

# CONTROLS

CONSTRUCTION  
MATERIALS  
TESTING

## PILOT PRO

Versatile Automatic Compression  
Machines for Standard Failure Tests



[www.controls-group.com](http://www.controls-group.com)

# 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 LIMS systems via our Data Manager software.

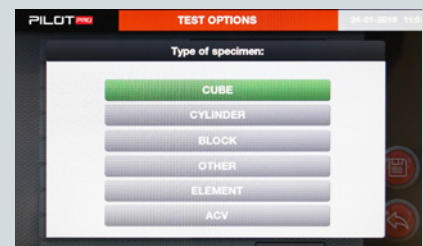
### INTUITIVE GRAPHICAL DISPLAY



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.

# Smart Connectivity

## Take control of your data

CONTROLS automatic compression machines are now communicating directly with your data management system.

- Automate and standardize your complete cylinder testing and reporting process
- Automatically send test results to your LIMS system
- Less potential for data transfer error
- Generate PDF report from each break and store it in the folder of your choice
- Whatever your location, your test results are available straight away



### **MOST AUTOMATED MACHINES AVAILABLE**

Thanks to our experience and leading technology we have the ultimate automated test execution – just press the START button!



### **AUTOMATIC COMMUNICATION to LIMS**

Our machines will automatically send test results to your own LIMS system, so your testing database is always up-to-date.



### **WIDEST RANGE OF CONTROLLERS**

We have four types of automatic controllers to choose from.



### **BEST VALUE**

Our high manufacturing volumes (we sell over 500 machines every year) allow us to reduce the price of our automatic compression machines to levels unmatched by other manufacturers.



### **AUTOMATIC REPORTING**

PDF reports are automatically generated and saved after each break without any additional interventions from the operator's side minimizing the risk of errors.



### **WIDEST RANGE OF FRAME CAPACITIES**

Compression frames from 1,500 kN to 5,000 kN.

Flex frames from 150 kN to 350 kN.

# Smart Connectivity

## Link-LAB, CONTROLS Laboratory Connectivity Package

PILOT PRO introduces 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

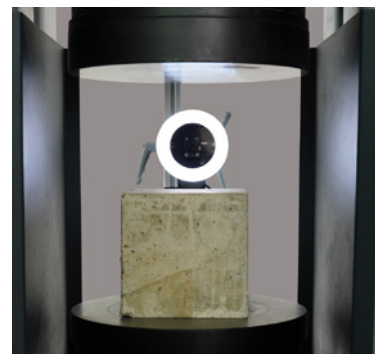
Fit your compression machine with an integrated high resolution smart camera to record all your testing.

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

# Technical Specifications

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## Hydraulics

**Dual stage HPU:** centrifugal low pressure for fast approach automatically switches to radial multi-piston high pressure for loading

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**DC motor:** 720 W, 50-60 Hz

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**Maximum working pressure:** 700 bar

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**Load/unload valve**

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**Second/third frame selection valve** available as an option

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**ES Energy Saving technology** to reduce power consumption and promote silent operation

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## Hardware

**524.000 points** high-resolution / stability analogue channels

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**3 channels** for load sensors

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**Control frequency:** 250 Hz

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**Sampling frequency:** 250 Hz

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**5.1", 800 x 480 pixel**, 16 M colors, icon-driven touchscreen graphic display, showing data and plots

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**Unlimited storage capacity** for test data on internal 8 GB SD card

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**USB port** for test data storage on external USB memory stick

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**Ethernet port** for PC / Internet / network communication

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**Optional integrated graphic printer** including Load-Time plot

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**RS 232 port** for data downloading in ASCII format

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## Firmware

**Execution of compression, flexure, indirect tensile, ACV tests** in automatic mode with load rate controlled by a closed-loop PID system

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**Execution of loading ramps** allowing the manual increase or decrease the test speed during the test

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**Pause command** to maintain steady load can be enabled at a pre-set value before the test or as required while testing

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**Simultaneous display of load**, specific load, actual load rate, load / time graph

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**Saving of the specimen failure type** (to EN or ASTM) in test results

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**Download data to internal printer (optional) or to PC** via RS 232 port or to USB memory stick

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**Ethernet port** for PC / network communication

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**Multi-coefficient linearization** of the calibration curve for better accuracy at low loads avoiding the use of a second pressure transducer.

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**Recording facility** for up to 10 test profiles for each channel including: type of test (e.g. compression, flexural, indirect tensile), specimen size and shape, load rate, test standard and other general information. Each one of the recorded test profiles can be recalled automatically to save time.

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**Improved PID algorithm and multi PID selection.** Up to 3 different PID settings can be tuned for a variety of materials (ACV, flexure, compression with neoprene pads, etc.)

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**Compatible with the newly released Datamanager software**, tailored for construction material testing laboratories, for real-time data acquisition, display and management

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**Peripheral devices integration** with Link-LAB

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**Automatic load measurement verification procedure**, by connecting suitable load cells and our digital readout unit to PC

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**Language selection** (including Cyrillic and Chinese)

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**Unit selection** (kN, ton, lbf)

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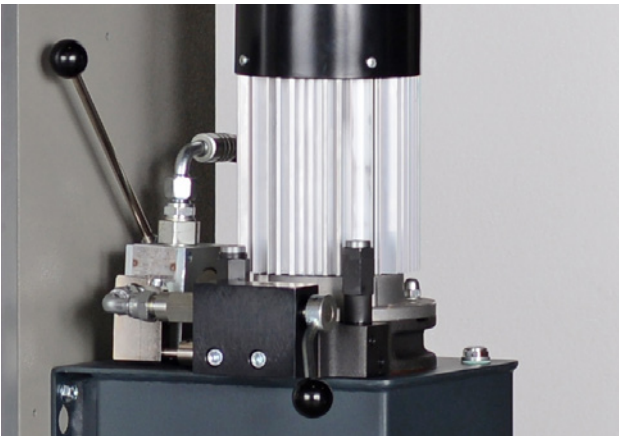
**USB port** for firmware upgrade and safe backup of the original configuration data (PID, calibration, etc.), in case of loss and / or data corruption. The restore to factory settings function is easy to use and reduces the need of any technical support.

# Technical Specifications

## Upgrading options

### SECOND AND THIRD FRAME CONNECTION

The PILOT Pro System can be upgraded with a hydraulic valve selector for controlling (not simultaneously) a second and third frame.



**Note:** when connecting a low capacity frame (i.e. flexural or cement) pressure regulator 65-L1400/X5 may be necessary for PILOT PRO testers. Please ask our technical department.

### 50-C10C/2F

Two-way valve for PILOT Pro System to control a second frame.

### 50-C10C/3F

Three-way valve for PILOT Pro System to control a second and third frame.

### SPECIAL CALIBRATION PROCEDURES

#### STANDARDS

▶ EN 12390-4 ▶ ASTM E74

This procedure can be applied to all compression machines. The special calibration is useful to extend the Class 1 load measurement accuracy in the lower part of the scale.

It is suggested when other test methods (flexure, indirect tensile) or low strength material testing shall be performed in the compression machine.

#### 50-C0050/CAL

Special calibration of load digital readout unit assuring class 1 from 1% of testing machine full scale (maximum load).

#### Suitable for:

- All testers from 1500 to 5000 kN cap.
- All cement testers 300 and 600 kN cap.
- All flexural testing frames fitted with load cell

PILOT Pro EN 2000 kN Automatic compression tester 50-C46P02 with 50-C10C/3F three-way valve controlling a double testing chamber 300/15 kN cement frame 50-L28Z10 with accessories



## Upgrading options (continued)

### SERIAL PRINTER INSTALLATION

PILOT PRO systems can be upgraded by incorporating a serial printer in the rear panel with the following specifications:

- Very quiet printing
- High speed: 50mm / sec
- High resolution: 200 dpi = 8 dots / mm
- Supports text and graphic printing
- Easy maintenance with self-diagnostics
- Paper width: 58 mm

The printer allows test results (including load / time plot) to be printed at the end of the test.

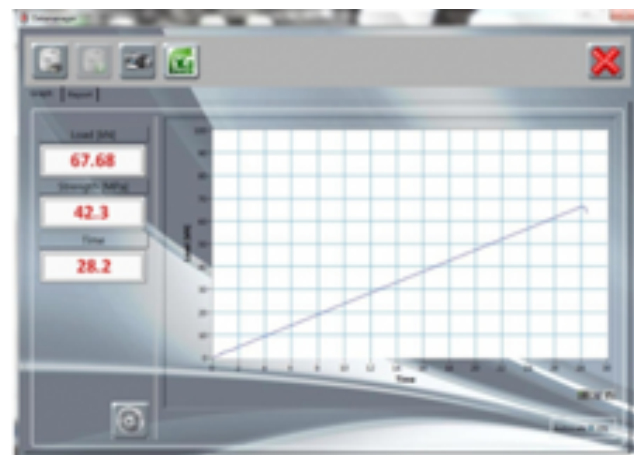
### 50-Q60P/PR

Installation of a serial printer on the PILOT PRO control panel allowing load / time plot.

## Software packages

### 82-SW/DM

DATAMANAGER software package for compression, indirect tensile, 3 points and 4 points flexural tests on different types of specimens.



## Models Overview

			CAPACITY [kN]				
			1,500	2,000	3,000	4,000	5,000
STANDARD	EN	Cubes/Cylinders	-	C46P02	C56P02	C68P02	C78P02
		Blocks	-	C47P02	C57P02	C69P02	C79P02
	ASTM*	Cylinders	A12P02	A22P02 or A42P02	A32P02 or A52P02	-	-
		Blocks	-	A29P02	A39P02	-	-
	General Purpose	Cubes/Cylinders	C13P02	C23P02	C34P02	-	-
		Blocks	-	C25P02	C35P02	-	-

Note: For 110V, 60 Hz versions change last code number from 2 to 4. Example: 50-C46P04, C56P04, C68P04

\*These machines can be calibrated in lbf unit. For the codes change second last code number from 0 to 1

## CONTROLS Customer Care

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 your local CONTROLS office / distributor or email [customercare@controls-group.com](mailto:customercare@controls-group.com).

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

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