

MHT Series

Horizon tensile testing machine



MHT Series



Basic 150kN capacity horizontal tensile testing machine, shown with Horizon software.

For maximum tensile testing throughput and capability, Tinius Olsen offers a range of horizontal tensile testing machines in capacities of 5kN (1000lbf), 25kN (5000lbf), 150kN (30,000lbf) and 300kN (60,000lbf).

These horizontal testing machines offer unique benefits over vertically oriented testers by allowing a range of accessories to be mounted next to the machine to turn it into a fully automatic testing station.

They are designed primarily for production departments and are typically in constant use; however, the grips can be modified to accommodate different shaped samples and alternate grips can be provided for customers when test requirements change.

The horizontal extensometer that is typically used with the machine has a unique design that incorporates pneumatic controls that automatically lower the arms prior to the test and raise the arms at the end of the test. Air bearings on the extensometer provide accurate strain measurement through fracture.

The operation of the basic machine is sophisticated, providing accurate and repeatable specimen placement against mechanical stops, automatic clamping, extensometer lowering (if supplied), testing, extensometer removal, and grip return to the starting position, all with a single mouse click.

This advanced operation can be further developed when the PC-based machine control software provided with the machine is upgraded to include data acquisition and data analysis.

Further automation can then be achieved by the addition of a robot and sample racks. In this configuration, the robot will pick a sample from a sample rack and insert it into the machine grips. It will then wait for the end of test so that the broken sample pieces can be removed from the grips and placed in a suitable disposal bin.

If a sample measuring station and barcode reader are included with the system, the whole testing process is automated with the only operator requirement being the loading of the samples in the sample rack. The test data that is generated can be included into corporate manufacturing and resource planning software ensuring that quality control data is an integral part of operations.

Basic 25kN capacity horizontal tensile testing machine, shown with optional extensometer.



Specifications

| Model | | MHT-1,000 | MHT-5,000 | MHT-30,000 | MHT60,000 |
|--------------------------|--------|------------------|-------------------|-------------------|-------------------|
| Capacity | lbf | 1,000 | 5,000 | 30,000 | 60,000 |
| | kN | 5 | 25 | 150 | 300 |
| | kg | 500 | 2,500 | 15,000 | 30,000 |
| Maximum crosshead travel | in | 17 | 17 | 20 | 20 |
| | mm | 430 | 430 | 500 | 500 |
| Grip actuation | | Pneumatic | Pneumatic | Hydraulic | Hydraulic |
| Testing speed range | in/min | 0.002-20 | 0.002-20 | 0.002-10 | 0.002-10 |
| | mm/min | 0.05-500 | 0.05-500 | 0.05-250 | 0.05-250 |
| Dimensions (LxDxH) | in | 14 x 48 x 28 | 41 x 61 x 29 | 50 x 70 x 20 | 48 x 77 x 21 |
| | mm | 356 x 1219 x 711 | 1041 x 1549 x 737 | 1257 x 1770 x 514 | 1229 x 1965 x 533 |
| Weight | lbs | 2,000 | 2,000 | 2,700 | 2,700 |
| | kgs | 910 | 910 | 1,225 | 1,225 |
| Console dimensions | in | NA | NA | 40 x 48 x 31 | 40 x 48 x 31 |
| | mm | | | 1016 x 1219 x 787 | 1016 x 1219 x 787 |
| Console weight | lbs | NA | NA | 880 | 880 |
| | kgs | | | 400 | 400 |

- + **Load measurement accuracy** +/-0.5% of applied load from 0.2% to full capacity
- + **Position measurement accuracy** 0.1% of reading
- + **Speed accuracy** 0.1% of set speed
- + **Operating temperature range** 32 to 100°F (0 to 38°C)
- + **Storage temperature range** 14 to 115°F (-10 to 45°C)
- + **Humidity range** 10-90% non-condensing, web bulb method
- + **Power** Standard optional voltages 110/240VAC, 50-60Hz, one-phase for small machines, three-phase for high capacity machines; power must be free of spikes and surges exceeding 10% of the nominal voltage
- + **Clean Air** Dry air filtered to 50 microns at up to 85psi (5.9 bar) minimum
- + **Notes:**
 1. Load weighing system meets or exceeds the requirements of the following standards: ASTM E4, EN 10002-2, BS 1610, DIN 51221, ISO 7500-1. Tinius Olsen recommends that systems are verified at installation in accordance with ASTM E4 and ISO 75001.
 2. Alternate, lower capacity load measurement cells can be supplied for these frame capacities.
 3. Strain measurement system meets or exceeds the requirements of the following standards: ASTM E83, EN 10002-4, BS 3846 or ISO 9513.
 4. Specifications are subject to change without notice

Key Features



- + Rapid, easy specimen loading.
- + Automatic specimen gripping.
- + Automatic extensometer placement and removal.
- + Auto-ranging for both load and strain.
- + Accurate strain measurement through failure.
- + Grips return to start position automatically.

Optional Features

- + Higher throughput of test samples.
- + Robotic loading and removal of samples
- + Sample dimension and barcode reading
- + Instrumentation and determination of R value



Horizon makes testing **simple, precise and efficient.**



Tinius Olsen has built upon its long history of providing solutions to an enormous variety of testing problems to develop Horizon, a comprehensive software program that makes testing simple, precise and efficient. Whether the test sample is metal, paper, composite, polymer, rubber, textile, or a micro-component, Tinius Olsen's Horizon software goes far beyond data collection and presentation. It automates system operation and data analysis from R&D to QC testing.

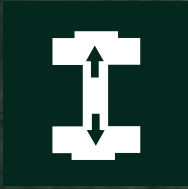


Horizon software sets new standards of data analysis by adding a host of report writing and data manipulation capabilities that will make easy work of your materials testing programs. As with most features of Horizon, flexibility is key; reports can be customized by operators, as can all user screens, allowing operators to focus on features that are most important to them.



In addition to powerful reports, Horizon Materials Testing software is networkable and scalable so operators and managers can operate equipment and review test results from multiple sources and locations. Horizon provides a library of standard, specific and application-focused test routines that have been developed in close co-operation with customers and international standards. Among the many valuable features offered by Horizon are: a test routine library; simultaneous multiple machine control; test, output, method and result editors; and multilayered security. This software is designed for data acquisition, data analysis, and closed loop control of nearly all Tinius Olsen testing systems.

Horizon is rich with capabilities that improve productivity and enable the operator to build, access and use a modern, powerful materials testing database. It employs the latest Windows environments, running on touchscreen-enabled monitors, to create an intuitive user experience. Built-in tutorials, online help, and help desk access provide additional user support.



MHT Tester

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