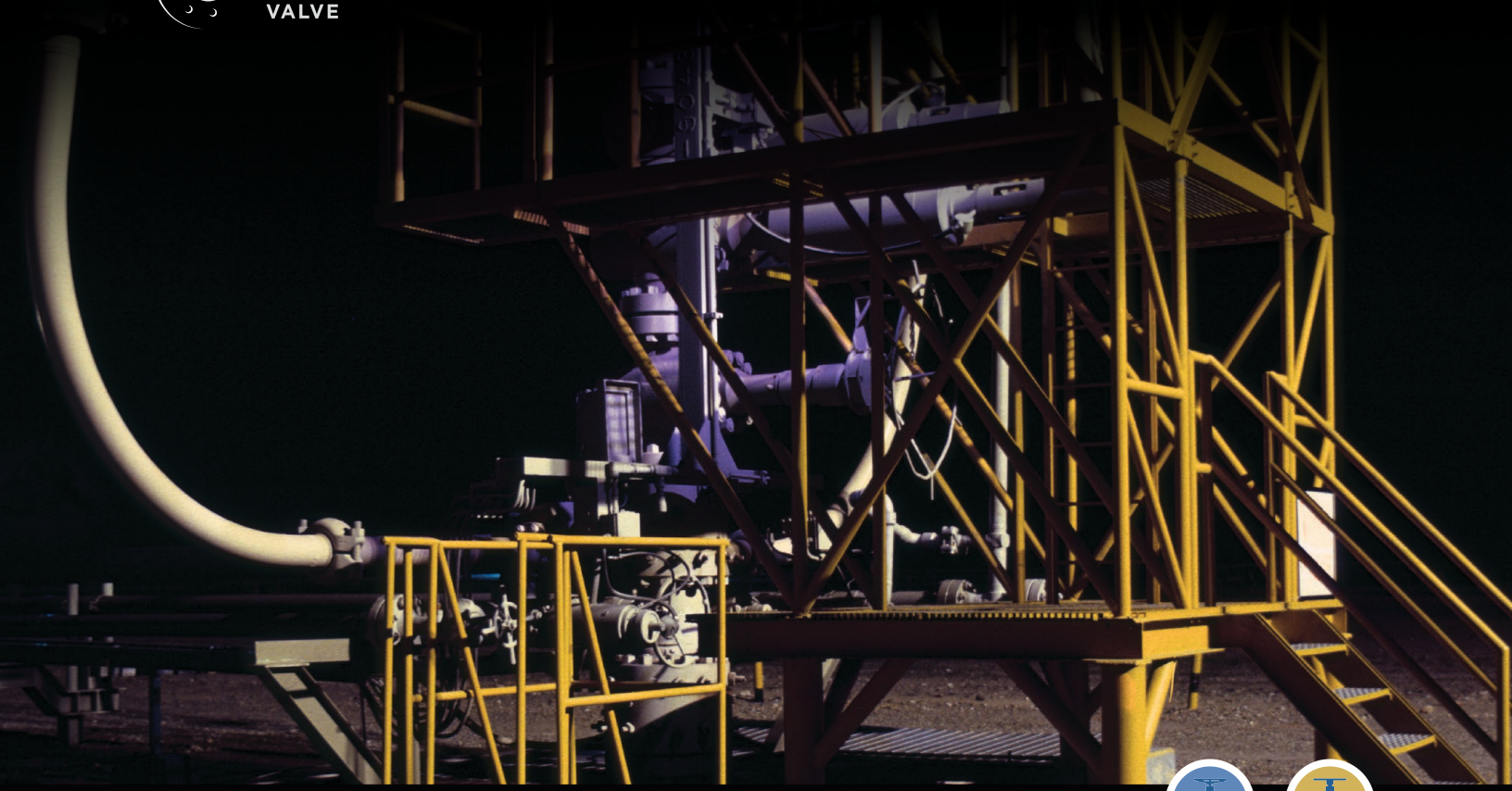
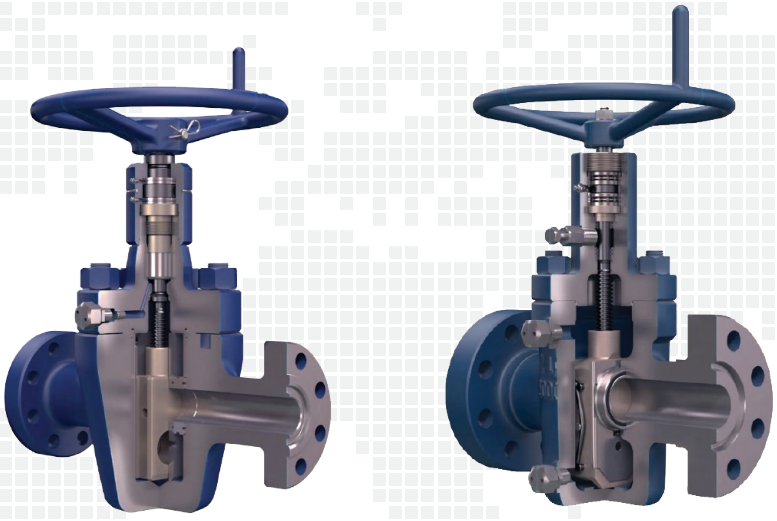
OMNI VALVE

Global Energy Market Solutions



CAST / FORGED BODY

Expanding & Slab Gate Valves



For oil and natural gas wellhead, flowline, manifold, fracture or other critical service applications requiring operating pressures from 2,000 to 15,000 psi

Engineered for Operational Excellence

Omni is committed to delivering valve solutions that meet or exceed the requirements of customers, projects or specific regions. Therefore, we focus our efforts on working closely with each customer to understand their unique requirements and develop long-term supply relationships. This often involves customizing individual actuators, designing specific procurement programs or providing structured design and/or manufacturing services to our customers.

Omni is certified to ISO and API standards and adheres to strict HSE standards in all segments of the business.

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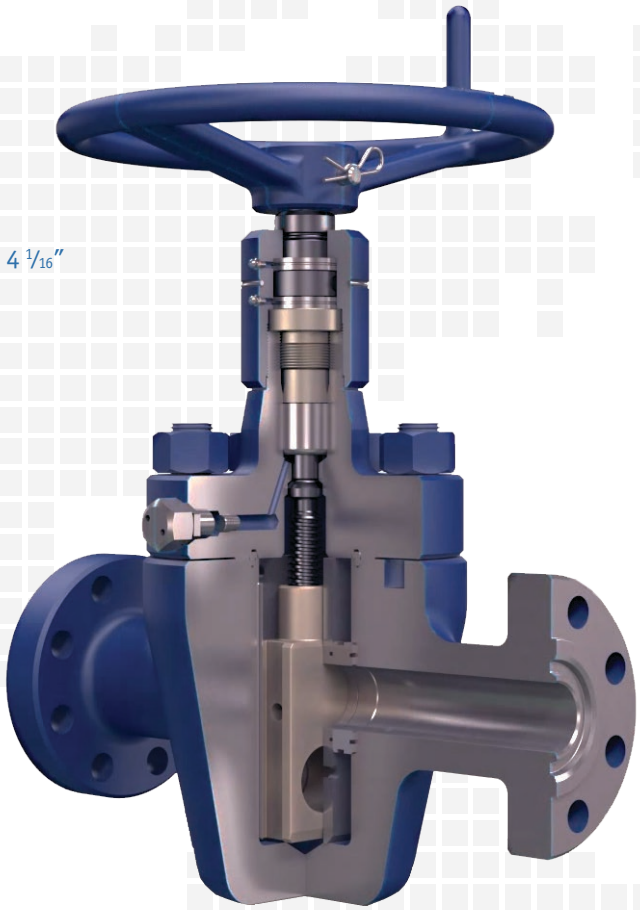
Model FS

Handwheel Operated Slab Gate Valves

Omni Model FS forged-body slab gate valves are designed for oil and natural gas wellhead, manifold or other critical service applications.

Forged Body



- Available in Sizes 1 13/16" through 4 1/16"
- For 2,000 & 15,000 psi Service
- Slab Gate - Field Replaceable

Features

Operating Temperatures

Model FS valves are available with API 6A Temperature ratings of L (-50 F) through Y (650 F). Valves for API Temperature ratings of X and Y are pressure de-rated as required per Annex G of API 6A 20th Edition.

Slab Gate

The single piece slab gate is field-replaceable and provides the valve with full bi-directional sealing capability at both high and low pressures.

Lubrication and Corrosion Protection

All Model FS valves have body cavity lubrication appropriate for the material class and temperature rating of the valve. This ensures smooth operation of the valve under pressure and prevents corrosion during storage.

Seat Design

The standard gate-to-seat and seat-to-body sealing interface is a two-piece design consisting of a seat ring and a body bushing, assisted by inserts in the rear of each piece. Metal-to-metal gate-to-seat interface is standard. Metal inserts are used for high-temperature applications.

Packing Design

Stem packing is replaceable and assisted by an anti-extrusion ring. This ensures efficient sealing for the life of the valve. Graphite packing is used for high-temperature applications.

Integrated Backseat

All Model FS valves have an integrated metal-to-metal stem-to-bonnet back-seat. When valve is in backseat position, pressure is contained within the valve cavity and cannot ingress into bonnet or stem packing area.

Grease Fittings

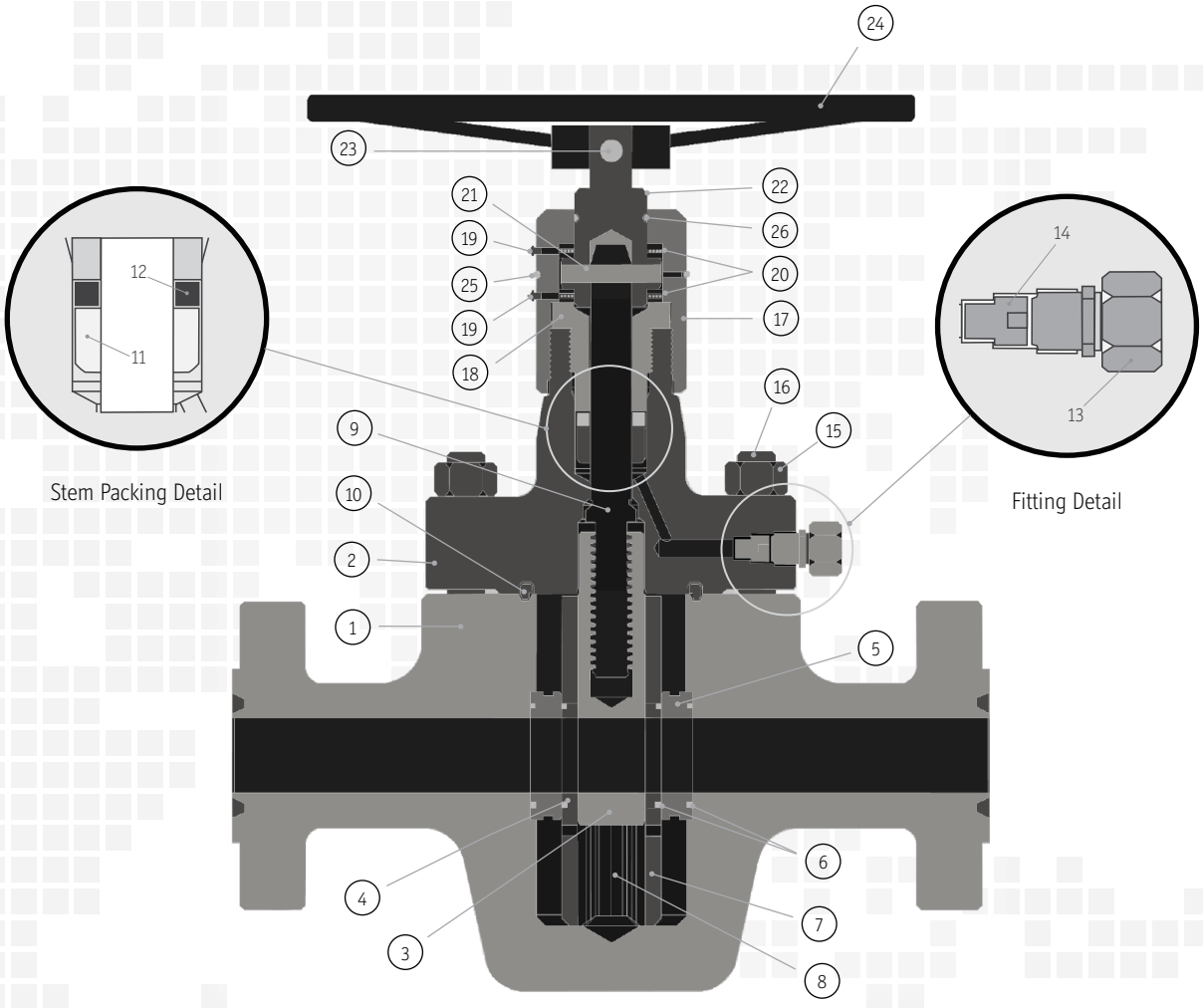
The valve body may be lubricated through the grease fitting provided in the valve bonnet. An in-line check valve is provided behind the grease fitting to ensure a unidirectional flow. All fittings meet the requirements of NACE MR0175.

Full Through Conduit Bore

The full through conduit bore provides for smooth flow with minimal turbulence. It also provides an unobstructed passage for well intervention tools.

Internal Configuration

Valve Depicted With Bonnet Grease Fitting Rotated Toward Flange



Component	Description	Qty
1	Valve Body	1
2	Valve Bonnet	1
3	Slab Gate	1
4	Seat Ring	2
5	Body Bushing	2
6	Seat Ring / Body Bushing Seals	4
7	Retainer Plate	2
8	Gate Guide	2
9	Operating Stem	1
10	Bonnet Seal Ring	1
11	Stem Packing	1
12	Anti-Extrusion Ring	1
13	Bonnet Grease Fitting	1

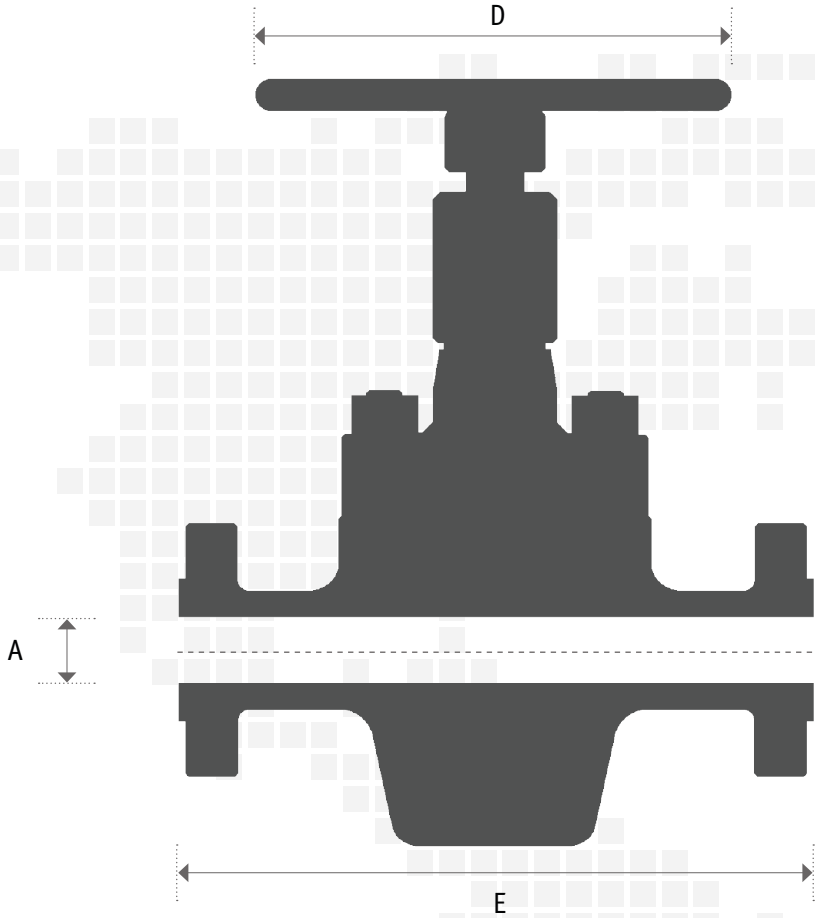
Component	Description	Qty
14	In-Line Ball Check Valve	1*
15	Nut	8**
16	Stud	8**
17	Bearing Cap	1
18	Packing Retainer	1
19	Bearing Grease Zerks	2
20	Thrust Bearings	2
21	Stem Pin	1
22	Stem Adapter	1
23	Handwheel Pin	1
24	Handwheel	1
25	Bearing Cap O-Ring	1
26	Stem Adapter O-Ring	1

* Configuration shown is for 10,000 psi valves only. 15,000 psi valves will have a single Autoclave style Bonnet Grease Fitting.

** Depends on valve size

Dimensional Data

Model FS



Forged Body

Dimensions

Bore Size	Pressure (psi)	API Ring #	A		B		C		D		E		Weight		Turns To Open
			in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kgs	
2 1/16"	2,000	R23	2.06	52	5.32	135	16.35	415	11	279	11.62	295	175	80	12
	3-5,000	R24	2.06	52	5.32	135	16.35	415	14	356	14.62	371	175	80	12
2 9/16"	2,000	R26	2.56	65	6.21	158	17.56	446	11	279	13.12	333	276	125	15
	3-5,000	R27	2.56	65	6.21	158	17.56	446	14	356	16.62	422	276	125	15
3 1/8"	2,000	R31	3.12	79	7.39	188	18.47	469	14	356	14.12	359	374	170	18
	3,000	R31	3.12	79	7.39	188	18.47	469	14	356	17.12	435	374	170	18
	5,000	R35	3.12	79	7.39	188	18.47	469	18	457	18.62	473	374	170	18
4 1/16"	2,000	R37	4.06	103	9.06	230	21.32	542	14	356	17.12	435	612	278	23
	3,000	R37	4.06	103	9.06	230	21.32	542	18	457	20.12	511	612	278	23
	5,000	R39	4.06	103	9.06	230	21.32	542	18	457	21.62	549	612	278	23
1 13/16"	10,000	BX151	1.81	46	5.69	145	16.47	418	14	356	18.25	464	232	105	12
	15,000	BX151	1.81	46	5.9	150	16.73	425	18	457	18	457	299	136	12
2 1/16"	10,000	BX152	2.06	52	5.69	145	16.45	418	14	358	20.5	521	265	120	12
	15,000	BX152	2.06	52	5.9	150	16.73	425	18	457	19	483	320	145	12
2 9/16"	10,000	BX153	2.56	65	6.75	171	17.68	449	18	457	22.25	565	360	163	15
	15,000	BX153	2.56	65	7.74	197	18.95	481	18	457	21	533	445	202	15
3 1/16"	10,000	BX154	3.06	78	8.12	206	18.58	472	24	610	24.38	619	510	231	18
	15,000	BX154	3.06	78	9.65	245	22.79	579	24	610	23.56	598	860	390	15
4 1/16"	10,000	BX155	4.06	103	10.19	259	21.42	544	24	610	26.38	670	835	379	23
	15,000	BX155	4.06	103	11.71	297	24.05	611	24	610	29	737	1290	585	24

Trim Chart
Model FS

Materials of construction listed below are as provided in Omni's standard valve configurations.
Alternate materials are available upon customer request.

Non-NACE Trims / NACE Trims

API Mat'l Class	AA	BB	CC	DD-NL	EE-0,5	EE-1,5	EE-NL	FF-0,5	FF-1,5	FF-NL
Service	General	General	General	Sour	Sour	Sour	Sour	Sour	Sour	Sour
Trim	Standard	SS Trim	Full SS	Standard	SS Trim	SS Trim	SS Trim	Full SS	Full SS	Full SS
Corrosive	No	Slightly	Moderate	No	Moderate	Moderate	Moderate	Highly	Highly	Highly
Avail API Temp	L to Y	L to Y	P to Y	L to Y	L to Y	L to Y	L to Y	P to Y	P to Y	P to Y

Component

Body	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 410 75K SS	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 410 75K SS	AISI 410 75K SS	AISI 410 75K SS
Bonnet	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 410 75K SS	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 4130 75K ALLOY	AISI 410 75K SS	AISI 410 75K SS	AISI 410 75K SS
Gate (4)	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED
Seats (4)	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED
Stem	AISI 4130 75K NITRIDED	ASTM A564 GR 630 (17-4)	ASTM A564 GR 630 (17-4)	AISI 4130 75K NITRIDED	ASTM A564 GR 630 (17-4)	CRA (2) PER NACE	CRA (2) PER NACE	ASTM A564 GR 630 (17-4)	CRA (2) PER NACE	CRA (2) PER NACE
Bonnet Seal Ring	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS
Studs	ASTM A193 GR B7	ASTM A193 GR B7	ASTM A193 GR B7	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M
Nuts	ASTM A194 GR 2H	ASTM A194 GR 2H	ASTM A194 GR 2H	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM
Packing	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3	PTFE WRAP WITH FKM 70D INSERT -3
Seals for Body Bushing & Seat Ring	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE

Notes

1	Nitriding is standard on all gates and seats. See Note 4 for explanation of hardfacing alternatives.
2	Corrosion resistant alloy per NACE MR0175/ISO 15156.
3	High temperature (API Temp Ratings X,Y) valves use graphite packing. Other special packing is available upon request.
4	Nitriding is standard on all gates and seats. If hardfacing is required, Omni can provide Tungsten Carbide, HF6 or other techniques upon request.
5	Charpy impact test results are provided as required by API according to the temperature rating and material class.
6	Materials for sour service trims conform to latest edition of NACE MR0175. Explanation for suffixes used for sour trims: 0,5 = 0.5 psi maximum partial pressure of hydrogen sulfide 1,5 = 1.5 psi maximum partial pressure of hydrogen sulfide NL = No limit to hydrogen sulfide exposure.
7	Omni reserves the right to use material class ZZ when customers request materials of construction that do not comply with current NACE MR0175/ISO standards.
8	High temperature (API Temp Ratings X,Y) valves use metal-to-metal seals. Other special seals are available upon request.

All Model FS valves are available in API PSL-1, PSL-2, PSL-3 or PSL-3G, PR-1 or PR-2. Please specify at time of order.

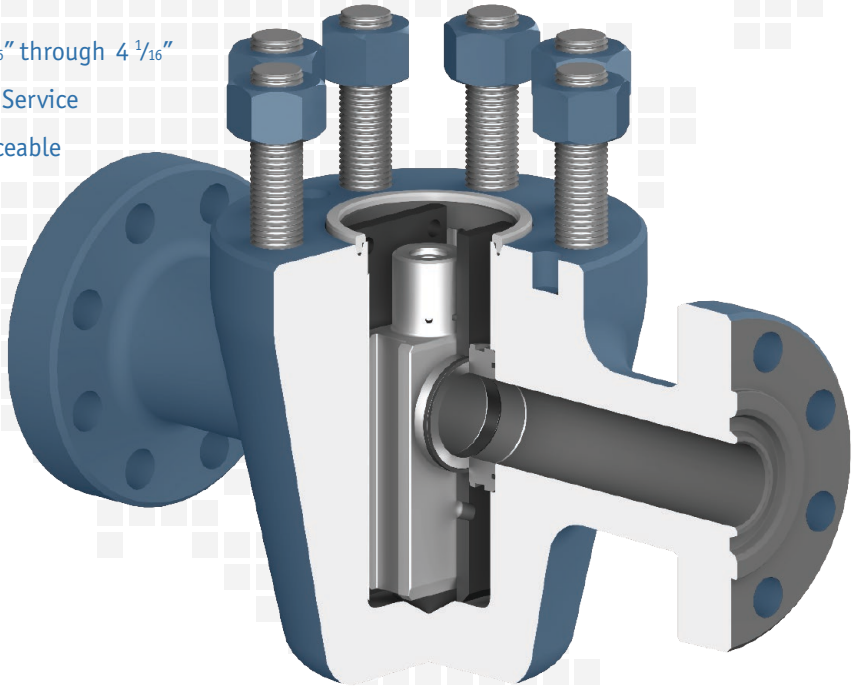
Model FS-R

Reverse Acting Slab Gate Valve for Actuation

Omni Model FS-R forged-body reverse acting slab gate valves are designed to be used as surface safety valves for oil and natural gas wellhead, manifold or other critical service applications. An appropriate pneumatic, hydraulic or electric actuator is required in conjunction with the Model FS-R.

Forged Body

- Available in Sizes 1 13/16" through 4 1/16"
- For 2,000 & 15,000 psi Service
- Slab Gate - Field Replaceable



Features

Adaptability

Model FS-R valves are designed to accept pneumatic, hydraulic or electric actuators from any manufacturer. Omni will provide interface drawings upon request. Omni has a complete line of pneumatic and hydraulic actuators and can deliver FS-R valves with actuators already mounted, ready for immediate deployment.

Operating Temperatures

Model FS-R valves are available with API 6A Temperature ratings of L (-50 F) through X (350 F). Valves for API Temperature rating X are pressure de-rated as required per Annex G of API 6A 20th Edition.

Reverse Acting Slab Gate

The reverse acting slab gate has the conduit opening on the upper portion of the gate. This means that the valve will be open when the gate is in the down position. The gate is moved to the down position by application of adequate control pressure to the actuator. Upon loss of control pressure, pressure acting on the gate and stem will cause the valve to close automatically. Under zero bore pressure conditions, valve closure is assisted by a spring contained in the actuator/bonnet assembly.

Full Through Conduit Bore

The full through conduit bore provides for smooth flow with minimal turbulence. It also provides an unobstructed passage for well intervention tools. All Model FS-R valves are drift tested in accordance with API 6A 20th Edition requirements.

Seat Designs

The standard gate-to-seat and seat-to-body sealing interface is a two-piece design consisting of a seat ring and a body bushing, assisted by inserts in the rear of each piece. Metal-to-metal gate-to-seat interface is standard. Metal inserts are used for high-temperature applications.

Grease Fittings

The valve body may be lubricated through the grease fitting provided in the actuated bonnet. All fittings meet the requirements of NACE MR0175.

Exposed Bolting

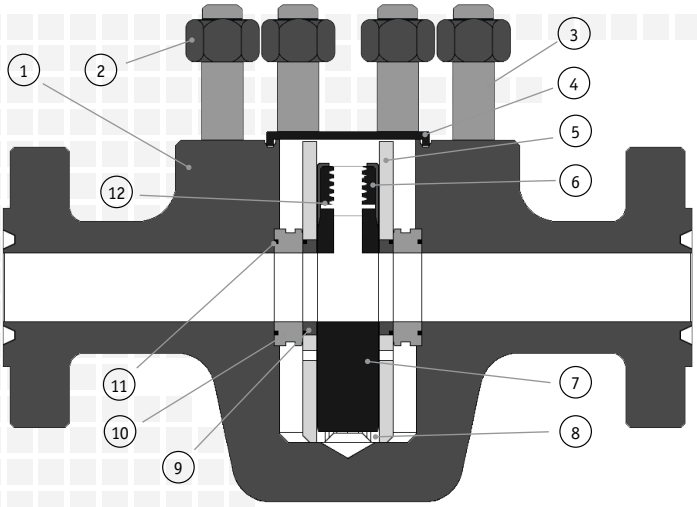
All exposed bolting meets the requirements of NACE MR0175.

Internal Configuration

Model FS-R

Component	Description	Qty
1	Valve Body	1
2	Nut	*
3	Stud	*
4	Bonnet Seal Ring	1 (VRK)
5	Retainer Plate	2
6	Stem Nut	1
7	Reverse Acting Slab Gate	1 (VRK)
8	Gate Guide	2
9	Seat Ring	2 (VRK)
10	Body Bushing	2 (VRK)
11	Seat Seal Ring / Body Bushing Seal Ring	4 (VRK)
12	Stem Pin	1 (VRK)

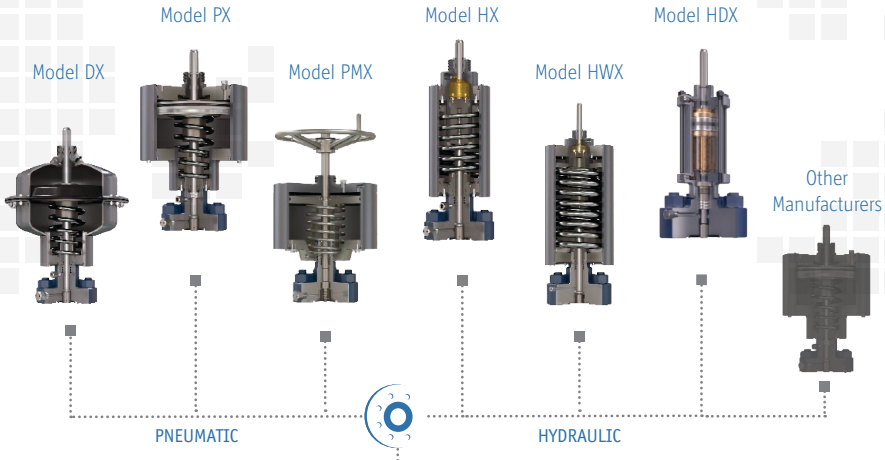
* Quantities will vary by valve size
(VRK) = Valve Redress Kit Item

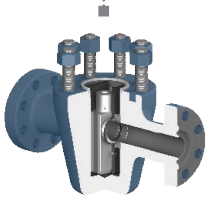


Gate Valves Prepared for Actuators

Model	Description
DX	Pneumatic Diaphragm Actuator (Fail Safe)
PX	Pneumatic Piston Actuator (Fail Safe, Removable Manual Override)
PMX	Pneumatic Piston Actuator (Fail Safe, Integrated Manual Override)
HX	Hydraulic Piston Actuator (Fail Safe)
HWX	Hydraulic Piston Actuator (Fail Safe, Wirecutting)
HDX	Hydraulic Piston Actuator (Double Acting)

* For more detailed information, see our Actuator & Surface Safety Valve brochure.





Model FS-R

Full Assembly

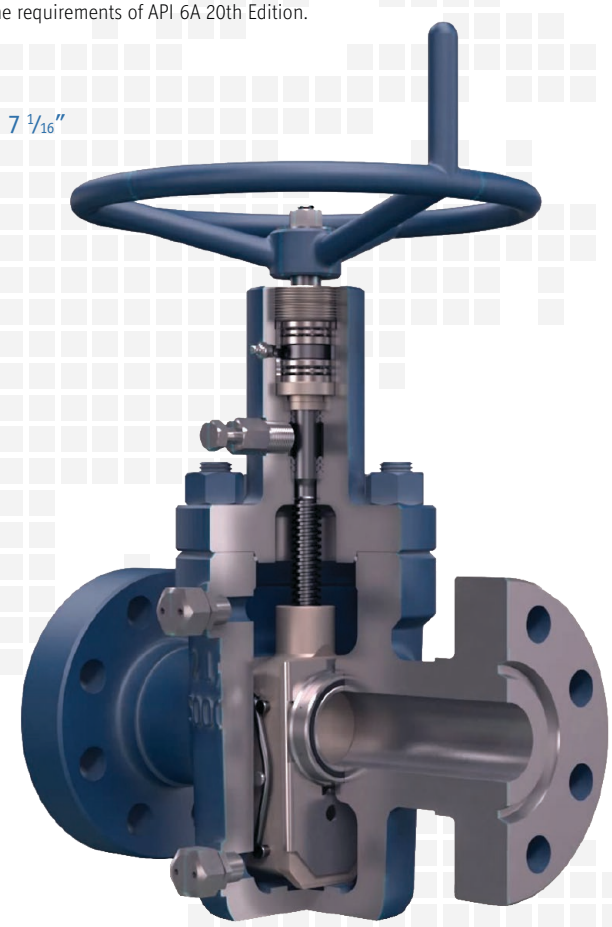
Model CX

Handwheel Operated Expanding Gate Valves

Omni Model CX cast-body expanding gate valves are designed for oil and natural gas wellhead or other critical service applications with operating pressures from 2,000 to 5,000 psi. All Model CX expanding gate valves are manufactured to the requirements of API 6A 20th Edition.

Cast Body

- Available in Sizes 2 1/16" through 7 1/16"
- For 2,000 & 5,000 psi Service
- Slab Gate - Field Replaceable



Features

Operating Temperatures

Model CX valves are available with API 6A Temperature ratings of L (-50 F) through Y (650 F). Valves for API Temperature ratings of X and Y are pressure de-rated as required per Annex G of API 6A 20th Edition.

Expanding Gate

The expanding gate is field-replaceable and provides a tight mechanical seal that does not rely on line pressure. This ensures seal integrity at both high and low pressure.

Exposed Bolting

All exposed bolting meets the requirements of NACE MR0175.

Seat Designs

The standard gate-to-seat and seat-to-body sealing interface is a slip-fit design, assisted by inserts in the face and rear of each seat. Metal-to-metal gate-to-seat and pressed-fit seat to body sealing is used for high-temp valves and is otherwise available upon request.

Packing Design

Chevron style stem packing is replaceable and can be re-energized by injection between the packing stacks. This ensures efficient sealing for the life of the valve. Graphite packing is used for high-temperature applications.

Body Lubricant

All Model CX valves are shipped with body filler grease appropriate for the material class and temperature rating of the valve to ensure smooth operation of the valve under pressure and to prevent corrosion during storage prior to deployment.

Grease Fittings

The valve body may be lubricated through the grease fittings provided in the valve body. All fittings meet the requirements of NACE MR0175.

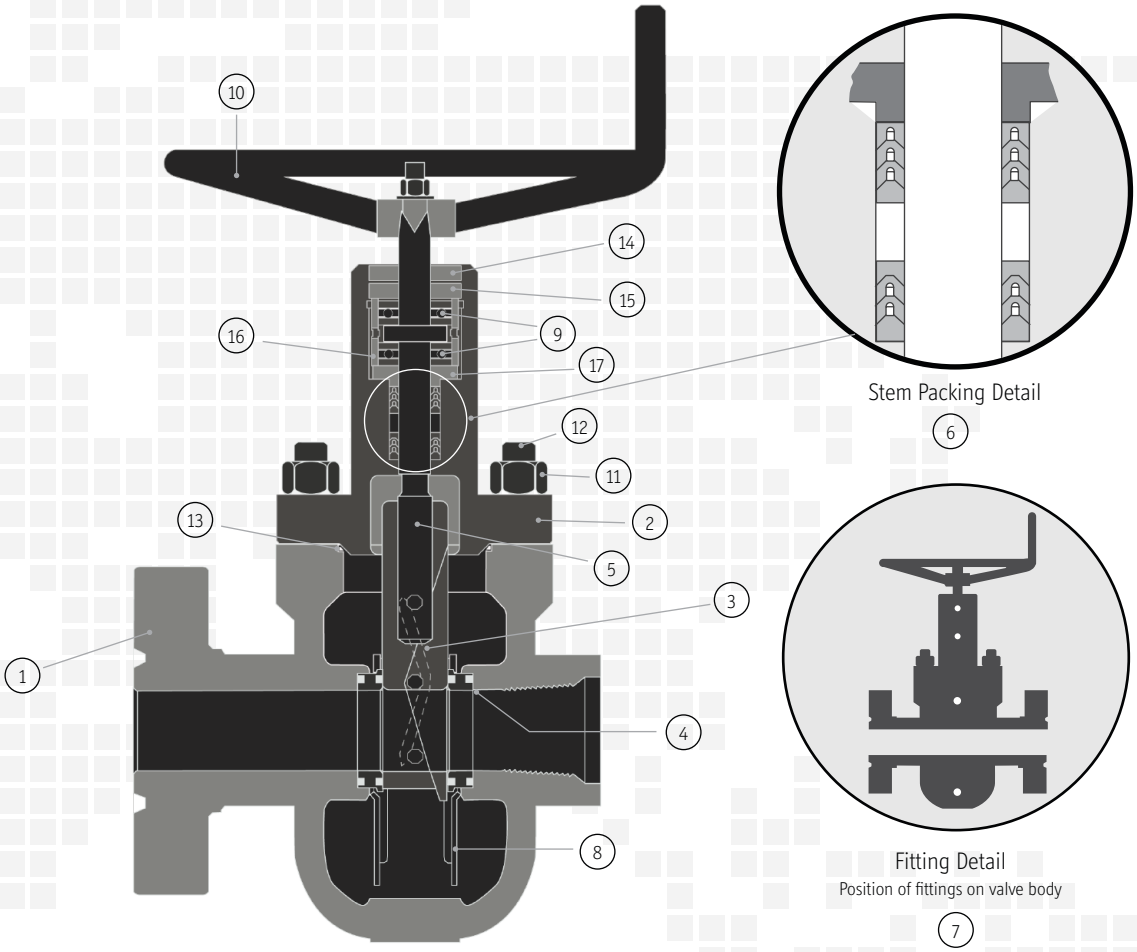
Full Through Conduit Bore

The full through conduit bore provides for smooth flow with minimal turbulence. It also provides an unobstructed passage for well intervention tools.

All Model CX valves are drift tested in accordance with API 6A 20th Edition requirements.

Internal Configuration

Valve Depicted With One Flanged & One Threaded End

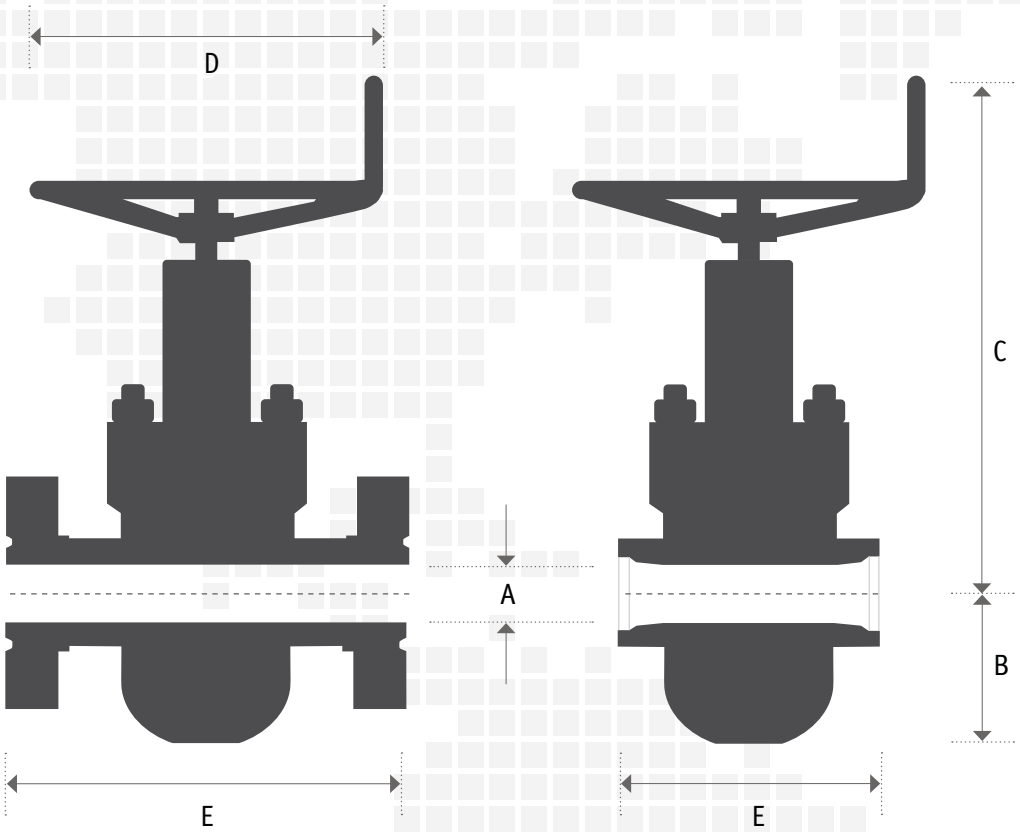


Part #	Description	Qty
1	Valve Body	1
2	Valve Bonnet	1
3	Expanding Gate Assembly	1
4	Seat	2
5	Operating Stem	1
6	Stem Packing Set	1
7	Grease Zerk (1) , Packing Injection Fitting (1) , Body Grease Fittings (2)	
8	Gate Guide	2
9	Thrust Bearings	2
10	Handwheel with nut and washer	1
11	Nut	8*
12	Stud	8*
13	Bonnet Seal Ring	1
14	Jam Nut	1
15	Stem Nut	1
16	Bearing Spacer Sleeve	1
17	Packing Retainer	1

* Dependent upon valve size

Dimensional Data

Model CX



Bore Size	Pressure (psi)	API Ring #	Common Dimensions A in	A mm	B in	B mm	C in	C mm	D in	D mm	# Turns To Open	Flanged E in	Flanged E mm	Flanged Weight lbs	Flanged Weight kgs	Threaded E in	Threaded E mm	Threaded Weight lbs	Threaded Weight kgs
2 1/16"	2,000	R23	2.06	52	4.81	122	19.25	489	11	279	13	11.62	295	120	54	9.62	244	90	41
	3-5,000	R24	2.06	52	5.06	129	19.43	494	13	330	13	14.62	371	160	73	9.62	244	110	50
2 9/16"	2,000	R26	2.56	65	5.62	143	20.18	513	13	330	15.5	13.12	333	180	82	10.25	260	125	57
	3-5,000	R27	2.56	65	5.93	151	20.43	519	16	406	15.5	16.62	422	235	107	10.25	260	160	73
3 1/8"	2,000	R31	3.12	79	6.93	176	22.5	572	13	330	20	14.12	359	220	100	11.38	289	190	86
	3,000	R31	3.12	79	7.31	186	22.75	578	16	406	20	17.12	435	300	136	11.38	289	230	104
	5,000	R35	3.12	79	7.31	186	22.75	578	16	406	20	18.62	473	335	152	11.38	289	230	104
4 1/16"	2,000	R37	4.06	103	8.62	219	25.93	659	16	406	24.5	17.12	435	430	195	13	330	320	145
	3,000	R37	4.06	103	9.06	230	26.37	670	20	508	24.5	20.12	511	520	236	13	330	420	190
	5,000	R39	4.06	103	9.06	230	26.37	670	20	508	24.5	21.62	549	633	287	13	330	420	190
5 1/8"	2,000	R41	5.12	130	11.62	295	32.5	826	20	508	31	22.12	562	800	363	N/A			
	3,000	R41	5.12	130	11.62	295	32.5	826	24	610	31	24.12	613	900	408				
	5,000	R44	5.12	130	11.62	295	32.5	826	24	610	31	28.62	727	986	447				
7 1/16"	2,000	R45	7.06	179	13.87	352	33.1	841	20	508	40	26.12	663	1021	463				
	3,000	R45	7.06	179	13.87	352	34.1	866	24	610	40	28.12	714	1118	507				
	5,000	R46	7.06	179	13.87	352	34.1	866	30	762	40	32	813	1190	540				

Trim Chart
Model CX

Materials of construction listed below are as provided in Omni's standard valve configurations.
Alternate materials are available upon customer request.

Non-NACE Trims / NACE Trims

API Mat'l Class	AA	BB	CC	DD-NL	EE-0,5	EE-1,5	EE-NL	FF-0,5	FF-1,5	FF-NL
Service	General	General	General	Sour	Sour	Sour	Sour	Sour	Sour	Sour
Trim	Standard	SS Trim	Full SS	Standard	SS Trim	SS Trim	SS Trim	Full SS	Full SS	Full SS
Corrosive	No	Slightly	Moderate	No	Moderate	Moderate	Moderate	Highly	Highly	Highly
Avail API Temp	L to Y	L to Y	P to Y	L to Y	L to Y	L to Y	L to Y	P to Y	P to Y	P to Y

Components

Body	ASTM A487 CL 4 60K ALLOY	ASTM A487 CL 4 60K ALLOY	ASTM A217 or A487 CA-15 60K SS	ASTM A487 CL 4 60K ALLOY	ASTM A487 CL 4 60K ALLOY	ASTM A487 CL 4 60K ALLOY	ASTM A487 CL 4 60K ALLOY	ASTM A217 or A487 CA-15 60K SS	ASTM A217 or A487 CA-15 60K SS	ASTM A217 or A487 CA-15 60K SS
Bonnet	AISI 4130 60K ALLOY	AISI 4130 60K ALLOY	AISI 410 60K SS	AISI 4130 60K ALLOY	AISI 4130 60K ALLOY	AISI 4130 60K ALLOY	AISI 4130 60K ALLOY	AISI 410 60K SS	AISI 410 60K SS	AISI 410 60K SS
Gate (1)	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED
Seats (1)	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 4130 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED	AISI 410 SS 75K NITRIDED
Stem	AISI 4130 75K NITRIDED	ASTM A564 GR 630 (17-4) 105K NITRIDED	ASTM A564 GR 630 (17-4) 105K NITRIDED	AISI 4130 75K NITRIDED	ASTM A564 GR 630 (17-4) 105K NITRIDED	CRA (2) PER NACE	CRA (2) PER NACE	ASTM A564 GR 630 (17-4) 105K NITRIDED	CRA (2) PER NACE	CRA (2) PER NACE
Bonnet Seal Ring	AISI 1018/1020	AISI 316 SS	AISI 316 SS	AISI 1018/1020	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS	AISI 316 SS
Studs	ASTM A193 GR B7 or ASTM A320 GR L7	ASTM A193 GR B7 or ASTM A320 GR L7	ASTM A193 GR B7 or ASTM A320 GR L7	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M	ASTM A193 GR B7M or ASTM A320 GR L7M
Nuts	ASTM A194 GR 2H	ASTM A194 GR 2H	ASTM A194 GR 2H	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM	ASTM A194 GR 2HM
Packing	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)	25% GLASS FILLED PTFE (3)

Notes

1	Nitriding is standard on all gates and seats. Tungsten Carbide, HF6 or other hardfacing techniques are also available.
2	Corrosion resistant alloy per NACE MR0175/ISO 15156.
3	High temperature (API Temp Ratings X,Y) valves use graphite packing. Other special packing is available upon request.
4	Teflon inserts on seat faces are standard in Omni valves. Metal-to-metal seats are available upon request.
5	Charpy impact test results are provided as required by API according to the temperature rating and material class.
6	Materials for sour service trims conform to latest edition of NACE MR0175. Explanation for suffixes used for sour trims: 0,5 = 0.5 psi maximum partial pressure of hydrogen sulfide 1,5 = 1.5 psi maximum partial pressure of hydrogen sulfide NL = No limit to hydrogen sulfide exposure.
7	Omni reserves the right to use material class ZZ when customers request materials of construction that do not comply with current NACE MR0175/ISO standards.
8	High temperature (API Temp Ratings X,Y) valves use metal-to-metal seals. Other special seals are available upon request.

All Model CX valves are available in API PSL-1, PSL-2, PSL-3 or PSL-3G, PR-1 or PR-2. Please specify at time of order.

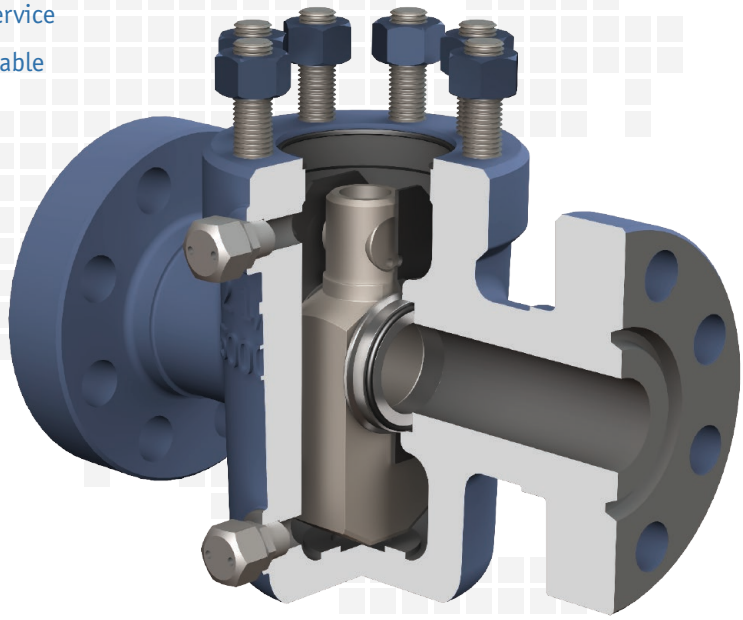
Model CS-R

Reverse Acting Slab Gate Valve for Actuation

Omni Model CS-R cast-body reverse acting slab gate valves are designed to be used as surface safety valves for oil and natural gas wellhead, manifold or other critical service applications. An appropriate pneumatic, hydraulic or electric actuator is required in conjunction with the Model CS-R.

Cast Body

- Available in bore sizes from 2 1/16" through 7 1/16"
- For 2,000 to 5,000 psi Service
- Slab Gate - Field Replaceable



Features

Adaptability

Model CS-R valves are designed to accept pneumatic, hydraulic or electric actuators from any manufacturer. Omni will provide interface drawings upon request. Omni has a complete line of pneumatic and hydraulic actuators and can deliver CS-R valves with actuators already mounted, ready for immediate deployment.

Operating Temperatures

Model CS-R valves are available with API 6A Temperature ratings of L (-50 F) through X (350 F). Valves for API Temperature rating X are pressure de-rated as required per Annex G of API 6A 20th Edition.

Reverse Acting Slab Gate

The reverse acting slab gate has the conduit opening on the upper portion of the gate. This means that the valve will be open when the gate is in the down position. The gate is moved to the down position by application of adequate control pressure to the actuator. Upon loss of control pressure, pressure acting on the gate and stem will cause the valve to close automatically. Under zero bore pressure conditions, valve closure is assisted by a spring contained in the actuator/bonnet assembly.

Full Through Conduit Bore

The full through conduit bore provides for smooth flow with minimal turbulence. It also provides an unobstructed passage for well intervention tools. All Model CS-R valves are drift tested in accordance with API 6A 20th Edition requirements.

Seat Designs

The standard gate-to-seat and seat-to-body sealing interface is a slip-fit design, assisted by inserts in the face and o-rings in the rear of each seat. Metal-to-metal gate-to-seat and pressed-fit seat to body sealing is used for high-temp valves and is otherwise available upon request..

Grease Fittings

The valve body may be lubricated through the grease fittings provided in the valve body. All fittings meet the requirements of NACE MR0175.

Exposed Bolting

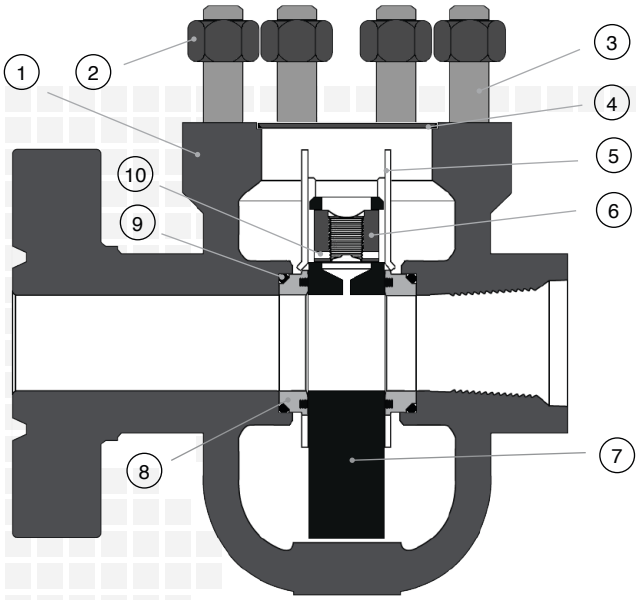
All exposed bolting meets the requirements of NACE MR0175.

Internal Configuration

Model CS-R

Component	Description	Qty
1	Valve Body	1
2	Nut	8
3	Stud	8
4	Bonnet Seal Ring	1 (VRK)
5	Gate Guide	2 (VRK)
6	Gate Nut	1 (VRK)
7	Reverse Acting Slab Gate	1 (VRK)
8	Seat	2 (VRK)
9	Seat Seal	2 (VRK)
10	Stem Pin	1 (VRK)

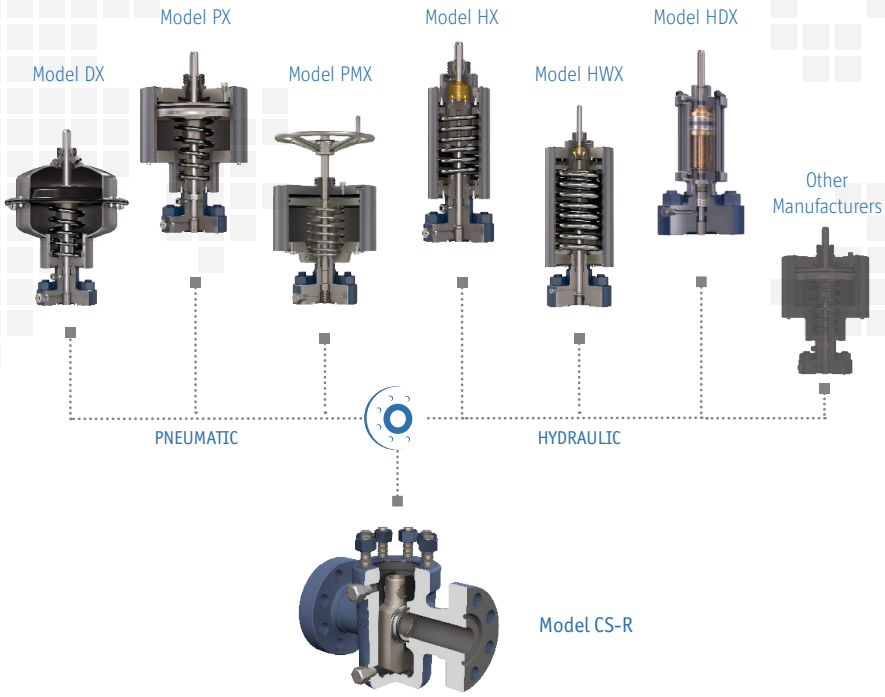
(VRK) = Valve Redress Kit Item



Gate Valves Prepared for Actuators

Model	Description
DX	Pneumatic Diaphragm Actuator (Fail Safe)
PX	Pneumatic Piston Actuator (Fail Safe, Removable Manual Override)
PMX	Pneumatic Piston Actuator (Fail Safe, Integrated Manual Override)
HX	Hydraulic Piston Actuator (Fail Safe)
HWX	Hydraulic Piston Actuator (Fail Safe, Wirecutting)
HDX	Hydraulic Piston Actuator (Double Acting)

* For more detailed information see our Actuator & Surface Safety Valve brochure.



Full Assembly

OMNI VALVE

Global Energy Market Solutions

CAST / FORGED BODY

Expanding & Slab Gate Valves

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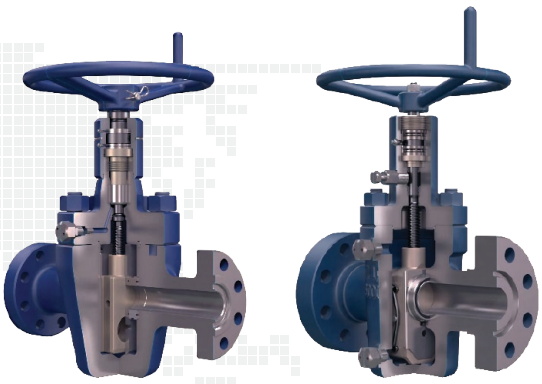

PRODUCT WARRANTY

All products quoted are subject to omni valve's limited product warranty available at: omnivalve.com/warranty.shtml

