

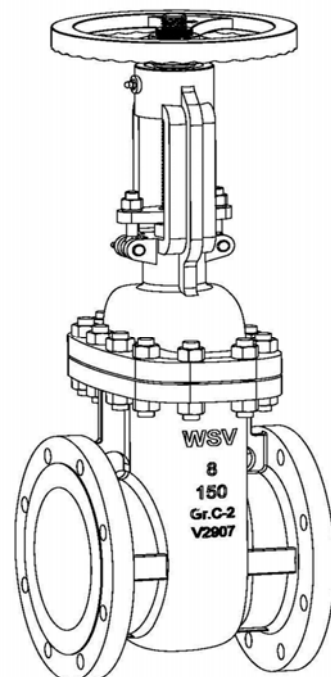


# GATE VALVES

## INSTALLATION,OPERATION,MAINTENANCE MANUAL

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The manual provides customers with all information on Weidouli Gate valves storage, installation, operation and maintenance.

a) This manual being applied substantially, it is essential to table proper measure that comes form the experience and common idea the operator

b) Such information as technical data on relevant dimensions, spare parts, part material, tools, fixtures are not covered in this manual. Details refer to each purchase order and Weidouli GA drawings.

## 1.0 TRANSPORTATION AND STORAGE

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### 1.1 Transportation.

a) The valve and the actuator can be integrated or separated to be placed in the plywood case(s) suitable for transportation. Each plywood case is marked with gross weight, net weight, case number and other related mark.

b) While loading or unloading, check for and adhere to any markings or arrows on the box which may be present to indicate upward orientation.

c) The user should select proper tools and lifting equipment to transport the goods to avoid damages to it after transported to the warehouse or outdoor storage of the installation site.

b) Valves should be checked regularly in long-term storage, to remove the dirt. Pay attention to keep the sealing surface clean, and avoid sealing surface be damaged.

c) Valves stored for extended periods should be prepared in the following manner:

If at all possible, the gate should be moved to the open position. This will prevent foreign debris and water from damaging the closed gate

If it impossible to move the valve to the open position, a coating of grease should be applied to help protect the gate surface

Flange protectors or end caps should be securely fastened in place

If the valves awaiting an operator or has an open yoke for any reason, wrap the exposed open areas and exposed stem with a protective cover to prevent moisture damage

### 1.2 Storage

a) The valve should be kept in a dry and airy environment indoors and valve both ends should be blocked.

## 2.0 PRIOR TO INSTALLATION

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2.1 Ensure Working conditions are within the specified capacity of the product being installed. Refer to the certified Engineering drawings to assist in determining these values.

2.2 Make sure that the construction material of the Gate Valve is chemically compatible with the media flowing in the pipeline

2.3 Before installation, rotate the handwheel to check whether valve rotation is flexible and positioning accuracy.

2.4 Before installation, make sure valve inside and the pipeline are clean. Any foreign material such as pipe scale, metal chips etc. can obstruct disc movement or damage the valve.

2.5 Make sure packing seals, the packing should be compressed tightly before installation, meanwhile do not prevent the stem rotation.

2.6 The distance between pipe flanges should be checked to assure sufficient clearance for valve.

2.7 Wedge should be full opened or closed when under pressure. Can't use the wedge to regulate the flow rate.

2.8 When use, stem screw should be in-pouring lubrication usually.

2.9 Regular check on valve's seals surface, stem and gasket, packing etc. parts. If any parts broken, should repair or replace in time.

### **3.0 INSTALLATION**

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3.1 Check that the existing pipe sizes match the inlet and outlet sizes of the unit being installed. If pipeline strain is a concern with larger Gate Valves and accessories, additional support may be necessary.

3.2 In the installation process, pay attention don't let the foreign matter enters the valve and don't strike the valve surface with the tool, to prevent valve from defect.

3.3 Valve shall be horizontally installed, keep the valve stem perpendicular to floor.

3.4 For NPT ends valves, it is recommended that the valve is mounted in the closed position. Gently thread valve to mating pipe by hand until resistance is felt. Using a wrench tighten the valve using hex flats at the joint being tightened. Do not tighten through the valve body using hex flats on opposite end of joint being tightened.

3.5 For welding ends valve, it is recommended that the valve be in the open position. Care must be taken to apply the proper amount of solder so that it does not flow into valve seat area. Depending on the fuel selected and the orientation of the installation it may be necessary to wrap the valve body with wet rags or employ other heat absorbing techniques. The cup should be heated evenly. Once one of the joints is complete, the valve should be allowed to cool until "cool to touch" before beginning the second joint.

3.6 For flanged ends valve, install lubricated flange bolts and hand tighten. Flange bolts should then be tightened, using a star or crisscross pattern to evenly load the bolts, in accordance with established piping standards. Mall cap screws on the inlet and the outlet of the valve.

## **4.0 OPERATION**

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4.1 The using temperature and pressure conditions of valve should not exceed the maximum limited temperature and pressure.

4.2 Inspect flange connections for leaks. If leaking occurs, check for piping misalignment, that the flange bolts are properly tightened, and that the cover is properly seated.

4.3 Working condition do not exceed the valve performance limitations.

4.4 Adjusting flow from 0° (closed) to 90° (full flow) can be done manually or automatically depending on the type of gate valve installed. Manual operators are available in a 10 position handle, an infinite handle, and a gear operator.

4.5 Valves should be opened and closed slowly to avoid hammering effect on the valve.

## **5.0 USAGE ATTENTION**

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5.1 The working temperature should bear in the stipulation, any deviation should in the charge of user. The surface temperature may cause the scald when valves working, the user should mark the warning on the part.

5.2 The maximum pressure should not beyond the contract indicate. Any overstep should on user's own.

5.3 It is recommended that lifting straps (instead of chains or hooks) be used around the valve yoke neck and through the flange bolt holes for pressure points.

5.4 Never lift or move the valve assembly using the disc, valve seat (bore) or packing follower/nut as a pressure point.

5.5 Never lift or move the valve assembly by using the actuator, positioner, tubing or other accessories.

5.6 No welding or coating is allowed when valve is working.

5.7 No life calculation, test and fatigue strength when design, the user should periodically check and replace it.

5.8 Prohibit adding or replace packing when the valve under use and pipeline with pressure. This could lead to serious injury

## 6.0 TROUBLESHOOTING

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| Faults  | Causes  | Solutions  |
|---|---|--|
| Packing leakage   | <ol style="list-style-type: none"> <li>1. Gland flange is loose</li> <li>2. packing invalidity</li> </ol>   | <ol style="list-style-type: none"> <li>1. Tighten up gland screw equally to press the packing tightly.</li> <li>2. Replace the packing</li> </ol>  |
| Seals surface leakage   | <ol style="list-style-type: none"> <li>1. Seals surface with foreign dirt</li> <li>2. The sealing surface is damaged.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Remove the dirt and keep clean.</li> <li>2. Repair or replace.</li> </ol>  |
| The leakage between the body and bonnet connection                    | <ol style="list-style-type: none"> <li>1. bolts are fixed unequally</li> <li>2. The flanged sealing surface is damaged.</li> <li>3. Gasket is cracked or useless</li> </ol>   | <ol style="list-style-type: none"> <li>1. Evenly tighten bolts.</li> <li>2. repair seals surface</li> <li>3. replacement</li> </ol>  |
| Handwheel rotation is not flexible or the disc can not open and close | <ol style="list-style-type: none"> <li>1. Packing is compressed too tight.</li> <li>2. Packing gland and gland bushing are askew</li> <li>3. Stem nuts are damaged.</li> <li>4. stem nut thread are breakage.</li> <li>5. stem is out of shape</li> </ol> | <ol style="list-style-type: none"> <li>1. Adjust gland nuts in correct position</li> <li>2. Adjust the packing gland</li> <li>3. repair the thread and clean up the dirt</li> <li>4. replace the stem nut</li> <li>5. repair the stem</li> </ol> |