

Poly-Axial Testing System for Soil & Pavement (SPAX-3000)



SPECIFICATIONS

- Tests cubical specimens up to 150 mm x 150 mm x 300 mm tall
- 100 kN static (80 kN dynamic) load capacity actuators on x and y axis (z axis actuators available as an upgrade)
- Synchronized loading up to 10 Hz
- Independent closed-loop digital servo control of the stress or strain on each of the three axes
- Temperature control from -15°C to +60°C
- Confining pressure control up to 300 kPa
- Internal load cells are rigidly attached to upper and side loading platens
- Especially well-suited for K_0 consolidation testing
- Mounted crane to assist with cell disassembly

DESCRIPTION

The SPAX-3000 Poly-Axial Testing System includes four (six with optional upgrade) hydraulic load rams with 100 kN static load capacities. Each is equipped with an LVDT so that each axis can be independently computer-controlled using stress, strain, load, or displacement as feedback. With this configuration the specimen can be kept centered, minimizing end platen friction. This is

accomplished by controlling the displacement of one LVDT on an axis and mimicking the displacement with the LVDT on the opposite actuator on the same axis.

The system allows for synchronized dynamic loading in each stress direction up to 10 Hz. Temperature control is also included from -15°C to +60°C, making this system ideal for testing either soil or pavement specimens in a wide variety of environmental conditions. This system also includes interchangeable platens to test prismatic specimens up to 150 mm by 150 mm by 300 mm or cylindrical specimens up to 150 mm in diameter and up to 300 mm tall.

An internal load cell is including on one of the loading rams on each axis. Pore pressures are measured at the top and bottom specimen ends. Optional bender elements can be added for P-wave and S-wave measurements.

Stress and strain in the third direction are applied through either chamber fluid pressure or an additional set of load rams. A volume change device is used to measure and control the strains in this direction. Optional internal displacement sensors can also be used to measure deformations in any principal stress direction.