ITT

Engineered Valves

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INSTALLATION OPERATION AND MAINTENANCE INSTRUCTIONS FIGURE C37L FABRI-VALVE BONNETLESS KNIFE GATE VALVE

CAUTION: IF THE VALVE IS TO BE STORED FOR A LONG PERIOD OF TIME BEFORE INSTALLATION IT SHOULD BE STORED IN A VERTICAL POSITION AND IN A COOL, CLEAN AREA TO PREVENT DAMAGING EFFECTS ON THE PACKING.

INSTALLATION:

CAUTION: A SINGLE SEATED KNIFE GATE VALVE IS DESIGNED TO SEAL IN ONE DIRECTION ONLY. IF REVERSE PRESSURE IS EXPECTED CONTACT THE FACTORY FOR TECHNICAL ASSISTANCE.

Inspect the valve and identify the seat side. The word "SEAT" is cast on the valve body in the chest area on the seat side. Install the valve in the line with the seat downstream or making sure the flow and pressure is in the direction tending to push the gate against the seat when closed.

Use a gasket material suitable for the pressure, temperature, and media and cut to fit raised face of the valve.

Bolt the valve to the mating flange using proper size bolts. It is critical that the bolts or studs in the chest area do not bottom out and distort the liner against the gate. This could damage or jam the gate.
It is recommended that studs be used in the tapped holes in the chest area. If bolts are to be used, select a length that will not cause bolt to bottom out in flange hole.

When tightening flange bolts work from side to side to ensure even compression of the gasket. The amount of torque required is determined by the type of gasket, line pressure, type of bolt, and bolt lubrication.

All valves are pressure and seat tested before shipment. The packing gland is loosened slightly after the tests to prevent unnecessary compression of the packing. As a result the packing gland may require some adjusting after line pressure is up to normal. Tighten just enough to stop leakage. Over tightening may cause undue pressure against the gate making the valve difficult to operate and cause rapid packing wear. If possible, stroke the valve a few times before setting packing bolts. Each valve is seat tested at 40 psi and 150 psi for seat leakage. Metal seated valves will not leak more than 40cc/in/min and resilient seated valves will be drip tight at these conditions. Extremely low pressures across a closed gate, below 5 psi, may result in higher leakage rates. If this is the normal working condition, centerline buttons may be required. See the Fabri-Valve® catalog or consult the factory.

If the valve is installed in horizontal position and a powered actuator is included with the valve, support of the actuator may be required. Consult the factory for technical advice.

Air operated valves must be supplied with clean, dry, regulated air.

CAUTION: THE VALVES ARE SUPPLIED WITH CYLINDERS SIZED FOR A SPECIFIED AIR PRESSURE AND PRESSURES EXCEEDING THIS MAY CAUSE DAMAGE TO THE VALVE. AIR REGULATORS AND AIR FILTERS ARE AVAILABLE FROM YOUR ITT REPRESENTATIVE.

MAINTENANCE:

TO REPACK STUFFING BOX:

DANGER: DO NOT REPACK VALVE UNDER PRESSURE

1. Disconnect stem from gate and raise the stem.
2. Remove gland nuts and raise the packing gland.
3. Remove old packing and clean the packing chamber
4. Install new packing per table below. Cut to length to fit around the gate, cutting each end of the packing at a 45 degree bevel and stagger the joints on opposite sides of the gate.

Valve Size	Number Rows	Packing Size	Packing Length
6	3	3/8	15 5/8
8	3	3/8	20 5/8
10	3	3/8	24 1/8
12	3	3/8	29 1/8
14	3	1/2	30 1/2
16	3	1/2	34 1/4
18	3	1/2	38 1/4
20	3	1/2	43
24	3	1/2	51
30	3	3/4	66
36	3	3/4	79

5. Reseat the packing gland and replace the packing nuts, making sure the gate is centered and against the valve body seat. Tighten nuts just to the point that the gland contacts and sets the packing. Do not tighten completely.
6. Connect the stem to the gate.
7. Pressurize the valve to the working pressure and tighten nuts evenly from side to side until any leakage is stopped. Do not over tighten.

The stem and stem nut are lubricated at the factory before shipment. However, these parts should be lubricated periodically to prevent wear and to minimize operating forces. Some recommended lubricants are:

Chevron Industrial Grease-Medium
Texaco Molytex Grease #2
Moly XL 47-F2-75
Fel-Pro C5-A Compound

VALVES WITH RESILIENT SEALS

D-RING SEALS

1. Remove valve from line and disassemble.
2. Remove old seal from groove. The groove must be clean and dry before installing new seal.
3. Roughen flat bottom surface of seal ring and clean.
4. Lay seal ring on flat surface with flat side up. Apply a thin layer of adhesive to the flat surface (.003 to .005 thick).

NOTE: Black Max adhesive #38050 is available from factory under part No. 137-900.

5. Install the ring in the body groove flat side down. Press seal in the groove starting at the top and then move to the bottom, and then to the sides as illustrated in fig 1. All rings must be stretched slightly to fit, and care must be taken to keep ring smooth and flat.
6. Wipe off any excess adhesive.
7. Allow adhesive to dry for a minimum of 8 hours for full bond strength.
8. Reassemble valve and repack per instructions above.

VALVES WITH CENTERLINE BUTTONS:

Centerline buttons are adjusted at the factory. If replacement or adjustment is required do the following.

Close the valve so that the gate is seated against the wedges. Insert setscrew into housing, using a few drops of thread locking compound (Loctite 271). Adjust setscrew to fit tight against the gate as shown in figure 2. The hardened tip of the centerline buttons in service will have a tendency to make short score marks on the backside of the gate. This is normal as the centerline button wedges the gate against the seat to affect a seal.

Maintenance manuals for cylinders, electric motors, and other accessories are available from the factory.

VALVES WITH ELECTRIC ACTUATORS

Valves with electric motors should be set up torque closed, position open if valve is single seated and position closed, position open if valve is double seated.

WARNING:

Valves and valve actuators supplied by Engineered Valves are designed and manufactured using good workmanship and materials, and they meet the applicable industry standards. These valves are available with components of various materials, and they should be used only in services recommended herein or by a company valve engineer. Misapplication of the product may result in injuries or property damage. A selection of valve components of the proper material consistent with the particular performance requirement is important for proper application.

Examples of the misapplication or misuse of a valve or valve actuator includes use in an application that exceeds the pressure / temperature rating, or failure to maintain the equipment as recommended.