

The TSFM500-DC is an advanced motorized test stand, featuring a capacity of 500 lbF (2,200 N). The stand is designed for compression and tension testing of springs, packaging, metals, fabrics, and other items. Generous clearance and throat depth accommodate a broad range of sample shapes and sizes.

The TSFM500-DC's durable and rigid column minimizes bending, making it particularly well suited for spring, tensile, and compression testing. Other features include a manual fine adjustment knob and a stepper motor that prevents speed variation with load, making testing precise and repeatable. Adjustable upper and lower travel limit switches are provided. 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.

## Specifications

|                                    |   |
|------------------------------------|---|
| <b>Load Capacity:</b>              | 500 lbF [2,200 N]   |
| <b>Maximum Travel:</b>             | 4.0 in [102 mm]   |
| <b>Speed range:</b>                | 0.01 - 6 in/min [0.2 - 150 mm/min]  |
| <b>Speed setting accuracy:</b>     | ±0.2% of setting, ±0% variation with load   |
| <b>Limit switch repeatability:</b> | ±0.001" [0.03 mm]   |
| <b>Power:</b>                      | 80-250 VAC  |
| <b>Weight:</b>                     | TSFM500: 36 lb [16.3 kg], TSFM500H: 30 lb [13.6 kg]<br>Controller unit: 10.25 lb [1.2 kg] |

## Features

- 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

## Optional Items

- **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, gauge to controller**  
Connects a Series 7, 5, or 4 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.



The TSFM500-DC is shown in a typical spring testing application, with Model M5-1000 digital force gauge and compression plate.



^ Included set of adjustable limit switches



The TSFM500H-DC is shown configured for a tensile test, with Model M5-1000 digital force gauge and wedge grips.



^ Optional digital travel display



## 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 7 or 5 force gauge
- 09-1056 serial cable (see Optional Equipment)
- 09-1162 multi-function cable (see Optional Equipment)

### Overload Protection

Protects a force gauge against overload (requires a Series 7, 5, or 4 force gauge and 09-1162 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 7, 5, or 4 force gauge and 09-1162 cable), 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 7, 5, or 4 force gauge and 09-1162 cable). 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

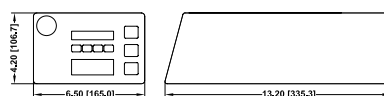
### Selectable Speed Units of Measurement (in/min & mm/min)

### 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 models ESM301 or ESM1500.

### CONTROLLER



## Ordering Information

| Model No.    | Description                               |
|--------------|---|
| TSFM500-DC*  | Motorized test stand, vertical            |
| TSFM500H-DC* | Motorized test stand, horizontal          |
| TSF001       | Digital travel display                    |
| 09-1162      | Multi-function cable, gauge to controller |
| 09-1056      | Serial cable, controller to PC            |
| 09-1066      | Cable, travel display Mitutoyo            |
| MRS100A      | Communication adapter, Mitutoyo to RS-232 |
| ---          | Column extensions                         |

\* The TSFM500-DC contains a universal power supply (80 - 240V) and includes a power cord with US plug. Add suffix 'E' for Euro plug, 'U' for UK plug, or 'A' for Australian plug.

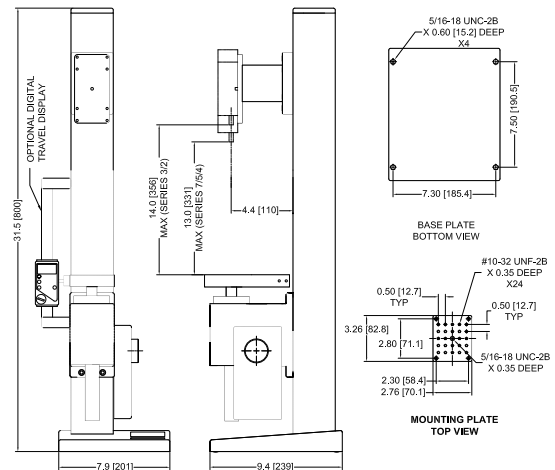
Ex:TSFM500-DCE, TSFM500-DCU, TSFM500-DCA

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

