The ESMH-DC is an advanced motorized test stand offering all the mechanical specifications of the ESMH. This horizontal test stand, with a capacity of 100 lbF (500 N), is designed for tension, compression, and friction testing. A smooth top surface makes this tester particularly well suited for coefficient of friction testing. Other typical applications include the testing of sealed pouches, fabrics, tubing, sutures, and many other items in virtually every industry. The tester features integrated limit switches for repetitive testing or other tests where travel limits are required. Modular design accommodates a wide variety of test sample shapes and sizes.

The ESMH-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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Capacity:</td>
<td>100 lbF [500 N]</td>
</tr>
<tr>
<td>Maximum Travel:</td>
<td>13” [330 mm], 12” [305 mm] w/optional travel display</td>
</tr>
<tr>
<td>Speed range:</td>
<td>0.2 - 50 in/min [5 - 1270 mm/min]</td>
</tr>
<tr>
<td>Speed setting accuracy:</td>
<td>±0.2% of setting, ±0% variation with load</td>
</tr>
<tr>
<td>Limit switch repeatability:</td>
<td>±0.001” [0.03 mm]</td>
</tr>
<tr>
<td>Power:</td>
<td>80-250 VAC</td>
</tr>
<tr>
<td>Weight:</td>
<td>Test stand: 17 lb [7.7 kg], Control unit: 2.7 lb [1.2 kg]</td>
</tr>
</tbody>
</table>

## Features

- Remote controller
- Mounting holes for bench mounting
- Adjustable limit switches
- Removable loading plate with 25 #10-32 threaded holes for fixture mounting
- CE mark

## Optional Hardware

- Digital travel display
  12” [300 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, Series 7/5/4 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.
Optional Controller Features

Any of the below option packages may be purchased at time of order or may be added in the field at a later date by entering an activation code.

- **Computer Control**
  An RS-232 port is provided to interface with a PC. The ESMH-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 9,999 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 LEFT / RIGHT Button Functions**
  LEFT and RIGHT 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 Left and Right Speeds**
  Programmable independent speeds for left and right 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 ESMH001 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.

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**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESMH-DC</td>
<td>Motorized test stand, 110 V</td>
</tr>
<tr>
<td>ESMH-DCE</td>
<td>Motorized test stand, 220 V, Euro Plug</td>
</tr>
<tr>
<td>ESMH-DCU</td>
<td>Motorized test stand, 220 V, UK Plug</td>
</tr>
<tr>
<td>ESMH-DCA</td>
<td>Motorized test stand, 220 V, Australian Plug</td>
</tr>
<tr>
<td>ESMH001</td>
<td>Digital travel display</td>
</tr>
<tr>
<td>09-1162</td>
<td>Multi-function cable, Series 7/5/4 gauge to controller</td>
</tr>
<tr>
<td>09-1056</td>
<td>Serial cable, controller to PC</td>
</tr>
<tr>
<td>09-1066</td>
<td>Cable, travel display Mitutoyo</td>
</tr>
<tr>
<td>MR5100A</td>
<td>Communication adapter, Mitutoyo to RS-232</td>
</tr>
</tbody>
</table>

The ESMH-DC is supplied with a small hook, medium hook, 2” diameter compression plate, extension rod, and #10-32 coupler.

**Dimensions**

* Contained [mm]

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**Mark-10 Corporation**

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3 YEAR WARRANTY

Specifications subject to change without prior notice