



Your supplier of high pressure laboratory instruments

TRUTEST – TRUE TRIAXIAL ROCK TESTING SYSTEM



The TRUTEST system is specifically designed for the mechanical characterization of large cubic rock specimens under fully independent stress control along the three orthogonal principal axes (σ_x , σ_y , σ_z). It enables rigorous reproduction of complex anisotropic in-situ stress conditions and precise simulation of true triaxial loading paths. The system allows high-resolution determination of principal stresses, directional strain responses, and failure criteria under true triaxial loading. The specimen is confined between six servo-controlled hydraulic actuators, configured in opposing pairs along each axis. Each actuator pair applies axial loading to the specimen, ensuring uniform stress distribution across the specimen faces. Actuation is driven by three independent high-pressure syringe pumps, providing closed-loop pressure regulation and fine stress-path control. Axial deformations are continuously monitored using six high-precision LVDT displacement transducers, with two sensors per axis to ensure redundancy and measurement accuracy. Optional thermal control enables subsurface temperature simulation. Ultrasonic monitoring of P- and S-waves allows real-time assessment of elastic evolution and damage. The system also supports true triaxial hydraulic fracturing and wellbore stability evaluation, with real-time acoustic emission monitoring of fracture initiation and propagation.

Specifications

Specimen dimensions	Type 1: 100 x 100 x 100 mm
	Type 2: 200 x 200 x 200 mm
	Type 3: 300 x 300 x 300 mm
Maximum X stress	100 MPa
Maximum Y stress	100 MPa
Maximum Z stress	100 Mpa
Temperature range	Ambient to 150°C (optional)
Wetted part material	Stainless steel
Power supply	220 V 2 Phases, 50/60 Hz

Benefits

Realistic simulation of in-situ anisotropic stress conditions

Independent control of three principal stresses (X, Y, Z)

Thermo-mechanical testing up to 150°C : Simulates realistic reservoir

temperature conditions

Advanced monitoring capabilities (strain, ultrasonic waves, acoustic emission)

Capability to perform hydraulic fracturing tests under controlled true triaxial stress conditions