

Explosive atmosphere

Only valves provided with "Ex" tag plate can be used in explosive or potentially explosive atmosphere. In such cases in the "Ex" tag plate is also stated the class and the use limits according to ATEX directive.

Other use limitations

Other use limitations imposed by valve design can be marked in the CE tag plate.

MANUAL OPERATION

1) During a manual operation it's not absolutely allowed to use a bar or another force-increasing extension to operate the valve (Fig. U-1). This prescription is valid also for manual operation of valves provided with gearbox or electric actuator. Be careful to don-t apply an excessive force to the handwheel because a such attempt can cause irreparable damages to the valve.

Never apply a force over the limits indicated in EN 12570(see the table in the following page).

If it's impossible to operate the valve with a force equal to the limits specified in this table this is a clear indication of a problem as the followings:

- a) too high differential pressure
- b) to high fluid speed
- c) fluid solidified
- d) solid parts in the fluids
- e) seats damaged
- f) stem damaged
- g) broken gearbox or actuator

In such situation an attempt to increase the force to the handwhell will not solve

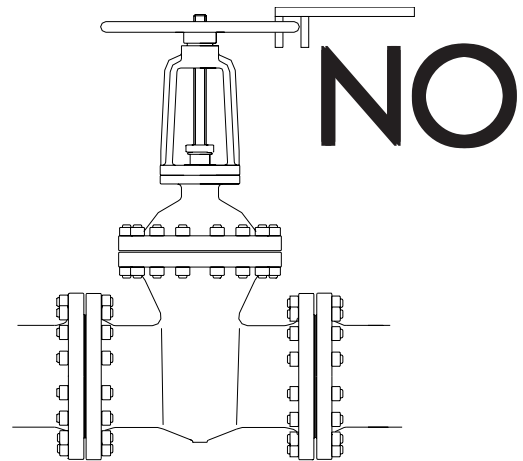


Fig. U-1

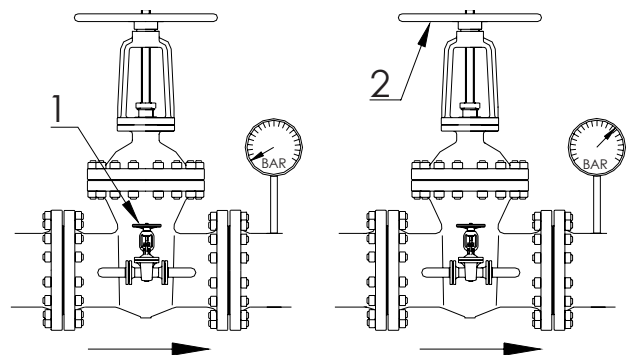


Fig. U-2

rised at the same pressure of upstream side (Fig. U-2).

4) The gate valves shall be always in completely closed or completely open position: they are not suitable for regulating service (Fig. U-3, U-4 and U-5).

5) The can't be absolutely operated if the service fluid is solidified: in such cases heat up the valve to the complete liquefaction of the service fluid.

6) Avoid operating the valve when the pipeline is empty.

7) In the new gate valves, in full close position, it's normal that the stem exit for 2 –

4 pitches from the yoke sleeve top, then don't force the closing in this situation.

8) If the valve is used for high or low temperature service it's mandatory to wear suitable protective gloves to operate it.

9) If a valve is used for corrosive or toxic medium service it's mandatory to wear suitable protective clothes (e.g. gloves, masks, etc.) during all the operations.

Handwheel Diameter [mm]	Max closing force at the handwheel [Nm]	Max opening torque at the handwheel [Nm]
200	540	700
250	615	800
300	615	800
350	675	880
400	770	1000
500	770	1000
600	770	1000

Values according to EN 12570



WARNINGS:

- 1) A use of the valve outside of the pressure temperature limitations specified in the current version of the catalogue represent a severe hazard.
- 2) A rate of change in the temperatures over 60 °C / min can cause a bad functioning of the valve (leakage) and in some cases can cause also a damage in the structure of the materials.
- 3) A frequent change in temperature with a velocity over 30°C / min can cause a relaxation of the bolted connections: in this cases the valve shall be controlled frequently to tighten immediately the bolts in case of leakage.
- 4) If the valve differ from the standard executions (e.g. because produced according to customer's specifications) the admissible pressure - temperature ratings can result reduced depending on materials used or construction characteristics. For more information or in case of doubt

please contact our customer service.

- 5) Forcing the closure of a gate valve can cause damages to the seats.
- 6) If a good tightness it's not obtainable closing the valve only by hands, the seats have been probably damaged.
- 7) The use of gate valves in partially open position can damage the body seats and the wedge.
- 8) The presence of foreign solid with high hardness (welding residuals, chips, sand etc.) during the closing can damage the seats.
- 9) If the medium is solidified (e.g. cause temperature variations) an attempt to close or open the gate valve can cause several damages (e.g. stem rupture, wedge damaging etc.).
- 10) Never force the closure: the overclosure damages irremediably the seats.
- 11) The operation with the pipeline empty, in some situations can cause seat seizure.

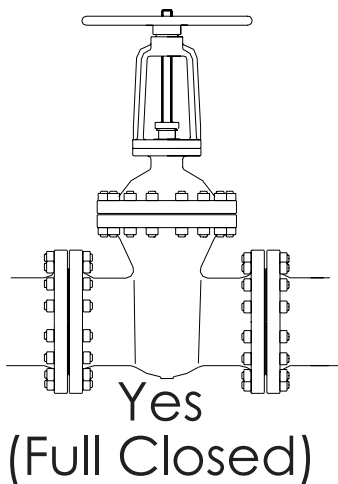


Fig. U-3

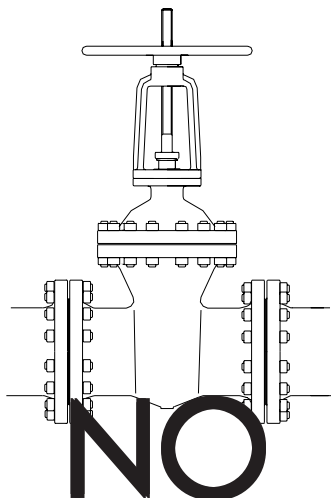


Fig. U-4

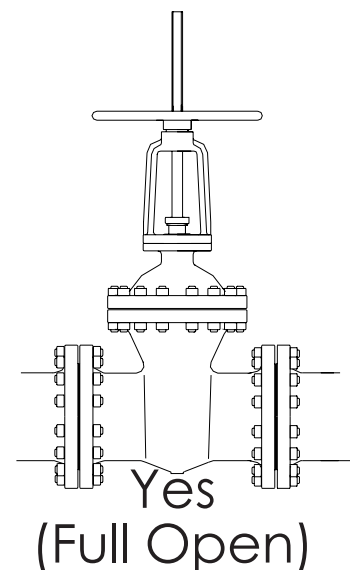


Fig. U-5

INSIDE SCREW GATE VALVES

The gate valves with inside screw need some supplementary precautions because their particular construction. The sleeve that allow the operation is positioned inside of the valve (then permanently in contact with the service fluid): this fact don't permit generally the control of the lubrication then it's necessary to avoid some situations that can cause the seizure of the parts and operate carefully these valves.

- 1) Avoid using the inside screw gate valves with fluids containing small solid particles in suspension (e.g. sand, rust etc.) that can deposit himself on the stem thread.
- 2) Avoid using the inside screw gate valves with fluids containing components that can cause seizure (e.g. iron oxides).
- 3) Avoid using the inside screw gate valves for fluids with high degreasing proprieties as solvents or steam.
- 4) Avoid using the inside screw gate valves for fluids that due to thermal gradients present the risk of solidification.
- 5) Operating the gate valves pay particular attention to open and close rotating slowly the and gently the handwheel.
- 6) In case of installation of an electrical actuator select rooting speeds not over 25 RMP.
- 7) The gate valves inside screw type with "maintenance free o-ring packing" (Var. 1040) shall not be used over 120 °C.

WARNINGS:



1) The use of the inside screw valves with medium containing solids in suspension or with degreasing proprieties can cause the seizure of the stem and the sleeve.

2) High rotating speeds of the stem can cause seizure or premature wear of stem and sleeve.

3) In case of seizure the stem and the sleeve must be replaced immediately to avoid other damages.

GATE VALVES WITH LOCKING SYSTEM

The gate valves with locking system are provided without locking device. The customer can choose the suitable locking device depending on the specific application. We recommend using only locking devices in corrosion proof execution.

GATE VALVES WITH PACKING EXTRACTION SYSTEM

To extract the packing it's necessary to unscrew the plug and to pressurise the packing chamber with compressed air mean the fitting. The packing will be extracted automatically. After the repacking remember to insert in the bottom the metallic ring in the same position as before and to close the fitting mean the plug.

CRYOGENIC VALVES

Only personnel wearing appropriate clothes and protections for low temperatures can operate the cryogenic valves. It's mandatory to use always protective gloves.

WARNINGS:



The accidental contact with the valve at low temperature can represent a hazard: it's mandatory to take appropriate measures to avoid this possibility.

ASSEMBLY OF ELECTRIC ACTUATORS

The valves provided with electric actuator coupling flange are supplied as bare stem. The coupling flange (if not differently requested) is according to ISO 5210 and is suitable to connect an electric actuator with coupling type "A". The sleeve of the actuator must be treaded according to ISO DIN 103 with the same pitch of the stem (in case of doubt please contact our customer service). Before to assemble the actuator it's necessary to release the packing bolts to avoid stem misalignment. The limit switches must be set up in the way that the torque limit switch stops the closing and the travel limit switch stops the opening. For other details please refer to the manual of the actuator.

GATE VALVES WITH CONVERTIBLE TOP FLANGE

These valves are designed to have the possibility to be operated manually (mean a standard handwheel) and to be converted easily and quickly to assembly on an electrical actuator.

To assembly the electric actuator follow these steps (Fig. U-6):

- 1) remove the clamp ring (a)
- 2) remove the handwheel (b)
- 2) remove the grab screw unscrewing it (c)
- 3) unscrew the threaded ring that fixes the sleeve to the yoke (d)
- 4) remove the yoke sleeve (e) and all roll bearings (f) (if present)
- 5) assemble the electrical actuator (for this operation follow the same indications for gate valves predisposed for electrical actuators)

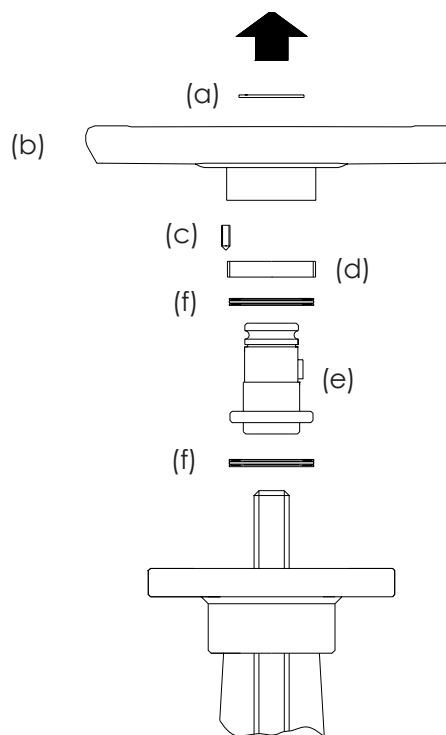


Fig. U-6

In some valves, mainly bigger sizes, the design can differ from that showed in the figure. In these valves the sleeve must be removed simply removing first the handwheel as previously showed then dismantling the yoke only.

WARNINGS:



1) This execution is suitable to assembly an electric actuator provided with stem connection according to ISO 5210 type A. Don't try to connect actuators provided with different coupling form (e.g. ISO 5210 type B3 or B4) because they are not suitable.

2) Don't use the roll bearings disassembled from the valve for the actuator: a suitable couple of roll bearing is always supplied with the electric actuator.