



Instructions Manual

Technical Data

- Accuracy: $\pm 1,6\%$ full scale value. Class 1,6 based on VDE/VDI 3513
- Scales: l/h, l/min, m³/h, kg/h, %, mm, etc
- Mounting: Vertical (Rising flow direction)
- Pipe fittings:
 - 6001 BSP or NPT female thread
 - 6002 DIN2501 Flange or ANSI flange
 - 6009 Female thread BSP, NPT or cylindrical fitting for gluing
 - 6011 DIN 11851 male thread
 - 6013 Clamp ISO 2852
 - 6015 SMS 1145 thread
- Working pressure:
 - Full scale from 25 to 1000 l/h: PN-15
 - Full scale from 1600 to 2500 l/h: PN-10
 - Full scale from 4000 to 6300 l/h: PN-8
 - Full scale from 10 to 14 m³/h: PN-6
 - Full scale from 16 to 40 m³/h: PN-5
- Fluid temperature: -10 ... +70°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-AMM Limit Switch Instructions Manual
- 60-AMD Limit Switch Instructions Manual
- 60-AMR Limit Switch Instructions Manual
- 60-AMO Limit Switch Instructions Manual
- 60-AMH Limit Switch Instructions Manual
- 60-TMUR Transmitter 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 : AI

The area proportional to the flow rate will be:

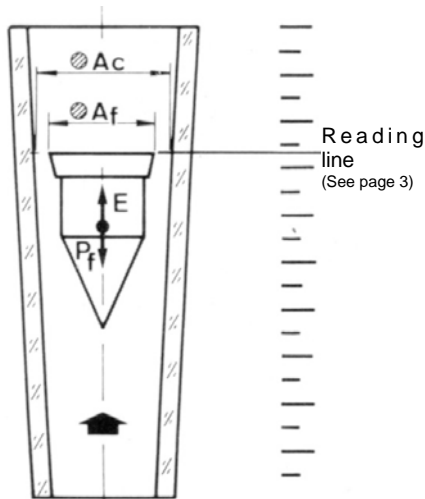
$$AI = Ac - Af$$

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			
		6001 STEEL 6002 STEEL 6009 STEEL	6001 INOX 6002 INOX 6009 INOX 6011 INOX 6013 INOX 6015 INOX	6001 PVC 6002 PVC 6009 PVC	6001 PTFE 6002 PTFE 6009 PTFE
1	End Piece	Steel	EN 1.4404 (AISI-316L)	PVC	PTFE
2	Pipe Fitting	Steel	EN 1.4404	PVC	PTFE
3	Nut	Steel	Steel / EN 1.4404	PVC	Steel
4	End Gasket	NBR	NBR	NBR / PFM	NBR / PTFE
5	Frame	Plastic coated Steel	Plastic coated Steel / EN 1.4404	Plastic coated Steel	Plastic coated Steel
6	Measuring Tube	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass	Borosilicate Glass
7	Float	EN 1.4404/ Aluminium	EN 1.4404	PVC	PTFE / PVDF
8	Float Stop	EN 1.4401 (AISI-316)	EN 1.4401	PVC / PVDF	PTFE / PVDF
9	Pipe Fitting Gasket	NBR	NBR	NBR	NBR
10	Flange	Steel	Steel / EN 1.4404	Steel / PVC	Steel / PTFE
11	Nut	EN 1.4401	EN 1.4401	EN 1.4401/PVC	EN 1.4401/PTFE
12	Centring Piece	EN 1.4404	EN 1.4404	EN 1.4401/PVC	EN 1.4401/PTFE
13	Washer	EN 1.4401	EN 1.4401	EN 1.4401/PVC	EN 1.4401/PTFE
14	Float Guide	EN 1.4404	EN 1.4404	EN 1.4401/PVC	EN 1.4401/PTFE

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.

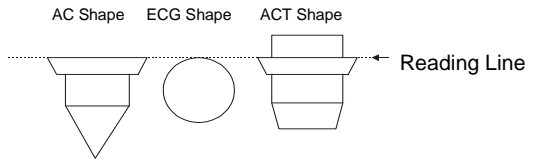
 Never open suddenly the regulating valve as this may cause the float to hit the glass tube and break it.

Don't forget to mount gaskets with the pipe fittings.

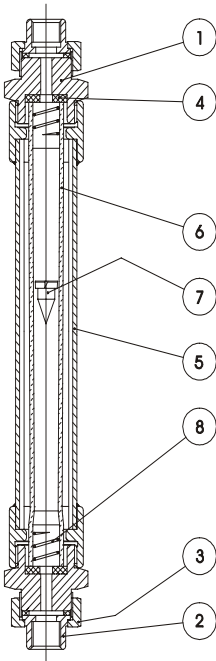
FLOW RATE READING

The float determines the flow rate measurement on the scale.

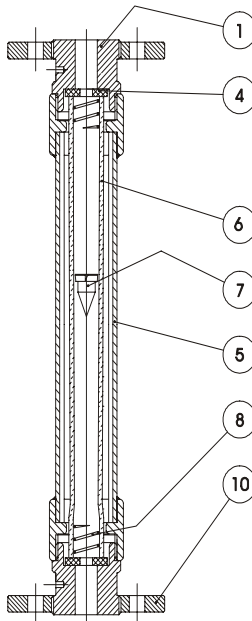
For the different shapes of floats, the readings must be taken at the height shown in the drawing at the right.



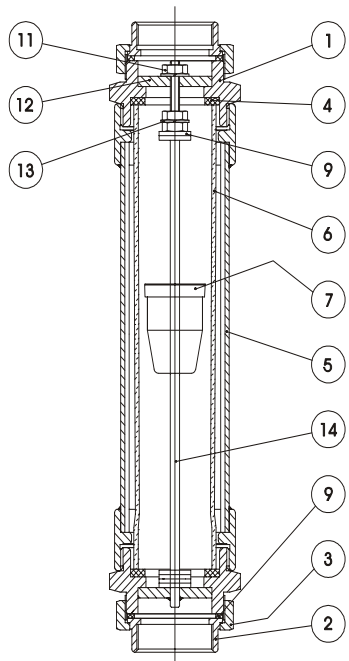
6001



6002



6001 ... 6015
(>10m³/h H₂O y
170 Nm³/h AIR)



CLEANING AND MAINTENANCE

If the float (7) has a central guide (14), remove the nut (11) and the centring piece (12), taking care that the guide does not incline. This avoids that the float knocks against the measuring tube (6).

Unscrew the end piece (1). In the case that there is a spring or stop (8), remove it. NOTE: The top spring is different from the bottom one and should not be interchanged.

And finally, remove the gasket (4) and then withdraw the measuring tube (6).

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 & 9) to see if they are in good working condition, and if not change them.

Assemble the bottom spring or stop (8) if the model has it. Insert the measuring tube (6), insert the float and the top spring or stop and screw on the head (1).

If the float has a central guide (14), insert the centring piece (12) and check that the float (7) is centred and that it moves freely. If the float (7) is not centred it can touch and break the measuring tube. Last, assemble the nut (11).

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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