ESM1500S
1,500 lbF [6.7 kN]
14.2 in [360 mm] travel

ESM1500
1,500 lbF [6.7 kN]
32 in [813 mm] travel

ESM750
750 lbF [3.4 kN]
32 in [813 mm] travel

ESM750S
750 lbF [3.4 kN]
14.2 in [360 mm] travel

ESM1500 and ESM750 single-column force testers are highly configurable solutions for tension and compression measurement applications, with capacities of 1,500 lbF (6.7 kN) and 750 lbF (3.4 kN), respectively. With generous travel and clearance, they are suitable for break testing, cycling, limit testing to a load or distance, loadholding, elongation testing, tensile testing, compression testing, and more.

Satisfy various test methods through configurable parameters, such as speed, number of cycles, etc. Up to 50 profiles may be saved and password protected. Crosshead positioning for sample setup is a breeze with available FollowMe®. Using your hand as your guide, push and pull on the load to move the crosshead at a dynamically variable speed.

The stands feature a unique modular controller function platform. Functions such as travel measurement, cycling, etc. are offered individually, for ultimate flexibility and value.

Collect force and travel data, plot and analyze results, and control test stand motion via MESUR®gauge Plus software. Or, fully control the stand by a PC through a custom application.

Standard Features

- **Broad force range and clearance dimensions**
- **Compatible with load cells and force gauges**
- **USB output of force vs. time or force vs. distance**
- **Adjustable, removal control panel with intuitive menu navigation**
- **Unique modular function platform - select functions as required for the application**
- **Password protection of test parameters**
- **Stepper motor-driven, producing smooth and quiet operation with no speed variation under load**
- **Compact footprint, suitable for crowded workbenches**
- **Most electronics are housed in an integrated removeable enclosure, easily accessed for service**

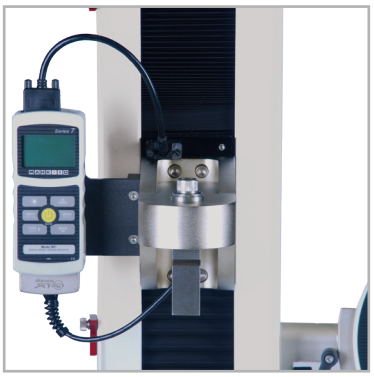
Key Features and Options

FollowMe® dynamic positioning
Using your hand as your guide, push and pull on the load cell or force gauge to move the crosshead. Responsive enough for quick positioning as well as fine adjustments.

Simple controller interface
Rugged aluminum up/down/stop keys are designed for industrial environments. *Zero Travel* and *FollowMe®* keys add convenience. Removable for remote use. See the following page for a full list of available functions.

Limit switches
Adjustable upper and lower solid state limit switches stop test stand travel with 0.001 in. [0.025 mm] repeatability.

Modular design
Most electronics are housed in an integrated enclosure, easily accessible and removable for updating and service.

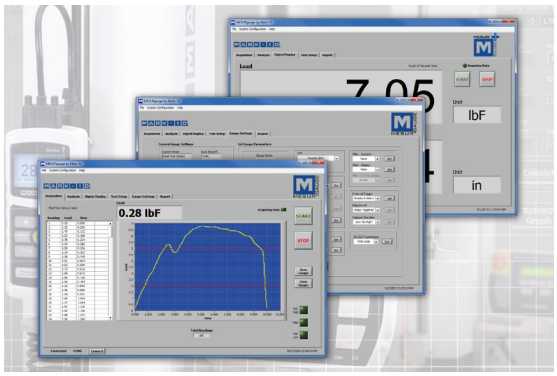


Indicators
Choose from three indicator models. Consider a Model 7i or 5i to take full advantage of all test stand functions.

Series R01 force sensors (load cells)
Rugged S-beam design. Available in capacities from 50 to 2,000 lbF [250 N to 10 kN].

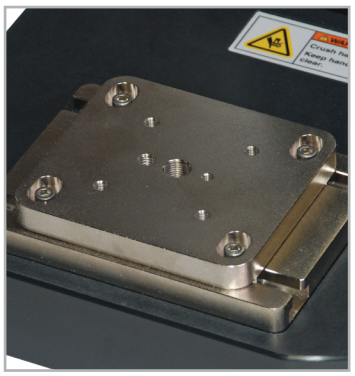
Series R03 force sensors (load cells)
Enclosed design. Available in capacities from 0.25 to 100 lbF [1 to 500 N].

Force gauges[2]
Choose from several gauge series. Consider a Series 7 or 5 gauge to take advantage of all test stand functions.



PC control via MESUR®gauge Plus
Acquire data and control test stand motion simultaneously via MESUR®gauge Plus. The software tabulates and graphs data, calculates statistics, and provides reporting and output tools.

Optional mounting plate, threaded hole matrix
A matrix of #10-32 threaded holes is provided, along with a 1/2-20 center hole.



Optional mounting plate, multiple hole thread sizes
Three thread sizes are provided [#10-32, 5/16-18, and 1/2-20], along with an array of four 1/4-28 holes.

Optional Functions

Any of the below functions may be selected at time of order or activated in the field via an activation code. A complete options package is also available. The stands are supplied in Demo Mode, a 160-hour time period in which all functions are temporarily enabled.

	Part No.	Description	Requirements
FollowMe®	**SF008**	Position the crosshead by manually pushing or pulling on the force gauge shaft or load cell. Increasing force produces greater speeds. Ideal for setups and quick positioning.	- Series 7 or 5 gauge or indicator
Travel indication	**SF009** (ESM1500 / ESM750) **SF009-1** (ESM1500S / ESM750S)	Position is indicated on the control unit display, with output via USB. An internal scale utilizing Renishaw technology produces significantly higher accuracy than with conventional rotary encoder-based designs. Backlash and nonlinearity are virtually eliminated.	-
Computer control	**SF010**	Fully control the stand and force gauge / indicator via custom-written application in any language supporting ASCII communications. Also responds to the legacy Chatillon TCD command set and legacy Nexygen TCD software (not available from Mark-10). This option is not required for MESUR®gauge Plus software.	- Series 7 or 5 gauge or indicator - SF009 travel indication
Travel limits	**SF011**	The stand stops at or cycles between upper and lower travel distances.	- SF009 travel indication
Overload protection	**SF012**	Protects a force gauge or force sensor against overload. Also compatible with many competitors' gauges.	- Series 7 or 5 gauge or indicator
Auto return	**SF013**	The crosshead moves to a limit switch, force set point, travel position, or break, then stops and reverses direction at full speed to the opposite limit.	- To reverse at specified force: Series 7 or 5 gauge or indicator - To reverse at travel limit: SF011 travel limits - To reverse at break: SF019 break detection
Cycling / dwell time	**SF014**	Same as auto-return, but programmable up to 99,999 cycles. Programmable dwell time at upper and lower limits up to 9,999 seconds.	- Same as auto-return, at the same speed in each direction. Add SF016 for independent up and down speeds.
Independent up and down Speeds	**SF016**	Individually specify speeds for the up and down directions.	-
Low speed range extension	**SF017**	Extends the standard speed range down to 0.001 in/min (0.02 mm/min).	-
High speed range extension	**SF018** **SF018-1**	ESM1500 / ESM1500S: Extends the max speed to 90 in (2,300 mm)/min. ESM750 / ESM750S: Extends the max speed to 60 in (1,525 mm)/min.	-
Break detection	**SF019**	Crosshead stops at a programmable drop in force.	- Series 7 or 5 gauge or indicator
Loadholding	**SF020**	Dynamically adjusts the crosshead position to maintain a specified load for an indefinite or specified period of time.	- Series 7 or 5 gauge or indicator - If a specified time is required, order SF014 cycling / dwell time
Preload / sample touch	**SF021**	Stops the crosshead and/or zeroes the travel display at an initial preload - useful in tensile, spring, elongation, and other applications.	- SF009 travel indication - Series 7 or 5 gauge or indicator
Profiles	**SF022**	Save and recall sets of test parameters, such as speeds, travel limits, preload, etc. Maximum of 50 profiles may be stored.	-
Complete options package	**SFCOMP** (ESM1500 / ESM750) **SFCOMP-1** (ESM1500S / ESM750S)	**Includes all funtions listed above.** **Requires a Series 7 or 5 gauge or indicator.**	

Specifications

	ESM1500	ESM1500S	ESM750	ESM750S
Load capacity:	1,500 lbF [6.7 kN] at < 60 in [1,525 mm]/min 1,000 lbF [4.5 kN] at > 60 in [1,525 mm]/min		750 lbF [3.4 kN] at < 35 in [900 mm]/min 500 lbF [2.3 kN] at > 35 in [900 mm]/min	
Maximum travel:	32.0 in [813 mm]	14.2 in [360 mm]	32.0 in [813 mm]	14.2 in [360 mm]
Standard speed range:	0.5 - 24 in/min [10 - 600 mm/min]			
Optional speed range:	0.001 - 90 in/min [0.02 - 2,300 mm/min]		0.001 - 60 in/min [0.02 - 1,525 mm/min]	
Speed setting accuracy:	±0.2%			
Speed variation with load:	±0% [Stepper motor driven]			
Travel accuracy:	±0.002 in. per 10 in. [±0.05 mm per 250 mm]			
Travel resolution:	0.001 in [0.02 mm]			
Limit switch repeatability:	±0.001 in [0.03 mm]			
Power:	Universal input 80-240 VAC, 50/60 Hz, 450 W		Universal input 80-240 VAC, 50/60 Hz, 120 W	
Weight (test stand only):	198 lb [90 kg]	160 lb [72 kg]	185 lb [84 kg]	150 lb [68 kg]
Shipping weight:	248 lb [113 kg]	206 lb [93 kg]	236 lb [107 kg]	196 lb [88 kg]
Warranty:	3 years [see individual statement for further details]			
Conformance:	CE			

* Because load cell deflection and system deflection are present and not automatically compensated for, this equipment is recommended for applications requiring at least 0.2 in [5 mm] of travel distance.

In The Box **(ESM1500LC shown at right)**

(1) AC1047-2 eye end kit
(2) G1088 spanner wrench
(1) Load cell / indicator mounting kit (-LC test stands)
(1) Force gauge mounting kit (-FG test stands)
(1) USB cable
(1) Interface cable, gauge/indicator to test stand
(4) Thumb screw for indicator / force gauge
(1) Allen wrench set
(1) Control panel
(1) Control panel mounting bracket with hardware
(1) Power cord

Ordering Information

Test Stands	
ESM1500LC	Motorized test stand with force sensor / load cell mount, 1,500 lbF, 110V[1]
ESM1500FG[2]	Motorized test stand with force gauge mount, 1,500 lbF, 110V[1]
ESM1500SLC	Motorized test stand with force sensor / load cell mount, 1,500 lbF, 110V[1]
ESM1500SFG[2]	Motorized test stand with force gauge mount, 1,500 lbF, 110V[1]
ESM750LC	Motorized test stand with force sensor / load cell mount, 750 lbF, 110V[1]
ESM750FG[2]	Motorized test stand with force gauge mount, 750 lbF, 110V[1]
ESM750SLC	Motorized test stand with force sensor / load cell mount, 750 lbF, 110V[1]
ESM750SFG[2]	Motorized test stand with force gauge mount, 750 lbF, 110V[1]
Hardware Options	
AC1054	Base plate, multiple center hole threads
AC1055	Base plate, matrix of threaded holes
Optional Functions	
SF008	FollowMe® force-based manual positioning
SF009	Travel indication, with USB output, ESM1500 / ESM750
SF009-1	Travel indication, with USB output, ESM1500S / ESM750S
SF010	Computer control, via USB
SF011	Programmable travel limits
SF012	Integrated overload protection
SF013	Auto return
SF014	Cycling / dwell time
SF016	Independent up and down speeds
SF017	Extended speed range, low
SF018	Extended speed range, high, ESM1500 / ESM1500S
SF018-1	Extended speed range, high, ESM750 / ESM750S
SF019	Break detection
SF020	Loadholding
SF021	Preload / sample touch
SF022	Profiles
SFCOMP	Complete options package, ESM1500 / ESM750
SFCOMP-1	Complete options package, ESM1500S / ESM750S

Notes:

1. Contains a universal power supply (80 - 240V) and power cord with US plug.
Add suffix 'E' for Euro plug, 'U' for UK plug, or 'A' for Australian plug. Ex: ESM1500LCE

Power cords also available for purchase individually.

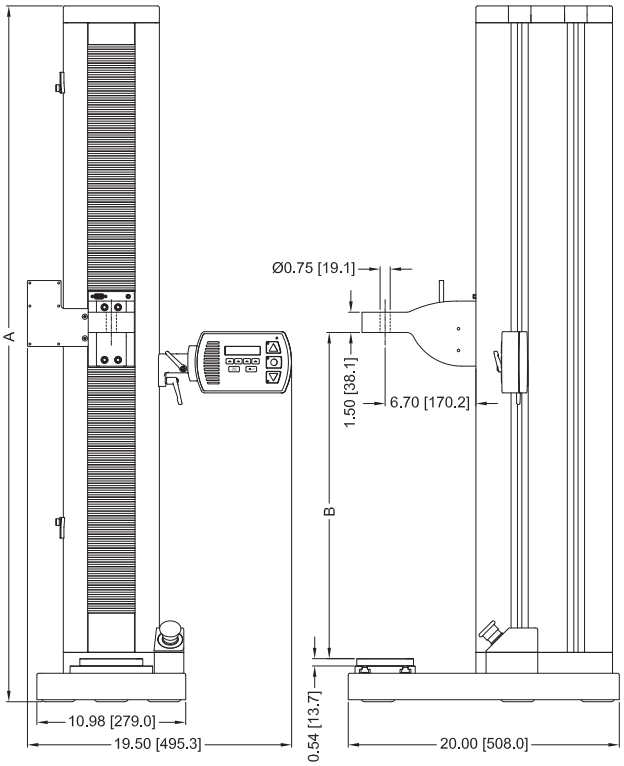
2. At 500 lbF (2,500 N) or more, force gauges are not recommended for applications involving sudden, sharp breaks. Examples include compression of brittle materials, pull testing of welds, etc. Consider an -LC test stand with indicator and load cell.

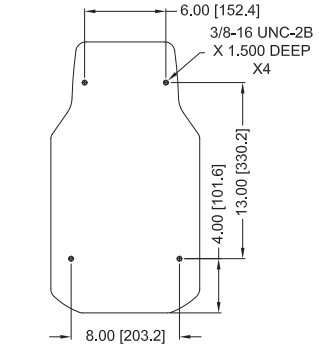
Dimensions in (mm)

LC models

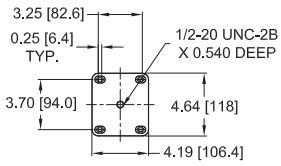
For use with an indicator and load cell.

	A	B
ESM1500LC	51.35 [1304.3]	8.13 - 40.13 [206.4 - 1019.2]
ESM1500SLC	33.89 [860.9]	8.13 - 22.33 [206.4 - 567.1]
ESM750LC	50.85 [1291.6]	8.13 - 40.13 [206.4 - 1019.2]
ESM750SLC	33.39 [848.1]	8.13 - 22.33 [206.4 - 567.1]

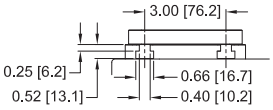




BENCH MOUNTING HOLES
BOTTOM VIEW



MOUNTING PLATE
TOP VIEW

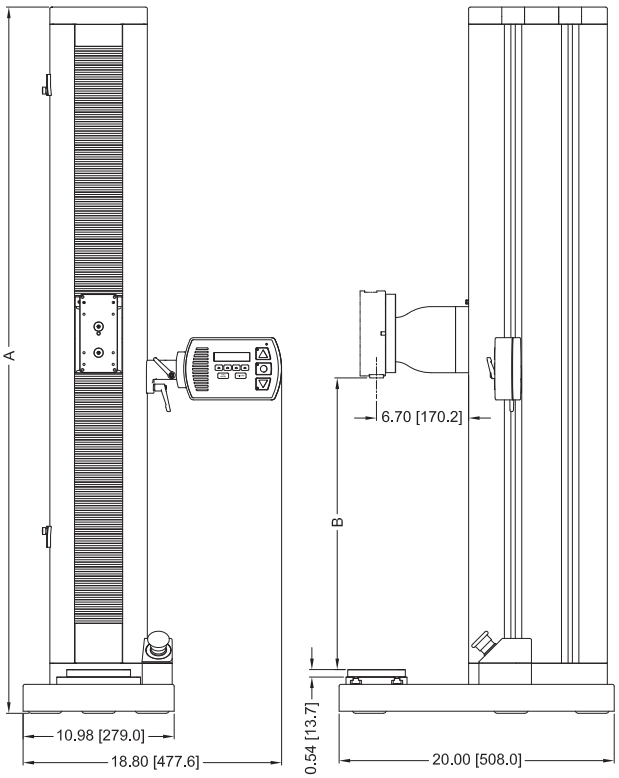


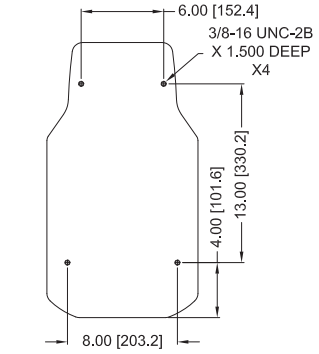
T-SLOT PLATE
SIDE VIEW

FG models

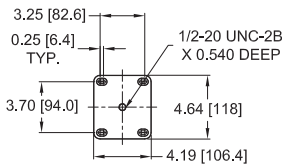
For use with a force gauge. For applications involving a sudden, sharp break, we recommend force gauge capacities up to 500 lbF (2,500 N) only. Otherwise, consider an -LC test stand instead.

	A	B
ESM1500FG	51.35 [1304.3]	5.25 - 37.25 [133.4 - 946.2]
ESM1500SFG	33.89 [860.9]	5.25 - 19.45 [133.4 - 494.0]
ESM750FG	50.85 [1291.6]	5.25 - 37.25 [133.4 - 946.2]
ESM750SFG	33.39 [848.1]	5.25 - 19.45 [133.4 - 494.0]

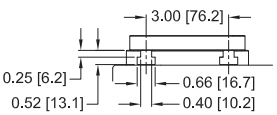




BENCH MOUNTING HOLES
BOTTOM VIEW



MOUNTING PLATE
TOP VIEW



T-SLOT PLATE
SIDE VIEW