

High Pressure Triaxial Cell (HTRX-070L)

- 70 MPa (10,000 psi) pressure & 1,000 kN (225 kips) axial load capacity
- Higher pressures available up to 210 MPa (30,000 psi)
- Hardened Stainless steel construction
- Accepts samples with a diameter from 25 mm to 100 mm and with a length of 2 times the diameter
- Upper platen provided with a spherical seat to compensate for specimens with non-parallel ends
- Top & bottom pore pressure plumbing provided for effective stress and permeability measurements
- Electrical feedthrough connectors for GCTS axial and circumferential deformation measurement devices, ultrasonic sensors, & other special transducers
- Available options:
 - Axial and circumferential deformation measurement system
 - Platens with ultrasonic transducers for P- & S-wave velocity measurements
 - High temperature control subsystem for testing at up to 150 C



DESCRIPTION

The GCTS High Pressure Triaxial Cell was designed for testing rock specimens with diameters up to 100 mm (4 inch) and 200 mm (8 inch) lengths at confining pressures of up to 70 MPa and axial loads of up to 1,000 kN. Other specimen diameters can also be tested with the use of optional platens.

The 178 mm inside diameter of the cell wall and the electrical feed-through connectors installed at the cell base allow the use of in-vessel instrumentation for precise measurements of deformation modulus and Poisson's ratio. The standard specimen platens have O-ring grooves for sealing the specimen jacket and an upper spherical seat to minimize stress concentrations due to non-parallel specimen ends. Pore fluid lines and ports for both, upper and lower platens, are also standard for effective stress and permeability measurements.

Cell and pore fluid connectors are provided at the cell base for easy interface with either the GCTS computer servo-controlled pressure intensifier or the GCTS air/oil pressure booster system. A loading piston with spherical seating is also provided with this triaxial cell.

The standard cell includes 5 electrical feed-through connectors with 4 lines each (20 electrical lines total) to connect a variety of internal sensors such as deformation gages, P & S wave velocity transducers, acoustic emission sensors, etc.

The optional high temperature control subsystem includes an internal thermocouple to measure the specimen temperature as well as a wall thermocouple to provide precise cascade temperature control and avoid temperature overshoots. In addition a high strength insulation plate is provided in order to eliminate temperature gradients inside the specimen by eliminating fast heat losses through the cell base and to the loading frame.

GCTS also manufactures other rock triaxial cells for higher pressures and/or loads. Contact GCTS for information on other high pressure triaxial cells.

SPECIFICATIONS

Inside Diameter: 178-mm (7 inch)
Cell Height: 560 mm (22 inch)
Cell Width: 355 mm (14 inch)