CAST OR DUCTILE IRON FLANGED GATE VALVE INSTALLATION OPERATING MANUAL

Ductile or cast iron gate valve with brass or stainless steel seat flanged PN10/16 full bore for opening/closing networks of water, water treatment and heating.
Outside screw stem, rising stem and non rising handwheel or inside screw stem, non rising stem and handwheel.
Graphite packing and bonnet gasket.

Certificate 3.1

CE

Ref.150 **Ref.158** **Ref.156** **Ref.159**

RANGE AND SPECIFICIATIONS :

Ref.	Body materials	Seat	Connection	Temperatures	Max Pressure	Size
150	Cast iron EN GJL-250	Brass	Flanges PN10/16	-10°C to +90°C	10 Bars	DN40 to DN300
158	Ductile iron EN GJS-500-7	AISI 304		-10°C to +180°C	16 Bars	DN40 to DN600
156		Brass		-10°C to +120°C	16 Bars	DN40 to DN300
159		AISI 304		-10°C to + 180°C	16 Bars	DN40 to DN300

USE :

- Water distribution, water treatment and heating

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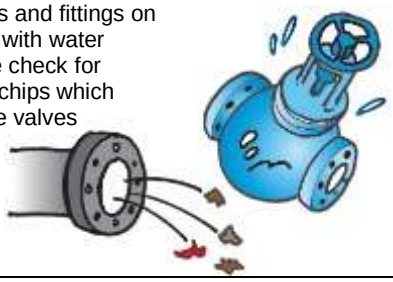
General installation instructions

1. Storage

Before installation, please store the valves and fittings in a dry place to protect them from harsh weather conditions, wind and sand. Please leave the goods in their original packing and do not remove the flange or end protections.
Please handle the products with care. Do not drop or drag them on the floor.

2. Cleaning of pipes

Before installing the valves and fittings on the pipes, clean the pipes with water or compressed air. Please check for welding spatters or metal chips which could possibly damage the valves sealing surface



3. Deviations of pipes

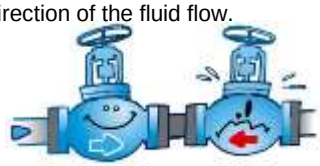
Before installing the valves and fittings, please check the pipe dimensions with the equipment already in place. Please also verify the correct alignment of the upstream and downstream pipes.
Do not count on the valves and fittings to make up for pipe deviations.
This might result in sealing leakages, blockings or mechanical ruptures.

4. Expansion joints

For pipes carrying heat transfer fluids, please anticipate the compensation of dilatations with the help of adapted equipment (loops and/or expansion joints).
Their absence may lead to mechanical ruptures and a blocking of the valves

5. Mounting direction

A certain number of devices do not necessarily have a symmetrical
functioning. It is essential to comply with the mounting direction indicated by the engraved or stamped arrow on the body and adapt it to the direction of the fluid flow.



6. Slinging

When installing the valves on the pipes, please use adapted lifting devices (bridge crane, forklift, hoist).
It is necessary to align the valve correctly while installing it

7. Support

For valves representing a significant weight in comparison with the pipes' solidity, it is essential to provide an additional support independently from the pipes.
Likewise, the valves cannot serve as support for pipes since they have to be supported themselves. The failure to respect these rules can lead to leakages, blockages and breakages.

8. Tightening

For threaded and flanged valves and fittings, please use a suitable tightening torque. Insufficient tightening can result in leakages.
Overtightening can lead to blocking the valve or mechanical ruptures. The coupling torques are indicated on every product manual

9. Welding of valves

When welding steel or stainless steel valves, make sure they are in the open position.
Extreme care must be taken with small valves to cause no damage to the critical valve components, which may be close to the weld area. Great caution must be taken when welding soft-seated ball valves.

10. Water hammers

A water hammer, by generating a sudden rise in pressure, can cause considerable damage:
slotted valve closure member, deformed stem etc. The causes of water hammers are varied.
The non-progressive start of a pump and the sudden closing of a valve are the most frequently found causes.

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GENERAL GUIDELINES :

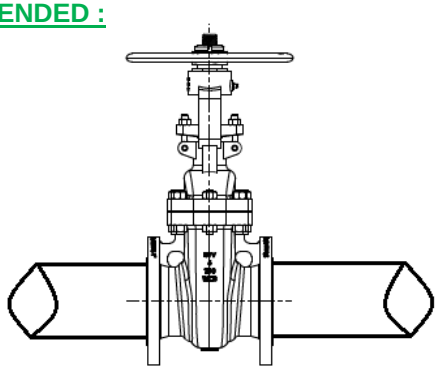
- Ensure that the valves to be used are appropriate for the conditions of the installation (type of fluid, pressure and temperature).
- Be sure to have enough valves to be able to isolate the sections of piping as well as the appropriate equipment for maintenance and repair.
- Ensure that the valves to be installed are of correct strength to be able to support the capacity of their usage.
- **Installation of all circuits should ensure that their function can be automatically tested on a regular basis (at least two times a year).**

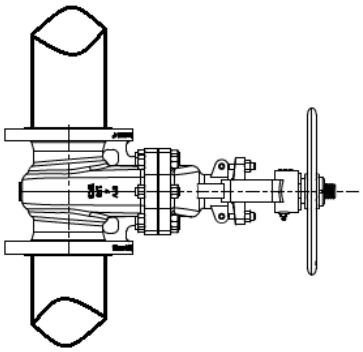
INSTALLATION INSTRUCTIONS :

- **Before installing the valves, clean and remove any objects from the pipes** (in particular bits of sealing and metal) which could obstruct and block the valves.
- **Ensure that both connecting pipes either side of the valve (upstream and downstream) are aligned (if they're not, the valves may not work correctly).**
- **Make sure that the two sections of the pipe (upstream and downstream) match, the valve unit will not absorb any gaps. Any distortions in the pipes may affect the tightness of the connection, the working of the valve and can even cause a rupture.** To be sure, place the kit in position to ensure the assembling will work.
- **If sections of piping do not have their final support in place, they should be temporarily fixed. This is to avoid unnecessary strain on the valve.**
- **Remove plastic covers of the flanges faces**
- **Install the valve between the flanges of the pipe installation**
- **Insert 1 flange gasket (use materials compatibles with the fluid and the use) between the flange face of the valve and the flange face of the flange installation on each side (so a total of 2 gaskets).**
- **Insert the bolting for the flanges and tighten the bolts in cross**
- **Valves will stay in opened position during cleaning operations of the pipe**

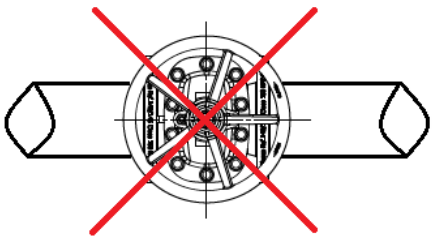
INSTALLATION POSITIONS :

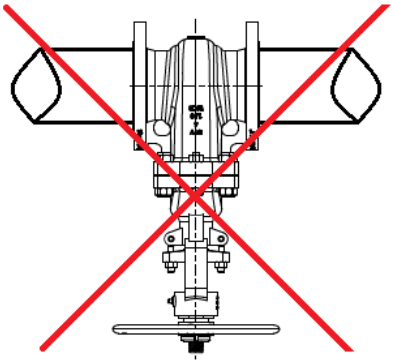
RECOMMENDED :





NON ACCEPTABLE :





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START-UP :

- Pressurization must be gradual to avoid water hammer
- Tightening the stuffing box gland is necessary when starting up the installation (valve supplied with stuffing box loosened). This tightening must be done without excess to allow the handwheel to rotate without difficulty, and so that the gland remains perfectly perpendicular to the axis of the operating stem.
- Pressure testing of the system must be carried out when the pipework is perfectly clean.
- Tests should be carried out with the valve partially opened. The test pressure must not exceed the valve characteristics specified in the EN 12266 standards.
- Gently handle the valve without blocking it (open-close) 3 times before start-up, then move the valve to the closed position.
- To close the valve, never use tools that increase the torque exerted on the handwheels (e.g. wrenches or extension). This may damage the sealing surfaces.

MAINTENANCE AND CARE :

- **Keep greased the stem for a good handling.**
- It's recommended to operate the valve (open and close) 1 to 2 times per year

Default	Cause	Solution
Leakage between body and bonnet	1. Bolts are not fastened or tighten not evenly 2. Damage on sealing face or debris clamped on sealing face 3. Gasket is damaged	1. Fasten bolts evenly 2. Repair sealing face or clean the debris 3. Change bonnet gasket
Leakage on packing	1. Packing is loosened 2. Packing gaskets are damaged	1. Tighten the packing gland 2. Change packing
Leakage on sealing face	1. Debris clamped on sealing face 2. Sealing face damaged	1. Clean throughly 2. Repair sealing face
Very hard or impossible to open or close the valve	1. Too tight on packing or skew packing 2. Trapezoid thread of stem thread damaged or with dust	1. Adjusting packing gland and tighten it 2. Dismantle to repair or clear dust

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STANDARDS :

- Certificate 3.1 on request
- Designing according to EN 1171
- DIRECTIVE 2014/68/EU : For liquids of group 2
    - Products excluded (article 4, § 3) for types PN10 and up to DN300 for types PN16
    - CE marking for types PN16 from DN350 to 600
- Pressure tests according to EN 12266-1, leakage rate B
- Flanged R.F. according to EN 1092-2 PN10/16
- Length according to EN 558 series 14 (DIN 3202-1 F4) for types **150, 156 and 159**
- Length according to EN 558 series 29 (NF 29323) for types **158**