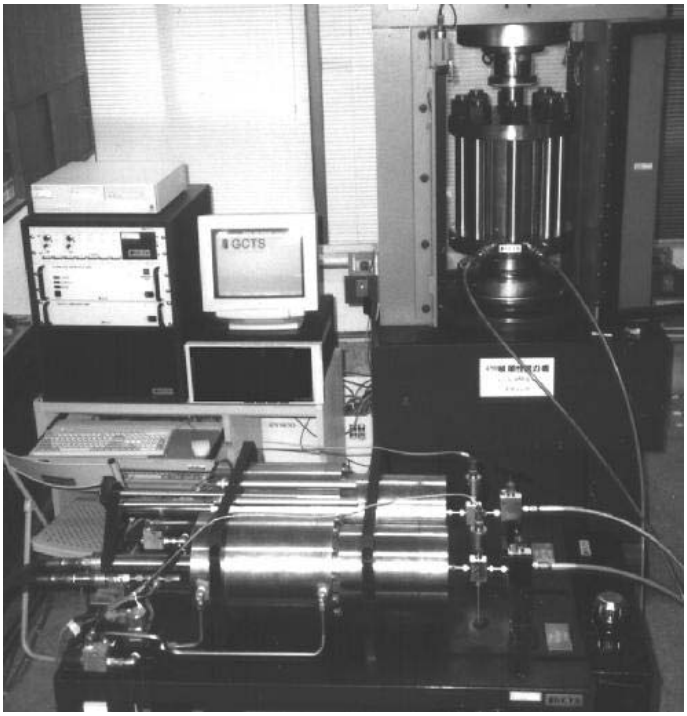
Digital Servo Control Upgrade



- Upgrade old analog equipment to a computer-aided geotechnical test system
- Extensively increase system capabilities
- Utilize your existing hydraulic power unit, servo-valves, and sensors for a cost effective digital upgrade
- GCTS triaxial cells and pressure intensifiers can be added to your upgrade

DESCRIPTION

Currently available testing systems capable of performing advanced tests are expensive and very complex in their operation. Most of these systems use the servo valve together with a closed-loop analog servo controller to apply the necessary test loads. They require experienced operators and good maintenance support. Since they have many electronic and mechanical components that require elaborated setup, usually operation is performed by the same person, limiting the number of research studies. Because of their inherent complexity these systems easily break down and, especially at remote sites, they experience long down times waiting for the parts and service personnel to get them back on line. Because these advanced testing systems have been mostly adapted from generic materials testing apparatus, performing realistic testing programs for soils or rocks is difficult if not impossible to achieve.

It is now possible to use microcomputers to perform all of the testing tasks, from data acquisition, to command generation, to close-loop test control.

These systems, classified as "Direct Digital Control", no longer require the use of an external servo controller, and allow complete integration of the test program with the control system. There are several advantages to using computers in control systems. Complex control algorithms can be implemented and changed easily because the algorithm is created in the software. This enables programs to control advanced testing systems in a more precise way than the analog controllers allow. The program can be designed in a modular fashion to allow an easy implementation of application test modules to perform different tests. Each test module can be programmed to handle specific test requirements that are otherwise difficult to perform. These specific requirements may include, for example, the transfer of control from stress to strain at a particular test stage.

Available GCTS software modules include triaxial, direct shear, permeability, resilient modulus, ultrasonic, and a universal program for custom applications.

SPECIFICATIONS

Contact GCTS