

**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

**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
		42120
		50520
		0
		0
		0
		0
		0

Entry Method  
 QUICK CLICK  
 MANUAL ENTRY

Calibration  
Custom

Clear Point  
[X]

[←] [→]

**Tests** 6:48 AM ID 1

PREVIOUS TESTS CURRENT TESTS [TEST\_1]

INPUT 1 LOAD

**19375**

STRESS 1542    RATE 35

NOT [ ]

HUMBOLDT



Testing Equipment For  Construction Materials

**HUMBOLDT**

# Concrete Compression Machines



## HCM-5080 and HCM-5070 Automatic Controllers

Humboldt's HCM-5080 and HCM-5070 automatic controllers are designed to make fast work of testing cylinders, cubes and beams with all of Humboldt's compression frames.

These controllers provide an easy-to-use automated testing work flow— just choose the test standard you wish to run from the menu and the controller will quickly guide you through the setup. Choose the "Fast Testing" option and your compression frame will run tests as fast as you can load your cylinders, cubes or blocks while sequentially numbering each test automatically. Just click on the start button.

The HCM-5080 and HCM-5070 controllers feature a robust, reliable and cool-running 1hp, multi-piston pump, which works together with the controller for full operational control.

These controller's high-resolution, 7-inch, color, touch-screen provides accurate, precision frame operation, setup and calibration. Test setup is simple, just choose the ASTM standard you wish to use and the controller will quickly walk you through the setup procedure. Calibration is also easy with these controllers, allowing you to use from 1 to 10 points to calibrate the machine in any increment you choose. It also provides an accurate motor-control knob, which let's you dial in precise loads for calibration.

Humboldt's controllers provide two channel inputs for load, which allows for the control of two separate compression frames when using the HCM-HP4014 selector valve accessory. Both controllers also provide two additional channel inputs for displacement, which provides an easy solution for determining Poisson's ration and Young's modulus testing.

Humboldt's automatic controllers provide 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:

- 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
- 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
- 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, ASTM C78, ASTM C293, ASTM C469, ASTM C496, ASTM C1019, ASTM C109/C109M, BS EN 12390-3

Humboldt's HCM-5070 automatic controller is a console version of the HCM-5080 automatic controller and both share the same features.

Humboldt Automatic Controller HCM-5080  
Humboldt Automatic Controller HCM-5080.4F



Ship wt. 180lbs. (82kg)

Humboldt Auto Console Controller HCM-5070  
Humboldt Auto Console Controller HCM-5070.4F



Ship wt. 200lbs. (91kg)



## HCM-5090 Digital Indicator

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. The HCM-5090 digital indicator 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

Humboldt Digital Indicator HCM-5090.3F



Ship wt. 13 lbs. (5.9kg)

### Automatic Controllers for upgrading existing compression frames

Looking to upgrade your existing compression machine? Now you can easily upgrade it with one of Humboldt's automatic compression machine controllers — the HCM-5080 and 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. The HCM-5080 upgrade kit come with necessary brackets and mounting hardware and both are available with new compatible transducers making these upgrade kits a quick and easy upgrade. See next page for more information on Humboldt's digital controllers and indicators.

Humboldt Controller Specifications	
HCM-5080 HCM-5080.4F	120V 60Hz 220V 50/60HZ
HCM-5070 HCM-5070.4F	120V 60Hz 220V 50/60HZ
HCM-5090.3F	120/220V 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 (1kHz)
Logging speed	1 reading per second
Multi-test storage	1000
Points per test	3000



HCM-720

### 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 backlit 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)

Accessories for HCM-5080 & HCM-5070	
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, 1L (2L required)
HCM-HP4014	Frame Selector Valve

Accessories for HCM-5090	
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 with Plug

# Compression Machines



HCM-2500iHA



HCM-3000iH



HCM-4000iHA

## HCM-2500 Series Compression Machines

ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of standard strength concrete mixes
- 2500 to 250,000 lbf (11 to 1112kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Suitable for concrete strength up to 7,000 psi for 6" diameter cylinders
- Standard configuration includes platens to test 6" x 12" (150mm x 300mm) cylinders.
- Choice of two digital controller and two digital indicators ( see pages 170-171)
- Optional test platens and accessories available on pages 177-178
- Steel protective doors, not plastic.
- **Mounting stand: OPTIONAL**, order: HCM-0200

Specification	Value
Vertical Opening	19.375" (492mm)
Horizontal Opening	9.25" (235mm)
Piston Stroke	2.5" (63.5mm)
Lower Platen, Dia.	6.5" (165mm)Ø
Upper Platen, Dia.	6.5" (165mm)
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	27" (686mm)
Overall Depth	17" (432mm)
Overall Height	56.312" (1430mm)

See Page 174-175 for models and ordering information.  
 HCM-2500 Series Compression Machines  
 CE Ship wt. 885 lbs. (401kg)

## HCM-3000 Series Compression Machines

ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of standard strength concrete mixes
- 3000 to 300,000 lbf (13.3 to 1334kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Suitable for concrete strength up to 9,000 psi for 6" diameter cylinders
- Standard configuration includes platens to test 6" x 12" (150mm x 300mm) cylinders.
- Choice of two digital controller and two digital indicators ( see pages 170-171)
- Optional test platens and accessories available on pages 177-178
- **Mounting stand: OPTIONAL**, order: HCM-0300

Specification	Value
Vertical Opening	18.5" (470mm)
Horizontal Opening	9.5" (241mm)
Piston Stroke	3" (76mm)
Lower Platen	9" x 12" (229 x 305mm)
Upper Platen, Dia.	6.5" (165mm)
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	31.5" (800mm)
Overall Depth	17" (432mm)
Overall Height	58.5" (1486mm)

See Page 174-175 for models and ordering information.  
 HCM-3000 Series Compression Machines  
 CE Ship wt. 1078 lbs. (488kg)

## HCM-4000 Series Compression Machines

ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of high-strength concrete mixes
- 4000 to 400,000 lbf (17.8 to 1780kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Suitable for concrete strength up to 11,000 psi for 6" diameter cylinders
- Standard configuration includes platens to test 6" x 12" (150mm x 300mm) cylinders.
- Choice of two digital controller and two digital indicators ( see pages 170-171)
- Optional test platens and accessories available on pages 177-178
- Large frame opening to allow easier loading of test specimens
- Mounting stand is **INCLUDED**

Specification	Value
Vertical Opening	18.375" (467mm)
Horizontal Opening	13.312" (338mm)
Piston Stroke	2.5" (63.5mm)
Lower Platen	12.5" x 18" (318 x 475mm)
Upper Platen, Dia.	6.5" (165mm)
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	39.875" (1013mm)
Overall Depth	20" (508mm)
Overall Height	61.250" (1556mm)

See Page 174-175 for models and ordering information.  
 HCM-4000 Series Compression Machines  
 CE Ship wt. 1700 lbs. (771kg)

Frame opening dimensions are measured without test platens installed in machine. Overall machine dimensions are measured with the stand, including machines where it is optional.



HCM-5000iH

### HCM-5000 Series Compression Machines

ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of high-strength concrete mixes
- 5000 to 500,000 lbf (22.2 to 2224kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Suitable for concrete strength up to 14,000 psi for 6" diameter cylinders
- Standard configuration includes platens to test 6" x 12" (150mm X 300mm) cylinders.
- Choice of two digital controller and two digital indicators (see pages 170-171)
- Optional test platens and accessories available on pages 177-178
- Large frame opening to allow easier loading of test specimens
- Mounting stand is **INCLUDED**

Specification	Value
Vertical Opening	18.375" (467mm)
Horizontal Opening	14" (356mm)
Piston Stroke	2.5" (63.5mm)
Lower Platen	12.5" x 18" (318 x 475mm)
Upper Platen, Dia.	6.5" (165mm)
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	30" (762mm)
Overall Depth	23.750" (603mm)
Overall Height	60.625" (1540mm)

See Page 174-175 for models and ordering information.

#### HCM-5000 Series Compression Machines

CE Ship wt. 2500 lbs. (1134kg)

#### Optional Travel Limit Switch

An electrical switch that prevents the hydraulic piston from going beyond its maximum travel point.

Limit Switch, HCM-2500 Series	HCM-TM0101
Limit Switch, HCM-3000 Series	HCM-TM0106
Limit Switch, HCM-4000 Series	HCM-TM0100
Limit Switch, HCM-5000 Series	HCM-TM0102
	Ship wt. 3 lbs. (1.4kg)



HCM-0030iH

Shown with Optional Flexural Attachment for Beams.

### HCM-0030 Series Compression Machines

ASTM C39, E4, AASHTO T22

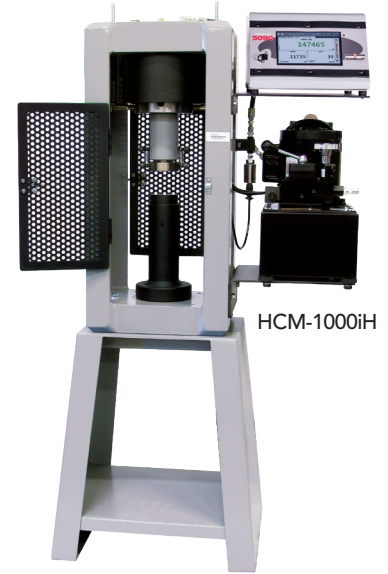
- Suitable for beams of standard strength concrete mixes
- 300 to 30,000 lbf (1.3 to 113.5kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Standard configuration includes no platens. Order HCM-0119A for beam testing
- Choice of two digital controller and two digital indicators (see pages 170-171)
- Optional test platens and accessories available on pages 177-178
- Available as an auxiliary frame design with no controller or pump; includes mounting stand, load frame selector valve and overload protection.
- **Mounting stand: OPTIONAL**, order: HCM-0032

Specification	Value
Vertical Opening	18.5" (470mm)
Horizontal Opening	9.250" (235mm)
Piston Stroke	2.125" (54mm)
Lower Platen, Dia.	NA
Upper Platen, Dia.	NA
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	28.625" (727mm)
Overall Depth	16" (406mm)
Overall Height	51.50" (1308mm)

See Page 174-175 for models and ordering information.

#### HCM-0030 Series Compression Machines

CE Ship wt. 460 lbs. (208kg)



HCM-1000iH

### HCM-1000 Series Compression Machines

ASTM C39, E4, AASHTO T22

The HCM-1000 has been custom-configured to be used for mortar applications like 2" and 4" cubes, beams and other low-strength materials, below 100,000 lbs. (445kN). These machines are based on HCM-2500 frames, which have been reconfigured for accurate readings of lower-strength materials. The machines are sold without platens, so be sure to order the appropriate set for your applications.

- Custom-configured for mortar applications like 2" and 4" cubes
- 1,000 to 100,000 (11 to 445kN) testing range with accuracy of  $\pm 0.5\%$  of indicated load
- Choice of two digital controller and two digital indicators (see pages 170-171)
- Machine comes with no platens, order the appropriate set for your applications
- **Mounting stand: OPTIONAL**, order: HCM-0200

Specification	Value
Vertical Opening	19.375" (492mm)
Horizontal Opening	9.25" (235mm)
Piston Stroke	2.5" (63.5mm)
Lower Platen	NA
Upper Platen, Dia.	NA
Oil Reservoir Cap.	2 gal (7.6 liter)
Overall Width	30" (762mm)
Overall Depth	23.750" (603mm)
Overall Height	60.625" (1540mm)

See Page 174-175 for models and ordering information.

#### HCM-1000 Series Compression Machines

CE Ship wt. 655lbs. (297kg)

Frame opening dimensions are measured without test platens installed in machine. Overall machine dimensions are measured with the stand, including machines where it is optional.

# Compression Machines

## Concrete Compression Machine Ordering Matrix

### HCM-4000BiHA.2F

Load Capacity

Block/Prism

Block use B suffix  
Prism use P suffix

Controller

HCM-5080 use iHA suffix  
HCM-5070 use iHAC suffix  
HCM-5090 use iH suffix  
HCM-720 use i7 suffix

Pump

1hp Automatic use A suffix  
1/2hp use no suffix  
3/4hp use P suffix

Electrical  
Configuration

110V 60Hz use no suffix  
220V 60Hz use .2F suffix  
220V 50Hz use .5F suffix

### Concrete Compression Frame (ONLY)

Compression Machine	Order Number
Compression Machine, 30,000 (133.5kN)	HCM-0030
Compression Machine, 100,000 (445kN)	HCM-1000
Compression Machine, 250,000 (1,112kN)	HCM-2500
Compression Machine, 300,000 (1,334kN)	HCM-3000
Compression Machine, 400,000 (1,780kN)	HCM-4000
Compression Machine, 500,000 (2,224kN)	HCM-5000
Compression Machine Block Series, 400,000 (1,780kN)	HCM-4000B
Compression Machine Block Series, 500,000 (2,224kN)	HCM-5000B
Compression Machine Prism Series, 400,000 (1,780kN)	HCM-4000P
Compression Machine Prism Series, 500,000 (2,224kN)	HCM-5000P

### HCM-0030 Series: 30,000 lbs. (133.5 kN)

Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-0030iHA
HCM-5080.4F		230V 50-60Hz	HCM-0030iHA.4F
HCM-5070		120V 60Hz	HCM-0030iHAC
HCM-5070.4F		230V 50-60Hz	HCM-0030iHAC.4F
HCM-5090.3F	1/2hp Manual	120V 60Hz	HCM-0030iH
HCM-5090.3F	1/2hp Manual	230V 60Hz	HCM-0030iH.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-0030iH.5F
HCM-720	1/2hp Manual	120V 60Hz	HCM-0030i7
HCM-720	1/2hp Manual	230V 60Hz	HCM-0030i7.2F
HCM-720	1/2hp Manual	230V 50Hz	HCM-0030i7.5F

### HCM-1000 Series: 100,000 lbs. (445 kN)

Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-1000iHA
HCM-5080.4F		230V 50-60Hz	HCM-1000iHA.4F
HCM-5070		120V 60Hz	HCM-1000iHAC
HCM-5070.4F		230V 50-60Hz	HCM-1000iHAC.4F
HCM-5090.3F	1/2hp Manual	120V 60Hz	HCM-1000iH
HCM-5090.3F	1/2hp Manual	230V 60Hz	HCM-1000iH.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-1000iH.5F
HCM-720	1/2hp Manual	120V 60Hz	HCM-1000i7
HCM-720	1/2hp Manual	230V 60Hz	HCM-1000i7.2F
HCM-720	1/2hp Manual	230V 50Hz	HCM-1000i7.5F

### HCM-2500 Series: 250,000 lbs. (1,112 kN)

Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-2500iHA
HCM-5080.4F		230V 50-60Hz	HCM-2500iHA.4F
HCM-5070		120V 60Hz	HCM-2500iHAC
HCM-5070.4F		230V 50-60Hz	HCM-2500iHAC.4F
HCM-5090.3F	1/2hp Manual	120V 60Hz	HCM-2500iH
HCM-5090.3F	3/4hp Manual		HCM-2500iHP
HCM-5090.3F	1/2hp Manual	230V 60Hz	HCM-2500iH.2F
HCM-5090.3F	3/4hp Manual		HCM-2500iHP.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-2500iH.5F
HCM-5090.3F	3/4hp Manual		HCM-2500iHP.5F
HCM-720	1/2hp Manual	120V 60Hz	HCM-2500i7
HCM-720	3/4hp Manual		HCM-2500i7P
HCM-720	1/2hp Manual	230V 60Hz	HCM-2500i7.2F
HCM-720	3/4hp Manual		HCM-2500i7P.2F
HCM-720	1/2hp Manual	230V 50Hz	HCM-2500i7.5F
HCM-720	3/4hp Manual		HCM-2500i7P.5F

### HCM-3000 Series: 300,000 lbs. (1,334 kN)

Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-3000iHA
HCM-5080.4F		230V 50-60Hz	HCM-3000iHA.4F
HCM-5070		120V 60Hz	HCM-3000iHAC
HCM-5070.4F		230V 50-60Hz	HCM-3000iHAC.4F
HCM-5090.3F	1/2hp Manual	120V 60Hz	HCM-3000iH
HCM-5090.3F	3/4hp Manual		HCM-3000iHP
HCM-5090.3F	1/2hp Manual	230V 60Hz	HCM-3000iH.2F
HCM-5090.3F	3/4hp Manual		HCM-3000iHP.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-3000iH.5F
HCM-5090.3F	3/4hp Manual		HCM-3000iHP.5F
HCM-720	1/2hp Manual	120V 60Hz	HCM-3000i7
HCM-720	3/4hp Manual		HCM-3000i7P
HCM-720	1/2hp Manual	230V 60Hz	HCM-3000i7.2F
HCM-720	3/4hp Manual		HCM-3000i7P.2F
HCM-720	1/2hp Manual	230V 50Hz	HCM-3000i7.5F
HCM-720	3/4hp Manual		HCM-3000i7P.5F

## Concrete Compression Machine Ordering Matrix

<b>HCM-4000 Series: 400,000 lbs. (1,780 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-4000iHA
HCM-5080.4F		230V 50-60Hz	HCM-4000iHA.4F
HCM-5070		120V 60Hz	HCM-4000iHAC
HCM-5070.4F		230V 50-60Hz	HCM-4000iHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-4000iHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-4000iHP.2F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-4000iHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-4000i7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-4000i7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-4000i7P.5F

<b>HCM-5000 Series: 500,000 lbs. (2,224 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-5000iHA
HCM-5080.4F		230V 50-60Hz	HCM-5000iHA.4F
HCM-5070		120V 60Hz	HCM-5000iHAC
HCM-5070.4F		230V 50-60Hz	HCM-5000iHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-5000iHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-5000iHP.2F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-5000iHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-5000i7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-5000i7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-5000i7P.5F

<b>HCM-4000B Masonry Block Series: 400,000 lbs. (1,780 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-4000BiHA
HCM-5080.4F		230V 50-60Hz	HCM-4000BiHA.4F
HCM-5070		120V 60Hz	HCM-4000BiHAC
HCM-5070.4F		230V 50-60Hz	HCM-4000BiHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-4000BiHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-4000BiHP.2F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-4000BiHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-4000Bi7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-4000Bi7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-4000Bi7P.5F
HCM-720	3/4hp Manual	230V 50Hz	HCM-4000Bi7P.5F

<b>HCM-4000B Masonry Block Series: 500,000 lbs. (2,224 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-5000BiHA
HCM-5080.4F		230V 50-60Hz	HCM-5000BiHA.4F
HCM-5070		120V 60Hz	HCM-5000BiHAC
HCM-5070.4F		230V 50-60Hz	HCM-5000BiHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-5000BiHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-5000BiHP.2F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-5000BiHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-5000Bi7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-5000Bi7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-5000Bi7P.5F
HCM-720	3/4hp Manual	230V 50Hz	HCM-5000Bi7P.5F

<b>HCM-4000P Masonry Prism Series: 400,000 lbs. (1,780 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-4000PiHA
HCM-5080.4F		230V 50-60Hz	HCM-4000PiHA.4F
HCM-5070		120V 60Hz	HCM-4000PiHAC
HCM-5070.4F		230V 50-60Hz	HCM-4000PiHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-4000PiHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-4000PiHP.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-4000PiH.5F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-4000PiHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-4000Pi7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-4000Pi7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-4000Pi7P.5F

<b>HCM-4000P Masonry Prism Series: 500,000 lbs. (2,224 kN)</b>			
Controller	Pump Size	Electrical	Order Number
HCM-5080	1hp Automatic	120V 60Hz	HCM-5000PiHA
HCM-5080.4F		230V 50-60Hz	HCM-5000PiHA.4F
HCM-5070		120V 60Hz	HCM-5000PiHAC
HCM-5070.4F		230V 50-60Hz	HCM-5000PiHAC.4F
HCM-5090.3F	3/4hp Manual	120V 60Hz	HCM-5000PiHP
HCM-5090.3F	3/4hp Manual	230V 60Hz	HCM-5000PiHP.2F
HCM-5090.3F	1/2hp Manual	230V 50Hz	HCM-5000PiH.5F
HCM-5090.3F	3/4hp Manual	230V 50Hz	HCM-5000PiHP.5F
HCM-720	3/4hp Manual	120V 60Hz	HCM-5000Pi7P
HCM-720	3/4hp Manual	230V 60Hz	HCM-5000Pi7P.2F
HCM-720	3/4hp Manual	230V 50Hz	HCM-5000Pi7P.5F



shown with  
optional  
Platen Carrier  
Bracket

HCM-5000iH

HCM-5000P

## Masonry Series Compression Machines

ASTM C39, C140, C1314, E4, AASHTO T-22

Masonry series machines are available in two capacities: 400,000 (1,780kN) and 500,000 (2,224kN) with a testing range from 1 to 100% of machine capacity, with an accuracy of  $\pm 5\%$  of indicated load. Masonry series compression testing machines are available in two load frame configurations for testing single- or two-block masonry prisms of full-sized block up to 12" (304 mm) wide.

- Tests blocks, masonry prisms, pavers and retaining wall units
- 400,000 to 800,000 (1,780 to 3,559kN) testing range with accuracy of  $\pm 5\%$  of indicated load
- Standard configuration includes platens for testing 6" x 12" (150 x 300mm) cylinders
- Draw rod is included for safer, easier and faster changing of test platens and spacers

The heavy-duty load frames use the same proven design and manufacturing process found in all of our machines, with a wide horizontal opening and large compression platen table for easier loading of heavy specimens. The machine's included mounting stand also places the lower platen at a convenient working height.

These machines' unique lower, dual-platen system features a wear platen through-hardened to 60 HRC or greater and is designed for fast and easy maintenance without the need for expensive rental equipment to remove the platen, unlike the cumbersome single-plate systems used in competitive units. Changing test platens and spacers is quick, easy, and safe with our draw rod, used to adjust the load frame's inside vertical working height, and optional carrier bracket system, which features a heavy-duty arm mounted on the rear left corner of the load frame that pivots on two hinged joints. When the block platen is not being used, it can be conveniently stored on the bracket's arm. **Includes mounting stand.**

Optional test platens and accessories add to the versatility of the block and prism machines, see pages 179-180.

See Page 177 for models and ordering information.

### HCM-4000B Series Block Machines

CE Ship wt. 1,700 lbs. (771kg)

See Page 177 for models and ordering information.

### HCM-4000P Series Prism Machines

CE Ship wt. 1,700 lbs. (771kg)

See Page 177 for models and ordering information.

### HCM-5000B Series Block Machines

CE Ship wt. 2,700 lbs. (1224kg)

See Page 177 for models and ordering information.

### HCM-5000P Series Prism Machines

CE Ship wt. 2,700 lbs. (1224kg)



HCM-0802

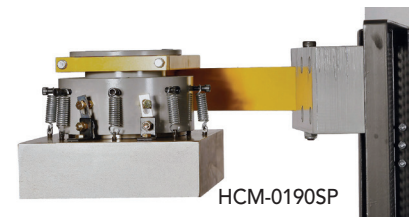
## Draw Rod Assembly

Draw rods are included with all masonry model machines. The draw rod system is used to adjust the inside vertical working height of the load frame, to allow for testing samples of different heights through the use of spacers and test platens. The system is made up of a steel hand wheel with internal ball bearings and a threaded rod that is easily raised or lowered inside the load frame for height adjustment. Spacers slide onto the rod, the rod is threaded into the test platen and the assembly is then tightened against the cross-head.

## Draw Rod Assembly

HCM-0802

Ship wt. 38 lbs. (17.3kg)



HCM-0190SP

## Platen Carrier Brackets

The Carrier Bracket is used for safer removal and mounting of the block platen assembly inside the load frame, and should be considered a must have option when testing masonry units.

The brackets heavy-duty arm is mounted on the rear left hand corner of the load frame and pivots on two hinged joints, allowing the complete assembly to rotate smoothly into and out of the load frame. When not in use, platen and arm are conveniently stored on rear of machine.

## HCM-4000 Carrier Bracket

HCM-0190SP

Ship wt. 120 lbs. (54.4kg)

## HCM-5000 Carrier Bracket

HCM-0190P

Ship wt. 155 lbs. (70.3kg)

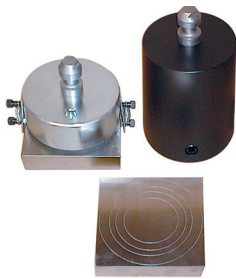
## Masonry Series Compression Machines

Specification	HCM-4000B	HCM-4000P	HCM-5000B	HCM-5000P
Vertical Opening	18.375" (467mm)	26.750" (679mm)	18.375" (467mm)	26.750" (679mm)
Horizontal Opening	13.312" (338mm)	13.312" (338mm)	14" (356mm)	14" (356mm)
Piston Stroke	2.5" (63.5mm)	2.5" (63.5mm)	2.5" (63.5mm)	2.5" (63.5mm)
Lower Platen, Dim.	12" x 16" (305 x 407mm)	12" x 16" (305 x 407mm)	13" x 16" (330 x 407mm)	13" x 16" (330 x 407mm)
Upper Platen, Dia.	6.5" (165mm)	6.5" (165mm)	6.5" (165mm)	6.5" (165mm)
Oil Reservoir Cap.	2 gal (7.6 liter)	2 gal (7.6 liter)	2 gal (7.6 liter)	2 gal (7.6 liter)
Overall Width	39.875" (1013mm)	39.875" (1013mm)	30" (762mm)	30" (762mm)
Overall Depth	20" (508mm)	20" (508mm)	23.75" (603mm)	23.75" (603mm)
Overall Height	63.625" (1616mm)	71.625" (1819mm)	63.625" (1540mm)	68.875" (1749mm)





HCM-0101



HCM-0113



HCM-0112A



HCM-0107P



HCM-0119A

### Cylinder Platens

ASTM C39, AASHTO T-22

Used when testing 6" (152 mm) or 4" (101 mm) diameter concrete cylinders in compression. Platen is manufactured from steel with all components plated for corrosion resistance.

Its bearing platen is 6.5" (165 mm) in diameter, through-hardened to HRC 55 or greater, plane to .0005" (.02 mm), has scribed concentric circles, and is hard nickel plated for wear resistance.

Note: An optional spacer is required for testing 4" (101 mm) diameter cylinders.

Machines	HCM-2500	HCM-3000
Platen	HCM-0101	HCM-0104
Machines	HCM-4000	HCM-5000
Platen	HCM-0101	HCM-0101

### Cylinder Platens

see chart above

Ship wt. 1078 lbs. (488.7kg)

### 6" (152mm) Cube Platen Test Sets

ASTM C109, C1604, C39, AASHTO T-22, T-106

Used for testing 6" (152 mm) concrete cubes and cylinders in compression.

Cube test set consists of a 6.5" (165mm) square, spherically-seated upper platen assembly.

The platen bearing blocks are through-hardened to HRC 55 or greater, plane to .0005" (.012 mm) in any 6" (152 mm) area, has concentric circles for easier centering of cylinders and is hard nickel-plated for wear and corrosion resistance.

Kit includes; spherical seated platen assembly and spacer. Note: A 6.5" (152 mm) square lower platen is supplied with MA-0113 cube set for use in HCM-2500 series machines

Machines	HCM-2500	HCM-3000
Set	HCM-0113	HCM-0111
Platen, Upper	HCM-0113X	HCM-0111X
Machines	HCM-4000	HCM-5000
Set	HCM-0116	HCM-0116
Platen, Upper	HCM-0116X	HCM-0116X

### 6" (152mm) Cube Platen Set

see chart above

2500 Platen

Ship wt. 38 lbs. (17.2kg)

3000 Platen

Ship wt. 116 lbs. (52.6kg)

4000 & 5000 Platen

Ship wt. 100 lbs. (45.3kg)

### 2" (50mm) Cube Platen Test Sets

ASTM C109, C1604, C39, AASHTO T-22, T-106

Used for testing 2" (50 mm) cubes and 3" (76 mm) diameter cylinders and cores in compression. Cube test set consists of a 3.125" (80mm) diameter, spherically-seated upper platen assembly and a lower pedestal with a 2.83" (72mm) diameter bearing block surface used for positioning the cube sample at the correct height for testing.

The bearing blocks of the upper platen are hardened to 60 HRC and plane to .0005" (.01 mm) and hard plated for corrosion resistance.

The upper bearing block is closely held in its spherical seat, but is free to tilt in any direction and seat securely under load. The bearing blocks are removable and replaceable.

The platen is easily installed in the upper cross-head of the load frame and is securely held in place by either the holding stem, hex bolt or draw rod system.

Spacers are required for testing 3" diameter cylinders or cores. Cube pedestal is not used when testing cylinders or cores.

Machines	HCM-0030	HCM-2500
Set	HCM-0112SA	HCM-0112A
Platen, Upper	HCM-0023L	HCM-0023L
Platen, Lower	HCM-0022SA	HCM-0022A
Machines	HCM-3000	HCM-4000
Set	HCM-0114A	HCM-0115A
Platen, Upper	HCM-0023N	HCM-0023
Platen, Lower	HCM-0022A	HCM-0022A
Machines	HCM-5000	
Set	HCM-0115A	
Platen, Upper	HCM-0023	
Platen, Lower	HCM-0022A	

### 2" (50mm) Cube Platen Set

see chart above

Ship wt. 14lbs. (6.3kg)

### Masonry Platens

ASTM C140, C1314 for HCM-0107P Only!

Masonry platens feature large diameter spherical disk and seat assemblies, and platen bearing surface plane to .001" (.025 mm) in any 6" (152 mm) direction, through hardened to HRC 60 and plated for wear and corrosion resistance. The bearing block is held securely in its seat assembly by a series of heavy duty springs and safety links which allow it to rotate freely and seat under load.

The HCM-0106 and HCM-0106.3 are used to test masonry units up to 8" (203 mm) wide. Both items are supplied with an 8" wide x 16" long bottom bearing plate through-hardened to HRC 60 and plated for corrosion resistance.

The HCM-0107P can be used to test masonry units up to 12" (305 mm) wide.

Machines	HCM-2500	HCM-3000
Platen	HCM-0106	HCM-0106.3
Machines	HCM-4000	HCM-5000
Platen	HCM-0107P	HCM-0107P

### Masonry Platen

see chart above

Ship wt. 135 lbs. (61.2kg)

### Flexural Beam Attachment

ASTM C78, C293, AASHTO T-97, T-177

Used to determine the modulus of rupture of center or third-point beams with a depth of 6" (150 mm). The upper heads load bearing blocks are easily changed for either a center or third-point testing configuration. Bottom support blocks are set in the lower support channel with a fixed 18" (457 mm) span length.

Bearing blocks are spring-loaded to hold them in contact with the pivot balls and rod, as required by ASTM specifications.

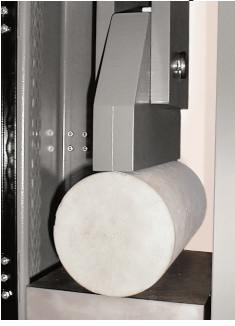
Machines	HCM-2500	HCM-3000
Attachment	HCM-0119A	HCM-0117A
Machines	HCM-4000	HCM-5000
Attachment	HCM-0119A	HCM-0119A
Machines	HCM-0030	
Attachment	HCM-0119A	

### Flexural Beam Attachment

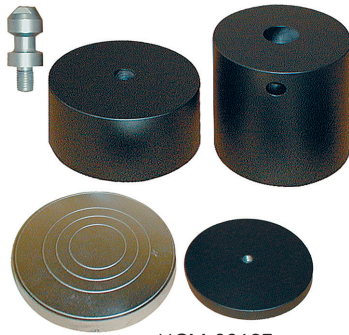
see chart above

Ship wt. 134 lbs. (60.7kg)

# Compression Machines



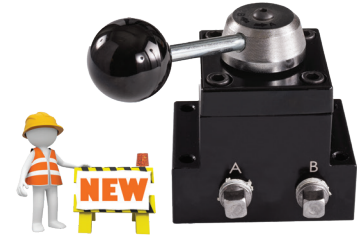
HCM-0120



HCM-00127



HCM-0135



HCM-HP4014

### Cylinder Splitting Set

ASTM C496, AASHTO T-198

The cylinder splitting head has a bearing contact area of 12" (304 mm) long by 2" (50 mm) wide, its surface is machined plane to .001" (.025 mm) and has a scribed center line of the face of the bar for easier centering of test samples.

Note: A lower bearing plate 12.5" (317 mm) long by 7" (178 mm) wide is supplied with HCM-0120 Splitting Test Set for use in HCM-2500 series machines.

Machines	HCM-2500	HCM-3000
Splitting Set	HCM-0120	HCM-0124
Machines	HCM-4000	HCM-5000
Splitting Set	HCM-0123	HCM-0123

### Cylinder Splitting Set

HCM-0120 see chart above  
 Ship wt. 173 lbs. (69kg)  
 HCM-0123, HCM-0124 Ship wt. 240 lbs. (108.8kg)

### Spacers for Platen Adjustment

Spacers are used with test platens to adjust the vertical working clearance height inside a machines load frame, for testing samples of various types and sizes to prevent over-extension of the load frames piston.

They are manufactured from steel and machined plane on both ends to maintain a parallel alignment between spacers and test platens. Spacers are painted for corrosion resistance. Spacers are available in four model types; three model types for mounting against the machines upper cross-head by the holding stem, socket head bolt or draw rod methods, and one model type that sits on the machines lower crosshead used with a bearing platen.

Spacers see chart below



### Brick Platen Assembly

ASTM C39, C67, AASHTO T-67

The brick platen assembly is designed for testing brick in compression. The set consists of an upper spherically-seated platen and a lower platen. The upper platen is 6.5" (165mm) wide x 8" (203mm) long x 1.875" (48mm) thick, through-hardened to HRC 60 or better, plane to .0005" (.02mm) and hard-plated for wear and corrosion resistance. The platen is closely held in its spherical seat, but in such a manner as to allow the contact platen to tilt freely and seat securely under load.

The bottom bearing block is used beneath the test specimen to minimize wear on the lower machine platen. It is 8" (203mm) long x 6.5" (165mm) wide x 1.875" (48mm) thick, through-hardened to HRC 60 or greater, plane to .0005" (.02mm) and is hard-plated for wear and corrosion resistance.

Optional spacers are required to close the vertical opening of the machine when testing bricks.

### Brick Platen Assembly

HCM-00127



Ship wt. 100 lbs. (45kg)

### Upper Brick Platen Only

HCM-0015



Ship wt. 100 lbs. (45kg)

### Cylinder Loading Shelf

Auxiliary Cylinder Loading Shelf is available for use with HCM-2500 Series machines.

### Cylinder Loading Shelf

HCM-0135



Ship wt. 40lbs. (18.4kg)

### Selector Valve

The HCM-HP4014 selector valve accessory provides switching capabilities between two separate compression frames when using a single pump for both frames. This valve can be used with either the HCM-5080 or HCM-5070 Humboldt automatic controllers or our HCM-5090.3F digital indicator.

### Cylinder Loading Shelf

HCM-HP4014



Ship wt. 7lbs. (3.2kg)



HCM-0718

### AbleCable

Serial/USB cable, which allows you to transfer load vs. time graph with test date, I.D. number and test data directly into a spread sheet program. This allows the user to transfer data from an individual test to a spread sheet to create a X-Y load vs. time graph with the graph wizard. Requires user to set initial column headings. For use with the i7 digital indicator only.

### AbleCable

HCM-0718



Ship wt. 0.4lbs. (0.181g)

### AbleCable Extension, 25' (7.6m)

HCM-0707.25



Ship wt. 5lbs. (2.2kg)

### Platens and Spacers for Concrete Compression Frames

Cylinders	Item	HCM-2500	HCM-3000	HCM-4000	HCM-5000	Ship Wgt.
4 x 8 in.	Platen	Supplied	Supplied	Supplied	Supplied	39 lb/17.7kg
	Spacer	HCM-0612	HCM-0662	HCM-0653	HCM-0653	34.4 lb /15.6kg
3 x 6 in.	Platen	HCM-0023L	HCM-0023N	HCM-0023	HCM-0023	45 lb/20.1kg
	Spacer	HCM-0612	HCM-0661	HCM-0654	HCM-0654	35 lb/15.8kg
2 x 4 in.	Platen	HCM-0023L	HCM-0023N	NR	NR	13 lb/5.8kg
	Spacer	HCM-0615	HCM-0666	NR	NR	17 lb/3.1kg

Supplied: Item comes with machine, NR: Not required





H-2912L



H-2911



H-2918D

Compressometer / Extensometers	Dial Gauge	LSCT
6" x 12" (152 x 305mm) cylinders	H-2912	H-2912L
4" x 8" (102 x 203mm) cylinders	H-2917	H-2917L
3" x 6" (76 x 152mm) cylinders	H-2919	H-2919L

Compressometers	Dial Gauge	Digital Indicator	LSCT
6" x 12" (152 x 305mm) cylinders	H-2911	H-2911D	H-2911L
4" x 8" (102 x 203mm) cylinders	H-2916	H-2916D	H-2916L
3" x 6" (76 x 152mm) cylinders	H-2918	H-2918D	H-2918L

### Compressometer-Extensometers

ASTM C469

Compressometer-extensometers are used to determine Poisson's ratio and Young's modulus during a compression test. This device contains a third, center yoke with a hinge dividing it into two equal segments. The middle yoke is hinged to permit rotation of the two segments of the yoke in the horizontal plane. Indicator gives deformation readings. Second indicator is furnished for compressometer section. Unit measures changes in length and diameter. All H-2900 series compressometers may be ordered with dial gauges, digital indicators or strain transducers, see charts above. Digital indicators and LSCT models can be used with data acquisition systems through the use of our miniloggers, see right.

Compressometer-Extensometers see chart above  
UPS Ship wt. 9.6 lbs. (4.3kg)

### Compressometers

ASTM C469

The compressometer is used for evaluating the chord modulus of elasticity (Young's modulus) of concrete cylinders while undergoing compression testing. The compressometer includes two, cast-aluminum alloy yokes, mounting and central points, stainless steel control rods. Models are available with a dial gauge— with a range of 0.2" (5.08mm) and minimum graduations of .0001 (.0025mm), as well as with a digital indicator or a LSCT transducer. Digital indicators and LSCT models can be used with data acquisition systems through the use of our miniloggers, see right.

Compressometers see chart above  
UPS Ship wt. 10 lbs. (4.5kg)

## Data Acquisition Upgrade for Existing Compression Machines and Compressometer-Extensometer Testing

Looking to upgrade your existing manually-operated compression machine or add compressometer/extensometer testing capabilities to it? Now you can easily upgrade your frame with Humboldt's HCM-5090 Digital Indicator. The HCM-5090's four, independent data acquisition channels provide you with enough options to control all your data needs with one digital indicator.

A typical setup would provide the logging of Load, Stress and Rate from one compression machine in Channel One. Channels Two and Three would provide inputs for measuring displacement— allowing you to perform extensometer and compressometer testing. Channel Four would provide another input for logging Load, Stress and Rate, perfect for an additional load frame set up for something like flexural testing or cubes. All this information can be simultaneously tracked by the HCM-5090.3F. For more information on the HCM-5090.3F, see pages 170-171. **If you are interested in an automatic solution upgrade, you should look at the HCM-5080 and HCM-5070 automatic controllers on pages 170-171.**

Digital Indicator, 120/220V 50/60Hz HCM-5090.3F  
UPS Ship wt. 6lbs. (2.7kg)

### Strain Transducer

ASTM C469

Strain transducer: 0.4" (10mm)

Strain Transducer HM-2310.04  
UPS Ship wt. 1lbs. (453g)

### Pressure Transducer

Pressure transducer: 10,000 psi with plug for HCM-5090.3F

Pressure Transducer HM-4177  
UPS Ship wt. 1lbs. (453g)



HCM-5090.3F



HM-2310.04



HM-4177



[www.humboldtmfg.com](http://www.humboldtmfg.com)  
1.800.544.7220