

MANUAL

Gate valve AL 48-XD

Installation

1. Prepare two G-ST/GUSS FLANGE GASKETS (COVERING THE FULL FACE OF THE FLANGE) of elastomer material suitable for the service medium, pressure and the facing of the mating flanges. Since the threaded holes are painted at the works to inhibit corrosion, wire brushing and greasing the threads should ease fitting the bolting.

2. The CYL valve is bi-directional; it can be inserted between the two flanges without regard to flow direction. However, if a deflector cone for abrasive media is supplied, it must be fitted at the upstream end of the valve in order to function correctly.

3. Valves fitted with pneumatic actuators have BSP threaded air input and output ports. Tight shut off of the valve will be ensured by having at least an 87 PSI (6 BAR) air supply at the actuator. The valve is designed to be installed with the cylinder in a vertical position resulting in proper support for the cylinder forces.

**PNEUMATIC ACTUATED VALVES,
SHOULD BE INSTALLED VERTICALLY.**

**ALL THE PNEUMATIC ACTUATORS SINGLE OR
DOUBLE ACTING, BIGGER THAN Ø250 MUST BE
SUPPORTED EXTERNALLY DUE TO THE
HEAVY WEIGHT.**

WARNING: Depending on service pressure, an actuator air supply pressure lower than 6 bar may cause the valve to open or close slowly and to shut off incompletely.

4. The AL 48-XD knife gate valve maintains its bubble-tight seal by pressure of the gate against the u-shaped and the packing material. In higher pressure valves, the force of the gate against the seat is naturally higher requiring a higher force to operate the valve. Therefore, in valves designed for high pressure service, the valve spindle must be lubricated by a waterproof, neutral grease to reduce the operating force required.

We advise as lubrication product for AL 48-XD valves Grease AL/SI 3653, grease silicone multi usages from Maker -MOLYDAL S.A., silicone grease from Loctite -(8104) or grease Molikote III Compound.

If a maximum operating torque is specified, this must be advised to us as a gearbox may be required.

Valves that are to be electrically actuated in the field must have the spindle lubricated as stated above. Failure to do so will make operating the valve inordinately difficult. To avoid any problems, we recommend that the high pressure service valves be fitted with actuators at the factory. The level of spindle lubrication must be checked periodically and maintained at an adequate level.

**WHEN THE VALVE IS FIRST PUT INTO SERVICE IT
SHOULD BE CHECKED THE PACKING MECHANISM AT
THE UPPER PART OF THE BODY.**

5. The packing bolts are set to an average tightness at the works. However, different service pressures require different degrees of tightness. If the service medium is seen to be weeping from the upper part of the body, tighten the packing gland bolts according to the table below:

TORQUE RANGE (KG/M) FOR PACKING BOLTS

DN	Min	Max
50	0,25	0,36
65	0,28	0,36
80	0,32	0,45
100	0,36	0,50
125	0,39	0,54
150	0,43	0,58
200	0,45	0,60
250	0,50	0,68
300	0,60	0,82
350	0,85	1,10
400	1,00	1,30
450	1,40	1,60
500	1,50	1,90
600	2,70	3,20
700	3,20	3,80
800	4,00	4,70

6. Once the valve is installed on the line; the technician must apply NEUTRAL GREASE to the spindle to ensure ease of operation.

7. Those valves operated by electric actuator (specially with modulating actuators) must be inspected and lubricated every week. Further, the grease nipple at the actuator and the threaded spindle should be checked and lubricated periodically. The operation and maintenance instructions of the electric actuator manufacturer should be followed by the customer. If this advice is not taken seriously, we can not guarantee the good performance of the valves.

**VALVES OPERATED ELECTRICALLY SHOULD
BE INSTALLED VERTICALLY.**

Very important!

EU regulations require all valves to be opened and closed at least twice a year to establish that they are in proper operating condition.

Storage of rubber products

While the various rubbers possess differing degrees of resistance to the deteriorating influences which may be present during storage, the same general recommendations apply to all-Vulcanized rubber products should be stored in a cool, dry, dark place away from stream pipes, sunlight, etc.

Coating

Binder system : Resistant polyester coating.

Colour – RA 5017(BLUE). Film thickness- 80 – 150 μ m.

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Gate valve AL 48-XD

Operation

- To open, turn the handwheel in a clockwise direction.

- To close, turn handwheel anti-clockwise. valve must be tightened down firmly to ensure a bubble tight seal.

- To open the pneumatic cylinder actuated valve, apply air pressure to the underside of the actuator piston.

- To close the pneumatic cylinder actuated valve, make sure that you have at least 87 PSI (6 BAR) at the upper cylinder head to insure sufficient force for a bubble tight seal.

Approximate n° of turns for manually operated valves

DN	AL 48-XD
50	14
65	17,5
80	21
100	26
125	32,5
150	31
200	41
250	51
300	61
350	71
400	81
450	65
500	72
600	86

CYLINDER CAPACITY IN LITERS OF AIR

DN	Ø Cylinder	Capacity
50	80	0,35
65	80	0,43
80	100	0,72
100	100	0,97
125	125	1,87
150	160	3,48
200	190	6,44
250	190	7,85
300	190	9,25
350	250	18,61
400	250	21,25
450	300	34,07
500	300	37,68
600	300	44,75

AVERAGE TIGHTENING TORQUE FOR BODY BOLTS See drawing pos 4.

DN	Torque Nm
50	40
65	40
80	40
100	40
125	40
150	75
200	75
250	75
300	75
350	75
400	75
450	75
500	120
600	120

AIR PRESSURE

Minimum – 6 bar.

Maximum – 10 bar

Maintenance

When the body material, seat elastomer and packing material used in the service medium are according to the manufacturer's recommendations, the valve is virtually maintenance-free.

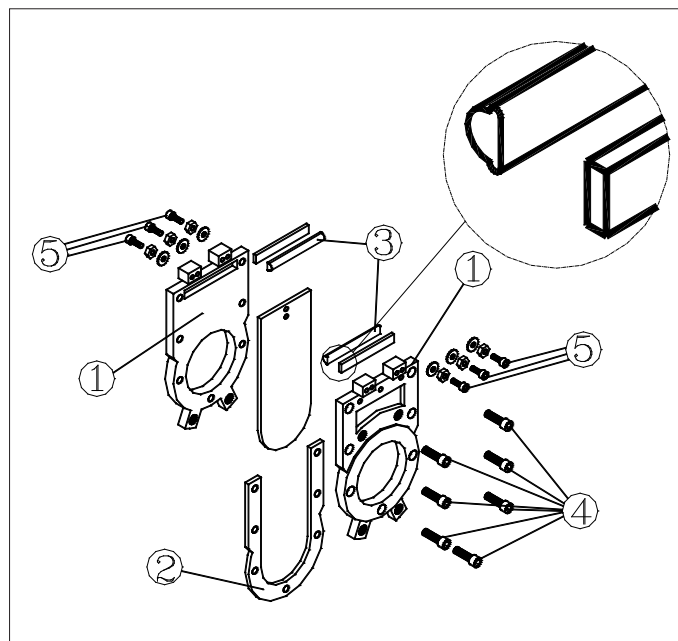
When routine inspection of the process piping is scheduled, it would be prudent to inspect the elastomer seat and packing. As all elastomers degrade to some extent when exposed to the atmosphere and sunlight, careful inspection will reveal the relative integrity of the seals and gland seal material.

Should a decision be made to change the gland seal and / or seat, proceed as follows:

WARNING
RELIEVE PIPELINE PRESSURE PRIOR TO LOOSENING GLAND NUTS OR FLANGE BOLTS. FAILURE TO RELIEVE PIPELINE PRESSURE COULD RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

To change U-SEAT and gland seal, proceed as follows:

- With a wrench remove the bolts fixing the yoke-plates to the body and upper platform. Remove the bolts fixing the spindle to the disc. Set yoke-plates and up per works aside.
- Remove the body bolting (pos 4). Once removed, separate the valve bodies (pos 1) and replace the supplied spare seat and gland seal (pos 2 and pos 3).



AVERAGE TIGHTENING TORQUE FOR PACKING GLAND BOLTS

See Installation, pos 5.

IMPORTANT: Once leakage has stopped, do not continue tightening the packing gland screws. Over-tightening the gland screws will result in higher valve operating torques and premature packing failure.

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