

### DESCRIPTION

The welded filters G-3 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 carbon steel body (1), which are welded two neck flanges (7 & 8) and two optional pressure outlets of 1/4". In the interior has a filtration cartridge that can be extracted from the body removing the top cover (5). Optionally, it can be provided with a differential manometer (4) with a manifold valve, and two 1/4" valves (2 & 3).

The flanges can be of different nominal diameter DN and even different DIN or ANSI standards, at the inlet and the outlet.

DN100/DN150 PN-16  
DN100/DN150 PN-25/40  
4"/6" ANSI-150  
4"/6" ANSI-300

The filter cartridge (6) is composed by a pleated synthetic fiber blanket with aluminum wire and supported on cadmium or zinc plated steel armor.

The filtration cartridge supports a differential pressure of 3 bars 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.

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 filter has a purge valve 1/2" PN100 (9) with a cap (11), 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.

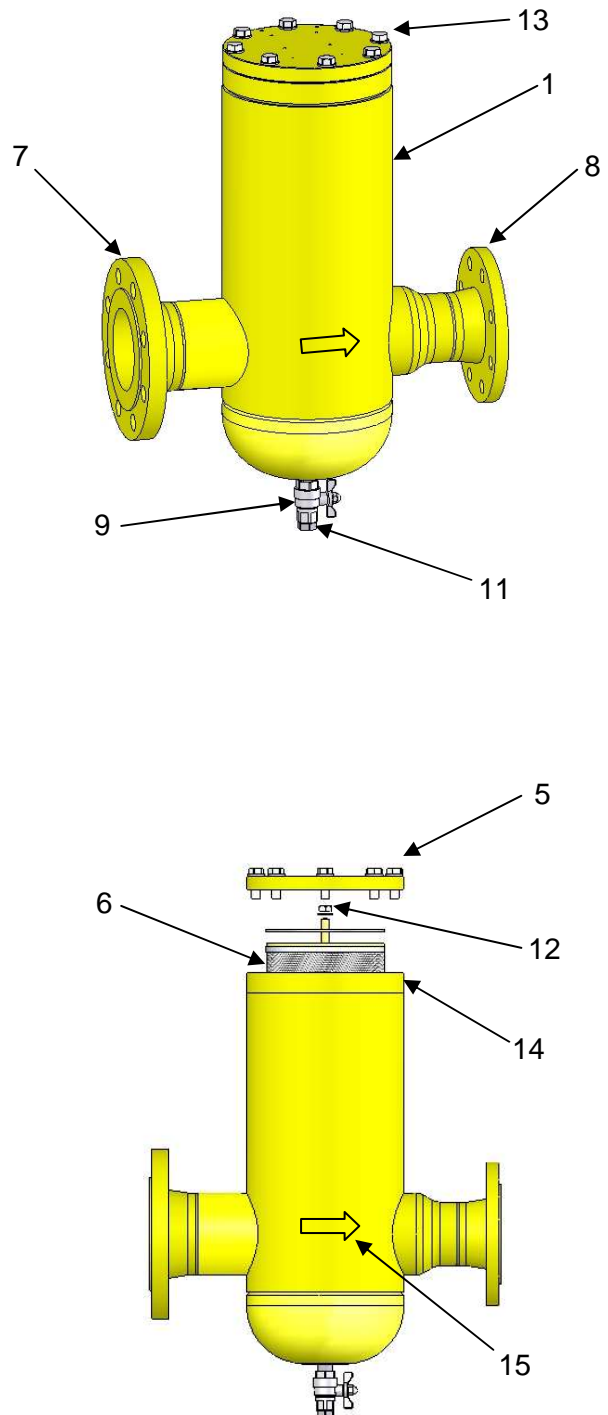
The usual mounting position is vertical being the differential manometer (4) above. It can also be installed at an angle of  $\pm 60^\circ$  from the vertical.

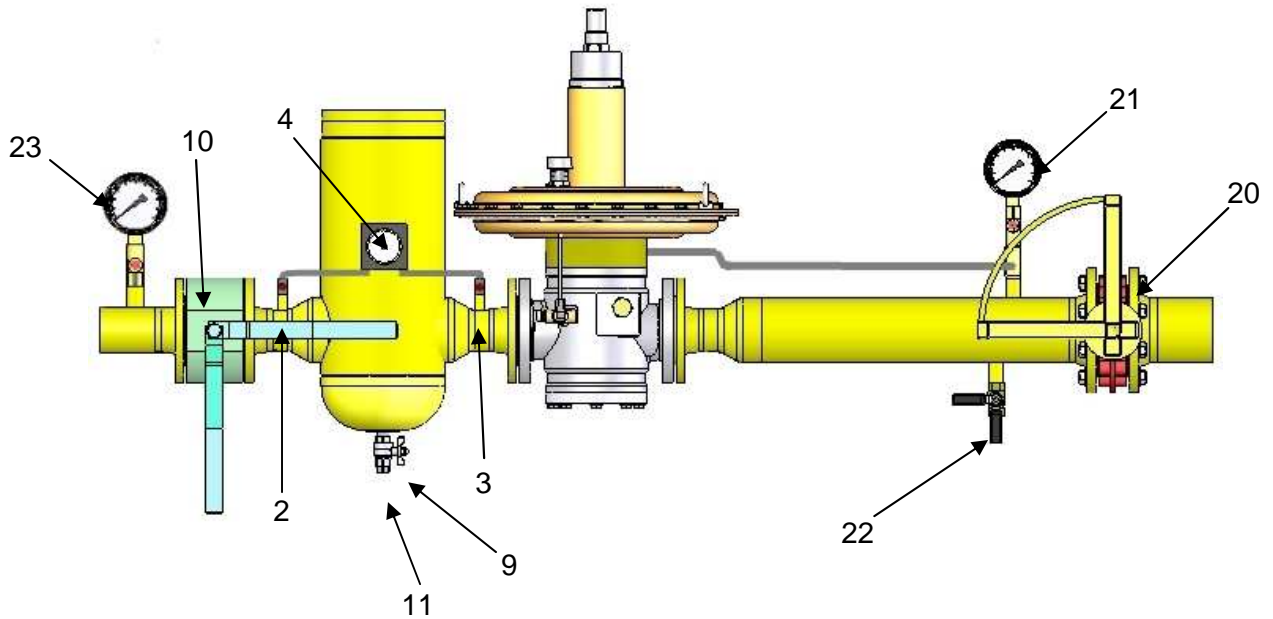
Check the label on the filter and assess whether it is suited to the demands of the facility where it will be mounted.

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 following steps:

- The inlet (10) and outlet (20) valves must be closed out.
- The purge valve (9) shall be closed and the cap (11) mounted.
- Slowly open the inlet valve (10).
- 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.

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 (11) which seals off the vent valve (9) 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 (9), replace the cap (11) 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 present 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 (6) 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 (11) with a 22mm spanner and slowly open the bleed valve (9), evacuating the pressure contained in the filter. Note: Particles or liquids can be projected, protect especially the eyes.
- With a Spanner, loosen a few turns the screws (13) of the collector cap(5), without actually removing them.
- Upward stretch the cap collector (5) separating it from the body and verifying the absence of internal pressure.
- Finish removes the screws (13).
- Separate the cap collector (5) of the filter body (1).
- With a 17 mm spanner. Loosen the nut (12) that holds the filter cartridge (6).
- Remove the filter cartridge and proceed to replace it.
- In the case of not having a new filter cartridge (6), 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.
- Internally clean the filter (1) and the seat of the purge valve (9).
- Reinstall the filter cartridge (6), in reverse order as described above.
- Put grease on the superior seal (14).
- Adjust the cap to the filter body and mount the mounting screws (13), alternately tightening up top.
- Slowly open the inlet valve (10).
- Check the general tightness of the filter and drain valve, using soapy water.
- Slowly open valve located downstream of the filter (20).

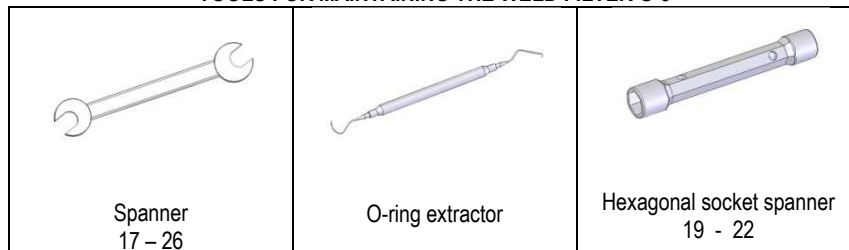
### Causes of abnormal operation

- O-rings of the body, flanges or manometer in poor condition.
- Drain ball valve (9) in poor condition.

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

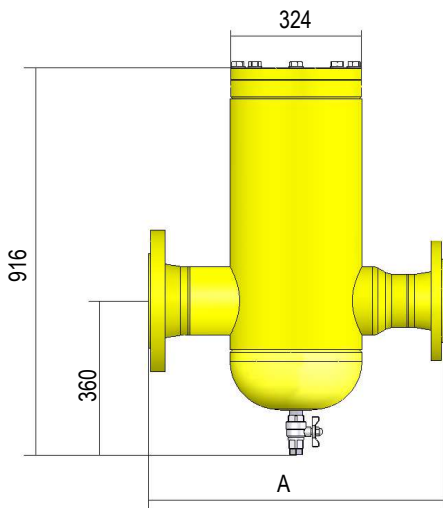
- Installation without consumption.
- Consumption very small.
- Needle valve bypass open.
- Filter without filtration cartridge (6) or perforated filtration cartridge.

## TOOLS FOR MAINTAINING THE WELD FILTER G-3

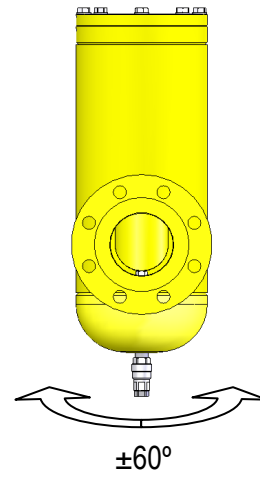


**WARNING!** It is potentially dangerous to manipulate a gas installation and its components. Therefore all start-up, adjustments and maintenance of the regulator must be carried out by duly authorized people with sufficient technical knowledge.

**DIMENSIONS AND WEIGHTS**

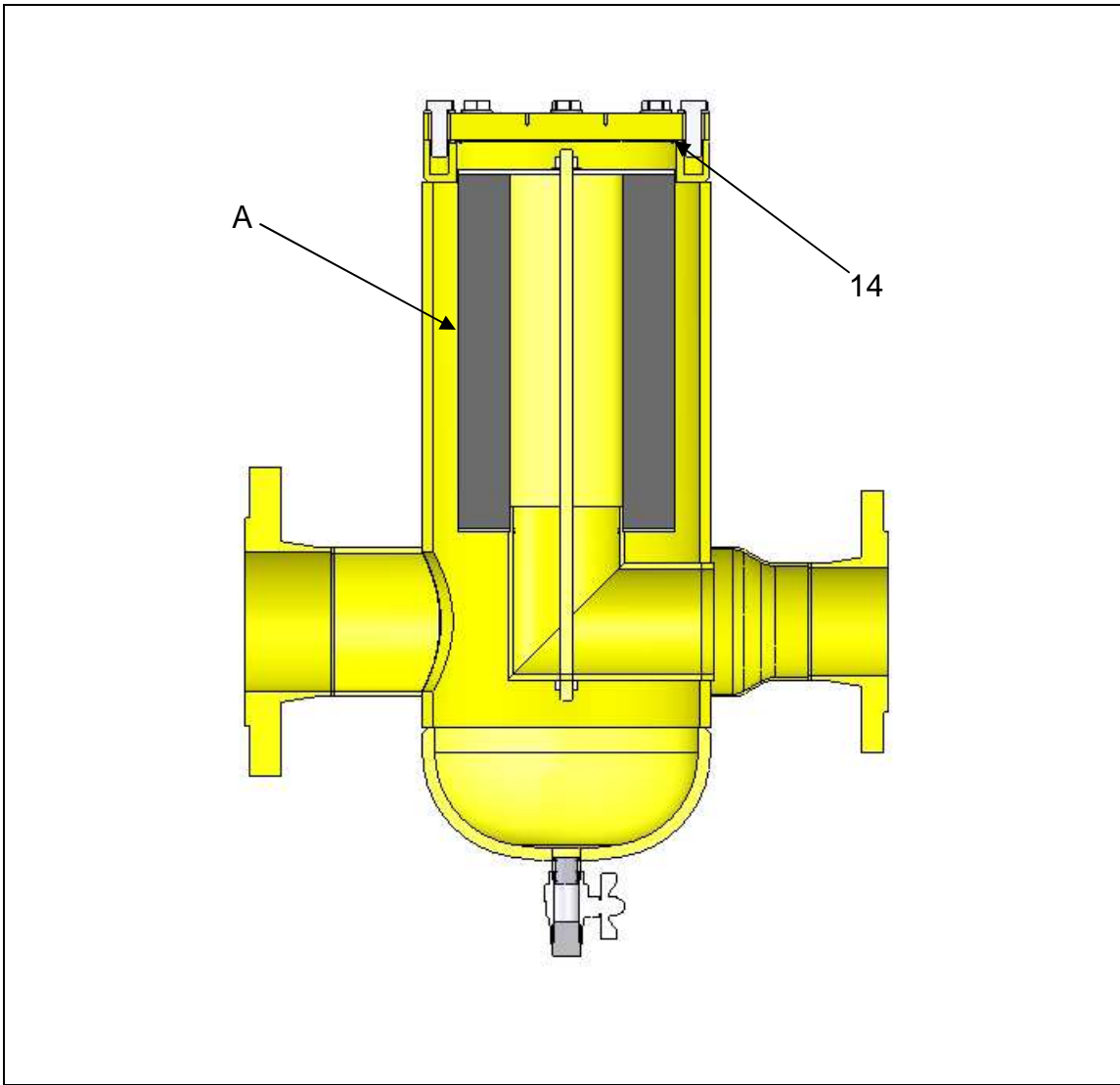


**MOUNTING POSITION**



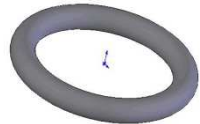


CONNECTION TYPE	DIMENSION A (mm)
DN100	790
DN150	800
4"	830
6"	860

Technical features of G-3		
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/Outlet connection	DN100/DN150 PN-16 DN100/DN150 PN-25 4"/6" ANSI-150 4"/6" ANSI-300	
Connections position	Axial	
Weight G-3	0.0 Kg	



**SPARES FOR REGULAR MAINTENANCE OF THE WELD FILTER G-3**

 <p>Filtration Cartridge G-0.5 (A) Code MA.0.00.0005</p>	 <p>Differential manometer Scale     Code 300 mbar Wl.9.10.0300 1000 mbar Wl.9.10.1000</p>	 <p>O-Ring Position     Code 14</p>
---	---	---