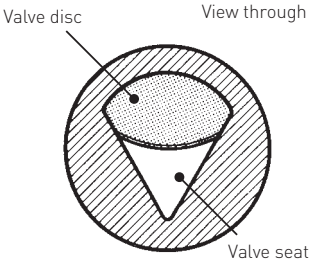
OPERATORS

Parallel slide gate valves can be equipped with gear operators – when handwheel rim torque exceeds 50 lbs. push and 50 lbs. pull. Bevel gear; bevel and spur gear; and spur gear operators are available.
Power operators – All Parallel slide gate valves may be adapted for motor operators, pneumatic or hydraulic cylinders. The low torque requirements and the position seating of the valve provides economic power operator sizing. When ordering, the following information should be supplied:
- Operating pressure/temperature
- Differential pressure
- System fluid
- Operation time
- Control voltage
- System power supply
- Required enclosure type
- Additional electrical features



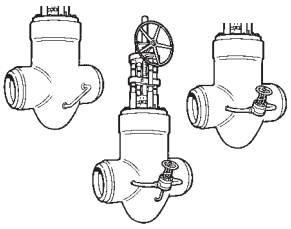
PARALLEL SLIDE VALVES FOR REGULATING DUTY

If a valve is required for flow regulation duties, a parallel slide valve can supply this when fitted with a "v-ported" seat, and special pattern discs. The upstream seat is drilled to provide a pressure equalizing feature and the valve becomes unidirectional.



BY-PASS VALVES

Parallel slide gate valves can be fitted with by-pass valves when specified by the customer. By-pass valves have a parallel slide gate design with a pressure seal bonnet, a forged body, butt-weld ends, can be motor operated and are in accordance with MSS SP-45.
By-pass, equalizing by-pass, equalizing pipe and drain arrangements are available to suit customer design installation. Application requests should include the following additional information:
- Unidirectional or bidirectional flow
- Main valve installation position
- Piping variations or restriction unique to your design.



VENTURI FOLLOWER-EYE FEATURE

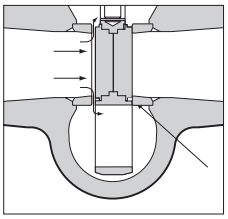
The advantages of the "follower-eye" are clearly shown in the sketch opposite, page which compares the Venturi parallel slide design with a full bore wedge gate valve.

- Parallel slide gate valves use system pressure and position to provide positive isolation.
- Seal is established on outlet seat face only.
- Springs are fitted between disks to provide initial searing force only, and do not maintain the sealing force.
- No additional torque required to achieve a positive seal once discs are in position.
- Wedge gates require additional force to make the seal between the tapered seat surfaces.
- Wedge gate valves require larger operating forces.
- Parallel slide valves can cope with movements due to expansion/contraction without the need for additional manual intervention.

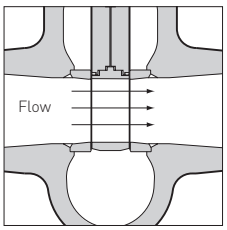
- Wiping action of discs over seats during closing, removes debris therefore helps prevent premature wear.
- Follower-eye on Venturi design parallel slide valve provides:
- Smooth flow path between seats.
- Protects seat faces from direct impingement of system debris.
- Enables a physically smaller and lighter valve to meet pressure drop equivalent of L/D=13.

- Non-wiping action of wedge gate traps debris between wedge and seat faces, thus preventing sealing and promoting leakage and localised erosion.
- Benefits of follower-eye are impossible to apply to wedge gate design resulting in:
- Turbulent flow path between seat faces.
- Seat faces exposed to system debris and erosion
- Physically larger seat bore and valve required to meet equivalent Dewrance venturi P.S.V. pressure drop figure.

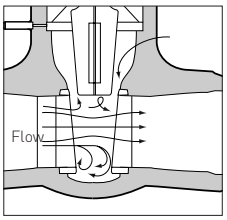
- Full bore wedge gate valves seat dimension is usually based on 90% of end bore to achieve acceptable pressure drop characteristic.
- 90% seat bore to end bore ratio is NOT a requirement of ASME B16.34 as per interpretation 1-36.


Closure takes place at outlet only

Parallel slide gate valve



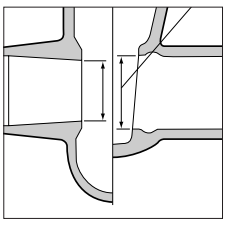
Venturi provides uninterrupted flow path and protected seat faces



Seat faces exposed to system dirt and scale

Flow path interrupted by turbulence due to absence of eyelet, resulting in higher Δp

Disadvantages of wedge gate valve


Traversing distance much greater than equivalent parallel slide valve

Venturi parallel slide valve

'Full' bore wedge gate valve

SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

IMPERIAL 1000 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)															
			-20° to 100°	200	300	400	500	600	650	700	750	800	850t	900	950	1000	1050	1100
P67	WCB	Std.*	2469	2276	2181	2110	2007	1892	1831	1767	1683	1372	1064	-	-	-	-	-
P67	WCB	Spec.**	2500	2497	2468	2445	2443	2430	2380	2291	2106	1716	1331	-	-	-	-	-
P67	WC6	Std.*	2500	2490	2406	2312	2207	2026	1959	1888	1775	1690	1616	1449	1106	723	497	330
P67	WC6	Spec.**	2500	2500	2500	2500	2500	2500	2490	2449	2428	2392	2241	1918	1383	903	621	413
P67	WC9	Std.*	2500	2492	2428	2341	2207	2026	1959	1888	1775	1690	1616	1483	1240	894	602	380
P67	WC9	Spec.**	2500	2497	2465	2427	2414	2401	2384	2361	2358	2352	2241	1968	1565	1117	753	475
P67	C12A	Std.*	2500	2492	2428	2341	2207	2026	1959	1888	1775	1690	1616	1483	1324	1213	1176	1000
P67	C12A	Spec.**	2500	2500	2500	2500	2500	2500	2490	2449	2428	2392	2241	1968	1641	1403	1389	1232

METRIC 1000 CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P67	WCB	Std.*	170.2	167.1	155.3	150.2	146.0	139.8	132.8	129.0	125.2	121.2	115.8	95.9	-	-	-	-	-	-
P67	WCB	Spec.**	172.4	172.4	172.1	170.1	168.6	168.4	168.4	167.0	163.0	157.0	144.7	119.9	-	-	-	-	-	-
P67	WC6	Std.*	172.4	172.4	171.6	165.8	159.9	154.5	142.9	137.8	134.1	129.4	122.0	116.8	112.7	105.6	85.8	49.7	42.3	29.3
P67	WC6	Spec.**	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	171.4	168.3	167.4	165.5	157.1	142.5	107.2	62.0	53.0	36.7
P67	WC9	Std.*	172.4	172.4	171.8	167.3	162.1	154.5	142.9	137.8	134.1	129.4	122.0	116.8	112.7	105.6	94.1	61.5	52.1	35.1
P67	WC9	Spec.**	172.4	172.4	172.1	169.9	167.4	166.6	165.9	165.3	164.0	162.6	162.6	162.6	157.1	142.5	119.0	76.8	65.1	43.9
P67	C12A	Std.*	172.4	172.4	171.8	167.3	162.1	154.5	142.9	137.8	134.1	129.4	122.0	116.8	112.7	105.6	94.1	83.6	83.2	79.8
P67	C12A	Spec.**	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	171.4	168.3	167.4	165.5	157.1	142.5	119.0	96.6	96.6	95.3

IMPERIAL 1690 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)															
			-20° to 100°	200	300	400	500	600	650	700	750	850t	850	900	950	1000	1050	1100
P73	WCB	Std.*	4172	3846	3686	3565	3392	3197	3094	2986	2843	2319	1799	-	-	-	-	-
P73	WCB	Spec.**	4226	4220	4171	4132	4128	4107	4023	3871	3560	2899	2249	-	-	-	-	-
P73	WC6	Std.*	4226	4209	4067	3907	3731	3424	3310	3189	2999	2854	2731	2446	1869	1222	840	557
P73	WC6	Spec.**	4226	4226	4226	4226	4226	4226	4208	4138	4105	4042	3789	3243	2336	1528	1050	697
P73	WC9	Std.*	4226	4212	4101	3960	3731	3424	3310	3189	2999	2854	2731	2504	2093	1511	1018	642
P73	WC9	Spec.**	4226	4219	4165	4102	4080	4058	4029	3989	3984	3975	3789	3327	2646	1889	1272	802
P73	C12A	Std.*	4226	4212	4101	3960	3731	3424	3310	3189	2999	2854	2731	2504	2236	2052	1988	1690
P73	C12A	Spec.**	4226	4226	4226	4226	4226	4226	4208	4138	4105	4042	3789	3327	2774	2374	2350	2084

METRIC 1690 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P73	WCB	Std.*	287.6	282.3	262.5	253.9	246.7	236.3	224.3	218.1	211.6	204.8	195.6	162.0	-	-	-	-	-	-
P73	WCB	Spec.**	291.3	291.3	290.9	287.5	284.9	284.6	284.6	282.3	275.6	265.3	244.5	202.6	-	-	-	-	-	-
P73	WC6	Std.*	291.3	291.3	290.0	280.2	270.2	261.1	241.5	232.8	226.6	218.6	206.2	197.2	190.4	178.3	144.9	83.9	71.6	49.6
P73	WC6	Spec.**	291.3	291.3	291.3	291.3	291.3	291.3	291.3	291.3	289.7	284.5	282.9	279.6	265.7	240.8	181.2	104.9	89.5	62.0
P73	WC9	Std.*	291.3	291.3	290.2	282.6	274.2	261.1	241.5	232.8	226.6	218.6	206.2	197.2	190.4	178.3	158.8	103.9	88.1	59.3
P73	WC9	Spec.**	291.3	291.3	290.8	287.1	282.9	281.6	280.4	279.4	277.2	274.7	274.7	274.7	265.7	240.8	201.2	129.8	110.1	74.1
P73	C12A	Std.*	291.3	291.3	290.2	282.6	274.2	261.1	241.5	232.8	226.6	218.6	206.2	197.2	190.4	178.3	158.8	141.3	140.7	134.9
P73	C12A	Spec.**	291.3	291.3	291.3	291.3	291.3	291.3	291.3	291.3	289.7	284.5	282.9	279.6	265.7	240.8	201.2	163.5	163.5	161.1

IMPERIAL 1715 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)															
			-20° to 100°	200	300	400	500	600	650	700	750	850t	850	900	950	1000	1050	1100
P8A	WCB	Std.*	4234	3903	3740	3618	3442	3245	3140	3031	2885	2353	1825	-	-	-	-	-
P8A	WCB	Spec.**	4288	4282	4233	4193	4189	4168	4082	3929	3612	2942	2282	-	-	-	-	-
P8A	WC6	Std.*	4288	4271	4127	3965	3786	3475	3359	3236	3044	2896	2771	2482	1897	1240	852	566
P8A	WC6	Spec.**	4288	4288	4288	4288	4288	4288	4270	4199	4165	4102	3845	3291	2371	1550	1065	708
P8A	WC9	Std.*	4288	4274	4162	4018	3786	3475	3359	3236	3044	2896	2771	2541	2124	1534	1033	651
P8A	WC9	Spec.**	4288	4281	4226	4162	4141	4118	4088	4048	4043	4034	3845	3376	2685	1917	1291	814
P8A	C12A	Std.*	4288	4274	4162	4018	3786	3475	3359	3236	3044	2896	2771	2541	2270	2082	2017	1715
P8A	C12A	Spec.**	4288	4288	4288	4288	4288	4288	4270	4199	4165	4102	3845	3376	2815	2409	2384	2115

t = Permissable for WCB material, but not recommended for prolonged usage above 800°F (425°C)

Std.* = Standard Spec.** = Special

SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

METRIC 1715 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																	
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P8A	WCB	Std.*	291.9	286.5	266.4	257.7	250.4	239.8	227.6	221.3	214.7	207.9	198.5	164.4	-	-	-	-	-	-
P8A	WCB	Spec.**	295.6	295.6	295.2	291.8	289.1	288.8	288.8	286.5	279.6	269.3	248.1	205.6	-	-	-	-	-	-
P8A	WC6	Std.*	295.6	295.6	294.3	284.3	274.2	265.0	245.1	236.2	230.0	221.9	209.3	200.1	193.3	180.9	147.0	85.2	72.6	50.3
P8A	WC6	Spec.**	295.6	295.6	295.6	295.6	295.6	295.6	295.6	295.6	294.0	288.7	287.1	283.8	269.6	244.4	183.8	106.4	90.8	62.9
P8A	WC9	Std.*	295.6	295.6	294.5	286.8	278.2	265.0	245.1	236.2	230.0	221.9	209.3	200.1	193.3	180.9	161.1	105.4	89.4	60.1
P8A	WC9	Spec.**	295.6	295.6	295.1	291.3	287.1	285.7	284.6	283.5	281.3	278.7	278.7	278.7	269.6	244.4	204.2	131.7	111.7	75.2
P8A	C12A	Std.*	295.6	295.6	294.5	286.8	278.2	265.0	245.1	236.2	230.0	221.9	209.3	200.1	193.3	180.9	161.1	143.4	142.8	136.9
P8A	C12A	Spec.**	295.6	295.6	295.6	295.6	295.6	295.6	295.6	295.6	294.0	288.7	287.1	283.8	269.6	244.4	204.2	165.9	165.9	163.5

IMPERIAL 2260 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)																	
			-20° to 100°	200	300	400	500	600	650	700	750	850t	850	900	950	1000	1050	1100		
P83	WCB	Std.*	5579	5143	4929	4768	4536	4275	4138	3994	3801	3101	2405	-	-	-	-	-		
P83	WCB	Spec.**	5650	5643	5578	5525	5521	5493	5379	5177	4760	3876	3006	-	-	-	-	-		
P83	WC6	Std.*	5650	5628	5439	5224	4988	4578	4428	4263	4009	3815	3653	3272	2500	1634	1123	746		
P83	WC6	Spec.**	5650	5650	5650	5650	5650	5650	5628	5534	5487	5406	5068	4337	3124	2042	1404	932		
P83	WC9	Std.*	5650	5633	5486	5294	4988	4578	4428	4263	4009	3815	3653	3350	2800	2021	1361	858		
P83	WC9	Spec.**	5650	5642	5569	5485	5457	5426	5387	5335	5327	5316	5068	4449	3537	2527	1701	1073		
P83	C12A	Std.*	5650	5633	5486	5294	4988	4578	4428	4263	4009	3815	3653	3350	2991	2742	2658	2260		
P83	C12A	Spec.**	5650	5650	5650	5650	5650	5650	5628	5534	5487	5406	5068	4449	3708	3174	3141	2786		

METRIC 2260 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																	
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P83	WCB	Std. *	384.7	377.6	351.0	339.6	330.0	315.9	300.0	291.6	283.0	274.0	261.5	216.7	-	-	-	-	-	-
P83	WCB	Spec. **	389.5	389.5	389.0	384.5	381.0	380.7	380.7	377.5	368.5	354.8	327.0	270.8	-	-	-	-	-	-
P83	WC6	Std. *	389.5	389.5	387.8	374.7	361.2	349.1	322.9	311.3	303.1	292.2	275.7	263.6	254.7	238.5	193.8	112.2	95.7	66.3
P83	WC6	Spec. **	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	387.4	380.5	378.2	374.0	355.3	322.1	242.3	140.2	119.7	82.9
P83	WC9	Std. *	389.5	389.5	388.2	378.0	366.5	349.1	322.9	311.3	303.1	292.2	275.7	263.6	254.7	238.5	212.4	138.9	117.8	79.3
P83	WC9	Spec. **	389.5	389.5	388.9	383.8	378.3	376.5	375.0	373.6	370.6	367.3	367.3	367.3	355.3	322.1	269.0	173.6	147.2	99.2
P83	C12A	Std. *	389.5	389.5	388.2	378.0	366.5	349.1	322.9	311.3	303.1	292.2	275.7	263.6	254.7	238.5	212.4	188.9	188.1	180.3
P83	C12A	Spec. **	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	387.4	380.5	378.2	374.0	355.3	322.1	269.0	218.5	218.5	215.4

IMPERIAL 2500 CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)																	
			-20° to 100°	200	300	400	500	600	650	700	750	850t	850	900	950	1000	1050	1100		
P91	WCB	Std. *	6171	5689	5452	5274	5018	4729	4577	4418	4205	3430	2661	-	-	-	-	-		
P91	WCB	Spec. **	6250	6242	6170	6112	6108	6076	5950	5727	5266	4287	3326	-	-	-	-	-		
P91	WC6	Std. *	6250	6226	6017	5778	5517	5064	4898	4715	4434	4220	4041	3620	2765	1808	1243	825		
P91	WC6	Spec. **	6250	6250	6250	6250	6250	6250	6225	6122	6069	5980	5607	4798	3456	2259	1553	1031		
P91	WC9	Std. *	6250	6231	6069	5855	5517	5064	4898	4715	4434	4220	4041	3707	3098	2236	1505	950		
P91	WC9	Spec. **	6250	6241	6160	6067	6036	6003	5959	5901	5893	5880	5607	4921	3913	2795	1882	1187		
P91	C12A	Std. *	6250	6231	6069	5855	5517	5064	4898	4715	4434	4220	4041	3707	3309	3032	2940	2500		
P91	C12A	Spec. **	6250	6250	6250	6250	6250	6250	6225	6122	6069	5980	5607	4921	4102	3510	3475	3082		

METRIC 2500 CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																	
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P91	WCB	Std. *	425.5	417.7	388.3	375.6	365.0	349.5	331.8	322.6	313.0	303.1	289.3	239.7	-	-	-	-	-	-
P91	WCB	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	-	-	-	-	-	-
P91	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
P91	WC6	Spec. **	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
P91	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
P91	WC9	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	162.8	109.7
P91	C12A	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	208.9	208.0	199.5
P91	C12A	Spec. **	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	297.5	241.7	241.7	238.3

t = Permissable for WCB material, but not recommended for prolonged usage above 800°F (425°C)

Std.* = Standard Spec.** = Special

SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

IMPERIAL 2850 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in lbf/sq. in. at temp. °F (for intermediate ratings use linear interpolation)															
			-20° to 100°	200	300	400	500	600	650	700	750	850t	850	900	950	1000	1050	1100
P95	WCB	Std. *	7035	6485	6215	6012	5720	5392	5218	5037	4794	3911	3033	-	-	-	-	-
P95	WCB	Spec. **	7125	7116	7034	6967	6962	6927	6784	6529	6003	4888	3791	-	-	-	-	-
P95	WC6	Std. *	7125	7097	6859	6588	6289	5772	5583	5375	5054	4810	4606	4127	3152	2061	1416	941
P95	WC6	Spec. **	7125	7125	7125	7125	7125	7125	7097	6979	6919	6817	6392	5469	3940	2575	1771	1176
P95	WC9	Std. *	7125	7103	6919	6675	6289	5772	5583	5375	5054	4810	4606	4225	3532	2549	1716	1083
P95	WC9	Spec. **	7125	7115	7023	6917	6881	6843	6794	6727	6718	6703	6392	5610	4460	3186	2146	1353
P95	C12A	Std. *	7125	7103	6919	6675	6289	5772	5583	5375	5054	4810	4606	4225	3772	3456	3352	2850
P95	C12A	Spec. **	7125	7125	7125	7125	7125	7125	7097	6979	6919	6817	6392	5610	4676	4002	3961	3513

METRIC 2850 INT. CLASS (ASME B16.34)

Prod. No.	ASTM Body material cast	ASME code B16.34	Pressure in Bar at temp. °C (for intermediate ratings use linear interpolation)																
			-30° to 38°	50	100	150	200	250	300	325	350	375	400	425t	450	475	500	538	550	575
P95	WCB	Std. *	485.1	476.2	442.7	428.2	416.1	398.4	378.3	367.8	356.8	345.5	329.8	273.3	-	-	-	-	-	-
P95	WCB	Spec. **	491.2	491.2	490.5	484.8	480.4	480.0	480.0	476.1	464.7	447.5	412.3	341.5	-	-	-	-	-	-
P95	WC6	Std. *	491.2	491.2	489.1	472.5	455.6	440.2	407.1	392.5	382.2	368.5	347.5	332.4	321.2	300.8	244.4	141.5	120.7	83.7
P95	WC6	Spec. **	491.2	491.2	491.2	491.2	491.2	491.2	491.2	491.2	488.6	479.8	476.9	471.6	448.1	406.2	305.5	176.8	150.9	104.5
P95	WC9	Std. *	491.2	491.2	489.5	476.8	462.2	440.2	407.1	392.5	382.2	368.3	347.5	332.4	321.2	300.8	267.9	175.2	148.5	100.0
P95	WC9	Spec. **	491.2	491.2	490.4	484.0	477.1	474.8	472.9	471.2	467.4	463.2	463.2	463.2	448.1	406.2	339.1	219.0	185.6	125.0
P95	C12A	Std. *	491.2	491.2	489.5	476.8	462.2	440.2	407.1	392.5	382.2	368.5	347.5	332.4	321.2	300.8	267.9	238.1	237.1	227.4
P95	C12A	Spec. **	491.2	491.2	491.2	491.2	491.2	491.2	491.2	491.2	488.6	479.8	476.9	471.6	448.1	406.2	339.1	275.5	275.5	271.6

NOTES:

t = Permissable for WCB material, but not recommended for prolonged usage above 800°F (425°C)

Pressure boundary materials to ASTM specifications

All other materials to stated comparable U.S. specifications

Std.* ASME B16.34 Standard Class

Spec.** ASME B16.34 Special Class

SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1000 INT. CLASS

PRODUCT NO. - P67 ('P' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium Bronze	Aluminium Bronze	Aluminium Bronze	Aluminium Bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke Sleeve	Aluminium Bronze	Aluminium Bronze	Aluminium Bronze	Aluminium Bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland Packing	Expanded Graphite	Expanded Graphite	Expanded Graphite	Expanded Graphite
Pressure Seal	Expanded Graphite	Expanded Graphite	Expanded Graphite	Expanded Graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

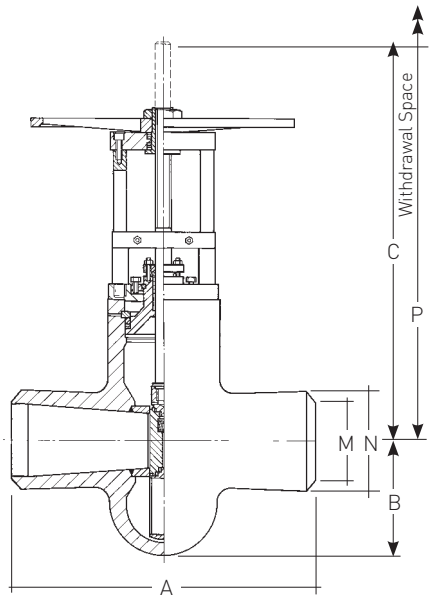
Pressure Class	Shell psi (bar)	Seat psi (bar)
1000	3750 (259)	2750 (190)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	17	7.75	31.10	4.72	5.71	44	214	1605	0.172
6	20	9.00	36.38	5.63	6.81	51	352	2240	0.179
8	26	11.56	44.21	7.44	8.78	63	629	3848	0.185
10	31	14.93	52.72	9.25	10.94	76	1265	7355	0.121
12	36	17.25	59.88	11.10	12.99	87	1900	9881	0.139
14	39	18.37	63.70	12.20	14.25	93	2213	11126	0.160
16	43	20.75	68.98	13.98	16.26	101	2992	14474	0.163
18	48	23.12	78.35	15.59	18.31	115	4158	18282	0.158
20	52	25.43	88.39	17.32	20.31	129	5890	22709	0.156
24	61	30.31	101.77	20.79	24.37	150	9030	33258	0.151

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	432	196	789	120	145	1118	97	1605	0.172
150	508	228	924	143	173	1296	160	2240	0.179
200	660	293	1123	189	223	1601	286	3848	0.185
250	787	379	1339	235	278	1931	575	7355	0.121
300	914	437	1521	282	330	2210	864	9881	0.139
350	991	466	1618	310	362	2363	1006	11126	0.160
400	1092	526	1752	355	413	2566	1360	14474	0.163
450	1219	589	1990	396	465	2921	1890	18282	0.158
500	1321	646	2245	440	516	3277	2677	22709	0.156
600	1549	770	2585	528	619	3810	4104	33258	0.151



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1000 INT. CLASS

PRODUCT NO. - P67 ('R' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

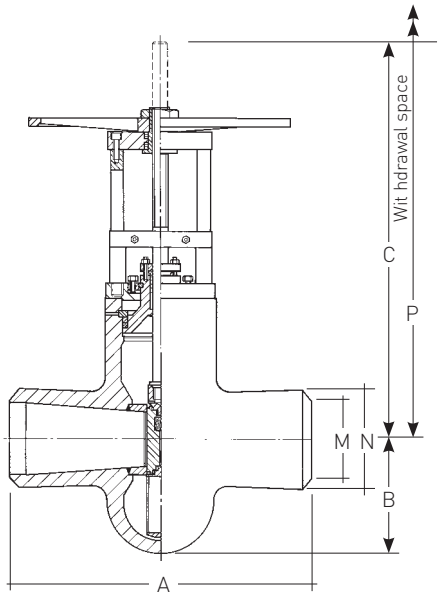
Pressure class	Shell psi (bar)	Seat psi (bar)
1000	3750 (259)	2750 (190)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
5	17	6.65	24.72	4.57	5.71	36	145	956	0.485
6	20	7.75	31.10	5.51	6.81	44	233	1410	0.452
8	26	9.00	36.38	7.20	8.78	51	416	1802	0.844
10	31	11.56	44.21	9.06	10.94	63	704	3181	0.647
12	36	14.94	57.72	10.75	12.99	76	1373	6394	0.332
14	39	17.25	59.88	11.81	14.25	87	1985	9161	0.236
16	43	18.36	63.70	13.54	16.26	93	2317	9808	0.355
18	48	20.75	68.98	15.24	18.31	101	3166	12887	0.318
20	52	23.12	78.35	17.00	20.31	115	4323	16376	0.300
24	61	25.44	88.39	20.39	24.37	129	6424	18634	0.481

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
125	432	169	628	116	145	915	66	956	0.485
150	508	196	789	140	173	1118	106	1410	0.452
200	660	228	924	183	223	1296	189	1802	0.844
250	787	293	1123	230	278	1601	320	3181	0.647
300	914	379	1339	273	330	1931	624	6394	0.332
350	991	437	1521	300	362	2210	902	9161	0.236
400	1092	466	1618	344	413	2363	1053	9808	0.355
450	1219	526	1752	387	465	2566	1439	12887	0.318
500	1321	586	1990	432	516	2921	1965	16376	0.300
600	1549	646	2245	518	619	3277	2920	18634	0.481



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1690 INT. CLASS

PRODUCT NO. - P73 ('P' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

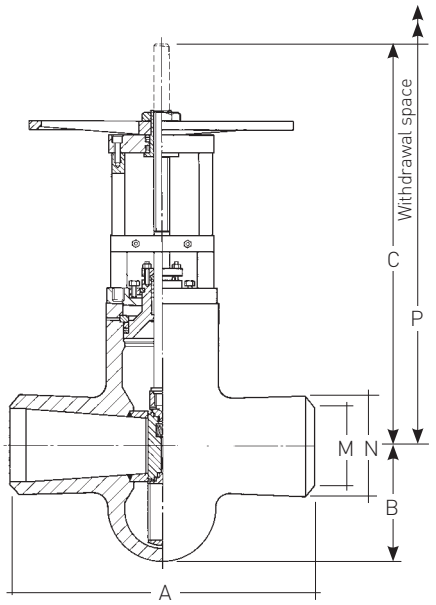
Pressure class	Shell psi (bar)	Seat psi (bar)
1690	6350 (438)	4650 (321)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
5	19	7.25	30.20	4.25	5.71	42	255	1104	0.239
6	22	8.81	31.46	5.12	6.81	46	425	2371	0.194
8	28	11.25	43.43	6.69	8.78	62	893	3103	0.186
10	34	13.68	50.71	8.35	10.94	74	1533	4873	0.183
12	39	16.25	58.15	10.04	12.99	84	2508	7084	0.181
14	42	17.93	64.00	11.02	14.25	93	3166	8755	0.172
16	47	20.56	68.15	12.64	16.26	100	4380	11760	0.165
18	53	22.75	77.28	14.09	18.31	114	6039	14748	0.162
20	58	25.12	82.83	15.63	20.31	122	8263	18319	0.159
24	66	30.00	100.28	18.78	24.37	148	13362	27048	0.152

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
125	483	184	767	108	145	1066	116	1104	0.239
150	559	223	799	130	173	1168	193	2371	0.194
200	711	286	1103	170	223	1575	405	3103	0.186
250	864	347	1288	212	278	1880	696	4873	0.183
300	991	413	1477	255	330	2134	1138	7084	0.181
350	1066	455	1626	280	362	2362	1436	8755	0.172
400	1194	522	1731	321	413	2540	1987	11760	0.165
450	1346	577	1963	358	465	2896	2740	14748	0.162
500	1473	637	2104	397	516	3099	3748	18319	0.159
600	1676	761	2547	477	619	3759	6061	27048	0.152



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1690 INT. CLASS

PRODUCT NO. - P73 ('R' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

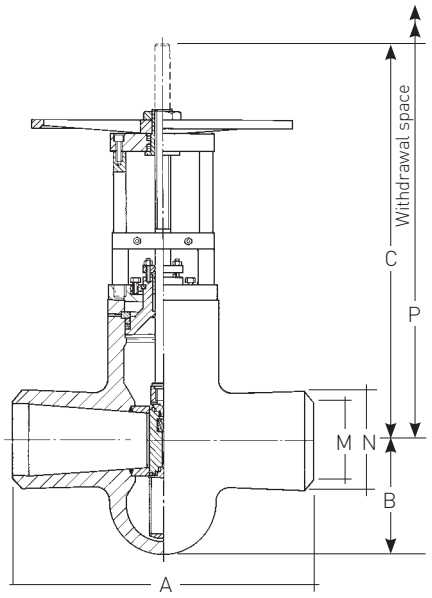
Pressure class	Shell psi (bar)	Seat psi (bar)
1690	6350 (438)	4650 (321)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	19	5.94	23.87	4.25	5.71	34	216	573	0.886
6	22	7.25	30.20	5.12	6.81	42	282	1246	0.702
8	28	8.81	31.46	6.69	8.78	46	500	1427	0.880
10	34	11.25	43.43	8.35	10.94	62	1023	2545	0.671
12	39	13.69	50.71	10.04	12.99	74	1679	4064	0.550
14	42	16.25	58.15	11.02	14.25	84	2625	6419	0.320
16	47	17.94	64.00	12.64	16.26	93	3364	7572	0.398
18	53	20.56	68.15	14.09	18.31	100	5880	10428	0.324
20	58	22.75	77.28	15.63	20.31	114	6340	13506	0.313
24	66	25.12	82.83	18.78	24.37	122	8980	14839	0.505

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	483	150	606	108	145	864	98	573	0.886
150	559	184	767	130	173	1066	128	1246	0.702
200	711	223	799	170	223	1168	227	1427	0.880
250	864	286	1103	212	278	1575	464	2545	0.671
300	991	347	1288	255	330	1880	762	4064	0.550
350	1066	413	1477	280	362	2134	1191	6419	0.320
400	1194	455	1626	321	413	2362	1526	7572	0.398
450	1346	522	1731	358	465	2540	2667	10428	0.324
500	1473	577	1963	397	516	2896	2876	13506	0.313
600	1676	637	2104	477	619	3099	4074	14839	0.505



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1715 INT. CLASS

PRODUCT NO. - P8A ('T' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

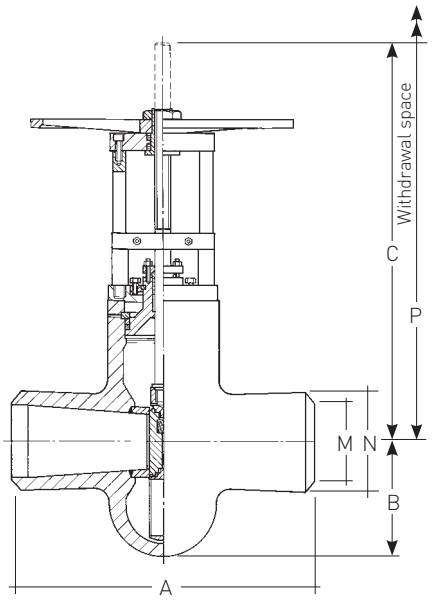
Pressure class	Shell psi (bar)	Seat psi (bar)
1715	6450 (444)	4725 (326)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	19	7.25	30.20	4.25	5.71	42	255	1104	0.239
6	22	8.81	31.46	5.12	6.81	46	425	2371	0.194
8	28	11.25	43.43	6.69	8.78	62	893	3103	0.186
10	34	13.68	50.71	8.35	10.94	74	1533	4873	0.183
12	39	16.25	58.15	10.04	12.99	84	2508	7084	0.181
14	42	17.93	64.00	11.02	14.25	93	3166	8755	0.172
16	47	20.56	68.15	12.64	16.26	100	4380	11760	0.165
18	53	22.75	77.28	14.09	18.31	114	6039	14748	0.162
20	58	25.12	82.83	15.63	20.31	122	8263	18319	0.159
24	66	30.00	100.28	18.78	24.37	148	13362	27048	0.152

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	483	184	767	108	145	1066	116	1104	0.239
150	559	223	799	130	173	1168	193	2371	0.194
200	711	286	1103	170	223	1575	405	3103	0.186
250	864	347	1288	212	278	1880	696	4873	0.183
300	991	413	1477	255	330	2134	1138	7084	0.181
350	1066	455	1626	280	362	2362	1436	8755	0.172
400	1194	522	1731	321	413	2540	1987	11760	0.165
450	1346	577	1963	358	465	2896	2740	14748	0.162
500	1473	637	2104	397	516	3099	3748	18319	0.159
600	1676	761	2547	477	619	3759	6061	27048	0.152



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 1715 INT. CLASS

PRODUCT NO. - P8A ('S' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

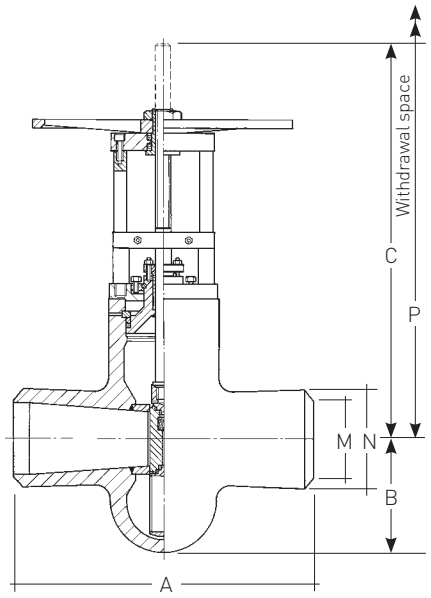
Pressure class	Shell psi (bar)	Seat psi (bar)
1715	6450 (444)	4725 (326)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	19	5.94	23.87	4.25	5.71	34	216	573	0.886
6	22	7.25	30.20	5.12	6.81	42	282	1246	0.702
8	28	8.81	31.46	6.69	8.78	46	500	1427	0.880
10	34	11.25	43.43	8.35	10.94	62	1023	2545	0.671
12	39	13.69	50.71	10.04	12.99	74	1679	4064	0.550
14	42	16.25	58.15	11.02	14.25	84	2625	6419	0.320
16	47	17.94	64.00	12.64	16.26	93	3364	7572	0.398
18	53	20.56	68.15	14.09	18.31	100	5880	10428	0.324
20	58	22.75	77.28	15.63	20.31	114	6340	13506	0.313
24	66	25.12	82.83	18.78	24.37	122	8980	14839	0.505

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	483	150	606	108	145	864	98	573	0.886
150	559	184	767	130	173	1066	128	1246	0.702
200	711	223	799	170	223	1168	227	1427	0.880
250	864	286	1103	212	278	1575	464	2545	0.671
300	991	347	1288	255	330	1880	762	4064	0.550
350	1066	413	1477	280	362	2134	1191	6419	0.320
400	1194	455	1626	321	413	2362	1526	7572	0.398
450	1346	522	1731	358	465	2540	2667	10428	0.324
500	1473	577	1963	397	516	2896	2876	13506	0.313
600	1676	637	2104	477	619	3099	4074	14839	0.505



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2260 INT. CLASS

PRODUCT NO. - P83 ('P' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

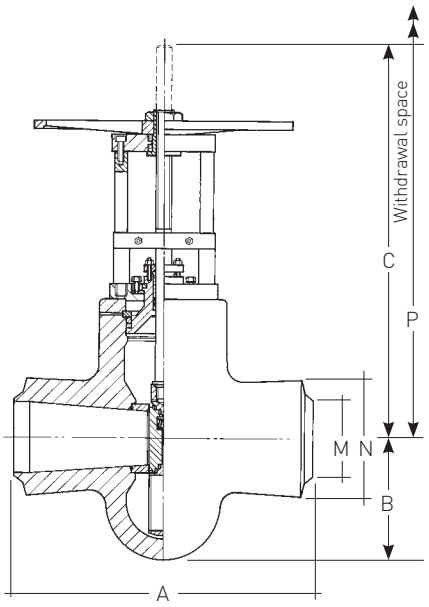
Pressure class	Shell psi (bar)	Seat psi (bar)
2260	8475 (585)	6225 (429)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
5	21	7.75	30.31	3.86	5.71	43	359	1168	0.145
6	24	9.12	31.42	4.65	6.81	46	568	1692	0.146
8	30	11.25	42.95	6.14	8.78	62	1036	2566	0.193
10	36	13.75	50.12	7.64	10.94	72	1835	4061	0.182
12	41	16.43	57.52	9.17	12.99	84	2926	5926	0.180
14	44	17.87	58.70	10.08	14.25	87	3819	7121	0.182
16	49	20.62	67.36	11.54	16.26	100	5696	9803	0.165
18	55	23.31	79.25	12.91	18.31	117	8725	13132	0.144
20	60	25.06	81.85	14.25	20.31	122	10243	15039	0.163
24	68	29.93	95.67	17.13	24.37	143	16034	22143	0.157

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
125	533	197	770	98	145	1092	163	1168	0.145
150	610	232	798	118	173	1168	258	1692	0.146
200	762	285	1091	156	223	1575	470	2566	0.193
250	914	349	1273	194	278	1829	833	4061	0.182
300	1041	417	1461	233	330	2134	1327	5926	0.180
350	1117	453	1491	256	362	2210	1732	7121	0.182
400	1245	523	1711	293	413	2540	2584	9803	0.165
450	1397	592	2013	328	465	2972	3958	13132	0.144
500	1524	636	2079	362	516	3099	4646	15039	0.163
600	1727	760	2430	435	619	3632	7273	22143	0.157



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2260 INT. CLASS

PRODUCT NO. - P83 ('R' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

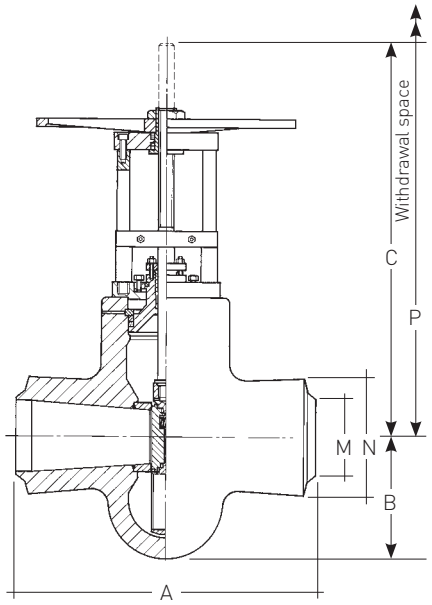
Pressure class	Shell psi (bar)	Seat psi (bar)
2260	8475 (585)	6225 (429)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
5	21	6.25	23.94	3.86	5.71	35	255	641	0.483
6	24	7.75	30.31	4.65	6.81	43	392	1066	0.368
8	30	9.12	31.42	6.14	8.78	46	660	1435	0.617
10	36	11.25	42.95	7.64	10.94	62	1180	2206	0.626
12	41	13.75	50.12	9.17	12.99	72	2000	3556	0.500
14	44	16.44	57.52	10.08	14.25	84	3050	5519	0.303
16	49	17.87	58.70	11.54	16.26	87	1465	6392	0.388
18	55	20.56	67.36	12.91	18.31	100	6100	8994	0.307
20	60	23.31	79.25	14.25	20.31	117	9200	12217	0.247
24	68	25.04	81.85	17.13	24.37	122	11100	12651	0.481

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
125	533	159	608	98	145	889	116	641	0.483
150	610	197	770	118	173	1092	178	1066	0.368
200	762	232	798	156	223	1168	300	1435	0.617
250	914	285	1091	194	278	1575	535	2206	0.626
300	1041	349	1273	233	330	1829	907	3556	0.500
350	1117	417	1461	256	362	2134	1384	5519	0.303
400	1245	453	1491	293	413	2210	1889	6392	0.388
450	1397	523	1711	328	465	2540	2767	8994	0.307
500	1524	592	2013	362	516	2972	4173	12217	0.247
600	1727	636	2079	435	619	3099	5035	12651	0.481



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2500 CLASS

PRODUCT NO. - P91 ('T' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

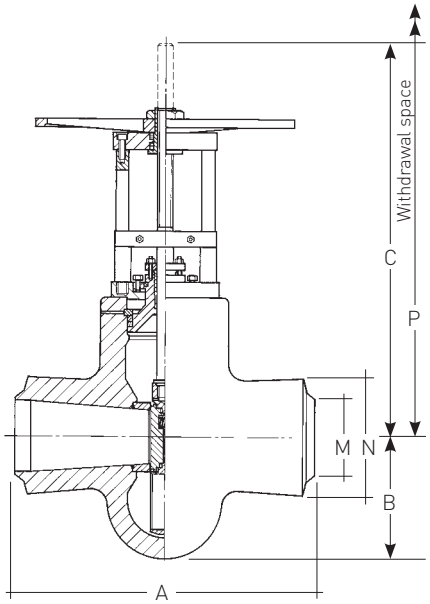
Pressure class	Shell psi (bar)	Seat psi (bar)
2500	9375 (647)	6875 (475)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	21	7.75	30.31	3.86	5.71	43	359	1168	0.145
6	24	9.12	31.42	4.65	6.81	49	568	1692	0.146
8	30	11.25	42.95	6.14	8.78	62	1036	2566	0.193
10	36	13.75	50.12	7.64	10.94	72	1835	4091	0.182
12	41	16.43	57.52	9.17	12.99	84	2926	5926	0.180
14	44	17.87	58.70	10.08	14.25	87	3819	7121	0.182
16	49	20.62	67.36	11.54	16.26	100	5696	9803	0.165
18	55	23.31	79.25	12.91	18.31	117	8725	13132	0.144
20	60	25.06	81.85	14.25	20.31	122	10243	15039	0.163
24	68	29.93	95.67	17.13	24.37	143	16034	22143	0.157

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	533	197	770	98	145	1092	163	1168	0.145
150	610	232	798	118	173	1168	258	1692	0.146
200	762	285	1091	156	223	1575	470	2566	0.193
250	914	349	1273	194	278	1829	833	4091	0.182
300	1041	417	1461	233	330	2134	1327	5926	0.180
350	1117	453	1491	256	362	2210	1732	7121	0.182
400	1245	523	1711	293	413	2540	2584	9803	0.165
450	1397	592	2013	328	465	2972	3958	13132	0.144
500	1524	636	2079	362	516	3099	4646	15039	0.163
600	1727	760	2430	435	619	3632	7273	22143	0.157



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2500 CLASS

PRODUCT NO. - P91 ('S' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

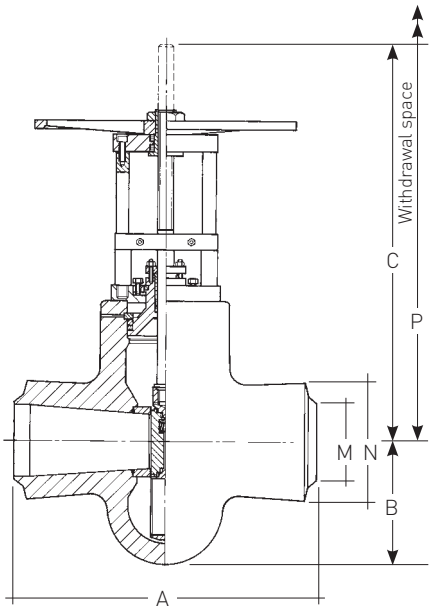
Pressure class	Shell psi (bar)	Seat psi (bar)
2500	9375 (647)	6875 (475)

DIMENSIONS IMPERIAL - (INCHES)

Size NPS	A	B	C	M	N	P	Weight (lbs)	Cv	K Factor
5	21	6.57	23.94	3.82	5.71	35	255	640	0.464
6	24	8.18	30.31	4.53	6.81	43	392	1078	0.324
8	30	10.43	36.73	5.91	8.78	54	926	1931	0.292
10	36	12.83	44.00	7.36	10.94	64	1705	3100	0.273
12	41	15.43	51.34	8.74	12.99	75	2761	4785	0.228
14	44	16.42	57.52	9.61	14.25	84	3050	5771	0.229
16	49	19.57	64.57	10.98	16.26	95	5515	8137	0.196
18	55	20.59	67.36	12.36	18.31	100	6100	9395	0.236
20	60	23.31	79.25	13.74	20.31	117	9200	12638	0.199
24	68	28.00	89.57	16.50	24.37	133	15679	17121	0.226

DIMENSIONS METRIC - (mm)

Size DN	A	B	C	M	N	P	Weight (kgs)	Cv	K Factor
125	533	167	608	97	145	889	116	640	0.464
150	610	208	770	115	173	1092	178	1078	0.324
200	762	265	933	150	223	1372	420	1931	0.292
250	914	326	1118	187	278	1626	773	3100	0.273
300	1041	392	1304	222	330	1905	1252	4785	0.228
350	1117	417	1461	244	362	2134	1383	5771	0.229
400	1245	497	1640	279	413	2413	2501	8137	0.196
450	1397	523	1711	314	465	2540	2767	9395	0.236
500	1524	592	2013	349	516	2972	4175	12638	0.199
600	1727	713	2275	419	619	3378	7111	17121	0.226



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2850 INT. CLASS

PRODUCT NO. - P95 ('P' DESIGN - STANDARD PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

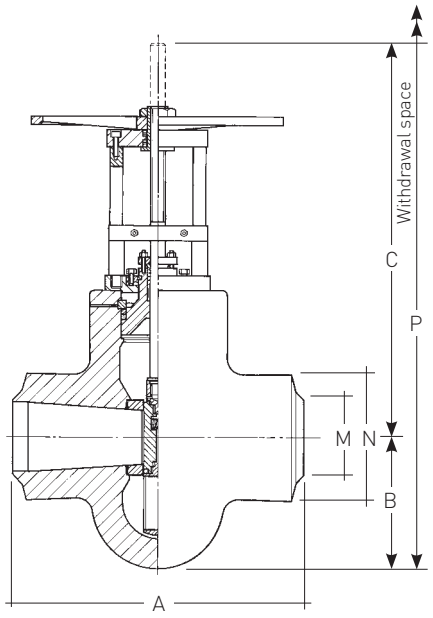
Pressure class	Shell psi (bar)	Seat psi (bar)
2850	10700 (737)	7900 (541)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
5	21	6.62	23.94	3.46	5.71	35	295	683	0.274
6	24	8.18	30.31	4.17	6.81	43	528	1135	0.210
8	30	10.75	36.73	5.51	8.78	54	1058	2020	0.202
10	36	13.18	44.00	6.89	10.94	64	1907	3231	0.193
12	41	15.93	51.34	8.23	12.99	75	3133	4956	0.167
14	44	17.43	57.52	9.06	14.25	84	4160	5988	0.168
16	49	20.25	64.57	10.39	16.26	95	6345	8390	0.148
18	55	21.81	67.36	11.61	18.31	100	8160	9804	0.169
20	60	24.68	79.25	12.83	20.31	117	12300	13201	0.139
24	68	28.68	89.57	15.47	24.37	133	17668	17889	0.160

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
125	533	169	608	88	145	889	134	683	0.274
150	610	208	770	106	173	1092	240	1135	0.210
200	762	273	933	140	223	1372	480	2020	0.202
250	914	334	1118	175	278	1626	865	3231	0.193
300	1041	404	1304	209	330	1905	1421	4956	0.167
350	1117	442	1461	230	362	2134	1887	5988	0.168
400	1245	514	1640	264	413	2413	2878	8390	0.148
450	1397	554	1711	295	465	2540	3701	9804	0.169
500	1524	627	2013	326	516	2972	5580	13201	0.139
600	1727	728	2275	393	619	3378	8014	17889	0.160



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

HIGH PRESSURE CAST STEEL

SIZES NPS 5 - 24 (DN125 - 600) ASME B16.34 2850 INT. CLASS

PRODUCT NO. - P95 ('R' DESIGN - REDUCED PORT)

MAIN COMPONENT MATERIALS

Description	Carbon steel		Alloy steel	
Body	ASTM A-216 Gr. WCB	ASTM A-217 Gr. WC6	ASTM A-217 Gr. WC9	ASTM A-217 Gr. C12A
Bonnet	A105	A182-F22	A182-F22	A182-F91
Cover	EN1008 P265GH (1.0425)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)	EN 10222 13CrMo4-5 (1.7335)
Stem	EN1008 17CrNi16-2 (1.4057)	A565-XM32	A565-XM32	A565-XM32
Gland	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Seats	A105	A182-F22	A182-F22	A182-F91
Yoke sleeve	Aluminium bronze	Aluminium bronze	Aluminium bronze	Aluminium bronze
Handwheel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel	Cast Iron/Steel
Disc	A105	A182-F22	A182-F22	A182-F91
Gland packing	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite
Pressure seal	Expanded graphite	Expanded graphite	Expanded graphite	Expanded graphite

HYDROSTATIC SHELL AND SEAT LEAK TEST PRESSURES

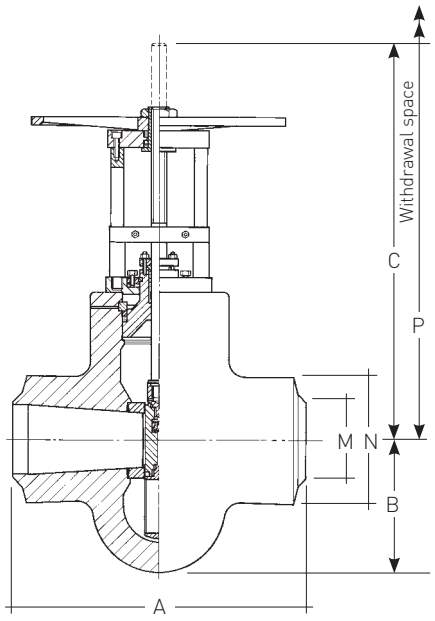
Pressure class	Shell psi (bar)	Seat psi (bar)
2850	10700 (737)	7900 (541)

DIMENSIONS IMPERIAL - (INCHES)

Size							Weight		K
NPS	A	B	C	M	N	P	(lbs)	Cv	Factor
6	24	6.62	23.94	4.17	6.81	35	332	606	0.736
8	30	8.19	30.31	5.51	8.78	43	630	954	0.905
10	36	10.75	36.73	6.89	10.94	54	1220	1741	0.665
12	41	13.19	44.00	8.23	12.99	64	2100	2844	0.507
14	44	15.94	51.34	9.06	14.25	75	3270	4655	0.278
16	49	17.44	57.52	10.39	16.26	84	4440	5402	0.357
18	55	20.25	64.57	11.61	18.31	95	6780	7814	0.266
20	60	21.81	67.36	12.83	20.31	100	8610	9093	0.293
24	68	24.69	79.25	15.47	24.37	117	13280	11272	0.403

DIMENSIONS METRIC - (mm)

Size							Weight		K
DN	A	B	C	M	N	P	(kgs)	Cv	Factor
150	610	169	608	106	173	889	151	606	0.736
200	762	208	770	140	223	1092	286	954	0.905
250	914	273	933	175	278	1372	554	1741	0.665
300	1041	334	1118	209	330	1626	953	2844	0.507
350	1117	404	1304	230	362	1905	1484	4655	0.278
400	1245	442	1461	264	413	2134	2014	5402	0.357
450	1397	514	1640	295	465	2413	3076	7814	0.266
500	1524	554	1711	326	516	2540	3906	9093	0.293
600	1727	627	2013	393	619	2972	6024	11272	0.403



SEMPELL DEWRANCE PARALLEL SLIDE GATE VALVES

SELECTION GUIDE

Example				**P**	**95**	**E**	**H**	**200**	**P**	**F**	**D**	**A**
Valve type P	Parallel slide gate valve											
Pressure class												
67	1000 Class											
73	1690 Class											
8A	1715 Class											
83	2260 Class											
91	2500 Class											
95	2850 Class											
X1	Special based on pressure/temperature											
X7	4500 Class											
Body material												
E	ASTM A216 WCB											
J	ASTM A217 WC6											
L	ASTM A217 WC9											
R	ASTM A217 C12A											
Valve operation												
A	Bevel gear - Operated from below.	**N**	Pneumatic actuator									
B	Bevel gear - Operated from above.	**P**	Spur gear - Operated from below.									
C	Chain wheel	**Q**	Spur gear - Operated from above.									
D	Hydraulic actuator	**R**	Rotork actuator									
E	Limitorque actuator	**T**	Universal joint									
F	Sleeve aoupling	**U**	Undrilled/Block ends - Hand operated									
G	Bevel gear - Manual operation	**V**	Special									
H	Handwheel operation	**W**	Power assisted									
L	Locking device	**Y**	Auma actuator									
M	Adaptor plate											
Nominal size (mm)												
Design change												
P or T	Standard port design											
R or S	Reduced port design											
Ancillary valve arrangement												
B	One bypass	**H**	V-port seat									
C	One equalizing bypass	**J**	One bypass and one bypass drain valve									
D	One bypass and one equalizing bypass	**K**	One drain valve									
F	No bypass arrangement	**L**	One equalizing pipe and one drain valve									
G	Equalizing bypass	**M**	V-port seat and equalizing pipe									
Bypass operation												
A	Bevel gear - Operated from below.	**H**	Handwheel operation									
B	Bevel gear - Operated from above.	**L**	Locking device									
C	Chain wheel	**P**	Spur gear - Operated from below.									
D	No bypass	**Q**	Spur gear - Operated from above.									
E	Limitorque actuator	**R**	Rotork actuator									
F	Sleeve coupling	**Y**	Auma actuator									
G	Bevel gear - Manual operation											
Minor product variation												