

Operation
& Maintenance Manual

ABOVE-GROUND FIRE HYDRANT

P/N
TYPE 8005

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:

Above-ground fire hydrant with double closure

- With additional protection against flow in the form of ball valve; placed below valve plug
- With automatic water drainage activated by medium flow stoppage;
- With valve plug (closure) embedded in 100% pure elastomer

1.2 PURPOSE

Above-ground fire hydrants TYPE 8005 with double closure and additional flow protection are intended for fire protection systems, for chemically neutral pure water, free of impurities and for industrial systems. For use on above-ground installations on pipelines laid horizontally below the freezing zone.

1.3 TECHNICAL SPECIFICATION

Above-ground fire hydrants with double closure are intended for transport of potable water 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]	80

- 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 EN 1092-2 with the dimensions adequate to the relevant nominal pressure of 1.6 MPa.
- Hydrant's efficiency with nominal pressure 0.2 MPa is:
10 dm³/s – above ground DN80
In accordance with EN-B-02863 "Fire water supply"
- Key for controlling valves and taps PN-89/M-74088
- Design in accordance with EN 14384 TYPE A
- Saddle tees B 75 per DIN 14318

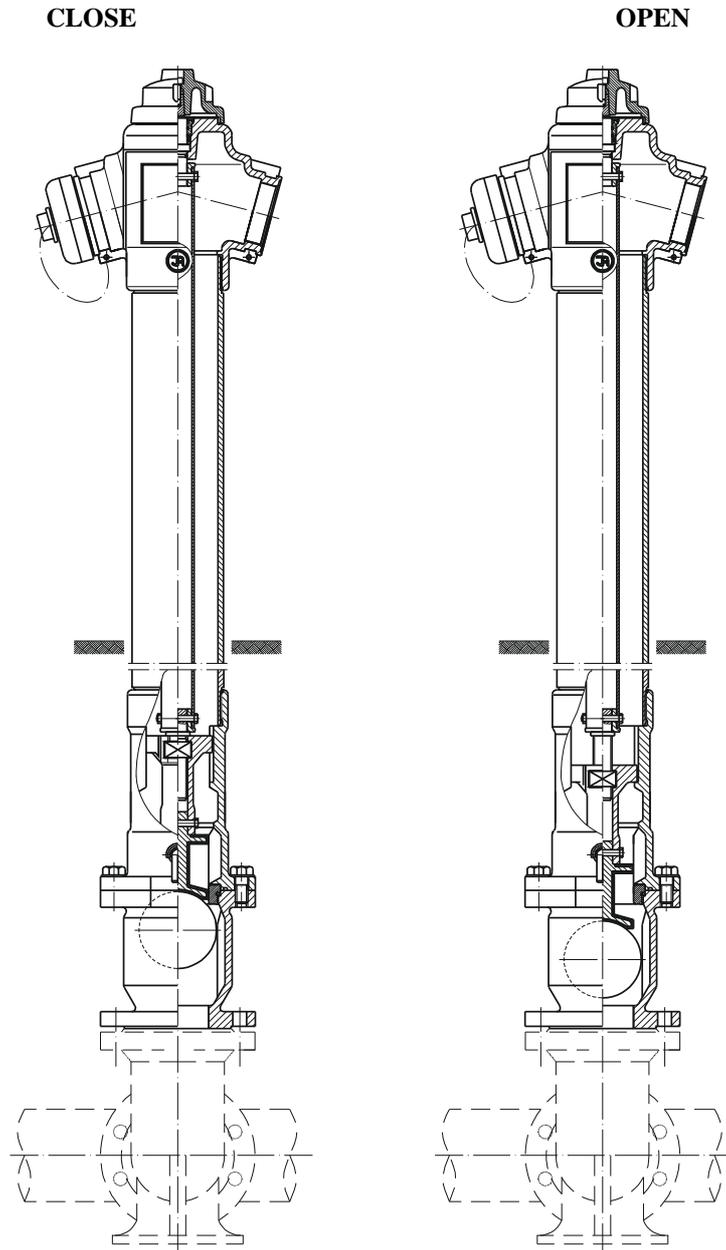
2 STRUCTURE

2.1 HYDRANT DESIGN DESCRIPTION

The fire hydrants are made in the form of column with internal structure to enable drawing water from pipeline and a header with saddle tees for attachment of fire hoses. In the lower part of the hydrant there is a cast-iron valve chamber with a poppet acting as closing element and a drainage device. The chamber housing is connected to the ball's (ball return valve) valve chamber finished with a connection flange for installing the hydrant on the pipeline. Top part of the hydrant is a cast-iron body with outlet openings with saddle tees. The top body also has a driving element on the end of bolt used for transferring rotational movement to the hydrant's plug

via distance pipe. The rotating stem is seated in a stopper with rubber sealing rings. Rotate the hydrant clockwise to close the flow. Valve plug moves during rotation of the stem and flow opens. The valve plug movement closes the water draining device's outlet opening. When closing a hydrant, the plug lands in the seat and the water remaining in the hydrant's column using draining valve.

Operation diagram for hydrant TYPE 8005 DN80



The order of operations during opening and closing of a hydrant type 8005 configured with a shutoff gate valve.

- Starting:

1. Open the shutoff gate valve.
2. Open the hydrant.

- Stopping:

3. Close the hydrant.
4. Close the shutoff gate valve.

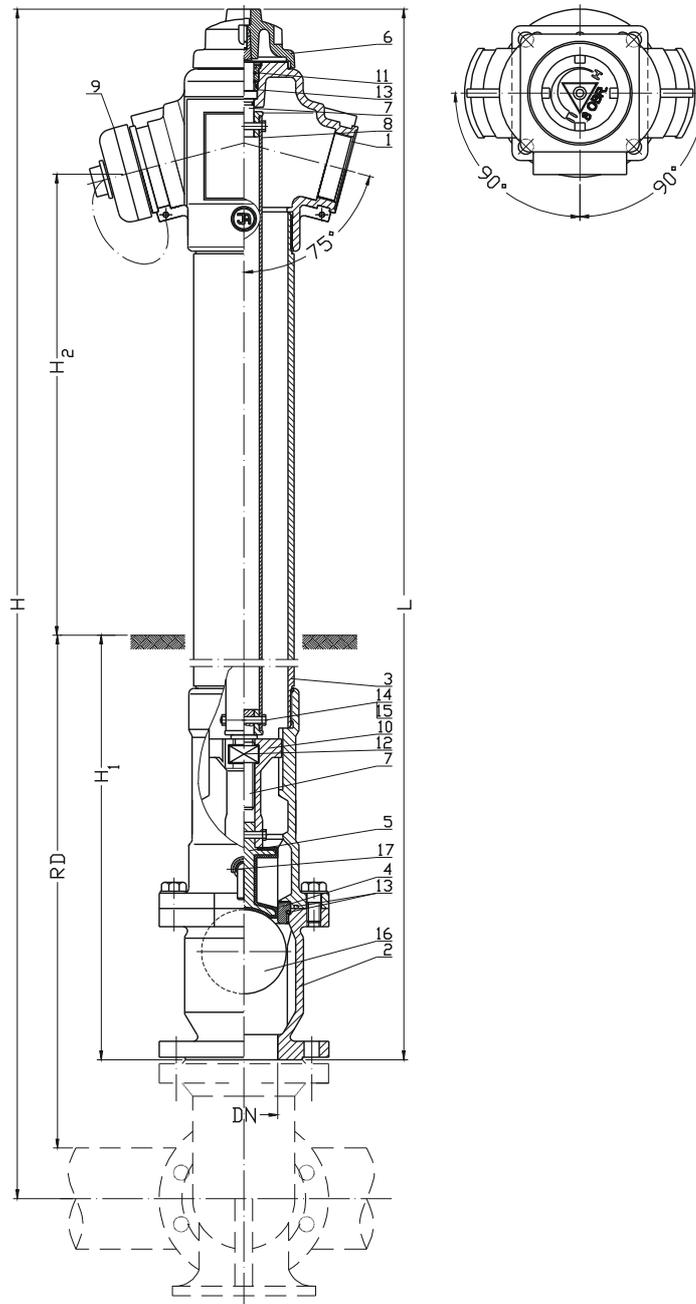
Caution! It is prohibited to open this type of hydrant with a closed shutoff gate valve because the poppet sliding down must be able to push a water column in the direction opposite to the flow direction during the first phase of its movement.

2.2 MATERIALS

List of basic materials used for the construction of an above-ground hydrant TYPE 8005
see table

Item	Part name	Material	Reference standard
1	Main body	Cast-iron, EN-GJS -400-15 EN-GJS-500-7	EN 1563
2	Ball chamber	Cast-iron, EN-GJS -400-15 EN-GJS-500-7	EN 1563
3	Column	Cast-iron, EN-GJS 400-15 EN-GJS500-7 Steel 1.0254 Stainless steel 1.4301	EN 1563 EN 1.503-3 EN 10088-1
4	Seat	Brass	EN 1982
5	Valve plug	Cast-iron, EN-GJS -400-15 EN-GJS-500-7 EPDM	EN 1563 EN ISO1629
6	Cap	Cast-iron, EN-GJS -400-15 EN-GJS-500-7	EN 1563
7	Stem	Stainless steel 1.4021	EN 10088-1
8	Spindle	Stainless steel 1.4301	EN 10088-1
9	Saddle tee	Aluminium, AlSi	EN 1706
10	Nut holder	Cast-iron, EN-GJS -400-15 EN-GJS-500-7	EN 1563
11	Stopper	Brass	EN 1982
12	Stem nut	Brass	EN 1982
13	O-ring	EPDM	EN ISO 1629
14	Bolt	Steel St3S/Zn5 Stainless steel, A2	EN ISO 4017 EN ISO 4762
15	Nut	Steel St3S/Zn5 Stainless steel, A4	EN ISO 4032
16	Ball	Cellular polypropylene or aluminium alloy AlSi/EPDM	EN 1706 EN ISO 1629
17	Drainage	Polypropylene PP	EN ISO 1873-1

2.3 DIMENSIONS



DN	RD	L	H	H ₁	H ₂	Weight
[mm]						[kg]
80	1250	1890	2055	1130	565	60
80	1500	2140	2305	1380	565	68
80	1800	2440	2605	1680	565	77

2.4 STANDARDS

EN 1074-1	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. General requirements
EN 1074-6	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Hydrants.
PN-89/H-02650	Fittings and pipelines. Pressures and temperatures.
EN 19	Industrial valves. Marking of metallic valves.
EN 1092-2	Flanges and their connections. Circular flanges for pipes, valves, fittings and accessories, PN designated. Cast iron flanges.
EN ISO 6708	Pipework components. Definition and selection of DN (nominal size).
EN 1559-1	Founding. Technical conditions of delivery. General.
EN 1563	Founding. Spheroidal graphite cast irons.
EN 1370	Founding. Examination of surface condition by visual-tactile comparators.
EN 14384	Standpost hydrants.
EN 10088-1	Stainless steels. List of stainless steels.
PN-89/H-84023	Specific application steel. Pipe steel. Grades.
EN 1706	Aluminium and aluminium alloys. Foundings. Chemical composition and mechanical properties.
EN 1982	Copper and copper alloys. Ingots and castings.
EN 12420	Copper and copper alloys. Forgings.
EN ISO 965-1	ISO general purpose metric screw threads. Tolerances. Principles and basic data.
EN ISO 2903	Trapezoid ISO metric threads. Tolerances.
EN ISO 4762	Hexagon socket headcap screws.
EN ISO 4017	Hexagon head screws. Product grades A and B.
EN ISO 4014	Hex head bolt. Product grades A and B.
EN ISO 4032	Hexagon regular nuts (style 1). Product grades A and B.
EN ISO 7091	Plain washers. Normal series. Product grade C
PN-77/M-82008	Spring washers.
EN ISO 8752	Spring-type straight pins. Slotted, heavy duty.
PN-69/M-80202	Steel wires 1x7.
PN-89/8511-15	Metallic seals.
EN ISO 1629	Rubbers and latices. Nomenclature.
EN ISO 1873-1	Plastic materials. Polypropylene (PP) moulding and extrusion materials. Designation system and basis for specifications.
EN ISO 1872-1	Plastic materials. Polyethylene (PE) moulding and extrusion materials. Designation system and basis for specifications.
EN ISO 12944-5	Paints and varnishes. Anti-corrosion protection of steel structures by means of protective painting systems. Protective paint systems.

2.5 ORDERING REGULATIONS

Above-ground fire hydrants are specific purpose industrial valves, therefore orders must include:

- product's catalogue number,
- intended use, e.g. for fire water supply systems;
- furthermore:
 - nominal diameter — acc. to EN ISO 6708
 - nominal pressure, acc. to PN-89/H-02650;
 - type of body material — acc. to EN 1563
 - max. operating temperature — acc. to PN-89/H — 02650.

2.6 MANUFACTURE AND ACCEPTANCE

The above-round hydrants are accepted and produced in accordance with: EN 1074-6 (Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Hydrants.) and EN 14384 (Above-ground fire hydrants.) All hydrants (100%) are subject to tightness testing. The tests include external body tightness and closing tightness.

2.7 MARKINGS

The above-ground hydrants are marked in accordance with: EN 19, EN 1074-6 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 250 μ with UV protection.

The casting surface is pre-treated for epoxy coating in accordance with the relevant technical documentation and standard EN ISO 12944-5.

The fastening bolts for external hydrant's part, if other than stainless steel grade OH18N9, then they should have corrosion protection in the form of coat, e.g. Fe/Zn5.

3.2 PACKAGING

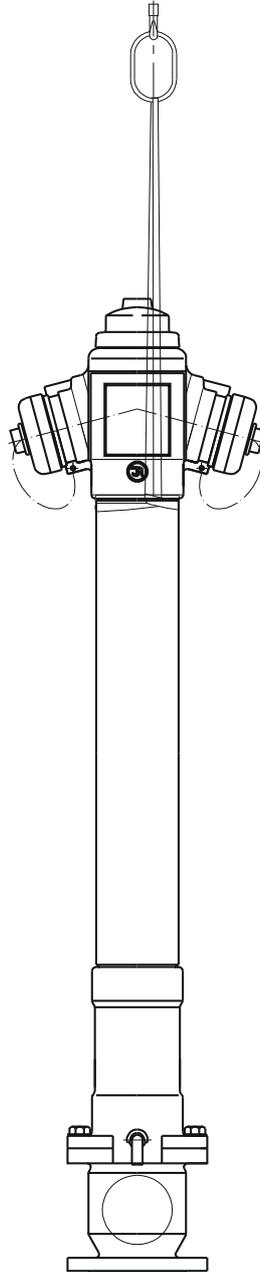
The hydrants are placed in plastic film sleeves and additionally wrapped with stretch wrap when placed on pallets.

3.3 STORAGE

Store the hydrants in sheltered rooms.

3.4 TRANSPORT

Transport the hydrants on sheltered vehicles.



4 ASSEMBLY AND INSTALLATION

4.1 INSTALLATION GUIDELINES

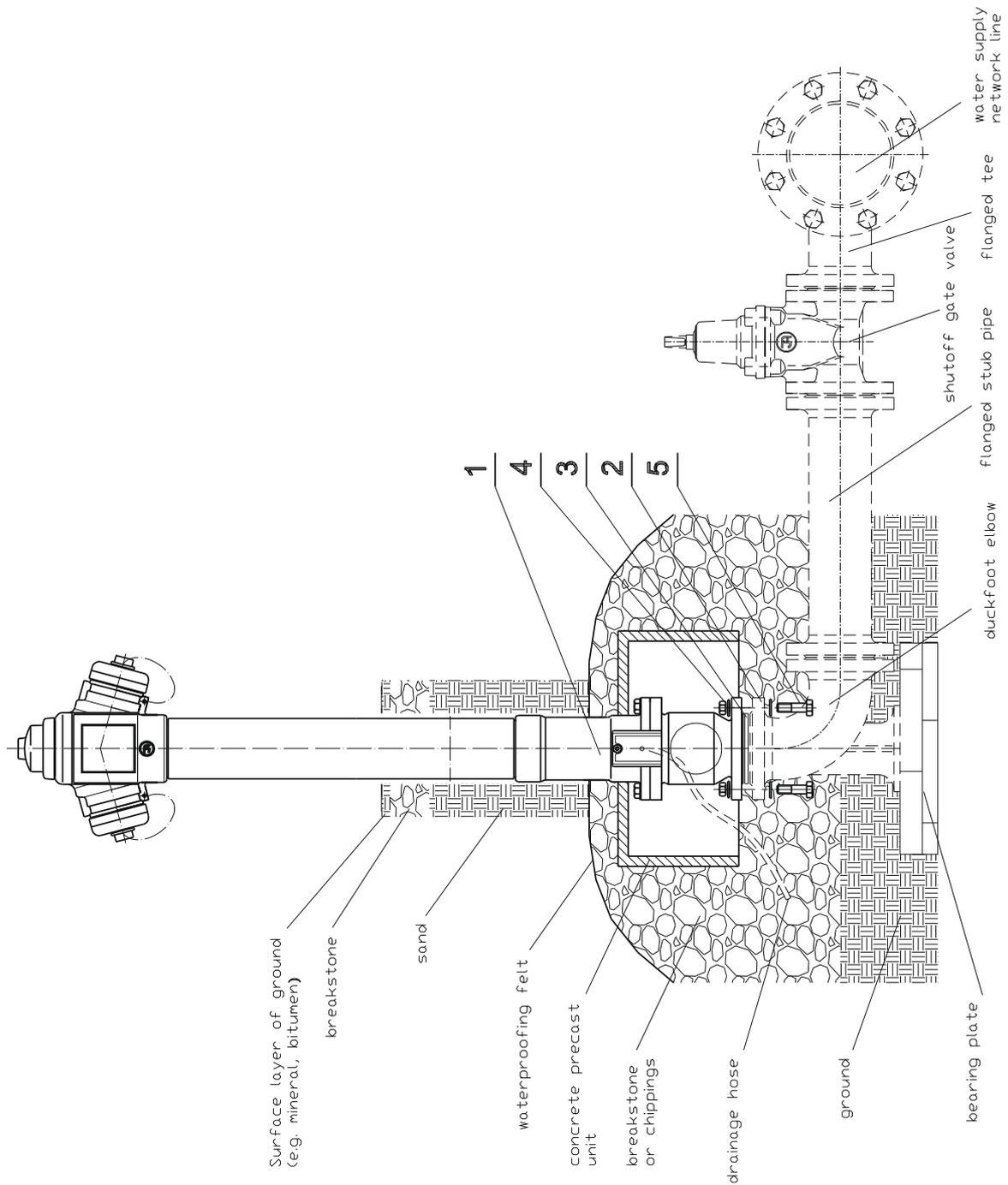
Above-ground fire hydrants TYPE 8005 may be installed on underground pipelines in case of horizontal systems. The products described herein are designed for installation using flange on the pipeline acting as medium (water) supply. Note that the system must not expose the hydrant to bending or tensile stress from loading with the unsupported pipeline sections. A hydrant 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 hydrants, 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.



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

4.3 OPERATION

The outdoor hydrants are designed for drawing fire fighting water. Detailed requirements are given in applicable regulations defining the need for fire fighting water. The diagram above shows an example installation method for an above-ground hydrant, 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.

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

4.4 OH&S REGULATIONS

In case of hydrants, 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.