

# **OPERATING MANUAL**

## **Wall-mounted and channel penstocks**

**Cat. no. 2801 and 2802**



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## 1. INTENDED USE

Wall-mounted and channel penstocks are designed to cut the flow of sewage and other neutral liquids in municipal and industrial wastewater treatment plants, water drainage systems, road and motorway drainage systems and fire prevention systems.

## 2. TECHNICAL DESCRIPTION

- manufactured in accordance with DIN 19569-4
- temperature range for fittings from -50°C to +80°C,
- nominal diameter range: DN200 – DN2500[mm],
- nominal connector diameters acc. to PN-EN ISO 6708,
- tightness in both flow directions, Class C, acc. to PN-EN 12266-1 All the penstocks are leak tested,
- The penstocks are to be installed on rectangular and oval end sections,
- Installation length: see JAFAR technical files,
- The structure of 2801 wall-mounted penstock and the 2802 channel penstock is built of rigid and durable stainless steel. The product is fullway, without any dead zones. The disc is moved by a single or double spindle screw mechanism,
- The penstock can be controlled by:
  - a hand-operated wheel;
  - a gate valve wrench;
  - a gear drive or electric actuator.

The seal of the closing component is made of LAR silicone elastomer (optionally EPDM or NBR) and can be replaced without penstock removal.

- Accessories: the penstock may be provided with accessories, such as the extension of the fitting spindle, wall-mount supports, universal joints, wall-mount faces for fitting round tanks on the walls, drive column, street box or other accessories.

## 3. PRODUCT IDENTIFICATION MARKING

The penstock marking meets the following standard: PN-EN 19 (Industrial valves. Marking of metallic valves). An identification plate is placed as specified in the documentation with the following data:

- Manufacturer's company and country of origin.
- Manufacturer's company logo.
- Maximum permitted pressure (PS).
- Maximum / minimum permissible temperature (TS).
- Barcode.
- Number in the Polish Declaration of Performance.
- Production serial no. in the calendar year.
- Seal material.
- Year of manufacture of the product.
- Diameter, bore and nominal size (DN).
- Reference standard the product is compliant with.
- Product name.

## 4. STORAGE AND TRANSPORT

Products are packed on EURO pallets (1200x800) or on special pallets for oversized products. Penstocks should be stored in clean rooms free from bacteriological or chemical contaminants, at a room temperature between -20 and 70°C. Protect the rubber parts from prolonged exposure to UV radiation. Store the elements ensuring protection against mechanical damage. Do not compress any rubber parts.

The closing element of the penstock should be in the closed position. Secure the products against shifting during shipping and handling.

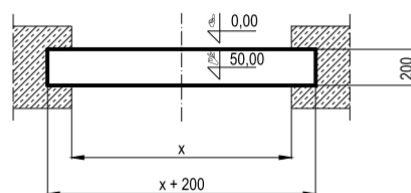
## 5. INSTALLATION

### Channel penstock

Before fitting the penstock:

- Make sure that the concrete installation recess in the channel has been properly prepared.
- Place the penstock in the installation area within the recess of the channel.
- Level the penstock.
- Fill the remaining gaps in installation recesses with B-20 concrete.
- When the concrete is set, re-check whether all nuts in the penstock are tightened.
- After the installation, clean the penstock (inspect the mechanism, i.e. guides, rolls, block, spindle and seals) from all contaminants.
- Fully switch (open/close) the penstock a few times.
- Make sure that the device works properly.

The picture shows dimensions of the installation recess. Recesses should be vertical on side walls and horizontal at the bottom of the concrete structure of the channel.



x - szerokość kanału

x-channel width

If the installation recesses are impracticable, but a channel penstock with installation loops (perpendicular to the penstock frame structure) is practicable, the flow clearance in the channel is narrowed by the dimensions of the penstock frame structure.

### Wall-mounted penstock

- Make sure that channel walls and headers which the penstock frame is attached to are smooth and level (flat), without any gaps, cracks, pinholes, chips and other damage affecting the flatness of the installation surface.
- Make sure that edges of the penstock installation hole are free from chips.
- Make sure that the dimension or DN of the penstock matches the dimensions of the hole in the channel. Under no circumstances should the hole be larger than the nominal dimensions of the penstock installed.
- Make sure that the dimensions of the penstock to be installed match the place of its installation and the order.
- Place the micro-rubber seal on the penstock frame (along the envelope of the closure disc at the connection of the penstock frame with the installation wall).
- Put up, centre and level the penstock in front of the hole.
- Mark and bore the installation holes for the anchors and fit the anchors.
- Using the anchors, screw the penstock frame to the channel and tighten the bolts alternately.
- Check if the micro-rubber fits snugly against the wall.
- Check the installation of the header beam of the frame to ensure that the surface is adequately flat while the closure disc of the penstock is operated (to avoid the risk of damage to the closure disc seal).

- Seal the connection between the penstock frame and the wall (along the envelope of the penstock closure disk) with the sealant.
- Make sure that the penstock bolts are properly tightened and if not tighten them using the torque specified for the M class and size.
- Make sure that the penstock is fitted at all installation points.
- After the installation, clean the penstock (inspect the mechanism, i.e. guides, rolls, block, spindle and seals) from all contaminants.
- Fully switch (open/close) the penstock a few times.
- Make sure that the device works properly.

**Caution!**

- If the product is physically damaged, do not install it in the channel.
- If metal must be cut near the penstock, make sure that the sparks do not come into contact with any part of the penstock, especially the seal.
- The product will operate properly only if correctly installed.
- Replace the penstock deformed as a result of faulty installation with a fault-free penstock.

## 6. OPERATION AND MAINTENANCE

The penstock should be operated in accordance with the requirements for stop valves, i.e. in the “fully open” or “fully closed” position. Leaving the penstock set partially opened may result in seal failure. It is possible to fit control penstocks with intermediate positions of the closure disc.

The penstock can be controlled:

- manually with:
  - a hand-operated wheel;
  - a kw27 penstock wrench;
  - a gear drive;
  - an electric actuator.

If the penstock is hand-operated, do not use additional elements (extensions) to reduce the torque as this may damage or destroy the product.

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

- fully open and fully close the penstock and vice versa, repeat several times,
- always observe limit values while opening and closing the penstock fully,
- lubricate all moving parts with a waterproof grease, such as OKS 403 or LT-43,
- check the drive system, i.e. the stem and the screw cap, as well as the seals, guides and rolls,
- remove any contamination found, do not use chemicals. When cleaning the penstock with pressurized water, do not direct the water stream at the seal.

**Note:**

Remove and segregate all penstock product parts before product disposal. All penstock parts are recyclable.

## 7. SAFETY

All installation and operation tasks related to the product shall be only 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 conformity with this Operating Manual and the data sheet is covered by a guarantee from the manufacturer. The warranty terms, conditions and period are specified in the Warranty Certificate available from [www.jafar.com.pl](http://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 constant development of our company, we reserve the right to introduce modifications and structural alterations to the product presented in this document.