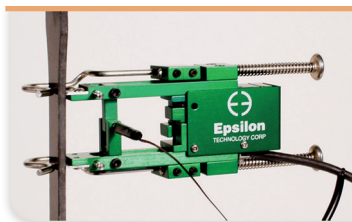


**General purpose extensometers for axial tensile, compression, and cyclic testing. Gauge lengths from 10 to 80 mm (and 0.5 to 2 inches) and full scale measuring ranges from 5% to 100% strain.**



*Model 3542 with 25 mm gauge length and  $\pm 10\%$  measuring range*

These extensometers are designed for testing a wide range of materials, including metals, plastics, composites and ceramics. All will work in both tension and compression. The dual flexure design makes them very rugged and insensitive to vibrations, which permits higher frequency operation.

They come standard with Epsilon's quick attach kit, making it possible to mount the extensometer on the test specimen quickly and easily with one hand. The quick attach kit can be removed, allowing mounting of the extensometer with springs or rubber bands.

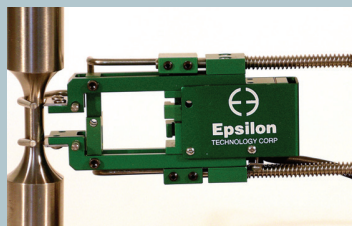
The Model 3542 extensometers are strain gaged devices, making them compatible with any electronics designed for strain gaged transducers. Most often they are connected to a test machine controller. The signal conditioning electronics for the extensometer is typically included with the test machine controller or may often be added. In this case the extensometer is shipped with the proper connector and wiring to plug directly into the electronics. For systems lacking the required electronics, Epsilon can provide a variety of solutions, allowing the extensometer output to be connected to data acquisition boards, chart recorders or other equipment.

For gauge lengths 100 mm (4 inches) or greater see Model 3542L.

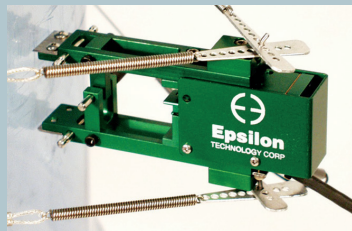
*See the electronics section of this catalog for available signal conditioners and strain meters.*



*Model 3542 with 25 mm gauge length*



*Model 3542 with 0.5 inch gauge length and  $\pm 25\%$  measuring range*

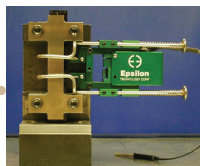


*Model 3542 configured for a very large specimen diameter*

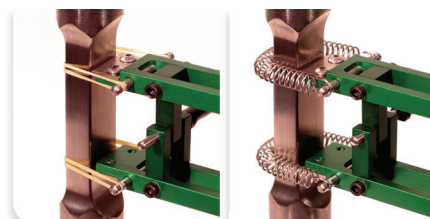
### **Extensometers for Composites Compression Testing**

Models 3542 and 3442 extensometers can be furnished to clip directly onto composites compression fixtures, such as for ASTM D695. These use specially made quick attach kit wire forms for the test fixture. Consult the factory for specifics.

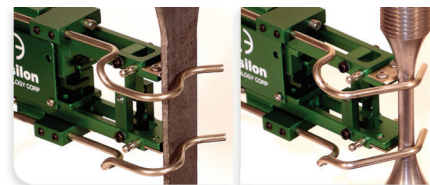
*Also see the Model 3442 miniature extensometer.*



*Model 3542 mounted on a D695 compression fixture for composite materials*



*Optional rubber band and spring attachment options included with Model 3442 and 3542*



*Standard quick attach wire forms included for round and flat samples*

## Features

- **May be left on through specimen failure.**
- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- All models can measure in both tension and compression and can be used for cyclic testing.
- Mechanical overtravel stops in both directions.
- Cable stops are used for overtravel protection where required. Epsilon's cable stops are contained fully between the arms of the extensometer, and do not hang below where they can interfere with fixturing—especially during compression testing.
- Standard units meet ASTM class B-1 requirements for accuracy. A test certificate is included. ISO 9513 class 0,5 test certificates are available upon request.
- Hardened tool steel knife edges are easily replaced. A spare set comes with every extensometer.
- High and low temperature options extend operation from as low as -265 °C (-450 °F) to +200 °C (400 °F).
- Includes high quality foam lined case.
- Replaceable arms and spacers for ease of repair. This also allows changing the gauge length for different test requirements.
- Rugged, dual flexure design for strength and improved performance. Much stronger than single flexure designs, this also allows cyclic testing at higher frequencies.
- Standard quick attach kit allows one hand mounting to specimens.

## SPECIFICATIONS

<i>Excitation:</i>	5 to 10 VDC recommended, 12 VDC or VAC max.
<i>Output:</i>	2 to 4 mV/V, nominal, depending on model
<i>Linearity:</i>	≤0.15% of full scale measuring range
<i>Temperature Range:</i>	Standard (-ST) is -40 °C to +100 °C (-40 °F to 210 °F)
<i>Cable:</i>	Integral, ultra-flexible cable, 2.5 m (8 ft) standard
<i>Standard Quick Attach Kit:</i>	Fits round samples up to 25 mm diameter (1.0 inch) and flats to 12 mm thick by 31 mm wide (0.5 inch by 1.25 inch)
<i>Operating Force:</i>	30 g typical

## OPTIONS

Quick attach kit wire forms for large specimens  
 Adapter kits to change gauge lengths  
 Connectors to interface to nearly any brand test equipment  
 Special coatings and stainless steel knife edges available for biomedical tests.  
 Shunt calibration module (see page 120)  
 Specialty knife edges (see page 100)



## ORDERING INFORMATION

Model 3542 Available Versions: ANY combination of gauge length, measuring range and temperature range listed below is available, except as noted. *Other configurations may be available with special order; please contact Epsilon to discuss your requirements.*

Gauge Length	
U.S.A.	
-0050	0.500"
-0064	0.640"
-0100	1.000"
-0140	1.400"
-0200	2.000"
METRIC	
-010M	10.0 mm
-012M	12.0 mm
-0125M	12.5 mm
-025M	25.0 mm
-050M	50.0 mm
-080M	80.0 mm

Measuring Range <sup>1</sup>	
DESIGNATION	% STRAIN
-005 <sup>2</sup>	±5%
-010	±10%
-020	+20%/-10%
-025	+25%/-10%
-050	+50%/-10%
-100	+100%/-10%

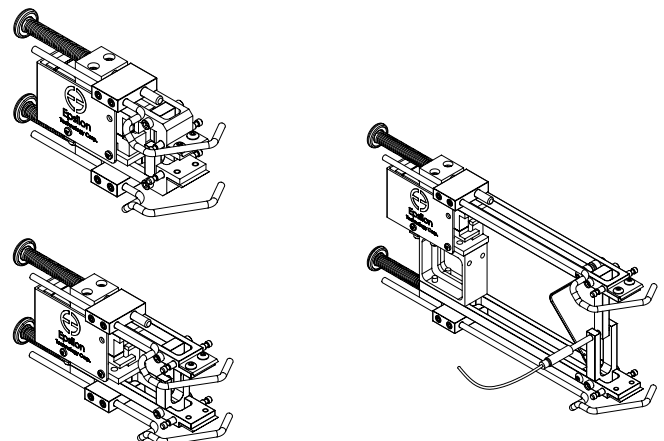
Model Number 3542- \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Temperature Range	
-LT	-265 °C to 100 °C (-450 °F to 210 °F)
-ST	-40 °C to 100 °C (-40 °F to 210 °F)
-HT1	-40 °C to 150 °C (-40 °F to 300 °F)
-HT2	-40 °C to 200 °C (-40 °F to 400 °F)
-LHT	-265 °C to 200 °C (-450 °F to 400 °F)

<sup>1</sup> Compressive ranges can be adjusted to higher values if required. Please contact Epsilon for your specific testing requirement.

<sup>2</sup> Not available in 10 mm, 12.5 mm, or 0.50 inch gauge lengths.

Example: 3542-0100-020-LT: 1.000 inch gauge length, ±20% measuring range, low temperature option (-450 °F to 210 °F)



MODEL 3542 EXAMPLES