

# Humboldt Concrete Compression Machines and Controllers



Testing Equipment For



Construction Materials

# HUMBOLDT

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# Automatic Pump and Controller System for concrete compression machines

## HCM-5080 and HCM-5070 Automatic Pump and Controller Systems

ASTM C39, C78, C293, C469, C496, C1019, C109/C109M, BS EN 12390-32

Humboldt's Automatic Pump and Controller System is the most versatile, accurate and easy-to-use concrete compression machine controller available today.

It is designed to make fast work of testing cylinders, cubes and beams with any of Humboldt's concrete compression machines. It provides an easy-to-use automated testing workflow — just choose the test standard you wish to use from the menu, and you will be quickly guided through the test setup and testing process. It is the ideal automatic system whether you are purchasing a new concrete compression frame or upgrading an existing frame.

The system features a robust, reliable and cool-running 1hp, multi-piston pump, which works together with the controller for full operational control. The controller's high-resolution, 7-inch, color, touchscreen provides accurate, precision machine operation, setup and calibration. Setup and operation are simple with step-by-step procedures.

Calibration is also easy with the controller, allowing from 1 to 10 points to calibrate the machine in any increment chosen. It also provides an accurate motor-control knob, which allows calibrators to dial in precise calibration loads.

The system provides two channel inputs for load, which can be used to control two separate compression frames when using the HCM-HP4014 selector valve accessory. Two additional channels are provided for displacement, which provides an easy solution for determining Poisson's ratio and Young's modulus testing.

The controller also provides data acquisition capabilities of up to 1000 tests with 3000 points per test. This information can be exported via the front USB port and a flash drive.

### Features:

- Provides two channel inputs for load, which allows for the control of two separate compression frames
- Provides two additional channel inputs for displacement, which allows performing extensometer and compressometer testing
- 7", high-resolution color touch-screen display with live readout, graphical and tabular display
- Easy test setup, just choose the standard you wish to test for and the controller will walk you through the complete setup
- Rapid approach, initial load and testing load are automated during test cycles
- Automatic control of test parameters
- Provides data acquisition of one reading per second
- Integral storage within the controller of up to 1000 tests and 3000 points per test



**Tests** 6:48 AM ID 1

PREVIOUS TESTS CURRENT TESTS [TEST\_1]

INPUT 1 LOAD

19375 lbf

STRESS 1542 RATE 283

TEST CONTROL

Input 1 Calibration 2:24 PM ID 44

1. SENSOR DETAILS 2. LIMITS 3. MULTI POINT 4. NAME

**Create Multi-Point Calibration:**  
Please note a minimum of 2 points are required for a successful calibration.

POINT	APPLIED	A/D COUNTS
0	0	12852
1	50000	24401
2	10000	35649
3	150000	38348
4	200000	42120
5	250000	50520
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

Entry Method  
 QUICK CLICK  
 MANUAL ENTRY

Calibration

Clear Point

Test Setup Wizard 9:55 AM ID 1

TYPE SAMPLE BREAK

**Select Test Type:**  
Please select the type of test you will be running.

ASTM  C39 BS  EN 12390-3

C78  
 C293  
 C469  
 C496  
 C1019  
 C109/C109M

- Simple, Fast and accurate machine calibration with accurate, motor-control knob
- Displays in Imperial or metric numbers

Pre-programmed to run the following tests: ASTM C39, C78, C293, C469, C496, C1019, C109/C109M, BS EN 12390-3

### HCM-5070 Console System

Humboldt's HCM-5070 is a console version of the HCM-5080 automatic controller system. The HCM-5070 Console System provides the same features as the HCM-5080, which includes our robust, reliable and cool-running 1hp, multi-piston pump, which works together with the controller for full operational control. The controller's high-resolution, 7-inch, color, touchscreen provides accurate, precision machine operation, setup and calibration. Machine setup and operation functions in the same fashion as the HCM-5080, with the ability to choose an ASTM specification and letting the controller guide you through the setup and testing function. The HCM-5070 can be used to control two separate compression frames when using the HCM-HP4014 selector valve accessory. This selector valve can be mounted directly to the console.



### HCM-5070 Console System for two Compression Machines

The HCM-5070 Console Controller System set up for two separate compression frames, one for cylinders and one for low strength beams. The System can easily switch control between the two frames via the HCM-HP4014 Selector Valve.

Controller System Specifications	
HCM-5080	120V 60Hz
HCM-5080.4F	220V 50/60HZ
HCM-5070	120V 60Hz
HCM-5070.4F	220V 50/60HZ
Display	7" (178mm) VGA (480 x 800) Resistive-touch screen
Processor	Dual 32-bit ARM
RAM	4GB
Analog to digital converter	24 bit
Data acquisition	4 Channels
Data Speed	1000Hz (1kH)
Logging speed	1 reading per second
Test storage	1000
Points per test	3000

Both Humboldt Controllers are: 120/220V 50/60z. However, the pump is either 120V 60Hz or 220V 50/60Hz.

Humboldt Automatic Controller HCM-5080

Humboldt Automatic Controller HCM-5080.4F

CE Ship wt. 180lbs. (82kg)

Humboldt Auto Console Controller HCM-5070

Humboldt Auto Console Controller HCM-5070.4F

CE Ship wt. 200lbs. (91kg)



HCM-HP4014



HCM-4177



HCM-4177.1



HCM-4177.4



HCM-005050

Accessories for HCM-5080 & HCM-5070	
HCM-HP4014	Frame Selector Valve
HCM-4177	Pressure Transducer, 10,000 psi with Cable and Plug
HCM-4177.1	Pressure Transducer, 10,000 psi
HCM-4177.4	Cable for Pressure Transducer 10,000 psi with Plug
HCM-005050	ISO VG 46 Hydraulic Oil, 1gal. (2gal. required)



HCM-5090



HCM-720

## Automate your existing compression frame

Looking to automate your existing compression machine? Now you can easily upgrade it with one of Humboldt's automatic compression machine controllers — the HCM-5080 or the HCM-5070. Both controllers come with our robust, reliable and cool-running 1hp pump, which works together with the controller for full operational control of your compression machine. Both are pre-programmed to run the following tests: ASTM C39, ASTM C78, ASTM C293, ASTM C469, ASTM C496, ASTM C1019, ASTM C109/C109M, BS EN 12390-3.

The HCM-5080 upgrade kit comes with the necessary brackets and mounting hardware and both controllers are available with new compatible transducers, making these upgrade kits a quick and easy upgrade.

Don't want an automated controller? You can also upgrade your machine with the HCM-5090 digital indicator and use your existing pump or add one of our manual pumps as well. The HCM-5090 is also pre-programmed to run all the tests listed above.

### HCM-5090 Digital Indicator

ASTM C39, C78, C293, C469, C496, C1019, C109/C109M; BS EN 12390-32

Humboldt's HCM-5090 digital indicator provides the same platform and many of the same features as the HCM-5080 and HCM-5070 except that it does not act as a controller, but works with a manually-operated pump.

#### Features:

- Provide two channel inputs for load, which allows for the control of two separate compression frames
- Provides two additional channel inputs for displacement, which allows performing extensometer and compressometer testing
- 7", high-resolution color touch-screen display with live readout, graphical and tabular display
- Easy test setup, just choose the standard you wish to test for and the controller will walk you through the complete setup
- Provides data acquisition of one reading per second
- Integral storage within the controller of up to 1000 tests and 3000 points per test
- Simple, Fast and accurate machine calibration
- Displays in Imperial or metric numbers
- Pre-programmed to run the following tests: ASTM C39, ASTM C78, ASTM C293, ASTM C469, ASTM C496, ASTM C1019, ASTM C109/C109M, BS EN 12390-3

The HCM-5090 is also available as a retrofit package.

**Humboldt Digital Indicator** **HCM-5090.3F**  
 Ship wt. 13 lbs. (5.9kg)

### HCM-720 Digital Indicator

ASTM C39, E4, AASHTO T22

The i7 is an easy-to-use digital load indicator that simultaneously displays both live load and rate of load values during a test. It eliminates the need to toggle keys between functions, and, automatically displays peak load and average rate of load at the end of each test.

All test information is clearly displayed on the indicator's 5.3" (135 mm) wide 240 x 64 pixel back-lit V.G.A., liquid-crystal display with adjustable contrast settings. Test data is displayed in user selectable engineering units of lbs, kN, kg and N with rate of load displayed in force units per second.

The indicator will store up to 600 tests in memory, and transfer them directly into a word document via the optional USB Able Cable, or print them on an optional serial printer. Stored test data includes; test date and time, sample ID number, peak load and average rate of load. The average rate of load calculation is based on the average load rate applied to the sample during the second half of the test.

The i7 is also available as a retrofit package.

**HCM-720 Digital Indicator** **HCM-720**  
 Ship wt. 13 lbs. (5.9kg)

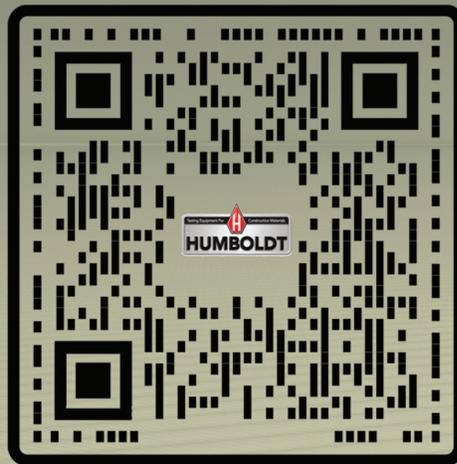
#### Upgrade/Retrofit Accessories for HCM-5090

Pressure Transducer, 10,000 psi with Cable and Plug	HCM-4177
Pressure Transducer, 10,000 psi	HCM-4177.1
Cable for Pressure Transducer with Plug	HCM-4177.4



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