

Crack Opening Displacement Testing Considerations

Type of Specimen

Test specimens designed for fracture mechanics testing; compact tension, C(T), or three-point bend, SE(B) [note accessories required for three-point bend specimens]. Other specimens, such as disk-compact tension, DC(T), and arc-shaped tension can be used if it has integral or attached knife edges and/or the gauge can be mounted in the correct position.

The end of the COD gauge arms are machines so that they clip onto knife edges. The knife edges may be machined as part of the specimen or be separate bolt-on knife edges fitted to the specimen faces for the duration of the test. Knife edges are typically machined to have a 60° tip angle.

Precautions

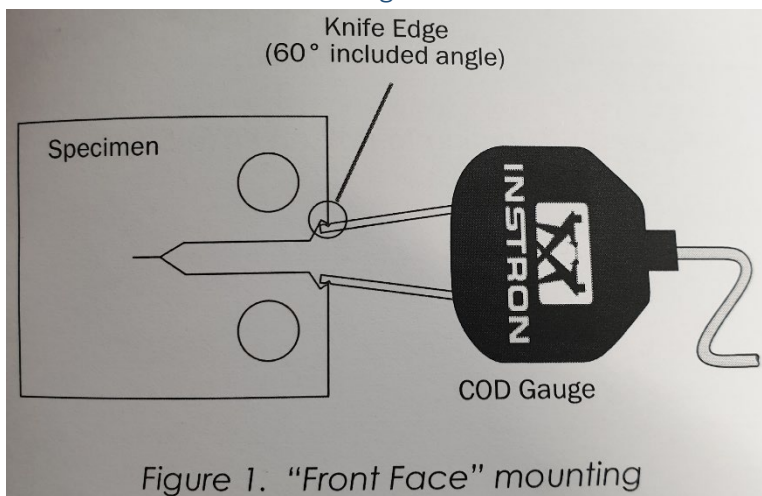
Can be damaged by over-travel or excessive force applied to the operating arms.

DO NOT touch or remove the COD gauge when the testing system is in strain control and the COD gauge is supplying control feedback. Doing so will cause a sudden and unexpected movement of the actuator or crosshead.

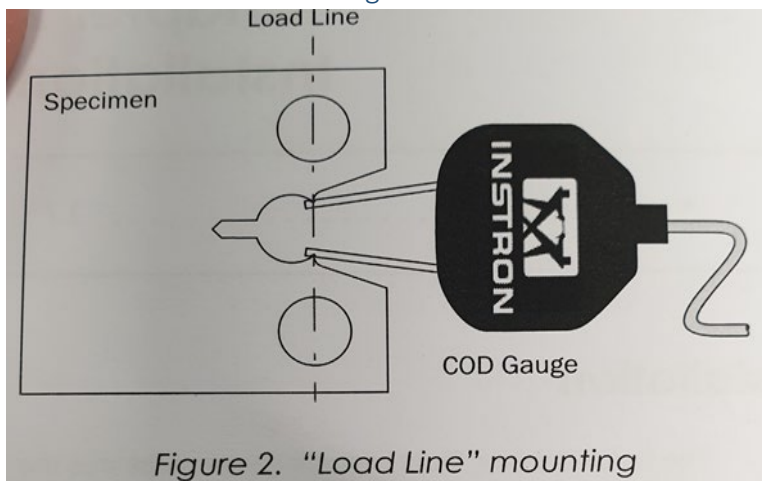
Installation of the gauge

There are three different ways to install the COD gauge;

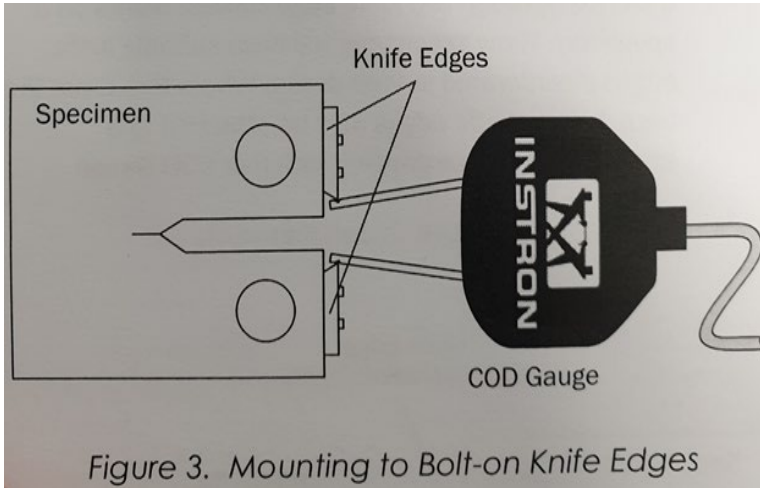
1. "Front Face" mounting



2. "Load Line" mounting



3. Mounting to Bolt-on Knife Edges



To attach a COD gauge onto a specimen:

1. Before turning on the instrument, connect the COD gauge transducer plug into the testing machine load frame extensometer socket.
2. Ensure it is fully mated, and secured into the socket with the clips or screw fittings provided.
3. Power on the instrument
4. If necessary, fit a pair of bolt-on knife edges to the specimen.
5. Mount the specimen to the load frame.
6. Compress the two arms of the COD gauge between your fingers and clip it to the specimen, engaging the arms onto the knife edges of the specimen.
7. Ensure that the cable from the COD gauge is supported so that no pressure is exerted on the gauge. The magnetic cable support included should help achieve this.
8. The device should now be zeroed and calibrated before use using the Calibration Wizard feature of the console software - for this the plug needs to be connected to the 25-way transducer socket on the load frame and placed on the specimen at gauge length (this is only valid at temperatures of or close to 20°).