

# U6 Series

## By-pass flow-rate indicator INSTRUCTIONS MANUAL



### 1. SET UP

**PIPING ARRANGEMENTS:** The lengths of the ducts, upstream and downstream the main restriction device, must be in accordance with the standards issued by UNI (Table 1567-1569) or equivalents, and the bore Dc of the duct must be in correspondence to the bore Dc of the throttling device. Upstream and downstream the unit, weld on the duct two flanges unions having same internal bore dimension as pipe's one. After checking the direction of the flow, loosen the screw 12 fastening the U6 Flow indicator to the flange and rotate the measuring orifice plate in accordance with the orientation of the duct and the direction of the flow, keeping the U6 Flow indicator in true vertical position. The good working of device depends on the accuracy of this fitting.

### 2. OPERATING

When measuring liquids which give rise to the formation of air bubbles, special precautions must be taken for their elimination. When the U6 Flow indicator is fitted as in **Fig. A**, for air discharging loosen the screw **ES3/6** until leakage is noticed from the screw's discharge hole, then tighten it as previously. Air discharging is self-acting when the U6 Flow indicator is fitted as in **Fig. B**. The same precautions must be taken when measuring gases, eliminating the formation of condensate. When the U6 Flow indicator is installed as in **Fig. B**, proceed as above; on the contrary, no formation of condensate will occur when the U6 Flow indicator is fitted as in **Fig. A**.

### 3. MAINTENANCE

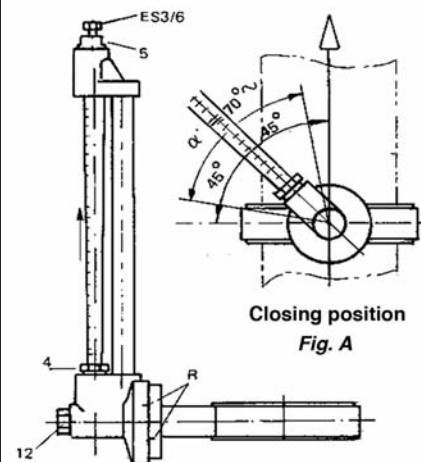
**DIAPHRAGM:** Generally it does not require maintenance though, if possible, it is advisable to remove it from the duct for cleaning, every two/three months. For this purpose loosen the screw 12 thus separating the U6 Flow indicator from the measuring flange and clean it, checking also the pressure intake chambers.

**MAINTENANCE OF THE U6 FLOW INDICATOR:** Maintenance can be carried out indifferently either leaving the flowmeter in its place or removing it from the plant. Before proceeding with the maintenance instructions we must point out that, as the attached layout shows, it exists an angular sector in the position of the U6 Flow indicator where it is partially or completely cut off from the main duct. Here the flowmeter is inactive and leakage of processed fluid from the pressure inlet holes is impossible. This sector, amounting to about a quarter of the orientation turn of the flowmeter in respect of the duct, is called  $\alpha$  in the layout and has been devised to make maintenance possible without removing the flowmeter from the plant. Considering the axis of the vertical duct upward flow, the shut off position is obtained as follows U6 Flow indicator fitted on the upper side of measuring flange: rotation in the left upper sector (**Fig. A**). U6 Flow indicator fitted on the underside of the flange: rotation in the right lower sector (**Fig. B**).

**CLEANING:** Cleaning the U6 Flow indicator or replacement of the pyrex metering tube, without removing it from the duct. First of all, cut out the U6 Flow indicator from circuit, as previously said.

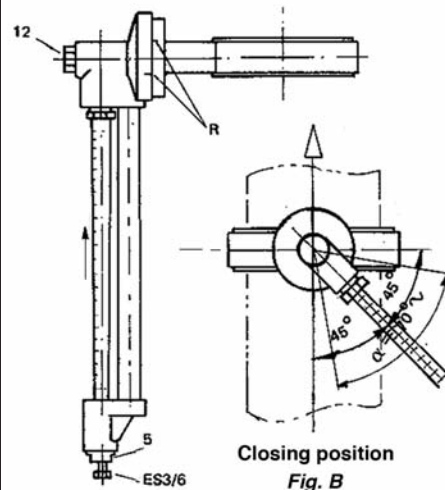
Loosen the screw 12 and rotate the U6 Flow indicator into the inner sector until the arrow visible on the U6 Flow indicator itself and the notch on the measuring flange, called **R** in the layout, are perfectly corresponding. Tighten the screw 12 once more, blocking the U6 Flow indicator in this position. For glass metering tube removing, loose screwed ring (5) and stuffing box (4) and take off all internal parts of the instrument, included secondary flange. Clean everything, being careful that inlet edge and internal bore of secondary flange can be damaged. When re-assembling, mind that edge of secondary flange is looking in the sense of the flow. Subsequently insert the float stop, the metal ring, gasket of glass tube and stuffing box screw (4) tightening it by your hand. Place glass tube and all internal parts concerning other end of metering tube in the right sequence and finally block the with threaded ring (5). Stuffing boxes (4) and (5) will be normally tighten and U6 Flow indicator will be put in its previous position, instrument will began to work again correctly.

#### GAS SERVICE EXECUTION



For condensate elimination, U6 Flow indicator must be set upwards.

#### LIQUID SERVICE EXECUTION



For gas elimination, U6 Flow indicator must be set downwards.

Sector of flow orientation reserved to maintenance purposes, not useable in normal execution. On request when necessary, sector can be changed. Flanges to be welded on the duct and necessary gaskets aren't supplied with device.

**BAMO MESURES**

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By-pass flow-rate indicator  
**U6 Series**

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764 M1 01 A

**MES**

**764-01/1**

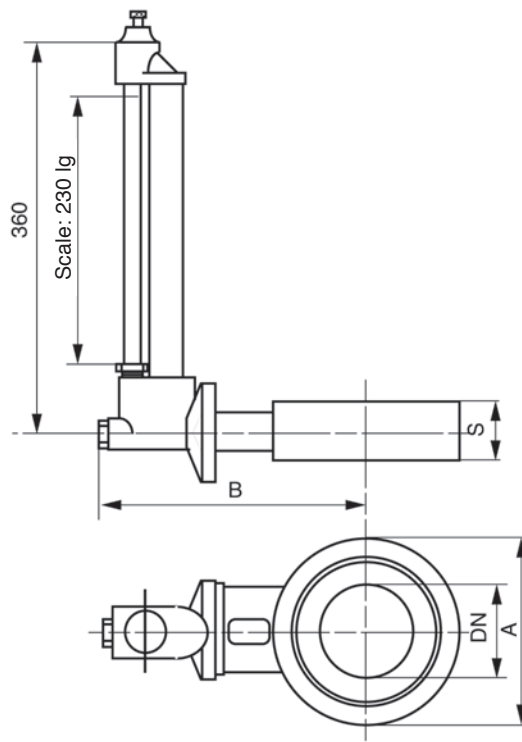
## 4. TECHNICAL FEATURES

|                      |   |
|----------------------|---|
| Measuring range:     | 1 to 1600 m <sup>3</sup> /h [Water at 20°C]<br>180 to 200 000 Nm <sup>3</sup> /h [normo m <sup>3</sup> /h of air] |
| Accuracy:            | ± 2.5% full scale   |
| Repeatability:       | ± 0.5% reading  |
| Scale amplification: | from 2 to 10 - Linear scale   |
| Temperature limits:  | 0...90°C, sealing in Buna<br>0...120°C, sealing in FPM  |
| Pressure limit:      | 21 bar as a maximum   |

## 5. MATERIALS

|                   |  |
|-------------------|--|
| Wetted parts:     | Cast iron and brass ( <i>standard</i> )<br>Stainless steel 316 ( <i>on request</i> ) |
| Diaphragm:        | Stainless steel 316  |
| Flow indicator:   | Borosilicate glass tube  |
| Diver:            | Stainless steel 316 SS ( <i>liquids</i> )  |
| Aluminium (gases) |  |
| Thrusts:          | Stainless steel 316  |
| Sealing:          | O-rings in Buna N as standard; FPM on request  |

## 6. DIMENSIONS



| Model     | ND [Inch] | ND [mm] | A   | B   | S  |
|-----------|-----------|---------|-----|-----|----|
| U6 - 3100 | 2         | 50      | 100 | 174 | 34 |
| U6 - 3200 | 2 1/2     | 65      | 115 | 184 | 34 |
| U6 - 3300 | 3         | 80      | 130 | 194 | 34 |
| U6 - 3400 | 4         | 100     | 155 | 204 | 34 |
| U6 - 3500 | 5         | 125     | 180 | 219 | 34 |
| U6 - 3600 | 6         | 150     | 210 | 234 | 38 |
| U6 - 3800 | 8         | 200     | 265 | 264 | 38 |
| U6 - 4000 | 10        | 250     | 315 | 294 | 38 |
| U6 - 4200 | 12        | 300     | 370 | 324 | 38 |