



## STORAGE, INSTALLATION & MAINTENANCE INSTRUCTIONS

### 1. STORAGE

Flow indicators and spare component parts should be stored with care in a clean dry area preferably at temperatures above freezing point.

### 2. INSTALLATION

2.1 It is important that you check before installation that the flow indicator is suitable for your operating conditions and is only installed within systems of compatible materials. Make sure that the materials of construction, also the maximum working pressure and temperature, are compatible with the application. The flow indicator must not be operated outside its pressure and temperature limits.

2.2 Mounting in the pipeline:

Style 'P': Straight through with spout can be mounted in a horizontal or vertical position.

Style 'F': Internal flap model is suitable for a horizontal or vertical upward flow.

Style 'FS': Internal flap model with spring is suitable for horizontal or vertical upward and vertical downward flow.

Style 'S' & GR: Paddlewheel and rotor models are suitable for horizontal, vertical upward and vertical downward flow.

Style T: Tube type can be mounted in a horizontal or vertical position. It is important that the pipework is adequately supported to ensure that no stress is exerted on the indicator in the line.

2.3 All styles except T: Must be installed so that flow takes place in the direction of the arrow located on the flow indicator body.

All styles: Location where there is a risk of hydraulic and/or thermal shock or accidental damage to the window assemblies must be avoided.

2.4 When the line temperature exceeds 100°C it is important that personnel are warned of the danger with appropriate notices and line should be lagged where necessary.

2.5 If lifting equipment is used for the installation of the units, these should be lifted using slings behind each flange.

### 3. INSPECTION & MAINTENANCE

3.1 It is important that the glass window assemblies are inspected at frequent intervals to ensure that the glass discs are free of erosion to the inner surface and scratches to the outer surface. If any scratching or erosion has occurred then these defective glasses must be replaced. In the case of erosion, the cause must be investigated to ensure the suitability of the glass for the application, and to determine if a suitable alternative is available or if it is necessary to fit mica shields.

Should it be necessary to remove the glass discs for cleaning, care must be taken to ensure that the glass discs are not damaged during this operation. New internal gaskets must be fitted prior to reassembly as a minimum.

3.2 Should erosion of the body occur in excess of 10% of the body thickness in any area then the unit must be replaced.

- 3.3 Ensure that the system is depressurised and drained before dismantling the unit. Any remaining fluid should be collected in a suitable container and handled and disposed of in a safe manner appropriate to the medium.
- 3.4 The fasteners that secure the covering ring should be tightened in a sequence of diagonal opposed corners so as to achieve even compression. The assembly torque should not exceed:-

<i>Nominal size of flow indicator</i>	<i>Nm</i>	<i>lb ft</i>
15mm & 20mm	1.8	16
25mm	3.2	28
32mm & 40mm	7.6	67
50mm, 80mm & 100mm	15.3	135
150mm	26.8	237

- 3.5 If you have any doubts concerning the condition of the glass windows or any other component part please contact us for advice.

#### **4. SPARES**

Spare parts are usually required as a result of accidental damage. We recommend that a limited number of glass windows, gaskets and edge protectors be held in your maintenance stocks and a priced recommendation is available on request.

Due to the nature of the glass tube in the Type T we recommend that replacement is not carried out on site. For this type of indicator we recommend that a complete unit is held as a spare.

**IMPORTANT: PLEASE RETAIN FOR FUTURE USE**