NEXTGEN MATERIAL TESTING

YOUR QUALITY TESTING CHOICE

Dynamic Triaxial Systems 1000 kPa

Standards: ASTM D5311

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE

GET A QUOTE

Description

NextGen offers a variety of Dynamic Triaxial Systems, with capacities ranging from 5kN/5Hz to 50kN/20Hz, designed to meet your specific testing requirements. Whether you're testing small or large specimens, using Bender Elements, or on-sample local strain sensors, our Dynamic Triaxial Systems can be configured to match your needs. The system features a Dynamic Servo Controller that supports up to 8 input channels and various waveforms. It includes adaptive PID control, allowing the system to automatically adjust internal settings to ensure target load and displacement are achieved, even as sample stiffness changes during the test. This ensures consistent, accurate results for dynamic soil testing.

Standard system configurations feature Pressure Volume Controllers for precise Back Pressure and Cell Pressure control. For enhanced cell pressure regulation or dynamic cycling of lateral pressure around the sample, an upgraded Dynamic Cell Pressure Controller is available.

The Clisp Studio software simplifies the entire testing process, covering everything from Saturation to various Consolidation phases (Isotropic, Anisotropic, or K0), Static Loading, Stress Path, and Cyclic Shear (Stress or Strain) tests. With its intuitive interface, Clisp Studio ensures easy setup and efficient execution, streamlining even the most complex geotechnical testing procedures.

Dynamic Triaxial System Features

- Dynamic or Hydraulic Servo Controller supports up to 8 input channels for sensor integration.
- Closed loop control for precise and consistent testing operations.
- Built-in signal conditioning to enhance data accuracy.
- Supports a variety of waveforms, including Sinusoidal, Square, Triangular, Haversine, Saw Tooth, Inverted Saw Tooth, Rectangular, and User Defined waveforms.
- Adaptive PID control (Peak and Trough Control) adjusts automatically during testing for optimal performance.
- USB or Ethernet connectivity for seamless PC control.
- Data logging rate of 200 points per cycle or 500 points per second.
- Built-in auto engage function with a definable engage value for efficient setup.
- Auto reverse function triggered by limit switch activation for safety.
- Lower and upper limit switch motion control ensures operational boundaries are maintained.

Dynamic Triaxial System Technical Specifications

Model	Dynamic Triaxial System
Minimum Frequency (Hz)	0.0001
Maximum Frequency (Hz)	5, 10, 20
Dynamic Range (kN)	5, 10, 20, 30, 50
Displacement Range	+/- 35mm (70mm travel)
Waveforms	Sinusoidal, Square, Triangular, Haversine, Saw Tooth, Inverted Saw Tooth, Rectangular, User Defined
Data Logging Rate	200 Points/Cycle or 500 Points/Sec
Sample Size Diameter (mm)	35, 38, 50, 63.5, 70, 75, 100, 150, 300, 315 mm dia (Other sizes available upon request)

Dynamic Triaxial System Accessories List

- **External Displacement Sensors**: Available in various displacement ranges, common sizes (mm) are 10, 25, 50, 100.
- **External Load Cells**: Used for standard UU, CIU, and CID tests. Available capacities (kN) are 5, 10, 20, and 50.
- **Internal Submersible Load Cells**: Our Internal Submersible Load Cells are expertly pressure compensated and strategically positioned within the Triaxial Cell or Pressure Chamber, making them essential for advanced geotechnical testing. These load cells are specifically required for conducting Anisotropic/k0 Consolidation and Extension Tests, ensuring precise and reliable data. Available in a range of load capacities, including 5 kN, 10 kN, 25 kN, and 50 kN, these versatile load cells cater to various testing needs. Additional sizes can be provided upon request to meet the specific requirements of your geotechnical projects.
- **External Pressure Transducers**: Used for PwP measurement. Require a De-airing Block.
- **Internal Pressure Transducers**: Allows for mid-height PwP Measurement. The sensor is mounted directly on the Sample.
- **Transducer Access Ring**: Upgrades your Triaxial Cell to acccommodate internal sensors, allowing the cables to exit the Chamber without leakage.
- **Top Cap & Base Pedestals (Triaxial)**: Our Top Caps and Base Pedestals are designed for versatility, available in a variety of sizes to ensure seamless interchangeability within your Triaxial Cell. The Top Caps are offered in multiple types to suit different testing requirements, including Domed (Compression only), Fixed (Compression and Extension), and Suction (Compression and Extension). This flexibility allows for precise and efficient adaptation to various geotechnical testing scenarios, enhancing the overall performance and reliability of your testing equipment.
- **Internal Submersible LVDT Kit (Triax)**: Includes one radial caliper, two axial brackets, and three LVDT sensors.
- **Bender Elements**: Vertical and Horizontal positions.
- **De-aired water system**: De-aired water tank (4.2 Gal / 19 liter capacity) availability in hard anodised or stainless steel for durability. Vacuum pump is required, ordered separately.

- **Automatic Solenoid Valve**: The Solenoid Valve is a key component for achieving complete automation in your geotechnical testing processes. By automatically opening and closing valves, it eliminates the need for manual intervention, streamlining operations and enhancing efficiency. This automation is seamlessly managed through advanced software integration, ensuring precise control and reliability throughout your testing procedures.
- **APC Water & Air Distribution Panel**: Our system assists users in efficiently filling and emptying Pressure Controllers, Triaxial Cells, and other pressure chambers. We offer a variety of panel sizes designed to connect multiple devices, providing flexibility and ease of use. These panels can be supplied with or without a mechanical pressure gauge, offering an independent reference point for enhanced accuracy and reliability in your geotechnical testing setup.
- **Porous Stones**
- **Filter Paper**

Value in the Market

The system enhances testing efficiency and accuracy, allowing laboratories and geotechnical firms to handle more sophisticated projects with confidence. Its versatility in waveform support and connectivity options, paired with automation and safety features, make it a valuable asset for improving productivity and ensuring high-quality results in construction, infrastructure, and research sectors. This positions such systems as essential tools for companies looking to stay competitive by delivering fast, accurate, and repeatable test results.

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