High Pressure Triaxial Cell (HTRX-140)

HTRX-140 with temperature control option (heaters inside cell wall) & ultrasonic platens

- 140 MPa (20,000 psi) pressure and 2.5 MN (560 kips) axial load capacity. Higher pressures available.
- Accepts samples with a diameter from 25 mm to 63.5 mm and with a length of 2 times the diameter. Platens for NX (54 mm) diameter specimens come standard with this cell.
- Upper platen provided with a spherical seat to compensate for specimens with non-parallel ends.
- Top and bottom pore pressure plumbing provided for effective stress and permeability measurements.
- Electrical feed-through connectors for GCTS axial and circumferential deformation measurement devices or other special transducers.
- Available options: Axial and circumferential deformation measurement system, platens with ultrasonic transducers for P and S wave velocity measurements, and high temperature control subsystem for testing at up to 200 C

DESCRIPTION

The GCTS High Pressure Triaxial Cell was designed for testing (NX size 54mm diameter) rock specimens with lengths of up to 120 mm at confining pressures of up to 140 MPa and axial loads of up to 2,500 kN. Other specimen diameters can also be tested with the use of optional platens. This cell includes a lifting/jacking top plate for easy specimen setup.

The 150 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 NX 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 a spherical seating is also provided with this triaxial cell.

The high temperature option includes a thermocouple port, heaters embedded into cell wall, insulation base plate, and insulation jacket. The insulation base plate is very important to eliminate temperature gradients within the specimen.

SPECIFICATIONS

Inside Diameter: . . . . . .150-mm (6 inch)
Overall Outside Diameter: . . . 355-mm (14 inch)
Overall Height: . . . . . 520 mm (20.5 inch)