

OPERATION MANUAL

for gas filters
Cat. no. 7310, 7320



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1. TECHNICAL DESCRIPTION

1.1. PRODUCT PROPERTIES

The subject of this O&MM is:

Flanged cast-iron TYPE 7310 (inclined flow) and TYPE 7320 (straight flow) gas filters intended for gas networks with cellulose or fabric filter elements.

1.2. INTENDED USE

The TYPE 7310 (inclined flow) and TYPE 7320 (straight flow) gas filters are intended for filtering natural gas (fluid group 1 according to the 2014/68/EU Directive). The filters can be used in overground installations in vertical or horizontal pipelines.

1.3. TECHNICAL SPECIFICATION

The TYPE 7310 (inclined flow) and TYPE 7320 (straight flow) gas filters are intended for filtering natural gas (fluid group 1 according to the 2014/68/EU Directive) in temperatures ranging from -30°C do $+60^{\circ}\text{C}$, which corresponds to the TC3 rating. All (100% of) filters are tested for tightness. The tests check external body and bonnet tightness. All production materials are selected to ensure safe operation and prevent sparking and explosion during operation.

- nominal diameter (dimension) range: DN20 to DN80 [mm]

- maximum gas flow (in operating conditions) should not exceed $150\text{ m}^3/\text{h}$ per sq. m of filter element in cellulose filters, and $300\text{ m}^3/\text{h}$ per sq. m of filter element in fabric filters

- gas filter efficiency levels for respective filter elements:

DN [mm]	20		25		50		80	
Filter element	cellulose	fabric	cellulose	fabric	cellulose	fabric	cellulose	fabric
Flow rate [m³/h]	25.5	27	25.5	27	51	45	97.5	87

- PM5 filtering efficiency is 99.9%

- connection flanges are manufactured in accordance with PN-EN 1092-2 (DIN 2501)

- installation length: as standardised by JAFAR

2. DESIGN

2.1. FILTER DESIGN DESCRIPTION

TYPE 7310 and TYPE 7320 gas filters manufactured in F.A. “JAFAR” S.A. consist of the body and the bonnet, which are connected with bolts. Seal integrity between the body and the bonnet is ensured with O-rings.

All inner and outer cast-iron surfaces of the filter are protected with are coated with epoxy paint. Filter bodies have technological bosses for differential pressure gauges or other measuring and controlling devices. TYPE 7320 filters have additional drain valves for removing solid or liquid matter which has accumulated in the bottom part of the body outside the pipeline. Filter elements used as per manufacturer’s catalogue

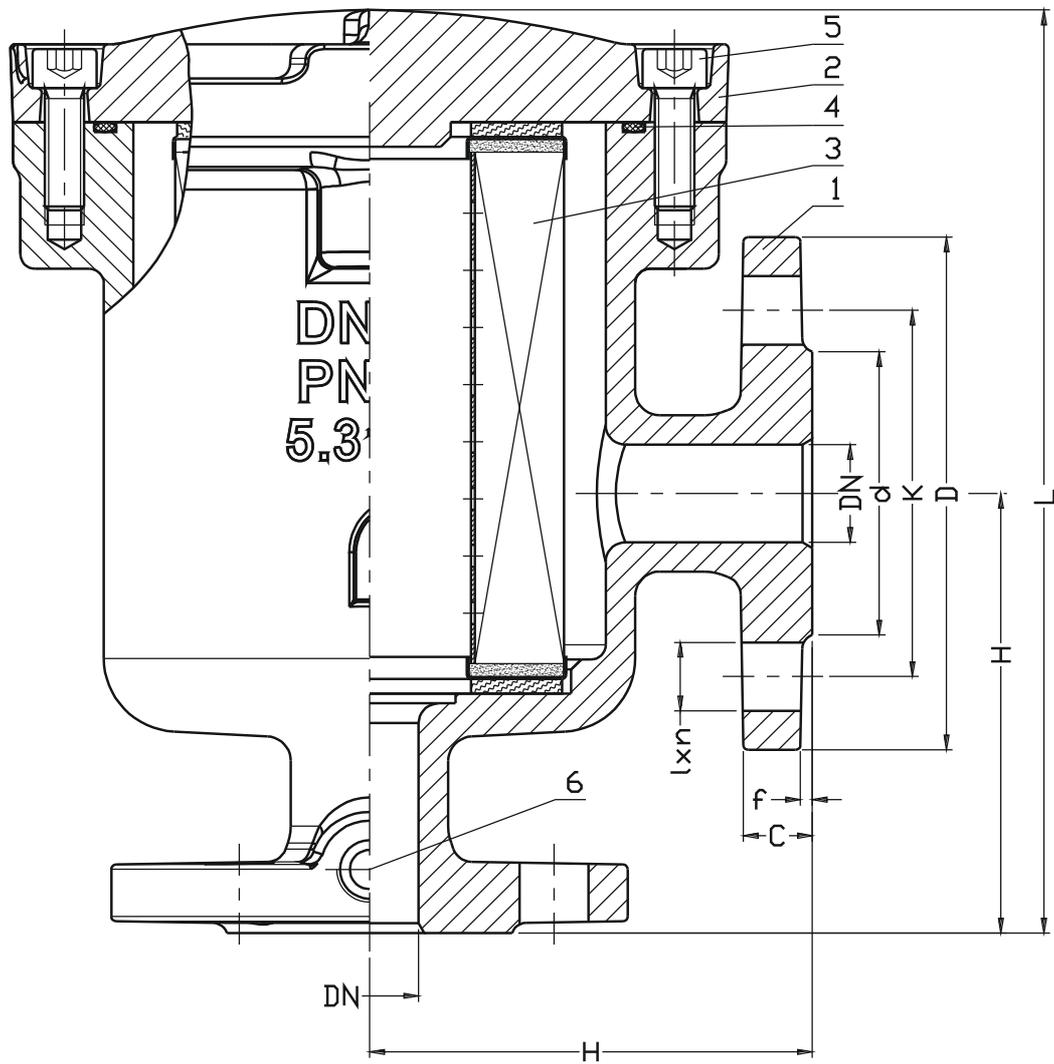
2.2. MATERIALS

The table below lists the structural materials of the gas filters for natural gas networks.

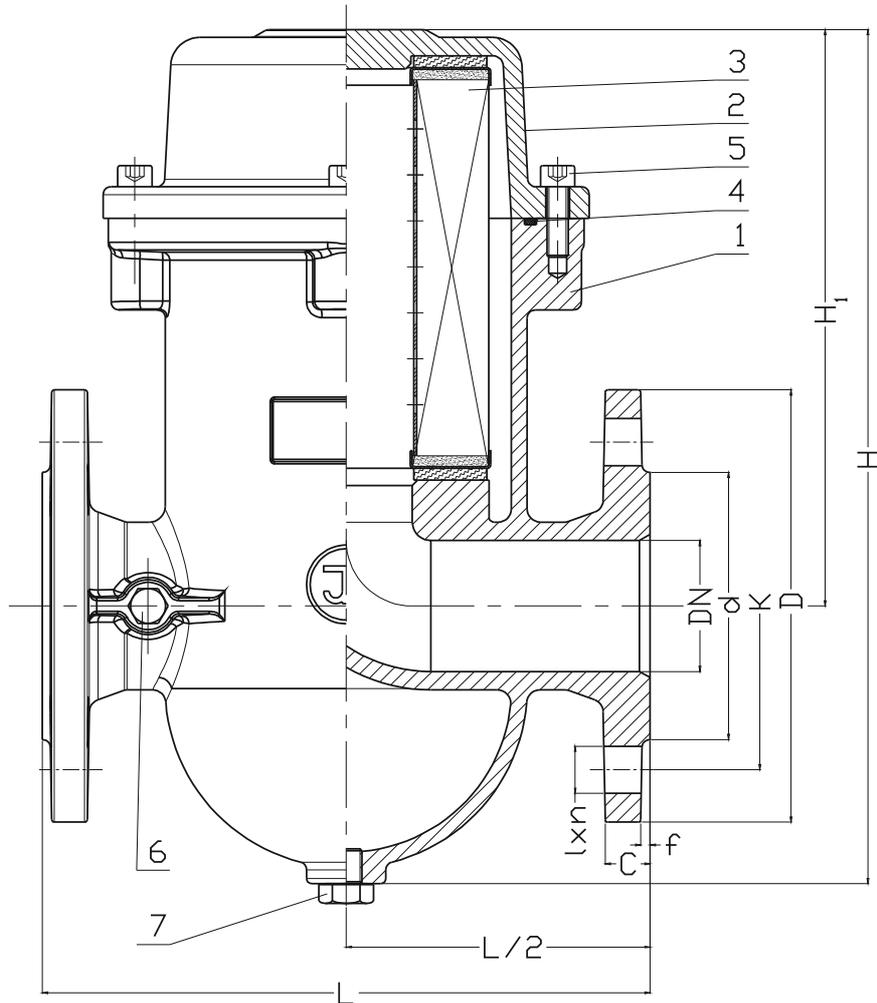
Pos.	Part name	Material	Standard
1.	Body	Cast iron, EN-GJS-350-22-LT	EN 1563
2.	Bonnet	Cast iron, EN-GJS-350-22-LT	EN 1563
3.	Filter element	Cellulose or fabric	Manufacturer's catalogue
4.	O-ring	NBR	ISO 1629
5.	Stud bolt	Stainless steel A2	EN ISO 4762/EN ISO 4014
6.	Stopper	Stainless steel A4	Manufacturer's catalogue
7.	Drain valve	Stainless steel A4	Manufacturer's catalogue

2.3. DIMENSIONS

TYPE 7310



DN	H	L	d	D	K	l	C	f	n	Weight
[mm]										
20	90	190	58	105	75	14	14	2	4	6.2
25	90	190	68	115	85	14	14	2	4	7
50	120	245	102	165	125	19	19	3	4	14
80	140	300	138	200	160	19	19	3	8	19



DN	H	H1	L	d	D	K	l	C	f	n	Weight	
[mm]											-	[kg]
50	330	220	230	102	165	125	19	19	3	4	15	

2.4. FILTER ELEMENT TYPES

DN	TYPE	
	7310	7320
20	G05	-
25	G05	-
50	G1	G1
80	G15	-

2.5. O-RING DIMENSIONS

DN	TYPE	
	7310	7320
20	104x4 NBR	-
25	104x4 NBR	-
50	135x4 NBR	
80	160x5 NBR	-

2.6. BOLT DIMENSIONS

DN	TYPE	
	7310	7320
20	M8x25 A2 (EN ISO 4762)	-
25	M8x25 A2 (EN ISO 4762)	-
50	M10x35 (EN ISO 4014)	M10x30 A2 (EN ISO 4762)
80	M10x35 (EN ISO 4014)	-

2.7. ORDERING REGULATIONS

Gas fittings are specific purpose industrial fittings, therefore orders must include:

- Part Number (P/N)
- nominal diameter - in line with EN ISO 6708
- nominal pressure - in line with 89/H - 02650
- maximum operating temperature - in line with 89/H - 02650
- type of filter element (cellulose, fabric)
- body material type - in line with EN 1563
- whether the filter features the differential pressure gauge
- placement of pressure gauge on the body (left or right)

2.8. MARKING

Filter marking meets the following standards: EN-19, EN-1074-1.

The filter bodies feature markings on the front and back walls.

The marking contains the following data:

- filter type
- nominal diameter
- nominal pressure
- body material type
- manufacturer's trade mark

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

- manufacturer's company name and logo
- product serial number
- year of manufacture
- Polish Construction Mark "B" and/or the "CE" mark (as applicable)
- product type

3. PROTECTION, STORAGE & TRANSPORT

3.1 PROTECTIVE COATINGS

All internal and external cast iron surfaces are protected with epoxy paint, applied electrostatically. The thickness of the anti-corrosion coating layer is min. 250 µm. The casting surface is pre-treated for epoxy coating in accordance with the relevant technical documentation and the PN-EN ISO 12944-5 standard

3.2 PACKAGING AND STORAGE

The filters are supplied on EURO pallets (1200x800).

Filters should be stored in clean rooms which are free from any biological or chemical contamination, and in temperatures ranging from 0 to 25°C. The coating must be properly protected against long exposure to UV. The filters should be protected against mechanical damage.

4. ASSEMBLY AND INSTALLATION

The TYPE 7310 and TYPE 7320 gas filters can be installed in overground pipelines, both in horizontal or vertical orientation. The listed products are suitable for joining with the flanged ends of pipelines with the size equal to that of the filter flanges. During the installation, one should ensure that the system does not expose the fittings (filters) to bending, tension and installation stress caused by encumbrance with the mass of an unsupported pipeline. Assemble with consideration to pressure and temperature compensation of the pipeline. Filters assembled and delivered by the manufacturer are ready for installation in the system. Any dismantling of the filter components may result in loss of seal. Use proper intrinsically safe tools and avoid all actions which may generate sparks during all repair and maintenance work and filter cartridge replacement.

4.1. INSTALLATION INSTRUCTIONS

Before attempting to install the fittings, check the technical and commercial documents delivered with the product to verify that the media, and especially pipeline operating parameters comply with the manufacturer's declaration. Any change in operating conditions must be consulted with the manufacturer beforehand. Before attempting to assemble the filter, remove the main bore plugs, check the external filter surfaces and, if necessary, clean the connection flange mounting surfaces.

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

4.2 OPERATION

The filters should be operated according to their intended use. Operating the filter involves the risk of excessive pressure and the risk of gas explosions. Draining and filling natural gas systems involve gas hazards.

Replacing the filter element requires:

- cutting off the gas supply from the filter before removing the bonnet, and depressurising the system
- removing the bonnet
- cleaning the filter chamber
- checking the condition of the seals and replacing them with new seals, if necessary
- lubricating the bolt threads before tightening the bonnet, e.g. with “LT43” grease
- lubricating the O-ring e.g. with technical Vaseline
- tightening the filter bonnet bolts evenly and alternately

Overrunning operating limits may damage the fittings – the manufacturer's suretyship liability will not apply.

4.3 OCCUPATIONAL HEALTH AND SAFETY RULES

The gas filters are eligible for the OHS guidelines and recommendation concerning installation of pipelines and devices for NG systems and eligible for the Polish Regulation concerning general OHS laws (use of personal protective equipment for hands, legs and head, and safety garment), especially at work with low or high temperature hazard.

Misuse of this product is prohibited.