Mounting Documentation Systems

MDS
MDS traceable bolting solution

Applications

High quality bolt-connections place the highest demands on bolting technology. The powerful mounting documentation system alkitronic® MDS provides a fast, complete and flawless collection of torque data. alkitronic® MDS helps to fulfill legal regulations and to comply with international quality standards (documentation to the end user, traceable bolting parameters).

- The product range includes:
  - The manually operated alkitronic® HSD, the pneumatic operated alkitronic® CLSD, and the battery driven alkitronic® EASD. The torque multipliers are used for torque controlled bolting and reliable measurement data recording on the spot.

Advantages

General
- Optimized process safety and work safety.
- Guaranteed traceability and documented bolted joints.
- Torque can be set and record on site.
- Control panel with OLED display, display of torque in Nm or lbf.ft.

alkitronic® HSD
- Repeatability in tightening – independent of disturbances.
- Torque/torque angle procedure, manual setting, and documentation on site.
- High mobility: independent of external power supply.

alkitronic® CLSD
- Robust motor housing of cast aluminum with proven pneumatic drive.

alkitronic® EASD
- Health preserving: ergonomically designed, low noise emission. No noise protection necessary.
- Powerful and independent: Two lithium-ion battery packs ensure up to 360 screw joints in a row.
- Exact shut-off torque even at low battery levels.

alkitronic® specials

- Torque recording and sensors directly on the square drive.
- Select individual bolting- and measurement method, several preset programs can be chosen.
- Menu-guided multilingual operation, using visual and acoustic control- or warning signals.
- Data transmission via the Bluetooth interface for communication with mobile phones and other devices, such as tablets.
- alkitronic® APP developed for measurement data recording and fast data transmission.

alkitronic® APP application scheme

alkitronic® APP app for iOS® and android® mobiles and platform independent data exchange via CSV file transfer.

Image on the upper right: alkitronic® HSD and on the lower right: alkitronic® CLSD and alkitronic® EASD.
### Technical Data

#### Models HSD / CLSD / EASD

<table>
<thead>
<tr>
<th>Type</th>
<th>HSD 100</th>
<th>HSD 200</th>
<th>HSD 400</th>
<th>CLSD 100</th>
<th>CLSD 200</th>
<th>CLSD 400</th>
<th>EASD 100</th>
<th>EASD 200</th>
<th>EASD 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range approx. Nm</td>
<td>100-1000</td>
<td>200-2000</td>
<td>400-4000</td>
<td>100-1000</td>
<td>200-2000</td>
<td>400-4000</td>
<td>100-1000</td>
<td>200-2000</td>
<td>400-4000</td>
</tr>
<tr>
<td>Power (max) Nm</td>
<td>1000</td>
<td>2000</td>
<td>4000</td>
<td>1000</td>
<td>2000</td>
<td>4000</td>
<td>1000</td>
<td>2000</td>
<td>4000</td>
</tr>
<tr>
<td>Square drive  B</td>
<td>1”</td>
<td>1”</td>
<td>1 1/2”</td>
<td>1”</td>
<td>1”</td>
<td>1 1/2”</td>
<td>1”</td>
<td>1”</td>
<td>1 1/2”</td>
</tr>
<tr>
<td>Diameter (approx.) D1 mm</td>
<td>54</td>
<td>54</td>
<td>72</td>
<td>54</td>
<td>54</td>
<td>72</td>
<td>54</td>
<td>54</td>
<td>72</td>
</tr>
<tr>
<td>Diameter (approx.) D2 mm</td>
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<td>98</td>
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<td>88</td>
<td>98</td>
<td>88</td>
<td>88</td>
<td>98</td>
</tr>
<tr>
<td>Length (approx.) L mm</td>
<td>220</td>
<td>295</td>
<td>320</td>
<td>360</td>
<td>390</td>
<td>410</td>
<td>370</td>
<td>405</td>
<td>425</td>
</tr>
<tr>
<td>Weight without DMA approx. Kg</td>
<td>6,4</td>
<td>7,6</td>
<td>11,35</td>
<td>10</td>
<td>11,25</td>
<td>15</td>
<td>8,7</td>
<td>10</td>
<td>13,5</td>
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<tr>
<td>Idle speed gear I r/min</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>5</td>
<td>3,5</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Idle speed gear II r/min</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18</td>
<td>6,5</td>
<td>4</td>
</tr>
</tbody>
</table>

Operation panel/sensoric: Measurement accuracy: +/- 1% / Temperature range: 0 to +50°C

#### Overview of the programs 1 to 5 (Programs for HSD: 1-4, for CLSD / EASD: 1 and 5, only)

1. **Tightening with specified torque**
   - Torque controlled bolting, bolt connections with target values and tolerance levels.

2. **Tightening with torque/angle procedure**
   - Pre-torque and angle can be preset.
   - Tolerance specification for the final torque (control of bolting quality).
   - Storage of actual torque and angle.

3. **Checking of torque**
   - Monitoring of already tightened bolt connections.

4. **Determination of already loosened torque values.**
   - Repeatable testing method with specified angle.
   - CCW: Determination of the starting torque.

5. **Determination of required angle**
   - For testing and development purposes. Pre-torque and target resp. final torque are specified.
   - Measurement and storage of the reached angle.

6. **Display actual torque only with models EASD and CLSD**
   - Display and recording of the actual torque.

#### Operating range HSD / CLSD / EASD with OLED graphic display

Example for menu-guided operation (HSD)

<table>
<thead>
<tr>
<th>15:10</th>
<th>&gt; Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15:10</th>
<th>&gt; nominal torque torque min</th>
<th>torque max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15:10</th>
<th>&gt; actual torque basic settings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Examples Display image in mode “Program 1”

Select units (Nm/ft.lb) and language (German, English) during setting (image 2). Image 3 shows setting of bolting parameters. Image 4 shows the amount of boltings. Alarms and other notifications made by visual and acoustic signals.

#### Diagram for program 2 and 4

Information on rotational angle setting for torque/angle procedure

- pre-torque and angle of rotation are specified constructively for the bolting connection.
- The angle of rotation can be determined individually and easily with the alkitronic® HSD.
YOUR PLUS FOR MORE PERFORMANCE

**Increased quality**
- Premium production
- Highest quality materials
- Long product life cycles
- 30 years experience in bolting technology
- Made in Germany – international patents

**Increased precision**
- Precise, customer-specific torques
- High repeatability
- Reliability in permanent operation
- Dokumentation of tightening results
- Automatic shut-off

**Increased productivity**
- Quicker tightening without reworking
- No environmentally caused failures (IP54, ATEX)
- High work safety
- Easy to use: clear, simple instructions
- Low maintenance and cost efficient

**Better service**
- Technical advice on site
- Training offers
- Manufacturer’s calibration and certification
- Lifecycle support
- Spare part and repair service

alki TECHNIK GmbH
Development, Production and Distribution of Bolting Systems
Unterlettenweg 4 – 85051 Ingolstadt/Germany – fon +49 841 97499-0 – fax +49 841 97499-90
info@alkitronic.com – www.alkitronic.com

EXTRACT FROM OUR PRODUCT RANGE