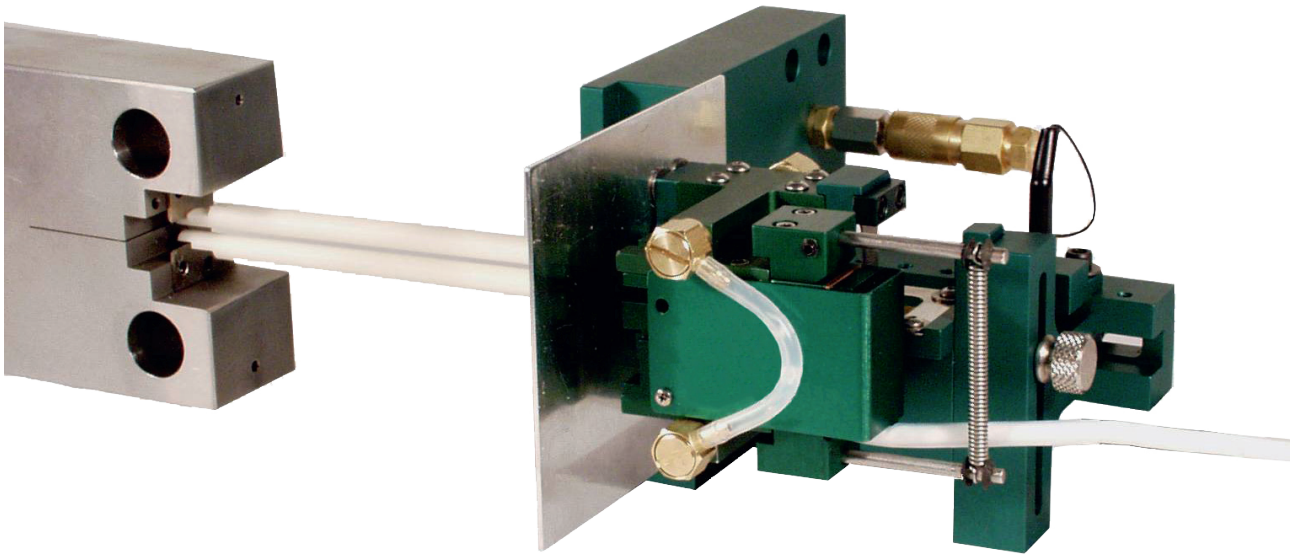
High Temperature COD Gage for Fracture Mechanics Testing

Series 3548COD

The 3548COD models are water-cooled high temperature Crack Opening Displacement Gages specifically designed for fracture mechanics testing at temperatures up to 1200°C or with high temperature option up to 1600°C. This COD gages can be used in combination with high-temperature split type furnaces with a slot for the ceramic rods.

The 3548COD gages accurate strain gaged devices mounted on a water-cooled bracket, which is mounted on the furnace cut-out, or with optional load frame support brackets. Additionally, high purity alumina rods are supplied with the standard temperature version (to 1200 °C). The high temperature option is furnished with alpha grade silicon carbide rods. The rods are made to order to the length needed for the specific furnace. For best performance with this model, contact edges on the test sample should be somewhat rounded (not sharp knife edges).



The application range includes:

Fracture Mechanics Testing to international standards as ASTM E1820, E399, E647 etc
Standard Units meet ASTM E1820 requirements for accuracy

Features

- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- All standard units meet existing ASTM E1820 requirements for accuracy.
- All units come with either high purity alumina ceramic rods (1200 °C) or alpha grade silicon carbide rods (1600 °C).
- Rugged, dual flexure design for strength and improved performance.
- Includes high quality foam lined case and a spare set of ceramic rods.

Important Note

Liquid cooling is recommended for all elevated temperature tests to obtain the best measurement accuracy and retain the validity of a room temperature calibration when the specimen temperature is >540 °C (1000 °F).
Cooling is necessary to prevent extensometer damage for testing in the range of ~800-1600 °C (1500-2900 °F).

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Specification:

Accuracy:	Standard configurations meet ISO 9513 class 0.5 and ASTM E83 class B-1 requirements for accuracy in the axial direction
Excitation:	5 to 10 VDC recommended, 12 VDC or VAC max.
Output:	2 to 4 mV/V nominal, depending on model
Linearity:	≤0.15% of full scale measuring range, depending on model
Temperature Range:	Standard (-ST) is to 1200 °C (2200 °F), optional (-HT) 1600 °C (2900 °F)
Cable:	Integral, ultra-flexible cable, 8 ft (2.5 m) standard
Operating Force:	≤30 g typical

Technical Data

Model 3548COD Available Versions: ANY combination of gauge length, measuring range and temperature range listed below is available, except as noted. *Ceramic rod lengths are made to fit furnaces as required. Please provide furnace dimensions at the time of order. Other configurations may be available with special order; please contact us to discuss your requirements.*

Model Number 3548COD – _ _ _ _ – _ _ _ _ – _ _ _ _ – _ _

Gauge Lengh	
-005M	5.0 mm
-008M	8.0 mm
-010M	10.0 mm
-012M	12.0 mm
-020M[1]	20.0 mm

Measuring Range:	
-025M	+2.5 mm
-040M	+4.0 mm
-070M	+7.0 mm
-100 M	+10.0 mm
-120M	+12.0 mm

Temperature Range	
-ST	Ambient to 1200 °C (Ambient to 2200 °F)
-HT	Ambient to 1600 °C (Ambient to 2900 °F)

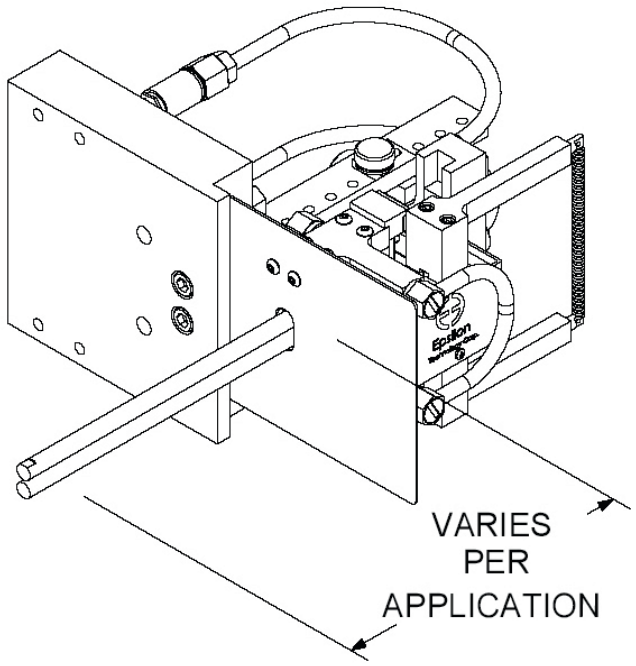
[1] *Only available in small measuring ranges (rod length dependent)*

Options:

- Constant-temperature recirculating chiller
- High temperature (-HT suffix) option for use up to 1600°C
- Load frame mounting brackets
- Connectors to interface existing electronics

Example: Model 3548COD-010M-070M-070M

Dimensions: mm



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