instrumentation
for fluids

PRC63
Orifice plate
Flowmeter

Instructions Manual

Conforms with the Pressure Equipment Directive 97/23/EC. CE

⚠ This equipment is considered as being a pressure accessory and **NOT** a safety accessory as defined in the 97/23/EC directive, Article 1, paragraph 2.1.3.

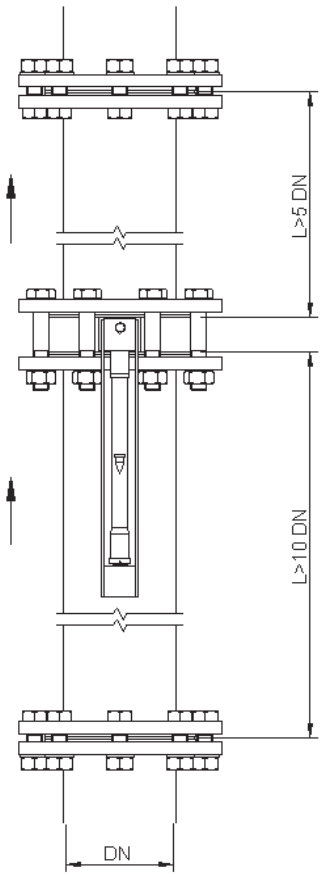
1 WORKING PRINCIPLE

When a fluid flows in a pipe and through an orifice plate, the pressure changes across the orifice plate. The difference of pressure is proportional to the square of the velocity of the fluid flowing in the pipe. If we adapt a differential pressure flowmeter to the system, we can obtain readings of the flow rate that is flowing trough the pipe.

2 RECEPTION

The flow meter is supplied ready for installation and service.

Turning the instrument up side down, check that the float moves freely in the tube.



3 INSTALLATION

The orifice plate can be installed in vertical or horizontal position.

It is very important that the point of installation guarantees that the pipe is always completely full. Flow rate measurement with open discharge makes it necessary to install the flowmeter with one of the following options:

- In a pipe section with a siphon which avoids stagnation of air in the sensor.
- With a regulating valve that allows to maintain the pipe full of fluid.

Straight pipe sections, free of valves, elbows, etc; before and after the orifice plate are necessary . The minimum distances are the following:

Upstream : 10 DN
Downstream : 5 DN

In installations with turbulent flow it may be necessary to increase these distances.

If these instructions are not followed, errors of up to 100% of the reading can be produced.

The flow direction should be as marked by the arrow on the orifice plate support.

Don’t forget to assemble gaskets between the flowmeter and the flanges of the installation.

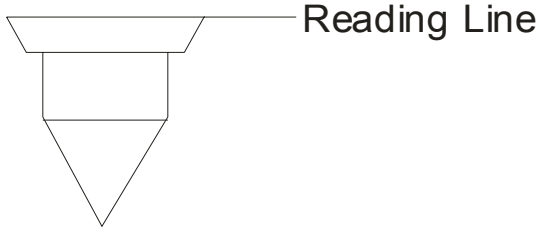
OPERATION

Once the orifice plate is correctly installed, open slowly the regulation valve to low flow rate position. Never open suddenly the regulating valve as this may cause the float to hit the glass tube and break it.

As the system fills with liquid, the air will exit the circuit and the float of the derived flowmeter will then be situated at the point where it indicates the flow rate through the orifice plate.

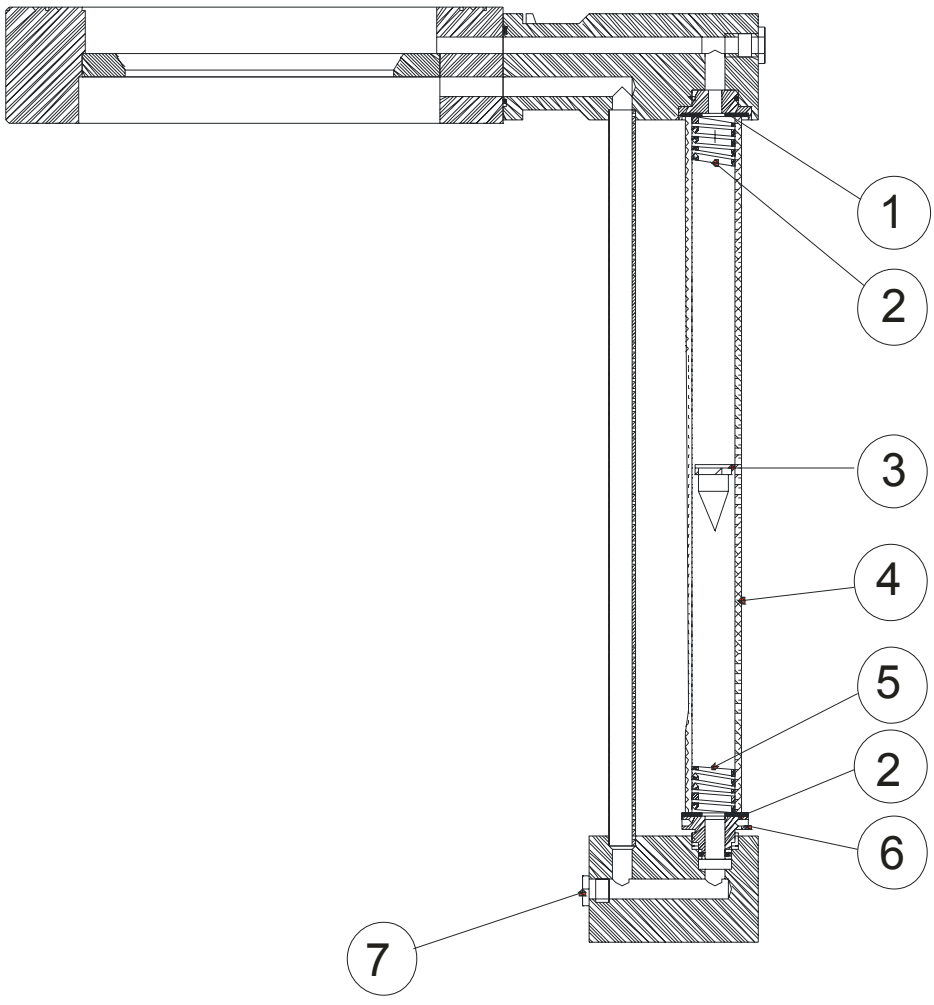
FLOW RATE READING

The float determines the flow rate measurement on the scale. The readings must be taken at the height shown in the drawing at the right.



CLEANING AND MAINTENANCE

- Close the valves on both sides of the flowmeter and empty the pipe.
- Unscrew slowly the purge plug (7) in order to empty the measuring tube. Once the tube is empty, screw the purge plug back in..
- Screw the metering tube press down (6) to free the metering tube.
- Remove the metering tube (4) from its support.



- Remove the top spring (2) and the bottom spring (5). NOTE: The top spring is different from the bottom one and should not be interchanged.
- Remove the float (3) from inside the metering tube.
- And finally, remove the gasket (1) and then withdraw the metering tube (4).
- Cleaning should be done using a soft brush (bottle brush or similar) to avoid scratching the metering tube.
- The float should also be cleaned with a soft brush, never with metallic utensils which could scratch it's surface
- To reassemble the instrument, inspect the gaskets (1) to see if they are in good working condition, and if not change them.
- Assemble the bottom spring (5) in the metering tube (4).
- Insert the float and the top spring (2) .
- Check that the gaskets (1) are in their places.
- Insert the assembly formed by the metering tube, float and springs between the two gaskets (1). Check that the group is centred and the scale is visible.
- Last, screw the metering tube press (6) up to hold the metering tube

WARRANTY

TECFLUID guarantees all the products for a period of 24 months from their sale, against all faulty materials, manufacturing or performance. This warranty does not cover failures which might be imputed to misuse, use in an application different to that specified in the order, the result of service or modification carried out by personnel not authorized by Tecfluid, wrong handling or accident.
This warranty is limited to cover the replacement or repair of the defective parts which have not damaged due to misuse, being excluded all responsibility due to any other damage or the effects of wear caused by the normal use of the devices.
Any consignment of devices for repair must observe a procedure which can be consulted in the website www.tecfluid.fr, "After-Sales" section.
All materials sent to our factory must be correctly packaged, clean and completely exempt of any liquid, grease or toxic substances.
The devices sent for repair must enclose the corresponding form, which can be filled in via website from the same "After-Sales" section.
Warranty for repaired or replaced components applies 6 months from repair or replacement date. Anyway, the warranty period will last at least until the initial supply warranty period is over.

TRANSPORTATION

All consignments from the Buyer to the Seller's installations for their credit, repair or replacement must always be done at freight cost paid unless previous agreement.
The Seller will not accept any responsibility for possible damages caused on the devices during transportation.

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