The TSTM-DC is an advanced motorized torque test stand, designed for a wide variety of applications requiring up to 100 lbFin (11.5 Nm) of torque, including closure torque testing, fastener torque testing, and more. A 200 lbFin (22 Nm) capacity upgrade is available as an option. The stand includes a torque loading plate with tapped holes for grip and fixture mounting. Stepper motor design eliminates speed variation with load. A lever-operated slider with travel stops makes engaging and disengaging samples quick and efficient. A modular mechanical design allows the stand to be configured for a variety of applications.

The TSTM-DC’s controller adds a significant amount of sophistication, including integrated angle display and output, programmable angle travel limits, an extended speed range, PC control capability, programmable cycling, auto return, overload protection, password protection, and other features.

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum torque</strong></td>
<td>Standard: 100 lbFin (11.5 Nm)</td>
</tr>
<tr>
<td></td>
<td>Optional: 200 lbFin (22 Nm)</td>
</tr>
<tr>
<td><strong>Speed range</strong></td>
<td>Standard: 0.01 - 15 RPM (0.05 - 90°/s)</td>
</tr>
<tr>
<td></td>
<td>Optional: 0.04 - 60 RPM (0.2 - 360°/s)</td>
</tr>
<tr>
<td><strong>Speed accuracy</strong></td>
<td>±0.2% of setting, ±0% variation with load</td>
</tr>
<tr>
<td><strong>Maximum programmable travel limits</strong></td>
<td>±999,999.9° / ±2,777.77 revolutions</td>
</tr>
<tr>
<td><strong>Rotational travel accuracy</strong></td>
<td>±0.7° / 0.02 rev.</td>
</tr>
<tr>
<td><strong>Rotational travel repeatability</strong></td>
<td>0.1° / 0.01 rev.</td>
</tr>
<tr>
<td><strong>Rotational travel resolution</strong></td>
<td>0.1° / 0.01 rev.</td>
</tr>
<tr>
<td><strong>Universal power supply</strong></td>
<td>80-250 VAC</td>
</tr>
<tr>
<td><strong>Slider travel rate</strong></td>
<td>1.047” [26.6 mm] / lever revolution</td>
</tr>
</tbody>
</table>

* Specifications subject to change without prior notice.

### Features

- Mounting holes for bench mounting
- Base may be removed for alternative mounting
- Grip / fixture mounting plate with 25 #10-32 threaded holes
- Integrated angle indication with programmable travel limits

### Optional Hardware

- Upgrade to 200 lbFin (22 Nm) capacity
- Upgrade to 60 RPM maximum speed

- Series R50 torque sensors
  Mount directly to the test stand. Capacities available from 10 ozFin to 100 lbFin (7 to 1,150 Ncm).

- Model MR55-200 torque sensor
  200 lbFin (22 Nm) capacity. Requires optional mounting adapter.

- Force/torque indicator
  Displays the torque value. Several models are available. All mount directly to the test stand.

- Communication cables and USB converter
Controller Features

- **Computer Control**
  An RS-232 port is provided to interface with a PC. A command set is provided to allow full control from a PC. The following are required with PC control:
  - Model 7i or 5i force/torque indicator
  - 09-1162 multi-function cable
  - 09-1056 serial cable

- **Digital Angle Indication**
  Rotational travel is indicated in degrees or revolutions, with output of angle data.

- **Programmable Angle Limits**
  The TSTM-DC can stop at or cycle between programmable upper and lower angle limits. Programmable in degrees or revolutions.

- **Overload Protection**
  Protects the torque sensor against overload (requires a Model 7i or 5i force/torque indicator and 09-1162 multi-function cable). The user programs the desired percentage of full scale of the sensor.

- **Auto-return**
  The torque table rotates to an angle limit or torque set point (requires a Model 7i or 5i force/torque indicator and 09-1162 cable), stops, and reverses direction at full speed to the other angle limit or torque set point.

- **Cycling / Dwell Time**
  Same as auto-return, but with the ability to program up to 100,000 cycles. Programmable dwell time for upper and lower limits (set independently) can be set up for up to 10,000 seconds. Independent CW and CCW speeds may be programmed.

- **Programmable CW / CCW Button Functions**
  Programmable CW and CCW button functions - momentary motion, maintained motion, or auto.

- **Independent CW and CCW Speeds**
  Programmable independent speeds for CW and CCW directions.

- **Selectable Speed Units of Measurement (RPM and deg/s)**

- **Password Protection**
  Prevents unauthorized changes to controller settings.

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### Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSTM-DC</td>
<td>Motorized torque test stand, vertical, 110V</td>
</tr>
<tr>
<td>TSTMH-DC</td>
<td>Motorized torque test stand, horizontal, 110V</td>
</tr>
<tr>
<td>SP-2496*</td>
<td>Upgrade to 200 lb-fin capacity</td>
</tr>
<tr>
<td>SP-2624*</td>
<td>Upgrade speed range to 60 RPM max</td>
</tr>
<tr>
<td>09-1162</td>
<td>Multi-function cable, indicator to controller</td>
</tr>
<tr>
<td>09-1056</td>
<td>Serial cable, controller to PC</td>
</tr>
<tr>
<td>RSU100</td>
<td>Converter, RS-232 to USB</td>
</tr>
<tr>
<td>AC1016</td>
<td>Mounting adapter, MR55-200 to test stand</td>
</tr>
<tr>
<td>---</td>
<td>Column extensions</td>
</tr>
</tbody>
</table>

* These two upgrades cannot be ordered simultaneously

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### In The Box

The TSTM-DC and TSTMH-DC test stands are shipped as shown above, and include the following accessories:

1. DC controller
2. Controller connection cable
3. Indicator mounting kit
4. Encoder cable
5. Column cap with hardware
6. Allen wrench set
7. Thumb screw for mounting indicator
8. Power cord
9. Resource CD
10. Base with hardware (TSTM-DC)
11. Mounting leg with hardware (TSTMH-DC)
12. Additional column cap with hardware (TSTMH-DC)
13. Power cord
14. Resource CD
Dimensions

in [mm]

TSTM-DC

OPTIONAL SERIES R50 TORQUE SENSOR

#10-32 UNF-2B X 0.50 X 16

Ø0.188 [4.78] X 0.35 DEEP PILOT HOLE

0.50 [12.7] TYP

Ø3.00 [76.2] TYP

TORQUE PLATE
top view

TSTMH-DC

#10-32 UNF-2B X 0.50 X 16

Ø0.188 [4.78] X 0.35 DEEP PILOT HOLE

0.50 [12.7] TYP

Ø3.00 [76.2] TYP

OPTIONAL SERIES R50 TORQUE SENSOR

MARK-10

Mark-10 Corporation  www.mark-10.com  info@mark-10.com
Toll-free: 888-MARK-TEN  Tel: 631-842-9200  Fax: 631-842-9201

3 YEAR WARRANTY

Specifications subject to change without prior notice