OPERATING MANUAL

Resilient seated Gate valves with ISO fitting for PE pipe P/N 3500, 3510

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1. INTENDED USE

The Type 3500 and 3510 gate valves with ISO fitting for PE pipe are intended for potable water supply systems, sanitary sewage systems and (if approved by the manufacturer) industrial media systems. Each valve can be installed in above-ground and underground pipelines as an integral inline part of the piping.
The gate valves are two-position valves which can only be set fully open or fully closed, and not intended for operation as control or damper valves.

2. TECHNICAL DESCRIPTION

- Production and acceptance according to EN 1074-2 (Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Isolating valves) and EN 12266-1 (Industrial valves. Testing of metallic valves).
- 100% of each valve is leak tested.
- Application temperature range: -10°C to +70°C.
- Nominal diameter range: DN25 to DN50 [mm].
- Armature used in water supply systems transmitting drinking water are resistant to disinfectants NaClO or Ca $(ClO)_2$ containing 50 mg / l of active chlorine
- Hydraulic performance: maximum medium flow rate for liquids 4 [m/s] and 30 [m/s] for gases.
- Valve switching driving torque:

DN [mm]	25	32	40	50
Ilość obrotów	9	9	11	13,5
Mmax	20		25	

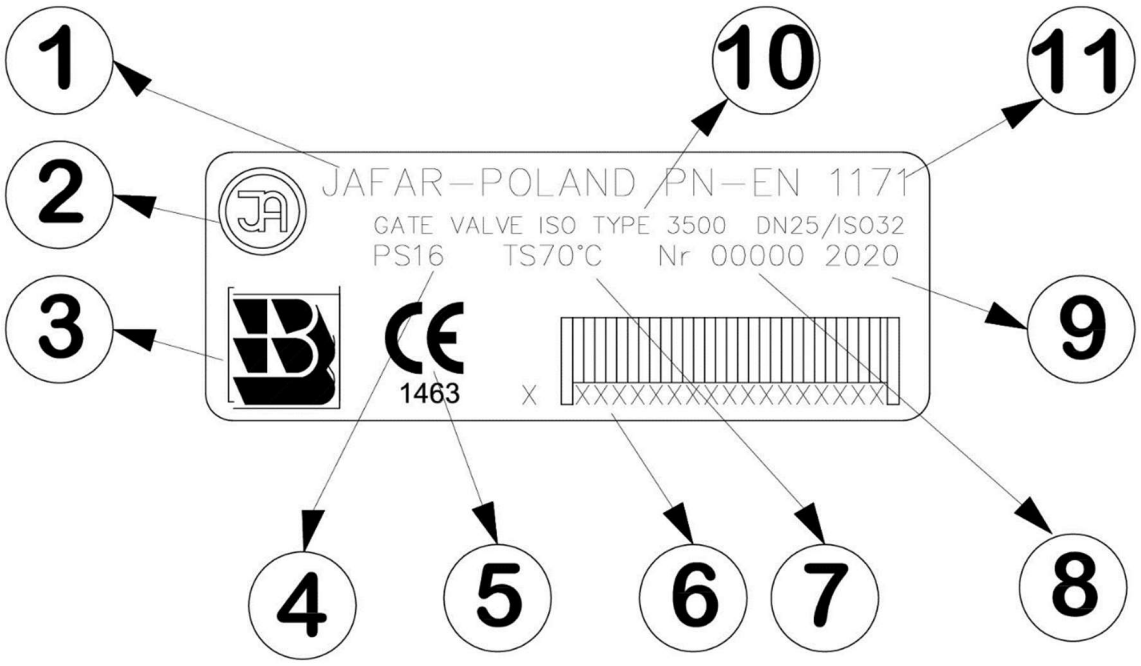
- Valve control mode: the standard version of the gate valve has the clockwise closing sense of rotation. The closing sense of rotation can be opposite on special order.
- the valve connection thread design is acc. to EN 10226-1
- Nominal pressure ratings:
    - 0,6 MPa,
    - 1,0 MPa,
    - 1,6 MPa,
- TYPE 3500 and TYPE 35100 gate valves with soft seals and ISO fitting for PE pipe feature a smooth walled bore, a non-rising stem, and an O-ring spindle seal installed in a head-type valve cover. The stem is guided by a bushing in the valve cover neck and a sealing plug. The stem seal is provided by the plug sealing assembly, which is a system of O-rings. The valve is closed by a monolithic vulcanized brass wedge with thread. For DN40 and DN50 sizes the stem is equipped with an interlocking collar installed by necking. From the bottom the stem collar rests on a seat in the head via a bushing which acts as a sealed bearing. In case of sizes DN25 nd DN32 the stem is solid and is not fitted with a bearing in the form of a sealing bushing. The plug is secured against unscrewing using a bayonet lock. The valve cover to body joint is made with hexagon socket head cap screws mounted flush with the valve cover and secured with paraffin compound. The valve cover to body seal is a rubber gasket which also seals the bolts to prevent any leaks from their openings. All inner and outer cast-iron surfaces of the gate valve are epoxy powder coated. The stem may be operated manually using a hand wheel or, in case of gate valves located underground, through a hood and gate valve casing, using a T socket.

3. PRODUCT IDENTIFICATION MARKING

The gate valve marking meets the following standards: EN 19 (Industrial valves. Marking metal fittings), Marking of metallic valves), EN 1074-1 (Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Part 1: General requirements). The gate valve bodies feature markings on the front and back walls of the body chamber. The marking contains the following data:

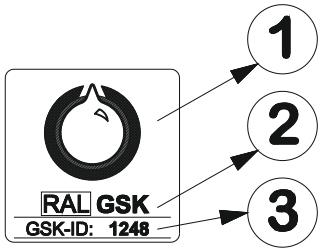
- manufacturer's trademark;
- heat no;
- nominal diameter;
- nominal pressure;
- body material type;

The location on the valve specified in the documentation features the nameplate which contains the following data:



1. Manufacturer's company and country of origin.
2. Manufacturer's company logo.
3. Polish construction mark (for the full range of diameter values).
4. Maximum permitted pressure (PS).
5. Barcode.
6. Maximum / minimum permissible temperature (TS).
7. Production serial no. in the calendar year .
8. Seal material.
9. Production serial no. in the calendar year.
10. Type of thread.
11. Reference standard the product is compliant with.
12. Product name.

The gate valves with GSK RAL certified corrosion protection feature the corresponding label:



1. GSK logo
2. Certificate title
3. Certificate reference number

The gate valves may feature additional markings, which depends on the market they are sold on, including. NF, WRAS, DVGW and other.

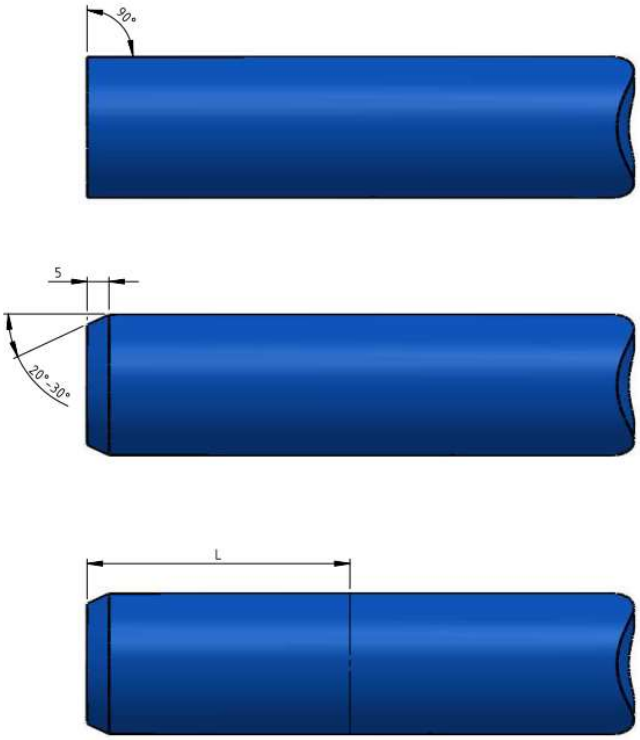
4. STORAGE & TRANSPORT

The products are packed on EURO pallets (1200x800 mm) or in custom containers, as applicable. Store the valves in clean indoor rooms without bacteriological or chemical contaminants and at a room temperature between -20°C and 70°C. Protect the paint coat and rubber parts from prolonged exposure to UV radiation. The filters should be protected against mechanical damage.
Protect the rubber parts from compression by keeping the gate valve wedge closure halfway open. Secure the products against shifting during shipping and handling.

5. INSTALLATION

The Type 3500 and 3510 gate valves with ISO fitting for PE pipe can be installed in underground or surface pipelines both in horizontal or vertical orientation. The listed products are suitable for joining with PE pipes of pipelines with size equal to that of the valve ISO fittings. Note that the system must not expose the (gate) valve to bending or tensile stress from loading with the weight of unsupported pipeline sections. Assemble with consideration to pressure and temperature compensation of the pipeline. The gate valve assembled and adjusted by the manufacturer is ready for installation. Any dismantling of the valve components may result in loss of tightness.
Before attempting to install the valve, check the technical and commercial documents delivered with the product to verify that your media and pipeline operating parameters comply with the manufacturer's declaration. Any change in the operating conditions must be consulted with the manufacturer beforehand.
Before attempting to assemble the valve, remove the main bore plugs, check the inner surfaces of the valve and thoroughly flush with water, if necessary. Install the gate valve on a base or a support adequate to the size and weight of the valve, to prevent strain of the piping with the valve. The gate valve location must prevent exposure to freezing of the medium flowing through the gate valve. It is necessary to equip the unit with a flexible or rigid housing, and street box founded on a base slab.

Installation procedure of pipe in gate valve:



L = *INSERTION DEPTH – apply lubricating compound on pipe*

DN	3500	3510
	L	
25	75	95
32	80	100
40	80	105
50	90	110

Tab.1. INSERTION DEPTH

Caution! The dimension L is equivalent to the depth to which the pipe must be inserted to ensure correct installation and tightness . If the product has mechanical damage, do not install it in the pipeline.

6. OPERATION AND MAINTENANCE

The gate valve shall be operated in accordance with all relevant requirements for stop valves, i.e. kept either in the fully open or fully closed position. Leaving the gate valve partially opened (or closed) may result in seal failure.
The gate valve can be controlled with:

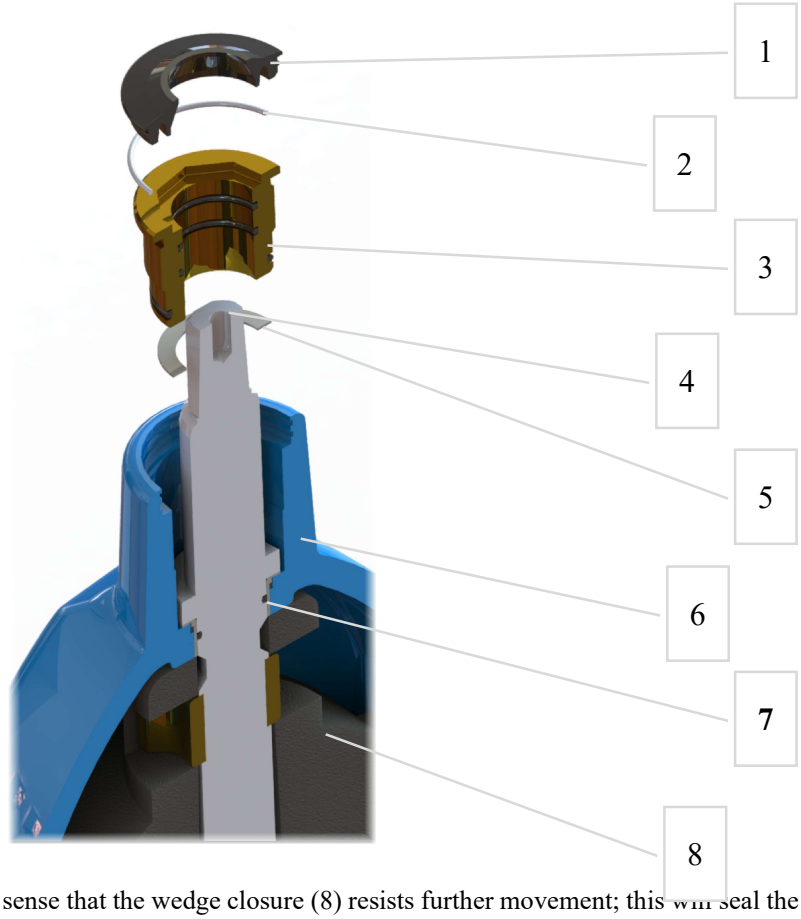
- a handwheel sized according to the Product Specification Sheet and mounted on the gate valve spindle or a pedestal;
- a T-socket wrench, if the spindle neck is in a housing;
- an electric or pneumatic drive unit;
- other driving gear, e.g. a handwheel with a chain.

Valve control requires a specific driving torque (see table in Section 2) and a specific number of spindle turns. Do not exceed the maximum driving torque.

To ensure full operational efficiency, carry out a technical inspection and maintenance at least once a year as follows:

- Operate the gate valve from the fully open position to the fully closed position, or vice versa, as the case may be.
- Follow the driving torque limits specified in the table in Section 2.
- If the valve operation is difficult, i.e. the valve reaches the maximum driving torque before either of its limit positions (e.g. due to scale on the spindle threads), repeat the full operation three times.
- Check the tightness of all connections and seals with the gate valve closed.
- If all the actions above have been completed with a good result, visually inspect the corrosion protection. If the paint coat is damaged, rebuild it with the paint kits available from JAFAR.

Replacing the seal in the cover:



Fully open the valve (until you clearly sense that the wedge closure (8) resists further movement; this will seal the spindle under the flange (7)).
This operation allows you to replace the o-rings in the plug (3) or the whole plug assembly on the pipeline .Clean the gate valve cover from dirt, sediments and grime.
Disassemble the following in the succession shown below:

- the wiper gasket (1);
- bayonet lock (2).
- Remove the sealing plug (3) (with the service wrench tool available from the manufacturer).
- Clean and moisten the seat in the cover.
- Install the new sealing plug assembly (3) or clean the existing one and install its new o-rings.
- Install new bayonet lock (2) to prevent secure the plug in place.
- Leak test the valve in the CLOSED POSITION to confirm that the sealing has been properly replaced.
- The reassembled and positively tested valve will be ready for operation.

7. SAFETY

All installation and operation tasks related to the product shall be only be done by qualified professionals with sufficient training and experience to assess the current situation and identify and avoid hazards. Failure to follow this warning or this Operating Manual may cause death, severe bodily injury or substantial property damage.
Fabryka Armatur Jafar S.A. shall not be liable for any accidents or emergencies related to incorrect installation or operation of the product. Note that the valve installation could be pressurized or contain various type of stray gas or aggressive liquids. If the installation is operated explosion hazard zones, ATEX requirements may apply; this

will require suitably trained professionals (according to ATEX requirements). Do not use tools which may generate electrostatic discharge in the ATEX zone.
Do not use the product without thorough knowledge and understanding of this Operating Manual. Follow the general health and safety rules. Keep this Operating Manual throughout the service life of the product to ensure a safe operation of the latter.

8. WARRANTY

The product assembled, installed and operated in compliance with this Operating Manual and the Product Specification Sheet is covered by a commercial warranty from the manufacturer. The warranty terms, conditions and period are specified in the Warranty Certificate available from www.jafar.com.pl.
The manufacturer may provide this product with custom materials and modifications on order. The final selection of the product which meets the optimum criteria for the installation project in question is made by the installation designer, who should consider this Operating Manual along with other data and information of significance for the correct operation of the product.

Failure to comply with the guidelines and instructions in this Operation and Maintenance Manual releases the manufacturer from all obligations, liability and warranty. Due to continuous business development, the manufacturer reserves the right to modify and change the design of the product shown herein.