**Description**

The Mechanical Triaxial Jointmeter is designed to monitor three way displacement (X, Y and Z) across joints or cracks between adjoining concrete and rock structures.

The Jointmeter comprises two elements: a zinc coated measurement arm and a Stainless Steel reference head, both attached to reinforcing bar embedment anchor stems.

The measurement arm incorporates three orthogonal locating bushes, designed to receive a mechanical or electronic micrometer.

The Stainless Steel reference head is a cubic anvil, with precision machined reference faces, providing a surface against which the triaxial displacement measurements are made.

Manual measurement with a mechanical gauge is a more preferred option when fewer readings are required.

**Features**

- Reads in X, Y and Z axes
- Accurate and precise
- Proven in long-term monitoring
- Simple in principle and operation

**Benefits**

- Three way independent movement monitoring in one easy installation
- Low and easy maintenance
- Long working life, long-term stability and reliability

Comprehensive information about this product and our full range is available at www.soilinstruments.com

If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@soilinstruments.com
## Operation

The arm anchor stems are embedded at either side of the joint, crack or fissure to be monitored, either in wet concrete at a construction joint, or grouted firmly into drilled holes in a pre-existing mass or structure, using cementitious or chemical grouts.

A temporary, removable jig maintains the two halves of the jointmeter in correct alignment at its mid-range, until the embedment medium has gained sufficient strength to be able to fully support the jointmeter.

Readings are acquired by recording the current distance from the measurement bushes to the reference anvil in X, Y and Z planes. The current readings are then subtracted from an initial base reading to give relative movement of the joint or crack.

## Applications

The Mechanical Triaxial Jointmeter is used for the measurement of X, Y and Z dimensional relative movement between two abutted structures or masses.

Typical applications include:

- Concrete dam construction joints
- Tunnel and shaft lining segments
- Bridge construction
- Masonry structures
- Structural and superficial cracks

## Associated products

<table>
<thead>
<tr>
<th>For details on:</th>
<th>Catalogue code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibrating Wire Embedment Jointmeter</td>
<td>J1</td>
</tr>
<tr>
<td>Vibrating Wire Triaxial Jointmeter</td>
<td>J3</td>
</tr>
<tr>
<td>Perimetric Jointmeter</td>
<td>J4</td>
</tr>
</tbody>
</table>

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## The Technical Rating for this Product:

As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, Soil Instruments makes the following recommendations, for the skill level of the installation contractor.

**ADVANCED**

The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.

**INTERMEDIATE**

The installer already has previous experience and/or training in the installation of this instrument or system.

**BASIC**

As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.
### Specifications

**Jointmeter**

<table>
<thead>
<tr>
<th>Ranges</th>
<th>±12mm</th>
<th>±35mm</th>
<th>±75mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions¹</td>
<td>H 248mm x L 242mm x W 94mm</td>
<td>H 275mm x L 345mm x W 125</td>
<td>H 345mm x L 385mm x W 208mm</td>
</tr>
<tr>
<td>Material</td>
<td>Mild steel, zinc coated frame</td>
<td>Stainless Steel reference surface</td>
<td></td>
</tr>
</tbody>
</table>

**Anchors**

<table>
<thead>
<tr>
<th>Type</th>
<th>Groutable</th>
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<tbody>
<tr>
<td>Material²</td>
<td>Zinc plated steel</td>
</tr>
<tr>
<td>Dimensions</td>
<td>165mm x Ø20mm</td>
</tr>
</tbody>
</table>

**Reference Anvil (part of 3D mounting)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>31mm x 31mm x 31mm</td>
</tr>
</tbody>
</table>

**Reading Devices**

<table>
<thead>
<tr>
<th>Dial Depth Gauge</th>
<th>Digital Depth Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranges</td>
<td>±0.3mm</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.0.3mm</td>
</tr>
<tr>
<td>Resolution</td>
<td>±0.0.2mm</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20 to +80°C</td>
</tr>
<tr>
<td>Battery</td>
<td>N/A</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20 to +80°C</td>
</tr>
<tr>
<td>Battery</td>
<td>1.5V replaceable battery</td>
</tr>
</tbody>
</table>

¹ Overall dimensions
² Available in Stainless Steel
³ Extension pieces available
## Ordering Information

### Mechanical Triaxial Jointmeters
- **J5-1.2**: Mechanical Triaxial Jointmeter, ±12mm range
- **J5-3.5**: Mechanical Triaxial Jointmeter, ±35mm range
- **J5-7.5**: Mechanical Triaxial Jointmeter, ±75mm range

### Reading Equipment
- **J5-2.2-A**: Dial depth gauge, 50mm range
- **J5-2.2**: Digital depth gauge, 25mm range
- **J5-2.3**: Extension piece, 20mm length; for depth gauge
- **J5-2.4**: Extension piece, 30mm length; for depth gauge
- **J5-2.5**: Extension piece, 100mm length; for depth gauge

### Installation Equipment
- **J5-1.2-J**: Installation jig; for J5-1.2, includes fittings
- **J5-3.5-J**: Installation jig; for J5-3.5, includes fittings
- **J5-7.5-J**: Installation jig; for J5-7.5, includes fittings
- **J5-1.2-C**: Protective cover; for Mechanical Triaxial Jointmeters, includes mounting kit
- **W6-4.4**: Polyester resin cartridge; 150ml, to fix anchor into drill hole
- **W6-4.5**: Cartridge injection tool

### Manual
- **MAN-66**: Mechanical Triaxial Jointmeter with Dial Gauge