

# NEW Range of Advanced Soil Mechanics Testing Systems

Boost your lab productivity with our fully automatic and expertly designed Testing Systems



## New Fully Automatic Range

The combination of Wykeham Farrance's 75 years expertise and Controls Group's leadership in construction material testing equipment gives you access to expert soil Testing Systems that are affordable and precise. Our new range has adopted the latest Electromechanical Servoactuation (EmS) Technology, making Automatic Soil Testing available to all. All our systems display the following attributes:



### Fully Automatic

24/7 testing without interruption maximizing your productivity and reducing demands on your staff.



### EmS Technology

Electromechanical Servoactuation eliminates dead weights and/or air compressor allowing you to perform tests easily and accurately with limited noise.



### Totally Expandable and Modular

The modular approach allows you to gradually build your system's software and components resulting in excellent return on investments without any interruption.



### User-friendly Software

Perform routine Research Tests smoothly and obtain reliable and repeatable results that comply with relevant standards.



### Ergonomic and Compact

A small footprint for any type of laboratory, office, classroom or mobile facility.



### Reliable Worldwide Service Network

Our quality and reliability are assured by a strict production and control process. Our worldwide Service network is available to assist locally with qualified engineers.

**Consolidation Testing**

BS 1377:5 | ASTM D2435 | ASTM D3877 | ASTM D4546 | AASHTO T216 | NF P94-090-1 | NF P94-091



ACE EmS performs fully automatic user-programmable Oedometric incremental loading consolidation or swelling tests with precise increments of vertical load (stress) and provides reliable results easily and practically.



Electromechanical Servoactuation means no dead weights and no air compressor

Maximum vertical force: 20 kN

Network-ready for remote monitoring of test status from PC, tablet or smartphone

Additional template for data processing to BS or ASTM

Optional upgrading kit for CRS test including Data Acquisition

Fully automatic PC-controlled test execution with dedicated software managing up to 60 units

Programmable consolidation steps

Closed-loop PID control: Target load reached quickly, smoothly, accurately and held precisely

Optional User interface with 6" Touch Screen color display

Optional upgrading kit for Unconfined test including Data Acquisition

**Available Kits**

**Optional upgrading kit for CRS test including Data Acquisition**

In addition to the incremental loading mode, two upgrading kits are available for Constant Rate of Strain Consolidation and Unconfined test.



**Optional User Interface**

Fitting the optional 6" Touch Screen Color Display, the ACE EmS becomes a stand-alone local apparatus not requiring a PC.

**Specifications**

**Maximum vertical force:** 20 kN

**Ram travel:** 25 mm

**Minimum speed:** 0.00001 mm/min

**Maximum speed:** 99.99999 mm/min

**Maximum consolidation cell size:** 112.5 mm dia.

**Horizontal clearance:** 175 mm

**Vertical clearance:** 185 mm without extension columns and 265 mm with extension columns

**Dimensions:** 285 x 390 x 590 mm

**Weight:** 40 kg

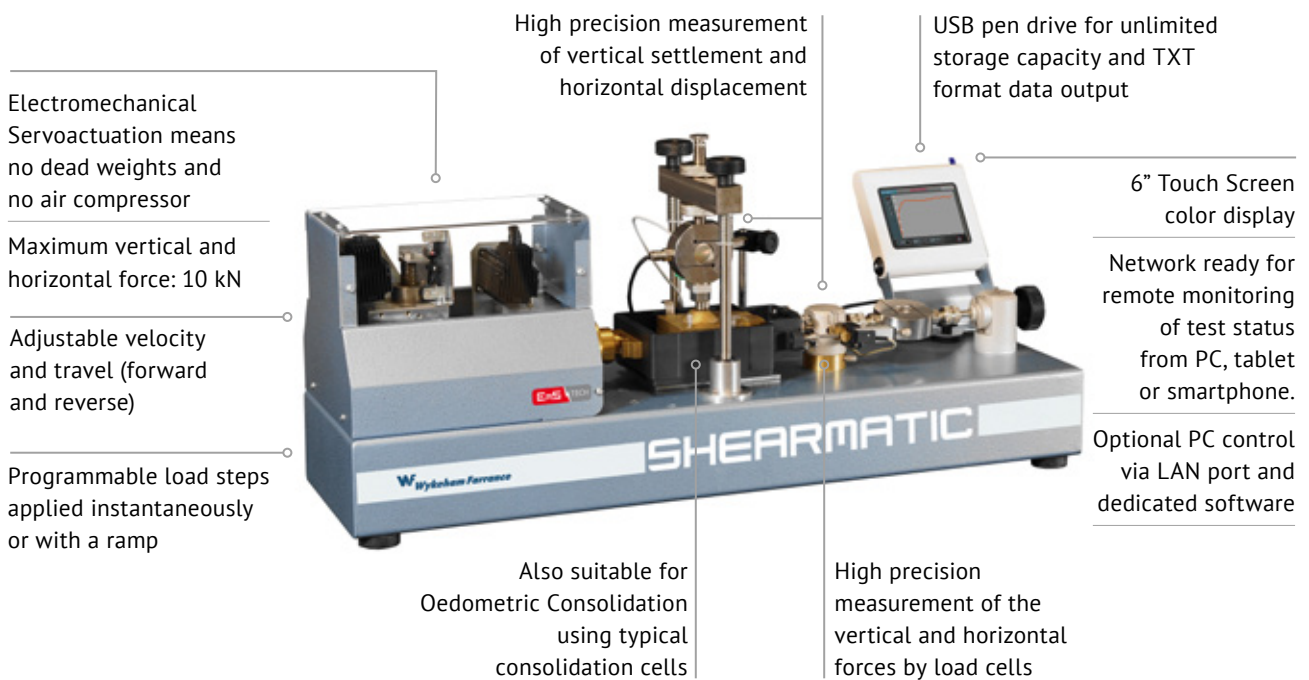
**Voltage:** Multivoltage, 110–230 V, 50–60 Hz, 1ph

**Direct / Residual Shear Testing**

ASTM D3080 | AASHTO T236 | BS 1377:7 | NF P94-07

**SHEARMATIC** 

Shearmatic EmS is a standalone automatic machine with **Electromechanic Servoactuation** for Direct/Residual Shear Testing. It can also automatically perform the Oedometric Consolidation tests using the dedicated accessories.



**Specifications**

**Maximum vertical force:** 10 kN

**Maximum horizontal force:** 10 kN

**Maximum horizontal travel:** 23 mm

**Maximum vertical travel:** 12.8 mm

**Test speed:** Infinitely variable speed from 0.00001 to 15.00000 mm/min

**Maximum number of cycles:** 99

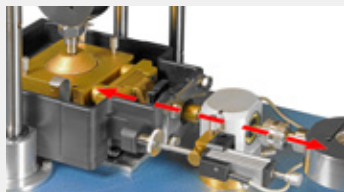
**Sample type and size:** up to 100 mm square or round

**Dimensions:** 990 x 550 x 350 mm

**Weight:** 60 kg

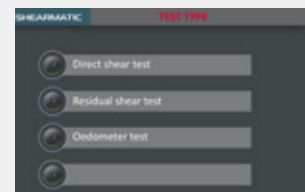
**Voltage:** Multivoltage, 110–230 V, 50–60 Hz, 1 ph

**Benefits**



**Straight connection**

The axial transmission of the horizontal force is secured by a straight connection between shear box, shaft and load cell. This design avoids the load measurement inaccuracies occurring with the widely used “swan neck” basic design. A high quality techno-polymeric material has been adopted for the carriage of the shear box, offering excellent resistance to corrosion, wear and tear and to the chemicals often mixed with the soil specimens.



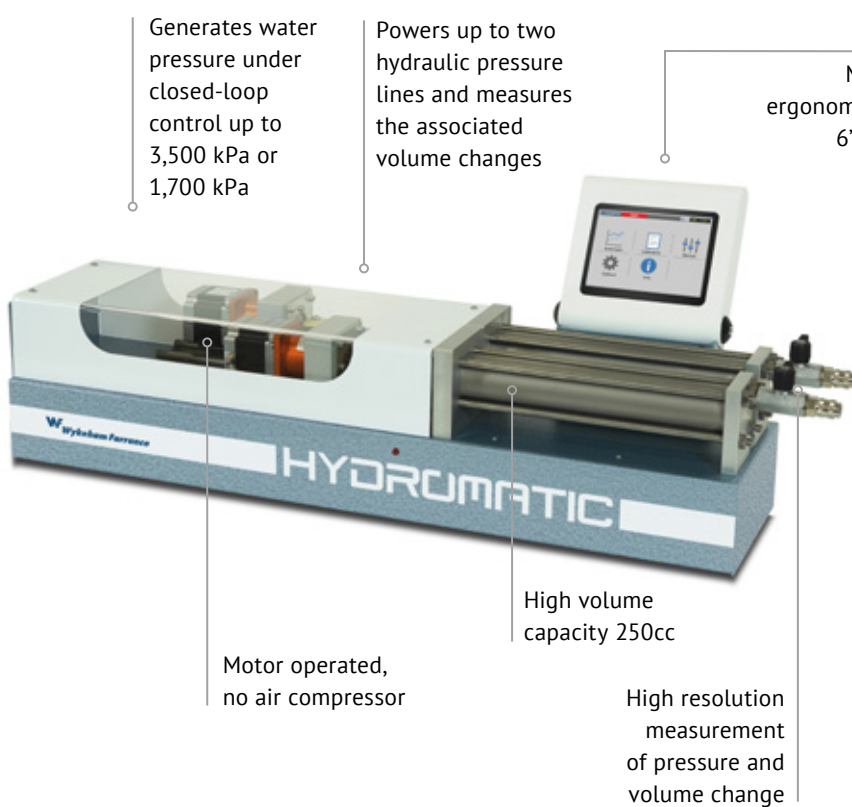
**Closed loop PID control**

It features a closed loop PID control optimized for automatic test performance at the touch of a button, dead weights and air compressor are no more necessary.

Triaxial Testing

# HYDROMATIC

Hydromatic standalone is the ideal compact solution for water pressure source and volume change control. It is operated by a Touch Screen Color Display mounted on an ergonomic and versatile support.



**The Touch Screen Color Display can:**

- Be mounted on the Hydromatic's body
- Live separately on the triaxial bench close to the testing frame
- Be fixed on the testing frame column

**Typical Configuration**

Hydromatic can be connected to the **GEODATALOG 8** data logger (via LAN port) and **DATA COMM 2** PC software synchronizing the readings (load, displacement, pore pressure and volume change).



**Specifications: Four models available**

Four models are available depending on the maximum pressure capacity

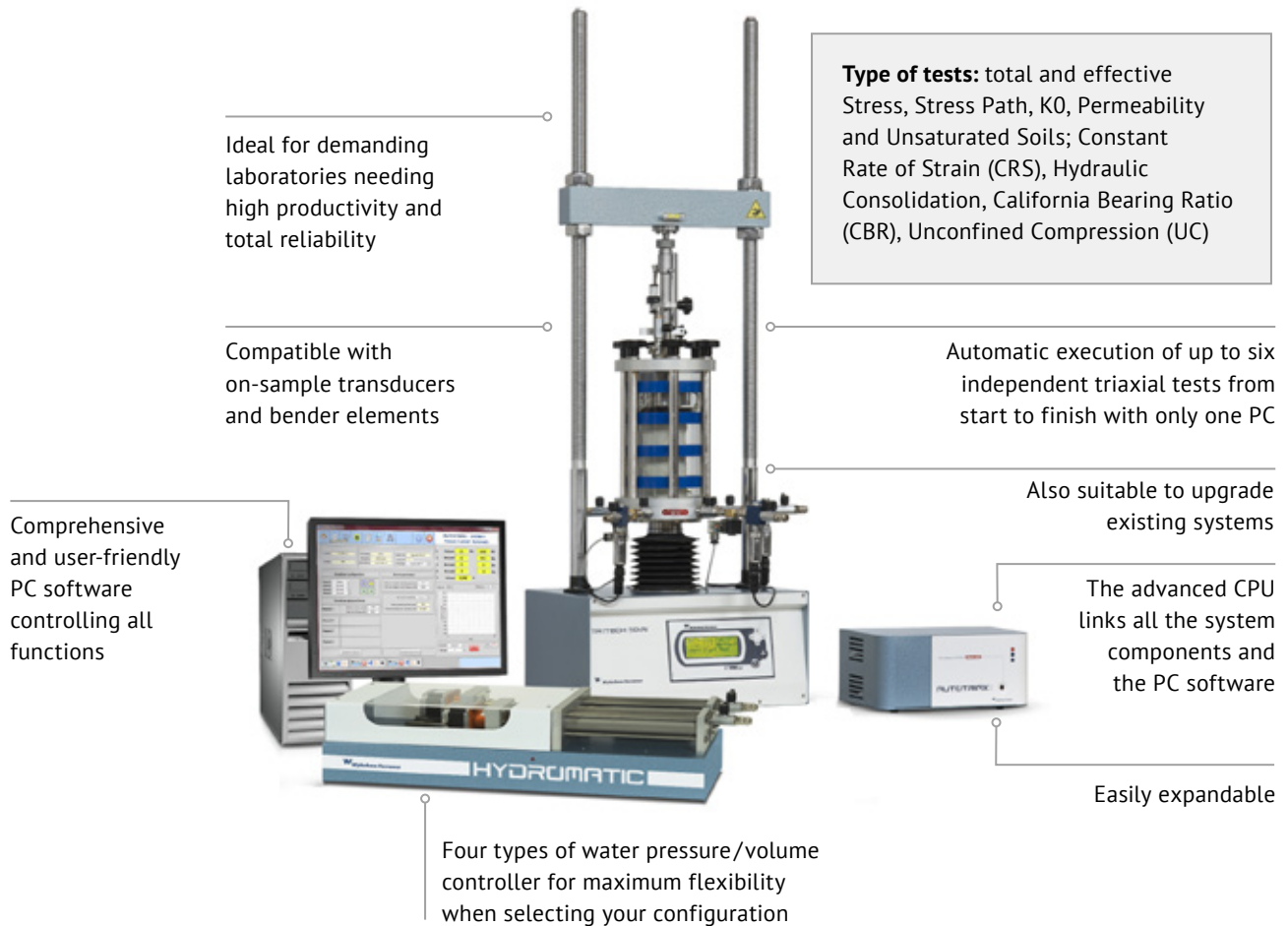
No. of pressure line	One	Two	One	Two
Maximum pressure (kPa)	1,700		3,500	
Pressure res. (kPa)	0.1			
Volume capacity (cc)	250			
Volume res. (cc)	0.001			
Dimensions [(LxHxW) [mm]]	860x300x250	860x300x300	860x300x250	860x300x300
Weight approx. (kg)	12	20	12	20

**Advanced Static Triaxial Testing**

BS 1377:7 | ASTM D2850 | ASTM D4767 | BS 1377:8 | BS 1377:6 | ASTM D7181

# AUTOTRIAX<sup>2</sup>

Autotriax2 is an Advanced Triaxial Testing System that automatically performs up to six contemporaneous independent tests.



## Benefits

- > **Efficiency** – 24/7 testing without interruption, maximizing productivity and reducing demands on your staff.
- > **Flexibility** – Ability to install software and fit additional accessories as required will enable the Autotriax2 to perform many types of tests.
- > **Expandability** – The modular concept of the Autotriax2 allows for easy expansion and upgrade.
- > **Reliability** – External factors and inconsistencies between different operators are eliminated; test procedures are always repeatable and compliant.

## Specifications

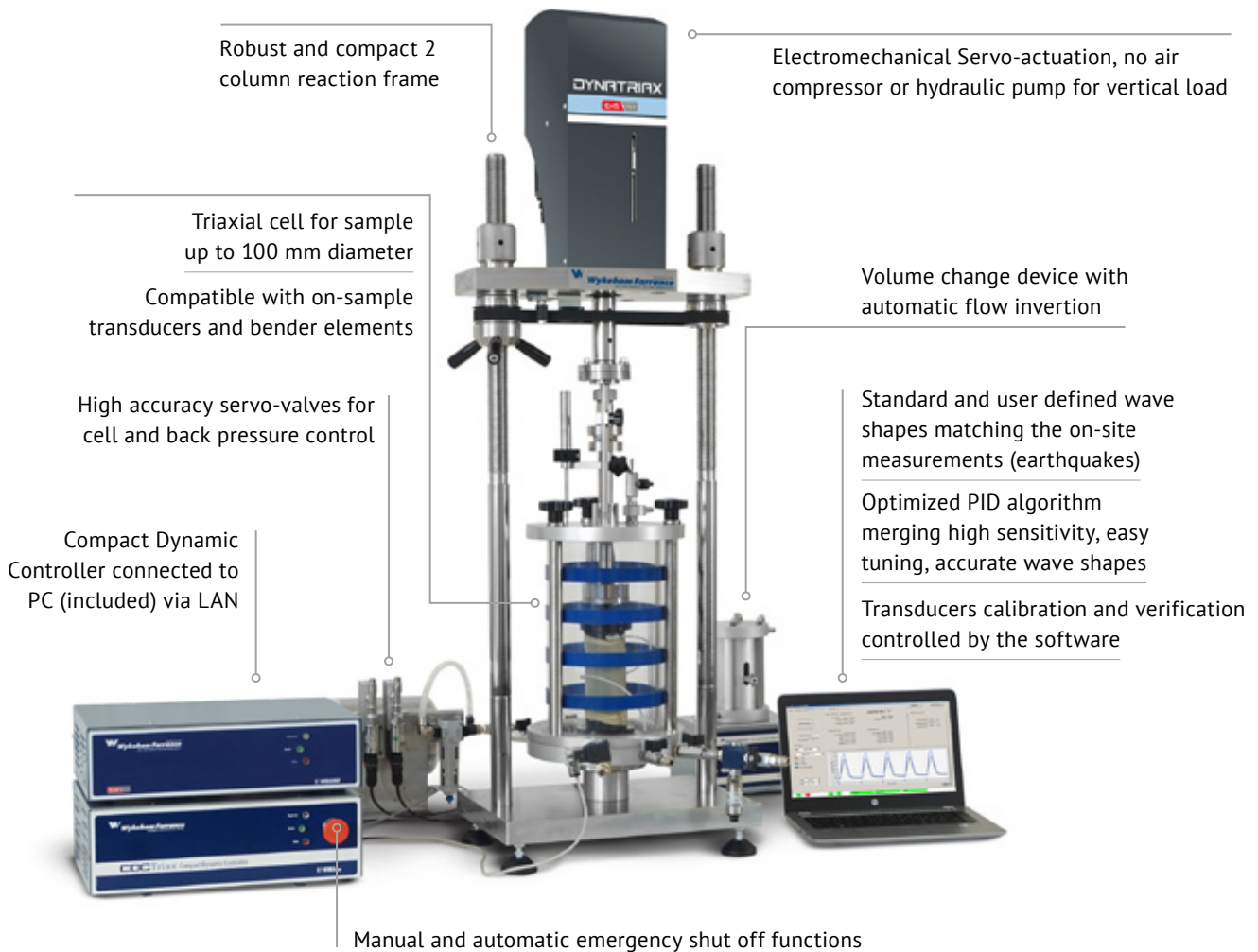
- Maximum no. of simultaneous tests:** 6
- Maximum no. of channels:** 96  
(in the most extended configuration)
- Maximum sample diameter:** 150 mm
- Maximum load:** 100 kN cap.
- Maximum water pressure:** 3,500 kPa
- Maximum air pressure:** 1,000 kPa
- Maximum volume of pressure/volume controller:** 250 cc
- Pressure resolution:** 0.1 kPa
- Volume resolution:** 0.001 cc

**Advanced Dynamic Triaxial Testing**

BS 1377:7 | ASTM D2850 | ASTM D4767 | BS 1377:8 | BS 1377:6  
 ASTM D7181 | ASTM D5311 | ASTM D3999 | AASTHO T0307



Dynatriax EmS adopts the new **Electromechanical Servoactuation** technology. It offers excellent reliability, accurate testing and lower maintenance requirements. The motorized belt-driven crosshead positioning assures easy operation and prevents crosshead tilting.



Robust and compact 2 column reaction frame

Electromechanical Servo-actuation, no air compressor or hydraulic pump for vertical load

Triaxial cell for sample up to 100 mm diameter

Compatible with on-sample transducers and bender elements

Volume change device with automatic flow inversion

High accuracy servo-valves for cell and back pressure control

Standard and user defined wave shapes matching the on-site measurements (earthquakes)

Compact Dynamic Controller connected to PC (included) via LAN

Optimized PID algorithm merging high sensitivity, easy tuning, accurate wave shapes

Transducers calibration and verification controlled by the software

Manual and automatic emergency shut off functions

**Specifications**

**Maximum dynamic load:** 15 kN

**Maximum static load:** 10 kN

**Maximum vertical travel:** 50 mm (other travels available)

**Maximum testing frequency:** more than 10 Hz (depending on testing conditions)

**Volume change measure:** 100 cc volume change device with automatic flow inversion

**Maximum confining pressure:** 1000 kPa

**Maximum back pressure:** 1000 kPa

**Close loop control frequency:** 10 kHz

**Input channel:** 16 channels for transducers, 16 bits ADC

**Voltage:** Multivoltage, 110–230 V, 50–60 Hz, 1 ph 230 V. 50 Hz or 110 V, 60 Hz

## ▶ Discover our full range of products

**At Wykeham Farrance, we are proud of our products.** As one of the longest established manufacturing companies in the world of Geotechnical Testing Systems, we are dedicated to supplying high quality, accurate, affordable, easy-to-use systems for Advanced Testing of soils.

Discover our full range of testing systems by visiting [www.wfi.co.uk](http://www.wfi.co.uk).



Resonant Column/ Torsional  
Simple Shear System



Triaxial load frame with 4 channels  
built-in and Hydromatic controller



## ▶ Wykeham Farrance Customer Care

As a valued customer of Wykeham Farrance, you will receive continuous, expert support and advice for your instrument. Furthermore, we offer full installation and training in the correct operation of your soil testing equipment.

For support from our expert Customer Care Team, contact your local Wykeham Farrance distributor or email [soil@controls.it](mailto:soil@controls.it). Visit our website for more information [www.wfi.co.uk](http://www.wfi.co.uk).

[www.wfi.co.uk](http://www.wfi.co.uk)

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