

Series TSTM-DC advanced motorized torque test stands are designed for a wide variety of applications, including closure torque testing, fastener torque testing, and more. Two torque capacities are available, 100 lbFin (11.5 Nm) and 200 lbFin (22 Nm).

The stands include 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 controller features an integrated angle display and output, programmable angle travel limits, PC control capability, programmable cycling, auto return, overload protection, password protection, and more.

## Features

- **Configurable clockwise and counter-clockwise speeds, RPM or °/s**

- **Digital angle indicator**

Rotational travel is indicated in degrees or revolutions, with RS-232 output of angle data.

- **Angle limits**

Stop at or cycle between configurable upper and lower angle limits, in degrees or revolutions.

- **Angle dial with 2° resolution**

- **Auto-return**

The torque table rotates to an angle limit or torque limit (requires a Model M71 or M51 indicator and AC1108 multi-function cable), stops, and reverses direction at full speed to the other angle limit or torque set limit.

- **Cycling**

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

- **Configurable button functions**

CW and CCW button presses can produce one of the following motions: (1) momentary (button-hold), (2) maintained (button release), or (3) automatic (press and hold for momentary, or quick press and release for maintained motion).

- **Overload protection**

Protects the torque sensor against overload (requires a Model M71 or M51 indicator and AC1108 multi-function cable).

- **PC control**

Control the test stand with your own application using a supplied library of motion control and data collection serial commands

Note the following co-requirements:

- Model M71 or M51 indicator
- AC1108 multi-function cable
- AC1104 serial cable

- **Password protection**

Prevents unauthorized changes to controller settings.



▲ Rotating torque plate includes a matrix of tapped holes for grip or fixture mounting



▲ Model TSTM-DC is shown in a cap torque test, with a Series R50 torque sensor, M51 force/torque indicator, G1023 universal closure grip, and G1053 cap grip



▲ Model TSTMH-DC is shown in a torsion spring test, with a Series R50 torque sensor and M51 force/torque indicator

## Optional Equipment



### Series R50 universal 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. Mounts to the test stand with AC1016 adapter.



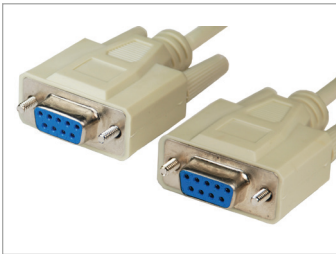
### Mounting Kit (AC1016)

MR55-200 to torque test stand



### Torque indicators

Displays the torque value measured by a torque sensor. Model M51 or M71 is recommended.



### Serial cable, controller to PC (AC1104)

For communicating with a PC for data output and PC control.



### Multi-function cable, indicator to controller (AC1108)

Connects an indicator to the controller. This single cable is used to transmit set points, overload signals, and torque data.



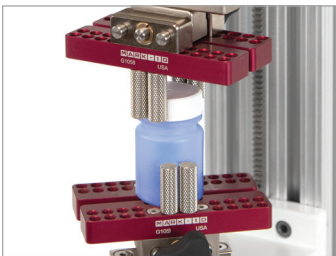
### RS-232 to USB adapter (RSU100)

Converts RS-232 to USB output.



### Horizontal / wall mounting kit (TSF002)

Pair of mounting legs for adapting the test stand to a bench, instead of the base.



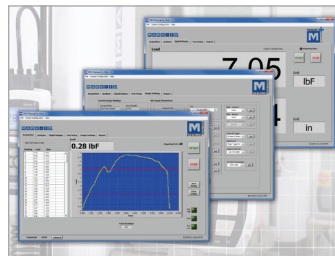
### Grips and attachments

For a variety of applications.



### Axial compensator (AC1029)

Allows for axial movement in threaded fasteners, bottle caps, and similar torque testing applications.



### MESUR<sup>®</sup> gauge software (15-1004)

Tabulates and plots torque vs. time or torque vs. angle. Also calculates statistics, exports to Excel, and more.

## Specifications

| All models                              |   |
|---|---|
| <b>Speed accuracy:</b>                  | ±0.2% of setting, ±0% variation with load |
| <b>Rotational travel accuracy:</b>      | ±0.7° [0.002 rev.]                        |
| <b>Rotational travel resolution:</b>    | 0.1° [0.01 rev.]                          |
| <b>Rotational travel repeatability:</b> | 0.1° [0.0003 revolutions]                 |
| <b>Throat:</b>                          | 4.10" [104 mm]                            |
| <b>Manual adjustment:</b>               | 12° / adjustment knob revolution          |
| <b>Maximum slider travel:</b>           | 15.5" [394 mm]                            |
| <b>Slider travel rate:</b>              | 1.047" [26.6 mm] / lever revolution       |
| <b>Universal power supply:</b>          | 80-250 VAC                                |

| Model               | Maximum torque  | Speed range                     |
|---------------------|---|---------------------------------|
| <b>TSTM(H)-DC</b>   | 100 lbFin [11.5 Nm]   | 0.01 – 15 RPM<br>[0.05 – 90°/s] |
| <b>TSTM(H)-DC-1</b> | 200 lbFin [22.0 Nm] at 75 RPM,<br>decreasing proportionally to 100<br>lbFin at 15 RPM | 0.01 – 15 RPM<br>[0.05 – 90°/s] |
| <b>TSTM(H)-DC-2</b> | 25 lbFin [2.8 Nm]   | 0.04 – 60 RPM<br>[0.2 – 360°/s] |

## In The Box



The test stands are shipped as shown above, and include the following accessories:

- (1) Controller
- (1) Controller connection cable
- (1) Indicator mounting kit
- (1) Encoder cable
- (1) Column cap with hardware
- (1) Allen wrench set
- (4) Thumb screw for mounting indicator
- (1) Base with hardware (vertical models)
- (2) Mounting leg with hardware (horizontal models)
- (1) Additional column cap with hardware (horizontal models)
- (1) Power cord

## Ordering Information

| Model                        | Description  |
|------------------------------|--|
| <b>TSTM-DC</b>               | Torque stand, motorized, vertical, 110 V*                          |
| <b>TSTMH-DC</b>              | Torque stand, motorized, horizontal, 110V*                         |
| <b>TSTM-DC-1</b>             | Torque stand, motorized, vertical, 200 lbFin, 110V *               |
| <b>TSTMH-DC-1</b>            | Torque stand, motorized, horizontal, 200 lbFin, 110V *             |
| <b>TSTM-DC-2</b>             | Torque stand, motorized, vertical, 60 RPM max, 100 lbFin, 110V *   |
| <b>TSTMH-DC-2</b>            | Torque stand, motorized, horizontal, 60 RPM max, 100 lbFin, 110V * |
| Additional items to consider |  |
| <b>AC1108</b>                | Multi-function cable, M7I/M5I indicator to test stand              |
| <b>AC1104</b>                | Serial cable, test stand to PC                                     |
| <b>RSU100</b>                | Communication adapter, RS-232 to USB                               |
| <b>TSF002</b>                | Horiz. / wall mounting kit   |
| <b>AC1016</b>                | Mounting adapter, MR55-200 to test stand                           |
| <b>SP-2736-12</b>            | Column extension, 12 in. / 305 mm                                  |
| <b>SP-2736-24</b>            | Column extension, 24 in. / 610 mm                                  |
| <b>SP-2736-42</b>            | Column extension, 42 in. / 1065 mm                                 |
| <b>SP-2496</b>               | Upgrade to 200 lbFin, factory retrofit                             |
| <b>SP-2624</b>               | Upgrade to 60 RPM, factory retrofit                                |

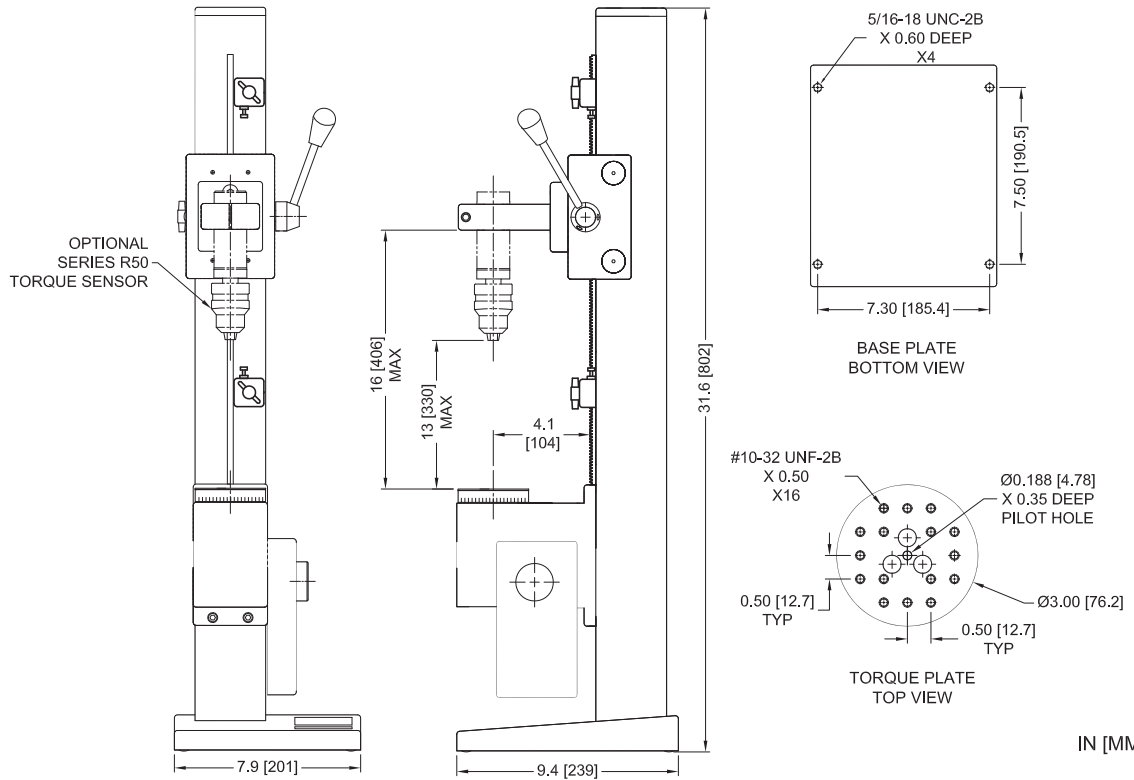
## Alternative Power Cords

TSTM-DC contains a universal power supply (80 - 240V) and power cord with US prong style. Select alternative power cords from the table below.

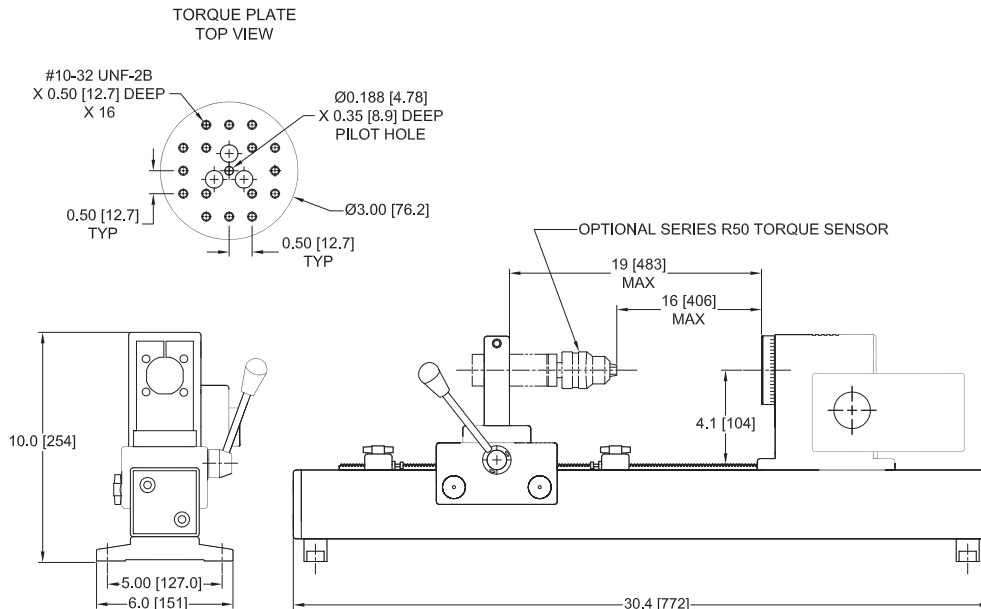
| Model         | Description      |
|---------------|------------------|
| <b>AC1139</b> | Power cable, EUR |
| <b>AC1140</b> | Power cable, UK  |
| <b>AC1141</b> | Power cable, AUS |

## Dimensions in [mm]

### TSTM-DC



### TSTMH-DC



### CONTROLLER

