



NextGen Electromechanical 5kN Universal Testing Machine

NG- EML CLASS A – Single Column Table Top

The EML class A Series addresses the needs of standardized and routine testing, providing the user high quality at the most affordable price. The single column testing systems are suited for tension and/or compression applications where tests are less than 5 kN and lab space is limited. They are typically used for quality control and production testing.

Typical Specimens

Plastics, fine wire, fibers and threads, biomaterials, thin films, adhesives, foam, packaging, paper products, and consumer products

New Features

- Robust linear motion guide increases lateral stiffness and ensure linear crosshead travel. This results in accurate crosshead alignment thus reducing variability in measurement data and producing better overall accuracy



- Servo motor with precise planet-gear speed reducer provides higher driving efficiency, low noise and free of maintenance. Because there is no need to replace lubricants the system's work life is prolonged.



- Compact design saves lab space

Controller

NextGen's NG-DTC-500 digital controller offers high speed and closed loop control of load, displacement and extension.

- Imported IC, more reliable
- Up to 1200Hz sampling frequency
- Up to 1200Hz closed loop control frequency
- 20bit resolution
- 16 digital input/output port
- Built-in port for PC communication
- Expandable ports
- Load protection, over-current protection, over-voltage protection, over-speed protect, and over-travel protection.

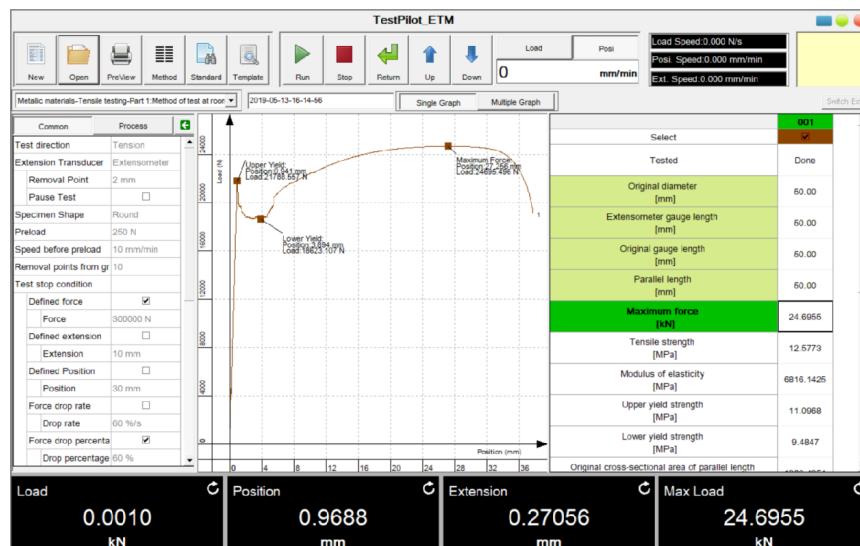
Remote Control with Display

- Ergonomically-designed and easy to operate
- Fine tuning knob
- Test start and stop operation
- Crosshead moving up, down, jog up, jog down
- Display of measurement channel: force, displacement, extension and etc.
- Test status display
- Specimen protection function



Software

- Multi-language software with built-in English, Chinese and Russian, and user can customize their own translation freely
- Pre-packaged test methods to help you quickly and efficiently meet the requirements of global test standards such as ASTM, ISO, DIN, EN, BS, and more
- Intuitive expression for easy programming of testing standards and testing process
- Testing report can be customized according to the requirement
- User authorization: The administrator can assign different functions for different level users
- Analysis can give typical test results like Young's modulus, Proof stress, Yield stress, stress, strain, Tensile strength, Elongation at break, compressive strength, bending strength, etc....



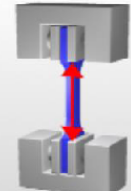
Method

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Metallic materials-Tensile testing-Part 1:Method of test at room temperature ISO 6892-1-2009

Common	Test direction	Tension	
Process	Extension Transducer	Extensometer	
Parameters	Removal Point	2	mm
	Pause Test	<input type="checkbox"/>	
Results	Specimen Shape	Round	
LoadPid	Return to initial position after test	<input type="checkbox"/>	
	Return Speed	0	mm/min
ExtensionPid	Preload	250	N
	Speed before preload	10	mm/min
Coordinate Axis	Removal points from graph	10	Points
	Test stop condition		
Temperature	Defined force	<input checked="" type="checkbox"/>	
	Force	300000	N
Yield	Defined extension	<input type="checkbox"/>	
	Extension	10	mm
	Defined position	<input type="checkbox"/>	
	Position	30	mm
	Force drop rate	<input type="checkbox"/>	
	Drop rate	0	%/s
	Force drop percentage	<input checked="" type="checkbox"/>	

Determine test direction, Tension Or Compression!



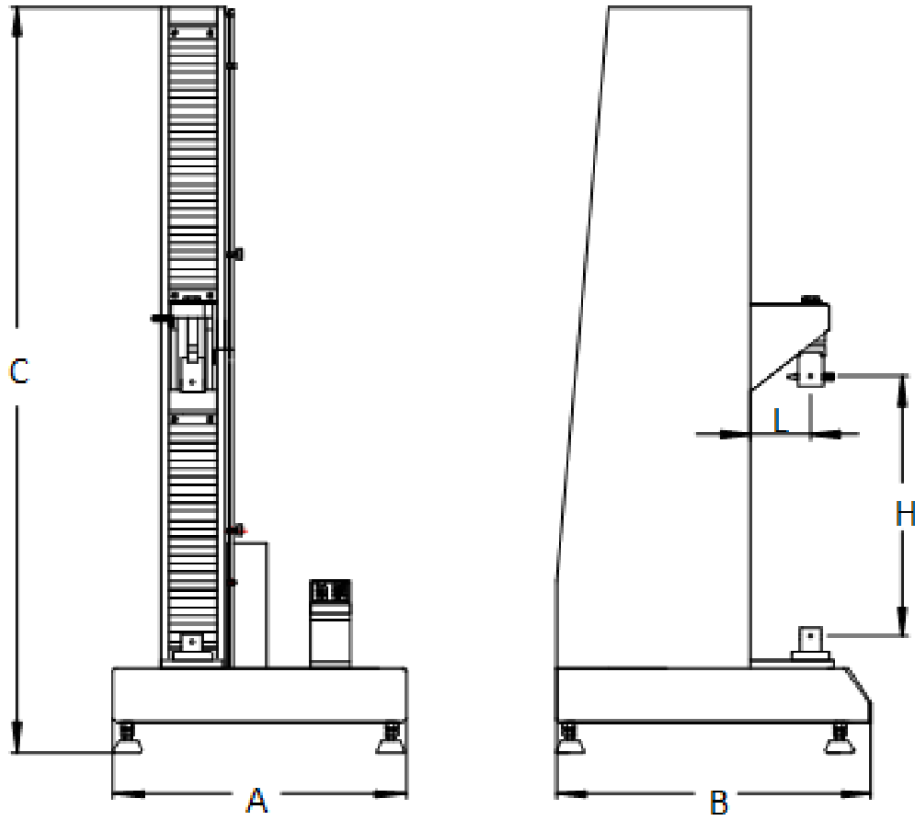
High Quality at Affordable Price

- Pre-loaded ball screws and heavy duty bearings assure long life with zero backlash as well as linear low force and through zero performance. The result is accurate and repeatable measurements that truly represent the specimen characteristics rather than load frame deficiencies
- Fully-protected lead screw covers provide longer life and greater operator protection
- High-speed, low vibration, world-class, maintenance-free, AC servo motor and servo controller
- Photoelectrical encoder built in servo motor system is for position measurement of crosshead
- Built-in bidirectional load cell is assembled in the middle crosshead to prevent any collisions and simple to perform compression or tension tests
- Dual action over-travel limits on all frames provide the highest level of safety and meet all international standards
- Remote control keypad facilitates test operation
- NG-400 controller provides high speed data acquisition with 8-CH A/D converting
- Full one-year warranty on parts and labor
- Free software upgrading

Full Complement of Test Accessories

Extensive range of accessories to meet test requirements in almost any application or industry: plastics, metals, biomedical, composites, elastomers, components, automotive, aerospace, textiles, and more.

- Tension grip
- Peel/tear fixture
- Compression fixture
- Flexure fixture
- Film COF test fixture
- Exchangeable load cells: 10N~2kN
- Long travel extensometer
- Clip-on extensometer



Machine Dimensions					
Frame type	Width x Depth x Height A x B x C (cm)	Crosshead travel H (cm)	Front opening space L (cm)	Adapter (cm)	Pin (cm)
Standard	49×53×129	70	10	Φ2	Φ1
30cm Extended	49×53×159	100	10	Φ2	Φ1

NG-EML Class A	
Model	EML102, EML103, EML202, EML203, EML501, EML502 ,EML503
Class	Class A, single column
Capacity	50N, 100N, 200N, 500N, 1kN, 2kN, 5kN
Calibration standard	ISO 7500, Class 1 / Class 0.5
Force range	0.2% - 100%FS/ 0.4% - 100%FS
Force accuracy	±1% / 0.5% of reading
Force resolution	1/500,000FS
Position accuracy	0.5% of reading
Position resolution	0.042μm
Crosshead speed	0.001 - 1000mm/min
Crosshead speed accuracy	±1.0% / ±0.5% of set speed
Crosshead travel	70cm (can be extended to 100cm) 27.55" (can be extended to 39.4")
Dimension	20.85x19.3x50.8" (53x49x129cm) (159cm for 100cm crosshead travel)
Power requirements	AC220V±10%, 50/60Hz,
Weight	198 / 90kg

Control System

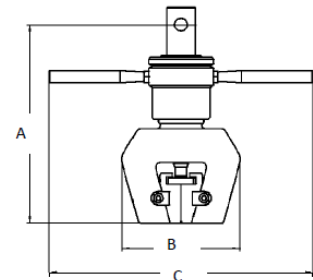
USB 2.0 communication

Data exchange between hardware and software via USB 2.0 interface and velocity of 12Mb/s. USB is main direction of development of communication, which has merits of high communication velocity, variety of communication mode(such as controlling , breaking, batch, real time ,etc.), and will be the main mode of communication.



Wedge Grip

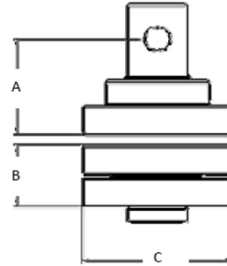
- Application: Tensile test of metallic and non-metallic materials
- Maximum force: 20kN
- Connection: Φ10mm pin
- Height (A): upper grip: 152mm, lower grip 162mm
- Grip body width (B): 114mm
- Total width (C): 114mm
- Working temperature: ambient
- Clamping type: wedge action
- Test space needed: 314mm
- Upper (lower) grip weight: 3.5kg
- Serrated jaw face: specimen hardness ≤ HRC24



- Jaw height: 40mm for flat or vee jaw, 26.5mm for file jaw
- Jaw width: 40mm
- Flat jaw face: 0~6mm, 6~12mm
- Vee jaw face: $\Phi 4\sim\Phi 9\text{mm}$, $\Phi 9\sim\Phi 14\text{mm}$

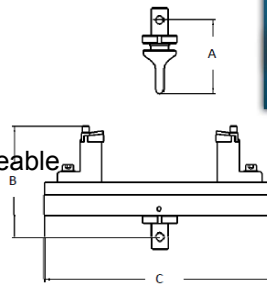
Wedge Grip

- Application: Compression test of metallic and non-metallic materials
- Maximum force: 20kN
- Connection: upper grip $\Phi 10\text{mm}$ pin, lower grip is seated on the lower adapter
- Grip height:
 - Upper grip (A): 65.5mm,
 - Lower grip (B): 20mm
- Platen (C): $\Phi 100\text{mm}$
- Working temperature: ambient
- Test space needed: 85.5mm
- Upper grip weight: 1.8kg
- Lower grip weight: 1.6kg



Flexural Testing

- Application: 3-point bending test of metallic and non-metallic materials
- Maximum force: 10kN
- Connection: upper (lower) grip: $\Phi 10\text{mm}$ pin
- Height: upper grip (A): 91mm, lower grip (B): 110mm
- Total width (C): 280mm
- Working temperature: ambient
- Test space needed: 201mm
- Upper grip weight: 0.4kg
- Lower grip weight: 1.6kg
- Bending nose: R2mm, R3mm, R5mm, R7mm, exchangeable
- Support roller: R2mm, R5mm, exchangeable
- Specimen width: 40mm
- Maximum span: 160mm, adjustable



Clip-On Extensometer

- Available gauge length: 25mm, 50mm, 100mm, made to order
- Extension: 5mm, 10mm, 12.5mm, 25mm, made to order
- Accuracy: $\pm 0.5\%$ as ISO 9513
- Resolution: $0.5\mu\text{m}$



Long Travel Extensometer

The NextGen long travel extensometer is a precise device for measuring strain in highly extensible materials such as elastomers, semi-rigid plastics and films. Gauge Length: 10mm, 20mm, 25mm, 50mm

- Measurement range: 10~ 800 mm
- Resolution: 0.01 mm
- Accuracy: 1%
- Standard: BS 5214

