



FASANI OPERATING AND SAFETY INSTRUCTION

GATE VALVES - CAST GATE VALVES

Before installation these instructions must be fully read and understood

INSTALLATION

WARNING

For safety reasons, it is important to take the following precautions before you start to work on the valve:

1. Before installing, operating or maintaining the valve, read all labels fitted to the valve and the present document.
2. Use valves only for the intended purpose (according to contract).
3. Any additional modifications and/or accessories mounting on valves are not allowed without approval from our technical department.
4. Personnel making any adjustments to the valve should use equipment and clothing normally used to work with the process where the valve is installed.
5. The line must be depressurized, drained, vented and cooled down before installing the valve.
6. Handling and installing of valves, operators and actuators must be carried out by qualified personnel.
7. Ensure the valve materials of construction and pressure/temperature limitations marked on the identification label are above or equal to service conditions for which the valve has been designed.
8. It is possible that some cavities within the valve body may contain some water pockets, for example after hydrostatic test. If the water pockets are not drained and the valve is subject to a temperature gradient, it is possible that the internal pressure may exceed the valve allowable pressure rating. Where such a condition is possible, it is the responsibility of the purchaser to provide, or require to be provided for any design, installation, or operating procedure to assure that the pressure in the valve will not exceed that allowed by the pressure rating of the valve.
9. Check correct electric connection of actuator if any. Wrong connection may cause danger and heavily damage the valve.
10. If the actuator is required to be repositioned on the valve, it is necessary after this operation to recalibrate the limit switches (this operation is described in the actuator maintenance manual). Non-calibrated actuators may become dangerous and may cause irreparable damage to the valve.

1. Gate valves are usually bidirectional. In case the valve is unidirectional, by means of devices and/or accessories, the flow direction is indicated by an arrow applied on the valve body. The flow direction must be respected during installation.
2. Unless differently stated on the valve General Arrangement Drawing, installation may be carried out:
 - for DN \leq 24", with stem oriented at an angle between $\pm 90^\circ$ from vertical
 - for DN $>$ 24", with stem oriented at an angle between $\pm 10^\circ$ from vertical
3. Gate valves can be installed on horizontal or vertical pipelines.
4. Remove protective covers from valve end faces and any transportation protection applied to the valve stem (if applicable).
5. It is responsibility of the customer, depending on the installation, to arrange for a proper support for the valves and/or the actuator, in particular for valves with pneumatic actuators.
6. For flanged valves ensure that coupling flanges and gaskets are clean and undamaged.
For butt weld valves ensure that the weld profile is clean and in suitable condition for welding.

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7. Should there be any possibility of abrasive particles (welding residues, sand, chemical cleaning residues etc.) within the piping system, this could damage valve seating. The system needs to be thoroughly flushed and cleaned prior to operation.
8. If valve ends are flanged, ensure that the valve flanges and pipe flanges are aligned correctly; bolting should be easily inserted through mating flange holes. Tighten the flange bolts using the crossover method.
9. Install the valve in the pipework ensuring easy access to the operating mechanism (handwheel, actuator) if applicable, and ensure a stress-free installation at the valve ends.
10. Welding and thermic treatment temperature limitations for the valve will be stated on the general arrangement drawing (if applicable). Consideration must be given to both these limitations and those indicated on the valve nameplate. Preheat/local thermic treatments must be performed in accordance with the relevant WPS/PQR and they are under complete responsibility of the customer.
11. All valves must be partially opened prior to welding.
12. Pipeline flushing: valve materials are usually resistant against pickling fluids (as the pipe material is). If required, check resistance to pickling with the pickling company.
If necessary, disassemble valve internal parts and replace them with special pickling inserts. Protect sensitive places with paint or cover plates.
Note: damage may occur to the valve (i.e. to the valve seats) during high speed flushing operation, caused by particles that could be present in the line. For this reason, it is recommended to arrange the valve in open position and not to perform any other actions during pickling and flushing. The pickling process must take place without interruptions to prevent unnecessary impingement due to the pickling fluid. At the end, remove pickling fluid completely. Check with particular care the dead spaces in the valves and the interstices between pipe sections (perform inspection if necessary).
Replace gaskets and gland packing which have been in contact with the pickling fluid. Carefully clean sealing areas before replacement.
13. Check gland/pressure bolts before operating the valve (during start up, or even in service, the bolt tension may decrease).
14. In case of operating temperatures above 200°C (392°F), thermal insulation of the valve body is recommended.
15. In case of insulation the valve bonnet/gland must be maintainable.

STORAGE / PROTECTION / SELECTION

State of delivery

Our valves are delivered with protection in accordance with customer's specification, or in accordance with the standard Quality Control Plan. To protect the valve ends from damage, the original wrapping and/or covers should be kept and removed only before installing the valve to the pipe.

Storage

When the valves have to be stored for some time before being installed, storage should be in the original delivery crates with waterproof lining and/or desiccant in a clean, dry, indoor area.

If storage is for a period exceeding six months the desiccant bags (if supplied) should be substituted. If valves are stored for longer than 12 months, they should be inspected by our personnel before installation.

Selection

Ensure the materials of construction of the valve and pressure/temperature limits shown on the identification plate are suitable for the process fluid and conditions. If in doubt contact your Emerson representative.

Limitations

- Do not use valve for end-of-line function. Standard safety practices require, for end of line function, 2 valves or one valve plus blind flange.
- Do not use on/off valves for control services.
- Do not use process valves as stop valves for flushing.
- Suggested allowable max pipeline flow velocity is:
 - 6 m/s for liquid
 - 80 m/s for gas or steam

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OPERATING AND ROUTINE MAINTENANCE

!!Read carefully this document and all warning labels fitted to the valve before carrying out any action on the valve!!

Handling

WARNING

- *Before lifting or handling the valve, check that there are no execution limits.*
- *The equipment used for valve handling and lifting (fasteners, hooks, etc.) must be sized and selected by taking into account the valve weight indicated in the packing list and/or delivery note. Lifting and handling must be made only by qualified personnel.*
- *Caution must be taken during the handling to avoid that the valve passes over the workers, the equipment or any other place where a possible fall could cause damage. In any case, the local safety regulations must be respected.*
- *To lift the valve, hook the slings to the flange holes or valve body holes; never lift the valve through the actuator.*

Operation

Gate valves can be operated manually, automatically or by an external operator (electric/pneumatic/hydraulic). All handwheel operated valves, including valves operated by electric actuator, are closed by rotating the handwheel clockwise. The open/close position is indicated by a position indicator on valve (if fitted) as well as the indicator arrow on the electric actuator (if fitted). Actuator travel switches and/or torque switches are set at the factory prior to shipment. They must not be altered before valve or actuator disassembly. In any case, these operations must be performed by qualified and skilful personnel, always following the instructions included in the maintenance manuals. The electric actuators on wedge gate valve (ref. VS) are set in closing position by torque limit switches, while in opening position they are set by position limit switches. The electric actuators on parallel slide gate valves (ref. SP) are set both in closing and opening position by position limit switches.

All the electric connections must be performed by qualified personnel. During this phase, the qualified personnel must check the correct setting of every actuator limit switch. The valve must be operated only by the relevant operating instrument, without using any lever or additional wrench. During start-up of the plant check gland packing and body/bonnet flange bolts.

MAINTENANCE

WARNING

- *Depressurize the line before starting any maintenance. Failure to do so may cause serious personal injury and/or equipment damage.*
- *In case the valve should be removed from the line, depressurize the line with the valve in open position. Then, close the valve by position.*

If valves are fitted with grease nipples, grease should be applied at 3 month intervals. Exposed threaded part of the stem should have grease applied at similar intervals. Lubricate the actuator according to individual manufacturer instructions.

No other routine maintenance is required other than periodic inspection to ensure satisfactory operation and sealing. Any leakage from the gland packing should be addressed immediately by depressurizing the valve and tightening the gland screws gradually and evenly.


If no further adjustment is possible or seat leakage is suspected, the valve will require a complete overhaul. This must be carried out after valve or line depressurisation and drainage in accordance with the relevant maintenance instruction.

Spare parts

Use always original spares only. Our valves are identified with a serial number, which is stamped on the identification plate. This reference should be quoted in respect of any after sales queries, spare parts or repair enquiries/orders.

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| | | | | | | |
|--|-----------|------------|---------|--------------|---|---|
| CE-0035 | YEAR ① | TYPE ② | SIZE ③ | CLASS ④ | END to END ⑤ | |
| | BODY ⑥ | STEM ⑦ | SEAT ⑧ | DISC ⑨ | | |
| | DES ⑩ | T ⑪ | P ⑫ | Shell Test ⑬ | ΔP ⑭ | ⑰ |
| | ⊕ T min ⑮ | P ⑯ | T max ⑰ | P ⑱ | DBB ⑳ | ⊕ |
| | S/N ㉑ | PED Cat. ㉒ | FLUID ㉓ | SMYS ㉔ | | |
| | TAG ㉕ | PO/N ㉖ | | ㉗ | | |
| EMERSON AUTOMATION SOLUTIONS FINAL CONTROL ITALIA S.R.L. | | | | |  | |

TAGPLATE REFERENCE

| Pos. | Description |
|------|---------------------------------------|
| 1 | Year |
| 2 | Type |
| 3 | Size |
| 4 | Class |
| 5 | N.A. |
| 6 | Body |
| 7 | Stem |
| 8 | Seat |
| 9 | Disc |
| 10 | Designer |
| 11 | Temperature |
| 12 | Pressure |
| 13 | Shell test |
| 14 | Differential pressure set up actuator |
| 15 | Temperature minimum |
| 16 | Pressure at temperature minimum |
| 17 | Temperature maximum |
| 18 | Pressure at temperature maximum |
| 19 | N.A. |
| 20 | N.A. |
| 21 | Serial number |
| 22 | PED category |
| 23 | Fluid |
| 24 | N.A. |
| 25 | Tag |
| 26 | Order number |
| 27 | N.A. |

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