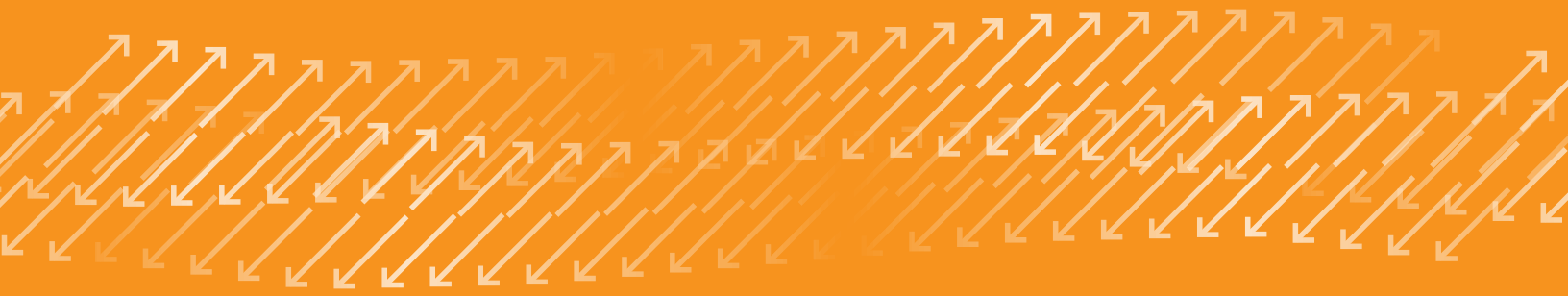
MTS Insight® Electromechanical Testing Systems

Affordable and easy-to-use platforms for performing virtually any static test

be certain.

AFFORDABLE AND EASY-TO-USE, THE COMPREHENSIVE **MTS INSIGHT FAMILY OF UNIVERSAL TEST MACHINES** IS DESIGNED TO PERFORM A FULL SPECTRUM OF STANDARD AND UNIQUE MONOTONIC TESTING NEEDS ACROSS A WIDE RANGE OF MATERIALS, INCLUDING PLASTICS, METALS, COMPOSITES, ADHESIVES, TEXTILES, WOOD AND PAPER PRODUCTS, CERAMICS, ELASTOMERS, FOAM AND MORE.



Simplify Static Testing with MTS Insight Electromechanical Testing Solutions

The MTS Insight testing solution integrates leading edge electromechanical load frame technology with best-in-class TestWorks® software and expert MTS consulting services to provide an affordable and easy-to-use platform for performing virtually any static test on a wide array of materials, sub-components and finished products.

Test results generated by MTS Insight systems are used in research, product or process development, and to help guarantee quality in production processes. Applications for the MTS Insight solution exist in many industries, and include biomedical, consumer product, ground vehicles, aerospace and basic materials testing.

Driven by powerful, best-in-class TestWorks application software, MTS Insight systems are easy to use and readily adapted to meet industry standards, perform both simple and advanced tests and fulfill more unique, custom testing requirements.

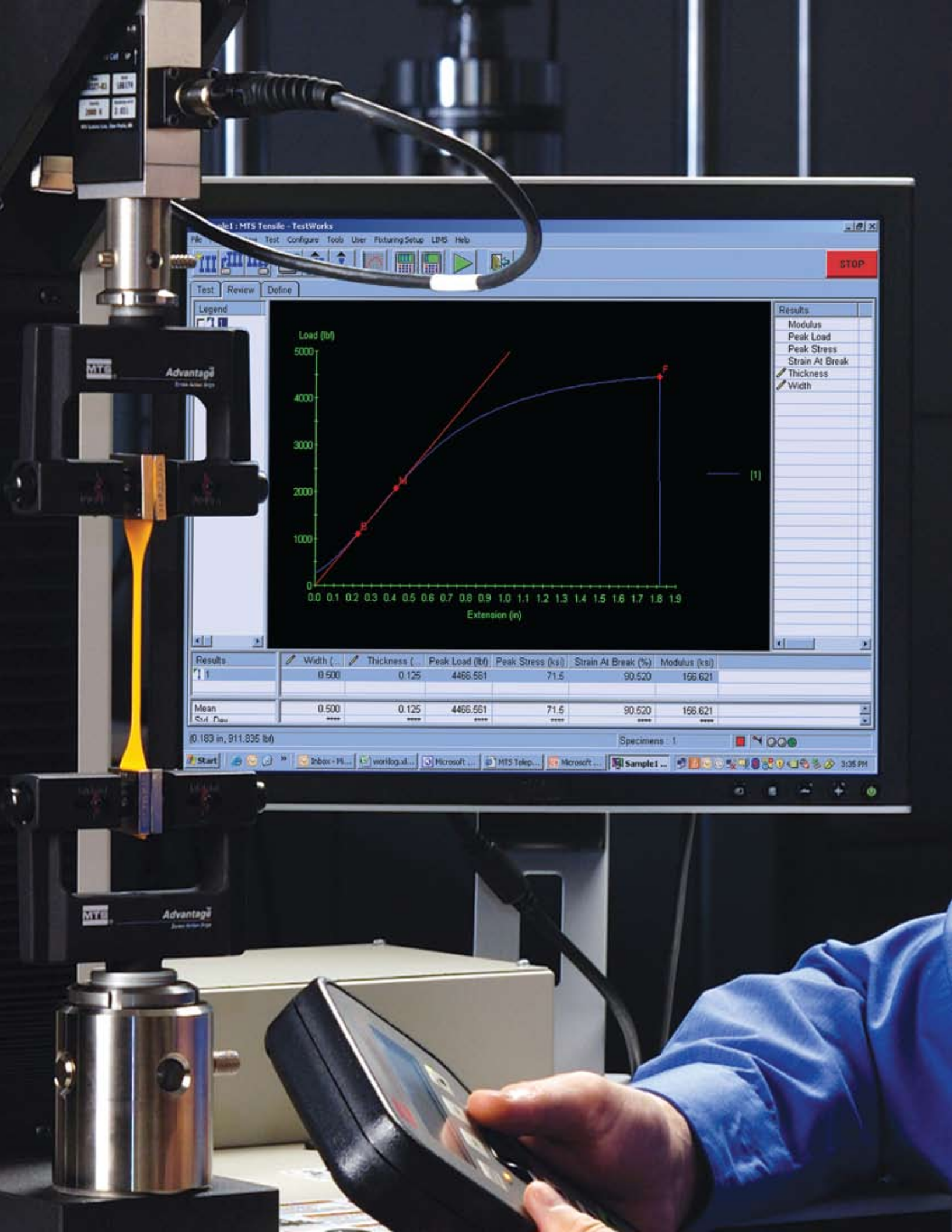
MTS Insight Electromechanical Testing Systems integrate an elegantly simple and reliable electromechanical drive system, state-of-the-art control electronics, and an intuitive user-interface to deliver highly accurate and repeatable results. All MTS Insight frames feature load cells equipped with TEDS self-identification capabilities that follow the recently adopted IEEE 1451.4 standard - the first in the industry.

Address a Full Spectrum of Static Testing Needs

Available in a variety of models, the comprehensive MTS Insight family is designed to provide test laboratories with the necessary capabilities to meet a full spectrum of standard and unique static testing needs across a wide range of industries. The MTS Insight family includes:

- **1-5 KN**, single-column tabletop models for low-force applications
- **5-50 KN**, twin-column table-top models for medium-force applications
- **100-300 KN**, twin-column floor-standing models for high-force applications
- **EXTENDED LENGTH** models for high elongation test applications
- **HIGH SPEED** models for testing high strain specimens with increased productivity
- **WIDE CONFIGURATION** 30 and 50 kN models for testing multiple specimens or wider samples

All MTS Insight models reliably perform standard tests such as peel, tear, shear, tensile, compression, and flex/bend. More advanced tests can also be performed, such as creep, stress relaxation, and multi-cycle. By offering user-defined crosshead speeds and advanced control modes such as load and strain, MTS Insight testing systems can analyze a wide range of materials, including low to high-strength components, structural materials, composites, metals, plastics, elastomers, biomaterials, paper products, adhesives, and foam.


Sample1 : MTS Tensile - TestWorks
STOP
Test
Review
Define
Legend
Load (lbf)
Extension (in)
Results
Modulus
Peak Load
Peak Stress
Strain At Break
Thickness
Width
Width (...
Thickness (...
Peak Load (lbf)
Peak Stress (ksi)
Strain At Break (%)
Modulus (ksi)
Mean
0.500
0.125
4466.561
71.5
90.520
166.621
(0.183 in, 911.835 lbf)
Specimens : 1
Advantage

Leverage the Power of Best-in-class TestWorks Application Software

Truly the brainpower behind MTS Insight testing systems, easy-to-use TestWorks software delivers test definition, test execution, and report generation capabilities for simple and complex material testing. TestWorks gives users the flexibility to not only create, customize and share test methods that meet any industry standard or unique testing requirement, but also perform a variety of standard and advanced tests — including peel, tear, shear, tensile, compressions, creep, stress, cyclic and strain. Alternatively, test engineers can save development time and effort by turning to MTS' dedicated team of professional testing consultants for pre-packaged and customized test methods to meet their specific material, sub-component and product testing requirements.

Enjoy Unparalleled MTS Support

To maximize the return on your test system investment, MTS fields the largest, most experienced worldwide service, support and consulting staff of any material testing solution provider. This global team offers a wide range of services to maximize a testing laboratory's productivity and help customers complete test programs as quickly as possible; these include:

- Experienced Materials Testing Consulting
- Worldwide Field Service
- Comprehensive Customer Support
- Lifecycle Management Support Packages

For more information, call your MTS Sales and Service office or visit our Services and Support web site at www.mts.com/services.

TestWorks Application Software:

The Brainpower Behind the MTS Insight Solution

Industry leading TestWorks application software has the power to streamline your testing procedures by adapting to the way you work. You can readily configure TestWorks to handle your most demanding requirements, while maintaining an interface that is user-friendly — even for the novice operator. Intuitive menus and controls make initial test definition, test execution, and report generation easy for both simple and complex testing.

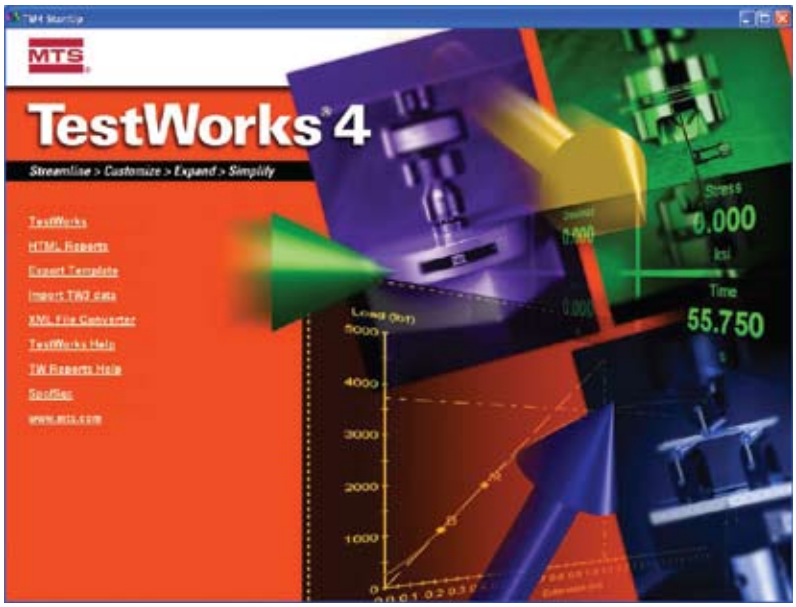
The TestWorks software offering comprises three distinct packages, which can be bundled to match your specific testing needs:

» The **TESTWORKS ESSENTIALS** package runs a variety of preset testing methods, including peel, tear, shear, tensile, compression, creep, stress, cyclic and strain — at low- to high-force capacities. Recognized as an industry leader, the Essentials package is the base product for both the Advanced and Creator packages.

» The **TESTWORKS ADVANCED** package runs preset testing methods with the ability to add non-motion control test segments and additional calculations.

» The **TESTWORKS CREATOR** package is designed for the knowledgeable user who wants to create or modify test methods by adding and sequencing motion or control segments.

TestWorks software evolves with your changing testing needs. As new TestWorks software versions become available, you can continue to improve your laboratory's productivity by easily updating your MTS Insight testing system. Recently introduced versions of TestWorks include a new Web browser-style launch screen to enhance ease of use, the ability to interface with virtually any laboratory information management system (LIMS), and full compatibility with all MTS ReNews Upgrade packages.



TestWorks software includes a new Web browser-style launch screen to enhance ease of use

TESTWORKS METHODS

TestWorks software enables the easy creation, customization and sharing of test methods. Alternatively, test engineers can save development time and effort by purchasing optional pre-packaged test methods, or by using MTS consulting services to develop customized test methods for their specific applications.

Custom Methods

MTS engineers have the experience and skills required to design and develop a unique testing method for virtually any industry or test type. Test methods can be completed in as little as a few days, and the resulting solution can be emailed to you. MTS can design the following software capabilities to your specifications:

» Custom test methods, tailored to meet your unique test specifications

» Custom report templates, formatted in your organization's reporting style

» Custom export templates to allow for customized data archiving

MTS custom test methods, report templates, and export templates are guaranteed to perform to your specifications and come with 30 days of free technical support to ensure your requirements are met.

Optional Pre-packaged Methods

A variety of pre-packaged methods are also available for purchase, including packages for:

» LIMS

» SPC/SQC

» Plastics

» Foam

» Creep/Stress Relaxation

» Limited Cyclic

» N, R & K for sheet metals

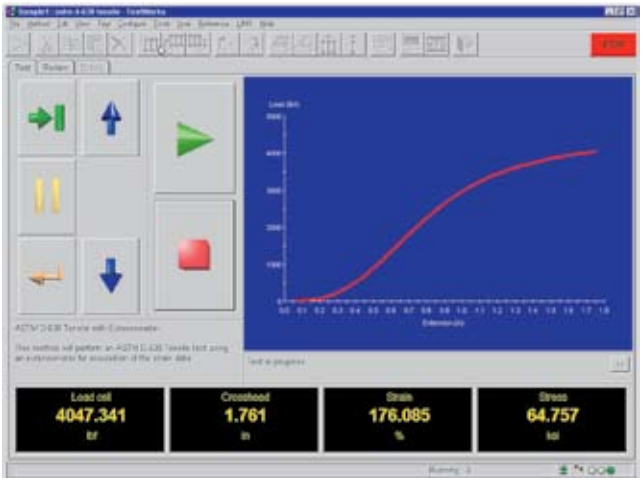
Complete Your Test in Just Three Steps

Select

1. Select the standard or custom test you want to run.

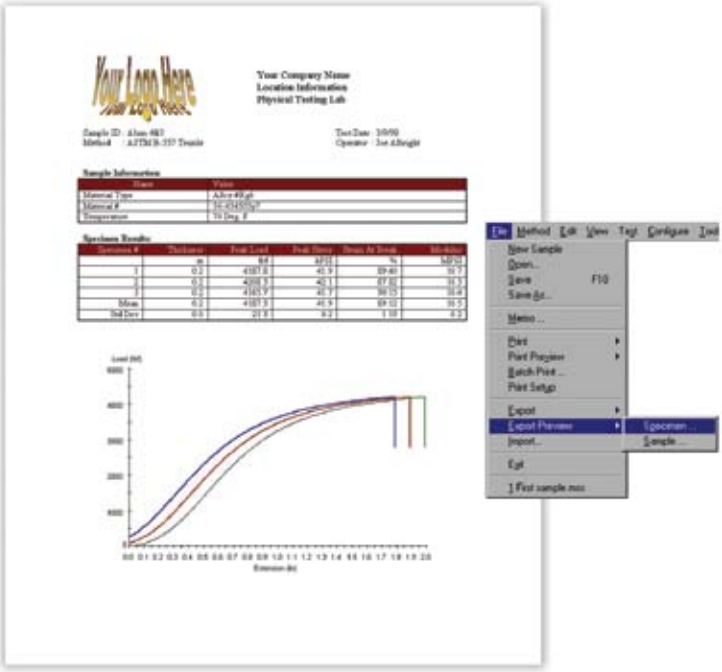
Run

2. While the test is running, monitor your test on-screen using real-time auto-scaling graphics and digital displays. The TestWorks Virtual Control Panel allows the operator to control the test from the system computer. With operator-configurable options, large buttons, and large display meters for monitoring, this user-friendly screen provides all the important functions.



Report

3. Review and report your data. Choose from a variety of standard calculations or create your own custom formulas. Prior to printing or archival, you can adjust the analysis or presentation. Use standard templates to create presentation-quality reports and plots, or customize your data for export or printing. You can share reports by email or by archiving to a common network.




1000 N Load Cell (182832)
-0.06
N
mm
MTS Insight
Electromechanical - 1 kN Standard Length
MTS

The Comprehensive Array of MTS Insight Electromechanical Testing Systems

Available in a variety of models, the comprehensive MTS Insight family is designed to provide test laboratories with all the capabilities to meet a full spectrum of standard and unique static testing needs across a wide range of industries.

SINGLE-COLUMN TABLETOP MODELS

Compact and ergonomic, single-column 1, 2 and 5 kN tabletop systems provide reliable low force testing of smaller specimens. These systems are ideal for lower force testing of components, biomaterials, plastics, metals, elastomers, paper products, adhesives and foam.


MTS
MTS Insight
Electromechanical - 30 kN Standard Length

TWIN-COLUMN TABLETOP MODELS

Twin-column 5, 10, 30 and 50 kN tabletop systems provide superior stiffness for medium force testing of components, biomaterials, plastics, metals, elastomers, paper products, adhesives and foam specimens in a wide range of sizes. These systems are designed to easily accommodate an MTS environmental simulation system.

MTS Insight 5

MTS Insight 10

MTS Insight 30

MTS Insight 50

(shown with new XLT high elongation extensometer)

The Comprehensive Array of MTS Insight Electromechanical Testing Systems

TWIN-COLUMN FLOOR STANDING MODELS

Twin-column 100, 150, 200 and 300 kN floor-standing systems provide accurate and reliable testing of high-strength specimens in a wide range of sizes. Designed to easily accommodate MTS environmental simulation systems, these systems are ideal for testing metals, high-strength components, large fasteners, structural materials, and composite materials.

MTS Insight 300

MTS Insight 200

MTS Insight 150

MTS Insight 100

Special Application Models

WIDE CONFIGURATION MODEL

Wide Configuration 30 and 50 kN systems offer more than two times the column spacing as a standard frame for ample testing space. This large area is ideal for testing foam, packaging, and finished components in a wide range of sizes. The additional space between the columns also makes the frame easily adaptable for testing up to five specimens simultaneously when equipped with multiple testing heads.

MTS Insight
50 Wide

MTS Insight
2 EL High Speed

WIDE CONFIGURATION MODEL

Extended Length frames are available in all force capacities for test applications requiring greater vertical travel. With 1004 mm of crosshead travel for single column frames, and 1400 mm for two column frames, these systems deliver best-in-class capabilities and more flexibility for high elongation testing of plastics, adhesives, foam and elastomer products. Quick crosshead return speeds reduce overall test cycle times, enhancing test productivity.

HIGH SPEED MODEL

The High Speed model, available on the twin-column 2 kN Extended Length frame, is designed for testing high strain specimens with increased productivity. This system delivers crosshead speeds of up to 2540 mm per minute (100 in/minute), even when used at the frame's maximum force rating of 2 kN. Quick crosshead return speeds reduce overall test cycle times, further enhancing test productivity. Typical applications for this model include testing plastics, adhesives, foam and elastomer products.

Harness the Strength of a Tightly Integrated Testing System

The testing power of TestWorks software is fully realized through the tight integration of the MTS Insight electromechanical load frame, digital controller, programmable handset, and high quality accessories. Working in concert, these elements comprise the most accurate, flexible and reliable static testing system available.

Optional equipment such as T-Slot tables (below) and environmental chambers (left) extend the utility of MTS Insight Systems across a wide range of material and component monotonic testing.

Compact, Innovative Electromechanical Frame

MTS Insight Electromechanical Testing Systems offer a full range of testing capabilities in a variety of compact, ergonomic frames. Single-column load frames and double-column load frames are available with a range of load capacities. Constructed with a solid steel crosshead and table for stiffness, MTS Insight testing systems are designed to deliver exceptional results, and feature excellent reliability, performance, and accuracy. MTS Insight testing systems are easy to maintain, and all MTS system components are covered by a one-year warranty. MTS Insight load frames also offer:

- Precision anti-backlash ball screws
- Precision guide columns
- Integrated load cell connection on the crosshead
- DC motordrives on 1 - 50 kN systems
- AC brushless motor drives on 100 - 300 kN systems
- Ball screw encoder
- Quiet drive system
- Anti-rotate feature
  - Orients fixturing
  - Improves alignment
  - Prevents accidental attachment drops
  - Facilitates repeatable positioning

Integrated Digital Controller

The MTS Insight Digital Controller is fully integrated into the electromechanical load frame; it features:

- Up to 1000 Hz DAQ rate
- A 1000 Hz control rate
- 20-bit resolution
- Built-in USB 2.0 for PC communication
- Self-ID capability for calibration and auto-ranging
- Two optional strain inputs in addition to the system load cell
- Three optically isolated digital inputs and outputs
- Two BNC monitor connectors
- A test area enclosure interlock connector

Convenient, Ergonomic Handset

The MTS Insight handset allows the operator to perform standard functions such as start, stop, pause, and crosshead positioning while standing close to the test specimen. The handset can display test status messages, performance messages, and results. Two programmable function keys are set up in the software as digital inputs, allowing users to define test functions such as start test, pause and hold position. The handset features a compact, ergonomic design for both right-handed and left-handed operators and a large text display that provides information at a glance.

SYSTEM SAFETY FEATURES

To guarantee operator well-being and ensure compliance with safety standards, MTS Insight testing systems are designed to accommodate an array of safety features, including:

- Optional test area enclosure
- Integrated test area enclosure interlock
- Push-button emergency stop and a remote enable/disable switch
- Mechanically adjustable limits to stop the crosshead predetermined points
- Motor overheat device to automatically turn off the motor power supply
- Ability to set limits for load, extension, strain, or any other data channel
- Safe system voltage of 48V

Extend Your Capabilities with High-Quality Accessories

MTS complements its EM testing lines with a comprehensive array of accessories to fulfill a full spectrum of material and small component testing — from basic quality control, to complex biomedical simulations, to demanding research and development applications. This array comprises the world's highest-performing selection of load cells and extensometers, a variety of environmental simulation solutions, and three distinct accessory families to accommodate your specific and evolving testing needs. Contact MTS for a complete catalog of our accessories offerings.

Advantage™ Accessories comprise a highly versatile, full-featured set of grips for demanding R&D testing of advanced composites and alloys. Ideal for the specific needs of the high-end researcher, this accessory family accommodates a very broad range of clamping force and temperature requirements and features numerous control and grip face options. MTS stands behind the Advantage family line with a 3-year warranty - the best in the industry. The Advantage family includes:

- Pneumatic Grips
- Wedge Grips
- Screw Action Grips
- Environmental Chambers

MTS Fundamental™ Accessories are a new family of basic, afford-able grips and fixtures for standard testing of plastics, textiles, rubber, wire, rope and more. These accessories feature a universal adapter design, and optional threaded frame adapters, to facilitate easy installation onto both MTS electromechanical and servohydraulic load frames systems, as well as other electromechanical test systems. Anti-rotation features and integrated alignment pins enhance test accuracy and repeatability. The MTS Fundamental family includes:

- Vise Action Grips
- Scissors Action Grips
- Low Force Aluminum Compression Platens
- High Force Steel Compression Platens
- Roller Action Grips
- Pneumatic Bollard Grips
- Manual Bollard Grips
- Coefficient of Friction Grips
- 90° Peel Fixtures

Bionix® Accessories are affordable and extremely durable grips, fixtures and platens for accurately replicating biomaterial and medical device service environments. These accessories feature a universal adapter design, as well as optional threaded frame adapters, to facilitate easy installation onto both MTS electromechanical and servohydraulic load frames systems, and other electromechanical test systems. Anti-rotation features and integrated alignment pins enhance test accuracy and repeatability. The Bionix accessory family includes:

- Vise Action Grips
- Scissors Action Grips
- Stainless Steel Compression Platens
- Roller Action Grips
- Manual Bollard Grips
- Spring Action Grips
- Environmental Chambers and Baths

Test Fixtures

MTS provides a wide array of standard and custom test fixtures and adapters to accommodate a full spectrum of static testing needs. Designed to exceed industry standards, durable MTS fixtures provide greater ease-of-use and more precise test data. Some fixtures can be modified to accommodate special measurement devices, such as extensometers. Others may be constructed out of special materials to withstand higher temperatures and corrosive environments, or provide longer life.

Environmental Simulation Systems

MTS environmental systems enable the testing of materials and components under a variety of real world conditions. Available systems include high temperature furnaces, environmental chambers, and mini-baths.

MTS EM Extend™ Load Extension Kit

MTS load frame extension rod kits enhance your testing capabilities within environmental chambers. The rods are designed to apply tension and compression in an environmental chamber at temperatures of -130 C (- 200 F) to 315 C (600 F).

MTS Load Cells

Highly accurate MTS load cells are designed to offer world-class stiffness, stability and linearity. They provide overload and side load protection and are designed with built-in shunt resistors to facilitate regular verification of accuracy using calibration routines featured in MTS software. To increase efficiency and reduce potential operator error, they feature TEDS (Transducer Electronic Data Sheets) self-identification capabilities that follow the recently adopted IEEE 1451.4 standard.

MTS Extensometers

MTS offers the world's most comprehensive and highest-performing selection of extensometers for static material and component testing. This includes extended length, laser, axial, and high temperature extensometers, as well as a variety of models for custom applications.

Industry Applications for MTS Insight Testing Systems

MTS Insight systems are deployed for research, product or process development, and to help guarantee quality in production processes. Applications for the MTS Insight testing solution exist in many industries, including:

- Consumer products
- Biomedical
- Basic materials
- Automotive
- Aerospace

Biomedical Testing

MTS Bionix® electromechanical testing systems are deployed for biomedical applications such as analyzing cosmetic implant materials, testing joint replacement compounds, static characterization of replacement and soft tissue materials, and determining medical tubing, tape and suture properties. Common tests include tension and compression and flexure, performed in ambient conditions and high humidity or submerged conditions.

A typical configuration for saline environment tensile testing includes:

- Bionix EnviroBath
- 642.01 Bend Fixture
- Corrosion Resistant Pull-rods
- LX 500 Laser Extensometer (not shown)
- One Strain Channel
- TestWorks 4 Advanced Option

Consumer Products Testing

Consumer-products testing programs require test systems flexible enough to adapt to unique applications. MTS Insight testing systems can test virtually any product, including tissue paper, plastic for bags, Velcro, closures, packaging materials, and foam materials. Tests for these products can include high-strain tensile tests, direct peel tests, and indention force deflection.

A typical configuration for high elongation tensile testing includes:

- 100/200 N Advantage Pneumatic Grips
- Advantage Pneumatic Grip Controller
- Smooth Rubber Grip Faces
- Insight XLT High Elongation
- Extensometer (not shown)
- One Strain Channel
- TestWorks 4 Advanced Option

Basic Materials Testing

MTS Insight testing systems offer easy-to-use tensile compression and flexure templates for basic materials testing. Analyze materials such as ductile iron, stiff plastic, and paper in tests such as ambient temperature tensile, ambient temperature, and ambient temperature flexure.

A typical configuration for ambient temperature tensile testing of plastic includes:

- 634.25 Extensometer for general applications
- Advantage 2 kN Pneumatic Grips
- Diamond Serrated Faces
- TestWorks 4 Basic Materials Methods Package

(shown with 634.25 extensometer)

Ground Vehicles Testing

MTS Insight testing systems are ideal for monotonic loading of ground vehicle components and materials. MTS Insight testing systems can be used to test high-performing new material systems, first-run components and sub-assemblies, or test samples of parts right on the production line. It also enables analysis of rigid plastics, elastomers, automotive sub-system components, audio equipment, and microelectronic components in tests such as ambient temperature tensile, compression, shear, flexure and Poisson's ratio.

A typical configuration for high temperature ground vehicles testing includes:

- 50 kN Advantage Wedge Grips
- 50 kN Advantage Wedges for flat specimens
- -200° F to 600° F Chamber (not shown)
- 633.11 High-temperature extensometer (not shown)
- One Strain Channel
- TestWorks 4 Creator Option

Aerospace Materials Testing

MTS Insight testing systems are well suited for analyzing high-strength and high-temperature materials such as polymer and metal matrix composites, super alloys, high-modulus fibers, and impacted panels. It is well suited for aerospace materials tests such as ambient and elevated temperature tensile, standard and open-hole compression, flexure, flatwise shear, climbing drum peel, and strain-hardening parameter (N, R and K value) determination.

A typical testing configuration for determining N-values consists of:

- MTS -200° F to 600° F Chamber
- MTS 647 Hydraulic Grips
- MTS 685 Stand Alone Grip Supply
- MTS Biaxial Extensometer
- Two Strain Channels
- TestWorks 4 N, R and K Methods Package

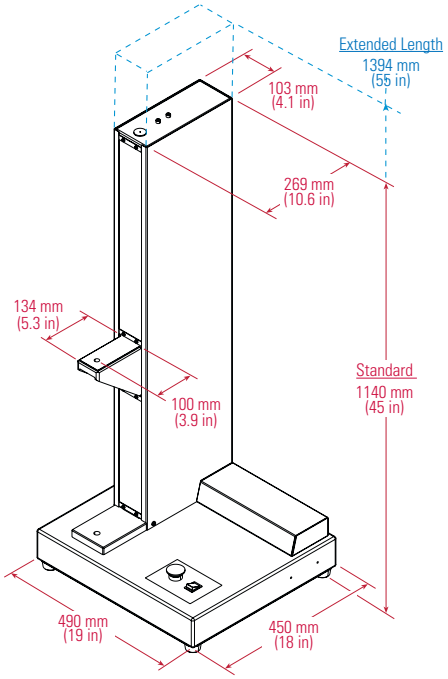
Typical room temperature biaxial test setup shown:

- MTS 647.02B flat specimen wedges
- 634.25F axial extensometer
- 632.23 cross-sectional strain extensometer

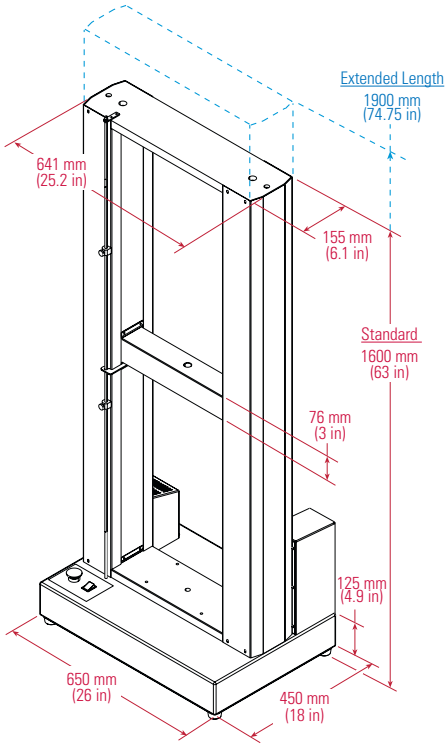
MTS Insight Electromechanical Testing Systems Specifications

	LOW-CAPACITY				
MTS Insight Model	**MTS Insight 1**	**MTS Insight 2**	**MTS Insight 2 High Speed**	**MTS Insight 5**	**MTS Insight 5**
Column Configuration	Single	Single	Double	Single	Double
Force Capacity	1 kN (225 lbf)	2 kN (450 lbf)	2 kN (450 lbf)	5 kN (1125 lbf)	5 kN (1125 lbf)
Vertical Test Space					
Crosshead Travel					
Standard Length	750 mm (29.5 in)	750 mm (29.5 in)	NA	750 mm (29.5 in)	1100 mm (43 in)
Extended Length	1004 mm (39.5 in)	1004 mm (39.5 in)	1400 mm (55 in)	1004 mm (39.5 in)	1400 mm (55 in)
Maximum Test Speed	1500 mm/min (59 in/min)	1000 mm/min (39 in/min)	2540 mm/min (100 in/min)	500 mm/min (20 in/min)	1000 mm/min (39 in/min)
Minimum Test Speed	0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)	0.003 mm/min (0.00012 in/min)	0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)
Height					
Standard Length	1140 mm (45 in)	1140 mm (45 in)	NA	1140 mm (45 in)	1600 mm (63 in)
Extended Length	1394 mm (55 in)	1394 mm (55 in)	1900 mm (74.75 in)	1394 mm (55 in)	1900 mm (74.75 in)
Width	490 mm (19 in)	490 mm (19 in)	650 mm (26 in)	490 mm (19 in)	650 mm (26 in)
Depth	450 mm (18 in)	450 mm (18 in)	450 mm (18 in)	450 mm (18 in)	450 mm (18 in)
Weight					
Standard Length	50 kg (110 lb)	50 kg (110 lb)	NA	50 kg (110 lb)	115 kg (255 lb)
Extended Length	55 kg (119 lb)	55 kg (119 lb)	123 kg (261 lb)	55 kg (119 lb)	123 kg (261 lb)
Clearance from Loading Axis to Column Cover	100 mm (3.9 in)	100 mm (3.9 in)	NA	100 mm (3.9 in)	N/A
Space Between Columns	N/A	N/A	450 mm (15.9 lb)	N/A	405 mm (15.9 in)
Power Requirements					
Power Supply	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)

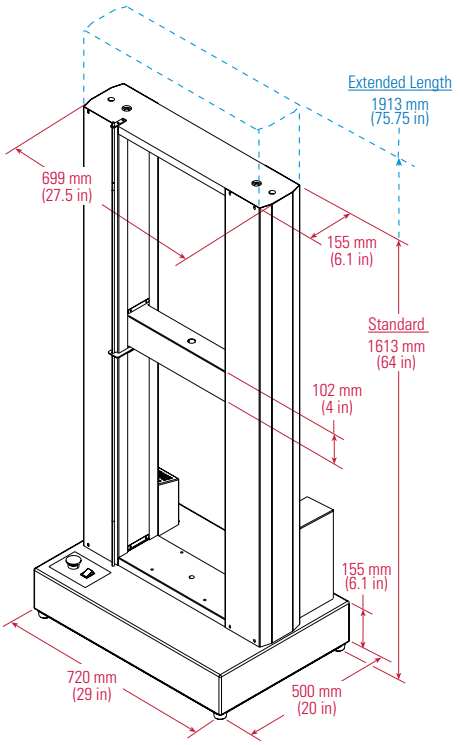
	MID-CAPACITY				HIGH-CAPACITY			
MTS **Insight 10**	MTS **Insight 30 Wide**	MTS **Insight 30**	MTS **Insight 50 Wide**	MTS **Insight 50**	MTS **Insight 100**	MTS **Insight 150**	MTS **Insight 200**	MTS **Insight 300**
Double	Double	Double	Double	Double	Double	Double	Double	Double
10 kN (2250 lbf)	30 kN (6750 lbf)	30 kN (6750 lbf)	50 kN (11250 lbf)	50 kN (11250 lbf)	100 kN (22500 lbf)	150 kN (33750 lbf)	200 kN (45000 lbf)	300 kN (67500 lbf)
1100 mm (43 in) 1400 mm (55 in)	1100 mm (43 in) 1400 mm (54.75 in)	NA 1350 mm (53 in)	1100 mm (43 in) 1400 mm (54.75 in)	1050 mm (41 in) NA	1200 mm (47.3 in) 1600 mm (63 in)	1200 mm (47.3 in) 1600 mm (63 in)	1200 mm (47.3 in) 1600 mm (63 in)	1150 mm (45.3 in) 1550 mm (61 in)
1000 mm/min (39 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)	500 mm/min (20 in/min)
0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)	0.001 mm/min (0.00004 in/min)	0.01 mm/min (0.0004 in/min)	0.01 mm/min (0.0004 in/min)	0.01 mm/min (0.0004 in/min)	0.01 mm/min (0.0004 in/min)
1600 mm (63 in) 1900 mm 74.75 in)	1613 mm (64 in) 1394 mm (75.75 in)	NA 1900 mm (76 in)	1613 mm (64 in) 1394 mm (75.75 in)	1629 mm (64.1 in) NA	2440 mm (96 in) 2840 mm (112 in)	2440 mm (96 in) 2840 mm (112 in)	2440 mm (96 in) 2840 mm (112 in)	2440 mm (96 in) 2840 mm (112 in)
650 mm (26 in)	720 mm (29 in)	1145 mm (45 in)	720 mm (29 in)	1145 mm (45 in)	1133 mm (44.6 in)	1133 mm (44.6 in)	1133 mm (44.6 in)	1133 mm (44.6 in)
450 mm (18 in)	500 mm (20 in)	500 mm (20 in)	500 mm (20 in)	500 mm (20 in)	685 mm (27 in)	685 mm (27 in)	685 mm (27 in)	685 mm (27 in)
115 kg (255 lb) 123 kg (261 lb)	180 kg (397 lb) 191 kg (422 lb)	NA 314 kg (692 lb)	180 kg (397 lb) 191 kg (422 lb)	296 kg (653 lb) NA	750 kg (1655 lb) 787 kg (1735 lb)	970 kg (2140 lb) 1029 kg (2270 lb)	970 kg (2140 lb) 1029 kg (2270 lb)	1050 kg (2315 lb) 1116 kg (2460 lb)
N/A	N/A	NA	N/A	N/A	N/A	NA	N/A	N/A
405 mm (15.9 in)	405 mm (15.9 in)	835 mm (20 in)	405 mm (15.9 in)	835 mm (33 in)	650 mm (25.6 in)	650 mm (25.6 in)	650 mm (25.6 in)	650 mm (25.6 in)
120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	120 or 230 VAC (single phase)	230 VAC (single phase)	400 VAC (three phase)	400 VAC (three phase)	400 VAC (three phase)



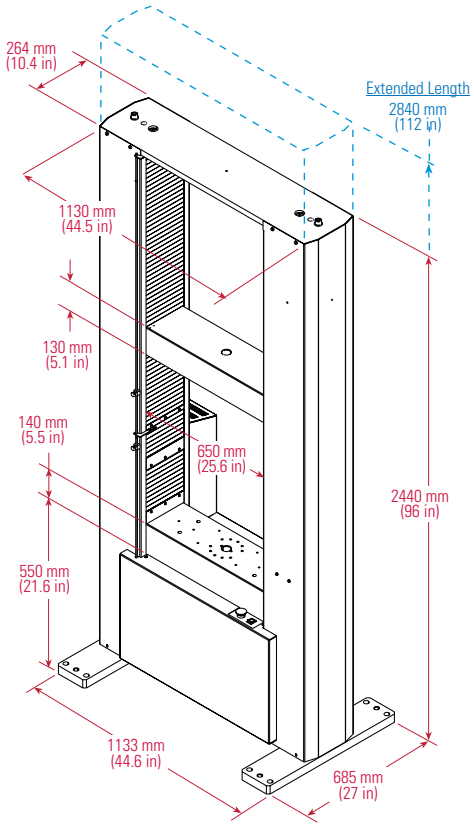
MTS Insight
Model 1, 2 and 5



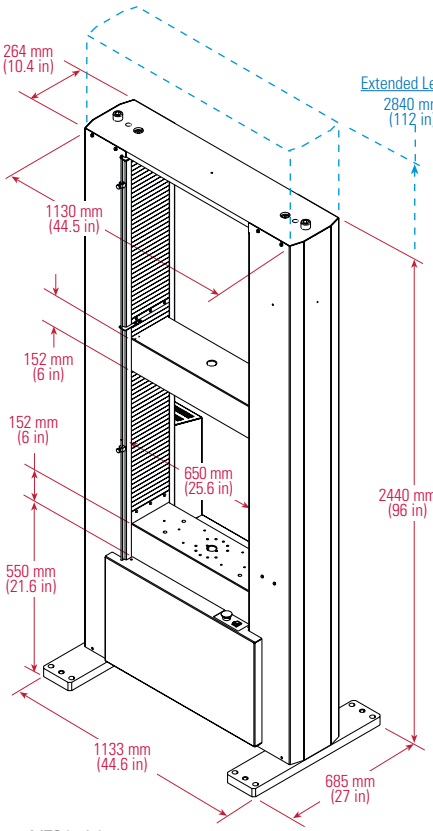
MTS Insight
Model 5 and 10



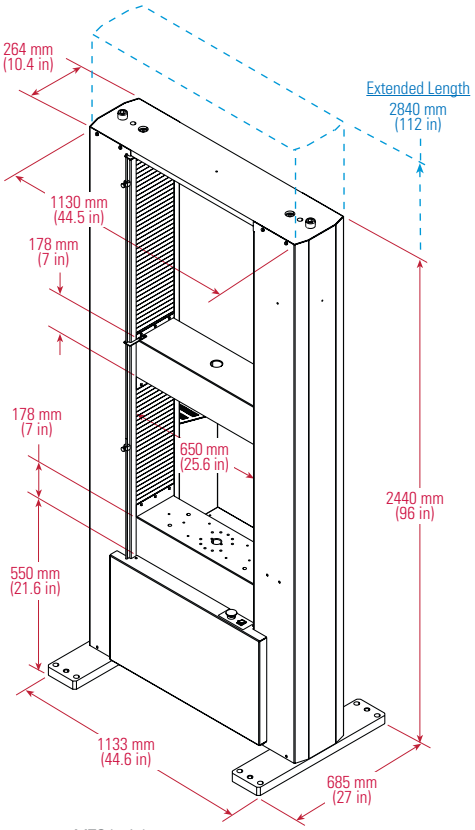
MTS Insight
Model 30 and 50



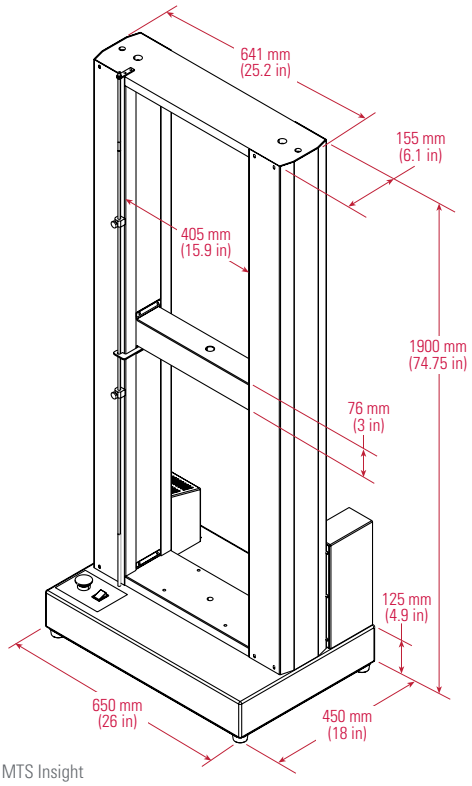
MTS Insight
Model 100



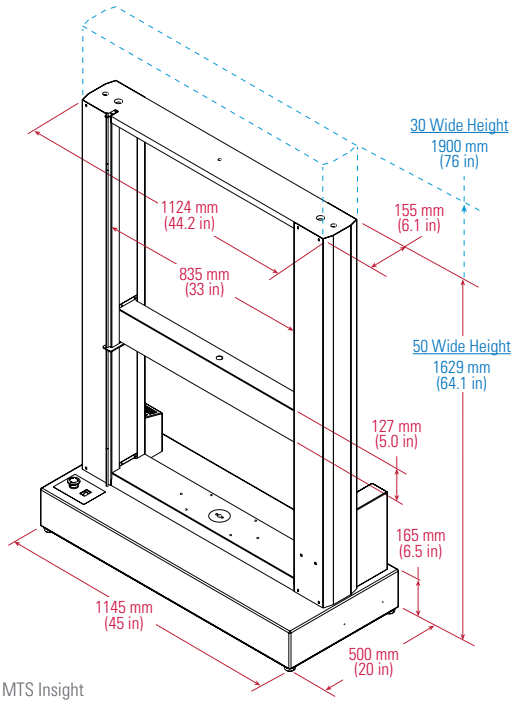
MTS Insight
Model 150 and 200



MTS Insight
Model 300



MTS Insight
Model 2 EL High Speed



MTS Insight
Model 30 and 50 Wide

MTS Insight Electromechanical Testing Systems, All Models

Force Capacity at Max Test Speed	100% for MTS Insight 1, 2, 5, 30, 100, 150, 200, and 300 50% for MTS Insight 10 and 50
Max Test Speed at Rated Force Capacity	100% for MTS Insight 1, 2, 5, 30, 100, 150, 200, and 300 50% for MTS Insight 10 and 50
Speed Accuracy*	± 0.05% of full speed
Position Accuracy*	0.01 mm (0.0004 in)
Position Resolution	0.001 mm (0.00004 in)
Motor and Drive System	Precision DC Servomotor, DC 4 Quadrant Motor Drive on MTS Insight 1 - 50
Speed Control	Continuously variable, AC Brushless, 3 ph Sinusoidal for 100 - 300
Ballscrews	Anti-backlash
Crosshead Guidance	Precision rail on MTS Insight 1 and 2 Precision guide columns on MTS Insight 2 HS and 5 - 300
Position Measurement	Optical encoder
Strain Channels	» Two optional conditioned strain channels » One optional digital channel available with conditioning for high elongation extensometers » Eight additional channels available
Environmental Requirements	
Operating Temperature	50 to 100°F (10 to 38°C)
Maximum Operating Humidity	70% non-condensing
Storage Temperature	0 to 120°F (-18 to +49°C)
Maximum Storage Humidity	90%

** In order to follow ASTM standards, MTS recommends on-site calibrations per relevant standards.*

Technical Specifications subject to CE compliance change

1. *Load weighing system meets or surpasses the following standards: ASTM E 4, BS 1610, DIN 51221, ISO 7500-1, EN 10002-2 and AFNOR_A03-501. MTS recommends that systems are verified on site at the time of installation as required by ASTM E 4 (par. 20.3) and ISO 7500-1 (section 9) standards.*
2. *Strain measurement system meets or surpasses the following standards: ASTM E 83, BS 3846, ISO 9513, EN 10002-4.*
3. *These systems conform to all relevant European standards and carry a CE mark.*

CE

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