



HCM-2500DIR machine with optional floor stand.



HCM-0135 Cylinder Loading Shelf is available for use with HCM-2500 Series machines.

Choose from three Digital Load Indicators see page 106-107 for information.



HCM-4000DIR machine with floor stand.



All machines feature, quiet-running, continuous-duty hydraulic pumps



**How to Order:**

**HCM-3000SD.5F**

All machines come set up to do 6 x 12 in. cylinders.

Mounting Stands are optional on HCM-2500/3000 Series machines, but come standard on HCM-4000/5000 Series machines.

Machine Series

Load Indicating System

DIR, SD, LXI  
(see page 106-107 for descriptions)

Electrical Configuration

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



## COMPRESSION MACHINE ACCESSORIES

Cylinders		HCM-2500	HCM-3000	HCM-4000	HCM-5000
6 x 12 in.	Platen	Supplied	Supplied	Supplied	Supplied
	Spacer	NR	NR	NR	NR
4 x 8 in.	Platen	Supplied	Supplied	Supplied	Supplied
	Spacer	HCM-0612	HCM-0662	HCM-0653	HCM-0653
3 x 6 in.	Platen	HCM-0023L	HCM-0023N	HCM-0023	HCM-0023
	Spacer	HCM-0612	HCM-0661	HCM-0654	HCM-0654
2 x 4 in.	Platen	HCM-0023L	HCM-0023N	NR	NR
	Spacer	HCM-0615	HCM-0666	NR	NR

Supplied: Item comes with machine, NR: Not required

Cubes		HCM-2500	HCM-3000	HCM-4000	HCM-5000
6 in.	Set	HCM-0113	HCM-0111	HCM-0116	HCM-0116
	2 in.	Set	HCM-0112	HCM-0114	HCM-0115

Set includes platen and pedestal. Cube pedestal (11 in.) only: MP0022.

Beams		HCM-2500	HCM-3000	HCM-4000	HCM-5000
Flexural Attach.		HCM-0119	HCM-0117	HCM-0119	HCM-0119

Blocks		HCM-2500	HCM-3000	HCM-4000	HCM-5000
Platen Assembly		HCM-0106	HCM-0106.3	HCM-0107P	HCM-0107P

Platen carrier bracket for loading platen into 400K machine: MA-0190-SP  
Platen carrier bracket for loading platen into 500K machine: MA-0190-P

Block set-ups on HCM-2500 and HCM-3000 do not meet ASTM Specifications

Split Cylinders		HCM-2500	HCM-3000	HCM-4000	HCM-5000
Splitter Attach.		HCM-0120	HCM-0124	HCM-0123	HCM-0123

### Carrier Bracket— HCM-0190

Changing block platens and spacers is quick, easy, and safe with the carrier bracket, 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.



HCM-0190



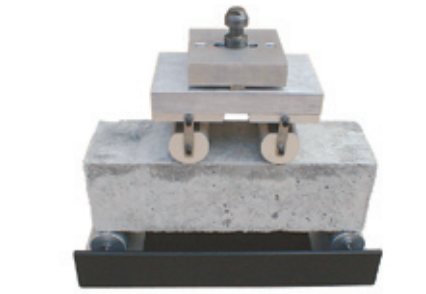
HCM-0120



HCM-0612



HCM-0112



HCM-0119



HCM-0107P

Concrete



## HCM-2500 Series

- Perfect machine for labs, contractors and even mobile labs
- Accuracy of  $\pm 0.5\%$  of indicated load from 2,500–250,000 lbs. (11–1,112 kN)
- Choice of 3 digital load-indicating systems
- Quiet-running, continuous-duty hydraulic pump
- Supplied with platen set for 6" (150 mm) cylinders using unbonded or sulfur-capping method

The CM-2500 has all the features you look for in a basic compression testing machine: accuracy, compactness, portability, versatility, and dependability.

The load frame features a wrap-around box construction with each corner fully welded on both the inside and outside crosshead seams, providing the rugged stability needed for accurate and repeatable test results year after year. The load frame is also protected with a unique baked-on, powder-coated painting process for a durable, long-lasting finish that keeps it looking good for years to come. The machine's eye-level digital indicator, loading-control valve, and hydraulic pump are positioned on the right side of the load frame for easy access, increasing productivity, and safer operation. Featuring superior rate-of-load control, its unique quiet-running, continuous-duty hydraulic pump and pressure-compensated loading-control valve are manufactured to ISO 9001 international quality standards. Exceeds ASTM C39, E4 and AASHTO T22 specifications.

**Optional .75 hp motor available. Order optional stand HCM-0200, if desired. See page 101 for list of accessories available.**

<b>Maximum Compression Capacity</b>	250,000 lbs (1,112kN)
<b>Vertical Opening</b>	19.375 in. (492mm)
<b>Horizontal Opening</b>	9.25 in. (235mm)
<b>Piston Stroke</b>	2.5 in (63.5mm)
<b>Dimensions w/ Opt. Stand (W x D x H)</b>	27 x 17 x 56.312 in. (686 x 432 x 1430mm)
<b>Lower Platen Diameter</b>	33.2 sq in. (214 sq mm)
<b>Upper Platen Diameter</b>	6.5 in. (165mm)
<b>Pump</b>	.5 hp (.4kw)
<b>Oil Reserve Capacity</b>	2 gallon (7.6 liter)
<b>Electrical Configuration</b>	110V 60Hz 220V 60Hz 220V 50Hz
<b>Shipping Weight</b>	780 lbs (353kg)

## HCM-3000 Series

- Accuracy and testing range of  $\pm 0.5\%$  of indicated load from 1% to full machine capacity
- Quiet-running, continuous-duty hydraulic pumps
- Rigid load frames exceed ACI 363 frame-elongation requirements
- Choice of 3 digital load-indicating systems

The CM-3000 features thicker crossheads and a wrap-around frame design. The result is a solid one-piece load frame that provides the stability needed for repeatable and accurate test results year after year, even when testing high-strength concrete.

For easier loading of test specimens, the frame has a wide horizontal opening and a large lower compression platen. The platens are through-hardened to 55 HRC or greater, ground plane, plated for corrosion resistance, and have concentric circles for easier centering of specimens.

Bottom-mounted piston is larger in diameter than those of competitive models and is protected by a steel dust shield that keeps its hydraulic system cleaner. Test platens and spacers are mounted to the top crosshead for easier changing, and the machine's quiet-running hydraulic pump is rated for continuous duty, with all its components and those of the loading-control valve manufactured to ISO 9001 international quality standards. The control valve is pressure-compensated for a smooth and constant rate of loading, meeting the test specification requirements for a range of specimens.

**Optional .75 hp motor available. Order optional stand HCM-0300, if desired. See page 101 for list of accessories available.**

<b>Maximum Compression Capacity</b>	300,000 lbs (1,334kN)
<b>Vertical Opening</b>	18.5 in. (470mm)
<b>Horizontal Opening</b>	9.5 in. (241mm)
<b>Piston Stroke</b>	3 in (76mm)
<b>Dimensions w/ Opt. Stand (W x D x H)</b>	31.5 x 17 x 58.8 in. (800 x 432 x 1486mm)
<b>Lower Platen</b>	9 x 12 in. (229 x 305mm)
<b>Upper Platen Diameter</b>	6.5 in. (165mm)
<b>Pump</b>	.5 hp (.4kw)
<b>Oil Reserve Capacity</b>	2 gallon (7.6 liter)
<b>Electrical Configuration</b>	110V 60Hz 220V 60Hz 220V 50Hz
<b>Shipping Weight</b>	975 lbs (442kg)



## HCM-4000 Series

- Accuracy and testing range of  $\pm 0.5\%$  of indicated load from 1% to full machine capacity
- Quiet-running, continuous-duty hydraulic pumps
- Rigid load frames exceed ACI 363 frame-elongation requirements
- Choice of 3 digital load-indicating systems

The HCM-4000 features thicker crossheads and a wrap-around frame design. The result is a solid one-piece load frame that provides the stability needed for repeatable and accurate test results year after year, even when testing high-strength concrete.

For easier loading of test specimens, both frames have a wide horizontal opening and a large lower compression platen. The platens are through-hardened to 55 HRC or greater, ground plane, plated for corrosion resistance, and have concentric circles for easier centering of specimens.

Bottom-mounted pistons are larger in diameter than those of competitive models and are protected by a steel dust shield that keeps their hydraulic system cleaner. Test platens and spacers are mounted to the top crosshead for easier changing, and the machine's quiet-running hydraulic pump is rated for continuous duty, with all its components and those of the loading-control valve manufactured to ISO 9001 international quality standards. The control valve is pressure-compensated for a smooth and constant rate of loading, meeting the test specification requirements for a range of specimens.

**Includes mounting stand. See page 101 for list of accessories available.**

<b>Maximum Compression Capacity</b>	400,000 lbs (1,780kN)
<b>Vertical Opening</b>	18.375 in. (467mm)
<b>Horizontal Opening</b>	13.312 in. (338mm)
<b>Piston Stroke</b>	2.5 in (63.5mm)
<b>Dimensions w/ Stand (W x D x H)</b>	39.9 x 20 x 61.3 in. (1013 x 508 x 1556mm)
<b>Lower Platen</b>	12 x 18 in. (305 x 475mm)
<b>Upper Platen Diameter</b>	6.5 in. (165mm)
<b>Pump</b>	.75 hp (.6kw)
<b>Oil Reserve Capacity</b>	2 gallon (7.6 liter)
<b>Electrical Configuration</b>	110V 60Hz 220V 60Hz 220V 50Hz
<b>Shipping Weight</b>	1620 lbs (734kg)

## HCM-5000 Series

- Rigid load frame exceeds ACI 363 frame-elongation requirements
- Accuracy and testing range of  $\pm 0.5\%$  of indicated load from 1% to full machine capacity
- Thicker crossheads and side members than competitors'
- Choice of 3 digital load-indicating systems

High-capacity series compression testing machine features rigid distortion-resistant load frame designed to meet the demands of testing high-performance concrete in a production testing program where accurate and repeatable test results are required.

High-strength frame incorporates thicker crossheads and deeper side members than competitors' models. For example, the frame has a stiffness of 41.6 million lbs./in. We invite comparison of the frame design specifications to any other high-capacity machine.

For easier operation and loading of specimens, the frames feature a wide horizontal opening, large lower platen, bottom-mounted piston with dust shield, heavy-duty load-frame mounting stand that positions the lower platen at a convenient height for loading heavy test specimens, and steel front and rear safety guard doors. The lower platen is through-hardened to 55 HRC or greater, ground plane, plated for corrosion resistance, and has concentric circles for easier centering of test specimens. A quick-change platen system is available to assist in fast and easy switching of test platens, please call 1.800.544.7220.

**Includes mounting stand. See page 101 for list of accessories available.**

<b>Maximum Compression Capacity</b>	500,000 lbs (2,224kN)
<b>Vertical Opening</b>	18.375 in. (467mm)
<b>Horizontal Opening</b>	14 in. (356mm)
<b>Piston Stroke</b>	2.5 in (63.5mm)
<b>Dimensions w/ Stand (W x D x H)</b>	30 x 23.75 x 60.63 in. (762 x 603 x 1540mm)
<b>Lower Platen Diameter</b>	13 x 18 in. (330 x 475mm)
<b>Upper Platen Diameter</b>	6.5 in. (165mm)
<b>Pump</b>	.75 hp (.6kw)
<b>Oil Reserve Capacity</b>	2 gallon (7.6 liter)
<b>Electrical Configuration</b>	110V 60Hz 220V 60Hz 220V 50Hz
<b>Shipping Weight</b>	2500 lbs (1134kg)



HCM-400P

## Block and Prism Compression Machines

- Test block, masonry prisms, pavers, and wall retainer units
- Testing range from 1% to 100% of machine capacity, with an accuracy of  $\pm 0.5\%$  of indicated load
- Accessories for testing a full range of concrete and cement specimens available. Ships with block and cylinder platens.

Block 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. The heavy-duty load frames use the same proven design and manufacturing process found in all our machines, with a wide horizontal opening and large lower compression platen for easier loading of test specimens.

The machine's mounting stand also places the lower platen at a convenient height for easier loading of heavy specimens. The 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. See page 101 for list of accessories available.**

### Specifications for Prism Machines (Single block available)

	HCM-400P	HCM-5000P
<b>Maximum Compression Capacity</b>	400,000 lbs (1,780kN)	500,000 lbs (2,2240kN)
<b>Vertical Opening</b>	26.750 in. (679mm)	26.750 in. (679mm)
<b>Horizontal Opening</b>	13.312 in. (338mm)	14 in. (356mm)
<b>Piston Stroke</b>	2.5 in (63.5mm)	2.5 in (63.5mm)
<b>Dimensions w/ Opt. Stand (W x D x H)</b>	39.9 x 20 x 71.6 in. (1013 x 508 x 1819mm)	30 x 23.8 x 68.9 in. (762 x 603 x 1749mm)
<b>Lower Platen</b>	12 x 16 in. (305 x 407mm)	12 x 16 in. (305 x 407mm)
<b>Upper Block Platen</b>	12 x 16 in. (305 x 407mm)	12 x 16 in. (305 x 407mm)
<b>Pump</b>	.75 hp (.6kw)	.75 hp (.6kw)
<b>Oil Reserve Capacity</b>	2 gallon (7.6 liter)	2 gallon (7.6 liter)
<b>Electrical Configuration</b>	110V 60Hz 220V 60Hz 220V 50Hz	110V 60Hz 220V 60Hz 220V 50Hz
<b>Shipping Weight</b>	2375 lbs (1077kg)	2960 lbs (1342kg)

### Cube Molds

### Compression Machine, Molds, Accessories

See Pages 120-122





## DIGITAL LOAD INDICATING SYSTEMS

### DIR Digital Load Indicator

The DIR digital is a basic, easy-to-use, budget-minded load indicator. The DIR model simultaneously displays both live load and rate of load in force units per second during a test and peak load automatically at the end of a test.

The DIR is one of the easiest-to-use digitals available, featuring automatic test reset—eliminating the need to zero between tests—and automatic peak-load display at the end of a test through the pre-set sample-break detector function. The digital's face is set on a 60° angle for easier reading of load values, and the display uses 3/8" (9.5 mm) characters protected by a nonglare, scratch-resistant window. Users can select from load-value engineering units of lbs., kN, kg, and N. Designed for years of dependable service, the digital's tactile keys have a life cycle of greater than two million uses, and accuracy is



±.5% of indicated load from 1% to 100% of machine capacity, exceeding ASTM C-39 and E-4 requirements.

The calibration program is password protected in permanent, non-volatile memory. The DIR digital has no hardcopy test documentation capabilities.

### SD Digital Load Indicator

The SD Digital System was designed for production-testing laboratories where dependability, accuracy, and minimal operator input is required. During a test it indicates live load or stress and rate of load simultaneously, and at the end of a test it automatically displays both peak stress and load. Plus, if activated, the average rate of load applied to a specimen during a test can also be displayed.

The SD is truly operator-friendly; using menu-driven scroll-through prompts. A pre-set menu lists six common specimen types from which to select: cylinder, cube, beam center or third point, round, and cross-sectional area.

All test information is easily read on the indicator's back-lit LCD display, which can show test data in any of the selectable engineering units, including lbs., kN, N, kg, psi, MPa, Kpa, kg/cm<sup>2</sup>, in, mm, cm, seconds, or minutes. A durable membrane keypad allows you to scroll, enter, store, print, or enter numbers manually.

Accuracy is achieved through a five-point calibration program using piece wise linear fit between points to exceed ASTM C-39 and E-4 requirements at better than ±.5% of indicated load from 1% to full machine capacity. The linearity of the calibration in specific areas is further improved through a unique edit-calibration program, which allows the on-site calibrator to re-enter the program and reset an individual value assigned to a point.

For added dependability, if the digital's calibration is ever changed or lost, its original calibration can be reinstalled in the field by reentering the original A/D conversion values into the program. Up to four separate calibration programs can be stored in the SD, allowing it to be used with multiple transducer/load cell combinations in one or more load frames.



For hard-copy test documentation, up to 750 tests can be stored in memory and printed directly on an optional serial-port printer or transferred to a PC through an RS-232 serial port. The print function allows the operator to print only the current test or all stored tests at once.

The standard test report uses a spreadsheet format and lists sequential test number, date and time, specimen ID number, specimen type, specimen area and length, peak load and stress, cylinder correction factor, and cylinder break type. Optional information includes average rate of load applied to a test specimen, specimen age and weight, job ID number, and a statistical summary of peak load and stress.



## LXI Digital Load Indicator

The LXI Digital System is the system of choice for commercial and in-house testing laboratories where ease of operation, accuracy, and test documentation are required.

During a test it displays load, stress, rate of loading in load or stress units seconds or minutes, plus the type of specimen being tested and its size - all simultaneously on the indicator's four-line display. At the end of a test it automatically displays peak stress and load, and, if activated, the average rate of load applied to the specimen during the test, with an accuracy exceeding ASTM C39 and E4 requirements.

The LXI's user-friendly scroll-through test set-up menu allows the operator to select an option and enter a "yes/no" command to activate or a numeric value to set the test parameter field.

A pre-set menu lists seven common specimen types to select from: cylinder, cube, beam center, beam third point, and cross-sectional area, allowing you to select, display, and document test data.

All test information is easily read on the indicator's back-lit LCD display, which can show test data in any of the selectable engineering units, including lbs., kN, N, kg, psi, MPa, Kpa, kg/cm2, in, mm, cm, seconds, or minutes. A durable membrane keypad allows you to scroll, enter, store, print, or enter numeric values. Calibration is also password-protected.

Accuracy is achieved through a 10-point calibration program using piece wise linear fit between points to exceed ASTM C39 and E4 requirements at better than +.5% of indicated load from 1% to full machine capacity. The linearity of the calibration curve in specific areas is further improved through a unique edit calibration function, which allows the on-site calibrator to re-enter the program and reset an individual value assigned to a calibration point. The indicator can also be used with multiple transducer/load cell combinations with one or more load frames by storing up to six separate calibration programs. For added dependability, the LXI features a unique restore calibration program that allows the calibration to be re-installed in the field if it is ever changed, lost, or the unit is damaged. Simply enter the original load value points and their corresponding A/D counts into the calibration program via the digital keypad. Your machine's original



calibration information is maintained in the unit's Q.C. inspection report. For hard-copy test documentation, up to 1,000 tests can be stored in memory and printed directly on a parallel-port printer or transferred to a PC through a standard RS-232 serial port. The system also features the X-Y plotting of a load or stress vs. time graph with title block listing date and time, specimen ID number, and peak stress of the test. An optional compatible printer is required for graphing.

The standard test report printout is in a spreadsheet format and lists the following information: sequential test number, date and time, specimen ID number, specimen type, specimen area and length, peak load, and peak stress. Optional data includes average rate of load applied to a specimen during a test, cylinder correction factor to C-39, cylinder break type, cylinder cap type, specimen age and weight, operator ID number, and statistical summary of peak load and stress.

Print options allow you to print only the current test or all stored tests and X-Y graphs.

### Wincom Data Transfer Software (LXI)— HCM-0711

### Wincom Data Transfer Software (SD)— HCM-0711SD

### Wincom Plus Data Transfer Software (LXI)— HCM-0712

To transfer stored test results to a PC, the Wincom or Wincom Plus data communications transfer program is required. The Wincom Plus program includes the added feature of allowing raw X-Y data to be transmitted directly to a PC for generating a load/stress vs. time graph.

Storage of tests and graphs are limited only by space in the PC, and up to 10 individual graphs can be printed on one report page. An optional piston travel speed indicator package is available, and, when activated, displays travel rates in in., mm, or cm per second or minute.