

Material Testing Machines (Physical Measurement)



AGX-V Series Testing Machines

High Performance Electromechanical Testers for the Most Demanding Applications

- Tabletop models with frame capacity up to 50 kN (11,000 lbf) and floor models with frame capacity up to 600 kN (135,000 lbf)
- Ultra high-speed (10 kHz) data sampling and crosshead control (1kHz) enable astonishingly precise stress and strain control.
- Modular control unit allows expansion of data acquisition inputs (20 max), sensor outputs (20 max) and digital control outputs.
- Intelligent crosshead enhances operability and adds additional safety precautions to protect hardware and users.
- Multi-joint eliminates the need to exchange heavy components when converting from tension to compression.
- Select from additional options including column extensions up to 750 mm (30 in) and wider frames with up to 1375 mm (54 in) effective test widths



Video



AGS-X Series Testing Machines

Economical Electromechanical Testers for Routine Testing

- Load cells with test force accuracy within $\pm 0.5\%$ over the range 1/1 to 1/500 of the maximum capacity
- 1 kHz sampling rate ensures no missed strength changes
- Load cells with maximum capacities ranging from 1 N (0.22 lbf) to 300 kN (66,000 lbf)
- Comprehensive safety functions include stroke limit switches, emergency stop buttons, and safety covers
- Frame capacities of 10 kN (2,200 lbf), 20 kN (4,400 lbf), and 50 kN (11,000 lbf) for tabletop models and 100 kN (22,000 lbf) and 300 kN (66,000 lbf) for floor models
- For testing materials with extensive elongations, extended-column models are available



Video



EZ-X Series Testing Machines

Single-Column Testers for Texture Analysis and Material Evaluation

- Analyzers, Accessories and testing Software for Food texture evaluation including hardness, brittleness, Crispiness, Crunchiness, Gumminess, Chewiness, Viscosity, Shear Strength Adhesiveness, cohesiveness, break, flexure and more.
- Ideal for testing a variety of medical devices (Tablets, Syringes, needles, band aids, gel type medicines), Household goods, electronic parts, plastics, fibers, papers, films etc.
- Availability of Short Column Model (Capacity up to 500N/110 lbf), Long Column Model (Capacity up to 5KN/1100lbf) and 2KN Capacity High speed model (2,000 mm/minute)
- Machines include an adjustable controller which enables fingertip control of crosshead positioning and test start operations



Video



UH-X/FX Series Testing Machines

User-friendly Hydraulic UTM for High Capacity Applications

- Choose from front-opening hydraulic grip model or top loading manual grip model to support a wide range of testing applications
- Extra-large color touch-screen LCD improves ease-of-operation and Trapezium X testing software control adds further testing and data processing options
- High-speed, rangeless data measurement means data can be acquired using optimal measurement parameters, even for specimens with unknown strength
- 200 kN (44,000 lbf) to 4,000 kN (880,000 lbf) frame capacities for samples requiring the most demanding of loads
- Includes standard models and hybrid hydraulic models which combine an AC servo motor with a hydraulic pump to increase energy efficiency and reduce environmental impact



Accessories -Testing Machines

Grips / Fixtures

- Tensile Grips (Selection of Manual , Hydraulic or Pneumatic grips)
- Compression Platen, Bending Fixture, Tear, Shear, Peel, Puncture etc
- ASTM / ISO / BE-EN ISO /JIS Compatible grips
- Special Grips – Bauschinger, Bi Axial, Torsion
- Special Grips for Composite Materials

Extensometers

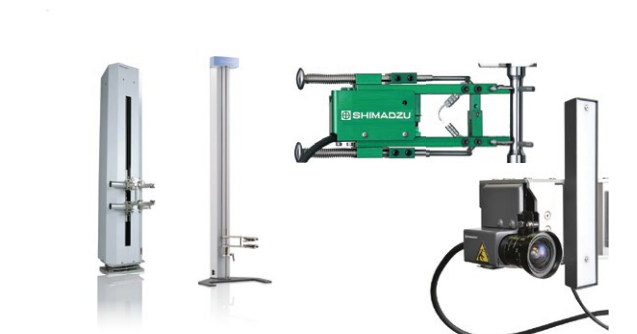
- Wide Selection of Contact and Non Contact type extensometers
- Video Extensometers and Long Travel Extensometer (DSES Type for high elongation materials include rubber, plastic etc.
- SIE And AEH Type fully automatic Extensometers
- Width Measurement device (Poissons ratio, Lankford value -R Value) measurement etc
- Extensometer Calibration Devices (CDE Series)

Chambers

- Wide range of Environmental chambers (Temperature, Humidity etc) and Furnaces
- Gas injection Type and Refrigerated thermostatic type chambers
- Wide range of temperature range from -180°C to 320°C (Select Suitable model)
- High temperature furnaces (Up to +1600°C)

Software

- Powerful and easy to operate Trapezium X Software Compatible with Autograph, EZX and UH Machines
- ASTM / ISO / BS-EN / JIS Methods can be easily created with step by step wizard assistance
- For data security and management, establish up to eight user account with different level of access



Video



Video

Micro Hardness Testers

HMV-G Series Micro Hardness Testers

- Manual and automated reading options available
- Test force range from 9.8 mN (1 gf) to 19.6 N (2,000 gf)
- Option of up to 2 indenters and up to 4 objective lenses
- Novel G-shaped frame improves work space and ease-of-use
- Range of accessories for mounting various sample types



Video



HMV-G Series Fully Automated Micro Hardness Testers

- Models with X-Y (2Dimension) Automation and X-Y-Z (3Dimension) Automations (Full automation)
- Enables automated sample shape recognition for indentation patterning 9.8 mN (1 gf) to 19.6 N (2,000 gf) force range
- Supports depth of hardening, area, and edge measurements
- Full automation model includes automatic focus function



DUH Dynamic Ultra Micro Hardness Tester

- Suitable for measuring hardness of Fibers, thin Films, Coatings, Rubbers and Elastomers (Elastic Recovery Materials)
- Ultra-low test force range of 0.1 mN (0.01 gf) to 1.96 N (200 gf)
- Indentation depth readings from 0.001 μm to 10 μm
- Elastic modulus and elastic and plastic indentation work calculations
- Evaluation of Hardness in accordance with ISO 14577-1 Annex A



MCT Micro Compression Tester

- Developed for compression strength testing of micro materials with size up to several hundred microns
- Force loading range of 9.8 mN (1 gf) to 4.9 N (500 gf)
- Displacement measurement range up to 100 μm
- Compression plate diameter options of 50 μm , 100 μm , 200 μm , and 500 μm
- Determine compression strength, compression rate, and recovery rate



Viscosity and Flow Testers

CFT-EX Series Capillary Rheometer

- Wide range of extruding pressures (up to 49 MPa) and test temperatures (up to 500°C)
- Constant temperature and constant heating rate methods
- Data acquisition and analysis software with a natural flow
- Determine apparent shear rate, apparent viscosity, flow rate, softening temperature, Flow Beginning temperature etc



Video



SMV-301 Series Mooney Viscometer

- For Measuring Mooney Viscosity and Scorch Time of Raw and Unvulcanized Rubber
- Mooney Viscosity test, Mooney Scorch Test, Stress Relaxation Test, Cyclic Test (SMV-301RT) Variable Rotor Speed test (SMV-301RT)
- Maximum 200M Capacity (Optional up to 400M)
- Automatic Calibration Unit (Optional) allows weight to be automatically Calibrated to ensure high tensile reliability
- Compliance with Global Standards Include ISO 289-1,2,3,4, ASTM D1646, JIS K6300-1 etc
- A color LCD Panel display allows instrument to be operated by anyone and enhance Safety

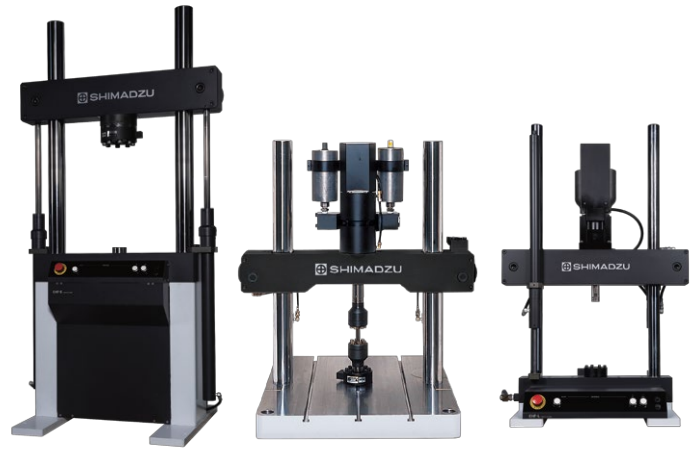


Video



Dynamic and Fatigue Testing Machine (Servopulser Series)

- Electric, hydraulic, pneumatic and ultrasonic type systems for fatigue and fracture analysis.
- Combination of high-rigidity load frame, low friction actuators, powerful controller and easy to use software makes smooth and accurate test analysis.
- Powerful 4830 controller features World best performance: 24 bit high resolution, 40 KHz fast sampling and 10 KHz fast feedback, auto tuning and auto gaining.
- Gluon 4830 software for fracture toughness
- ASTM E647-13, ASTM E399-12, ASTM E1820-11, ISO 12108-2012, ASTM E813-89.
- Special Instruments include Ultrasonic Fatigue Testing Machine, High Speed Tensile / Impact Testing Machine, Hydraulic Jack Systems, Electromechanical Actuators etc.



High Speed Impact Testing Machine (Tensile or Puncture)

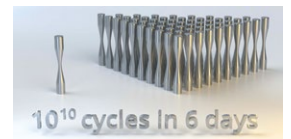
- State of the art machine for research on Plastics and Composites for their behavior against High Speed impact (Tensile or Puncture)
- HITS-TX (High Speed Tensile testing) for Tensile analysis and And HITS-PX (High Speed Puncture testing) for puncture analysis
- Capable of speed control from a very wide range of 0.0001 m/s to 20m/s (72km/hour) For HITS-PX : 1m/s to 20m/s
- Excellent vibration resistant design and powerful software enable the best accurate test results (Load cell : 10KN)
- Optional thermostatic chamber for temperature dependency test(-40 to 150°C)
- Related Standards include ISO 6603-2 :2000 and ASTM D3763-06



Video

Ultrasonic Fatigue Testing machine

- High Cycle fatigue testing system (20kHz) provides most time and coefficient test procedures for reliable service life data
- 10^{10} Cycle can be completed with in 6 days (400 times faster compared to 50Hz cyclic testing)
- Supports R&D Activities in Automotive, Railway, Aerospace application
- Generates stress amplitude in a specimen by resonating it with 20 kHz longitudinal wave oscillation
- Range of test amplitudes 100 MPa -1200 MPa (1000 MPa grade steel tests are possible)
- Resonance technique reduces power consumption to 1/100 W compared to conventional fatigue test.
- No Oil or Cooling water required.
- Availability of mean stress model



Applications

Metal Industries

Semi-auto-tuning function enables high-precision stress control and strain control (compliant with ISO 6892-2009 and JIS Z2241 metallic materials tensile testing standards)

Applicable Methods

- ASTM E8, ASTM O7205, ASTM A370, ASTM E399
- ISO 6892
- JIS Z 2241

And more . . .



UH-X/FX Series

AGX-V Series

Carbon Fiber (CFRP)

- ASTM D6484 / D6484M : Testing Open-Hole Compressive Strength of Polymer-Matrix Composite Laminates
- ASTM D7137 / D7137M : Testing Compressive Residual Strength Properties of Damaged Polymer-Matrix Composite Plates
- ASTM D7078 / D7078M : Evaluation Testing of Shear Properties of Composite Materials by the V-Notched Rail Shear Method
- ASTM D6671 / D6671M : Evaluating the Compression Characteristics of Polymer-Matrix Composite Laminated Plates Using a Combined Loading Compression (CLC) Test Jig



Video



Video



Video



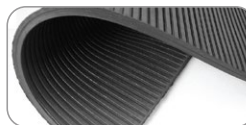
Video

Plastic, Rubber, Packaging Industries

- Strength properties of various plastics (HDPE, LDPE, PP, PVC etc.) and rubber are evaluated with high precision.
- Availability of a wide range of extensometers makes the system compatible with global testing standards (ASTM, ISO, JIS).
- High speed sampling of 1000Hz ensure no sudden variations in strength are missed.

Applicable Methods

- ISO 527, ISO 37
- ASTM D1894, ASTM D1781, ASTM D429 (Method A), ASTM D412, ASTM D790, ASTM D5943 etc.



AGS-X Series

Food & Pharmaceuticals

For Food Industries :

Bite Strength, Cook Quality, Resistance to Skin Break, Toughness, Crispiness, Crunchiness, Fracture, Work at break, Chewability, Rubbersness, Brittleness and more . . .

For Pharma Industries:

Tablet Hardness, Syringe Extrusion, Package Strength, tablet splitting strength, press-dispense test, needle injectability test, medical goods (syringes, needles, sutures, condoms, bandages etc) Strength test and more . . .

General Application :

Electrical Components, papers, plastics, wet and dry tissues, household goods and more . . .



EZ-X Series

103+ years of History in Testing Machines

Innovation and collaboration

Since 1917, 103+ years of materials testing technology for R&D and QA/QC

Shimadzu's highly precise materials testing solutions serve the most challenging R&D, production and quality control applications. Developers and users benefit from technical excellence and customer-focused commitment.

- Leading-edge sensor technology, control systems and information processing
- Static and dynamic universal testing machines
- Hardness testing instruments
- Capillary rheometers



Customer Testimonials

“

We have recently purchased a 1000 KN Hydraulic UTM from Shimadzu for our GFRP Rebar Testing. It is crucial in composite REBAR industry to have proper equipment that matches the requirement of the applicable testing methods. The chosen model is matching our expectations, in terms of performance, accuracy and test results reproducibility, and has helped us comply with the quality standards. We also recommend the quick and effective support provided by Shimadzu Local Office. Shimadzu has proven to be a valuable and dependable partner for our business development and for quality testing requirements.

Mr. Bogdan P.

Pultron Composites / Mateenbar - United Arab Emirates

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“HTU Jordan campus maintains state-of-the-art laboratory with the aim of providing high quality practical training for students and contributing effectively to regional research activities. Shimadzu is one of our trusted technology partners. Our lab has both, Electromechanical and Hydraulic systems from Shimadzu, that support and accelerate our training and R&D activities.”

Dr. Hazim Dwairi

Al Hussein Technical University- Jordan Campus

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“

It's been 27 years since we purchased Shimadzu's Autograph Tensile Testing Machine in 1992. The machine, till date, is in good working condition and continues to provide us reliable results for our cable metal strength analysis. We are very happy with the quality and performance of Shimadzu products.

Mr. Soumen

Gulf Cable & Electrical Industries Co. K.S.C.P - Kuwait

”

“

We at Fujairah Municipality conduct third-party materials testing of steel and metal samples on a frequent basis. We have been using Shimadzu's Hydraulic UTM for over a decade now and the performance of the machine has consistently been far beyond expectations. Shimadzu testing machine is a very reliable choice and we endorse it for its robustness and accuracy.

Engr. Rahana

Fujairah Municipality – United Arab Emirates

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“

Shimadzu Tensile Testing machine has been installed at Saudi Steel Pipe Company and is in use for more than 20 years with robust performance and with high reliability.

Mr. Mirza Aqeel Baig

Saudi Steel Pipe Company - Saudi Arabia

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Shimadzu Middle East and Africa

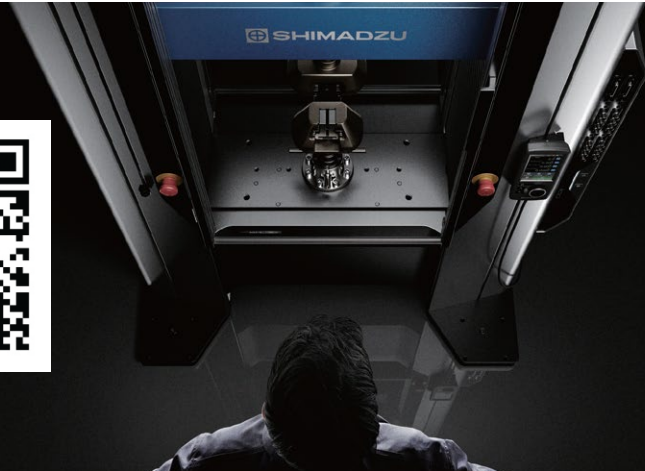
Our motto is to provide world-class customer experience by combining 150 years of Japanese Quality with superior 'After Sales Support'. Our business capabilities ensure that we sustain our customer-centric culture.

- On-site installation
- Factory Acceptance Testing (FAT)
- Site Acceptance Testing (SAT)
- Operational training
- Prompt service support
- Spare parts and instruments warehouse



Testing Machine Configurator

Create your own testing system configuration and request quotations



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