

# Instructions Manual

## Technical Data

- Accuracy:  $\pm 2,5\%$  of full scale value. Based on VDE/VDI 3513
  - Scales: In l/h, l/min, m<sup>3</sup>/h, kg/h, %, mm., etc
  - Scale length: 100 mm  $\pm$  5
  - Mounting: Vertical (rising flow direction)
  - Total length: 220 mm  $\pm$  2
  - Pipe fittings: 1/4" BSP or NPT female thread
  - Working pressure: 10 ... 15 bar
  - Fluid temperature: -10 ... +100°C
- The glass can support a thermal shock of 150 °C if there is no internal pressure.
- The temperature difference between the interior and exterior of the glass tube must not exceed 80 °C

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



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.

The following instruction manuals are attached:

- ☐ 60-AMD Limit Switch Instructions Manual
- ☐ 60-AMO Limit Switch Instructions Manual
- ☐ 60-AMH Limit Switch Instructions Manual





Working Principle

The flowmeter consists of a float inside a conical tube. The rising flow pushes the float to an equilibrium point. The area obtained between the float and the orifice is proportional to the flow rate.

This type of measuring principle is known as variable area.

The equilibrium point depends on :

- The float weight : Pf
- The fluid thrust : E
- The free flow area : Af

The area proportional to the flow rate will be:

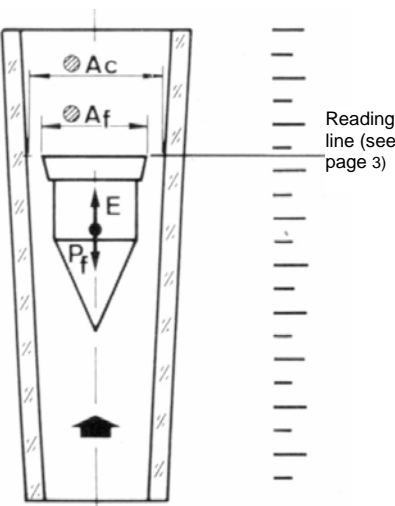
$Af = Ac - Af$

where:

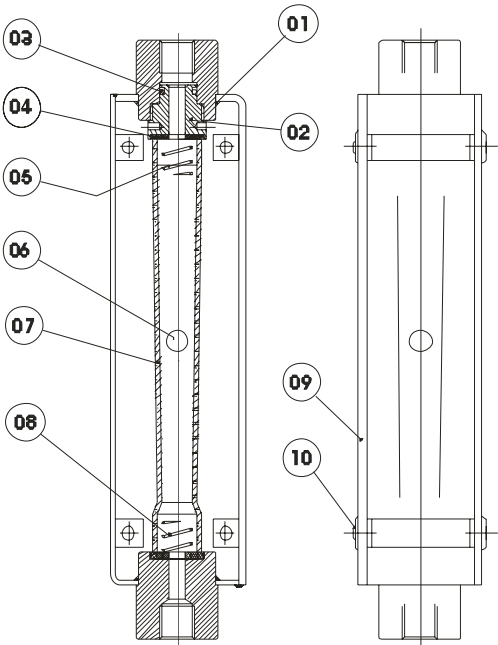
Ac = Flow measuring tube area

Af = Float area

Each position of the float corresponds to a flow rate indicated on the scale printed on measuring tube.



n.	Part	Materials
1	Body	EN 1.4404
2	M. Tube clamp	EN 1.4404
3	O-ring	NBR
4	End gasket	NBR
5	Top spring	EN 1.4401
6	Float	EN 1.4404 / Glass / Ceramic / Hostalen
7	Measuring Tube	Borosilicate Glass
8	Bottom spring	EN 1.4401
9	Transparent protection	Metacrylate
10	Screw	Nylon ®



## RECEPTION

The flowmeter is supplied ready for installation and service.

The blocking elements that hold the float for transport should be removed before installation.

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

## INSTALLATION

The instrument must be installed taking into account the following:

The fluid inlet will be in the bottom of the flowmeter (the one nearest the scale's minimum value).

The fluid outlet will be in the top of the flowmeter (the one nearest the scale's maximum value).

It is very important that the position of the instrument is completely vertical, given that deviations of about 5°– 10° can produce errors of about 10% of the reading.

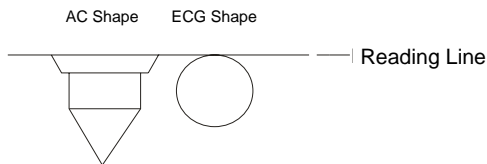


Never open suddenly the regulating valve as this may cause the float to hit the glass tube and break it.

## FLOW RATE READING

The float determines the flow rate measurement on the scale.

For the different shapes of floats, the readings must be taken at the height shown in the drawing at the right.



## CLEANING AND MAINTENANCE

Remove the 4 screws (10) and the transparent protection (9) to gain access inside the body (1).

Screw up the measuring tube clamp (2) into the body head (1), until the metering tube (7) is free.

Remove the metering tube (7), taking care that the top and bottom springs (8 and 5) don't fall out.

Once the metering tube (7) is removed, withdraw the top and the bottom springs (8 and 5) and the float (6). NOTE: The top spring is different from the bottom one and should not be interchanged.

Cleaning should be done using a soft brush (bottle brush or similar) to avoid scratching the measuring 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 (4) to see if they are in good working condition, and if not, change them.

Put the bottom spring (8) in the measuring tube (7), insert the float and the top spring (5).

Assemble the measuring tube inside de body.

Screw down the measuring tube clamp (2) from the body head (1), until the tube is tight and the gaskets make a proper seal.

Put the transparent protection (9) in the body (1) and screw in the 4 screws (10).

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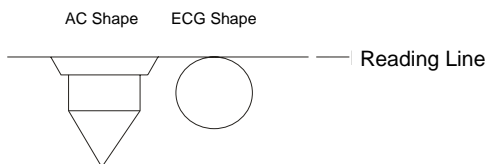


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## **WARRANTY**

Tecfluid S.A. GUARANTEES ALL ITS PRODUCTS FOR A PERIOD OF 24 MONTHS, after consignment, against all defects in materials and workmanship.

This warranty does not cover failures which can be imputed to misuse, use in an application different to that specified in the order, the result of service or modification by un-authorized persons, bad handling or accident.

This warranty is limited to cover the repair or replacement defective parts which have not been damaged by misuse.

This warranty is limited to the repair of the equipment and all further and eventually following damages are not covered by this warranty.

Any consignment of equipment to our factory or distributor must be previously authorised. The consignment should be done with the equipment well packed, clean of any liquids, grease or hazardous materials. Tecfluid S.A. will not accept any responsibility for damage done during transport.

Together with the equipment, a note should be enclosed indicating the failure observed, the name, address and telephone number of the sender.

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