ER-071 Gyro Inclinometer

The ER-071 Gyro is as same as ER-021, which is a single point and multi-point except the application of smaller size flexible gyro and features are smaller size, better anti-impact performance.

<table>
<thead>
<tr>
<th>Application:</th>
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<tbody>
<tr>
<td>● Well trajectory survey</td>
</tr>
<tr>
<td>● Well casing windows, cutting and directional.</td>
</tr>
<tr>
<td>● Cluster well directional</td>
</tr>
<tr>
<td>● Directional perforating</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Features:</th>
</tr>
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<tbody>
<tr>
<td>● Small size, anti-impact</td>
</tr>
<tr>
<td>● Multi-purpose, wide application</td>
</tr>
<tr>
<td>● Automatic north-seeking, logging data read</td>
</tr>
<tr>
<td>● Out directly on surface</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameters:</th>
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</thead>
<tbody>
<tr>
<td>● Inclination angle</td>
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</tbody>
</table>
of well: (0-70°) ± 0.15°
  • Azimuth: (0-360°) ± 1.5°
  • High Side: (0-360°) ± 1.5°
  • Down hole instrument diameter (OD): 38 mm (45mm with heat shield)
  • Pressure resistance: 140MPa / 100Mpa
  • Temp: 100℃ (175℃ With heat shield)
Continuous Gyro Inclinometer

**ER-01 real time gyro**
ER-01 real time gyro measuring instrument, which has introduced a new measuring principle, can realize dynamic high-precision continuous well logging with high measuring speed. Logging data is accurate and reliable. ER-01 can be used for old well trajectory repeated survey, sidetracking directional.

**Application:**
- Well trajectory survey
- Well casing window, cutting and directional.
- Cluster well directional
- Directional perforating

**Features:**
- Fast continuous survey, 5000m/hour.
- Automatic north-seeking
  - High accuracy
  - High reliability, shock resistance, vibration resistance
- Simple operation and save time, Easy used software, auto-record logging data.

**Technical parameter:**
- Azimuth: (0-360)°±0.5°
- Well Inclination angle: (0-80)°± 0.1°
- Down hole instrument size diameter: 45mm (48mm with heat shield)
- Pressure resistance: 140MPa/94Mpa
- Temp: 100℃ (175℃ with heat shield)
# Simple inclinometer calibration sets

Simple inclinometer calibration sets is main calibration instrument for inclinometer on ground, can be used to check inclinometer’s azimuth error, inclination error and measurement accuracy.

<table>
<thead>
<tr>
<th>Main features:</th>
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<tbody>
<tr>
<td>● Lightweight structures</td>
</tr>
<tr>
<td>● Easy to use</td>
</tr>
<tr>
<td>● High mobility</td>
</tr>
<tr>
<td>● Non-magnetic</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical parameters:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Inclination: 0°~ 180°± 0.1°</td>
</tr>
<tr>
<td>● Azimuth: 0°~ 360 °± 0.2 °</td>
</tr>
<tr>
<td>● Tool face angle: 0°~360 °± 0.5°</td>
</tr>
<tr>
<td>● Diameter range of the instrument under test: φ30—76 mm</td>
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<tr>
<td>● Maximum weight of the instrument under test: 6 kg</td>
</tr>
<tr>
<td>● Dimension:diameter × height= 1000 ×1100 mm</td>
</tr>
<tr>
<td>● Net weight: 15 Kg</td>
</tr>
</tbody>
</table>
Non-magnetic inclinometer calibration sets

Non-magnetic inclinometer calibration sets is has very high precision, which is main calibration instrument for inclinometer on ground, can be used to check inclinometer’s azimuth error, inclination error and measurement accuracy.

**Main features:**
- Robust structure
- Easy to use
- Excellent stability and high precision
- 1'st non-magnetic materials

**Technical parameters:**
- Inclination: 0° ~ 180° ± 2’
- Azimuth: 0° ~ 360° ± 2’
- Tool face angle: 0° ~ 360° ± 2’
- Diameter range of the instrument under test: φ30—50mm
- Maximum weight of the instrument under test: 6 kg
- Dimension: Diameter × Height = 400 × 800 mm
- Net weight: 30 Kg
ER-48 Continuous north seeking gyro

Technical Specification:
Model: ER-48
1. Parameters can be measured:
Inclination, azimuth, high side toolface, north direction toolface, and probe temperature.

2. Measurement accuracy (1σ):
Azimuth: 0~360 deg, error: ≤0.5 deg
Inclination: 0~70 deg, error: ≤0.1 deg
Gravity toolface: 0~360 deg, error: ≤1.5 deg
North direction toolface: 0~360 deg, error: ≤0.5 deg

3. Environment condition:
Operating temperature: 175℃
Pressure: 100 MPa
Shock: 700g, 0.5 ms, ½ sine

4. Outside dimension:
Downhole probe outside dimension: 48 mm,
Downhole probe length: 1180 mm,
Total length of downhole tools: 3100 mm,
Centralizer length: 566 mm,
Extra heavy bar length: 1000 mm,
Standard R-type single-point guide shoe

5. Test software:
Ericco International Limited
V1.4 Gyroinclinometer dedicated software.

6. Measuring method:
Trajectory measurements: real-time,
Measurement speed: 5000 m/hr

7. Ground host:
Gyro dedicated host.