INSTRON®

The difference is measurable®

Compact Tension Fixtures | 2780 series

This range of Compact Tension (CT) Fixtures are desinged for static and fatigue fracture testing for compact testing specimens. They can be used with Instron Fracture Mechanics Software to carry out both basic and resistance curve tests in accordance with relevant international standards. Each set of grips includes a combination of alignment and pre-loading fittings which is done with precision to ensure alignment at the time of installation. All necessary attachments for Instron equipment can be provided with your order.

We have analyzed the guidance provided in the standards to design a grip which maximizes compliance across those relevant standards with a single, simple and sophisticated grip design. We offer two standard grips which are for testing common metric specimens 12.5mm and 25mm. Instron also offers competitively priced solutions for testing other specimen sizes which follow the same ratio-metric design including imperial dimensions and non-standard sizes.

Please contact your sales representative to discuss alternative specimen geometries or the use of this fixture with non-Instron equipment.

Features and Benefits

- Designed in accordance with international standards such as ASTM E399, E647 & E1820
- Standard fixtures for metric specimens 12.5mm and 25mm thick
- Standard attachment kits available for 8801 and 8862 machines
- Includes rugged storage case purpose designed to store grips and associated parts
- Retaining tab, safety feature which retains pin in place when under test
- Knurled thumb screws for easy and safe insertion or removal of clevis pins and specimen
- Temperature Range -50 °C to 315 °C

Application Range

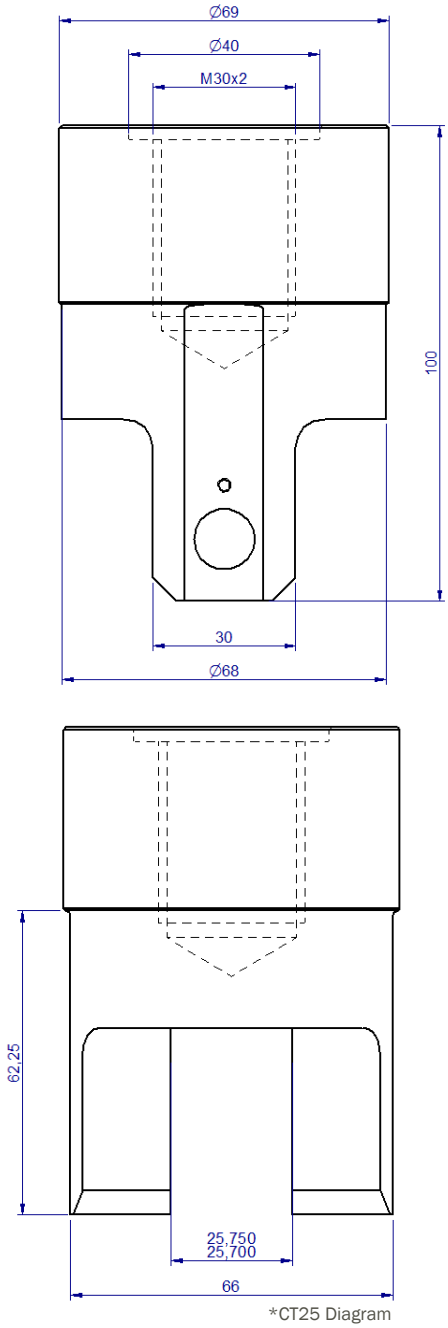
- Types of loading - Static or Fatigue
- Specimen geometries - Compact tension
- Fracture Toughness, J-Integral, Crack Growth & R-Curve

Principle of Operation

The upper and lower grips are identical and attached to the specimen by means of clevis pins. The two grips are aligned during set up and secured with a pre-load in that alignment. Results are obtained using a COD gauge to measure displacement within the opening of the notch during loading. The retaining tab ensures that the clevis pins are safely inserted and remain in place during the test.

Specifications

		CT12.5	CT25
Dynamic Force Capacity (Fatigue Crack Growth)	kN	10	50
	lbf	2248	11240
	kgf	1019	5098
Static Force Capacity	kN	20	100
	lbf	4496	22481
	kgf	2039	10197
Overall Height	mm	100	100
Overall Diameter	mm	69	69
To Fit Specimen Thickness	mm	12.5	25
Pin Diameter	mm	5.875	11.75
Permitted Tolerance	±mm	0.1	0.2
Internal Thread (For Attachment)		M30	M30
Construction	Maraging steel C-250 Heat treated to H925		
Construction Weight (Per Grip)	kg	1.723	1.915
	lb	3.799	4.222
Temperature Range	°C	0 to 315	0 to 315
	°F	32 to 599	32 to 599



*CT25 Diagram

Configurations

Catalog Number	Description
2780-118	CT12.5 - attachment kits and accessories to suit 50kN and 100kN actuator for ambient testing
2780-119	CT25 - attachment kits and accessories to suit 50kN and 100kN actuator for ambient testing
2780-120	Additional extension rod for use of 2780-118 and 2780-119 with a standard 3119-600 series chamber

Note: If 2780-118 and 2780-119 are to be used on a 250kN (size 2) actuator, additional 8000-093 attachment kits are necessary

Accessories

Catalog Number	Description
2670-130	Crack opening displacement (COD) gauge 5mm GL/2mm Travel
2670-132	Crack opening displacement (COD) gauge 10mm GL/4mm Travel

Rugged Storage Case

www.instron.com

INSTRON

Worldwide Headquarters
825 University Ave, Norwood, MA 02062-2643, USA
Tel: +1 800 564 8378 or +1 781 575 5000

European Headquarters
Coronation Road, High Wycombe, Bucks HP12 3SY, UK
Tel: +44 1494 464646