

Automated Testing System | For Tensile Testing of Metals



Instron® Automated Tensile Testing Systems for metals are configured to perform unattended tensile testing of metallic specimens of varying lengths and thicknesses. These systems have been designed to meet ASTM E8, EN 10002-1, ISO 6892, and other metals tensile standards, including JIS and DIN, and can be easily configured to meet other requirements. Barcodes are utilized to pass specimen geometry, handling, and testing information to the TestMaster™ 2 Automation Control Software. Bi-axial, Advanced Video Extensometry allows for r and n-value testing.

To satisfy the majority of our customer's testing requirements, Instron developed 100 kN and 250 kN capacity standard automation system configurations, while other capacities can be quoted upon request.

The 100 kN Automation System

This system is configured to perform unattended tensile testing of metallic specimens of varying lengths, <280 mm, and thicknesses from 0.1 to 12 mm and weighing <0.75 kg (1.75 lbs).

The system consists of a standard Instron universal testing frame, Advanced Video Extensometer (AVE), hydraulic wedge action grips, and hydraulic power supply.

The 250 kN Automation System

This system is optimized to perform fully-automated tensile tests on metallic specimens of varying lengths, <400 mm, and thicknesses from 0.5 to 20 mm thick and <1.25 kg (2.75 lbs).

The system consists of a standard Instron universal testing frame, AVE (for r & n-value testing) or contacting axial extensometer, hydraulic grips, and hydraulic power supply.

Robotic System Components

- Mitsubishi industrial-grade articulated arm
- Specimen storage racks designed to fit customer's specifications*
- Barcode reader, compatible with 1D or 2D barcodes
- Dual-axis vertical or heavy-weight, horizontal specimen measurement device (dependent on system capacity)
- Automatic ink transfer marking station to apply video targets, if video is used
- Bluehill® Materials Testing Software
- Premium PC
- TestMaster™ 2 Automation Control Software

*The system storage racks typically hold up to 275 specimens; however, this may vary depending on sample size and geometry

Improve Efficiency and Increase Throughput of Your Facility

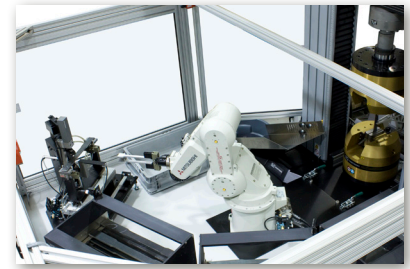
- Storage racks can be easily loaded prior to the end of the day and left for unattended, overnight testing
- Consistent specimen loading and testing improves repeatability and reproducibility of results by eliminating human variability
- Operators available to work on more value-added activities
- Overall costs are lower due to reduction in training and injury-related expenses

Options

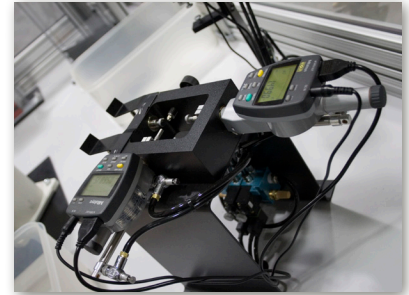
- Rockwell Hardness Tester
- Tab measurement or Automatic removal of coating thickness on actual thickness measurement
- Automatic queue mode (without barcodes, a custom queue table can be read from a file)
- Bi-directional communications with a Laboratory Information Management System (LIMS)
- Pass/Fail tested specimen sorting

Specifications

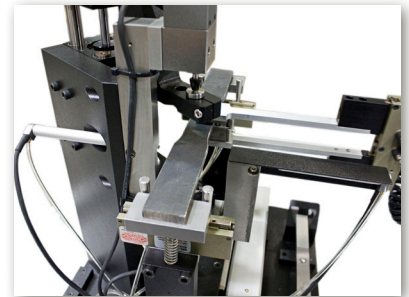
		100 kN Automation System		250 kN Automation System	
Robot Capacity		2 kg	3 kg	3 kg	
System/Load Capacity	kN lbs	100 22,500	100 22,500	250 56,250	
Maximum Specimen Weight	kg lbs	<0.75 1.75	<0.75 1.75	<1.25 2.75	
Electrical Requirements		Single phase, 50/60 Hz, 120 VAC	Single phase, 50/60 Hz. At least one line must be 220 VAC. Remaining equipment can be either 120 or 220 VAC	Single phase, 50/60 Hz. At least one line must be 220 VAC. Remaining equipment can be either 120 or 220 VAC	
Storage Rack Type		Top Feed Rack	Discrete Position	Discrete Position	
Measurement Device		Dual Axis Vertical	Dual Axis Vertical	Heavy-Weight Dual Axis Horizontal	
Gauge Type		Mitutoyo or Heidenhain	Mitutoyo or Heidenhain	Heidenhain	
Overall System Dimensions with Enclosure Doors Open	mm in	3810 × 2970 × 2785 150 × 117 × 110	4430 × 3110 × 2370 175 × 122 × 101	4430 × 3110 × 2370 175 × 122 × 101	



Typical 250 kN Automated Tensile Testing System



Dual-Axis Vertical Measurement Device, Mitutoyo Based



Horizontal Heavy-Weight Measurement Device, Heidenhain Based

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