

The TSFM500-DC is an advanced motorized test stand offering all the mechanical specifications of the TSFM500. The test stand is designed for compression and tension testing of springs, packaging, metals, fabrics, and other items requiring up to 500 lbF of force. Generous clearance and throat depth accommodate a broad range of sample shapes and sizes. The TSFM500-DC's durable and rigid column minimizes bend, making it particularly well suited for precision spring testing. Other features include a manual fine adjustment knob and a stepper motor that prevents speed variation with load, making testing precise and repeatable.

The TSFM500-DC's controller adds a significant amount of sophistication, including an extended speed range, PC control capability, programmable cycling, auto return, overload protection, and other features.

Features / Specifications

Maximum force: 500 lb [2200 N]
Maximum travel: 4" [102 mm]
Speed range: 0.01 - 6 in/min [0.2 - 150 mm/min]
Speed accuracy: $\pm 0.2\%$ of setting, $\pm 0\%$ variation with load
Limit switch repeatability: $\pm 0.001"$ [0.03 mm]
Universal power supply: 80-250 VAC
Remote controller
Mounting holes for bench mounting
Base may be removed for alternative mounting
Removable loading plate with 25 #10-32 threaded holes for fixture mounting
CE mark

» Digital travel display



» Limit switch kit



The TSFM500-DC is shown in a typical spring testing application, with Series CG digital force gauge and compression plate.

Optional Hardware Features

■ Digital travel display

6" [150 mm] travel, 0.0005" [0.01 mm] resolution, 0.001" [0.03 mm] accuracy, SPC output for automated data collection. For output of travel data to a PC, the following items are required: 09-1066 cable and MRS100A communication adapter.

■ Multi-function cable, BG gauge to controller

Connects a Series BG force gauge to the controller. This single cable is used to transmit set points, overload signals, and force data.

■ Serial cable, controller to PC

Bi-directional communication with a PC for computer control. Also sends force data from the controller to a PC.

■ Serial cable, gauge to PC

Connects a Series BG force gauge with a PC. Bypasses the controller.



The TSFM500H-DC is shown set up for a tensile test, with Series CG digital force gauge and wedge grips.

Controller Features

Computer Control

An RS-232 port is provided to interface with a PC. The TSFM500-DC accepts a number of commands pertaining to test stand motion and force gauge functions*. The following additional items are required for PC control:

- Series BG or CG force gauge
- 09-1056 serial cable (see Optional Equipment)
- 09-1143 multi-function cable (see Optional Equipment)

Overload Protection

Protects a force gauge against overload (requires a Series BG or CG force gauge and 09-1143 multi-function cable). The user programs the desired percentage of full scale of the gauge. Adjustable analog output voltage setting allows the test stand to interface with virtually any force gauge with analog output.

Auto-return

The crosshead moves to a limit switch or force set point (requires a Series BG or CG force gauge), stops, and reverses direction at maximum speed to the other limit switch or set point.

Cycling / Dwell Time

The crosshead moves up and down between limit switches or force set points (requires a Series BG or CG force gauge). Configurable up to 99,999 cycles. Dwell time allows the operator to program the amount of time, up to 9,999.9 seconds, in 0.1 second intervals, for which the crosshead pauses at limits.

Programmable UP / DOWN Button Functions

UP and DOWN button operation can be configured in three user-configurable modes: Maintained: a short push produces continuous motion until STOP is pressed, Momentary: crosshead moves only while the button is pressed, and Auto: short push produces maintained motion, while holding down the button will produce momentary motion.

Independent Up and Down Speeds

Programmable independent speeds for up and down directions

Selectable Speed Units of Measurement (in/min & mm/min)

Password Protection

Prevents unauthorized changes to test parameters

* Contains no integrated travel measurement. Travel information available only through the external TSF001 digital travel display, requiring an additional serial port on the PC. For an integrated solution with full PC control, including travel distance, see test stand model ESM301.

Ordering Information

Model No.	Description
TSFM500-DC*	Motorized test stand, vertical
TSFM500H-DC*	Motorized test stand, horizontal
TSF001	Digital travel display
TSFM002	Limit switch kit
09-1143	Multi-function cable, gauge to controller
09-1056	Serial cable, controller to PC
09-1048A	Serial cable, force gauge to PC
09-1066	Cable, travel display Mitutoyo
MRS100A	Communication adapter, Mitutoyo to RS-232
---	Column extensions

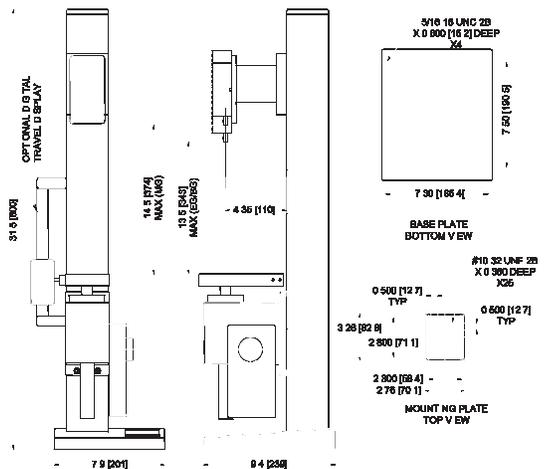
* For 220V operation add suffix E to model number. Ex: TSFM500-DCE

The TSFM500-DC / TSFM500H-DC is supplied with four hooks (small, medium, large, and extra large), 1/2-20F adapter plate, 2" and 3" compression plates, two couplers (#10-32 coupler and 5/16-18), and wrench set.

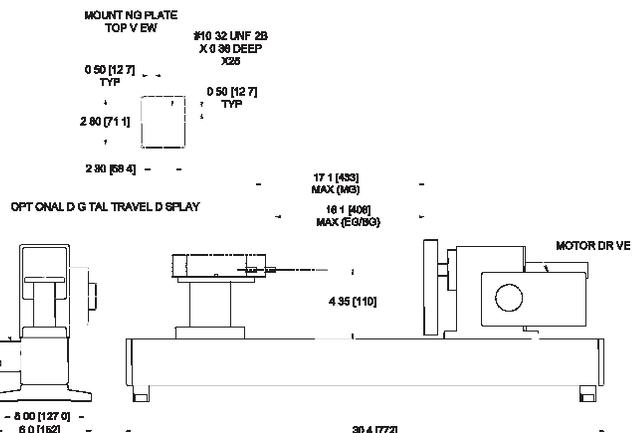
Dimensions

in [mm]

TSFM500-DC



TSFM500H-DC



CONTROLLER

