



ACE with consolidation cell, PC and Hub-switch

Reference Standard:

ASTM D2435, ASTM D387, ASTM D4546, AASHTO T216, BS 1377:5, NF P94-090-1, NF P94-091, UNE 103-405, UNE 103-601, UNE 103-602, CEN-ISO/TS17862-5.

Save your time by the complete test automation

- **PC controlled automatic test execution**
- **Incremental consolidation and one-dimensional swell tests**
- **24/7 continuous testing for greater throughput and cost saving**
- **Avoids the negative environmental discrepancies as operator errors, non calibration etc.**
- **Real time data and graph display**
- **PC software controlling up to 60 units**
- **High speed LAN network communication**
- **Modular expandibility**

INTRODUCTION

This test determines the rate and magnitude of consolidation of a soil specimen restrained laterally and subject to a number of successive increments of vertical loads. In this automatic model, the incremental loading, in load (stress) or swelling (strain) mode, is fully automatic for a practical and accurate test execution with more reliable test results and time saving. The ACE unit, the SHEARMATIC Automatic shear testing machine and AUTOTRIAX Automatic triaxial test systems are unique equipment for the complete automation of a CST (Consolidation, Shear, Triaxial) Soil Mechanics laboratory in different configurations.

GENERAL DESCRIPTION

The ACE, Automatic Consolidation oEdometer, consists of a compact load frame housing two coaxial pneumatic cylinders: the smallest one for low loads and the other for higher loads, with automatic switch off from one to the other. The load is controlled by a high precision pneumatic servo-valve. Two analogue channels: one for displacement transducer and the other for the load cell with closed loop feedback control. The test end can be programmed either on time or step base. The software controls up to 60 ACE units from a PC.

Test parameters are programmed by the operator. Test results are recorded and displayed in real time. Test data can be processed by the Geo-Analysis Templates conforming to BS or ASTM Standards.

The frame accepts all standard consolidation cells from 50.47 to 112.80 mm dia.

PC, consolidation cells, Geo-Analysis templates and test software are not included and must be ordered separately.

MAIN SPECIFICATIONS

- Max. vertical load:	15 kN
- Displacement transducer:	10 mm travel
- Max. air pressure supply:	10 bar. If an air pressure line is not available in the laboratory, our air compressor model 86-D2015, 50 l cap. may be used.
- Sample dimensions:	from 50.47 to 112.8 mm dia. with suitable consolidation cell.
- Software:	controls up to 60 ACE units
- Network mode:	for the connection to a PC fitted with LAN/Ethernet port of more than one unit (up to 60) it is necessary the use of a LAN/Ethernet hub with the opportune number of ports
- Test data accuracy:	±1%
- Overall dimensions:	280x300x600 mm (h)
- Weight approx.:	25 kg

Ordering information

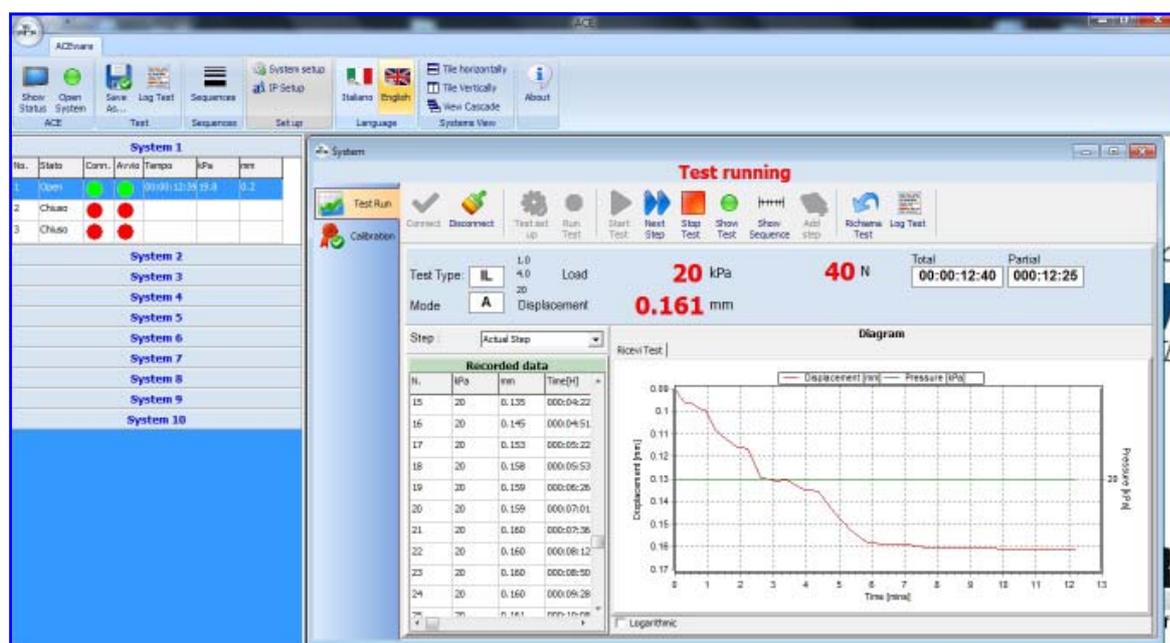
Code	Description
26-WF3120	ACE, Automatic computerized oedometer. 110-240 V, 50-60 Hz, 1 ph

Software for test execution

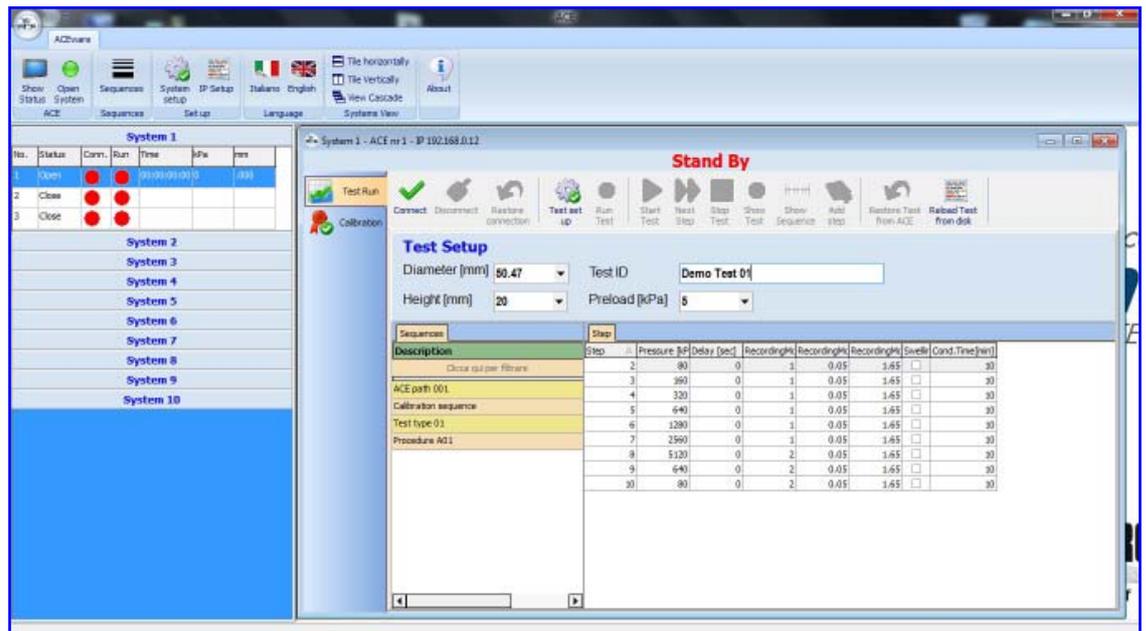
26-WF3120/SOF Test software for 26-WF3120, performs automatic consolidation test; compatible with Microsoft Windows® operating system, controls up to 60 ACE units.

26-WF4645 LAN box to connect up to eight units ACE to a single PC.

Examples of consolidation diagram and multitask function (up to 60 units).



Test configuration screenshot.



ACCESSORIES

Consolidation cells. To perform either standard or permeability test

Model	Specimen Dia. x height mm	Specimen area cm ²	Cell dimension Dia. x height mm	Weight kg
26-WF0320	50.47x20	20	139x74	1.3
26-WF0321	63.50x20	31.67	139x74	1.3
26-WF0325	71.40x20	40	139x74	1.3
26-WF0326	75x20	44.16	139x74	1.3
26-WF0335	112.80x25	100	200x74	3

Calibration disks for consolidation cells

- 26-WF0320/9** Calibration disk for 26-WF0320 cell
- 26-WF0321/9** Calibration disk for 26-WF0321 cell
- 26-WF0325/9** Calibration disk for 26-WF0325 cell
- 26-WF0326/9** Calibration disk for 26-WF0326 cell
- 26-WF0335/9** Calibration disk for 26-WF0335 cell

Air supply

- 86-D2015** Laboratory air compressor, 8 bar continuous max. pressure, 50 l cap. 230 V, 50 Hz, 1 ph
- 86-D2015/Z** Laboratory air compressor, 8 bar continuous max. pressure, 50 l cap. 110 V, 60 Hz, 1 ph



Consolidation cells spare parts

Cell model/ Size	26-WF0320 20 cm ²	26-WF0321 31.67 cm ²	26-WF0325 40 cm ²	26-WF0326 44.16 cm ²	26-WF0335 100 cm ²
Upper porous disk	26-WF0320/4	26-WF0321/4	26-WF0325/4	26-WF0326/4	26-WF0335/4
Lower porous disk	26-WF0325/10	26-WF0326/10	26-WF0325/10	26-WF0326/10	26-WF0335/10
Cutting ring	26-WF0320/3	26-WF0321/3	26-WF0325/3	26-WF0326/3	26-WF0335/3

Geo-Analysis templates

Test data can be processed by the Geo-Analysis MS-EXCEL® templates 30-WF6016/T1 and 30-WF6016/T8 conforming respectively to BS and ASTM Standards.

30-WF6016/T1 Consolidation template based on MS-EXCEL® conforming to BS 1377:5.

30-WF6016/T8 Consolidation template based on MS-EXCEL® conforming to ASTM D2435.

Other accessories

Permeability test accessory: 26-WF0338/B Permeability attachment with 50 ml graduated burette.

AUTOGEOLAB

reliability in automation

Automatic Consolidation, Shear and Triaxial testing system

The real automation of a Soil Mechanics laboratory is not limited to a modernization of the testing equipment only but is a contribution to cost saving.

The possibility of performing 24 hours 7 days tests without interruptions is a great value.

The **ACE Automatic Computerized Oedometer** together with the **SHEARMATIC Shear Testing Machine** and **AUTOTRIAX Triaxial Testing System** is our proposal for your automated laboratory. For detailed information visit our web site or get in touch with our technical-commercial dept.

SHEARMATIC Automatic Shear Testing Machine

- Automatic pneumatic application of pre-set consolidation steps (up to 50)
- Automatic test management from consolidation to failure: the operator is only requested to remove the clamping screws of the shear box
- High resistance techno-polymeric carriage
- Easy and immediate set up of the test parameters via the large digital graphic display
- Possibility to set different speeds and travel (forward and reverse) in the residual shear tests
- Each single step of axial force can be applied instantaneously or by means of a linear ramp in a pre-set time interval
- Different and independent data recording for consolidation and failure



SHEARMATIC

AUTOTRIAX, Automatic Triaxial System for Effective stress, Stress path, Permeability, Unsaturated tests

- More than 30 possible configurations to suit your requirements
- Control up to three independent systems
- System is expandable in modular steps
- With the opportune accessory system performs also stress-path test and advanced examination on unsaturated soil



AUTOTRIAX