



FEATURES OF THE PUMP-ACTUATED TRIAXIAL COMPRESSION TEST SYSTEMS

	TRILAB	PREPEAK	ROCLAB	AVS700
Triaxial cell specifications				
Triaxial cell type	Balanced deviatoric piston triaxial cell	Axial piston triaxial cell	Axial piston triaxial cell	Axial piston triaxial cell
Maximum axial load	1000/2500 KN	500 KN	150 KN	150 KN
Maximum confining pressure	70/140 Mpa	70 Mpa	100 Mpa	70 Mpa
Pore pressure	70 Mpa	70 Mpa	70 Mpa	70 Mpa
Maximum temperature	200°C	200°C	150°C	120°C
Specimen diameter	up to 100 mm	up to 54.7 mm	up to 54.7 mm	up to 54.7 mm
Specimen length	2.5 x Diameter	2.5 x Diameter	2.5 x Diameter	2.5 x Diameter
Wetted parts	Stainless steel / Inconel	Stainless steel / Inconel	Stainless steel / Inconel	Stainless steel
Connection	1/8-inch LP	1/8-inch LP	1/8-inch LP	1/8-inch LP
Cell securing mechanism	by nut rotation	by nut rotation	by nut rotation	by nut rotation
Axial loading system specifications				
Axial load generation	deviatoric piston (pressurized by pump)	Axial piston (pressurized by pump)	Axial piston (pressurized by pump)	Axial piston (pressurized by pump)
Actuation	Electromechanical pump	Electromechanical pump	Electromechanical pump	Electromechanical pump
Control type	Pressure-controlled or displacement controlled	Pressure-controlled or displacement controlled	Pressure-controlled or displacement controlled	Pressure-controlled
Operating regime	Static	Static	Static	Static
Feedback loop	Load cell + displacement encoder	Load cell + displacement encoder	Load cell + displacement encoder	Pressure transducer
Control Waveforms	static/ramp	static/ramp	static/ramp	static/ramp
Confining pressure system specifications				
Confining pressure generation	Electromechanical pump	Electromechanical pump	Electromechanical pump	Electromechanical pump
Control mode	Pressure-controlled or displacement controlled	Pressure-controlled or displacement controlled	Pressure-controlled or displacement controlled	Pressure-controlled
Operating regime	Static	Static	Static	Static
Feedback loop	pressure sensor + displacement encoder	pressure sensor + displacement encoder	pressure sensor + displacement encoder	pressure sensor
Control Waveforms	Static	Static	Static	Static
Pore pressure system specifications				
Confining pressure generation	Electromechanical pump	Electromechanical pump	Electromechanical pump	Electromechanical pump
Control mode	Pressure-controlled / Flow controlled	Pressure-controlled / Flow controlled	Pressure-controlled / Flow controlled	Pressure-controlled / Flow controlled
Operating regime	Static	Static	Static	Static
Feedback loop	pressure sensor	pressure sensor	pressure sensor	pressure sensor
Control Waveforms	Static	Static	Static	Static
Triaxial sensor type				
Axial deformation	In-vessel diametral extensometer	In-vessel diametral extensometer	In-vessel diametral extensometer	
Radial deformation	In-vessel axial LVDT	In-vessel axial LVDT	In-vessel axial LVDT	
Axial load	In-vessel load cell	In-vessel load cell	In-vessel load cell	
Acoustic velocity	In vessel acoustic sensors	In vessel acoustic sensors		In vessel acoustic sensors
Acoustic Emission	In-vessel AE sensors	In-vessel AE sensors		
Triaxial tests				
Pre-failure Stress-strain behaviour	yes	yes		
Triaxial compressive strength	yes			
Post-failure Stress-strain behaviour	yes			
Rock compressibility	yes	yes	yes	
Acoustic velocity	yes	yes		yes
Acoustic Emission	yes	yes		
Electrical resistivity	yes	yes		
Liquid permeability	yes	yes		
Hydraulic fracturing	yes	yes		