

## Automatic and smart testing systems range

Mechanical properties of concrete,  
cement and steel rebars



# WIZARD **AUTO**

## Standard automatic Quality Control machines for compression and flexural testing

This all new automatic Quality Control compression machine is the outcome of 50 years of innovation and technical leadership in concrete testing equipment. Routine testing performance has made a step change improvement with CONTROLS adopting an automatic closed-loop PID control of load rate using VFD inverter-technology.

**Flexible use** with two analog channels for load sensors to connect an optional second frame.

**Highly efficient, quiet and energy saving AC motor** fitted with Inverter lowers running costs and is more environmentally-friendly.

**Fast approach** with dual stage pump and automatic switch to high pressure for loading improves productivity and efficiency.



**User-friendly** wide graphic display (128 x 80 pixel) for increased user comfort.

**Streamlined printing process** with optional integrated graphic printer.

**RS232** for quick and simple data download in ASCII format.

**High accuracy** with 16-bit effective resolution (65,000 datapoint).

## Benefits



### No human error

Greatly reduces opportunities for operator errors, improving accuracy of results and repeatability.



### Conforming to Standards

The machine automatically performs the test at correct test speed and conformance to Standards can be easily proven.



### High performance

High speed pump closes the daylight above the specimen at the fastest speed allowing a very high throughput of tests.



### Easy to use

Easy to use, even for operators with limited expertise.



### Quiet operation

Increased operator comfort due to the significant noise reduction.



### Energy saving

Respects the environment with up to 50% reduction in energy consumption.

# PILOT PRO

## Versatile automatic compression machines for standard failure tests

Pilot Pro is the best choice for Quality Control laboratories to carry out a high throughput of routine failure tests including compression, flexure and indirect tensile tests.

**Flexible** optional second and third frame connection facility via manual selector.

**Variable speed with permanent magnet DC motor** for superior performances at low load rates and low load value. Soft platen-to-specimen contact for more accurate speed control from the very beginning of the ramp.

**Fast approach** with dual stage pump and automatic switch to high pressure for loading improving productivity and efficiency.



**User-friendly** wide graphic color 5.1" display (800 x 480 pixel)

**Dual user interface** via console display or PC with Datamanager software.

**Easy data download** to internal printer (optional), PC or USB memory stick.

**Optimum accuracy** is obtained with 19-bit effective resolution (524,000 datapoint) and extended class-1 range.

**Automatic and seamless reporting** to all major US LIMS systems via our Data Manager software.

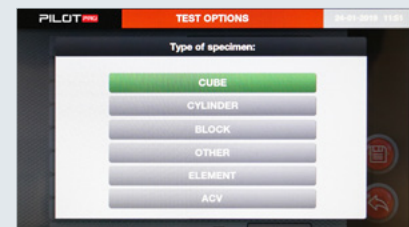
## Intuitive Graphical Display



**Intuitive, quick and simple operation** – The graphical interface is very intuitive and will guide you through each phase giving you consistency across testing procedures.



**Multilingual functionality** – The system is available in multiple languages and is fully compatible with non-Latin characters for Chinese, Cyrillic (and more) versions.



**Handy test options** – Navigate through test options such as type of specimen, type of test, Standards, units of measurements, etc.

# AUTOMAX PRO

## Smart, automatic and connected Compact-Line compression machines

### Integrated computerized control system for quick, intuitive and efficient testing

The leading-edge high definition 7" color graphical display is easy-to-follow and works like a tablet or smart-phone. This makes it easy to perform test and access the latest international Standards resulting in more rapid training of new staff and higher testing through-put.

### Two models available

**AUTOMAX PRO** **AUTOMAX PRO M**

AUTOMAX PRO allows automatic performance of basic failure tests on concrete and cement whilst the higher-spec AUTOMAX PRO-M, with factory-fitted advanced hydraulics, can perform advanced concrete tests such as Modulus of Elasticity (MOE) and Displacement Control.

#### Active control of up to 4 frames

with selection via display or PC (no manual operation or valve switching required).

#### Variable speed with permanent magnet DC motor

for superior performances at low load rates and low load value. Soft platen-to-specimen contact for more accurate speed control from the very beginning of the ramp.

#### High speed pump

closes the daylight above the specimen at the fastest speed for maximum sample throughput.



#### Automatic and seamless reporting to all major US LIMS systems

via our Data Manager software.

#### Large intuitive graphic color 7" display

similar to tablet or phone 800 x 480 pixel.

#### Dual user interface

via console display or PC with optional Datamanager software.

#### Oversampling function

increasing the sampling rate when specimen is approaching the failure for better identification of peak value.

#### Optimum accuracy

is obtained with 19-bit effective resolution (524,000 datapoint) and extended class-1 range.

	AUTOMAX PRO	AUTOMAX PRO M
Automatic basic failure tests	✓	✓
Elastic Modulus determination	✗	✓
Displacement Control	✗	✓*
Tensile tests	✗	✓**

\* With firmware upgrade 50-FW/DC

\*\* With firmware upgrade FW/UTS



# AUTOMAX PRO M

AUTOMAX PRO-M Power Control System fitted with superior hydraulics can also perform, in addition to standard failure tests, Modulus of Elasticity Determination tests and characterizations of Fiber Reinforced Concrete (FRC) under displacement-control and tensile tests on steel rebars.

**Automatic performance of Elastic Modulus tests** according to the main International Standards with automatic calculation of tests results.

**Performs displacement-controlled tests** on beams, notched beams, round or square slabs with the appropriate flexure frame.

**6 channels to be factory configured:**

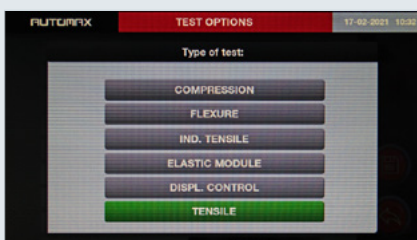
- 2 channels for load sensors
- 2 channels for load or displacement/strain sensors
- 2 channels for displacement/strain sensors.

**Flow-sharing technology** to perform loading and unloading cycles at controlled rate.

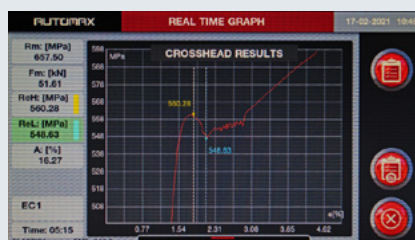


AUTOMAX PRO-M 3000kN ASTM compression machine for Elastic Modulus determination, control of a second flexure frame for FRC slab testing and third tensile frame for rebars testing.

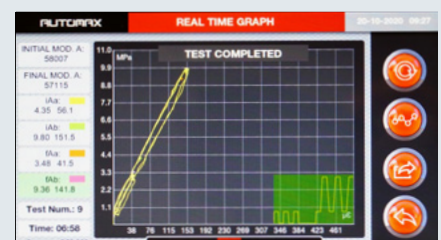
## Intuitive Graphical Display



Easily select your test method



Tensile test results



Elastic Modulus test results

# AUTOMAX **MULTITEST**

## Automatic Control Console for Concrete, Cement, MOE and Steel Testing

Versatile and modular Automatic Computerized Control Console for concrete, cement, MOE and steel rebar testing allowing modular upgrades from basic failure tests to advanced displacement controlled tests for FRC Fiber Reinforced Concrete.

**Wide range of test methods available** through the addition of software packages on the high spec all-in-one supplied PC.

### High productivity

Double stage Hydraulic Power Unit (HPU) with rapid approach and precise oil flow control allowing high throughput of accurate test (up to 40/hour).



### Environmentally friendly

Adopts the latest ES (Energy Saving) technology for reduction of power consumption and silent operation.



### Integrated PC control

Test cycle, with closed-loop digital feedback, is automatically performed by pressing the start button via PC.

### 500 Hz high control frequency

for optimum oil flow adjustment during critical tests.

### Modular and expandable

two control, expandable to four, with active frame selection via software.

### Maximum versatility and flexibility

with 14 channels available to connect several types of sensors.

### Suitable for

#### All test methods

from basic failure (compression, flexure, splitting, tension) through cyclic tests for Elastic Modulus and Poisson's Ratio determination up to advanced displacement controlled tests for FRC Fiber Reinforced Concrete.

#### All sample types

tested by connecting up to four frames ranging from 3,000 Lbf to 1.1 M lbf in compression and 112,000 Lbf in tension.

#### All budgets

systems can be upgraded incrementally by adding suitable testing frames, accessories and dedicated software packages.

#### All users

system suitable to any user thanks to four easy-to-use software packages tailored to guide the operator through all test phases:

- **DATAMANAGER** (included) for standard failure tests and automatic reporting
- **E-MODULE** (optional) for Modulus of Elasticity and Poisson Ratio determinations
- **UTS** (optional) for tensile tests on steel rebars
- **D-CONTROL** (optional) for displacement-controlled tests.

# AUTOMAX<sup>PRO</sup> AUTOMAX<sup>PRO M</sup>

## MOE and Poisson's Ratio measurement

Automax Multitest and Pro-M allow you to run loading/unloading customized sequences for Modulus of Elasticity (MOE) and Poisson's Ratio determination in full automatic mode.



Full automatic control of the whole loading /unloading steps sequence and strain measurement in MOE and Poisson's Ratio tests. The E-Module software package automatically calculates test results according to EN 12390-13 (method A and B) and ASTM C469 and generates test reports for easy analysis.



### E-MODULE software (82-SW/EM)

For automatic determination of Modulus of Elasticity and Poisson's ratio

## Complete FRC testing solution

### For Displacement-controlled tests

By adding accessories from the wide range available to the Automax Multitest and Pro-M systems, you'll be equipped to perform many tests complying with the main international Standards such as:

- Deflection test on Steel Fiber Reinforced Concrete beams to EN 14651 [CMOD Method]
- Flexural behaviour of FRC beams to ASTM C1609
- Energy absorption test on square slabs to EN 14488-5
- Flexural toughness of round panels to ASTM C1550



### D-CONTROL software (82-SW/DC)

For Displacement Controlled tests on FRC

## Easy steel rebar testing

### For Tensile tests on steel rebar

Automatic performance and tests results elaboration in conformity to EN ISO 6892-1 (methods A1, A2, B) and EN 15630-1.



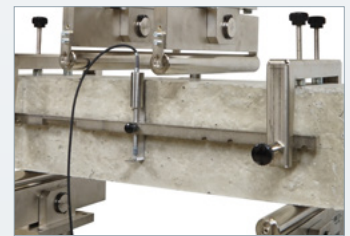
### UTS software (82-SW/UTS)

For Tensile tests on steel rebars

## Flexural and transverse testing frames

### From 30,000 lbf to 78,000 lbf

The following flexural and transverse frames are designed for connection to our Power and control systems, such as our **PILOT** and **AUTOMAX PRO SMARTline** and **AUTOMAX Multitest**.





450 K lbf	660 K lbf
2,000 kN	3,000 kN

**Standards** ASTM C39 | C140 | C1314 | AASHTO T22

## Versatile machines for testing blocks and cylinders

Two automatic versions available, Automatic (PILOT PRO) and Super-Automatic (AUTOMAX PRO).

### Axial screw

Axial screw assembly allowing easy adjustment of vertical clearance.

### Completely interchangeable

The testing configuration can be easily changed from blocks to cylinders.

### Truly multi-testing unit

Easily switch the block upper platen with testing cylinder along a robust sliding system, allowing for multi-testing.

### Truly multi-testing unit

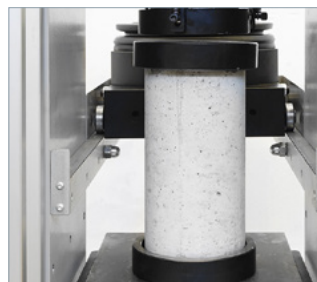
Easily switch the block upper platen with testing cylinder along a robust sliding system, allowing for multi-testing.



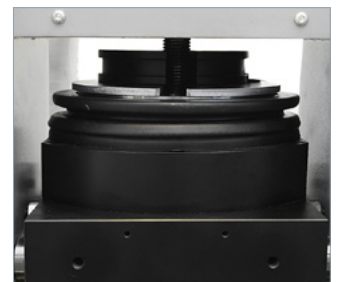
Detail of axial screw assembly



Detail of the upper block platen and spherical seat sliding off by solid rail system



Detail of the machine fitted with the conversion set 50-A29/ CYL to test cylinders



Detail of the sliding off operation of the upper platen and spherical seat



# Future-proof your Lab

## Retrofit and keep pace with today's technology

Our control consoles provide a cost-effective way to retrofit any make of compression testers fitted with old Bourdon gauges or unreliable electronic readout unit and power pumps into one that is automatic and fitted with the latest technology.



### You can connect our consoles to any testing frames in three easy steps.

1. Disconnect and remove the hydraulic pump and display or the Bourdon gauge fitted on the machine
2. Connect the control console using a new hose and pressure transducer and perform load calibration.
3. You can start enjoying the benefits of automatic testing...

### You can connect our consoles to any testing frames in three easy steps.

- ☑ Machine capacity
- ☑ Piston diameter or max working pressure
- ☑ Piston travel
- ☑ Piston type (single or double effect)

# Smart connectivity

All Controls' machines (except Wizard auto) introduce new features and capabilities that will revolutionize the operations of any progressive construction quality testing laboratories.



**LinkLAB** is CONTROLS' new proprietary **Laboratory Connectivity Package** that brings total reliability and transparency to your testing process. It allows your machine to take direct inputs from many ancillary devices, reducing error-prone manual tasks and eliminating transposing errors. The addition of an integrated smart camera for recording your testing ensures that you can deliver unadulterable results that can be easily documented and shared.

## Two models available



### Link-LAB Local

Available for systems that operate stand-alone using the controller only without a PC.



### Link-LAB Enterprise

Available for new and existing systems controlled by PC via Datamanager Software.

## Sample Information Acquisition

**Direct acquisition provides a tidier operation eliminating the possibility for data transposition errors.**

Compatible devices include but are not limited to:

- calipers
- digital balances
- ID bar-code readers



## Test Video Recording\*

### High Resolution Video Recording

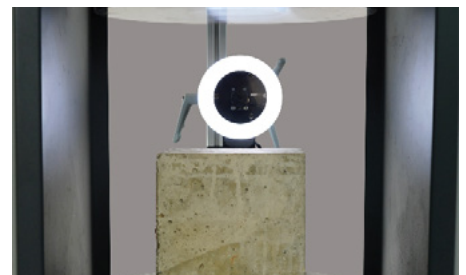
Fit your compression machine with an integrated high resolution smart camera to record all your testing.

Video recording not only proves that a test has been performed but also provides unalterable test results, raising the bar of reliability and transparency. At the end of a test, easily save your recording and test results in the PC software's archive.

### Automatic Sample Identification

The SID READER module is an extra tool to be activated in the PC software allowing the smart camera to read and recognize the barcode on a sample.

The sample ID, read by the camera, will be displayed during the test and recorded along with the other data such as data, time, elapsed time, load and strength values.



\* Only available if your machine is fitted with LINK-LAB Enterprise

# Our automatic range at a glance



	WIZARD <b>AUTO</b>	PILOT <b>PRO</b>	AUTOMAX <b>PRO</b>	AUTOMAX <b>PRO M</b>	AUTOMAX <b>Multitest</b>
<b>Automatic basic failure tests</b>	✓	✓	✓	✓	✓
<b>Elastic Modulus determination</b>	✗	✗	✗	✓	✓**
<b>Displacement-controlled tests</b>	✗	✗	✗	✓*	✓**
<b>Steel tensile tests</b>	✗	✗	✗	✓*	✓**
<b>LIMS system connectivity</b>	✗	✓	✓	✓	✓
<b>HMI</b>	Monochrome graphic display	5.1" color touchscreen display	7" color touchscreen display	7" color touchscreen display	All-in-one PC
<b>Channels</b>	2 for load	3 for load	4 for load	2 for load + 2 for displacement or load + 2 for displacement	4 for load + 10 for displacement
<b>Frame selection</b>	Manual	Manual	By PC / display	By PC / display	By PC
<b>PC Control</b>	✗	✓ Optional	✓ Optional	✓ Optional	✓ Included

	Compression on cylinders	Splitting on cylinders	Compression on cubes	Flexure on beams	MOE and PR	Flexure on FRC beams	Flexure on FRC PANELS	Tensile on Rebars
	ASTM C39	ASTM C496	ASTM C109	ASTM C78/ C293	ASTM C469	ASTM C1609	ASTM C1550	ASTM A370
<b>WIZARD AUTO</b>	✓	✓	✓	✗	✗	✗	✗	✗
<b>PILOT PRO</b>	✓	✓	✓	✓	✗	✗	✗	✗
<b>AUTOMAX PRO</b>	✓	✓	✓	✓	✗	✗	✗	✗
<b>AUTOMAX PRO-M</b>	✓	✓	✓	✓	✓	✓*	✓*	✓*
<b>AUTOMAX Multitest</b>	✓	✓	✓	✓	✓**	✓**	✓**	✓**

\* With suitable firmware upgrade, dedicated frame and accessories.

\*\* With suitable software package, dedicated frame and accessories.

## Controls Customer Care

At CONTROLS we are proud of our products. As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

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

For support from our expert Customer Care Team, contact CONTROLS Inc at [info-usa@controls-group.com](mailto:info-usa@controls-group.com).

To order or upgrade your product, please contact our sales department at [info-usa@controls-group.com](mailto:info-usa@controls-group.com).

For more information, please visit [www.controls-group.com/usa](http://www.controls-group.com/usa).

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