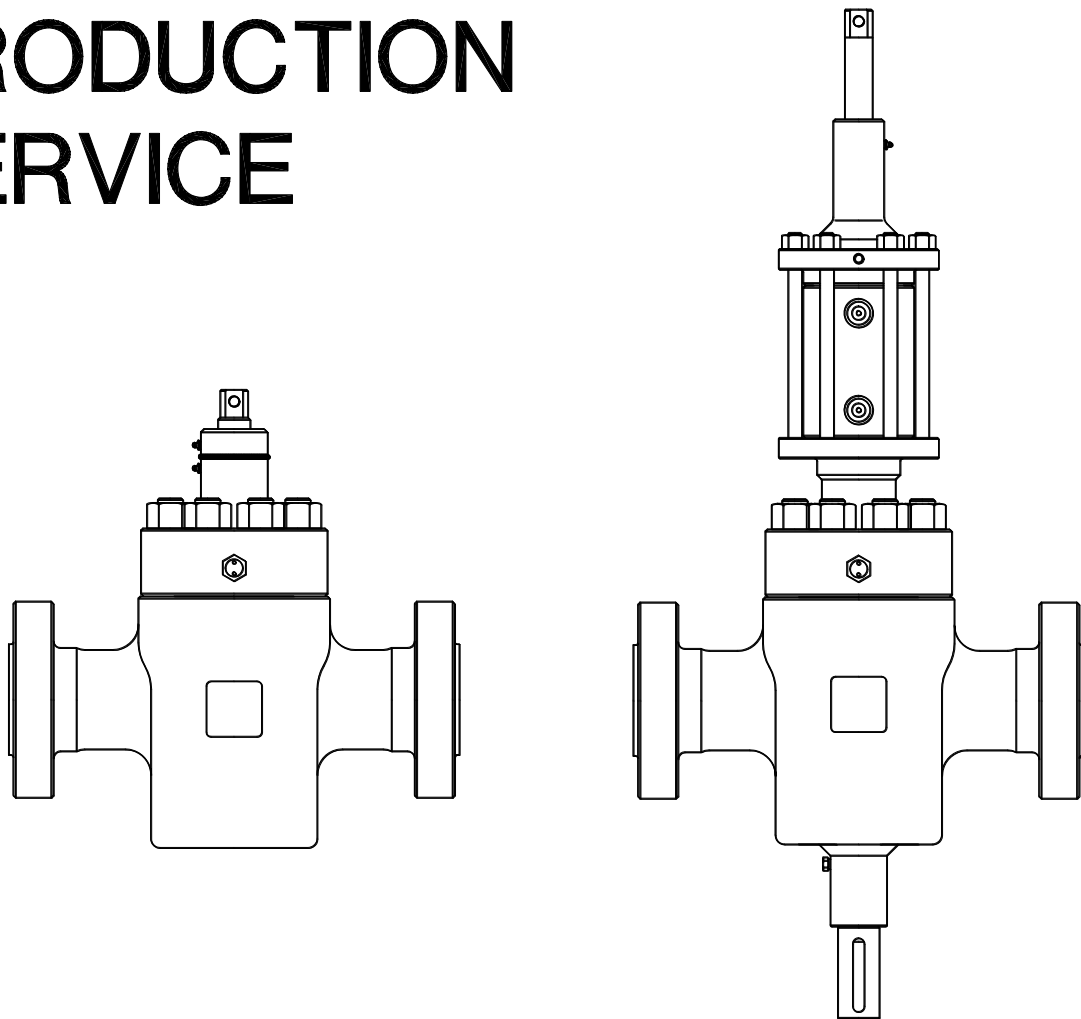


Church Energy

SERVICES LTD.

GATE VALVES FOR DRILLING AND PRODUCTION SERVICE



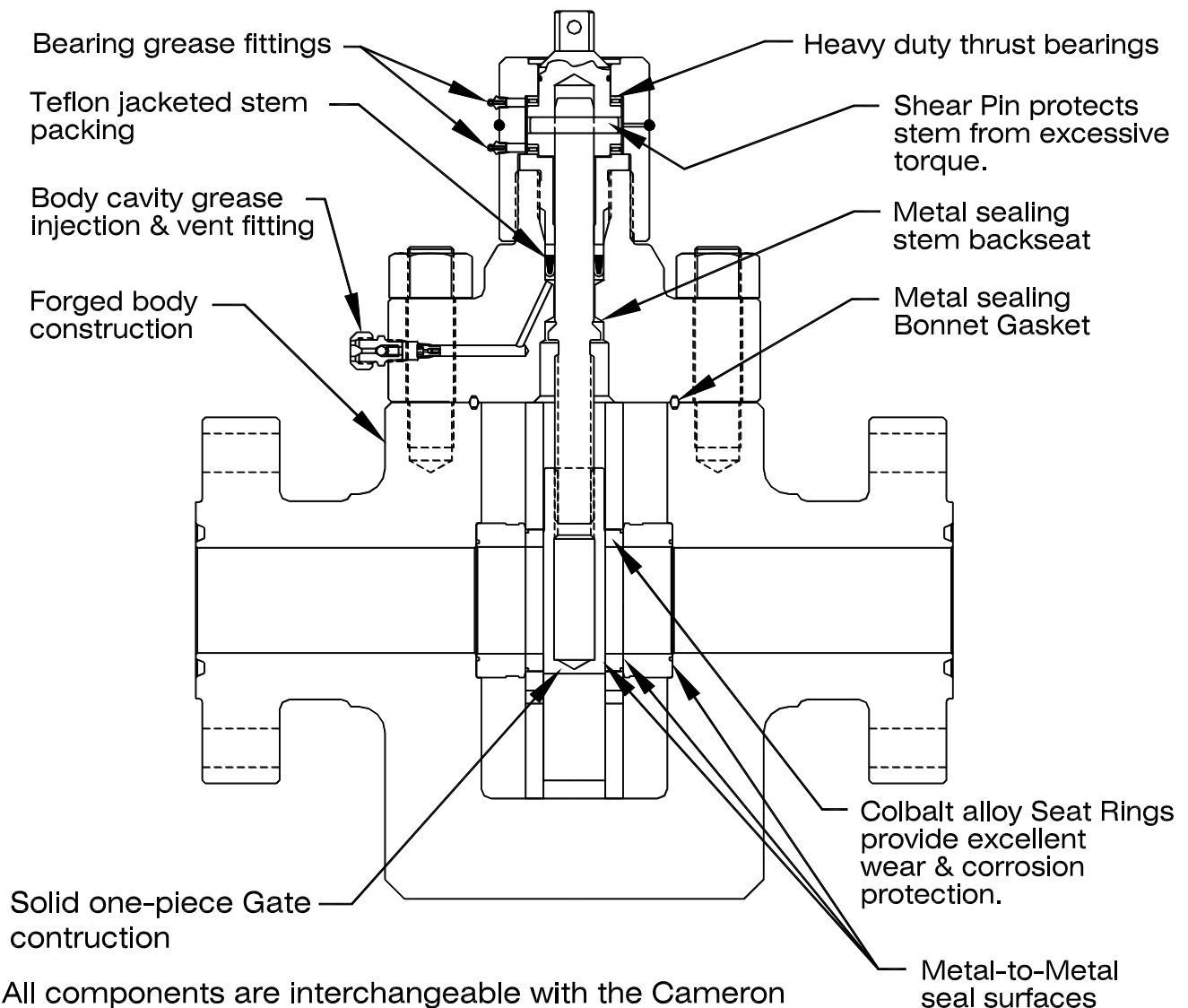
2810 WASHINGTON DR. * HOUSTON, TEXAS * 77038

CHURCH ENERGY SERVICES LTD.

TYPE 41 GATE VALVE

The Type 41 Gate Valve is an industry accepted, field proven gate valve that provides the reliability and interchangeability needed in the competitive market today. The Type 41 Gate Valve is bi-directional sealing and utilizes a non-rising stem, making it ideally suited for drilling manifold and production operations. Materials and trims are available for all operating conditions.

The Type 41 Gate Valves are available for operating pressures up to 20,000 psi, which can meet all API 6A PSL levels. The Type 41 Gate Valve can be equipped with hydraulic actuators for manifold or subsea service. Type 41 Gate Valves are currently being used in all areas of the world where oil and gas is produced today.



All components are interchangeable with the Cameron type FC gate valve.

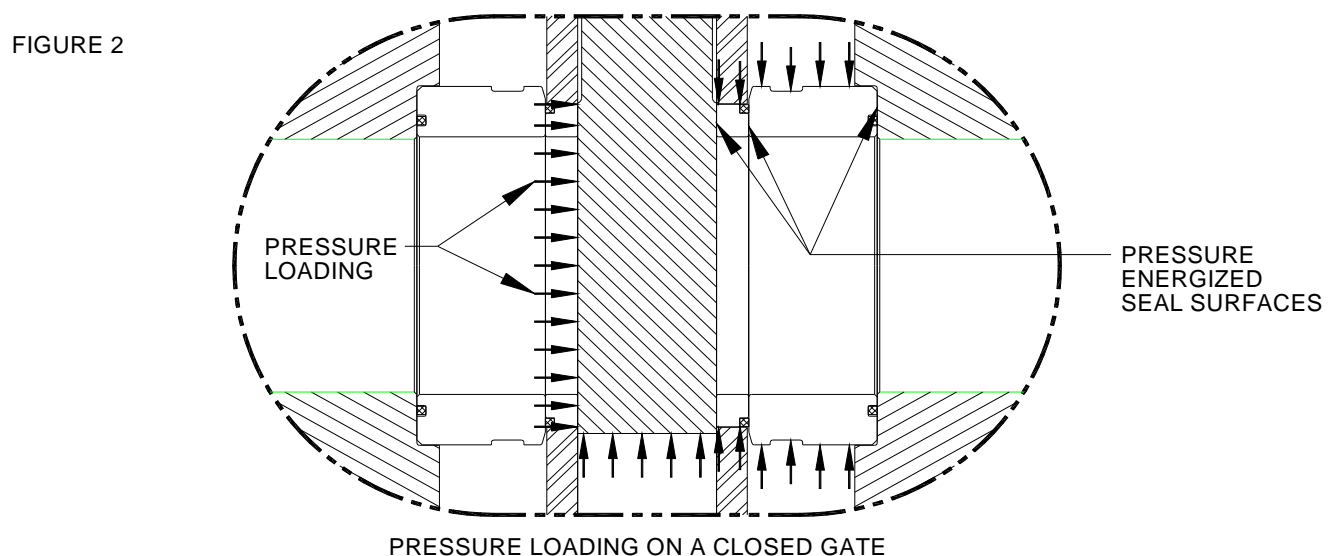
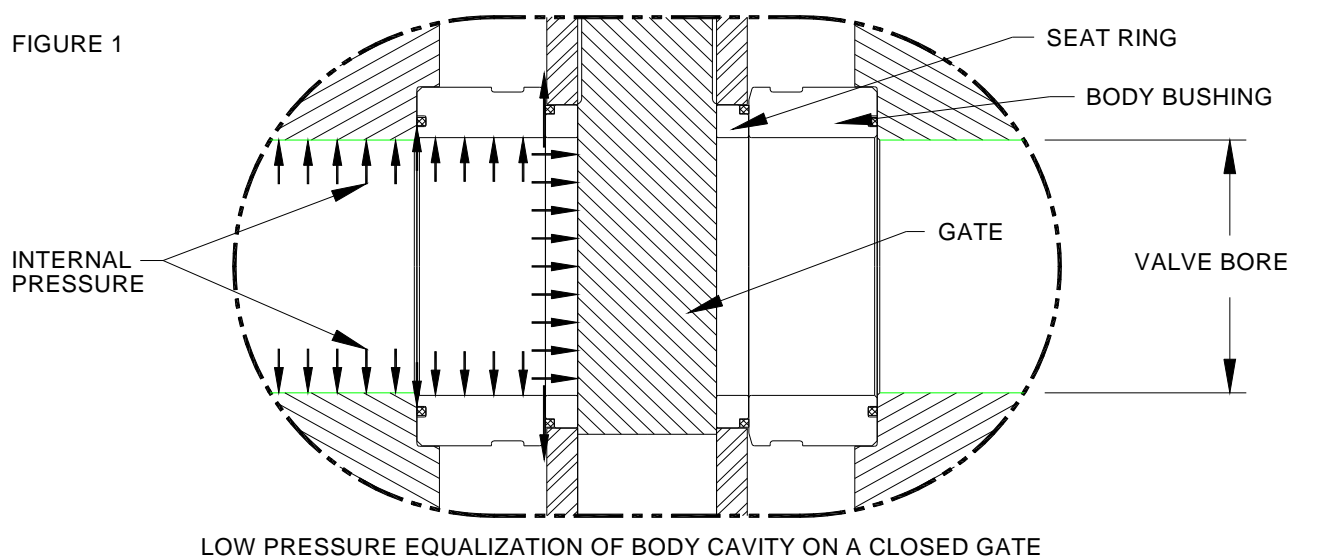
OPERATION OF THE TYPE 41 GATE VALVE SEALING SYSTEM

The floating Gate and Seat sealing system is the most reliable and widely used valve sealing design utilized today.

In Figure 1, upstream internal pressure equalizes the Body cavity pressure and pushes the floating Gate against the opposite side of the valve. Metal to metal seals form between the Gate, Seat Ring, Body Bushing, and Body Interfaces. Figure 2 shows the large area acted on by the pressure. This pressure loading generates large forces acting on the seal surfaces. The pressure energized sealing pressure is 3 to 4 times that of the pressure itself.

A unique feature of the Type 41 Gate Valve design is that Body cavity equalization occurs across the Seat Ring to Body Bushing interfaces. These items can be easily replaced in the field. This is preferable to either the Gate to Seat Ring or Body to Seat interfaces, which other valve designs utilize.

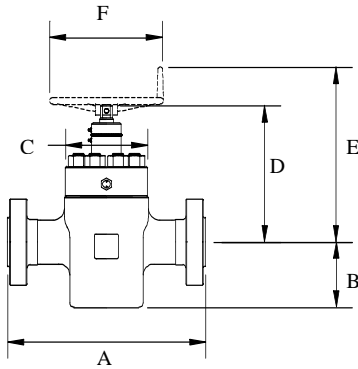
Church Energy Services Ltd. selects the best materials available and uses precise manufacturing controls to produce a Gate Valve unsurpassed in the industry for reliability and performance.



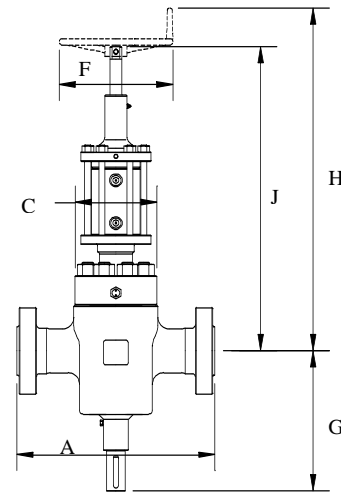
Church Energy

SERVICES LTD.

MANUAL
GATE VALVE



HYDRAULIC
GATE VALVE



FLANGED TYPE 41 GATE VALVES FOR PRODUCTION & DRILLING SERVICE
DIMENSIONAL DATA FOR API 3000 PSI W.P. (6000 PSI TEST)

Nom. Bore Size	API Ring Joint	A	B	C	D	E	F	G	H	J	Wt. Lbs. (Man.)	Wt. Lbs. (Hyd.)
2-1/16"	R-24	14.62	5.62	6.75	13.00	18.88	14.00	14.25	34.25	28.38	180	275
2-9/16"	R-27	16.62	6.50	7.62	13.81	19.68	14.00	15.94	37.12	31.25	250	350
3-1/8"	R-31	17.12	7.38	7.50	16.81	22.68	14.00	17.25	41.38	35.50	280	400
4-1/16"	R-37	20.12	9.12	10.50	18.44	24.31	18.00	19.75	45.88	40.00	450	550
6-1/8"	R-45	24.12	12.75	12.75	22.75	28.62	24.00	25.88	59.18	53.31	910	1100

DIMENSIONAL DATA FOR API 5000 PSI W.P. (7500 PSI TEST)

Nom. Bore Size	API Ring Joint	A	B	C	D	E	F	G	H	J	Wt. Lbs. (Man.)	Wt. Lbs. (Hyd.)
2-1/16"	R-24	14.62	5.62	7.00	15.12	21.00	14.00	14.25	36.38	30.50	180	280
2-9/16"	R-27	16.62	6.50	8.18	15.94	21.81	14.00	15.94	38.88	33.00	255	360
3-1/8"	R-35	18.62	7.38	9.25	16.81	22.68	18.00	17.25	41.38	35.50	360	430
4-1/16"	R-39	21.62	9.12	10.81	18.44	24.31	18.00	19.75	45.88	40.00	545	650
6-1/8"	R-46	29.00	12.75	14.12	22.75	28.62	24.00	25.88	59.18	53.31	1090	1490

DIMENSIONAL DATA FOR API 10000 PSI W.P. (15000 PSI TEST)

Nom. Bore Size	API Ring Joint	A	B	C	D	E	F	G	H	J	Wt. Lbs. (Man.)	Wt. Lbs. (Hyd.)
1-13/16"	BX-151	18.25	5.75	9.06	15.12	21.00	14.00	14.38	36.38	30.50	270	330
2-1/16"	BX-152	20.50	5.88	9.38	15.12	21.00	14.00	14.50	36.38	30.50	275	370
2-9/16"	BX-153	22.25	6.81	9.81	15.81	21.68	18.00	15.94	38.88	33.00	485	555
3-1/16"	BX-154	24.38	8.06	10.25	16.88	22.75	18.00	17.25	42.75	36.88	680	750
4-1/16"	BX-155	26.38	10.06	12.81	19.68	25.56	24.00	19.75	49.88	44.00	1060	1170
7-1/16"	BX-156	35.00	16.50	17.12	27.38	33.25	30.00	32.00	68.50	64.38	3800	4200

DIMENSIONAL DATA FOR API 15000 PSI W.P. (22500 PSI TEST)

Nom. Bore Size	API Ring Joint	A	B	C	D	E	F	G	H	J	Wt. Lbs. (Man.)	Wt. Lbs. (Hyd.)
1-13/16"	BX-151	18.00	5.88	9.88	15.12	21.00	14.00	14.38	36.38	30.50	275	335
2-1/16"	BX-152	19.00	6.12	9.88	15.12	21.00	18.00	14.50	36.38	30.50	350	445
2-9/16"	BX-153	21.00	7.31	11.50	17.18	23.06	18.00	16.38	43.00	37.12	800	870
3-1/16"	BX-154	23.56	9.25	13.56	20.94	26.81	24.00	20.62	51.12	45.25	1065	1150
4-1/16"	BX-155	29.00	10.18	21.00	22.81	28.68	24.00				1300	
7-1/16"	BX-156	36.00	17.75	19.00	32.25	38.12	30.00	33.00	65.63	59.75	4300	4800

(All dimensions in inches)