

This range of Compact Tension (CT) Fixtures are designed 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 alignment and pre-loading fitting 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

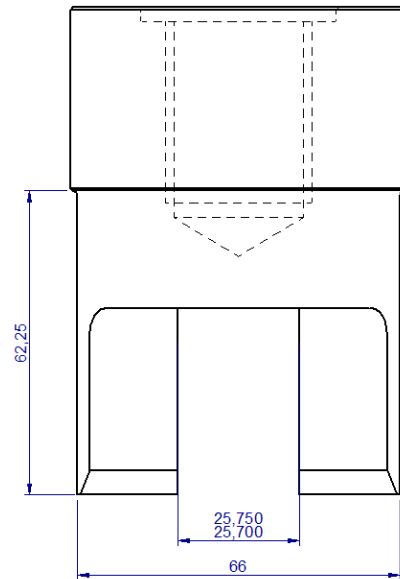
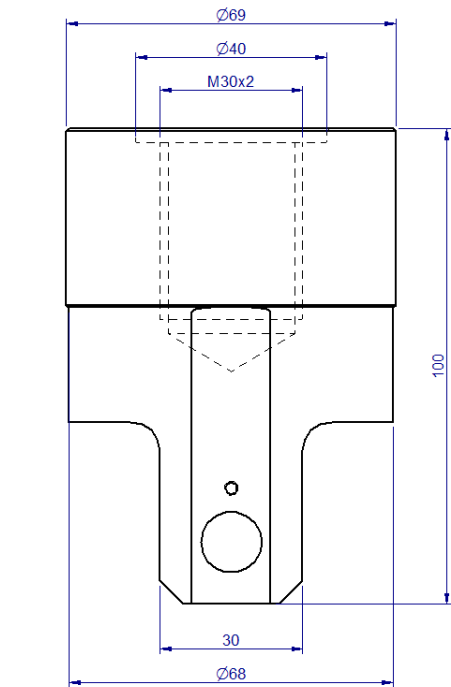
### Principle of Operation

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 measuring 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<br>(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<br>Heat treated to H925 |           |           |
| Construction<br>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 |



## 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       | Option to include additional components for testing in a chamber and need two piston rode extenders |

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<br>5mm GL/2 Travel    |
| 2670-132       | Crack opening displacement (COD) gauge<br>10mm GL/4mm Travel |



Rugged Storage Case

[www.instron.com](http://www.instron.com)



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