

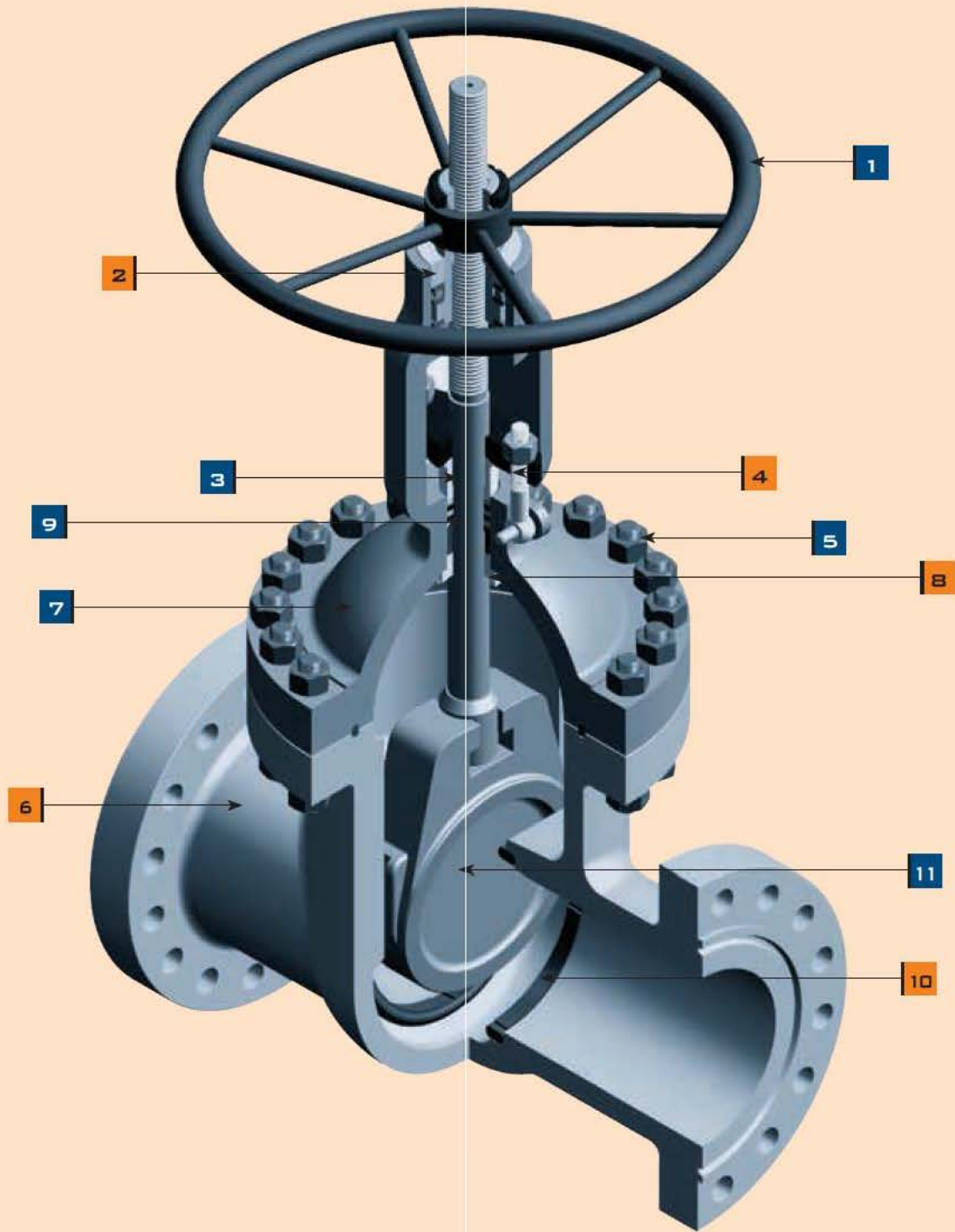


# Gate Valves

**ORION**

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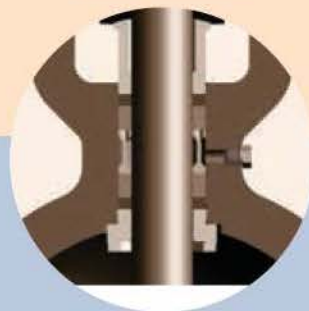
WELDED - IN SEAT RINGS



FLEX WEDGE



LANTERN RING

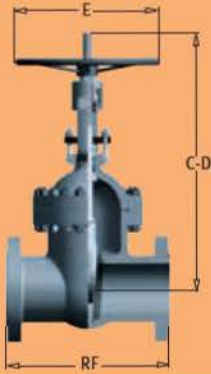


**CAST STEEL BODY, OUTSIDE SCREW AND YOKE, RISING STEM, NON-RISING OPERATOR, RENEWABLE SEATS, REMOVABLE YOKE SLEEVE, BACKSEAT FOR REPACKING UNDER PRESSURE.**

- 1 HANDWHEEL.** The spoked handwheel is fabricated from steel pipe. The hub is coupled to the yoke sleeve by means of a key. Larger valves are equipped with a bevel or spur gear gearbox unit.
- 2 YOKE SLEEVE.** The yoke sleeve is made from cast aluminum bronze having high resistance to wear and a high melting point. It is designed to simplify removal from the bonnet or the yoke whilst the valve is in service.
- 3 GLAND AND FLANGE.** They are in forged steel and are supplied in two pieces, self-aligning design in order to allow the gland to slide parallel to the stem even if the eyebolts are unevenly tightened.
- 4 GLAND BOLTS AND NUTS.** The forged steel gland bolts are of the eyebolt type which can be swung outward for ease of gland repacking. They are fixed to the bonnet by hinge pins.
- 5 BONNET BOLTING.** Bonnet studs and nuts are manufactured from alloy steel to the relevant ASTM standard. The body to bonnet connection is designed according to ASME VIII DIV 1 standard.
- 6 BODY.** The body is cast in carbon or stainless steel and is available in many other CRA. It is carefully designed for total reliability and simple maintenance. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ASME standards. The body-to-bonnet flange is circular, except in the Class 150 where it is oval. The body-to-bonnet joint are flat face on Class 150 valves, male-and-female on Class 300 and ring joint on Class 400 and above. The body is basically supplied with renewable seats. Bosses are provided for drain taps or by-pass piping.  
The internal surfaces in contact with the fluid can be fully lined or clad for improved corrosion or erosion resistance.
- 7 BONNET.** As the body, the bonnet is cast in carbon or stainless steel and is available in many other CRA. It is machined to accept yoke sleeve and incorporates a stuffing box sized in accordance with the API standard. Lifting lugs can be provided integrally cast on the bonnet surface.
- 8 BONNET BUSHING.** The bonnet bushing or backseat is part of the valve trim. Its design allows valve repacking without valve's bleeding or draining. Hardfacing can be provided on stem seating surface.
- 9 STEM.** The stem is part of the trim and is available in a wide range of material in accordance to API 600 or customer's requirements. The stem is provided with a T-shaped head. A ground backseat is provided to ensure a perfectly tight seal to the stuffing box when the valve is fully open. The stem is highly finished in order to minimize friction and prevent damage to the packing. The thread is trapezoidal ACME type. All the stem sizes comply with the API 600 standard.
- 10 SEAT RINGS.** Welded-in seat rings are supplied as a standard. The rings are part of the trim of the valve. They can be externally threaded and internally notched for easy installation and dismantling. Special attention is given to the seating surfaces which are ground and lapped for a tight seal.
- 11 WEDGE.** The wedge is the main part of the trim. It is forged steel or alloy for diameters up to 12" and is cast for larger sizes. It is normally supplied as the solid wedge type. It is connected to the stem by means of a T-shaped joint. The guides on each side of the wedge are machined. Special care is given to the seating surfaces which are ground and lapped, integral or hardfaced. A cladding or lining can be applied to the wedge to improve its resistance against erosive and corrosive environments. For improved seating and unseating easiness, it can be machined with the flexible option.

**REMARKS:** A lantern ring is supplied upon request, in this case the stuffing box shall be drilled, tapped and fitted with an 1/4" NPT plug or grease fitting.

## Class ASME 150 [PN 20]



### FIGURE NUMBERS

#### CLASS ASME 150 - ALL SIZES

SR 150 RF ..... RAISED FACE

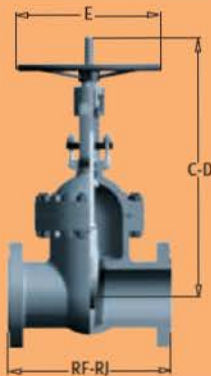
SR 150 BW ..... WELDING ENDS

SIZE	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF	178	190	203	229	267	292	330	356	381	406	432
RJ	191	203	216	242	280	305	343	369	394	419	445
BW	216	241	282	305	403	419	457	502	572	610	660
C-closed	357	415	445	556	712	862	1020	1178	1318	1440	1608
D-open	417	490	530	671	877	1082	1290	1498	1676	1850	2069
E	204	204	254	305	356	406	457	502	610	610	-

SIZE	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"
RF	457	483	508	559	610	610	660	711,2	711	762	762
RJ	470	496	521	-	-	-	-	-	-	-	-
BW	711	762	813	864	914	914	965	1016	1016	1067	1067
C-closed	1768	1940	2064	2220	2375	2518	2620	2690	2970	3228	3228
D-open	2271	2492	2680	2876	3092	3281	3435	3555	3876	4228	4228
E	-	-	-	-	-	-	-	-	-	-	-

SIZE	42"	44"	46"	48"	50"	52"	54"	56"	58"	60"	66"
RF	787	826	864	864	940	1016	1067	1110	1140	1168	1270
RJ	-	-	-	-	-	-	-	-	-	-	-
BW	1067	-	-	-	-	-	-	-	-	-	-
C-closed	3372	3558	3743	3702	3915	4127	4305	4305	4550	4711,5	5156
D-open	4415	4685	4953	4912	5188	5462	5693	5693	5980	6227,6	6823
E	-	-	-	-	-	-	-	-	-	-	-

## Class ASME 300 [PN 50]



### FIGURE NUMBERS

#### CLASS ASME 300 - ALL SIZES

SR 300 RF ..... RAISED FACE

SR 300 BW ..... WELDING ENDS

SR 300 RJ ..... RING JOINT

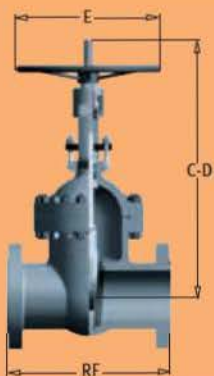
SIZE	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF-BW	216	241	282	305	403	419	457	502	762	838	914
RJ	232	257	298	321	419	435	473	518	778	854	930
C-closed	370	430	445	556	712	890	1069	1245	1325	1480	1620
D-open	430	510	530	671	877	1110	1339	1580	1685	1890	2069
E	204	204	254	305	406	457	457	-	-	-	-

SIZE	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"
RF-BW	991	1092	1143	1245	1346	1397	1524	1626	1727	1828,8	1930
RJ	1010	1114	1165	1270	1371	1422	1552	1654	1755	-	-
C-closed	1796	1948	2122	2430	2430	2596	2705	2868	2970	3113	3550
D-open	2287	2500	2729	3146	3146	3355	3515	3730	3885	4064	4551
E	-	-	-	-	-	-	-	-	-	-	-

SIZE	42"	44"	46"	48"	50"	52"	54"	56"	58"	60"
RF-BW	1981	2066	2151	2235	2285	2335	2387	2438,4	2488	2540
RJ	-	-	-	-	-	-	-	-	-	-
C-closed	3468	3594	3732	3870	4023	4176	4330	4503	4650	4810
D-open	4525	4723	4900	5100	5298	5500	5700	5928	6122	6330
E	-	-	-	-	-	-	-	-	-	-

N.B. All dimensions are given in millimeters.

## Class ASME 400 [PN 68]



### FIGURE NUMBERS

#### CLASS ASME 400 - ALL SIZES

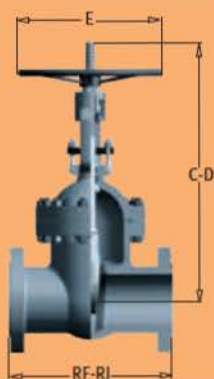
SR 400 RF ..... RAISED FACE  
 SR 400 BW ..... WELDING ENDS  
 SR 400 RJ..... RING JOINT

SIZE	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"
RF-BW	292,1	330,2	355,6	406,4	457,2	495,3	596,9	673,1	762,0	825,5
RJ	295,3	333,4	358,8	409,6	460,4	498,5	600,1	676,3	765,2	828,7
C-closed	371,0	448,0	515,0	618,0	715,0	740,0	920,0	1.225,0	1.318,0	1.420,0
D-open	431,0	538,0	620,0	745,0	855,0	888,0	1.140,0	1.505,0	1.644,0	1.780,0
E	204,0	254,0	305,0	356,0	406,0	457,0	457,0	-	-	-



SIZE	16"	18"	20"	22"	24"	26"	30"	36"	42"	48"
RF-BW	901,7	977,9	1.054,1	1.143,0	1.231,9	1.308,1	1.524,0	1.879,6	2.184,4	2.387,6
RJ	904,9	981,1	1.060,5	1.152,5	1.241,4	1.320,8	1.536,7	1.895,5	-	-
C-closed	1.540,0	1.680,0	2.220,0	2.340,0	2.500,0	2.550,0	2.740,0	3.180,0	3.610,0	4.070,0
D-open	1.956,0	2.133,0	2.700,0	2.895,0	3.100,0	3.250,0	3.490,0	4.080,0	4.650,0	5.260,0
E	-	-	-	-	-	-	-	-	-	-

## Class ASME 600 [PN 100]



### FIGURE NUMBERS

#### CLASS ASME 600 - ALL SIZES

SR 600 RF ..... RAISED FACE  
 SR 600 BW ..... WELDING ENDS  
 SR 600 RJ..... RING JOINT

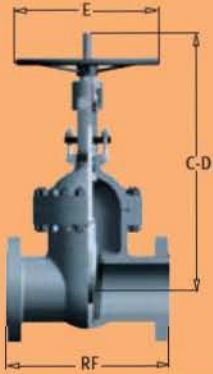
SIZE	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF-BW	292	330	356	432	559	660	787	838	889	991	1092
RJ	295	333	359	435	562	663	790	841	892	994	1095
C-closed	371	448	515	600	840	925	1120	1318	1429	1588	1700
D-open	431	528	620	720	1003	1138	1400	1644	1781	1998	2138
E	204	254	305	356	502	-	-	-	-	-	-



SIZE	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"
RF-BW	1194	1295	1397	1448	1549	1651	1778	1930	2082	2185	2286
RJ	1200	1305	1407	1461	1562	1664	1794	1946	2099	-	-
C-closed	1775	1960	2183	2380	2472	2698	2855	3012	3168	3342	3516
D-open	2253	2495	2771	3026	3144	3478	3668	3870	4078	4298	4493
E	-	-	-	-	-	-	-	-	-	-	-

SIZE	42"	44"	46"	48"	50"	52"	54"	56"	58"	60"
RF-BW	2438	2438	2489	2540	2540	2805	2905	2692	2743	3203
RJ	-	-	-	-	-	-	-	-	-	-
C-closed	3690	3655	3903	4100	4174	4443	4604	4764	4751	5084
D-open	4720	4724	5042	5280	5414	5723	5932	6140	6187	6558
E	-	-	-	-	-	-	-	-	-	-

## Class ASME 900 [PN 150]



### FIGURE NUMBERS

#### CLASS ASME 900 - ALL SIZES

SR 900 RF ..... RAISED FACE  
 SR 900 BW ..... WELDING ENDS  
 SR 900 RJ..... RING JOINT

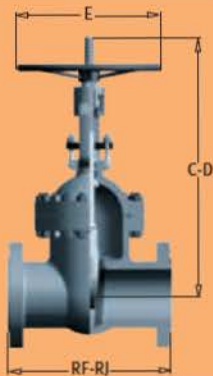
SIZE	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF-BW	368	419	381	457	610	737	838	965	1029	1130	1219
RJ	371	422	384	460	613	740	841	968	1039	1140	1232
C-closed	505	530	530	655	875	1070	1180	1305	1400	1518	1730
D-open	575	615	618	780	1040	1305	1440	1607	1746	1901	2160
E	305	356	356	406	-	-	-	-	-	-	-

SIZE	20"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"
RF-BW	1321	1549	1676	1803	1930	1981	2032	2083	2232	2380	2485
RJ	1334	1568	1688	1815	1953	-	-	-	-	-	-
C-closed	1896	2260	2423	2587	2750	2917	3084	3250	3389	3528	3687
D-open	2370	2830	3041	3249	3455	3674	3885	4200	4353	4506,2	4714
E	-	-	-	-	-	-	-	-	-	-	-

SIZE	44"	46"	48"	50"	52"
RF-BW	2589	2695	2799	2904	3009
RJ	-	-	-	-	-
C-closed	3847	4007	4166	4326	4485
D-open	4982	5165	5337	5569	5752
E	-	-	-	-	-



## Class ASME 1500 [PN 250]



### FIGURE NUMBERS

#### CLASS ASME 1500 - ALL SIZES

SR 1500 RF..... RAISED FACE  
 SR 1500 BW..... WELDING ENDS  
 SR 1500 RJ ..... RING JOINT

SIZE	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF-BW	368	419	470	546	705	832	991	1130	1257	1384	1537
RJ	371	422	473	549	711	842	1001	1146	1276	1406	1559
C-closed	505	530	557	715	915	1065	1270	1318	1450	1565	1760
D-open	575	615	636	845	1085	1263	1515	1604	1760	1925	2158
E	305	356	406	457	-	-	-	-	-	-	-

SIZE	20"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"
RF-BW	1664	1943	2090	2237	2383	2525	2666	2808	2950	3091	3233
RJ	1686	1971	2111	2258	2404	-	-	-	-	-	-
C-closed	2075	2330	2533	2736	2940	2964	3126	3289	3452	3614	3776
D-open	2540	2860	3108	3360	3605	3662	3866	4070	4274	4478	4682
E	-	-	-	-	-	-	-	-	-	-	-



## Class ASME 2500 [PN 420]

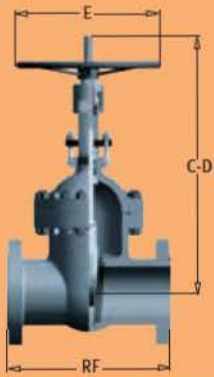
### FIGURE NUMBERS

#### CLASS ASME 2500 - ALL SIZES

SR 2500 RF..... RAISED FACE

SR 2500 BW..... WELDING ENDS

SR 2500 RJ..... RING JOINT



SIZE	2"	2" ½	3"	4"	6"	8"	10"	12"	14"	16"	18"
RF-BW	451	508	578	673	914	1022	1270	1422	1637	1756	2024
RJ	454	514	584	683	927	1038	1292	1444	1659	1778	-
C-closed	504	554	620	716	1070	1386	1502	1639	1983	2227	2471
D-open	568	620	700	816	1215	1556	1717	1889	2272	2554	2836
E	300	350	400	450	-	-	-	-	-	-	-

SIZE	20"	24"	26"
RF-BW	2218	2606	2800
RJ	-	-	-
C-closed	2715	3204	3448
D-open	3118	3682	3964
E	-	-	-

Note: For sizes and pressure classes not mentioned in the above tables please contact Orion.

