

# 632.24-50 Axial Extensometers

MTS 632.24-50 Axial Extensometers are ideal for measuring strain in tension testing applications. U.S. Customary units have a gage length of 1.0 inch with a travel of 1.0 inch. SI Metric units have a gage length of 25 mm with a travel of 25 mm. Like all MTS extensometers, these feature our unique cross-flexure design which assures true center-point bending. The result is low hysteresis and low activation forces for exceptionally accurate strain readings; and extended travel capability for measuring post-yield behavior up to fracture.

Mechanical stops on these extensometers make it possible to leave them attached through specimen failure without damaging the unit. They also feature a zero stop for accurate and consistent determination of the initial gage length when you press the extensometer arms together.

Model 632.24-50 extensometers come standard with hardened, replaceable knife edges for flat and round specimens. Optional knife edge sets are available for use with a variety of specimen geometries and materials. These units also come standard with patented\* MTS Quick-Attach springs which make attachment to flat or round specimens fast and easy. Manual attachment devices are also included.

Each extensometer is packed in a rugged storage case which contains the instrument, attached cable with connector, spare parts, springs, attachment devices and tools. Instruction manuals are included with specifications and information on maintenance and operation.

\*U.S. Patent 4,507,871

## FEATURES

### Exceptionally Accurate

- ▶ Meets or exceeds ASTM E83 Class B1 and ISO 9513 Class 0.5 standards.

### Highly Reliable

- ▶ Can leave on through specimen failure without damaging the unit—not true of many competitive models.
- ▶ Extensometer cable is strain-relieved and potted directly to the sensing unit to minimize solder connections and assure maximum signal integrity.
- ▶ Symmetrical knife-edge design minimizes susceptibility to chipping and wear.
- ▶ One-year warranty.

### Easy To Use

- ▶ A single set of MTS patented\* Quick-Attach springs quickly mounts the unit to both flat and round specimens.

### Versatile

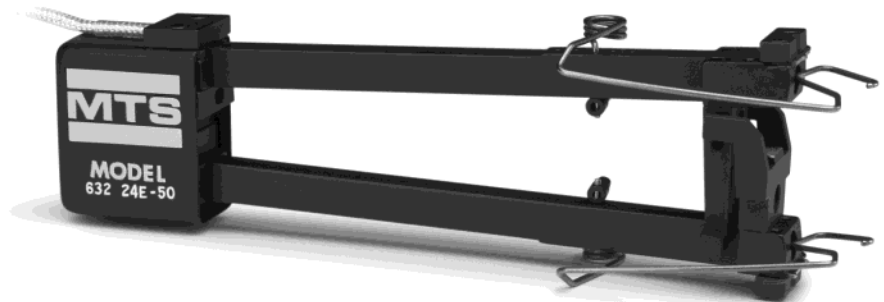
- ▶ Suitable for both static and dynamic applications.

### Thermally Stable

- ▶ Standard units feature temperature compensation for minimal span shift.

### Low Activation Force

- ▶ As low as 50 grams for minimum specimen contact force without slippage.



## SPECIFICATIONS

### Accuracy

- ▶ Meets or exceeds ASTM E83 Class B1 and ISO 9513 Class 0.5 standards.

### Nonlinearity

- ▶ Typical: 0.18% of range
- ▶ Maximum: 0.30% of range

### Hysteresis<sup>1</sup>

- ▶ Typical: 0.07%
- ▶ Maximum: 0.1%

### Quick-Attach Specimen Size Limits

- ▶ Diameter: 0.10 to 0.56 in (2.5 to 14 mm)
- ▶ Flat width: 0.4 to 1.0 in (10.5 to 26 mm)
- ▶ Thickness: 0.01 to 0.5 in (0.3 to 12.5 mm)

### Bridge Resistance

- ▶ 350 Ω

### Unit Weight<sup>2</sup>

- ▶ 47 grams

### Shipping Weight

- ▶ 1.5 lb (0.6 kg)

### Immersion

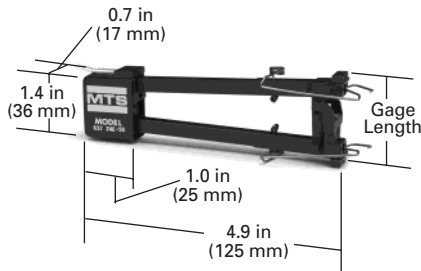
- ▶ May be immersed in most non-conducting fluids for specimen heating and cooling, including water-free alcohol, acetone and silicone. Models with a -51 suffix may also be immersed in cryogenic fluids, such as liquid nitrogen and helium.

### Connectors

- ▶ Extensometer connector: Bendix PT01A-10-6P; mating connector: Bendix PT06A-10-6S. All zero-balancing circuitry is situated in the connector to reduce unit weight and raise natural frequency.

### Calibration

- ▶ Each extensometer ordered may be calibrated by MTS using our automated calibration system at our factory or on-site by MTS Field Service. In addition, the extensometer and associated conditioning electronics may be returned to MTS for repair and recalibration.



## OPTIONS

### Longer Interface Cables

- ▶ 60, 80 or 100 inches.
- ▶ 1.5, 2.0 or 2.5 meters.

### Cable Insulation

- ▶ For electrical isolation.

### Radiation Protection

- ▶ Radiation-resistant coating.
- ▶ Cable insulation.

### Vacuum Protection (to 10<sup>-6</sup> Torr)

- ▶ Corrosion-resistant fasteners.
- ▶ Vacuum-rated epoxies.

## ACCESSORIES

### Adapter Cables

- ▶ For use with non-MTS test system controllers.

### Gage Length Extenders

- ▶ For extending gage length up to 8.00 in (200 mm).

### Mating Connector

- ▶ Bendix PT06A-10-6S, for building your own interface cable. Available with or without extension cable.

### Replacement Knife Edges

- ▶ Straight for round specimens.
- ▶ Three-point for flat.

## STANDARD MODELS<sup>5</sup>

Model	Gage Length	Maximum Travel	Maximum Strain <sup>3</sup>	Temperature Range	Activation Force (Max)
632.24E-50	1.000±0.002 in	+1.0 in	+100%	-120° to +300°F <sup>4</sup>	50 g
632.24F-50	25.00±0.05 mm	+25 mm	+100%	-85° to +150°C <sup>4</sup>	50 g

<sup>5</sup> Standard models are inventoried for quick delivery. Extended temperature models may require additional delivery time.

## EXTENDED TEMPERATURE RANGE MODELS<sup>5</sup>

Model	Gage Length	Maximum Travel	Maximum Strain <sup>3</sup>	Temperature Range	Activation Force (Max)
632.24E-51	1.000±0.002 in	+1.0 in	+100%	-452° to +150°F <sup>4</sup>	50 g
632.24F-51	25.00±0.05 mm	+25 mm	+100%	-269° to +65°C <sup>4</sup>	50 g

Notes:

<sup>1</sup> Hysteresis is measured over the ± maximum travel range and is specified as a percent of this full range.

<sup>2</sup> Unit weight includes extensometer and Quick-Attach springs, does not include cable and connector.

<sup>3</sup> Strain is the deflection per unit of gage length (inches/inch or millimeters/millimeter).

<sup>4</sup> May be used 50°F (25°C) higher for short durations (less than 24 hours).

<sup>5</sup> Standard models are inventoried for quick delivery. Extended temperature models may require additional delivery time.