








# Test Stand Comparison Chart

The following tables summarize the technical characteristics of Mark-10 test stands.



## Motorized Force Test Stands

Model	Force Capacity	Maximum Travel <sup>1</sup>	Speed Range	Daylight <sup>2</sup>
<b>ESM303 / ESM303H</b> 	300 lbF [1.5 kN]	18.0 [457 mm]	0.02 - 45 in/min [0.5 - 1,100 mm/min]	ESM303: 18.7 in [475 mm] <sup>3</sup>  ESM303H: 21.2 in [538 mm] <sup>3</sup>
<b>ESM750</b> 	750 lbF [3.4 kN]	32.0 in [813 mm]	0.001 - 60 in/min [0.02 - 1,525 mm/min]	40.1 in [1019 mm]
<b>ESM750S</b> 	750 lbF [3.4 kN]	14.2 in [360 mm]	0.001 - 60 in/min [0.02 - 1,525 mm/min]	19.5 in [494 mm]
<b>ESM1500</b> 	1,500 lbF [6.7 kN]	32.0 in [813 mm]	0.001 - 90 in/min [0.02 - 2,300 mm/min]	40.1 in [1019 mm]
<b>ESM1500S</b> 	1,500 lbF [6.7 kN]	14.2 in [360 mm]	0.001 - 90 in/min [0.02 - 2,300 mm/min]	19.5 in [494 mm]

# Manual Force Test Stands

Model	Force Capacity	Maximum Travel <sup>1</sup>	Loading Method	Travel Rate	Daylight <sup>2</sup>
<b>ES05</b> 	30 lbF [150 N]	1.5 in [38 mm]	Spring-loaded lever	---	8.0 in [203 mm]
<b>ES10 / ES20</b> 	100 lbF [500 N]	9.0 in [229 mm]	ES10: Lever  ES20: Top-mounted hand wheel	ES10: 1.05 in [26.7 mm] / lever rev.  ES20: 0.06 in [1.5 mm] / wheel rev.	9.0 in [229 mm]
<b>ES30</b> 	200 lbF [1,000 N]	13.0 in [330 mm]	Side-mounted hand wheel	0.05 in [1.3 mm] / wheel rev.	14.0 in [356 mm] <sup>3</sup>
<b>TSA750 / TSA750H</b> 	750 lbF [3,750 N]	with travel stops: 2.75 in [70 mm]  without travel stops: 6.00 in [152 mm]	Lever with rack & pinion, lever can be positioned in 30° increments	3.00 in [76.2 mm] / lever rev.	TSA750: 10.5 in [267 mm] <sup>3</sup>  TSA750H: 14.5 in [368 mm] <sup>3</sup>
<b>TSB100</b> 	100 lbF [500 N]	with travel stops: 2.75 in [70 mm]  without travel stops: 6.00 in [152 mm]	Lever with rack & pinion, lever can be positioned in 30° increments	3.00 in [76.2 mm] / lever rev.	13.0 in [330 mm] <sup>3</sup>
<b>TSC1000 / TSC1000H</b> 	1,000 lbF [5,000 N]	3.5 in [89 mm]	Inline hand wheel	0.10 in [2.5 mm] / wheel rev.	TSC1000: 10 in [254 mm] <sup>3</sup>  TSC1000H: 13 in [330 mm] <sup>3</sup>
<b>TSF / TSFH</b> 	1,000 lbF [5,000 N]	4.0 in [102 mm]	Side-mounted hand wheel	0.013 in [0.34 mm] / wheel rev.	TSF: 14.0 in [356 mm] <sup>3</sup>  TSFH: 16.5 in [419 mm] <sup>3</sup>

## Torque Test Stands

Model	Torque Capacity lbFin [Nm]	Speed Range	Angle Indication	Programmable Angle Travel Limits	Daylight <sup>2</sup> (w/R50 torque sensor) in [mm]
<b>TST / TSTH</b>					
	100 [11.3]	12° / wheel rev. (manually operated)	Dial, optional digital angle display (no data output)	N/A	TST: 15 [381] <sup>3</sup>  TSTH: 16 [406] <sup>3</sup>
<b>TSTM-DC/ TSTMH-DC</b>					
	100 [11.3]	0.01-15 RPM [0.05-90°/s]	Dial, integrated digital angle display with RS-232 output	Yes	TSTM-DC: 13 [330] <sup>3</sup>  TSTMH-DC: 16 [406] <sup>3</sup>

1. Maximum travel depends on the grips or fixtures used during testing. The dimensions indicate distances without the use of grips or fixtures.
2. The clearance between the bottom of a mounted force gauge or sensor and the loading surface of the stand. This distance is reduced if grips or fixtures are used. Column extensions are available with certain test stand models.
3. Column extensions available.

# Series F / Series ESM Comparison Chart



**Series F Advanced Test Frame**  
+ IntelliMESUR® Software

**Series ESM Test Stand +**  
Force Gauge / Indicator with Sensor +  
MESUR® gauge Software

	Series F Advanced Test Frame + IntelliMESUR® Software	Series ESM Test Stand + Force Gauge / Indicator with Sensor + MESUR® gauge Software
<b>Configuration</b>	Test frame + force sensor + integrated control panel or PC license	Test stand + test stand control panel + force measuring instrument + PC
<b>Peak load sampling rate</b>	20,000 Hz	Up to 14,000 Hz, with Series 7 force gauge / indicator
<b>Data acquisition rate</b>	1,000 Hz	50 Hz
<b>Distance measurement</b>	Included	Optional
<b>Distance accuracy</b>	±0.002 in [0.05 mm], factory-compensated at up to full load	±0.002 in. per 10 in. (±0.05 mm per 250 mm), subject to un- compensated system deflection
<b>Distance resolution</b>	0.0005 in [0.01 mm]	0.001 in [0.02 mm]
<b>Height mode</b>	✓	✗
<b>Deflection compensation utility for grips and fixtures</b>	✓	✗
<b>Limit switches</b>	✓, with ruler	✓
<b>Overload protection</b>	Included	Optional
<b>Auto return / cycling</b>	Included	Optional
<b>Max number of cycles</b>	Unlimited	99,999
<b>Record results for each cycle</b>	✓	✗
<b>Break detection</b>	Included	Optional
<b>Load holding</b>	Included	Optional
<b>Preload</b>	Included	Optional
<b>FollowMe® force-based positioning</b>	Included	Optional
<b>Multi-step testing</b>	✓	✗
<b>Single-step testing</b>	✓	✓

# Series F / Series ESM Comparison Chart



**Series F Advanced Test Frame**  
+ IntelliMESUR® Software

**Series ESM Test Stand +**  
Force Gauge / Indicator with Sensor +  
MESUR®gauge Software

<b>Batch mode</b> (set up no. of runs)	✓	✗
<b>Graph force vs. travel</b> or force vs. time	✓	✓
<b>Overlay previous runs on graph</b>	✓, up to 10	✗
<b>Pass / fail limits</b>	✓	✓, via force gauge / indicator
<b>Operator prompting</b>	✓	✗
<b>Available results</b>	<ul style="list-style-type: none"> <li>▪ Final load</li> <li>▪ Maximum load</li> <li>▪ Minimum load</li> <li>▪ Load at maximum distance</li> <li>▪ Load at minimum distance</li> <li>▪ Load at break</li> <li>▪ Average load</li> <li>▪ Delta load</li> <li>▪ Maximum distance</li> <li>▪ Final distance</li> <li>▪ Minimum distance</li> <li>▪ Free height</li> <li>▪ Final height</li> <li>▪ Distance at maximum load</li> <li>▪ Distance at minimum load</li> <li>▪ Distance at break</li> <li>▪ Delta distance</li> <li>▪ Area under the curve</li> </ul>	<ul style="list-style-type: none"> <li>▪ Maximum load</li> <li>▪ Minimum load</li> <li>▪ Average load (via force gauge / indicator)</li> <li>▪ Area under the curve</li> </ul>
<b>Available statistics for results</b>	<ul style="list-style-type: none"> <li>▪ Maximum</li> <li>▪ Minimum</li> <li>▪ Mean</li> <li>▪ Standard Deviation</li> <li>▪ Variance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Maximum</li> <li>▪ Minimum</li> <li>▪ Mean</li> <li>▪ Standard Deviation</li> <li>▪ Variance</li> </ul>
<b>Report creator</b>	✓	✓
<b>Field-upgradeable firmware</b>	✓	✗