Data Sheet

Torque Test Stands **Series TSTM-DC**

32-1100 REV 0821

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).

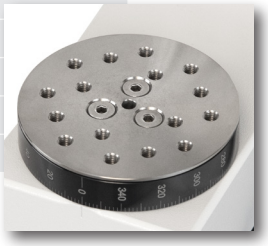
The stands include a torque loading plate with tapped holes for grip and fixture mounting. Stepper motor design eliminates speed variation with load. A lever-operated slider with travel stops makes engaging and disengaging samples quick and efficient. A modular mechanical design allows the stand to be 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.

Specifications

Maximum torque:	TSTM-DC / TSTMH-DC: 100 lbFin [11.5 Nm] TSTM-DC-1 / TSTMH-DC-1: 200 lbFin [22.0 Nm]
Speed range:	TSTM-DC / TSTMH-DC: 0.01 - 15 RPM [0.05 - 90°/s] TSTM-DC-2 / TSTMH-DC-2: 0.04 - 60 RPM [0.2 - 360°/s] *
Speed accuracy:	±0.2% of setting, ±0% variation with load
Maximum programmable travel limits:	±999,999.9° / ±2,777.77 revolutions
Rotational travel accuracy:	±0.7° [0.002 rev.]
Rotational travel repeatability:	0.1° [0.0003 revolutions]
Rotational travel resolution:	0.1° [0.01 rev.]
Universal power supply:	80-250 VAC
Slider travel rate:	1.047" [26.6 mm] / lever revolution

* Maximum torque decreases proportionately with speed, as follows:
- Maximum torque at 30 RPM = 50 lbFin [5.6 Nm]
- Maximum torque at 60 RPM = 25 lbFin [2.8 Nm]



^ 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, M5i force/torque indicator, G1023 universal closure grip, and G1053 cap grip

Features

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

Optional Hardware

- **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**

^ Model TSTMH-DC is shown in a torsion spring test, with a Series R50 torque sensor and M5i force/torque indicator

MARK-10

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3 YEAR WARRANTY

Specifications subject to change without prior notice

Controller Features

Computer Control
An RS-232 port is provided to interface with a PC. A command set is provided to allow for full control from a PC. The following are required with PC control:
- Model M7i or M5i 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
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 M7i or M5i 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 M7i or M5i 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.

Ordering Information

Model No.	Description
TSTM-DC	Motorized torque test stand, vertical, 100 lbFin, 110V *
TSTMH-DC	Motorized torque test stand, horizontal, 100 lbFin, 110V *
TSTM-DC-1	Torque stand, motorized, vertical, 200 lbFin, 110V *
TSTMH-DC-1	Torque stand, motorized, horizontal, 200 lbFin, 110V *
TSTM-DC-2	Torque stand, motorized, vertical, 60 RPM max, 100 lbFin, 110V *
TSTMH-DC-2	Torque stand, motorized, horizontal, 60 RPM max, 100 lbFin, 110V *
09-1162	Multi-function cable, indicator to controller
09-1056	Serial cable, controller to PC
RSU100	Converter, RS-232 to USB
AC1016	Mounting adapter, MR55-200 to test stand
---	Column extensions
SP-2496	Upgrade to 200 lbFin, factory retrofit
SP-2624	Upgrade to 60 RPM, factory retrofit
SP-2736-12	Column extension, 12 in. / 305 mm
SP-2736-24	Column extension, 24 in. / 610 mm
SP-2736-42	Column extension, 42 in. / 1065 mm

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

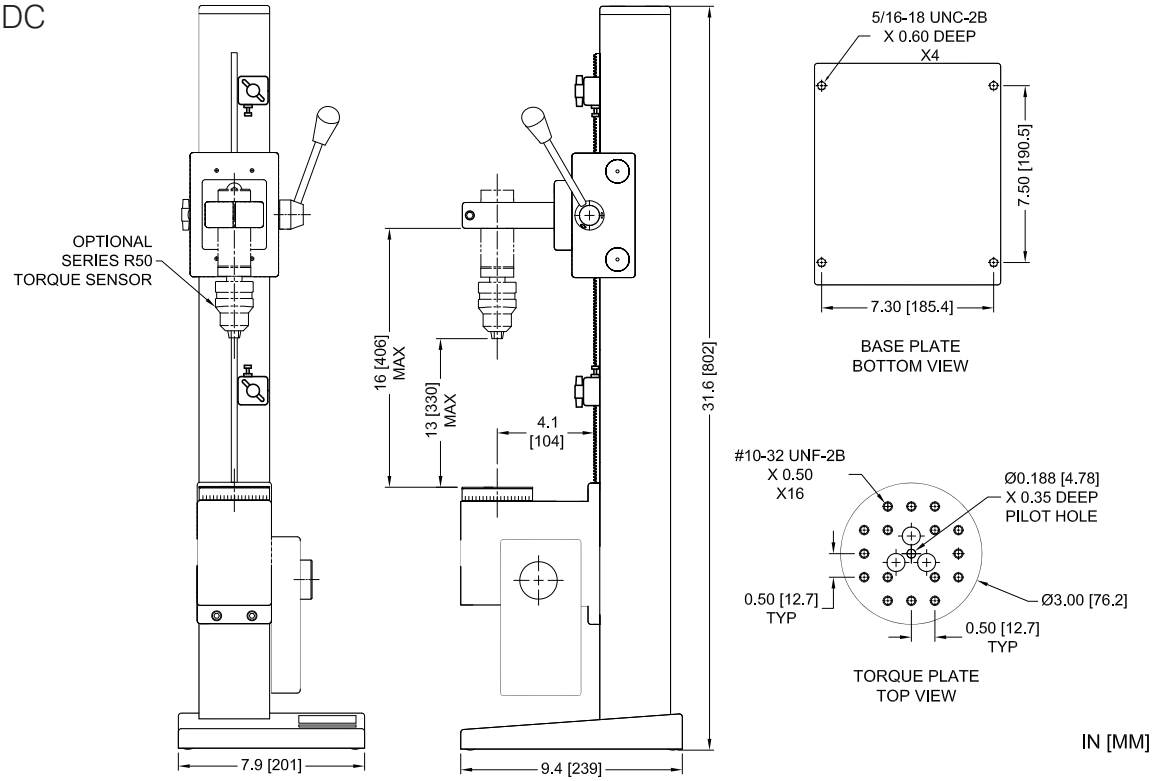
* Contains a universal power supply (80 - 240V) and includes a 110V US power cord. Add suffix 'E' for Euro cord, 'U' for UK cord, or 'A' for Australian cord.
Ex: TSTM-DCE, TSTM-DC-1U, TSTMH-DC-2A

Power cords also available for purchase individually.

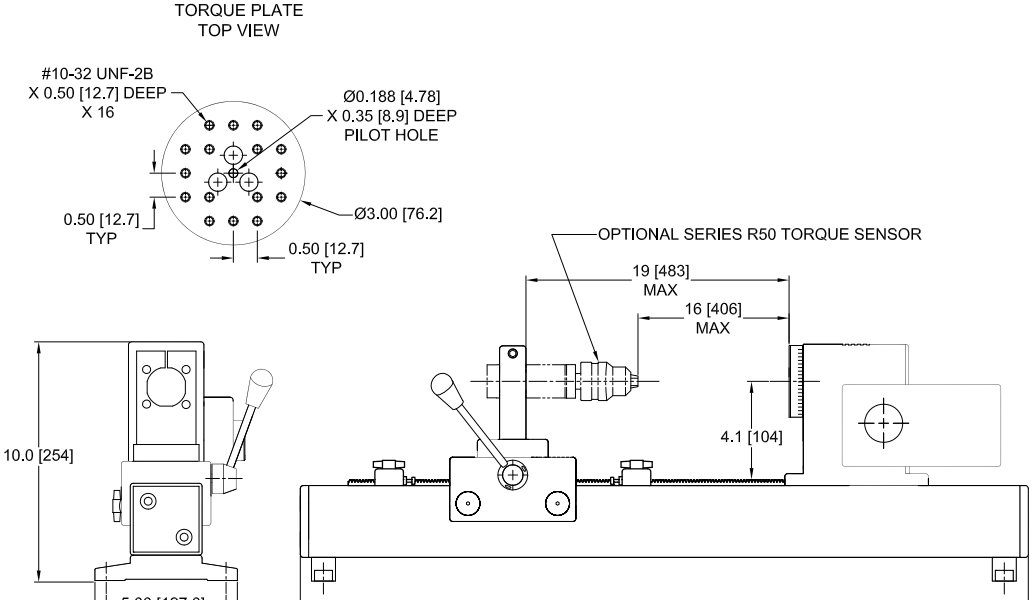
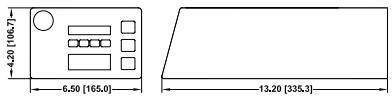
Dimensions

in [mm]

TSTM-DC



TSTMH-DC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