Operation
& Maintenance Manual

PIPELINE FLUSHING DEVICE

P/N
TYPE 8895

Approved for use by

President of Factory, JAFAR S.A.

Failure to comply with the guidelines and instructions in this Operation and Maintenance Manual releases the manufacturer from all obligations, liability and guarantee.

Due to continuous business development, we reserve the right to introduce modifications and structural changes to the presented product.

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1 TECHNICAL DESCRIPTION

1.1 PRODUCT NAME AND FEATURES

The subject of this O&MM is:
Pipeline flushing device, with single closure TYPE 8895
- With automatic water drainage activated by medium flow stoppage;
- Stainless steel knife (closer);
- Knife's drive elements may be replaced without cutting off flow;

1.2 PURPOSE

Pipeline flushing device is intended for fire protection systems, for chemically neutral pure water, free of impurities and for industrial systems. For cleaning pipelines and for other types of inspections.

1.3 TECHNICAL SPECIFICATION

The device is designed for transferring both potable and industrial water at temperatures from +1°C to +50°C.

- Available diameters (dimensions) DN80 [mm]
- Maximum medium flow rate: - liquid up to 4 [m/s]
- driving torque at opening start and closing end are listed below:

DN [mm]	80
Mmax [Nm]	60

- equipment control: closing direction in the standard version of hydrant:
  clockwise closing sense of rotation.
  The closing sense of rotation can be opposite on special order.
- connection flanges are manufactured in accordance with PN-EN 1092-2:1999 with the dimensions adequate to the relevant nominal pressure of 1.6 MPa.
- Fittings efficiency with nominal pressure 0.2 MPa is:
  10 dm^3/s – above ground DN80
- Key for controlling valves and taps PN-63/M-74085
- Manufactured in accordance with PN-EN 14339:2009

2 STRUCTURE

2.1 DEVICE DESIGN DESCRIPTION

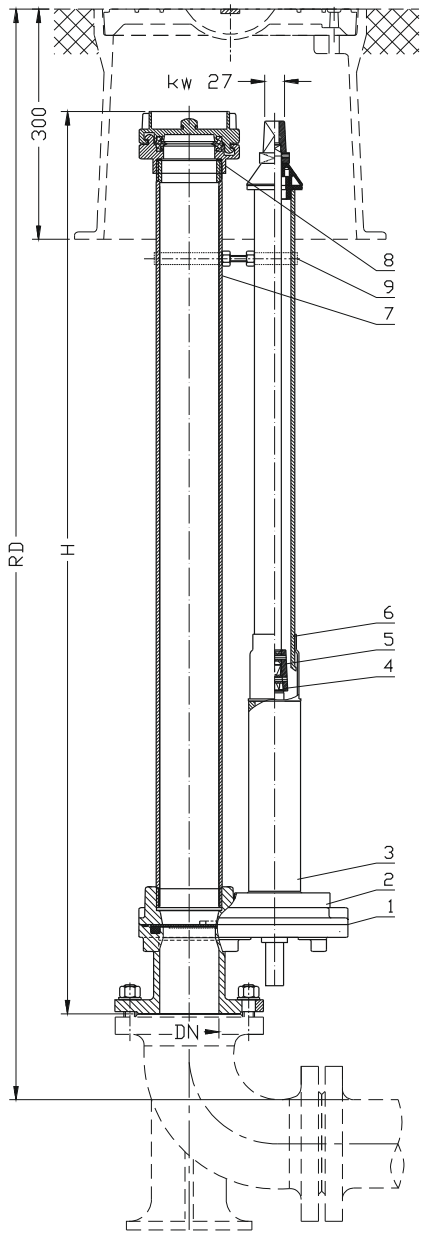
The pipeline flushing device is a column with internal structure to enable drawing water from main pipeline for monitoring or cleaning. The lower part of the device includes a body (no. 1) with flow gate (acting as a closing component) and a drainage device. The lower chamber's body has a connecting flange for installing the fitting on pipeline. In the top part of the fitting's column (no. 7) there is a saddle tee (no. 8) for connecting the fitting stand. In parallel to the fitting's column (no. 7), there is a driving unit for the shut-off gate on bonnet (no. 2). To close or open the fitting, the housing bolt must be rotated using a T key installed on the housing (no. 6) with cap (no. 9) which activates transmission mechanism rotating eccentric plate located in the bonnet (no. 2). The plate has a toothed connection with closing cover to effect reciprocating movement (i.e. closing-opening). When the rotating gate moves the knife's plate positioned in perpendicular to the water flow direction towards sealing socket with knife's seal, the water drainage opening opens and water flows out the hydrant's column (no. 7).

2.2 MATERIALS

List of basic materials used for the construction of device TYPE 8850 is given in the table below.

Item	Part name	Material	Reference standard
1	Body	Cast-iron, EN-GJS -400-15	PN-EN1563: 2012
2	Bonnet	Cast-iron, EN-GJS -400-15	PN-EN1563: 2012
3	Driving gear	Cast-iron, EN-GJS -400-15 Stainless steel 1.4021 Brass, CuZn39Pb1Al-B	PN-EN1563: 2012 PN-EN 10088-1: 2014 PN-EN1982: 2010
4	Stem	Stainless steel 1.4301	PN-EN 10088-1: 2014
5	Coupling	Cast-iron, EN-GJS -400-15	PN-EN1563: 2012
6	Housing	PE + S235JR/FeZn	Manufacturer's catalogue TYPE 9010
7	Column	Steel R35 Stainless steel 1.4301	PN-89/H-84023/07 PN-EN 10088-1:2007
8	Saddle tee	Aluminium alloy AlSi	PN-EN1706: 2011
9	Holder	Steel, S235JR EPDM	PN-EN 10025-1:2007 PE-ISO 1629:2005

2.3 DIMENSIONS



DN	RD	H	Masa Weight / Вес
	[mm]		[kg]
50	1000	750	47,0
	1250	1000	49,0
	1500	1250	51,0
	1800	1500	54,0
80	1000	750	48,0
	1250	1000	50,0
	1500	1250	52,0
	1800	1500	55,0

2.4 STANDARDS

PN-EN 1074-1: 2002	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. General requirements
PN-EN 1074-6: 2009	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Hydrants.
PN-89/H-02650	Fittings and pipelines. Pressures and temperatures.
PN-EN 19:2005	Industrial valves. Marking of metallic valves.
PN-EN 1092-2: 1999	Flanges and their connections. Circular flanges for pipes, valves, fittings and accessories, PN designated. Cast iron flanges.
PN-EN ISO 6708: 1998	Pipework components. Definition and selection of DN (nominal size).
PN-EN 1559-1: 2011	Founding. Technical conditions of delivery. General.
PN-EN1563: 2012	Founding. Spheroidal graphite cast irons.
PN-EN1370: 2012	Founding. Examination of surface condition by visual-tactile comparators.
PN-EN14339: 2009	Undergound hydrants.
PN-EN 10088-1: 2014	Stainless steels. List of stainless steels.
PN-89/H-84023/07	Specific application steel. Pipe steel. Grades.
PN-EN 1706 2011	Aluminium and aluminium alloys. Foundings. Chemical composition and mechanical properties.
PN-EN1982: 2010	Copper and copper alloys. Ingots and castings.
PN-EN12420: 2002	Copper and copper alloys. Forgings.
PN-ISO 965-1: 2001	ISO general purpose metric screw threads. Tolerances. Principles and basic data.
PN-ISO 2903: 1996	Trapezoid ISO metric threads. Tolerances.
PN-EN ISO 4762:2006	Hexagon socket headcap screws.
PN-EN ISO 4017:2011	Hexagon head screws. Product grades A and B.
PN-EN ISO 4014:2011	Hex head bolt. Product grades A and B.
PN-EN ISO 4032:2013	Hexagon regular nuts (style 1). Product grades A and B.
PN-EN ISO 7091:2003	Plain washers. Normal series. Product grade C
PN-77/M-82008	Spring washers.
PN-EN ISO 8752:2009	Spring-type straight pins. Slotted, heavy duty.
PN-69/M-80202	Steel wires 1x7.
BN-89/8511-15	Metallic seals.
PN-ISO 1629: 2005	Rubbers and lattices. Nomenclature.
PN-EN ISO 1873-1: 2000	Plastic materials. Polypropylene (PP) moulding and extrusion materials. Designation system and basis for specifications.
PN-EN ISO 1872-1:2000	Plastic materials. Polyethylene (PE) moulding and extrusion materials. Designation system and basis for specifications.
PN-EN ISO 12944-5: 2009	Paints and varnishes. Anti-corrosion protection of steel structures by means of protective painting systems. Protective paint systems.

2.5 ORDERING REGULATIONS

The pipeline flushing device is a specific purpose industrial valve, therefore orders must include:
- product's catalogue number,
- intended use, e.g. for fire water supply systems;

furthermore:
- nominal diameter — acc. to PN-EN ISO 6708: 1998
- nominal pressure, acc. to PN-89/H-02650;
- type of body material — acc. to PN-EN 1563: 2012
- max. operating temperature — acc. to PN-89/H — 02650.

2.6 MANUFACTURE AND ACCEPTANCE

Pipeline flushing device is accepted and produced in accordance with: PN-EN 1074-6:2005 (Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Hydrants.) and PN-EN 14339:2005
(Underground hydrants). All hydrants (100%) are subject to tightness testing. The tests include external body tightness and closing tightness.

2.7 MARKINGS

The pipeline flushing device is marked in accordance with: PN-EN-19: 2005, PN-EN-1074-6: 2009 markings on the front and back walls of the body chamber. The marking contains the following data:

- nominal diameter
- nominal pressure
- type of body material
- manufacturer trade mark
- direction of medium flow.

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

- manufacturer's company name and logo
- product serial number
- sealing temperature grade
- the Polish Building Mark "B" and/or the CE mark (as applicable)
- product type

3 PROTECTION, STORAGE & TRANSPORT

3.1 PROTECTIVE COATINGS

All inner and outer cast-iron surfaces and column pipes are protected with electro-deposited epoxy coat. The coat has been approved for contact with foodstuffs.
The anti-corrosion coating layer minimum thickness is 250µwith UV protection.
The casting surface is pre-treated for epoxy coating in accordance with the relevant technical documentation and standard PN-EN ISO 12944-5: 2009.
The fastening bolts for external hydrant's part, if other than stainless steel grade 1.4301, should have corrosion protection in the form of coat, e.g. Fe/Zn5.

3.2 PACKAGING

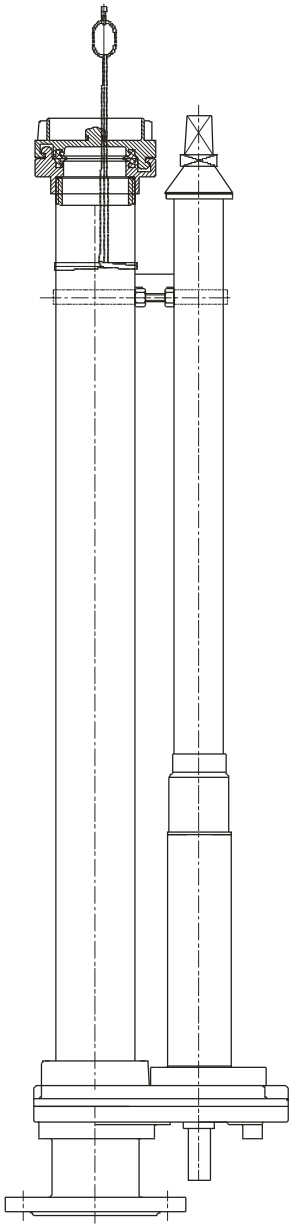
The device is placed in plastic film sleeve and additionally wrapped with stretch wrap when placed on pallets.

3.3 STORAGE

The device should be stored in covered areas.

3.4 TRANSPORT

On sheltered vehicles.



4 ASSEMBLY AND INSTALLATION

4.1 INSTALLATION GUIDELINES

The pipeline flushing device TYPE 8895 may be installed on underground pipelines on horizontal systems. The products described herein are designed for installation using flange on the pipeline acting as medium (water) supply. Note that the system must not expose the coupling to bending or tensile stress from loading with the unsupported pipeline sections. A device assembled and adjusted by the manufacturer is ready for installation in the system. Any dismantling of the hydrant components may result in loss of tightness.

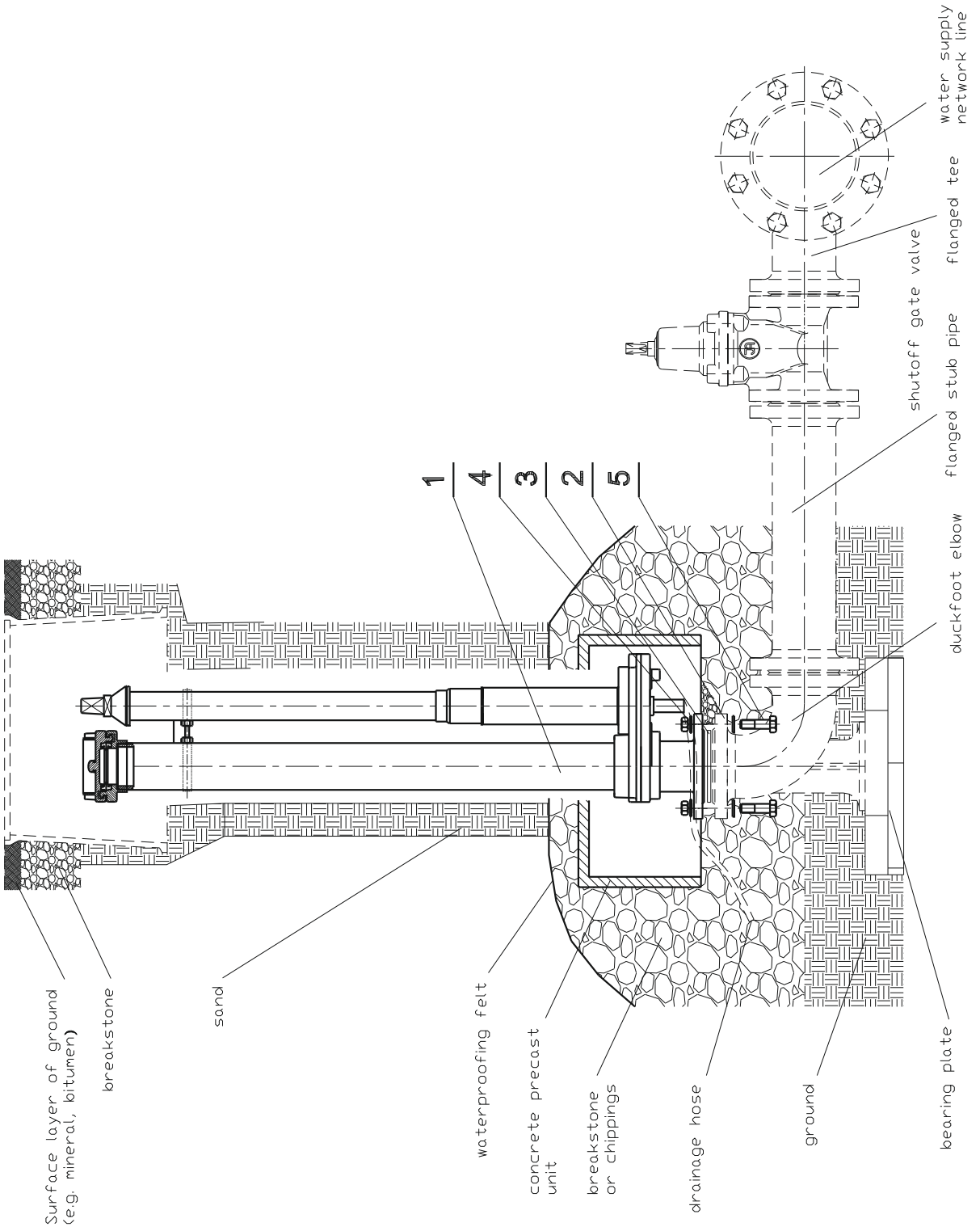
4.2 INSTALLATION INSTRUCTIONS

Before installing the fittings, check the technical and commercial documentation, i.e. application for media and operation parameters of the pipeline, in which they are to be installed.

Note! If the product is damaged mechanically, do not install it in the pipeline.

Any change in the operating conditions must be consulted with the hydrant's manufacturer beforehand.

The device is equipped with a draining device to protect the device's column against defrosting. This protection operates automatically provided that the drain hole has not been clogged during installation and operation of the product and that a drainage was provided around the hole with applicable capacity, made of gravel or other permeable material, see diagram. To ensure better water outlet from the drain, place a plastic hose on the outlet pipe to distribute water in the gravel bed.



1. Pipeline flushing device; 2. Pipeline connection flange; 3. Gasket; 4. Nut; 5. Fastening bolt

4.3 OPERATION

Pipeline flushing device is designed for drawing water for fire fighting purposes. Detailed requirements are given in applicable regulations defining the need for fire fighting water. The diagram above shows an example

installation method for the device, the installation method largely depends on the applied rules based on the local climate and geologic conditions.

Exceeding the operating limits of the fitting may result in damage that will not be covered by the suretyship granted by the manufacturer.

Water outlet shall be performed with the device fully opened.

It is recommended to change the device's settings once a year.

4.4 OH&S REGULATIONS

In case of pipeline flushing device, guidelines and recommendations for installation of water systems and devices installed in water supply stations and other facilities apply.

Misuse of this product is prohibited.

5 GUARANTEE CONDITIONS

The manufacturer grants guarantee for the product being installed and operated according to this O&MM. The conditions and period of the guarantee is specified in the guarantee sheet.