

### DESCRIPTION

The casted filters G-1 PN-25 or ANSI-150 are designed to retain solid particles and undesired solids and the condensation liquid, which are inside the pipelines for gas or air.

The filter consists of a casted body (1), which are coupled externally two neck flanges, valve manifold (2), with its needle valve bypass (3) the differential manometer (4) and the nameplate (5). In the interior has a filtration cartridge that can be extracted from the body removing the lower collector (6).

The filter connections are made through two flanged collars available. One for the inlet connection (7) and the other to the outlet connection (8). These flanges can be of different nominal diameter DN and even different DIN or ANSI standards.

The filter cartridge (9) is composed by a pleated synthetic fiber blanket with aluminum wire and supported on a cadmium or zinc plated steel armor.

The filtration cartridge supports a differential pressure of 3 bar without rupture or collapse of the filter element.

The retained particle size is  $\geq 5$  microns and its minimum evaluated performance in solids retained on the basis of the particle size is from 98% to 5 microns and its minimum evaluated performance in retained liquid substance depending on the particle size will be 100% to 20 microns.

For the collection of particles, the filter has a collector tank (6) of suitable capacity at the bottom.

The pressure drop between the inlet pressure and outlet pressure to be considered in the design is 0.1 bar with new filter and with maximum flow and minimum guaranteed pressure.

The installation incorporate a differential manometer (4) for measuring the filter pressure drop.

The filter has a purge valve (19) with a cap (14), for the extraction of particles retained on the bottom.

The filters are having stood the test of internal resistance to regulatory pressure, indicated in the Pressure Equipment Directive 97/23/EC, it is the responsibility of the installer ensuring the seal when installed.

### INSTALATION

Assemble the filter in a strong enough driving, to support the filter weight.

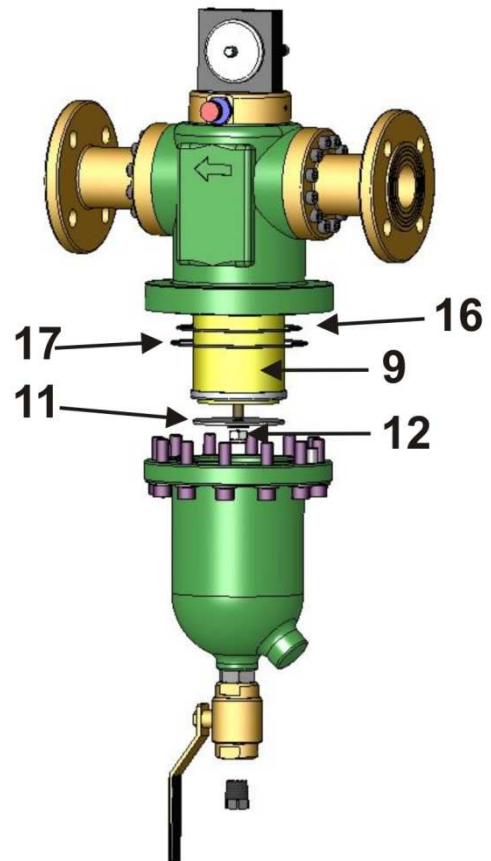
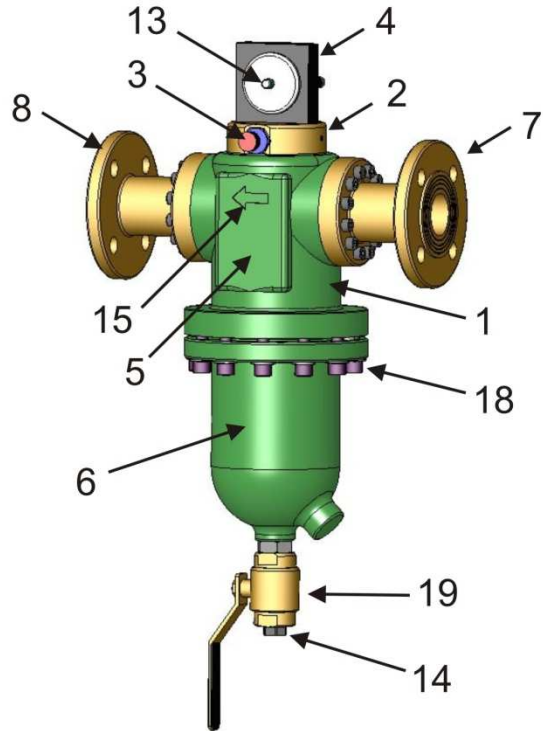
The usual mounting position is vertical being the differential manometer (4) above. It can also be installed at an angle of  $\pm 60^\circ$  from the vertical.

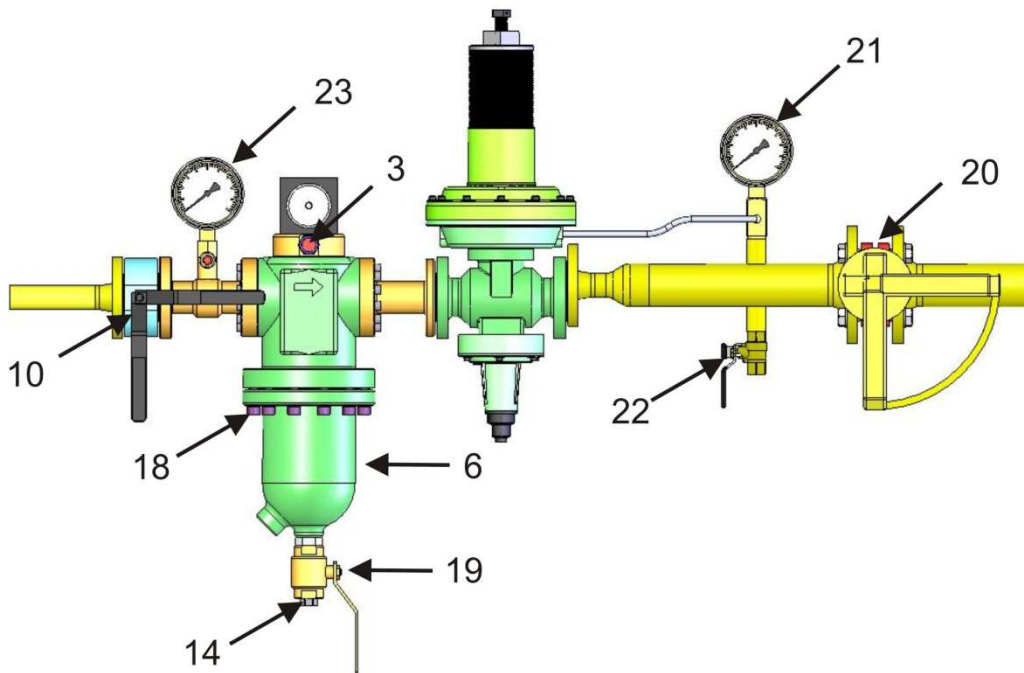
Check the label on the filter (5) and assess whether it is suited to the demands of the facility where it will be mounted.

Make sure that the fluid goes through the filter in the right direction, following the arrow (15).

Consider leaving sufficient space for maintenance, especially in the bottom of the filter.

Ensure, by priming the driving, which no contains solid particles and undesired solids from the building, welding, hydraulic test, etc.





#### START-UP

After placing the filter in the pipeline will follow the next steps:

- The inlet (10) and outlet (20) valves must be closed out.
- The purge valve (19) shall be closed and the cap (14) mounted.
- The bypass valve (3) of the differential manometer shall be closed.
- Slowly open the inlet valve (10). The gauge (23) indicates the inlet pressure.
- Check the tightness in the joints of the filter with soapy water.
- Finally open the outlet valve (20).

#### MAINTENANCE

The differential manometer (4) should be checked monthly. In there are two pointers. One black and one red. The black color indicates the instantaneous differential pressure and depends on the gas or air flow rate through the filter at this time. The red pointer indicates the differential pressure is reached at the time of maximum consumption. Red needle must indicate within the black color scale.

With the installation running, open and close repeatedly the bypass valve (3). When the valve is opened, the manometer (4) should read less pressure.

If in this check the red needle is near to the red stripe on the dial, only need to perform a purge of the filter.

To do this we get the cap (14) which seals off the vent valve (19) and opened repeatedly evacuating all residues, impurities and liquid accumulated in the bottom tank of the filter. Once the purging is done you should close the bleed valve (19), replace the cap (14) with a sealant and check that the joints of the purge valve closes perfectly. This will draw soapy water.

The purging of the filter should be made with pressure for eject particles and/or liquid in the interior of the bottom tank. If the fluid is fuel gas, precautions should be suitable.

If in the monthly check we found that the red needle shown in the red region of the dial, indicated that the filter cartridge (9) is clogged with dirt.

We will therefore proceed to change the filter cartridge.

In both operations, proceed with the care required in working with pressure vessels, so this operation should did only by qualified technicians.

## FILTRATION CARTRIDGE REPLACEMENT

- Slowly close the valve located downstream of the filter (20).
- Slowly close the inlet valve (10).
- Remove the cap (14) with a 22mm spanner and slowly open the bleed valve (19), evacuating the pressure contained in the filter. Note: Particles or liquids can be projected, protect especially the eyes.
- With a 10 mm Allen key, loosen a few turns the screws (18) of collector (6), without actually removing them.
- Downward stretch the collector (6) separating it from the body and verifying the absence of internal pressure.
- Finish removes the screws (18).
- Separate the collector (6) of the filter body (1).
- Internally clean the collector (6) and the seat of the purge valve (19).
- With a 17 mm spanner. Loosen the nut (12) that holds the filter cartridge (9).
- Remove the filter cartridge and proceed to replace it.
- In the case of not having a new filter cartridge (9), as an interim measure, clean the cartridge, provided that is not perforated. This will be do with pressurized air from inside to outside (opposite direction of gas flow). Not recommended cleaning cartridges more than once. To do this the person performing this operation must be adequately protected, especially the eyes.
- Clean internally the metal body of the filter (1).
- Reinstall the filter cartridge (9), in reverse order as described above.
- Check the condition of the sealing O-rings (16 & 17). In case of it will be bitten or deformed, replace it.
- Put grease on the seal and position in the race of the body (1).
- Adjust the tank to the filter body and mount the mounting screws, alternately tightening up top.
- Check that the needle valve bypass (3) of the differential manometer is open.
- Rotate anti-clockwise, the drag button (13) of the red needle and reset it.
- Slowly open the inlet valve (10).
- Check the general tightness of the filter and drain valve, using soapy water.
- Close the needle valve bypass (3) of the differential manometer.
- Slowly open valve located downstream of the filter (20).





### Causes of abnormal operation

- O-rings (F or G) of the body in poor condition.
- O-rings (A, B, C or D) of the differential manometer in poor condition.
- O-rings (E) of the flanges in poor condition.
- Drain ball valve (19) in poor condition.

### If the differential pressure gauge does not indicate.

- Installation without consumption.
- Consumption very small.
- Needle valve bypass (3) open.
- Filter without filtration cartridge (9) or perforated filtration cartridge.

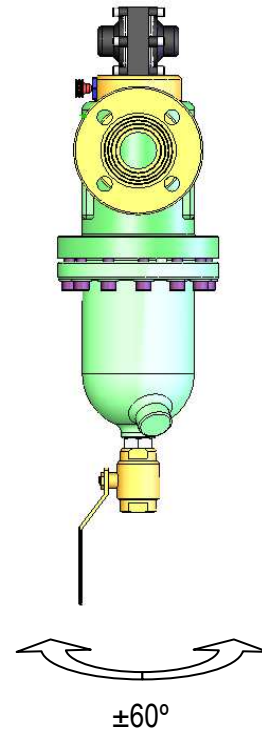
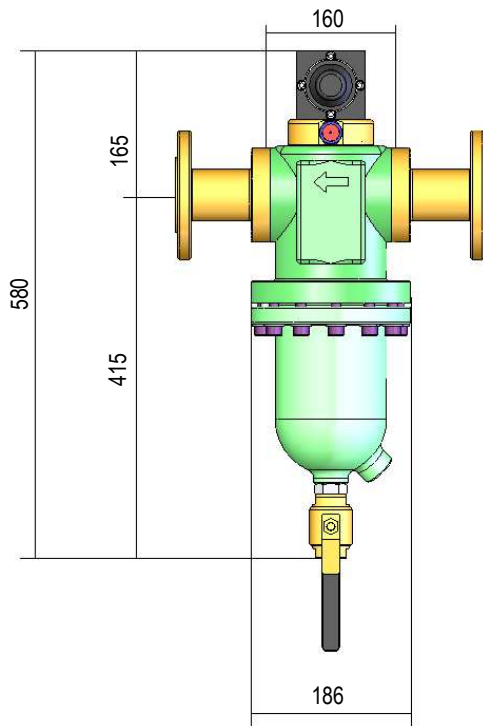
## TOOLS FOR MAINTAINING THE CAST FILTER G-1 PN-25

			
Spanner 17 – 19 – 26 - 36	O-ring extractor	Male hexagonal spanner 5 - 10	Hexagonal socket spanner 19 - 32

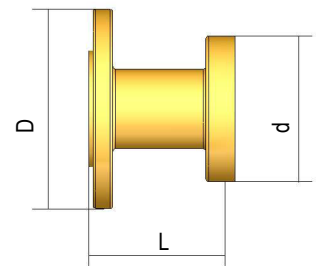
**WARNING!** It is potentially dangerous to manipulate a gas installation and its components. Therefore all start-up, adjustments and maintenance of the regulator must be carried out by duly authorized people with sufficient technical knowledge.

**DIMENSIONS AND WEIGHTS**

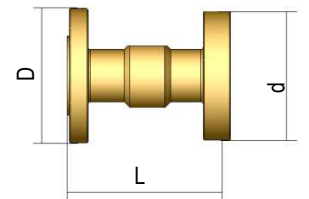
**MOUNTING POSITION**



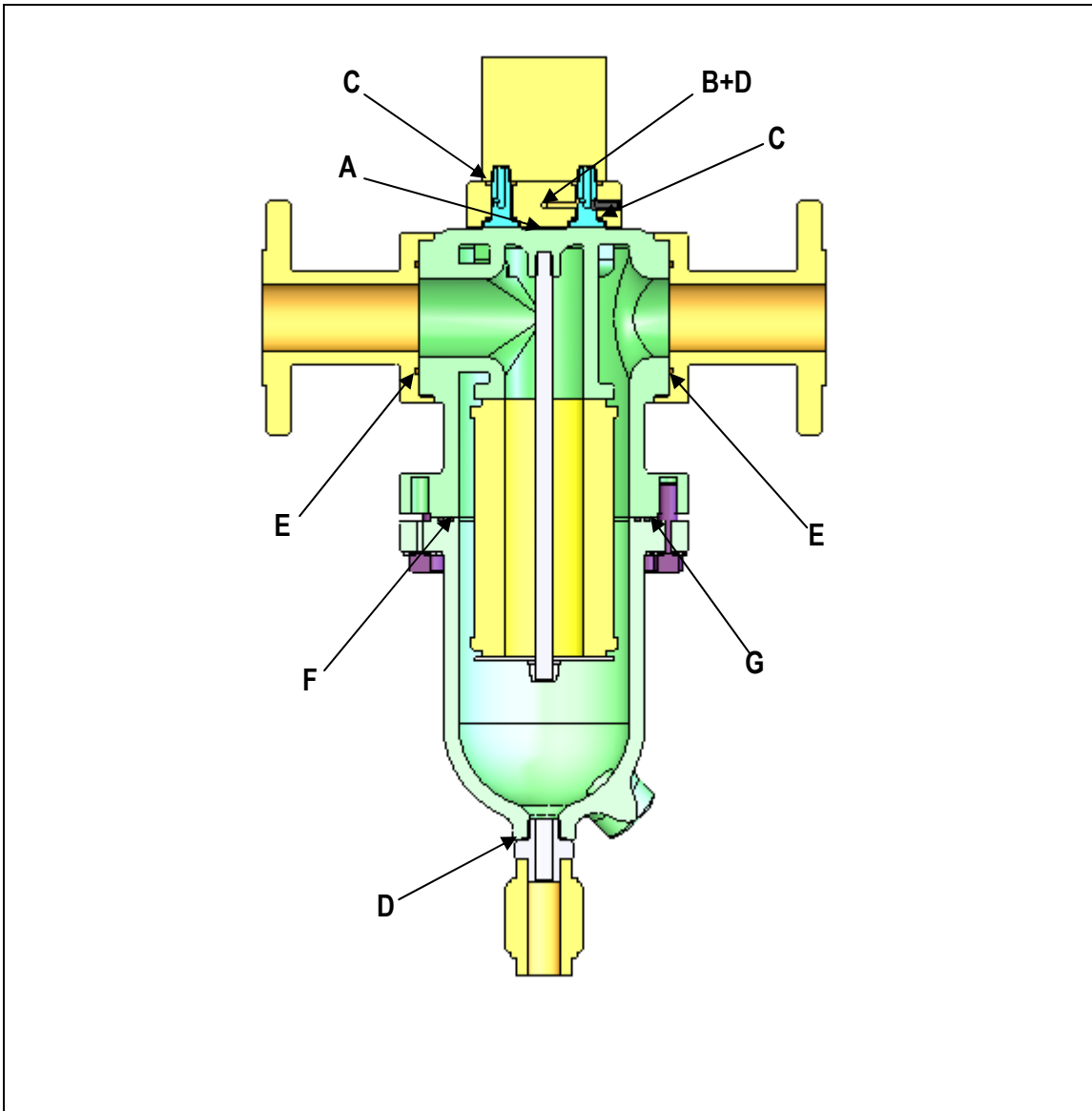
Model		Without orifice for pressure gauge		
		D (mm)	d (mm)	L (mm)
DN25 PN-25	MA.7.DIN25	115.0	110	101
DN40 PN-25	MA.7.DIN40	150.0	110	101
DN50 PN-25	MA.7.DIN50	165.0	110	101
1" ANSI-150	MA.7.ASA25	107.9	110	101
1.½" ANSI-150	MA.7.ASA40	127.0	110	101
2" ANSI-150	MA.7.ASA50	152.4	110	101





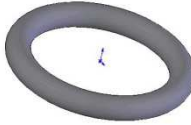
Model		With orifice for pressure gauge		
		D (mm)	d (mm)	L (mm)
DN25 PN-25	MA.7.DIN25M	115.0	110	131
DN40 PN-25	MA.7.DIN40M	150.0	110	131
DN50 PN-25	MA.7.DIN50M	165.0	110	131
1" ANSI-150	MA.7.ASA25M	107.9	110	131
1.½" ANSI-150	MA.7.ASA40M	127.0	110	131
2" ANSI-150	MA.7.ASA50M	152.4	110	131



Technical features of G-1 PN-25 / ANSI-150		
bpu	0.2 ÷ 25 bar	(inlet pressure range)
Ps	25 bar	(design pressure)
Pu	25 bar	(maximum inlet pressure)
F	5 µ	(filtration capacity)
T	-20°C ÷ 60°C	(working temperature)
Inlet connection	DN25 / DN40 / DN50 PN-25 1" / 1.½" / 2" ANSI-150	
Outlet connection	DN25 / DN40 / DN50 PN-25 1" / 1.½" / 2" ANSI-150	
Connections position	Axial	
Weight G0.5 PN-25	25 Kg	



**SPARES FOR REGULAR MAINTENANCE OF THE CAST FILTER G-1 PN-25**

 <p>Filtration Cartridge G-1 Code MA.0.00.0010</p>	 <p>Differential manometer Scale Code 300 mbar Wl.9.10.0300 1000 mbar Wl.9.10.1000</p>	 <p>O-rings</p> <table border="1"> <thead> <tr> <th>Position</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>ZM.1.00.3180</td> </tr> <tr> <td>B</td> <td>ZM.1.00.1572</td> </tr> <tr> <td>C</td> <td>ZM.1.00.2037</td> </tr> <tr> <td>D</td> <td>ZM.1.00.0842</td> </tr> <tr> <td>E</td> <td>ZM.1.00.1299</td> </tr> <tr> <td>F</td> <td>ZM.1.00.2489</td> </tr> <tr> <td>G</td> <td>ZM.1.00.2490</td> </tr> </tbody> </table>	Position	Code	A	ZM.1.00.3180	B	ZM.1.00.1572	C	ZM.1.00.2037	D	ZM.1.00.0842	E	ZM.1.00.1299	F	ZM.1.00.2489	G	ZM.1.00.2490
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