



CONCRETE

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H-2783



H-2786C



H-2786

Humboldt Concrete Air Meter

ASTM C231, AASHTO T152

The H-2783 air meter, which exceeds ASTM requirements, features the Humboldt, all-brass super pump, the most reliable and highest quality pump available. The meter's easy-to-use, and extra durable stainless steel clamping system employs four, one-piece, self-locking clamps that quickly seal the lid to the base with proper tension aided by an o-ring to assure a watertight seal. The large, easy-to-read, 4-inch diameter, heavy-duty, direct percentage gauge with calibration adjustments is accurate to the nearest 0.1%. The bucket, or pressure chamber, features EZ-grip, cast handles, which improve usability. This is especially true when the bucket is also used as a 0.25 cu. ft. unit weight measure. The lid of the pressure meter features a smooth sloped top so water and concrete wipe right off. By eliminating the cavities in the lid that trap and hold concrete, maintenance and repair problems are greatly reduced. The meter also features a machined base, which ensures the meter sets level when conducting tests. The kit includes a durable plastic carrying case; a tamping rod; strike-off bar; rubber bulb syringe; plastic calibration vessel; inside calibration tube, outside calibration tube and operating instructions.

Features Include:

- Humboldt all-brass Super Pump
- Large, heavy-duty, easy-to-read gauge
- Cast handles for secure grip
- Bucket can be used as a 0.25 cu. ft. unit weight measure
- Complete with all needed accessories and case

Humboldt Concrete Air Meter **H-2783**
 Ship wt. 36lbs. (16.3kg)



Concrete Air Meter

ASTM C231, AASHTO T152

The H-2786C air meter features a simplified, low-maintenance design, which uses no moving parts inside the chamber. Pressure is released into the base by an external, brass, quick-release T-valve. The meter uses brass cover clamps, which can be adjusted for clamping pressure. A large, easy-to-read, 4" diameter, direct percentage gauge with calibration adjustments is accurate to the nearest 0.1%. The base is machined inside and out for easy cleaning and the chamber and cover are one solid component, eliminating bottom gasket leaks. The H-2786C air meter also features the Humboldt, all-brass super pump, the most reliable and highest quality pump available. The meter's base/bucket can be used as a 0.25 cu. ft. unit weight measure. The kit includes a durable plastic carrying case; tamping rod; strike-off bar; wash bottle; plastic calibration vessel; inside calibration tube, outside calibration tube and operating instructions.

Concrete Air Meter **H-2786C**
 Ship wt. 34.9lbs. (15.9kg)



Press-Ur-Meter Concrete Air Meter, Wood Case

ASTM C231, AASHTO T152

This is the original Press-Ur-Meter for field and laboratory tests. This air meter is designed to provide air content and the determination of specific gravity and free moisture of aggregate. Designed to save time, reduce water use, ensure accuracy and maintain sample integrity (sample may also be used for slump and compression tests). The meter uses brass cover clamps, which can be adjusted for clamping pressure. A large, easy-to-read, 4" diameter, direct percentage gauge with calibration adjustments is accurate to nearest 0.1%. The H-2786 meter also features the Humboldt, all-brass super pump, the most reliable and highest quality pump available. The meter's base/bucket can be used as a 0.25 cu. ft. unit weight measure. This kit includes a wood carrying case; tamping rod; strike-off bar; rubber bulb syringe; aluminum calibration vessel; inside calibration tube, outside calibration tube and operating instructions.

Press-Ur-Meter with vertical wood case **H-2786**
 Ship wt. 30lbs. (13.6kg)



Looking for the Humboldt Super Air Meter?

See page 214

H-2784



H-2786P

Press-Ur-Meter Concrete Air Meter, Plastic Case

ASTM C231, AASHTO T152

This is the original Press-Ur-Meter for field and laboratory tests. This air meter is designed to provide air content and the determination of specific gravity and free moisture of aggregate. Designed to save time, reduce water use, ensure accuracy and maintain sample integrity (sample may also be used for slump and compression tests). The meter uses brass cover clamps, which can be adjusted for clamping pressure. A large, easy-to-read, 4" diameter, direct percentage gauge with calibration adjustments accurate to the nearest 0.1%. The H-2786 meter also features the Humboldt, all-brass super pump, the most reliable and highest quality pump available. The meter's base/bucket can be used as a 0.25 cu. ft. unit weight measure. This kit includes a molded-plastic carrying case; tamping rod; strike-off bar; rubber bulb syringe; aluminum calibration vessel; inside calibration tube, outside calibration tube and operating instructions.

Press-Ur-Meter with horizontal plastic case H-2786P
 Ship wt. 30lbs. (13.6kg)



H-2756

Chace Concrete Air Indicator Kit

AASHTO T199

(Isopropyl-Alcohol Method) Complete kit for measuring air content of fresh concrete includes H-2755 Chace air indicator, instructions, cleaning brush and plastic squeeze-type bottle for alcohol in plastic storage box. Glass tube provides marked lines on stem for estimating total air content. Kit does not replace conventional air meters.

Chace Concrete Air Indicator Kit H-2756
 Ship wt. 1.4lbs. (1.8kg)



H-2782

Air Entrainment Meter, 8 Liter

ASTM C231, EN 12350-7, BS 1881, GOST 10181

The H-2782 8 Liter air meter features push-buttons for simple test performance. The meter's easy-to-use, and extra durable stainless steel clamping system employs four, one-piece, self-locking clamps that quickly seal the lid to the base with proper tension aided by an o-ring to assure a watertight seal. It also features durable, stainless steel handles. The large, easy-to-read, 4-inch (100mm) dia., heavy-duty, direct percentage gauge with calibration adjustments is accurate to the nearest 0.1%. This gauge is built into the meter's cover for excellent protection from damage. The meter also features a machined base, which ensures the meter sets level when conducting tests. The air meter includes a calibration kit and operating instructions. A case can be ordered below right.

Air Entrainment Meter, 8L H-2782
 Ship wt. 21.1lbs. (9.6kg)



H-2781

Air Entrainment Meter, 5 Liter

ASTM C231, EN 12350-7, BS 1881, GOST 10181

The H-2781 5 Liter air meter features push-buttons for simple test performance. The meter's easy-to-use, and extra durable stainless steel clamping system employs four, one-piece, self-locking clamps that quickly seal the lid to the base with proper tension aided by an o-ring to assure a watertight seal. It also features durable, stainless steel handles. The large, easy-to-read, 4-inch (100mm) dia., heavy-duty, direct percentage gauge with calibration adjustments is accurate to the nearest 0.1%. This gauge is built into the meter's cover for excellent protection from damage. The meter also features a machined base, which ensures the meter sets level when conducting tests. The air meter includes a calibration kit and operating instructions. A case can be ordered below.

Air Entrainment Meter, 5L H-2781
 Ship wt. 19.8lbs. (9.0kg)

Air Entrainment Meter Accessories

Item	Part No.
Transport Case, Aluminum	H-2782.1



H-2755

Chace Concrete Air Indicator

AASHTO T199

For quick field checks for air content of fresh concrete in about three minutes, pocket-sized unit air meter is furnished with instructions and correlation chart. Glass tube provides marked lines on stem for estimating total air content. Air Indicator includes brass cup and stopper. Unit does not replace conventional air meters. Overall Dimensions: 6.25 x 1.125" dia. (159 x 29mm).

Chace Concrete Air Indicator H-2755
 Ship wt. 0.25lbs. (.45kg)



H-2755.2

Chace Air Indicator Glass Filter Tube Only

AASHTO T199

Chace Glass Filter Tube only H-2755.2
 Glass tube provides marked lines on stem for estimating total air content. Does NOT include brass cup and stopper.

Ship wt. 0.2lbs. (.45kg)





H-2789



H-2793



H-2788



H-2783.30

Air Meter Calibrators (5%)

Calibrators check the accuracy of any pressure-type concrete air meter. Set the specially-designed canister upright at the bottom of the water-filled base, and the meter should read 5% air by volume. Two calibrators are used for a 10% air reading.

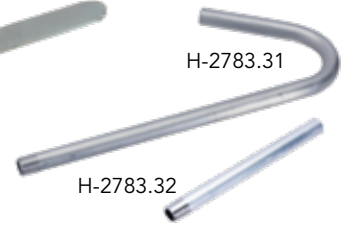
- Air Meter Calibrator, Brass H-2789
 - Air Meter Calibrator, Aluminum H-2793
 - Air Meter Calibrator, Plastic H-2788
- Ship wt. 3lbs. (1.3kg)



H-2783.35



H-2785.34



H-2783.32



H-2785.32



H-2785.33



H-3399



H-2785.36



H-2785.31



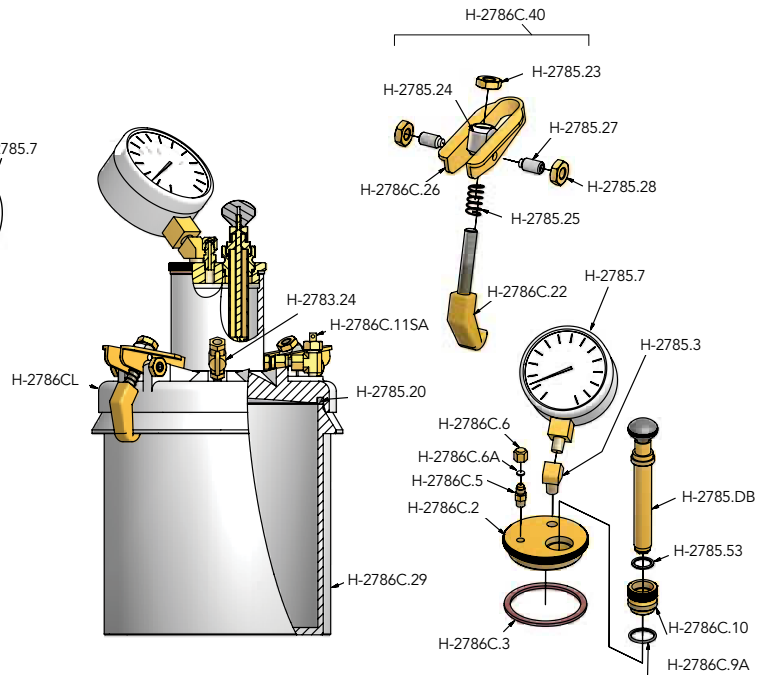
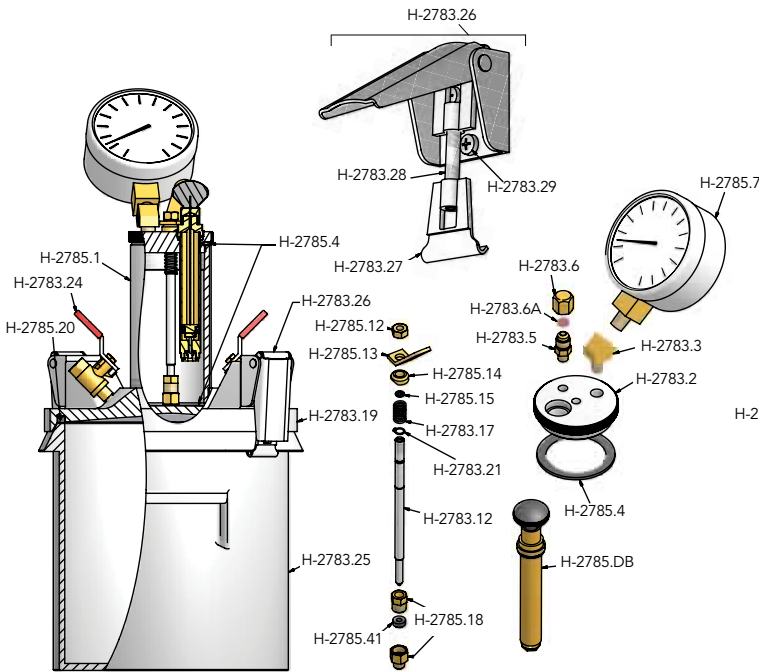
H-2783.26



H-2786C.32



H-2786C.33



H-2783 Air Meter Replacement Items

Part No.	Description	Part No.	Description
H-2785.1	Pressure chamber	H-2785.18	Needle valve seat assembly
H-2783.2	Pressure chamber cap	H-2783.19	Cover
H-2783.3	Pressure chamber elbow	H-2785.20	Cover o-ring
H-2785.4	Pressure chamber gasket	H-2783.21	Needle valve spring retainer
H-2783.5	Air-release stem	H-2783.24	Cover petcock
H-2783.6	Air-release cap	H-2783.25	Base
H-2783.6A	Release cap gasket	H-2785.41	Needle valve seat gasket
H-2785.7	Air meter gauge	H-2783.26	Latch assembly
H-2783.12	Needle valve stem	H-2783.27	Latch
H-2785.12	Needle valve nut	H-2783.28	Adjusting rod
H-2785.13	Needle valve lever	H-2783.29	Latch assembly screw
H-2785.14	Needle valve spacer	H-2785.DB	Super Pump assembly
H-2785.15	Needle valve o-ring	H-2783.39	Gasket replacement kit
H-2783.17	Needle valve spring		

H-2786C Air Meter Replacement Items

Part No.	Description	Part No.	Description
H-2785.7	Gauge, complete	H-2785.27	Clamp toggle lock nut
H-2785.3	Pressure chamber elbow	H-2785.25	Spring
H-2786C.3	Gasket, pressure chamber	H-2786C.26	Toggle
H-2786C.2	Pressure chamber cap	H-2786C.22	Clamp
H-2786C.5	Air-release stem	H-2786C.10	Super Pump adapter
H-2786C.29	Pot (base only)	H-2786C.9A	O-ring, lower for adapter
H-2786C.6	Release cap and gasket	H-2785.53	O-ring for tube
H-2786C.6A	Release cap gasket only	H-2786C.29	Pot, base only
H-2786C.11SA	Valve assembly, complete	H-2786CL	Lid only
H-2785.20	Cover o-ring	H-2785.DB	Super Pump
H-2785.24	Clamp trunnion	H-2786C.55	Gasket replacement kit
H-2785.23	Nut, clamp	H-2786C.40	Latch assembly complete





H-2783.62H



H-2785.38HP

H-2785.38



H-4976

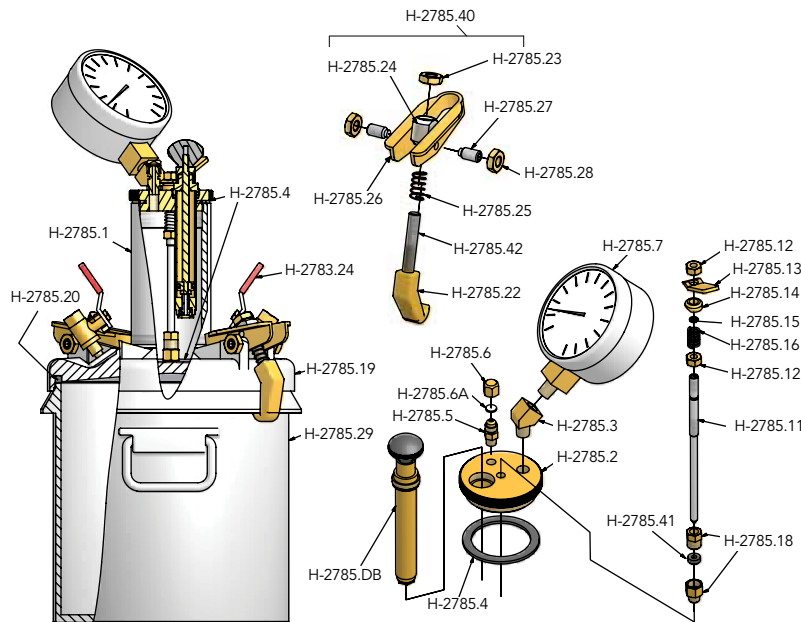
Air Meter Replacement Accessories

Item	Part No.
Calibration Vessel, plastic	H-2783.30
Calibration Vessel, metal	H-2785.31
Calibration Tube (outside)	H-2783.31
Calibration Tube (inside)	H-2783.32
Calibration Tube (outside)	H-2785.32
Calibration Tube (inside)	H-2785.33
Calibration Tube (outside)	H-2786C.32
Calibration Tube (inside)	H-2786C.33
Wash Bottle	H-3399
Strike-off Bar	H-2785.34
Tamping Rod 5/8" x 16"	H-2785.35
Syringe, Rubber Bulb	H-2785.36
Latch Assembly	H-2783.26
Plastic Case, Horizontal	H-2783.62H
Latch & Pin for H-2783.62H Case	H-2783.60L
Wooden Case, Press-Ur-Meter	H-2785.38
Plastic Case, Press-Ur-Meter, Horizontal	H-2785.38HP
Rubber Mallet, 1.25 lb. (0.57kg)	H-4976

**CLEAN, REPAIR
CALIBRATE**



Call: 1.800.544.7220



H-2785.DB

Super Pump for Air Meters

Step up to the quality and reliability of the Humboldt super pump. The super pump's all brass construction resists acids in cement. All parts, including valve, are replaceable. For use with all type B air meters.

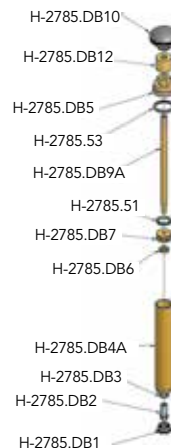
Super Pump for Air Meters

H-2785.DB

Ship wt. 0.51lbs. (.45kg)

H-2786 Air Meter Replacement Items

Part No.	Description	Part No.	Description
H-2785.1	Pressure chamber	H-2785.19	Cover
H-2785.2	Pressure chamber cap	H-2785.20	Cover O-ring
H-2785.3	Pressure chamber elbow	H-2783.24	Cover Petcock
H-2785.4	Pressure chamber gasket	H-2785.22	Clamp with stud
H-2785.5	Air-release stem	H-2785.23	Clamp nut
H-2785.6	Air-release cap	H-2785.24	Clamp trunnion
H-2785.6A	Release cap gasket	H-2785.25	Clamp spring
H-2785.7	Air meter gauge	H-2785.26	Clamp toggle
H-2785.11	Needle valve stem	H-2785.27	Clamp toggle set screw
H-2785.12	Needle valve nut	H-2785.28	Clamp toggle lock nut
H-2785.13	Needle valve lever	H-2785.29	Base
H-2785.14	Needle valve spacer	H-2785.41	Needle valve seat gasket
H-2785.15	Needle valve o-ring	H-2785.42	Stud
H-2785.16	Needle valve spring	H-2785.DB	Super Pump assembly
H-2785.12	Needle valve spring retainer	H-2785.55	Gasket replacement kit
H-2785.18	Needle valve seat assy.	H-2785.40	Latch assembly complete



H-2785DB Super Pump Replacement Parts

Part No.	Description
H-2785.DB1	Valve nut
H-2785.DB2	Valve
H-2785.DB3	Valve O-ring
H-2785.DB4A	Pump tube
H-2785.DB5	Pump cap
H-2785.DB6	Stem nut
H-2785.DB7	Pump piston
H-2785.DB9A	Pump stem
H-2785.DB10	Pump handle
H-2785.DB12	Stem cap
H-2785.51	Pump piston O-ring
H-2785.53	Pump tube O-ring





ASTM Unit Weight Measures



Non-ASTM Unit Weight Measures



ACCESSORIES

Portable Scales for use with Unit Weight measurements, Go to Pages 335-336.



Roll-A-Meter Air Indicator

ASTM C173, AASHTO T196

This lightweight aluminum Roll-A-Meter is used to determine the air content of concrete mixes, and is recommended for concrete containing lightweight aggregate, air-cooled slag or highly porous aggregate. The meter's fast acting one-piece, self-locking stainless steel clamps assure a watertight seal between the top section and bowl. A see-through window in the neck has easy to read engraved scale graduated from 0 to 9% with .25% sub-graduations. A durable plastic carrying case with a tough die cut closed cell hard foam insert protects the meter and its accessories. Kit includes: Meter, carrying case, tamping rod, baffle funnel, strike-off bar, calibration measuring vessel, syringe, 16 oz. measuring cup, spanner wrench and manual.

Roll-A-Meter Air Indicator **H-2796A**
UPS Ship wt. 29.8lbs. (11.4kg)

Volumetair Air Meter

ASTM C173, AASHTO T196

The volumetair is used for the rolling method of measuring entrained air in any concrete. This ultra lightweight and easy-to-use instrument is supplied complete with the meter, funnel, syringe, tamper, calibration cup, mallet, strike-off bar and plastic carrying case. The plastic materials used in the construction of this unit not only make it lightweight; but also allow the user to use water for clean-up and small amounts of muriatic acid for periodic cleaning. The sight tube has a range of 0 to 9% and the base volume is 134 cu. in. (2200ml).

Volumetair Air Meter **H-2795P**
UPS Ship wt. 19lbs. (6.8kg)

ASTM Unit Weight Measures

ASTM C29, C138, C192, AASHTO T19, T121, T158

Machined aluminum, cylindrical unit weight measures with handles for determining unit weight of fine, coarse or mixed aggregates. Water-tight with true and even top and bottom. Measures retain form after repeated use.

ASTM Measures **see chart**
UPS Ship wt. see chart

Non-ASTM Unit Weight Measures

Heavy-gauge, seam-welded, water-tight, steel unit weight measures with bail handles. Can be used for concrete or aggregate. Do not meet ASTM specifications.

Non-ASTM Measures **see chart**
UPS Ship wt. see chart

Strike-Off Plates

ASTM C29, C138, C192, AASHTO T19, T121, T158

Clear .625" (15.8mm) thick, acrylic plates used to strike off surface of unit weight measure samples. Use a plate that is 2" (50.8mm) larger than the diameter of the unit weight measure.

Size sq. in. (mm sq.)	Model	Ship Wt. lbs. (kg)
8 (203)	H-3669.1P	2.3 (0.9)
10 (254)	H-3669.4P	4 (1.0)
12 (305)	H-3669.2P	5.1 (2.3)
16 (406)	H-3669.3P	8 (3.6)

Strike-Off Plates **see chart above**
UPS

ASTM Unit Weight Measures

Capacity cu. ft. (liter)	Inside Dia. in. (mm)	Inside Ht. in. (mm)	Ship Wt. lbs. (kg)	Model
1/10 (2.8)	6 (152)	6.1 (155)	6.5 (2.7)	H-3660.1
1/4 (7.1)	8 (203)	8.8 (224)	9.4 (4.9)	H-3664.1
1/3 (9.3)	8 (203)	11.5 (292)	17 (7.7)	H-3663.1
1/2 (14.1)	10 (254)	11 (279)	20 (7.2)	H-3661.1
1 (28.3)	14 (356)	11.2 (155)	22 (13.6)	H-3662.1

Non-ASTM Unit Weight Measures

Capacity cu. ft. (liter)	Inside Dia. in. (mm)	Inside Ht. in. (mm)	Ship Wt. lbs. (kg)	Model
1/10 (2.8)	6 (152)	6.1 (155)	6.5 (3.2)	H-3660
1/4 (7.1)	8 (203)	8.8 (224)	15 (6.8)	H-3664
1/3 (9.3)	8 (203)	11.5 (292)	15.8 (8.7)	H-3663
1/2 (14.1)	10 (254)	11 (279)	20 (10)	H-3661
1 (28.3)	14 (356)	11.2 (155)	33 (15)	H-3662

Tamping (Puddling) Rod

Round, straight steel rod for use with concrete cylinder molds, slump cones and unit weight measures. Rod measures .625" (16mm) dia. x 24" (610mm) long. Both ends are rounded to hemispherical tip. Plated for rust resistance.

Tamping (Puddling) Rod **H-3650**
UPS Ship wt. 3lbs. (0.9kg)



H-3669.4P



H-3650





Acme Penetrometer

ASTM C403, AASHTO T197

Hydraulic reaction-type apparatus for determining the setting time of concrete with slump greater than zero by testing mortar sieved from the concrete mixture. It also determines the effects of variables, such as temperature, cement mixture proportions, additions and admixtures upon the time of setting and hardening of concrete. The penetrometer's design makes it easy to operate, being more efficient, with a longer gear rack. All needles are one length so settings may remain the same. Loads are applied hydraulically with pressures read on a 200 lbf (890N) capacity gauge graduated in 2 lbf divisions. Set of six needles allows multiplication to a maximum reading of 8000 lbf. The acme penetrometer features cast aluminum base and set of stainless steel penetration needles in a wooden block (bearing area: 1, 1/2, 1/4, 1/10, 1/20 and 1/40 sq. in., (645, 323, 161, 65, 32 and 16mm²). Includes 100 laboratory test data reporting forms.

Acme Penetrometer **H-4133**
 Ship wt. 40lbs. (18kg)

Data Sheets, Time of Set
 ASTM C403, AASHTO T197

Time of setting data sheets for use with the H-4133 and H-4137. Package of 100 sheets.

Data Sheets, Time of Set **H-4133F**
 Ship wt. 3.3lbs. (1.45kg)

Resistance Needle Set

ASTM C403, AASHTO T197

Set of six, stainless steel needles and holding block for use with the H-4133 acme penetrometer mortar penetration resistance apparatus. Set includes all needles in chart below. Needles are also available individually. See table below.

Description	Part No.
1 sq. in. (645mm ²)	H-4133.15
1/2 sq. in. (323mm ²)	H-4133.16
1/4 sq. in. (161mm ²)	H-4133.17
1/10 sq. in. (65mm ²)	H-4133.18
1/20 sq. in. (32mm ²)	H-4133.19
1/40 sq. in. (16mm ²)	H-4133.20

Resistance Needle Set **H-4133N**
 Ship wt. 1.2lbs. (0.5kg)

Cementometer Moisture Meter

The cementometer type-R handles normal water/cement ratios between 0.35 to 0.65. The unit is calibrated for standard type I, II, and III cements and can also be programmed with up to ten different mix designs by the user. For highest accuracy, the user should program the unit for the material being used. The simple-to-use calibration process rapidly creates user programs without the need for external computing devices. The unit can store over 150 readings complete with time and date for future reference. Data can be recalled via USB interface.

Cementometer Moisture Meter **HC-4972**
 Ship wt. 7lbs. (3.1kg)

Concrete Pocket Penetrometer

ASTM C403, C780

Lightweight, spring-reaction type concrete penetrometer for field and lab evaluation of the initial set of concrete mortar, based on ASTM C403. Penetration plunger has a 1/20 sq. in. tip area. Plunger is steadily pushed into the mortar to a 1 in. depth, as indicated on the shaft, at periodic time intervals. The penetrometer's calibrated range is 0-700 psi. Resistance in psi is indicated on the scale. The term "initial set" is the semi-hardened, partially hydrated condition of the concrete beyond which it can no longer be worked. The point of initial set is reached when the penetration value is 500psi.

Concrete Pocket Penetrometer **H-4134**
 Ship wt. 0.9lbs. (.45kg)

Concrete Pocket Penetrometer, w/Dial

ASTM C403, C780

Lightweight, spring-reaction type concrete penetrometer for field and lab evaluation of the initial set of concrete mortar, based on ASTM C403. Penetration plunger has a 1/20 sq. in. tip area. Plunger is steadily pushed into the mortar to a 1" depth, as indicated on the shaft, at periodic time intervals. Penetrometer's calibrated range is 0-700 psi. Resistance in psi is indicated on the scale. The term "initial set" is the semi-hardened, partially-hydrated condition of the concrete beyond which it can no longer be worked. The point of initial set is reached when the penetration value is 500 psi.

Concrete Pocket Penetrometer w/Dial **H-4132**
 Ship wt. 0.9lbs. (.45kg)

Penetrometer Foot

ASTM C403, C780

For use with masonry mortars to determine board life and initial consistency. Method can be used as a basis for acceptance of mortars. Stainless steel disk, 2.70" (68.58mm) dia. Can be used with H-4134 or H-4132 Penetrometers.

Penetrometer Foot **H-4134F**
 Ship wt. 2.2lbs. (.99kg)



H-3637 and H-3635 Slump Cone Sets feature Easy-Carry Configuration

H-3637

H-3643

H-3645

H-3655

H-3656

H-3635

Deluxe Slump Cone Set

ASTM C143, C143M, AASHTO T119, BS1881

The Humboldt, deluxe slump cone set provides you with the basic slump test components in an easy-carry configuration, plus a scoop and funnel to aid in filling the slump cone. The set also includes a specially-designed "crete-brush" with a 20" handle, which stands up to the harsh acids used to clean slump test equipment. The deluxe set includes: H-3636 base plate, H-3638 funnel, H-3639.20 brush, H-3640 slump cone (standard steel), H-3651 tamping rod w/ 6" scale on handle, and a H-3731 scoop and H-4901 tape measure.

Standard Slump Cone Set

H-3635

Ship wt. 25lbs. (11.4kg)

Standard Slump Cone Set

ASTM C143, C143M, AASHTO T119, BS1881

The Humboldt, standard slump cone set provides you with the basic slump test components in an easy-carry configuration. The unique base design allows you to combine the individual components together into a one-piece, portable unit (see photo). The standard set includes our H-3636 cast aluminum base plate, H-3640 slump cone (standard steel), H-3651 tamping rod w/ 6" scale on handle and H-4901 tape measure. The base includes bolt-on clamps, which hold the slump cone securely during filling and rodding. The integral handle, attached to the base, can be rotated above the specimen once the cone has been removed and used as a guide to measure the slump.

Standard Slump Cone Set

H-3637

Ship wt. 20lbs. (9.5kg)

Slump Test Set w/ Pan

ASTM C143, C143M, AASHTO T119, BS1881

This slump cone test set is designed for those who prefer a traditional pan setup. This set includes our H-3640 slump cone (standard steel), the H-3800 wire-bristle, wooden-handled brush, a H-3650 tamping (puddling) rod, the H-3725 galvanized-steel, 24" x 24" x 3" slump pan, and a H-3760 Trowel.

Slump Test Set w/ Pan

H-3645

Ship wt. 24lbs. (10.9kg)

K Slump Tester

ASTM C1362

The K-slump tester provides a fast approximate determination of slump and workability of wet concrete. Can be used to measure slump in buckets, wheelbarrows, ready-mix truck chutes, as well as in-place forms and test molds. The tester is capable of indicating a fairly accurate correlation to an actual slump test. The probe can also be used to determine the workability and the degree of compaction of fresh concrete. Includes correlation chart and instructions.

K Slump Tester

H-3643

Ship wt. 1.1lbs. (0.5kg)

Ball Penetration Apparatus (Kelly Ball)

ASTM C360, AASHTO T183, CTM533

Used to test the consistency of concrete using the penetration of a half sphere into plastic concrete. A 1" (2.5-centimeter) penetration by the kelly ball corresponds to about 2" (5 cm) of slump. The apparatus consists of 30 lb. (14kg) cylinder with hemispherically shaped bottom and handle. Stirrup or frame guides handle act as reference for measuring the depth of penetration. The stirrup handle is graduated in 0.25" (6.4mm) increments on one side and half-centimeter increments on the other side for measuring the depth of penetration. Concrete may be tested as it is placed into forms prior to any manipulation or in a suitable container.

Ball Penetration Apparatus, 30 lb

H-3655

Ball Penetration Apparatus, 20 lb.

H-3655-20

Ship wt. 33.7lbs. (15kg)

Ball Drop Apparatus (Kelly Ball)

ASTM D6024

Used to test the suitability of load applications on controlled low-strength material (CLSM). Used as a field test to determine the readiness of the CLSM to accept loads prior to adding a wearing surface. Ball and handle weigh 30-33 lbs (14-15kg).

Ball Penetration Apparatus, D6024

H-3655.D6024

Carrier for Ball Penetration Apparatus

Heavy-duty, cast-aluminum design with quick release latches. Provides convenience for the operator and protection to Kelly ball when transporting to and from the job site.

Carrier for Ball Penetration Apparatus

H-3656

Ship wt. 18lbs. (8kg)





SLUMP ACCESSORIES AND REPLACEMENT PARTS

Slump Cone, Steel

ASTM C143, C143M, AASHTO T119

Steel slump cone has plated finish to resist rust. Fitted with handles and foot lugs for use with H-3636 base plate. 8" (203mm) dia. at base, 4" (102mm) dia. at top and 12" (305mm) high.

Slump Cone, Steel H-3640
Ship wt. 7lbs. (2.7kg)

Slump Cone, Metric Steel

ASTM C143, C143M, AASHTO T119

Steel slump cone has plated finish to resist rust. Fitted with handles and foot lugs for use with H-3636 base plate. Dimensions are: (200mm) dia. at base, (100mm) dia. at top and (300mm) high.

Slump Cone, Metric Steel H-3640M
Ship wt. 7lbs. (2.7kg)

Slump Cone, Plastic

ASTM C143, C143M, AASHTO T119

Lightweight, plastic slump cone will not dent or rust and can be cleaned with an acid bath. Formed with handles and foot lugs for use with H-3636 base plate. 8" (203mm) dia. at base, 4" (102mm) dia. at top and 12" (305mm) high.

Slump Cone, Plastic H-3640P
Ship wt. 2.3lbs. (1.4kg)

Graduated Tamping Rod

ASTM C143, C143M, AASHTO T119, BS 1881

Steel Tamping Rod with 6" scale in 0.25" increments engraved on handle for measuring amount of slump. When used with H-3636 base plate, raise handle over specimen and measure distance from handle to specimen.

Graduated Tamping Rod H-3651
Ship wt. 4lbs. (1.8kg)

Tamping (Puddling) Rod— H-3650

ASTM C138, C138M, C143, C143M, ASTM C173, C173M, C31, C31M, AASHTO M 205, T 119, T152, BS 1881

Round, straight steel rod for use with concrete cylinder molds, slump cones and unit weight measures. Rod measures .625" (16mm) dia. x 24" (610mm) long. Both ends rounded to hemispherical tip. Plated for rust resistance. No scale.

Tamping (Puddling) Rod H-3650
Ship wt. 3lbs. (0.9kg)

Base Plate, Aluminum

ASTM C143, C143M, AASHTO T119, BS 1881

Cast-aluminum base plate firmly holds all slump cone models, permitting one person to conveniently perform test. Base clamps turn down over cone foot lugs to secure entire assembly. Movable handle raises vertically over specimen (after removal of cone) and slump is easily measured with the 6" scale cut into handle end of H-3651 tamping rod.

Base Plate, Aluminum H-3636
Ship wt. 8lbs. (3.6kg)

Slump Pan, Galvanized

ASTM C143, C143M, AASHTO T119, BS 1881

Durable, steel pan with tapered sides for easy cleaning and nesting. Dimensions: 24" x 24" x 3" (610 x 610 x 76mm).

Slump Pan, Galvanized H-3725
Ship wt. 9.9lbs. (8.2kg)

Brush, Wooden Handle

Brass wire with wood handle brush. Dimensions: 2" x .875" x 5.25" (25 x 22 x 133mm), 10.25" (360mm) overall length.

Brush, Wooden Handle H-3800
Ship wt. 0.5lbs. (0.9kg)

Crete Brush, 8" Handle

Acid-proof crete brush with 8" handle.

Crete Brush, 8" Handle H-3639.8
Ship wt. 0.75lbs. (0.9kg)

Crete Brush, 20" Handle

Acid-proof crete brush with 20" handle.

Crete Brush, 20" Handle H-3639.20
Ship wt. 1lbs. (0.9kg)

Scoop, One-piece Aluminum

Round nose #2 scoop. Bowl dimensions: 8.25" (210mm) length x 5.25" (133mm) width x 3" (76mm) depth.

Scoop, One-piece Aluminum H-3731
Ship wt. 1.5lbs. (0.9kg)

Funnel, Aluminum

Aluminum funnel for use with all slump cones to assist in filling.

Funnel, Aluminum H-3638
Ship wt. 0.8lbs. (0.9kg)

Trowel, Forged Steel

Forged steel trowel with flat, pointed blade, features rubber/plastic comfort handle, 2.75" X 5" (70 x 127mm).

Trowel, Forged Steel H-3760
Ship wt. 0.4lbs. (0.9kg)

Tape Measure

16 ft (5m) tape measure with rubber grip cover and wrist strap.

Tape Measure H-4901
Ship wt. 0.8lbs. (0.45kg)

**Penetration Apparatus**

ASTM C1712

The penetration apparatus provides a rapid assessment of static segregation resistance of self-consolidating concrete. While it does not actually measure static segregation, it does provide a quick assessment of whether static segregation is likely to occur. The included scale is marked in 1mm increments and is replaceable. Test apparatus is used in conjunction with an inverted standard slump cone, order H-3640 for this purpose. You may also need a strike-off bar, order H-2785.34.

Penetration Apparatus**HC-3668**

Ship wt. 3lbs. (1.9kg)

L-Box Flowability Test

EN 12350, ASTM pending

Method used to determine flow rates and passability of Self-consolidating concrete in confined spaces, as well as an evaluation of filling, passing ability and segregation resistance. Applicable to concrete with aggregates of 1" (25mm) maximum size. Test box is comprised of concrete reservoir, a slide gate, an obstacle grid comprised of 3 bars and a test basin. Includes metal strike-off bar and instructions.

L-Box Flowability Test**H-3658**

Ship wt. 27lbs. (12kg)

Static Segregation Column

ASTM C1610

Used to determine the potential for static segregation of self-consolidating concrete by measuring the coarse aggregate content in the top and bottom portions of a cylindrical specimen. This test can be used as a quality control determination for levels of coarse aggregate segregation, especially for deep section applications like walls or columns. This test is not applicable for self-consolidating concrete with lightweight aggregate. The column includes a stable base, three column sections and two sliding separator blades, which allow the column to be disassembled while capturing the concrete sample in the column sections.

Static Segregation Column**HC-3666**

Ship wt. 24lbs. (11kg)

V-Funnel Flowability Test

EN 12350

Designed to evaluate the segregation resistance of self-consolidating concrete through the flowing speed from a funnel. Applicable to concrete with aggregates of 1" (25mm) maximum size. Stainless steel construction with 10L capacity. Upper edge is smooth and reinforced and the outflow orifice is equipped with a sealable valve. Includes polyethylene box to collect discharge and a 36" (914mm) long straight edge to level concrete prior to testing.

V-Funnel Flowability Test**HC-3665**

Ship wt. 53lbs. (24kg)

J-Ring Test Set, Steel Base Plate

ASTM C1621, C1621M, C1611

The J-ring test can be used to determine the passing ability of self-consolidating concrete. It is applicable for laboratory use in testing different concrete mixtures for passing ability or can be used in the field as a quality control test. It is typical to also perform a slump flow test with the J-ring test. This test is similar to the J-ring except the J-ring is not used. The difference between the results of the two tests provides an indicator of the passing ability of the concrete.

Designed for durability, Humboldt's J-ring set includes a slump cone, J-ring with smooth or rebar rods and steel base plate with positioning rings.

J-Ring Test Set, Smooth Rods**H-3652****J-Ring Test Set, Rebar Rods****H-3652R**

Ship wt. 85lbs. (38.5kg)

J-Ring Test Set, HDPE Base Plate

ASTM C1621, C1621M, C1611

Identical to the sets above except that these feature a HDPE base plate. This plate is easier to transport and use on site. These sets include a slump cone, J-ring with smooth or rebar rods and the HDPE base plate with screened positioning rings.

J-Ring Test Set, HDPE Plate, Smooth Rods**H-3652P****J-Ring Test Set, HDPE Plate, Rebar Rods****H-3652PR**

Ship wt. 85lbs. (38.5kg)

Individual J-Ring Components

Description	Part No.
J-Ring with Smooth Rods	H-3654
J-Ring with Rebar Rods	H-3654R
Base Plate, Stainless	H-3653
Base Plate, HDPE	H-3653P
Slump Cone	H-3640



Vebe Consistometer

EN 12350-3; BS1881:104; UNI 9419

The Vebe Consistometer method is based on the same principle of the simple slump cone test, for the determination of the workability of concrete, but it has the advantage of a mechanized action. After removing the slump cone, the concrete undergoes a vibration to determine slump.

- Vebe Consistometer, 120V 60 Hz H-3647
- Vebe Consistometer, 220V 60 Hz H-3647.2F
- Vebe Consistometer, 220V 50Hz H-3647.5F

Ship wt. 198lbs. (90kg)

Consistency Vibrating Table Test

ASTM C1170 Method A, C1170 Method B

Used for determining the consistency of stiff to extremely dry concrete mixtures like those used in roller-compacted concrete mixtures. Density of the specimens is determined by determining the mass of the consolidated specimen and dividing by its volume. The unit is comprised of a vibrating table, which can be bolted to a floor or substantial base slab. A swing arm with a guide sleeve for the 50 lb (22.7kg) surcharge weight is attached to the base, which allows the weight to swing out of the way when filling the mold, but allows easy application of the weight to the top of the specimen in the mold prior to vibration. The test mold is 9.5" x 7.75" ID with handles for easy movement and is locked into place on the base with positioning tabs and wing nuts.

- Consistency Vibrating Table, 120V 60 Hz H-3648
- Consistency Vibrating Table, 220V 60 Hz H-3648.2F
- Consistency Vibrating Table, 220V 50Hz H-3648.5F

Ship wt. 360lbs. (150kg)

Cylinder Mold Vibrating Table Apparatus

ASTM C1176, C470 Method B

Used for making roller-compacted concrete in cylinder molds using a vibrating table. This practice is used when the standard procedures of rodding and internal vibration are not practicable. The unit is comprised of a vibrating table, which can be bolted to a floor or substantial base slab. A swing arm with guide sleeve for the 20 lb (9kg) surcharge weight is attached to the base, which allows the weight to swing out of the way when filling the mold, but allows easy application of the weight to the top of the specimen in the mold prior to vibration. The test mold is a 6" x 12" mold conforming to ASTM C470 and is locked into place on the base of the unit.

- Vibrating Table, 120V 60 Hz H-3649
- Vibrating Table, 220V 60 Hz H-3649.2F
- Vibrating Table, 220V 50Hz H-3649.5F

Ship wt. 305lbs. (138kg)

Cylinder Molds for Vibrating Table Apparatus

ASTM C1176, C470 Method B

Standard, disposable, plastic cylinder molds with flat bottoms. For use with H-3649 Vibrating table and H-2950.RCA Mold Sleeves. Easily stripped with stripper tools, sold separately. Oversize charges apply to cartons of 36.

- Plastic Cylinder Molds, 36 per carton H-3041
- Plastic Cylinder Molds, 20 per carton H-3041.20

Ship wt. 26lbs. (11.8kg)

Ship wt. 15lbs. (6.8kg)

Mortar Penetration Resistance Apparatus

ASTM C403, AASHTO T197

Spring-reaction-type apparatus, graduated from 10 to 130 lbf (45 to 580N) in increments of 2 lbf (9N) for testing rate of hardness of mortars sieved from concrete mixtures. Determines effects of variables such as temperature, cement, mixture proportions, additions and admixtures upon the time of setting and hardening of concrete. Penetration resistance is measured by the downward vertical force exerted to penetrate the mortar 1" (25mm). Pressure reading is measured by a scale with a sliding ring indicator on the handle's stem. Includes these interchangeable mortar penetration resistance needles: 1, 1/2, 1/4, 1/10, 1/20 and 1/40 sq. in (645, 323, 161, 65, 32, 16mm²).

- Mortar Penetration Resistance Apparatus H-4137

Ship wt. 16lbs. (9kg)

Resistance Needle Set

ASTM C403, AASHTO T197

Set of six, screw-on type, replacement needles for use with the H-4137 mortar penetration resistance apparatus. Set includes all needles in chart below. Needles are also available individually.

- Resistance Needle Set H-4143

Ship wt. 0.5lb. (1.0kg)

Description	Part No.
1 sq. in. (645mm ²)	H-4143.1
1/2 sq. in. (323mm ²)	H-4143.50
1/4 sq. in. (161mm ²)	H-4143.25
1/10 sq. in. (65mm ²)	H-4143.10
1/20 sq. in. (32mm ²)	H-4143.05
1/40 sq. in. (16mm ²)	H-4143.025



Humboldt Concrete Maturity Sensor System

ASTM C1074

Humboldt’s New Maturity Sensor System provides an innovative way to monitor concrete strength using the maturity testing method. CMOTS provides a wireless, accurate, durable and reusable method for charting concrete temperatures, maturity and strengths, which allows constant monitoring from any device (computer, phone or tablet) with an Internet connection.

CMOTS is ideal for monitoring maturity in massive concrete pours, walls, suspended slabs and pavements, as well as for footings, cylinders and beams for monitoring compliance with curing requirements.

The Humboldt Maturity System provides a wireless solution to collecting data avoiding loss of data due to cable damage during construction activities. Temperature and compressive strengths can be accessed from anywhere without visiting the construction site. And, the system is very cost effective when compared to other semi-wireless systems.

The system is comprised of three key components— a transmitter, sensor and receiver. The sensor is connected to the transmitter with a waterproof connection via a 20ft. (6m cable). The sensor is then embedded at a desired location within a concrete pour. The attached transmitter is then placed alongside the pour and can be secured, if desired. The wireless receiver is then located within 1000 ft (300m) of the furthest installed transmitter/ sensor.

When the sensors are installed, they are activated by registering them with your website account using a sensor-specific ID number. Once this step is completed, the transmitters for each sensor will begin to receive data from the sensor and transmit that data to the receiver. The receiver then relays this information to your account on the web-based cloud platform. This information/data is available to you in real time, 24/7, 365 days a year by simply logging into your account, using your user name and password.

Raw data received by your sensors is transformed by the web-based platform into compressive strength, using the specific maturity curve developed for that specific concrete mix design.

Because the maturity sensor system is wireless, there is no limit to the number of sensors that can be used or the number of pours done at one time. Since the transmitter component of this system is reusable, battery life is 3 years from the activation date, it can be reused by purchasing replacement sensors for subsequent uses, which can be connected to the existing transmitters via the waterproof connector. Sensors are available with 20ft (6m) cables, but extension cables are also available in similar lengths for extended sensor placement.

The Maturity Sensor System is available as a kit, which includes (1) Receiver, (5) Transmitters, (5) Sensors with 20ft (6m) cables and a website platform account. Voltage: 120/220V 50/60Hz.

Humboldt Maturity Sensor System H-2683.3F
 Ship wt. 8.9lbs. (4kg)



Humboldt Maturity Sensor System Components

Description	Part No.
Temperature Transmitter w/20ft (6m) cable	H-2683.4
Sensor w/ 20ft (6m) cable	H-2683.6
Extension Cable, 20ft (6m)	H-2683.7





Installation Example of HG-4040



SmartRock, Wireless Maturity Sensor

ASTM C1074

SmartRock is a rugged, mobile app-based wireless sensor for monitoring the temperature of concrete from fresh to hardened stage. It also estimates concrete strength, based on the maturity concept. The SmartRock can be placed in the concrete form work, no more than 3" deep (installed on the rebar) before pouring, to monitor the temperature of concrete in situ. The continuous measurements are recorded on the SmartRock memory and can be downloaded at any time during the concrete setting and hardening on-site using the mobile application on a smartphone or tablet device.

The continuous monitoring of concrete temperature can be used as a QC/QA method as well as maturity-based strength estimation of concrete. The field monitoring of concrete temperature can also help with optimizing the formwork removal time, application of load on the structure, and adjusting the curing temperature of concrete on-site.

SmartRock can be used to monitor the temperature of fresh and hardened concrete. This information can be used for:

- Optimization of curing conditions
- Quality control in the field
- Estimation of strength (ASTM C1074)
- Formwork removal timing
- Post-tensioning
- Opening road to traffic
- Monitoring temperature gradients in mass concrete

Features (Hardware):

- Wireless technology
- Rugged and waterproof design
- Easy installation and activation by tying the wires together
- Extended temperature sensor cable for mass concrete
- Long battery life (up to 4 months after installation)

Features (Software):

- Real-time data display (e.g. temperature, strength, max-min)
- Maturity calibration database
- Free Android and iOS apps for smartphone and tablet
- Easy data sharing between devices
- Project management tools
- PDF report generation
- Photos and blueprints attachment
- Goal limit setting for temperature and strength

Specifications	
Reading Range	-22 to +176°F (-30 to 80°C)
Accuracy	± 1.8 °F (1°C)
Measurement Frequency	Once every 15 mins for 2 months of data
Wireless Signal Range	Up to 26 feet (up to 8 meters)
Dimensions	1.5" x 1.5" x 0.5" (38 x 38 x 12mm)
Temperature Cable Length	16" (40cm) 10 ft (3m)
Battery Life	Up to 4 months after installation

SmartRock Maturity Sensor, 16" (40cm) HG-4040

SmartRock Maturity Sensor, 10ft (3m) HG-4040.10

Ship wt. 1lbs. (0.4kg)

Multi-Channel, Maturity Meter

ASTM C1074

Humboldt Maturity Meters provide a predictable strength determination of cast-in-place concrete based on ASTM standard C1074-98 (Estimating concrete strength by the maturity meter method). These units utilize inexpensive, disposable, T-type thermocouple wire with quick-connect jacks, which can be embedded directly into a concrete structure to measure temperature at timed intervals. These readings can then be used to document the maturity process within the structure in order to:

- Predict the time for form and shoring removal
- Estimate loading and post-tensioning time
- Control winter heating/insulation
- Reduce construction time and costs

The H-2680 and H-2682 have four channels, and provide the maturity number calculation, instant readout and temperature history on a menu-driven alphanumeric display. A communications port allows information to be transferred from the meter to another meter, printer or computer. The H-2682 provides the use of a rechargeable nickel-cadmium battery, which can be used to enhance performance in cold weather applications.

Both units give maturity number calculation, instant readout and temperature history. All four channels may be used simultaneously. All information is available on menu-driven alphanumeric display. Datum temperature is programmable from -20° to +60°C. Communications port allows information transfer from meter to meter, printer or computer. H-2680 includes: four, type "T" thermocouple wire and GFE connectors, RS-232 communications cable, 9V battery and plastic carrying case. H-2682 includes: four, type "T" thermocouple wire and GFE connectors, RS-232 communications cable, rechargeable nickel-cadmium battery with 120V battery charger/ AC adapter and plastic carrying case.

Maturity Meter H-2680

Maturity Meter, Rechargeable H-2682

Ship wt. 8.9lbs. (4kg)

Maturity Meter Components

Description	Part No.
Thermocouple Wire:	
24 GA, (per foot)	H-2670.1
20 GA, Type T (per ft.)	H-2670.1T
24 GA, Type T, 50 ft.	H-2670.1.50
24 GA, Type T, 100 ft.	H-2670.1.100
Plug for thermocouple	H-2680P
Printer	H-2684
AC Adapter/Charger	H-2682CH
Serial Cable	H-2686



H-3859



H-3859PL



H-3849PL



H-3849PC



H-3846A

Utility Mixer with Steel Drum

ASTM C192

This quality Utility Mixer is perfect for batch mixing of concrete, as well as numerous other industrial applications. It features a 5.5 ft.³ heavy-duty, steel drum. The 1/2hp motor is quiet and features a heavy-duty, reliable worm-drive gearbox. It's 5.5 ft.³ drum can produce batches as fast as one per minute. The mixer features a well-balanced tilt handle and the convenient drum lock secures the drum in one of five available positions. The mixer also features a tubular, steel frame and utilizes maintenance-free bearing design.

The Mixers Feature:

- Sturdy mixing blades
- Convenient on/off switch standard with motor
- Hand tow kit option available
- Drum opening of 15.25" (381mm), depth 24.75" (628.65mm)
- Discharge height of 20" or 22.75" with tow kit
- Three (3) ft.³ batch size, 5.5 cubic foot drum volume
- Overall dimension of 31.5" x 35.5" x 50" (drum facing down)
- Pre-drilled steel base can be anchored to the floor
- 25 RPM drum rotation

Utility Mixer with Steel Drum

1/2hp Electric, 120V 60Hz **H-3859**
 1/2hp Electric Motor & Hand Tow Kit, 220V 60Hz **H-3859TK**
 Ship wt. 366lbs. (166kg)

Utility Mixer with Poly Drum

ASTM C192

This quality Utility Mixer is perfect for batch mixing of concrete, as well as numerous other industrial applications. It features a 5.5 ft.³ field-replaceable, poly drum for fast, non-stick cleanup and extended life for the mixer, which is FDA/NSF/USDA approved. The 1/2hp motor is quiet and features a heavy-duty, reliable worm-drive gearbox. It's 5.5 ft.³ drum can produce batches as fast as one per minute. The mixer features a well-balanced tilt handle and the convenient drum lock secures the drum in one of five available positions. The mixer also features a tubular, steel frame and utilizes maintenance-free bearing design.

The Mixers Feature:

- Sturdy in-mold mixing blades
- Convenient on/off switch standard with motor
- Hand tow kit option available
- Drum opening of 15.25" (381mm), depth 24.75" (628.65mm)
- Discharge height of 20" or 22.75" with tow kit
- Three (3) ft.³ batch size, 5.5 ft.³ drum volume
- Overall dimension of 31.5" x 35.5" x 50" (drum facing down)
- Pre-drilled steel base can be anchored to the floor
- 25 RPM drum rotation

Utility Mixer with Poly Drum

1/2hp Electric, 120V 60Hz **H-3859PL**
 1/2hp Electric & Hand Tow Kit, 220V 60Hz **H-3859PLTK**
 Ship wt. 346lbs. (156kg)

Poly Drum Replacement

3 ft.³ replacement liner for H-3859 mixer.

Poly Drum Replacement **H-3849PL**
 Ship wt. 29lbs. (13.1kg)

Poly Drum Cover

Snug-fitting drum cover for H-3859 mixer.

Poly Drum Cover **H-3849PC**
 Ship wt. 29lbs. (13.1kg)

Lightweight Wheelbarrow Mixer

ASTM C192

Drum mixing capacity is 3 ft.³. (85 Liters). Lightweight, portable mixer only weighs 125 lbs. High-torque, 1/2hp electric motor with on/off switch. Spins at 28 rpm. CE and CSA approved electric motor. Strong polyurethane drum will not crack or rust and is easy to clean. Includes mixing stand. Ring gear is enclosed for safe operation. Transport handles adjust for easy storage. Can clear a 30" (762mm) door opening. Ships unassembled in a box. Shipping Dimensions: 24" x 23" x 30" (610 x 584 x 762mm).

Lightweight Wheelbarrow Mixer

1/2hp Electric, 110V 60Hz **H-3846A**
 Ship wt. 121lbs. (54kg)





H-3030A

Concrete Beam Tester for 6" x 6" Beams

Humboldt's Portable, Concrete Beam Testers are a great quality control tool for contractors, DOTs and consultants for quickly and accurately determining flexural strengths of concrete using 6" x 6" cross-section test beams. These Beam Breakers are hydraulically driven units using the center-point loading method and provide continuous readings to the beam breaking point while retaining the maximum reading for accuracy and to eliminate lost data. The gauge also resets to zero for testing multiple beams.

These beam breakers are constructed of lightweight aluminum, making them extremely portable for use at even the most remote of job-sites. Self-contained, portable concrete beam tester, which accurately and easily determines flexural strengths of 6" x 6" test beams of 16" and 18" lengths.

While not in full compliance with ASTM C293 since they use a hand pump, these beam testers can be used as an accurate quality control tool to determine whether curing concrete has met a specified flexural strength. In this type of application, a known flexural strength value is determined and is used as a go/no-go test parameter. Numerous government agencies including Illinois DOT have found its results acceptable for their purposes.

These beam testers provide dual registration of modulus at rupture between 15,000 lbf. and 0-6,800 kgf. The unit is calibrated by measuring the load applied on a calibrated load cell. The factory calibration is supplied at gauge readings of 10% FS, FS and 3 readings in between. Three load cell readings are averaged at each point to establish the correction for each point.

Concrete Beam Tester	
16", Single-Point	H-3030A
18", Single-Point	H-3032A
18", Third Point	H-3033A
	Ship wt. 87lbs. (39.4kg)



H-3030CL

Continuous-Load Concrete Beam Tester

ASTM C293,C78; AASHTO T177

By adding a Micro-pump to our Concrete Beam Testers provides a continuous load pressure to the testing procedure, which renders these Beam Testers in compliance with the ASTM standards. According to the ASTM, a load can be rapidly applied to the beam up to 50% of the expected maximum load. Then, by using the micro-pump the rest of the load can be applied continuously until failure. The range of the micro-pump allows it to add up to 10,000 lbf pressure.

Humboldt's Portable, Concrete Beam Testers with Micro-pumps are a great quality control tool for contractors, DOTs and consultants for quickly and accurately determining flexural strengths of concrete using 6" x 6" cross-section test beams. These Beam Breakers are hydraulically driven units using the center-point loading method and provide continuous readings to the beam breaking point while retaining the maximum reading for accuracy and to eliminate lost data. The gauge also resets to zero for testing multiple beams.

These beam breakers are constructed of lightweight aluminum, making them extremely portable for use at even the most remote of job-sites. Self-contained, portable concrete beam tester, which accurately and easily determines flexural strengths of 6" x 6" test beams of 16" and 18" lengths.

Continuous-Load Concrete Beam Tester	
16", Single-Point	H-3030CL
18", Single-Point	H-3032CL
18", Third-Point	H-3033CL
	Ship wt. 90lbs. (40.8kg)



H-3031CL

Continuous-Load Beam Breaker for 4" x 14" Beams

ASTM C293

The Humboldt H-3031CL Portable, Continuous-Load, Concrete Beam Breaker is a great quality control tool for contractors, DOTs and consultants for quickly and accurately determining flexural strengths of concrete using 4" x 4" x 14" test beams. The H-3031CL incorporates a continuous, screw jack to provide a continuous application of force against the test beam. By providing a continuous force, these beam breakers comply with the ASTM C293 standard and can be used as an accurate quality control tool to determine whether curing concrete has met a specified flexural strength. In this type of application, a known flexural strength value is determined and is used as a go/no-go test parameter.

The H-3031CL beam breaker is constructed of lightweight aluminum, making it extremely portable for use at even the most remote of job-sites. Self-contained, portable concrete beam tester, which accurately and easily determines flexural strengths of 4" x 4" x 14" test beams, which are placed on rollers that are 12" apart. The hydraulically driven unit uses a center-point loading method that provides continuous readings to the break point and retains the maximum reading to eliminate losing the break-point data. The gauge will then reset to zero for repeat tests. The lightweight aluminum unit features a 8,000 lbf. x 100 lbf. The unit is calibrated by measuring the load applied on a calibrated load cell. The factory calibration is supplied at gauge readings of 10% FS, FS and 3 readings in between. Three load cell readings are averaged at each point to establish the correction for each point.

Continuous-Load Beam Tester	
4" x 14" Beams	H-3031CL
	Ship wt. 90lbs. (40.8kg)

NOTES
For Beam Molds, see page 171.



HCM-1142



HCM-1143



HCM-5070

Specification	HCM-1142
Capacity	(100kN)
Piston Stroke	2.95" (75mm)
Test Chamber Height	7.00" (180mm)
Bending Roller Length	6.30" (160mm)
Bending Roller Dia.	1.50" (38mm)
Lower Roller Distance	29.50" (750mm)
Overall Width	33.00" (840mm)
Overall Depth	33.20" (845mm)
Overall Height	47.80" (1215mm)

Specification	HCM-1143	HCM-1144
Capacity	(200kN)	(300kN)
Piston Stroke	1.96" (50mm)	8.66" (220mm)
Bending Roller Length	optional	20.10" (510mm)
Bending Roller Dia.	1.50 -0.78" (38-20mm)	1.6" (40mm)
Lower Roller Distance	35.40" (900mm)	40.1" (1020mm)
Overall Width	39.30" (1000mm)	26.40" (670mm)
Overall Depth	50.80" (1290mm)	53.90" (1370mm)
Overall Height	50.80" (1290mm)	87.00" (2210mm)

Flexural Series Compression Machines

ASTM C78, C293; EN 12390-5, EN 1339, EN 1338

These Flexural Series machines can be paired with the Humboldt Concrete Compression Frame and HCM-5070 Automatic Console Controller to provide an automated solution for testing standard concrete beams. Frames support a hydraulic ram and upper platen sub-assembly incorporating a spherical seating. The upper and lower platens will accept various specimen loading bearer, which are sold separately.

Flexural Machine, 100kN	HCM-1142
Flexural Machine, 200kN	HCM-1143
Flexural Machine, 300kN	HCM-1144

These three Flexural machines are controlled with Humboldt's HCM-5070 Automatic controller, which is designed to make fast work of testing a variety of standard beams.

The HCM-5070 Console controller provides 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 beams while sequentially numbering each test automatically. Just click on the start button. The HCM-5070 controller features a robust, reliable and cool-running 1hp pump, which works together with the controller for full operational control.

The HCM-5070 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. The controller also provides two additional channel inputs for displacement, which provides an easy solution for determining Poisson's ration and Young's modulus testing.

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
- 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, EN 12390-5, EN 1339, EN 1338
- 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

Humboldt Auto Console Controller HCM-5070
 Humboldt Auto Console Controller HCM-5070.4F
 Ship wt. 200 lbs. (91kg)



Concrete Beam Molds, Heavy-Duty

ASTM C31, C78, C192, C293; AASHTO T23, T97

Concrete Beam Molds, heavyweight, machined .375" steel. The sides of the one-piece mold hinge to the base and the ends hinge to the sides. Fastened with wing nuts. Reusable. Fast and easy to assemble and use. Easy to strip, clean, knock-down and store. Molds give accurate specimens for center or third-point loading tests.

Description	Ship wt.	Part No.
6" x 6" x 21" (152 x 152 x 533mm)	54lbs. (24.4kg)	H-3005
6" x 6" x 24" (152 x 152 x 610mm)	67lbs. (31kg)	H-3010
6" x 6" x 30" (152 x 152 x 762mm)	70lbs. (31.7kg)	H-3015
6" x 6" x 36" (152 x 152 x 914mm)	80lbs (36kg)	H-3020

Concrete Beam Mold, Lightweight

ASTM C31, C78, C192, C293; AASHTO T23, T97

Lightweight, stamped-steel, hinge-free beam mold is collapsible. Can be disassembled in to individual, interchangeable parts. Fastened with wing nuts.

Description	Ship wt.	Part No.
6" x 6" x 22" (152 x 152 x 559mm)	29.2lbs. (13kg)	H-3007
4" x 4" x 14" (152 x 152 x 559mm)	25.2lbs. (11.4kg)	H-3004

Concrete Beam Mold, Plastic

ASTM C31, C78, C192, C293

Durable, lightweight copolymer plastic beam mold utilizes simple thumb screws for ease of stripping, cleaning and assembly. The lightweight design requires no tools and weighs less than one quarter of the weight of a conventional mold. Will not rust, reusable, inexpensive.

Description	Ship wt.	Part No.
6" x 6" x 21" (152 x 152 x 533mm)	9lbs. (4kg)	H-3009

Curing Covers for Beam Molds, Insulated

Constructed of heavy-duty, rip-stop nylon with removable pad, which can be saturated with water for moisture retention during curing.

Description	Ship wt.	Part No.
Curing Cover 21", 22", 24"	1.5lbs. (0.6kg)	H-3021.24
Curing Cover 30"	1lbs. (0.4kg)	H-3021.30
Curing Cover 36"	1lbs. (0.4kg)	H-3021.36

Concrete Cube Mold, Steel

ASTM C403; AASHTO T97

Single-cavity steel cube mold with base plate. Used for mortar specimens in the time of initial and final setting of concrete.

6" x 6" x 6" (152 x 152 x 152mm)	H-2827
150 x 150 x 150mm	H-2827M
	Ship wt. 27lbs. (12kg)

Concrete Cube Mold, Steel, Heavy-Duty

ASTM C403; AASHTO T97

Single-cavity, two-part, steel cube mold with base plate. Used for compression testing of concrete cubes.

150 x 150 x 150mm	H-2827MHD
	Ship wt. 27lbs. (12kg)

Concrete Cube Mold, Plastic

ASTM C403; AASHTO T97

Single-cavity plastic cube mold. Used for compression testing of concrete cubes and for mortar specimens in the time of initial and final setting of concrete.

150 x 150 x 150mm	H-2827MP
	Ship wt. 3.5lbs (1.6kg)

Leather Compression Shim

Leather shims for use with concrete beams, 4-pack. Dimensions: 7" x 2" x 0.25" thick.

Leather Compression Shim	HCM-0119LS
	Ship wt. 1.3lb (0.6kg)

Vibrating Table

ASTM C31, C192, C293; AASHTO T23, T97

Cushioned impact vibrating table with load capacity of 300 lbs. (136.1kg) is used to vibrate beam forms, cylinder molds, concrete products and soil specimens. Table deck is 20" x 20" (508 x 508mm). Table vibrates at 3600 vpm. Amplitude or power of vibration is regulated by means of a rheostat in the electrical control circuit. Not supplied with cord and plug due to high wattage consumption requirements—must be connected through electrical conduit and fittings.

Vibrating Table, 115V, 60Hz	H-3755
Vibrating Table, 230V, 60Hz	H-3755.2F
Vibrating Table, 230V, 50Hz	H-3755.5F
	Ship wt. 115lbs. (52kg)

Vibration Indicator, Tachometer Type

Precision tachometer is pen size to allow accurate readings even on hard-to-reach equipment. Scale gives readings from 2,000 to 21,000.

Vibration Indicator, Tachometer Type	H-3753
	Ship wt. 1lbs. (1.9kg)

Vibration Indicator, Visual Type

Visual indicator gives accurate reading of amplitude of vibration so vibrating table may be adjusted.

Vibration Indicator, Visual Type	H-3754A
	Ship wt. 1lbs. (1.9kg)

Concrete Vibrator

ASTM C31, C138, C192; AASHTO T23, T97

Lightweight square-head model is used for vibrating concrete test cylinders and molds in the laboratory or field. Unit is flexible-shaft type, powered with 3/4 HP electric motor. Shaft is 24" (610mm) long; vibrating head is 1" sq x 13" L (25 x 330mm) with a speed of 10,000 vpm. 115V model is 7 amps 1ph and 230V model is 3.6 amps 1ph.

Concrete Vibrator, 115V, 50/60Hz	H-2999A
Concrete Vibrator, 230V, 50/60Hz	H-2999A.4F
	Ship wt. 12lbs. (5.5kg)



Concrete Cylinder Molds, Single-use, Plastic

C31, C39, C192, C470, C496; AASHTO T22, T23, T126, T198, M205

Disposable, plastic cylinder molds with flat bottoms. Easily stripped with stripper tools (order separately).

Size	Description	Ship wt.	Model
6" x 12" (152 x 305mm)	Reinforcing rib around top opening. Lids not included. Cartons of 36, oversize UPS charges apply.	26 lbs. (11.8kg)	H-3041
6" x 12" (152 x 305mm)	Reinforcing rib around top opening. Lids not included. Cartons of 20	15 lbs. (6.8kg)	H-3041.20
6" Ø (152mm)	Plastic lid for use with H-3041 mold. Sold individually.	0.08 lbs. (.04kg)	H-3041L
4" x 8" (102 x 203mm)	Complete with integral, domed plastic lid. Cartons of 36, oversize UPS charges apply.	14 lbs. (6.3kg)	H-3037PML
3" x 6" (76 x 152mm)	Complete with integral, domed plastic lid. Cartons of 80, oversize UPS charges apply.	16.4 lbs. (7.4kg)	H-3038PML
2" x 4" (51 x 102mm)	Complete with integral domed plastic lid. Cartons of 84.	5 lbs. (3.6kg)	H-3039P

Tamping (Puddling) Rod

Round, straight steel rod measures .625" (16mm) dia. x 24" (610mm) long. Both ends rounded. Plated for rust resistance.

Tamping (Puddling) Rod H-3650
 Ship wt. 4.3lbs. (1.9kg)

Tamping Rod

ASTM C157, C192

Round, straight steel rod measures .375" (10mm) dia. x 12" (305mm) long. Both ends are rounded to a hemispherical tip of the same diameter as the rod.

Tamping Rod H-2905.1
 Ship wt. 4.3lbs. (1.9kg)

Mold Strippers

Mold strippers split single-use plastic cylinder molds for cylinder removal.

T-Handle Style H-3041S
Screwdriver Style H-3041SMA
 Ship wt. 2lbs. (0.9kg)

Quick-Strip Mold Strippers

The Quick-Strip Mold Stripper from Humboldt provides fast, easy and safe stripping of cylinder molds with one easy pull of its lever. With each pull of the lever the Quick-Strip slices plastic cylinder molds with two opposing cuts, making removal of the concrete cylinder easy. And, since the Quick-Strip is designed to be bench mounted, it will also save your lower back from bending over to strip molds on the floor like you do with conventional stripping tools. The Quick-Strip also doesn't bottom out the knife blades when it cuts molds, so you'll save on the frequency of blade replacements. And, you'll save wear and tear on your floors, which are often ruined by repeated blade gouging.

- No more bending over molds on the floor
- No more missed hammer blows
- No more stripping tools slipping off the mold
- No more floor gouging

The Quick-Strip will provide you with cylinder mold stripping that's faster, safer and more efficient, especially when you have large numbers of cylinders to process.

Video: <https://youtube/WUTRdgNu-24>

Quick-Strip Mold Stripper, 4" x 8" H-3045
 Ship wt. 75lbs. (34kg)

Quick-Strip Mold Stripper, 6" x 12" H-3046
 Ship wt. 75lbs. (34kg)

Replacement Blade for Strippers H-3046.1
 Ship wt. 1lbs. (1.9kg)





H-3043.6

H-3043.4

Concrete Cylinder Molds, Reusable, Plastic

C31, C39, C192, C470, C496; AASHTO T22, T23, T126, T198, M205

Lightweight, impact resistant construction. Will not crack, rust or deform. Can be reused up to 100 times. .25" (6.2mm) wall thickness. Sold individually.

Size	Description	Ship wt.	Model
6" x 12" (152 x 305mm)	.25" (6.2mm) wall thickness. Sold individually.	4.1 lbs. (1.8kg)	H-3043.6
4" x 8" (102 x 203mm)	.25" (6.2mm) wall thickness. Sold individually.	14.2lbs (.5kg)	H-3043.4



H-3040

H-3037

Concrete Cylinder Molds, Single-use, Cardboard

C31, C39, C192, C470, C496; AASHTO T22, T23, T126, T198,

Size	Description	Ship wt.	Model
6" x 12" (152 x 305mm)	Carton of 24, oversize UPS charges apply	17 lbs (7.7kg)	H-3040
4" x 8" (102 x 203mm)	Carton of 50, oversize UPS charges apply	15 lbs (6.8kg)	H-3037
3" x 6" (76 x 152mm)	Carton of 50, oversize UPS charges apply	10 lbs (4.5kg)	H-3038
2" x 4" (51 x 102mm)	Carton of 50	5 lbs (2.2kg)	H-3039



H-2942

H-2934

Cylinder Molds, Reusable, Metal

ASTM C31, C39, C192, C470; AASHTO T22, T23, T97, T126, T198

Molds are constructed of plated steel for rust resistance and are dimensionally stable under severe use. Molds are split along one side with 2 quick-acting clamps welded to mold. When open, mold springs apart slightly to allow specimen removal. Includes detachable base plate.

Size	Description	Ship wt.	Model
6" x 12" (152 x 305mm)	.125" (3mm) wall thickness	18 lbs. (8.2kg)	H-2942
	.25" (6mm) wall thickness	30 lbs (13kg)	H-2950
	.25" (6mm) wall thickness with handle	24.2 lbs (10.9kg)	H-2950H
4" x 8" (102 x 203mm)	.125" (3mm) wall thickness	10 lbs (4.5kg)	H-2935
	.25" (6mm) wall thickness	14 lbs (6.3kg)	H-2934
3" x 6" (76 x 152mm)	.25" (6mm) wall thickness	9 lbs (4kg)	H-2931
2" x 4" (51 x 102mm)	3-Gang, split, cast bronze with heavy rib reinforcement. Quick-acting yoke clamps, bolts and thumbscrews for locking halves.	8 lbs (3.6kg)	H-2920



H-2950H

H-2920

Cylinder Carrier (Gripper Type)

The H-2945 employs a hand-grip pincer action to secure standard 6" (152mm) dia. cylinders. For 4" cylinders order the H-2945G-4".

Cylinder Carrier, 6" (Gripper Type) H-2945G

Cylinder Carrier, 4" (Gripper Type) H-2945G-4"

Ship wt. 3lbs (1.4kg)

Cylinder Carrier (Cradle Type)

Steel cylinder carrier is plated to resist rust. Used to carry 6" (152mm) dia. concrete cylinders in field or laboratory.

Cylinder Carrier (Cradle Type) H-2945

Ship wt. 2.5lbs (1.1kg)

Concrete Cylinder Wrap

Used to minimize fragment scattering and reduce cleanup time after the compression test. Made of canvas/nylon with Velcro fastening strips.

Concrete Cylinder Wrap, 4" H-2900.4

Concrete Cylinder Wrap, 6" H-2900.6

Ship wt. 0.4lb (0.1kg)



H-2945G



H-2945



H-2900.4, H-2900.6



H-2943



H-2977C



H-2977S.6
H-2977S.12



H-2970.1



H-2970A



H-2969.6

Sample Cart, Welded

Premium-grade all-welded cart has 800-lb. capacity. Features 5 x 1-1/4" casters mounted to cross-channel bolster plate for added support, convenient offset handle and 36" x 24" (914 x 609mm) tray size. Smooth finish; no rough edges. Shipped assembled.

Sample Cart, Welded H-2943

Ship wt. 75lbs. (34kg)

Sample Cart, Bolt-Together

For use in handling concrete beams and cylinders, plus soil and aggregate samples in the lab or field. Ready to assemble. Cart has pan-type rolled-edge 3-1/2" (89mm) deep steel shelves. Top shelf reverses to flat working surface. Features 5" (127mm) dia. rubber casters; front casters swivel for easy steering. Dimensions: 24" x 36" x 32" (61 x 91 x 81cm). Assembly required.

Sample Cart, Bolt Together H-2944

Ship wt. 55lbs (25kg)

Carrying Rack for Concrete Cylinders

Carrying rack for 4" x 8" test cylinders. Durable, molded plastic construction with molded handles for easy and safe transportation. Easily carry 8 cylinders at a time in this plastic carrier, which will not deteriorate or corrode in water. Allows you to keep companion cylinders together in the same case for curing.

Carrying Rack for Concrete Cylinders H-2977C

Ship wt. 4.5lbs. (1.8kg)

Curing Rack for Concrete Cylinders

Durable, plastic cylinder curing racks provide a stable and open air flow design for storing cylinders during curing. The racks are manufactured from recycled plastic materials to resist moisture, abrasion, as well as chemical and temperature variations. Each rack has built-in handles for easy carrying. Each rack holds (4) 4" x 8" cylinders and the interlocking racks can be stacked 12 high (58").

Curing Rack for Cylinders (6 racks) H-2977S.6

Ship wt. 7 lbs (3.2kg)

Curing Rack for Cylinders (12 racks) H-2977S.12

Ship wt. 27.1lbs. (12.2kg)

Transport Rack for 6" Test Cylinders

Test cylinder transport rack securely holds (8) 6" x 12" cylinders in a lightweight and durable frame, which can be secured to a truck bed or used in conjunction with the H-2970A field curing chest listed below. Open center position is available for heater. Will not rot or rust. Rack is 23.5" square by 9" high.

Transport Rack for 6" Test Cylinders H-2970.1

Ship wt. 11.2lbs. (5.1kg)

Transport Rack for 4" Test Cylinders

Test cylinder transport rack similar to above, but securely holds (16) 4" x 8" cylinders. Rack is 23" square by 7" high.

Transport Rack for 4" Test Cylinders H-2970.2

Ship wt. 15lbs. (6.8kg)

Field Curing Chest

The field curing chest offers the user with an affordable approach to store, transport and cure concrete test cylinders. The chest consists of a 24" x 24" x 14" (610 x 610 x 356mm) zipper-sealed polymer and vinyl chest with 0.5" (12.7mm) insulating foam. The unit can accept up to nine 6" x 12" concrete cylinders.

Field Curing Chest H-2970A

Ship wt. 13.6lbs. (6.18kg)

Poly Curing Tanks

Durable seamless design resists breakage. All round-end tanks have an extra heavy duty, molded rim and an extra-deep sidewall rib design for additional strength. Heavy duty, molded-in aluminum drain fitting and 1.25" poly drain plug ensure a long-life. Tested to -20° F, corrosion-free impact resistant and recyclable. Premium UV protection assures long life and resistance to color fade in outdoor use. Shipping weights: 8': 66lbs (29kg); 6': 49lbs (22kg); 4': 30lbs. (13.6kg).

Poly Curing Tank, 3' x 2' x 8" H-2969.8

Poly Curing Tank, 2' x 2' x 6" H-2969.6

Poly Curing Tank, 2' x 2' x 4" H-2969.4

Ship wt. see above





H-2986A



H-2988A



H-2985



H-2735



H-2968

Precision Tank Heater

Designed for efficient and economical indoor operation with H-2969 series curing tanks where temperature does not fall below 55°F (13°C). Temperature is thermostatically controlled and adjustable. The 1,000W, 8.3 amp, 120V solid-state controlled element will warm to a maximum of 200°F. Heater is Incoloy sheathed to prevent rust and is secured to aluminum base. Base provides protection for heater components from test cylinders in the tank. Overall length: 22.5" (57cm).

- Precision Tank Heater, 110V 60Hz H-2986A
 - Precision Tank Heater, 220V 50/60Hz H-2986A.4F
- Ship wt. 5lbs. (2.2kg)

Immersion Circulator and Heater

This Immersion Circulator/Heater converts any tank or vessel into a reliable, user-friendly circulating bath. Remarkably versatile and convenient, it delivers precise and reliable temperature control for virtually any laboratory application. The unit features a large, backlit digital display, which allows you to monitor a set point and actual temperature from across the lab. It has a protective housing that shields the pump and heater from damage yet offers easy access for cleaning. Flow management is easy with its convenient slide control, which easily adjusts to adapt to any need. Its adjustable mounting clamp fastens securely to both flat and rounded tank walls.

Working temperature: 135°F maximum
 Temperature stability: ±0/07°C
 Pump: 1-speed

Suitable for tank capacities to 28 liters and a minimum working depth of 7.25".

- Circulator/Heater, 120V 60Hz H-2988A
 - Circulator/Heater, 220V 50/60Hz H-2988A.4F
- Ship wt. 9lbs. (4.08kg)

Curing Tank Circulator

Silent submersion pump is 1/160hp (30W) with 120gph rating at 1ft. (30cm) height. Circulation from the 0.25" (6.4mm) MNPT discharge may be aimed; simply place the housing on any of five sides. Flow also may be directed using elbow connector (included) or by attaching extension tubing. Working parts are lubricated and sealed for life in glass-filled nylon housing with flush inlet. Features 6ft. (1.8m) grounded cord.

- Curing Tank Circulator, 110V 60Hz H-2985
 - Curing Tank Circulator, 220V 50/60Hz H-2985.4F
- Ship wt. 3lbs. (1.3kg)

Chart Recorder, Circular

This chart recorder provides reliable and rugged trend reporting with the ability to measure 3 different temperature ranges and 4 recording speeds (6 or 24 hr. and 7 or 31 days). Large LED display shows sensor temperature and all controls are located on the front panel. Unit can be free standing or wall mounted. Battery backup provides operation during power interruptions. Comes with 2 cartridge pens and 60 assorted charts. **Sensor is not designed to be fully immersible.**

- Chart Recorder (°F), 120V 60Hz H-2735F
 - Chart Recorder (°C), 120V 60Hz H-2735C
 - Chart Recorder (°F), 220V 50/60Hz H-2735F.4F
 - Chart Recorder (°C), 220V 50/60Hz H-2735C.4F
- Ship wt. 5lbs. (2.3kg)

Charts for Chart Recorder

Description	Part No.
Probe w/ lead (15ft.), stainless steel	H-2735A.3
Pen for H-2735 chart recorders (black)	H-3185.3A
6" 7-Day Chart, 50 to 120°F	H-2735F.1
6" 24-Hr. Chart, 50 to 120°F	H-2735F.5
6" 7-Day Chart, 10 to 50°C	H-2735C.1
6" 24-Hr. Chart, 10 to 50°C	H-2735C.5

Concrete Curing Box, Deluxe

ASTM C192, C511, C31; AASHTO M201, T126, T23
 Deluxe curing box provides heating and cooling while still being lightweight, and portable—74 lbs. (33.6kg). Plastic construction is rugged, durable and rustproof. Up to 22 standard 6" x 12" (152 x 305mm) test specimens can be stored at 72 ±2°F (22.2 ±1.1°C) over an ambient range of -10 to 100°F (-23 to 37.8°C). Sturdy, 14-gauge steel bottom rack provides optimum water circulation for even curing. Bottom valve for fast drainage. Lockable lid resists tampering. Requires minimum 15 amp circuit. Deluxe model includes recirculating water temperature control unit with temperature set buttons, indicating lights and digital readout for water temperature. **Not available in 220V 50/60Hz.** Shipping Dimensions: 76" x 28" x 29" (193 x 71 x 73.6cm) L x W x H

- Curing Box, Heating/Cooling, 110V, 50/60Hz H-2968
- Ship wt. 200lbs. (90.9kg)

Concrete Curing Box, Heating Only

ASTM C192, C511, C31; AASHTO M201, T126, T23
 Curing box for concrete cylinders is lightweight, and portable—74 lbs. (33.6kg). Plastic construction is rugged, durable and rustproof. Up to 22 standard 6" x 12" (152 x 305mm) test specimens can be stored at 72 ±2°F (22.2 ±1.1°C) over an ambient range of -10 to 100°F (-23 to 37.8°C). Sturdy, 14-gauge steel bottom rack provides optimum water circulation for even curing. Bottom valve for fast drainage. Lockable lid resists tampering. Requires minimum 15 amp circuit. Heating-only model, though cooling can be achieved by cool water recirculation, if available. Includes adjustable heating control and dial thermometer. **Not available in 220V 50/60Hz.** Shipping Dimensions: 64" x 28" x 29" (162.5 x 71 x 73.6cm) L x W x H

- Curing Box, Heat only, 110V, 50/60Hz H-2967
- Ship wt. 120lbs. (54.5kg)



VaporPlus Curing Room System

ASTM C511

The VaporPlus Curing Room System provides the ideal solution for maintaining concrete curing rooms within ASTM C511 specifications. The VaporPlus system utilizes air atomization technology to produce a fine vapor fog to create the optimal environment for storing and curing concrete testing samples, such as cylinders. It provides the ideal solution for maintaining the high humidity levels (up to 100%) required for curing rooms.

The system is comprised of a simple timer, stainless steel, air atomizing nozzles, which produce a fine vapor fog, won't rust and are resistant against clogging. A water filtration unit, which includes sediment removal and 100% KDF, anti-bacterial filter and a compressor unit, which includes an adjustable water regulator for added humidity control.

The VaporPlus system is designed to provide consistent humidity results in rooms up to 26 x 26 x 8 ft. or 0-5,600 cubic feet. VaporPlus systems can accommodate rooms of all sizes, just add additional nozzles for larger room applications.

VaporPlus Curing Room System, 115V, 60Hz H-2741
 VaporPlus System, 220V, 50/60Hz H-2741.4F
 Ship wt. 47lbs. (21.3kg)

Replacement Parts for H-2741 VaporPlus

Description	Part No.
Spray Nozzle	H-2741.1
Air Filter Cartridge	H-2741.2
Air Muffler Filter (Qty. 4)	H-2741.3
10" Sediment Cartridge	H-2741.4
10" KDF Media Cartridge	H-2741.5



H-2741.1



H-2741.2



H-2741.3



H-2741.4



H-2741.5

Monitor the VaporPlus System with Humboldt's NEW Concrete Humidity Sensor System!

Humboldt Concrete Humidity Sensor System

Based on Humboldt's Concrete Maturity System, the Humidity Sensor System can be used to wirelessly monitor curing room humidity.

The Humboldt Humidity Sensor System provides a wireless solution to collecting humidity data. Humidity can be accessed from anywhere without even visiting the curing room. When the system is installed, it is activated by registering it with your website account using a sensor-specific ID number. Once this step is completed, the transmitter for each sensor will begin to receive data from the sensor and transmit that data to



the receiver. The receiver then relays this information to your account on the web-based cloud platform. This information/data is available to you in real time, 24/7, 365 days a year by simply logging into your account, using your user name and password. See page 166 for additional information.

The Humidity Sensor System is available as a kit, which includes (1) Receiver, (1) Transmitter/Sensor, and a website platform account.

Humboldt Humidity Sensor System H-2689.3F
 Ship wt. 8.9lbs. (4kg)





H-2742

Tri-Breeze Curing Room System Sanitizer

The Tri-Breeze Curing Room System Sanitizer is a sanitizing system designed for use with the Vapor-Plus Curing Room System. It provides proven sanitizing capabilities to disinfect against a build up of bacteria and viruses. It kills pathogens on contact and converts to regular oxygen, leaving no toxic residuals. It has been proven to be effective against Listeria, Salmonella, E. Coli, Norovirus, Campylobacter and other pathogens. The system generates oxygen (O₂) in a relatively simple process using ordinary air. Oxygen and Nitrogen are the raw materials. As the air is drawn through the reaction chamber, energy is supplied, which splits some oxygen molecules into oxygen atoms. Some of these atoms then quickly react with oxygen molecules to form an activated oxygen. This process cleans and sanitizes the system more effectively and less expensive than a chlorine-based system.

Tri-Breeze, Sanitizing System, 120V 60Hz H-2742
 Tri-Breeze, Sanitizing System, 220V 50/60Hz H-2742.4F
 Ship wt. 30lbs. (13.6kg)



H-2737



H-2738

Fine Mist Fogging Fan

The H-2737 bench-type fogging fan is a quiet and dependable fogging fan, perfectly suited for the small curing rooms. The H-2737 conveniently sits on flat surfaces or shelves and is extremely easy to set up and operate. The nozzle-free fan can atomize ordinary water supplies into a very fine mist-like-fog, as well as pond water without the risk of clogging. Utilizing high-speed centrifugal force and air flow, these units can propel a misty-fog stream up to 20 feet away. The H-2737 is engineered to withstand humid conditions as high as 100% relative humidity. Units are constructed of impenetrable components like Nema 4 boxes and connections, all 304 stainless steel hardware, UV-stabilized polyethylene housing and precision, high-strength injection molded polypropylene components. Units also reuse their condensation waste water, eliminating the need of a near by drain. Bench top units fill automatically by means of an internal float valve and come equipped with a simple garden hose connection. A quarter-turn valve controls the fogging output.

Specifications

Description	Part No.
Fogging Capacity	0-3 gallons per hour
CFM Rating	1,125 cubic ft. per min.
Energy Consumption	1.5 amps @ 115V
Noise @ 10 ft.	62dB(A)
Dimensions	16" dia. x 16" length
Coverage	about 500 sq. ft.

Similar to the H-2737, the H-2738 is a direct-feed, hanging unit, which receives liquid directly through a visual flowmeter control panel. This provides for fine "repeatable" control of the fogging output, as well as enhancing dependability by eliminating sump components. Direct feed units are well suited for harsher environments or applications where standing water in a sump could become an issue. Each unit is equipped with a 5gph (20-300cc/min) flowmeter panel and 12 foot condensation drainage line. **Not available in 220V 50/60 Hz.**

Fogging Fan, Bench Type H-2737
 Fogging Fan, Hanging Type H-2738
 Ship wt. 24.6lbs. (11.2kg)

Accessories for H-2737 & H-2738

Description	Part No.
Floor Stand (Econo)	H-2734.1
Ceiling Support	H-2734.2
Wall Mount	H-2734.3
Humidistat	H-2737.1
Thermostat	H-2737.2
Cycle Timer	H-2737.3



H-2736



H-2732



H-2736.4



H-2736.3



H-2736SW



H-2736.1



H-2736.2



H-2962
H-2962.4F

Temperature/RH Loggers

These temperature and relative humidity data loggers are housed in a robust, waterproof (IP68-rated) case, which is designed for use in harsh applications like cylinder curing rooms. They are available with an integral, coated RH sensor (H-2736) or with a temperature and relative humidity probe with a 1.5m cable length (H-2732). The relative humidity probe features a coated RH sensor that shows good resistance to moisture and condensation, ensuring measurement reliability. These data loggers have a high reading resolution and accuracy and provide fast off-load speed and a low battery monitor. Data is downloaded to a computer for viewing, reports and archiving. Data stored on the logger will be retained after a battery is replaced. See tables below for specific logger specifications. **Require H-2736.SW software and a download cable for operation.** Dimensions: 1.75" x 2.25" x 3.15" (34 x 57 x 80mm).

Relative Humidity Specifications	
Sensor Type	Capacitive
Reading Range	0 to 100% RH
Accuracy	±3.0% at 77°F (25°C)
Reading Resolution	Better than 0.3% RH
Sensor Location	Externally mounted
Response Time	10 seconds to 90%

Temperature/RH Logger **H-2736**

Temperature/RH Logger with Probe **H-2732**
Ship wt. 0.3lbs. (.13kg)

Temperature/RH Logger Software

Explorer Software for operating H-2736 and H-2732 data loggers. This Windows-based program is simple and intuitive to use, allowing users to easily manage both Tinytag loggers and recorded data. A simple to use launch page that allows easy editing of a data logger's settings, while at the same time summarizing them clearly. When offloaded, recorded data is initially presented as a graph but can also be displayed as a table of readings if required. These views are supplemented with an information view, that summarizes details of the data being shown, and a daily minimum/maximum view. Data can easily be exported from all four views into MS Excel and Word, either as a file or by simply copying and pasting. The software supports multiple languages, and there is also a comprehensive, illustrated help file to take the user through the basics of the software, and its more advanced features. Site licenses are available for multiple installs.

Temperature/RH Logger Software **H-2736SW**
Ship wt. 1lbs. (.45kg)

Logger Download Cables

Download cables to connect a PC to the H-2732 and H-2736 Loggers.

Download Cable, Serial **H-2736.1**

Download Cable, USB **H-2736.2**
Ship wt. 0.5lbs. (.22kg)

Logger Specifications	
Reading Capacity	32,000
Memory Type	Non-volatile 64K
Reading Types	Actual, Min, Max
Delayed Start	Relative / Absolute (up to 45 days)
Trigger Start	Magnetic Switch (H-2736.3)
Alarms	2, fully programmable
Stop Options	When full, After "n" Readings, Never overwrite oldest data
Operating Range	-40°F to +185°F -40°C to +85°C
Battery	User-replaceable Lithium

Temperature Specifications	
Sensor	10K NTC Thermistor
Range	-13 to 185°F (-25 to 85°C)
Response Time	25 mins to 90% FSD in moving air
Accuracy	0.01°C or better

Trigger Start Magnet

A magnet for starting loggers that have been set up for a trigger start.

Trigger Start Magnet **H-2736.3**
Ship wt. 0.1lbs. (.04kg)

Stevenson-type Screen Enclosure

The Stevenson-type screen, or instrument shelter, shields data loggers against precipitation and direct heat radiation from outside sources, while still allowing air to circulate freely around it.

Stevenson-type Screen Enclosure **H-2736.4**
Ship wt. 1.5lbs. (.68kg)

Specimen Grinding Machine

ASTM standards D4543, C31, C39, C192, and C617 This automatic cylinder end grinder quickly grinds specimen ends plane and parallel prior to compression tests. This unit can grind three (3) 4" x 8" (100mm x 200mm), (3) 3" x 6" (76mm x 150mm) or two (2) 6" x 12" (150mm x 300mm) test cylinders simultaneously. The adapter for 4" x 8" (100mm x 200mm) and 3" x 6" (76mm x 150mm) test cylinders is easy to install on the table and requires no assembly. The machine is mounted on wheels for easy moving. Safe access to components allows for easy maintenance. The grinder's aluminum frame and stainless steel exterior ensure both resistance to corrosion and light weight.

H-2962 Specifications	
Specimen Size	6" x 12" (152 x 305mm) cylinder 4" x 8" (102 x 203mm) cylinder 3" x 6" (75 x 150mm) cylinder
Cut Precision	Plane and Parallel to within 0.002" (.05 mm)
Cutting Feed	8.5" (215mm)
Cutting Head:	13" (330mm)
Cutting Speed:	1400 rpm
Power Supply	120V, 50/60Hz 1ph 10 amps 220V, 50/60Hz 1ph 10 amps
Dimensions	24" x 37" x 52.5" (W x D x H) (610 x 940 x 1334mm)





HC-2979.2F.3
HC-2979.5F.3

- Grinds planeness and parallelism of cylinder ends
- Planeness accuracy: 0.002" (0.05mm)
- Grinding time 90 to 120 seconds per end
- Ready to use for 6" x 12" (150mm x 300mm), 4" x 8" (100mm x 200mm), 3" x 6" (76mm x 150mm) and 2" x 4" (50mm x 100mm) test cylinders
- Selectable advance speed
- Automatic, bi-directional radial displacement of table
- Aluminum frame, stainless steel outer shell
- Splash guard reduces user exposure to water and dust
- Easy access to water inlet and outlet
- Diamond-grinding wheel included

Specimen Grinder, 120V, 50/60Hz H-2962
Specimen Grinder, 240V, 50/60Hz, 1Ph H-2962.4F
Ship wt. 904lbs. (410kg)

Grinding Wheel, Replacement for H-2962

Replacement grinding wheel for the H-2962 Specimen Grinding Machine.

Grinding Wheel, Replacement H-2962.1
Ship wt. 25 lb (11.3kg)

Automatic Grinding Machine

ASTM D4543, C31, C39, C192, and C617

This automatic grinding machine is designed to grind and polish concrete cubes, cylinders, blocks, natural stones, rocks and ceramic materials. Specimens are easily fixed to the table with the use of the proper locking stirrups. See chart for specimen types and sizes.

This unit features a grinding head is equipped with an end-of-stroke system, which allows full automatic displacement in both directions without activating the electric pushbutton. This unit is designed for the simultaneous grinding of varied types of specimens, including concrete cube, cylinders, blocks and rock. It offers the motorized radial displacement of the abrasive head in both directions.

The revolving abrasive head is radially and alternately moved in both directions through an electric motor actuated by push button. The column is completely protected against abrasive dust. The grinding head can be lowered vertically in 0.05mm graduations by using the top handwheel. The machine is made from rugged plate and is supplied

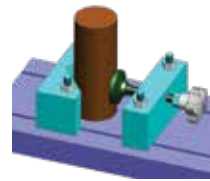
HC-2979 Specifications	
Specimen Size	6" x 12" (152 x 305mm) cylinder 4" x 8" (102 x 203mm) cylinder 3" x 6" (75 x 150mm) cylinder 6" Cubes 100mm, 150mm, 200mm Cube 390 x 250mm Block
Table Dims.	30.5" x 11.0" (775 x 280mm)
Head Stroke	8.5" (215mm)
Wheel Dia.	13" (330mm)
Wheel Speed	1400rpm
Power Supply	400V, 3ph 4500W
Dimensions	48" x 42.5" x 68" (W x D x H) (1220 x 1080 x 1730mm)

complete with: control panel; coolant/decantation tank for water and emulsifying oil; motor pump; set of standard abrasive sectors; safety chip guard that automatically stops the machine if it is removed. Both models are 3-Phase electric.

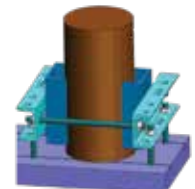
Specimen Grinder, 240V, 60Hz-3PH HC-2979.2F.3
Specimen Grinder, 240V, 50Hz-3PH HC-2979.5F.3
Ship wt. 904lbs. (410kg)

NOTES

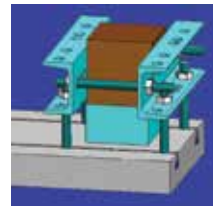
HC-2979 Grinding Machine includes Standard Abrasive Grinding Sections, but require the separate purchase of specimen locking devices, not included. Choose between the Fast Locking Device or the appropriate Locking Stirrups for your operation.



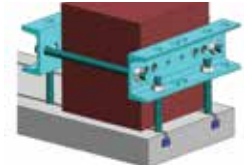
HC-2980.1



HC-2980.2, HC-2980.3



HC-2980.3



HC-2980.4

Standard Abrasive Grinding Sections

Standard abrasive grinding sections provide excellent grinding capabilities and long life. Sold as a set of 8.

Standard Abrasive Grinding Sections HC-2980.5
Ship wt. 20 lb (9.1kg)

Diamond Grinding Sections

Diamond grinding sections provide enhanced grinding capabilities and long life. Sold individually, 8 required.

Diamond Grinding Sections HC-2980.6
Ship wt. 20 lb (9.1kg)

Fast Locking Device

Fast locking device for use with Cubes 150 and 200mm; Cylinders 100 to 160mm. Each device accepts only one specimen. It is possible to grind (1) 200mm cube, (2) 150mm cubes or (2) cylinders.

Fast Locking Device HC-2980.1
Ship wt. 25 lb (11.3kg)

Locking Stirrups, Cylinders

For use with cylinder specimens, 4" x 8" and 6" x 12", 100mm, 150mm. Complete with 60mm high spacer. **Note: must be used in conjunction with HC-2980.3 for proper operation, order separately.**

Locking Stirrups, Cylinders HC-2980.2
Ship wt. 25 lb (11.3kg)

Locking Stirrups, Cubes

For use with cube specimens, 100mm, 150mm and 200mm. Complete with 60mm high spacer.

Locking Stirrups, Cubes HC-2980.3
Ship wt. 25 lb (11.3kg)

Locking Stirrups, Block

For use with block specimens 390mm x 250mm.

Locking Stirrups, Block HC-2980.4
Ship wt. 25 lb (11.3kg)



HC-2931.2F



HC-2930.36F

Shown with optional adjustable stand (sold separately).

Masonry Saw, 8" Cut

Saw for use in cutting cylinders and blocks. Blade capacity is 20" (508mm), which allows a cutting depth of 8" (203mm). Unit features a 5hp, 230 60hz 1ph Baldor motor. The saw has only two pivot points for reduced saw maintenance and longer diamond blade life. The cutting head pivots on bearings, which are sealed and lubricated for life requiring no greasing. Its ergonomically designed steel handle with molded grip bolts securely into place and the Sta-level® blade guard keeps the blade guard parallel to the cutting table for accurate cuts. Height can be controlled with a convenient crank control on foot pedal.

Blade not included, order separately.

- High torque, continuous duty dual capacitor motors make efficient use of horsepower and reduce cutting time.
- Capable of cutting 8" x 8" x 16" block with a 20" blade in one pass or 10" block with a 24" blade in one pass. (For 24" blade, please inquire)
- Height can be controlled with a convenient crank control or foot pedal.
- The Sta-level® blade guard keeps the blade guard parallel to the cutting table for accurate cuts.

HC-2931 Specifications

Blade Dia.	20" (508mm)
Cut Depth	8" (203mm)
Motor	5hp (3.7)
Power Supply	230V, 1ph
Dimensions	47.75" x 22" x 57.5" (1213 x 559 x 1461mm)
Weight	361 lbs (162kg)

Masonry Saw, 230V, 60Hz

HC-2931.2F

Ship wt. 361lbs. (162kg)

Masonry Saw, 5" Cut

Saw for use in cutting concrete and mortar cylinders and blocks. Blade capacity is 14" (350mm), which allows a cutting depth of 5" (127mm). Perfect for cutting 4" x 8" cylinders. Unit features a 1.5hp, 115/208-230 60hz 1ph Baldor motor. The saw has only two pivot points for reduced saw maintenance and longer diamond blade life. The cutting head pivots on bearings, which are sealed and lubricated for life requiring no greasing. Its ergonomically designed steel handle with molded grip bolts securely into place and the Sta-level® blade guard keeps the blade guard parallel to the cutting table for accurate cuts. Height can be controlled with a convenient crank control on foot pedal. There is a switch that needs to be set to change from 120V to 230V operation. **Includes 14" Vari-Cut Turbo blade.**

- Equipped with a patented water management system that keeps the work piece dry and the workplace clean.
- The double splash guard decreases water spray behind the saw and makes cleaning easier.
- Head rotates to easily cut 22.5 degree and 45 degree bevel cuts.
- It is easy for two people to move the saw thanks to integrated telescopic handles.
- Sta-level® blade guard keeps the blade guard parallel to the cutting table for accurate cuts.

HC-2930 Specifications

Blade Dia.	14" (356mm)
Cut Depth	5" (127mm)
Motor	1.5hp (1.1)
Power Supply	120/230V, 1ph
Dimensions	39.8" x 26.4" x 25.6" (1010 x 670 x 650mm)
Weight	131 lbs (59kg)

Masonry Saw, 120/230V, 60Hz

HC-2930.36F

Ship wt. 171lbs. (77kg)

CONCRETE



HC-2933, HC-2935



HC-2932, HC-2934

MASONRY SAW ACCESSORIES

Masonry Saw Elite Cut (Silent Core) Blade

High-quality, fast cutting, silent core blade designed for abrasive, lightweight block. Designed for dry or wet cutting. The segment height is .500" (400" diamond depth and 1.00" segment base).

Masonry Blade, 20" (508mm) x .140" x 1" HC-2933

Masonry Blade, 14" (350mm) x .125" x 1" HC-2935



Ship wt. 15lbs. (6.8kg)

Masonry Saw Blade, Elite Cut

High-quality, fast cutting, blade designed for abrasive, lightweight block. Designed for dry or wet cutting. The segment height is .500" (400" diamond depth and 1.00" segment base).

Masonry Blade, 20" (508mm) x .140" x 1" HC-2932

Masonry Blade, 14" (350mm) x .125" x 1" HC-2934



Ship wt. 15lbs. (6.8kg)

Portable Masonry Saw Stand

Portable, adjustable stand for HC-2871 Masonry Saw. Stand is easy to set up and take down and is adjustable to several heights for user comfort. It easily folds down to serve as a dolly to transport or store saw. Folded dimensions are: 22" x 42" x 12" (559 x 1067 x 305mm)

Portable Masonry Saw Stand

HC-2930.1



Ship wt. 40lbs. (18.1kg)



Digital Caliper, 12"

ASTM C174

This 0-12" (0-305mm) digital caliper has 3.5" long jaw blades for use in measuring cylinders. It features a large, easy-to-read digital display, ergonomic thumb rest; rolling thumb wheel; hold feature, Inch/metric conversion, preset mode now includes offset for inside jaws. It provides digital readout to .0005"/0.01mm for error-free reading and accuracy.

Digital Caliper **HC-2819.12**
 Digital Caliper, Certified **HC-2819.12C**
Ship wt. 3lbs. 1.3kg)

Digital Caliper, 20"

ASTM C174

This 0-20" (0-508mm) digital caliper has 5.9" long jaw blades for use in measuring cylinders. It features a large, easy-to-read LCD digit, rolling thumb wheel; plus control buttons for zero, on/off and inch/mm functions. It provides digital readout to .0005"/0.01mm for error-free reading and an accuracy of ±.0025".

Digital Caliper **HC-2817**
Ship wt. 8lbs. (3.6kg)

Core Length Measuring Device

ASTM C174

For determining concrete core lengths. Device accommodates either 4" or 6" diameter specimens up to 24" long. Allows measurements to be taken at the center of the specimen's upper end, as well as eight equidistant points along the circumference. Measuring rod has graduations on one end of 0.10" (2.5mm) apart and the other end is every 2mm.

Core Length Measuring Device **H-2939**
Ship wt. 10.4lbs. (0.1kg)

Verification Cylinder

Used with H-2939 Core Length Measuring Device to verify cylinder lengths.

Verification Cylinder, 4" x 8" **H-2939.40**
 Verification Cylinder, 6" x 12" **H-2939.60**
Ship wt. 2.5lbs (1.1kg)

Precision Diameter Tape

ASTM D2166, D2850, D4767, BS1377:8

Diameter tapes provide a fast, reliable method for measuring the diameter of concrete, soil and asphalt cores and cylinders. One reading provides round and out-of-round diameters within an accuracy of .001" (.03mm) by means of special graduations and vernier scale. All tapes are made from a stainless alloy and are precision engraved to ensure accuracy. Tape has diameter range of 2" to 12" (50 to 300mm). Includes certificate of calibration. Tapes are calibrated and include a NIST-traceable certification.

Core Length Measuring Device **H-2937**
 Core Length Measuring Device, Metric **H-2937M**
Ship wt. 0.6lbs. (.2kg)

Concrete Micrometer

Designed for accurately measuring diameters of concrete cylinders, micrometer has spindles of hardened steel. Thimble and sleeve sections are chrome finish and have black graduations and numbers. The H-2938 has a range of 5.5" to 6.5" and the H-2938M has a range of 150-175mm. Readings can be made to hundredths or thousandths in decimals.

Concrete Micrometer **H-2938**
 Concrete Micrometer **H-2938M**
Ship wt. 3.8lbs. (1.7kg)

Perpendicular Verification Devices

ASTM C39

PVDs (Perpendicular Verification Devices) are used to quickly and accurately verify cylinder perpendicularity per ASTM C39 when using Econ-o-Pad Capping Pad Sets with test cylinders.

Both the 4" x 8" and the 6" x 12" devices are configured to rest against the test cylinder while avoiding contact with your ASTM-compliant top and bottom retaining rings. By resting the base of the device against the lower platen of the compression machine while having the vertical edge against the test cylinder, you can use the included Gap Measuring Tool to verify that there are no gaps between the cylinder and the device indicating the compression test complies with ASTM C39 and can proceed.

Also available is a device designed for use with a 4" high x 7.5" round or square spacer for use when your operation uses this type of spacer in the compression machine.

Perp. Verification Device, 4" x 8" **H-2933.4NS**
 Perp. Verification Device, for 4" spacer **H-2933.4**
 Perp. Verification Device, 6" x 12" **H-2933.6**
Ship wt. 0.6lbs. (.2kg)



H-2946C



H-2925A



H-2952

Econ-o-Cap Capping Pad Sets

ASTM C1231; AASHTO T22

Econ-o-caps provide a highly-efficient and reusable method for capping concrete cylinders for use in compression testing. Econ-o-caps eliminate the time and labor expenses associated with capping compounds. Sets are comprised of precision-machined, high-alloy steel retaining caps, which hold tough, elastomeric material pads. These pads can be assembled quickly and provide a fast end efficient method for distributing the test load uniformly across the cylinder, smoothing out any irregularities and ensuring consistent breaks. The steel retaining rings can be used for years with care and the pads are reusable up to 100 times or more with the aid of qualification testing of the pad's durometer. Bearing surfaces of the retaining rings is plane within 0.002in (0.05mm). Sets include (2) rings and (2) pads.

Econ-o-Cap Sets	Ship wt.	Part #
2" Econ-o-Cap Set	4.3lbs. (2kg)	H-2946A
3" Econ-o-Cap Set	10lbs. (4.5kg)	H-2946B
4" Econ-o-Cap Set	10.5lbs. (4.8kg)	H-2946C
6" Econ-o-Cap Set	20lbs. (9.1kg)	H-2946D

Econ-o-Cap Capping Pad Sets [see chart above](#)

[see chart above](#)

Econ-o-Cap Capping Rings

ASTM C1231; AASHTO T22

Single Cylinder Rings, sold individually.

Econ-o-Cap Ring	Ship wt.	Part #
2" Econ-o-Cap Ring	0.2lbs. (.09kg)	H-2946AR
3" Econ-o-Cap Ring	4lbs. (1.8kg)	H-2946BR
4" Econ-o-Cap Ring	5lbs. (2.7kg)	H-2946CR
6" Econ-o-Cap Ring	10lbs. (4.5kg)	H-2946DR

Econ-o-Cap Capping Rings [see chart above](#)

[see chart above](#)

Econ-o-Cap Capping Pads

ASTM C1231; AASHTO T22

Single cylinder pads of specific size and durometer, sold individually. Durometer ranges:

- 50 durometer: 1500 to 2200 psi (10.3 to 15.1MPa)
- 60 durometer: 2500 to 7000 psi (17.2 to 48.2MPa)
- 70 durometer: 4000 to 12000 psi (27.5 to 82.7MPa)

Single Econ-o-Cap Pad	Part #
2" Pad, 60 Durometer	H-2946ACP60
2" Pad, 70 Durometer	H-2946ACP70
3" Pad, 50 Durometer	H-2946BCP50
3" Pad, 60 Durometer	H-2946BCP60
3" Pad, 70 Durometer	H-2946BCP70
4" Pad, 50 Durometer	H-2946CCP50
4" Pad, 60 Durometer	H-2946CCP60
4" Pad, 70 Durometer	H-2946CCP70
6.125" Pad, 50 Durometer	H-2946DCP50
6.125" Pad, 60 Durometer	H-2946DCP60
6.125" Pad, 70 Durometer	H-2946DCP70

Econ-o-Cap Capping Pads [see chart above](#)

[see chart above](#)

Vertical Cylinder Capper

ASTM C31, C39, C192, C617; AASHTO T22, T23, T126, T231

These heavy-duty vertical cylinder cappers are used in applying capping compound to concrete test cylinders in preparation for compression tests. The base and capping plate are machined from cold-rolled steel and the capping plate is finish-ground within .002" (.05mm) planeness. The cylinder guide is a rigid, one-piece standard, which is machined from high-strength, cast-aluminum alloy.

- 2" x 4" (51 x 102mm) Cylinders H-2925A
- 3" x 6" (76 x 152mm) Cylinders H-2925B
- 4" x 8" (102 x 203mm) Cylinders H-2925C

Ship wt. 18lbs. (8.1kg)

Capping Plates

Replacement capping and base plate assemblies for H-2925 series vertical cylinder cappers.

- 2" x 4" (51 x 102mm) Cylinders H-2925A.1
- 3" x 6" (76 x 152mm) Cylinders H-2925B.1
- 4" x 8" (102 x 203mm) Cylinders H-2925C.1

Ship wt. 10.7lbs. (4.8kg)

Vertical Cylinder Capper

ASTM C31, C39, C192, C617; AASHTO T22, T23, T126, T231

This heavy-duty vertical cylinder capper is used in applying capping compound to 6" x 12" (152 x 305mm) concrete test cylinders in preparation for compression tests. The vertical capper simplifies the capping process by ensuring the plane, end surfaces are at right angles to the axis of the cylinder. The upright is used as a guide for positioning the cylinder. Molten capping compound is poured into the mold (plate); then the cylinder is placed on the capping material. After the compound is set, the capped cylinder is removed for testing. All types of capping compounds can be used with this apparatus. Capping plate is machined and finish-ground from cold-rolled steel to within .002" (.05mm) planeness. Thickness of the capping plate is 0.75" (19mm), to allow regrinding and refinishing after considerable usage should the plate become gouged. Capping plates are round, allowing circular rotation during use that results in uniform wearing down of contacting surfaces for maximum length of service. The frame is machined from high-strength aluminum alloy.

Vertical Cylinder Capper, 6" x 12" H-2952

Ship wt. 25.7lbs. (11.3kg)

Capping Plate

Replacement ring and bottom plate for H-2952 vertical cylinder capper.

Capping Plate, 6" x 12" H-2952.3

Ship wt. 16lbs. (7.3kg)





H-2959



H-2953

Cylinder Capping Kit

ASTM C31, C39, C192, C617; AASHTO T22, T23, T126, T231

Kit provides the basic components for cylinder capping and includes: (1) H-2945 cylinder carrier, (1) H-2952 vertical cylinder capper, (1) H-2953 compound melting pot, (1) H-2959 capping compound and (1) H-2958 ladle. See individual components for descriptions.

Cylinder Capping Kit, 120V 60Hz **H-2951**
 Cylinder Capping Kit, 220V 50/60Hz **H-2951.4F**
 Ship wt. 130lbs. (58.7kg)

Capping Compound, Flake-style

ASTM C307, C321, C386, C579, C617, D71

50 lb bag of Sauereisen No. 600 sulfur-based, flake-form capping compound melts and sets within minutes. Silica-filled compound has 150 psi bond strength, 9000 psi compressive strength and 605 psi tensile strength. Compound pours between 265 and 290°F (129 to 143°C). Overheated material's viscosity is reinstated by decreasing temperature to 290°F.

Capping Compound, Flake-style **H-2959**
 Ship wt. 52lbs. (24kg)

Capping ladle

Stainless steel ladle with 4" (102mm) dia. bowl is used in transferring capping compound from melting pot to capping fixture.

Capping Ladle **H-2958**
 Ship wt. 1.3lb (0.6kg)

Compound Melting Pots

ASTM C617; AASHTO T231

Designed for melting capping compound, paraffin and similar materials; compound melting pots feature an adjustable thermostat to deliver close temperature control automatically from 100° to 320°F (37.8 to 160°C). Includes cover, pilot light, 6' (1.8m) 3-conductor grounded cord set. Inner pot is cast aluminum encased in a metal jacket with fiberglass and air insulation, keeping heat loss to a minimum. Replaceable heating elements are securely clamped to the bottom and sides of the crucible for even heat distribution.

Capacity	Electric	Amps	Ship wt.	Model
4 qt.	120V 60Hz	6	16.8 lbs	H-2953
3.8L	220V 50/60Hz	3	18 kg	H-2953.4F
8 qt.	120V 60Hz	10	20 lbs	H-2954
7.6L	220V 50/60Hz	5	29 lbs	H-2954.4F
12 qt.	120V 60Hz	11	31 lbs	H-2955
11.4L	220V 50/60Hz	5.5	31.1 lbs	H-2955.4F
20 qt.	120V 60Hz	12	48 lbs	H-2948
19L	220V 50/60Hz	6	43.6 lbs	H-2948.4F
28 qt.	120V 60Hz	15	48 lbs	H-2949
26.5L	220V 50/60Hz	7.5	48 lbs	H-2949.4F

Compound Melting Pots **see chart above**
 Ship wt. **see chart above**



HCM-0030iH

Shown with Optional Flexural Attachment for Beams.



HCM-1000iH



HCM-2500iHA

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-0119B for beam testing
- Choice of two digital controllers and two digital indicators (see page 186-187)
- Optional test platens and accessories available on pages 191-192
- Available as an auxiliary frame design with no controller or pump; includes mounting stand, load frame selector valve and overload protection. Order: HCM-0030.
- **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 188-189 for models and ordering information.
HCM-0030 Series Compression Machines
 CE Ship wt. 460 lbs. (208kg)

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 controllers and two digital indicators (see page 186-187)
 - 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 188-189 for models and ordering information.
HCM-1000 Series Compression Machines
 CE Ship wt. 655lbs. (297kg)

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 controllers and two digital indicators (see page 186-187)
- Optional test platens and accessories available on pages 191-192
- 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 188-189 for models and ordering information.
HCM-2500 Series Compression Machines
 CE Ship wt. 885 lbs. (401kg)

NOTES

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-3000iH

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 ±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 controllers and two digital indicators (see page 186-187)
- Optional test platens and accessories available on pages 191-192
- **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 188-189 for models and ordering information.
HCM-3000 Series Compression Machines
 CE Ship wt. 1078 lbs. (488kg)



HCM-4000iHA

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 ±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 controllers and two digital indicators (see page 186-187)
- Optional test platens and accessories available on pages 191-192
- 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 188-189 for models and ordering information.
HCM-4000 Series Compression Machines
 CE Ship wt. 1700 lbs. (771kg)



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 ±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 controllers and two digital indicators (see page 186-187)
- Optional test platens and accessories available on pages 191-192
- 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 188-189 for models and ordering information.
HCM-5000 Series Compression Machines
 CE Ship wt. 2500 lbs. (1134kg)

NOTES

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-5080



HCM-5070

HCM-5080 and HCM-5070 Automatic Controllers

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

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

Humboldt's HCM-5070 automatic controller is a console version of the HCM-5080 automatic controller and both share the same features. 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
 Ship wt. 180lbs. (82kg)

Humboldt Auto Console Controller HCM-5070
 Humboldt Auto Console Controller HCM-5070.4F
 Ship wt. 200lbs. (91kg)

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, 1gal. (2gal. required)
HCM-HP4014	Frame Selector Valve





Upgrade your existing compression frame

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 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.

Upgrade/Retrofit 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

HCM-5090 Digital Indicator

ASTM C39, ASTM C78, ASTM C293, ASTM C469, ASTM C496, ASTM C1019, ASTM 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. 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

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 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.

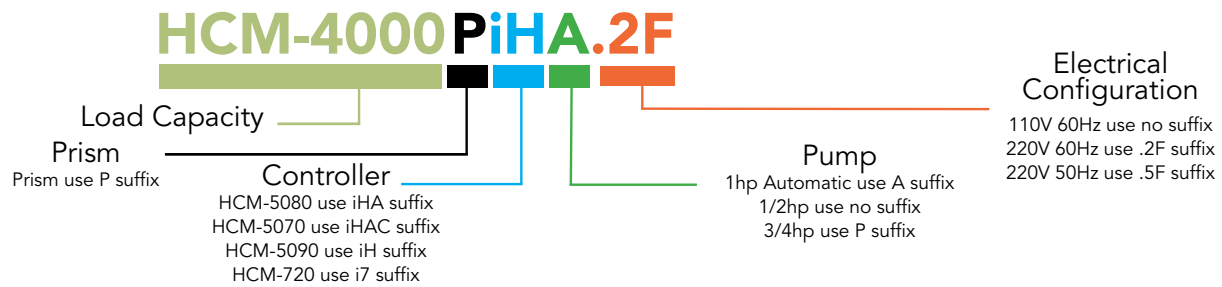
The indicator will store up to 600 tests in memory, and transfer them directly into a word document via the optional USB Able Cable, or print them on an optional serial printer. Stored test data includes; test date and time, sample ID number, peak load and average rate of load. The average rate of load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



Concrete Compression Machine Ordering Matrix



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 Prism Series, 500,000 (2,224kN)	HCM-5000P

Compression Machine Capacities in PSI												
Load Capacity	Model	Cylinder			Cube			Brick	Beam		Block	
		3" x 6"	4" x 8"	6" x 12"	2"	6"	8"	2" x 4" x 8"	6" x 6" x 20"	4" x 4" x 14"	Single	Prism
30000	HCM-0030	3395	1910	849	50000	5556	3125	750	2222	3333	NA	NA
100000	HCM-1000	11318	6366	2829	20000	2222	1250	NA	7407	11111	NA	NA
250000	HCM-2500	28294	15915	7074	60000	6667	3750	6250	18519	27778	NA	NA
300000	HCM-3000	33953	19099	8488	80000	8889	5000	7500	22222	33333	NA	NA
400000	HCM-4000	45271	25465	11318	100000	11111	6250	10000	29630	44444	NA	NA
500000	HCM-5000	56588	31831	14147	6000	667	375	12500	37037	55556	3125	3125



Concrete Compression Machine Ordering Matrix

HCM-0030 Series: 30,000 lbs. (133.5 kN)			
Controller	Pump Size	Electrical	Order Number
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-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

HCM-5000 Series: 500,000 lbs. (2,224 kN)			
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

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-4000 Series: 400,000 lbs. (1,780 kN)			
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

HCM-5000P Masonry Prism Series: 500,000 lbs. (2,224 kN)			
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	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

Compression Machine 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)





shown with optional Platen Carrier Bracket

HCM-5000PiHP



HCM-0802



HCM-0190SP

Masonry Series Compression Machines

ASTM C39, C140, C1314, E4, AASHTO T22

Masonry series machines are available in a single capacity of 500,000 (2,224kN) with a testing range from 1 to 100% of machine capacity, with an accuracy of ±0.5% of indicated load. These compression testing machines feature two-block masonry prism configuration of full-sized blocks up to 12" (304 mm) wide.

- Tests blocks, masonry prisms, pavers and retaining wall units
- 500,000 (2,224kN) testing range with accuracy of ±0.5% of indicated load
- Machines up to 800,000 (3,559kN) are also available, please inquire.
- 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 prism machines, see pages 191-192. See Page 189 for models and ordering information.

HCM-5000P Series Prism Machines



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

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)

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)





HCM-0101



HCM-0113



HCM-0112A



HCM-0107P



HCM-0119B

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. These beam attachments can be used with 4" x 4" x 16" and 6" x 6" x 18" beams.

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

Flexural Beam Attachment

see chart above
Ship wt. 134 lbs. (60.7kg)



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

see chart above

HCM-0120	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

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-0639	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-0639	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

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)

Feeler Gauge

Feeler gauges are used for precise alignment of the base and platen.

Feeler Gauge, .001 x 12"

HCM-CA0481

Feeler Gauge Set

HCM-CA0485

Ship wt. 6lbs. (2.7kg)

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.

Selector Valve

HCM-HP4014

Ship wt. 7lbs. (3.2kg)

AbleCable (i7 Digital Indicator)

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)

Compression Machine 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)





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

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 page 187. **If you are interested in an automatic solution upgrade, you should look at the HCM-5080 and HCM-5070 automatic controllers on page 186.**



HCM-5090.3F

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

Strain Transducer

ASTM C469

Strain transducer: 0.4" (10mm)

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

Pressure Transducer

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

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



HM-2310.04



HCM-4177

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 mini-loggers, see right.

Compressometer-Extensometers see chart above
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 mini-loggers, see right.

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



Humboldt provides repair and calibration services for concrete rebound hammers, Call: 1.800.544.7220

Concrete Rebound Hammers

Concrete rebound hammers are used to determine in-place strength of concrete. All these models accurately measure compressive strength, which directly determines the load-bearing capacity and durability of concrete structures. All models also include a grinding stone, carrying case and instruction booklet with conversion charts.

Humboldt Rebound Hammer

ASTM C805, D5873; BS 1881: Part 202; ISO/DIS8045; ENV 206; IGJ/T 23-2001

Humboldt's concrete rebound hammer provides a reliable, yet economical, alternative to the original Schmidt hammer. It is designed for testing concrete 4" (100mm) or more in thickness with a maximum particle size less than or equal to 1.25" (32mm), providing a quick and simple test for obtaining an immediate indication of concrete strength in various parts of a structure. The Humboldt rebound hammer covers a compressive strength range of 1,450 to 9,000 psi (10 to 62 MPa). To operate, the rebound hammer is pressed against the concrete structure and the rebound values are displayed on a mechanical sliding scale. These values can then be correlated to compressive strength by using the conversion table chart affixed to the hammer. It includes a grinding stone, a cloth carrying case, instruction booklet and conversion charts.

Humboldt Test Hammer, Type N H-2987H
 Ship wt. 4lbs. (1.8kg)

Schmidt Hammer, Type N

ASTM C805, D5873; BS 1881: Part 202; ISO/DIS8045; ENV 206; IGJ/T 23-2001

The original Schmidt® hammer, type N, is designed for non-destructive testing of concrete items 4" (100mm) or more in thickness, or concrete with a maximum particle size less than or equal to 1.25" (32mm). It is designed for testing concrete within a compressive strength range of 1,450 to 10,152 psi (10 to 70 N/mm²) and impact energy of the test is 1.6 ft-lbs (2.207 Nm). The (type N) Schmidt hammer is pressed against the concrete structure and the rebound values are displayed on a mechanical

sliding scale. These values can then be correlated to compressive strength by using the conversion table chart affixed to the hammer. The original Schmidt hammer is known for its durability and accuracy.

Schmidt Hammer, Type N H-2975
Schmidt Hammer, Type N (N/mm²) H-2975M
 Ship wt. 4.7lbs. (2.1kg)

Schmidt Hammer, Type L

The H-2975L hammer is designed for testing thin-walled structural components with a thickness of less than 4" (100mm) or rock cores. This hammer features an impact of 0.74 Nm, which is 1/3 less energy than type N hammers and uses a N/mm² scale.

Schmidt Hammer, Type L (N/mm²) H-2975LM
 Ship wt. 4.8lbs. (2.2kg)

Original Schmidt OS8000

ASTM C805, D5873; BS 1881: Part 202; ISO/DIS8045; ENV 206; IGJ/T 23-2001

The Original Schmidt OS8000 is the Original concrete test hammer, now digitally redefined - and it is also the most advanced R-value hammer ever made, with unmatched performance, ease of use, and versatility, as well as reporting on the go thanks to its mobile app. This hammer provides both analog and digital functions. This allows you to take readings using the integral scale or use the digital functions, which offer several enhanced capabilities. It is designed for testing concrete within a compressive strength range of 1,450 to 10,152 psi (10 to 70 N/mm²) and impact energy of the test is 1.6 ft-lbs (2.207 Nm). The Schmidt OS8000 is pressed against the concrete structure and the rebound values are displayed on a mechanical sliding scale, as well as the digital readout on the top of the hammer.

The hammer's digital capabilities increase productivity by providing faster operation and great improvements of the time needed for taking readings. A free, mobile App is available, which functions via bluetooth technology on any compatible Apple® iOS device (please see App Store for

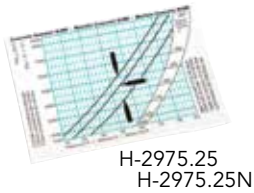
details) or any supported Android™ device (see Google Play Store for details). The App provides geolocation capabilities and access to a cloud-based webtool. This web-based reporting capability provides you and others at different locations to access report data. It provides extensive reporting abilities, including custom curves and ones to ASTM/EN standards. Reports and data are available in both .pdf or .csv file formats for use by computers. A bluetooth printer is also available for on-site printing of mobile App reports and the new Schmidt Live also provides audio output of results, if desired. The Schmidt Live runs on AAA batteries.

Schmidt OS8000, Type N with App H-2994
Schmidt OS8000, Type N with Printer H-2994P
Schmidt OS8000, Type L with App H-2992
Schmidt OS8000, Type L with Printer H-2992P
 Ship wt. 4.7lbs. (2.1kg)

Silver Schmidt OS8200

ASTM C805, D5873; BS 1881: Part 202; ISO/DIS8045; ENV 206; IGJ/T 23-2001

Silver Schmidt OS8200 is as accurate, reliable, and versatile as ever—and now, connected, thanks to its optical measurement technology delivering Q-value measurements, paired with digital productivity features and user-friendly mobile apps. The Proceq SilverSchmidt OS8200 test hammer has been redesigned to provide unmatched accuracy, repeatability and easy, intuitive operation. The Schmidt OS8200 features quicker and more accurate testing while addressing the previous insufficiencies of the traditional hammers. With the Schmidt OS8200 impact direction no longer has an impact on values; values are not affected by internal friction of the hammer operation, and, loss of accuracy because of seal problems is not an issue. In use, the Silver Schmidt OS8200 eliminates cocking the hammer for each blow and recording the results, the OS8200 allows you to do all your test blows in rapid succession, while it records the results. These results can then be reviewed. Intuitive User Interface is language independent through the use of easy-to-understand icons.



H-2975.25
H-2975.25N



H-2975.27



H-2972



REPAIR

Humboldt provides repair and calibration services for concrete rebound hammers, Call: 1.800.544.7220.



H-2987H.7

The interface menu structure is similar to a mobile phone's. Practically every command can be activated either directly or via no more than 2 consecutive steps. All data is automatically saved and may be reviewed via the data list. The memory capacity is dependent of the length of tests in a series, but roughly 400 series with 10 readings each can be accomplished with the Silver Schmidt. A free, mobile App is available, which functions via blue-tooth technology on any compatible Apple® iOS device (please see App Store for details) or any supported Android™ device (see Google Play Store for details). The Silver Schmidt hammer includes these standard accessories: battery charger with USB cable, data carrier with software, carrying strap, grinding stone, chalk, documentation and carrying bag. Software provided for performing firmware upgrades and selecting presets only.

- Schmidt OS8200, Type N with App HC-2720
 - Schmidt OS8200, Type N with Printer HC-2720P
 - Schmidt OS8200, Type L with App HC-2721
 - Schmidt OS8200, Type L with Printer HC-2721P
- Ship wt. 4.7lbs. (2.1kg)

Grinding Stone for Rebound Hammers

Replacement grinding stone for rebound hammers.

- Grinding Stone H-2975.27
- Ship wt. 0.9lbs. (0.4kg)

Calibration Anvil for Rebound Hammers

ASTM C805, D5873; BS 1881: Part 202; ISO/DIS8045; ENV 206; IG/JT 23-2001

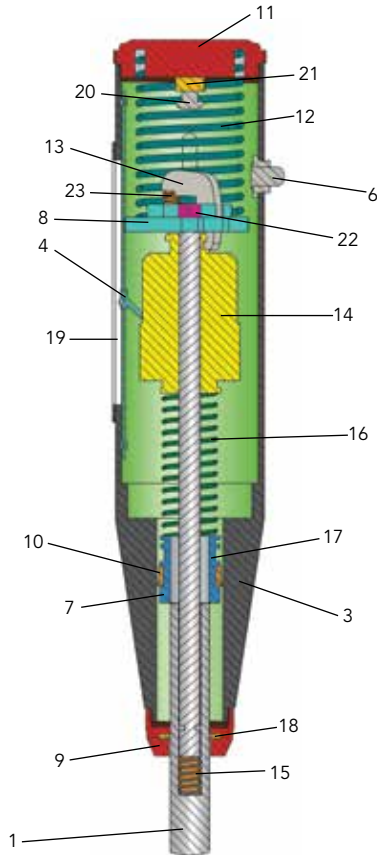
Calibration anvil ensures continued test accuracy. For use with all test hammers. Hammers should be periodically checked to determine correct performance.

- Calibration Anvil H-2972
- Ship wt. 58lbs. (26.3kg)

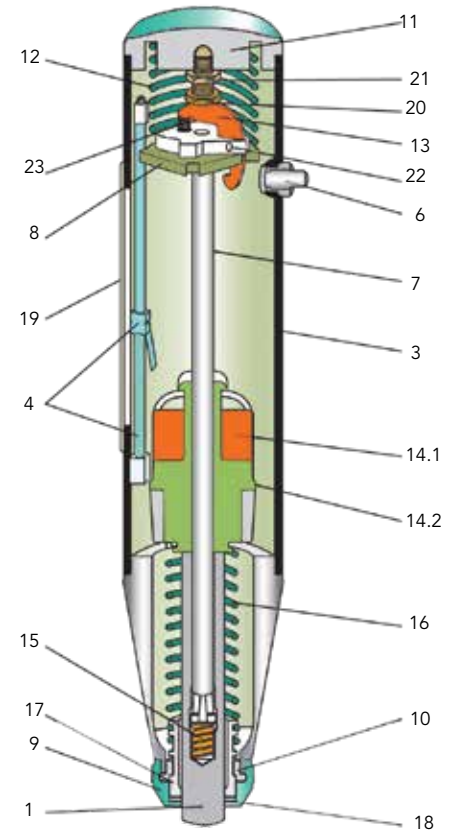
Conversion Chart Labels

Replacement conversion chart for rebound hammers.

- Conversion Chart Label (psi/MPa) H-2987H.7
 - Conversion Chart Label (psi) H-2975.25
 - Conversion Chart Label (N/mm2) H-2975.25N
- Ship wt. 0.5lbs. (0.22kg)



H-2987H Replacement Parts		
Key	Description	Part#
1	Impact Plunger	H-2987.1
3	Housing, complete	H-2987.3
4	Rider with Guide Rod	H-2987.4
6	Push-button, complete	H-2987.6
7	Hammer Guide Bar	H-2987.7
8	Guide Disk	H-2987.8
9	Cap	H-2987.9
10	Two-part Ring	H-2987.10
11	Rear Cover	H-2987.11
12	Compression Spring	H-2987.12
13	Pawl	H-2987.13
14	Hammer Mass	H-2987.14
15	Retaining Spring	H-2987.15
16	Impact Spring	H-2987.16
17	Guide Sleeve	H-2987.17
18	Felt Washer	H-2987.18
19	Acrylic Window	H-2987.19
20	Trip Screw	H-2987.20
21	Lock Nut	H-2987.21
22	Pin	H-2987.22
23	Pawl Spring	H-2987.23



H-2975 Replacement Parts		
Key	Description	Part#
1	Impact Plunger	H-2975.1
3	Housing, complete	H-2975.3
4	Rider with Guide Rod	H-2975.4
6	Push-button, complete	H-2975.6
7	Hammer Guide Bar	H-2975.7
8	Guide Disk	H-2975.8
9	Cap	H-2975.9
10	Two-part Ring	H-2975.10
11	Rear Cover	H-2975.11
12	Compression Spring	H-2975.12
13	Pawl	H-2975.13
14	Hammer Mass	H-2975.14
15	Retaining Spring	H-2975.15
16	Impact Spring	H-2975.16
17	Guide Sleeve	H-2975.17
18	Felt Washer	H-2975.18
19	Acrylic Window	H-2975.19
20	Trip Screw	H-2975.20
21	Lock Nut	H-2975.21
22	Pin	H-2975.22
23	Pawl Spring	H-2975.23



H-2978

Windsor HP Probe System

ASTM C803; BS 1881

The Windsor HP probe system is used to evaluate the compressive strength of in-place concrete. This non-destructive test can be used on fresh or mature concrete with equal effectiveness. The system features an electronic measuring device for accuracy and efficiency. Three individual tests can be automatically averaged and displayed on the LCD in compliance with ASTM procedures. The data, together with time and date of the test can be stored in the memory for uploading to a PC. Two probe and power load types are available: silver probes are used for high performance concrete with strengths up to 17,000 psi (110 MPa) and gold probes for test applications on concrete with less than 3,000 psi (19.4 MPa) strength. The system consists of the drive unit, electronic measuring device, templates, measuring caps, gauge plates and carrying case. **Probes are not included with this product and must be ordered separately.**

Windsor HP Probe System H-2978
 Ship wt. 30.6lbs. (13.8kg)



HC-2978

Windsor HP Pin System

Measures the compressive strength of concrete, mortar and brick in-situ, quickly, accurately. A non-explosive instrument, the Windsor Pin™ system uses a spring-loaded device to drive a steel pin into the concrete or mortar. The depth of penetration of the needle correlates to the compressive strength of the material under test. A removable chuck and a small pin size facilitate the testing of mortar joints; this is the only system for testing the in-place strength of brick mortar joints. **Pins are not included, see below.**

Windsor HP Pin System HC-2978
 Ship wt. 20lbs. (9kg)

Steel Pins for Windsor Pin System

Box of 40 pins.

Steel Pins for Windsor Pin System HC-2978.1
 Ship wt. 2lbs. (0.9kg)

Replacement Micrometer for Windsor Pin

Replacement Micrometer HC-2978.2
 Ship wt. 2lbs. (0.9kg)



H-2978.01



H-2978.03

Windsor HP Probe Kits

Each certified probe kit includes 3 probes and 3 matched, nickel-plated power loads. Silver probe kit is for natural stone or coarse aggregate (density greater than 125 lbs/cu ft). Gold probe kit is for lightweight aggregate (less than 125 lbs./cu. ft. density) **Can not be shipped via air or ocean.**

Windsor Silver Probe Kit (3 probes) H-2978.01
 Windsor Gold Probe Kit (3 probes) H-2978.03
 Ship wt. 0.4lbs. (0.1kg)

Windsor Silver Probe Kit (75 probes) H-2978.01C
 Windsor Gold Probe Kit (75 probes) H-2978.03C
 Ship wt. 10lbs. (4.5kg)



HC-6100A.3F

HA-6200

Humboldt Concrete Scanner

The Humboldt Concrete GPR Scanner has been designed to find even the deepest targets while still providing high-resolution. The unit boasts the most diverse sensor suite on the market today. It can be used to locate rebar, power lines, cables, conduits, pipes, and voids.

Dual-frequency GPR antennas insure high-resolution scans can be made without sacrificing penetration depth. The two GHz antennas clearly identify objects buried in concrete to depths of about two feet, while the 750 MHz antennas can detect objects as deep as 6 feet. This scanner also provides a dual mode power line detector that detects both current and voltage. This is useful for detecting power lines where no current is flowing.

The system is controlled with a rugged IP67 Windows tablet computer that connects to the sensor via WiFi. There are several mounting configurations for the tablet to support one- or two-person teams.

The unit has several survey configurations for maximum flexibility. A long handle can be attached for floor surveys. Finally, the long handle converts into a tripod for the tablet computer, in order to provide maximum freedom of the sensor head.

The wireless design has eliminated all cables to improve ease of use, and eliminate common problems associated with connectors and cables. An

innovative positioning system includes an odometer, GPS, as well as optional inertial measurements. Advance software is available to provide cross section views (B-Scans), depth slice views, and 3D views.

Features:

- 2 GHz bi-static radar antenna
- 750 MHz bi-static radar antenna
- Electric field sensor for detecting power lines or tracer signals
- Magnetic field sensor for detecting power lines or tracer signals
- Includes rugged IP67 tablet computer
- Dimensions: 12" x 8.9" x 8.5" including wheels and skid plate
- WiFi connection between sensor and tablet
- Removable tablet computer allows data analysis from vehicle or office
- Durable construction with IP65 ingress protection
- Positioning systems include odometer, GPS, and optional inertial measurements.
- Optically-coupled odometer eliminates cables and interference to magnetic sensors
- Short handle for surveys within arm's reach
- Long handle for floor surveys rotates and locks into different positions

- Rechargeable LiFePO4 battery provides 5-6 hours of use. Includes second battery for all day use. Carrying case includes built-in charging system for batteries.

Includes: Concrete Scanner, Long Handle and Carrying Case

Humboldt Concrete Scanner- HC-6100A.3F
Ship wt. 7.7lbs. (3.5kg)

Dell® Latitude Tablet

Required for operation of Humboldt Concrete Scanner and sold separately.

Dell® Latitude Tablet HC-6200
Ship wt. 7.7lbs. (3.5kg)



HC-2967A
(shown with iPad,
not included)

Proceq Portable GPR Live GP8000

ASTM D4748, D6087, D6432; AASHTO R37-04;
ACI 228.2R.98; EN 302066- ETSI

The Proceq GP8000 portable ground penetrating radar instrument is the beginning of a new era in NDT. The outstanding, patented ultra-wideband technology combined with a compact wireless probe delivers unmatched industry performance. Just connect to your iPad and detect objects and back walls reliably, with amazing clarity and ease of use.

Proceq GP8000 is the world's first large-scale inspection solution that utilizes augmented reality in industrial applications, and is now available on Apple iPad with iOS 12. You can now augment the world around you with 2D and 3D visualizations of GPR data and insights merged seamlessly with your local environment.

Proceq GP8000 ground penetrating radar features the unique stepped-frequency continuous-wave radar technology, which delivers the widest bandwidth in the market and in a handheld device. All applications that have typically been addressed with multiple separate antennas in the range of 0.9 to 3.5 GHz can now be covered with a single device — this means that you do not need to buy and switch to a different antenna for every inspection challenge. Unlike traditional devices with pulsed GPR technology, Proceq GP8000 enables you to detect features of various types and sizes with an unmatched depth penetration.

The powerful, user-friendly Proceq GPR Live app for Apple® iPad, together with the wireless Proceq GP8000 probe, make it possible to perform real-time, on-site data analysis, sharing, and collaboration, like no other product in its category.

The Proceq GPR Live app for Apple® iPad is designed to simplify the entire assessment process of concrete structures. As an example, the integrated wizard assists you with audio feedback during area scans. The intuitive object identification marker is another great feature that makes the life of every operator easier. The Proceq GP8000

probe wirelessly connects to its app for Apple® iPad. Thus, Proceq GPR Live allows instant imaging on a high-resolution touchscreen of up to 12.9" diagonal (iPad Pro) – this makes it the ground penetrating radar inspection solution with the largest and most crisp display in the industry.

The wireless, compact Proceq GP8000 probe is built into a lightweight but highly-durable housing, and ensures reliable, high-quality measurement results even when operated in the most challenging environments. Additionally, the probe operates with standard rechargeable AA batteries to guarantee smooth air travels and easy battery replacements worldwide. Proceq GP8000 Pro delivers a rich set of intuitive features that help you get the job done with peace of mind. It includes a built-in Live Wire kit, cloud-enabled sync and collaboration, export of raw data to SEG-Y, on-site touch-happy visualizations in 2D and 3D, Augmented Reality, and more. The superbly intuitive mobile app is supported by software updates that deliver enhancements and new features. Robust accessories, such as the telescopic rod, are also optionally available.

As a result, Proceq GP8000 is the one true all-in-one handheld GPR, and the most modern and future-proof ground penetrating radar instruments in the world.

Proceq GP8000, Basic **HC-2967A**
Proceq GP8000, Pro **HC-2968A**
Ship wt. 3lbs. (1.4kg)

Proceq GP8000 Basic Software* **HC-2967.10**
Proceq GP8000 Pro Software* **HC-2968.10**
Ship wt. 0.4lbs. (0.1kg)

*Basic software for the HC-2967A is sold as a one-time purchase. This allows you to own the software and use it with your unit for as long as you like. Pro software requires a 2-year subscription with the first year being purchased with your HC-2968A unit and the second and subsequent years being purchased directly from Proceq. These are one-year, use licenses.

Features	Basic	Pro
Ultra-wideband GPR	X	X
Basic time-slice view	X	X
Pro time-slice view		X
3D View		X
Data sharing & reporting		X
Secure cloud features		X

Specifications

Measuring principle	Stepped-frequency continuous-wave GPR
Frequency range	0.2 to 4.0 GHz
Central frequency	2.4 GHz
Bandwidth	2.85 GHz
Maximum peak power	-7 dB EIRP
Max. depth range	28" (70cm) on dry concrete
Dimensions	8.7" x 7.1" x 5.6" (220 x 180 x 143 mm)
Weight	4.4 lb (2 kg)
Battery	(8) AA (alkaline or rechargeable)
Battery lifetime	3.5 hours of continuous use
Display	Any iPad
Operating temperature	14 to 122°F -10 to 50°C
Humidity	<95% RH, non-condensing
IP classification	IP54
Export (Pro only)	Measurement (Proceq GPR Live app file), snapshot (JPG), chart (CSV)
Languages	English, German, Japanese, Chinese, Korean
Regional settings	Imperial/metric units

HC-2967A & HC-2968A Accessories

Item	Part No.
Tablet Holder	HC-2968.1
Telescopic rod/tablet holder (iPad Air/Mini)	HC-2968.2
Battery pack 8x AA NiMH	HC-2968.3
Grid Paper 60 x 60/5cm (set of 5)	HC-2968.4
Grid Paper 60 x 60/10cm (set of 5)	HC-2968.5
Grid Paper 24 x 24/2" (set of 5)	HC-2968.6
Grid Paper 24 x 24/4" (set of 5)	HC-2968.7
Chalk (set of 10)	HC-2968.8



HC-2968U
(shown with iPad,
not included)



Proceq Ultraportable GP8800

ASTM D4748, D6087, D6432; AASHTO R37-04; ACI 228.2R.98; EN 302066- ETSI

Proceq’s Ultraportable Ground Penetrating Radae, GP8800 is yet another revolution by Proceq in concrete inspection and imaging. The rugged, light-weight Swiss Made probe packs our unique radar technology in a tiny footprint with gigantic clarity and depth. This makes it possible to locate rebar and tendon ducts by inspecting overhead, in tight spots, close to walls, from the edge of the slab—and in congested spaces, such as underneath pipes.

Connect the powerful probe to your iPad and enjoy the rich features of the famously user-friendly Proceq GPR Live app. Inspect with ease in four different configurations by reorienting the wireless wheel on the fly, even during the measurement, without screws or tools. Enjoy powerful post-processing, visualization, sharing, collaboration and reporting anywhere, anytime—in 3D and Augmented Reality.

Proceq GP8800 is the only ground penetrating radar in the market that offers complete, wireless autonomy and flexibility in an mini, ultraportable, lightweight probe that connects to iPad over encrypted Wi-Fi.

There is no need to connect Proceq GP8800 to any master GPR device with long, thick, and fragile cables that adversely impact data quality. Say goodbye to tripping hazards, and welcome convenient scanning, even overhead.

As for flexibility: the wireless wheel snaps effortlessly on any side of the probe in both trailing and side-car configurations, and can be rotated at will for cross-polarization, even while you scan—without fumbling with screws or tools.

Proceq GP8800 is powered by a battery pack with

rechargeable AA batteries, enabling smooth air travel and easy battery replenishments worldwide.

Need unlimited autonomy, better access to tight spaces, or both? Simply tether the battery pack or an off-the-shelf power bank by USB-C and scan under pipes with as little as 63 mm (2.5 in) distance to concrete—for hours and hours.

Proceq GP8800 features the unique implementation of Stepped-Frequency Continuous-Wave (SFCW) radar technology by Proceq, delivering the most ultra-wide bandwidth ever in a handheld GPR device.

As proven by the explosive global adoption of Proceq GPR Live by expert GPR users since 2017, SFCW GPR technology by Proceq delivers far superior signal-to-noise ratio compared to traditional high-frequency pulsed GPR devices for concrete scanning.

Now available in the ultraportable form factor of Proceq GP8800, SFCW GPR will continue to impress you with superior inspection insights thanks to crystal-clear radar data, without the traditional dilemma between multiple pulsed-GPR antennas, center frequencies, and their hard compromises between resolution and penetration depth.

Proceq GP8800, Pro HC-2968U
UPS Ship wt. 0.4lbs. (0.1kg)

Proceq GP8800 Pro Software* HC-2968U.10
UPS Ship wt. 0.4lbs. (0.1kg)

*Pro software requires a 2-year subscription with the first year being purchased with your HC-2968A unit and the second and subsequent years being purchased directly from Proceq. These are one-year, use licenses.

Specifications	
Radar technology	Stepped-frequency continuous-wave GPR
Frequency range	400 – 6000 MHz
Depth penetration*	65 cm / 25.6 in
Dimensions**	90 x 90 x 60 mm / 3.5 x 3.5 x 2.4 in
Weight**	460 g / 16.2 oz
Max. line scan length	1000 m / 3281 ft
Max. area scan size	120 x 120 cm / 47.2 x 47.2 in
Antenna distance to edge	45 mm / 1.77 in
Path measurement	Wireless wheel, ±2% accuracy
Cross-polarization	Yes, adjustable at any time
Ground clearance	0 mm / 0 in
Built-in battery	Removable pack, 4x AA (NiMH), flight-safe
Off-the-shelf power bank	5V DC, at least 2A
Autonomy	2.5 h (up to 8 hours with off-the-shelf 10'000 mAh power bank)
Connectivity	Wi-Fi® and USB-C to iPad
Operating temperature	-10 to 50 °C / 14 to 122 °F
Operating humidity	<95% RH, non-condensing
IP rating	IP54
Exporting formats	JPG, PNG, CSV, SEG-Y, HTML

Accessories	
Item	Part No.
Telescopic rod	HC-2968U.2
Battery complete	HC-2968U.3
Grid Paper 60 x 60/5cm (set of 5)	HC-2968.4
Grid Paper 60 x 60/10cm (set of 5)	HC-2968.5
Grid Paper 24 x 24/2" (set of 5)	HC-2968.6
Grid Paper 24 x 24/4" (set of 5)	HC-2968.7
Chalk (set of 10)	HC-2968.8



HC-2969

Zircon MT7 Rebar Locator

ACI 318; BS 1881 Part 204

MetalliScanner® MT7 metal detector quickly and easily locates rebar, pipes, and other metal before you saw or drill. The bright, backlit display indicates metal target depth (inches and centimeters) up to 6" deep, type of metal located (ferrous or non-ferrous), and whether you are moving towards or away from a target. Use to find and avoid rebar in concrete before drilling, to find pipes and junction boxes behind tile, and even detect the nails/tacks in studs behind lath and plaster walls. This powerful tool saves time and money by eliminating guesswork, rework, needless holes, and costly broken drill bits or saw blades. Recommended uses include locating and reinforcing rebar in masonry and measuring subsurface nail spacing in roofing material for compliance with building codes.

- Features two scanning modes; Standard mode DeepScan mode
- Locates and determines the depth of 0.5" rebar and 0.5" copper pipe up to 6"(15cm) deep
- Finds and differentiates ferrous and non-ferrous metal
- Position accuracy to within ± 0.5" (13mm) for #4 rebar or 0.5" copper pipe
- Backlit display and audio tone clearly indicate location of target
- Rubberized handle and built-in lanyard loop
- Pivoting handle attachment for extended and overhead reach can be used with standard threaded broom handle, etc.
- Includes 9V battery and protective carrying case.

Zircon MT7 Rebar Locator

HC-2969

Ship wt. 3lbs (1.4kgs)



HC-2976

Zircon MT 6 Rebar Locator

ACI 318; BS 1881 Part 204

Locate embedded metal before your drill bit or saw blade does. This powerful dedicated metal scanning tool can locate metal up to 6 inches deep in solid concrete.

The MT6 locates both ferrous and non-ferrous metal up to 6" (152mm) deep in concrete and other non-metallic surfaces. It also differentiates between ferrous and non-ferrous metal targets and indicates the target depth in inches and centimeters.

The MT6 indicates when you are approaching a metal object with a large plus (+) sign on the display. When the plus becomes a minus (-), you have crossed over the target and are now moving away.

Use to avoid rebar, cables, pipe, nails in reclaimed wood, nails/tacks in studs behind lath & plaster walls, electrical boxes and conduit, and more.

The MT6 is the tool recommended by the My Safe Florida Home Program to assist in hurricane loss mitigation.

Automatically differentiates between magnetic metal (such as rebar) and non-magnetic metal (such as copper pipe). Shows the depth of metal from the surface in both inches and centimeters. Easy-to-read LCD screen pinpoints the location of metal objects to the nearest 0.5" (13mm) and depth to the nearest inch (25mm). Helps map out the grid of metal through any nonmetallic construction material, including concrete, tile, and marble.

Zircon MT6 Rebar Locator

HC-2976

Ship wt. 3lbs (1.4kgs)



HC-2983A

Profoscope+

ACI 318; BS 1881 Part 204

The Profoscope is a versatile, fully-integrated rebar detector and cover meter with a unique real-time rebar visualization, allowing the user to actually "SEE" the location of the rebar beneath the concrete surface to a maximum depth of 180mm and can determine rebar diameter to a depth of 64mm. This is coupled with rebar-proximity indicators and optical and acoustical locating aids. Rebar diameter can also be estimated within the specified testing range. The Profoscope combines these unique features in a compact, light device that allows the user to operate this rebar detector with one hand making the task of locating rebars a simple and efficient process. In addition, the instrument can record measurement data, manually or automatically. This increases testing efficiency on the construction site significantly. The included software tool allows post-processing or exporting of the collected data.

Profoscope+

HC-2983A

Ship wt. 6lbs (2.7kgs)





HC-2981A



HC-2982A

Profometer 600

ACI 318; BS 1881 Part 204

The Profometer 600 (HC-2981A) is the ideal instrument for contractors who need to avoid damages to the reinforcement steel when drilling, coring or cutting. It additionally covers the needs of inspection engineers to locate rebars and to assess concrete cover values and rebar sizes for spot checks.

With the Locate Mode you can precisely detect the rebar location and direction, as well as measure the cover and the rebar diameter.

The Profometer 600 provides visual assistance for speed and signal strength control, as well as having settings directly accessible on the measurement screen.

The Spot Probe is provided for areas with congested rebar arrangements and the unit automatically detects inclined rebars.

The statistics and snapshot views allow comprehensive review of the measured data directly on the screen. The statistics view presents a graphical overview of the distribution of cover measurements. The snapshot view shows cover for each rebar with the diameter displayed as a number.

It also provides graphical display of measured values and minimum cover set and easy inspection of the measured values directly on the screen. Settings can be changed before and after storage and stored files can be reopened to continue measurements. Data can be exported to a PC via the Profometer-Link software.

Profometer PM600 **HC-2981A**
Ship wt. 15lbs. (6.8kg)

Profometer 630AI & 650AI

ACI 318; BS 1881 Part 204

The sophisticated Profometer 630AI (HC-2982A) further enhances the application range of the Profometer 600 with Single-Line, Multi-Line and Area Scan Modes, as well as an extensive choice of statistical views, increasing productivity for civil engineers and inspection companies in charge of assessing the conformity of concrete cover of a new structure (quality check and resistance assessment) or dealing with corrosion analysis on large elements.

Single-Line Scan provides a linear scan of the cover across the first layer of rebar over a long distance, with or without diameter measurement. The signal curve allows the user to manually verify and confirm the rebar position, delivering improved resolution.

The user can zoom in to scale according needs while displaying the cover curve or signal strength curve.

Multi-Line Scan provides multiple linear scans across the first layer of rebar over a rectangular area. Cover, diameter and signal strength spectrum are shown in one view. Each line can be viewed individually in the Single-Line View. Color classification can be used to show cover and rebar diameter settings and the signal strength spectrum can be used for further evaluation.

Area Scan

The grid display of the Area Scan Mode allows a simplified view of the measured cover data. It is best suited for a combination with potential field measurements and individual grid sizes can be selected.

The Profometer 650AI (HC-2984A) extends the features of the Profometer 630AI further still with the unique Cross-Line Scan measuring mode and analysis functions. Full reporting features are available, as required on large investigation campaigns where a comprehensive report is to be delivered to the client.

The 2D Cross-Line Scan extends the Multi-Line Scan with the special functionality of combining scans in the X and Y directions and measuring the rebars of the first and second layer typically arranged in a rectangular mesh. The signal strength spectrum can be seen in addition to the cover and diameter. By changing the Offset- and Gain-slider positions the signal strength range and resolution can be set and accordingly shown in a color spectrum, for example to display the first layer of rebar.

Profometer PM630AI	HC-2982A
Profometer PM650AI	HC-2984A
<small>Ship wt. 15lbs. (6.8kg)</small>	



Profometer Corrosion

ASTM C876

The Profometer Corrosion is the most versatile corrosion analysis solution, based on the half-cell method, in the market today. Coupled with the Profometer’s unique wheel electrodes, this unit provides the fastest and most efficient on-site testing available. And, as the direct successor to the Canin, the Profometer Corrosion is compatible with existing Canin and most third party electrodes.

In addition, the Profometer Corrosion can also be easily upgraded to include all the additional capabilities of the Profometer 6 Cover Meter. This results in having a future-proof, all-in-one solution for rebar assessment and corrosion analysis.

The Profometer’s dual-core processor allows fast data acquisition and real-time control over the measurement procedure directly on site. Its rugged housing has been specially developed for testing in harsh environments.

The high resolution and illustrative Profometer touchscreen enables high productivity with 2D grid views, an assisted workflow and on-site post processing of the measured data. Together with the included PC software it allows best possible analysis of the statistical data with efficient custom reporting.

Features Include:

- Intuitive user-friendly interface for data acquisition
- Optimized workflow for both rod and wheel measurements
- Customizable text can be entered for any specific locations
- Flexible features enable the mapping of any irregular geometry
- Improved digital filtering to remove the effect of external noise (civil and industrial power sources)
- Profometer Link PC software for data analysis, combined data evaluation and reporting on any third party software

Profometer Corrosion Specifications	
Voltage Measuring Range	-1000 to +1000 mV
Voltage Resolution	1 mV
Impedance	100 MΩ
Sampling Rate	900 Hz
Display	7" color display 800 x 480 pixels
Memory	Internal 8 GB flash memory
Regional Settings	Metric and imperial units and multi-language and timezone supported
Power input	12 V +/-25% /1.5 A
Dimensions	250 x 162 x 62 mm
Weight (of display device)	About 1525g (incl. battery)
Battery	3.6 V, 14 Ah
Battery lifetime	> 8h (in standard operating mode)
Humidity	< 95% RH, non condensing
Operating temperature	-10°C to +50°C
IP Classification	Touchscreen IP54, universal probe IP 67

- Create custom reports with exported graphs and charts
- Housing is specially designed to be used on-site in harsh environments, including carrying strap, integrated stand and sunshield cover
- High resolution color display
- Battery lifetime of > 8h
- 8 GB flash memory
- Dual-core processor supporting diverse communication and peripheral interfaces
- Future-proof investment through direct upgrade possibilities for upcoming Profometer products

Profometer Corrosion includes: Profometer touch-screen; interface box; battery charger; 82 ft. (25m) cable coil with clamp; USB cable; DVD with software; documentation, carrying strap and case. **Order Probe separately.**

Profometer Corrosion HC-2873
 Ship wt. 15lbs (6.8kg)

Profometer Corrosion Accessories	
Rod Electrode	HC-2873.2
One-Wheel Electrode	HC-2873.3
Four-Wheel Electrode	HC-2873.4
Telescopic Extension 5.6ft. (1.7m) & 10ft. (3m) cable	HC-2873.5
Spare Battery	HC-2873.6
Quick Charger	HC-2873.7
Anti-glare Protection Film	HC-2873.8
Upgrade kit to Profometer 600 Cover Meter	HC-2783.1
Software Upgrade from Profometer 600 to Profometer 630	HC-2874
Software Upgrade from Profometer 630 to Profometer 650	HC-2875





HG-9047

iCOR™

Giatec iCOR™ is a unique non-destructive testing tool for detailed detection and evaluation of corrosion in reinforced concrete structures without the need to have an electrical connection to the rebar. iCOR is equipped with high-precision sensors to measure:

- Corrosion potential mapping of rebar
- Corrosion rate mapping of rebar
- Real In-situ electrical resistivity of concrete
- Ambient temp. and relative humidity of rebar
- On-site assessment of concrete durability

iCOR utilizes wireless technology to transmit data to a tablet, where data can be stored, analyzed and visualized. Moreover, the tablet app offers a powerful post-processing tool and an easy way to share the results with other team members. iCOR can significantly save time, human resources and cost in the condition assessment of concrete structures.

iCOR employs a complex electrical circuit model for predicting different properties of concrete materials, and steel reinforcement. An advanced mathematical algorithm is implemented in the core software of the device. This software processor is responsible for the analysis of certain characteristics of reinforced concrete structure such as the polarization resistance of embedded reinforcement and the “real” electrical resistivity of concrete. Includes: ICOR measuring device;; measurement cable; charging cable; table charging cable; (3) contact sponges (half cell); (12) contact sponges (corrosion) electrode storage solution; conductive gel; spray bottle; case; data recording app; tablet and carrying support, tablet charger and verification kits.

iCOR™ Specifications	
Testing Time	3 to 15 seconds
Corrosion Rate	0 ~ 300 μm / year
Corrosion Potential	+200 to -800 mV / CSE
Electrical Resistivity	0 ~ 10,000 Ω • m
Operating Temp.	32 to 113°F (0 ~ 45°C)
Operating Humidity	20~ 90% RH
Dimensions	250 x 70mm
Weight	900g

Giatec iCOR™ Essential Pkg. **HG-9047**
Ship wt. 15lbs (6.8kg)



H-2872

CorMap Rebar Corrosion Mapping System

ASTM C876; BS 1881 Part 201

The CorMap is a simple and economical instrument for use in identifying areas of probable rebar corrosion. The system consists of the voltmeter, two electrode extensions, reference electrode with copper sulfate reservoir, copper sulfate, wetting agent reservoir, dispensing sponge, 250 ft. (80m) cable reel, and a heavy-duty carrying case. In operation, the high impedance voltmeter is connected between the reinforcing steel and the reference electrode on the concrete surface where a measurement can be made for the half-cell potential. This measurement is then used to determine the probability of corrosion activity. By testing at a fixed distance apart, a grid of half-cell potentials can be developed and areas delineated.

CorMap Rebar Corrosion Mapping System **H-2872**
Ship wt. 24lbs. (10.8kg)

Copper Sulfate, 8.5 oz. (400ml) Container

For use with the CorMap mapping system.

Copper Sulfate, 8.5 oz. (400ml) **H-2872.1**
Ship wt. 1.6lbs. (.7kg)

Giatec Perma2™ Rapid Chloride Permeability

ASTM C1202. C1740; AASHTO T277

Perma2™ is a laboratory test device for measuring the electrical resistance of concrete against the penetration of chloride (RCPT) according to the standard methods such as ASTM C1202, AASHTO T277 and ASTM C1760. The measurement data derived from this test method can be used to estimate the chloride diffusion coefficient of concrete in service life predictions and structure design, as well as durability-based quality control of concrete. Perma2™ is electrically certified for rapid chloride penetrability testing in concrete laboratories and is the only RCPT device that meets the specifications of ASTM and AASHTO specifications.

Perma2™ provides an easy-to-use, stand-alone testing device, which is accurate to ±0.1mA. It can test up to 4 samples at a time with a flexible logging time of 1-10 minutes depending on test and sample parameters. It also features automatic temperature control and customizable setups.



HG-9036

Applications:

- Concrete’s ability to resist chloride ion penetration (ASTM C1202, AASHTO T277)
- Bulk electrical conductivity of concrete (ASTM C1760)
- Performance-based quality control of concrete
- Estimation of chloride diffusion coefficient of concrete
- Estimation of chloride migration coefficient of concrete
- Estimation of the remaining life of concrete structures
- Service life design of concrete structures

Perma2™ unit includes complete set of test cells, Temperature sensors, test cables, power cord, USB cable, user manual, communication software, gauge vacuum pump assembly, desiccator assembly, PC software and USB connection.

Perma2™ Complete, **HG-9036**
 120V 60Hz
 220V 50/60Hz **HG-9036.4F**
Ship wt. 125 lbs. (56.6 kg.)

Perma2™ less Pump and Desiccator, **HG-9020.3F**
 120/220V 50/60Hz
Ship wt. 40 lbs. (18.1 kg.)

Perma2™ Accessories / Replacement Parts	
Perma2™ Device, 110/220 50/60Hz	HG-9044.3F
Perma2™ Test Cell	HG-9021
Stainless Steel Mesh - Pair	HG-9027
Sample Prep Package, 115V 60Hz	HG-9042
Sample Prep Package, 230V 50/60Hz	HG-9042.4F
Rubber Gasket Cast - Pair, 4" (100mm) Dia. .	HG-9028
Rubber Gasket Core - Pair 3.75" (95mm) Dia	HG-9039
Test Cable Set	HG-9022
Temperature Sensor	HG-9023



H-2877



H-2877.1



H-2874



H-2878



HC-6390

The Chlorimeter Chloride Test System

A field kit for the determination of chloride ion content in concrete, fresh cement, masonry, most other construction materials, and water. The determination of the chloride ion concentration in concrete is essential in assessing the need for maintenance on, for example, bridge decks and parking structures. The test can also be used to ensure that materials used in new construction are free from potentially harmful chloride ion levels. The Chlorimeter produces results on-site, within minutes that are accurate and comparable to expensive laboratory tests. With this method, the concentration of acid soluble chlorides is measured. In most cases, this is equivalent to total chloride concentration. It measures the electrochemical reaction of a weighted sample placed in an extraction liquid. It automatically shows a temperature compensated reading of percent of chlorides on its digital display. A wide range— from 0.002 to 2% chloride by weight— is covered.

Kit does not include required hand drill or extraction and calibration liquids, which can be ordered below.

Chlorimeter Chloride Test System H-2877
Ship wt 14lbs. (6.3kg)

Extraction and Calibration Liquid, small kit
 Pack of 12 jars, extraction liquid and calibration liquid

Extraction and Calibration Liquid, Small H-2877.1
Ship wt 0.5lb. (0.2kg)

Extraction and Calibration Liquid, large kit
 Pack of 100 jars, extraction liquid and 20 jars of calibration liquid.

Extraction and Calibration Liquid, Large H-2877.2
Ship wt 5lb. (2.2kg)

ASR Detect

ASR Detect™ is both a practical and a scientific tool. Its principal application is analyzing existing concrete structures. By identifying alkali silica deterioration in its earliest stages, the ASR Detect facilitates the problem being identified when remediation techniques can be applied; for example, treating the concrete with a lithium-bearing solution to inhibit further deterioration. Where deterioration is advanced, ASR detect provides a clear picture of the extent and depth of the damage.

As a scientific tool, ASR detect can be applied to improving the understanding of where, how and why ASR occurs. That understanding is basic to developing ASR preventatives that allow high-alkali cements or poor-quality aggregates to be used in concrete mixes without risking the development of ASR.

To identify alkali silica reaction (ASR) in concrete, two reagents are applied to the broken surface of a concrete core and the excess rinsed off. On contaminated concrete, the resultant stains reveal the presence of ASR. The stains also reveal the extent of the ASR in the concrete and indicate the stage of ASR progression. Yellow indicates that degradation has begun; pink warns that degradation is advancing.

ASR Detect H-2878
Ship wt 10lbs. (4.5kg)

Carbo Detect
 Carbo Detect™ is a simple colored dye field test for detecting carbonation. The single reagent is sprayed on the surface to be checked. The reagent will change to pink in uncarbonated concrete and remain colorless when sprayed on carbonated concrete.

Carbo Detect H-2874
Ship wt 1.3lbs. (.6kg)

Ultrasonic Pulse Velocity Tester

ASTM C597; BS1881:203; EN 12504

Used to determine the presence of faults, voids, cracks, etc. in in-situ or precast concrete and for long-term monitoring of structures subject to environmental conditions. Gives data concerning the homogeneity of the concrete, by generating pulses of sound into the concrete and measuring the time the sound takes to travel from the transmitter probe to the receiver probe through the material. Measuring range: 0 - 3000 μs - accuracy +/- 0,1 μs

- Selection of the ultrasonic pulse amplitude adjustable from 250 to 1000 V
- Measurement of the required time by the ultrasonic pulse to go through the tested material.
- Single or continuous acquisition mode with automatic or manual saving.
- Calibration of a defined time value.
- Capacity of data acquisition, processing and filing of the test data up to 30.000 samples.
- Interface mini USB for PC connection.
- Two outlets for connection to the oscilloscope.

Includes (2) 55kHz probes with cables; calibration rod and paste; rechargeable battery pack and case.

Ultrasonic Pulse Velocity Tester HC-6390
Ship wt 3lbs. (1.6kg)

Accessories for HC-6390	
55 kHz Transmitting/receiving replacement probes	HC-6390.1
Exponential 150 kHz Transmitting/receiving probes	HC-6390.2
Exponential 55 kHz Transmitting/receiving probes	HC-6390.3
Exponential 24 kHz Transmitting/receiving probes	HC-6390.4
Probe Cables (2) 12' (3.5m)	HC-6390.5
Probe Cables (2) 33' (10m)	HC-6390.6



H-2984



HC-6320
HC-6330

Pundit Lab, Ultrasonic Test Device

ASTM C597-02, EN12504-4, BS 1881 Part 203, ISO1920-7:2004, IS1311

The Pundit Lab ultrasonic tester can be used to detect the presence of cracks, voids and other imperfections in concrete, as well as determine and monitor the strength and deterioration of concrete, which may have occurred due to age, fire, frost or chemical attack. The Pundit Lab devices provide optimized pulse shaping, automated transmission settings and a range of powerful transducers. They allow analysis of the received signal and manual triggering directly on the instrument. Full remote control of all transmission parameters, data logging function and functionality that can turn your PC into an oscilloscope. USB interface and data analysis software provide data analysis and export to third party programs through Open interface such as LabVIEW. Pundit Lab consists of: display unit, 2 transducers (54kHz), 2 BNC cables 1.5 m, couplant, calibration rod, battery charger with USB-cable, 4x AA (LR6) batteries, data carrier with software, documentation and carrying case

Pundit Lab Ultrasonic Test Device H-2984
Ship wt. 13.4lbs. (6kg)

Pundit Lab+, Ultrasonic Test Device

ASTM C597-02, EN12504-4, BS 1881 Part 203, ISO1920-7:2004, IS1311

The Pundit Lab+ builds upon the Pundit Lab and comes with an extended feature set, making it particularly suitable for on-site measurements. Functions include, an integrated gain stage making an external amplifier unnecessary when using long cables or exponential transducers, a real time stamp for recording the time of measurement, a data review list that allows previous measurements to be viewed on site, and a correlation to compressive strength either directly from pulse velocity or in combination with a rebound value (SONREB method). Pundit Lab+ consists of: display unit, 2 transducers (54kHz), 2 BNC cables 1.5 m, couplant, calibration rod, battery charger with USB-cable, 4x AA(LR6) batteries, data carrier with software, documentation and carrying case

Pundit Lab+ Ultrasonic Test Device H-2983
Ship wt. 13.4lbs. (6kg)

* included with unit.

Transducers for Pundit Lab	
24 kHz Transducer (2 required)	H-2984.1
54 kHz Transducer (2 required)*	H-2984.2
150 kHz Transducer (2 required)	H-2984.3
250 kHz Transducer (2 required)	H-2984.4
500 kHz Transducer (2 required)	H-2984.5
(2) 54 kHz Exponential Transducers (include calibration rod)	H-2984.6
(2) 250 kHz Shear Wave Transducers (include couplant)	H-2984.7

Pundit 200 Pulse Velocity and 200 Pulse Echo

ASTM C597-02, EN12504-4, BS 1881 Part 203, ISO1920-7:2004, IS1311, CECS21

The Pundit PL-200 and PL-200PE are the first instruments using a new generation and design-protected Touchscreen Unit. They are specifically designed to be used on-site, in harsh environments for a range of applications while providing enhanced measurement modes. The Pundit PL-200 and PL-200PE feature a new generation and design-protected Touchscreen. This screen features the highest resolution and sharpest image of any comparable product available in the market. This coupled with a powerful dual-core processor allows the best possible analysis of the measured waveforms. Typically, up to 100,000 A-Scans can be stored on the device. Furthermore, advanced ultrasonic products currently being developed will be directly compatible, extending the application range and making the Pundit Touchscreen a sound future proof investment.

The Pundit PL-200 provides an extended range of measurement modes and superior features for on-site testing: Assessing the concrete uniformity using standard A-Scans and the new Line Scan functionality, estimating the compressive strength of concrete or measuring the surface velocity and the depth of perpendicular cracks. The intelligent software supports directly accessible settings in real time from the measuring screen and allows multiple trigger modes and zoom functionality to permit precise determination of the transmission time. An extensive range of transducers for the Pundit PL-200 are available.

The Pundit PL-200PE employs state-of-the-art pulse echo technology to extend the ultrasonic application to objects where access is restricted to a single side. The measurement process is greatly assisted by Proceq innovations such as advanced echo tracking and automatic estimation of pulse velocity. The A-scan mode allows direct analysis of the raw signal and the real-time B-scan mode provides a cross-sectional view perpendicular to the scanning surface. This allows the user to determine the slab thickness and to localize subsurface deformities such as voids, pipes, delaminations and honeycombing. Control buttons and optical feedback directly on the probe increase measurement efficiency and make the instrument even more user-friendly.

Specifications	
Range	0.1 – 7930 μs
Resolution	0.1 μs (< 793 μs), 1 μs (> 793 μs)
Display	7" color display 800x480 pixels
Pulse Volt. UPV	100 – 450 Vpp
Pulse Volt. UPE	100 – 400 Vpp
Bandwidth	20 – 500 kHz
Receiver Gain	1x – 10,000x (0 – 80dB)
Memory	Internal 8 GB Flash memory
Battery	Lithium Polymer, 3.6 V, 14.0 Ah
Battery Life	> 8h (std. mode)
Operating Temp.	-10°C – 50°C (Non-charging)
Humidity	< 95 % RH, non condensing

Pundit PL-200 Pulse Velocity HC-6320
Pundit PL-200PE Pulse Echo HC-6330
Ship wt. 40lbs. (18.1kg)



HC-6450



HC-6460A
(shown with iPad,
not included)



HC-6460A
(shown dual-handle
kit and iPad,
not included)

Pundit 250 Pulse Echo Array

The Pundit 250 Array is a rapid ultrasonic pulse echoing imaging scanner that can be used for deep scanning of concrete and fiber-reinforced concrete. It can be used for thickness measurements of thick concrete and tunnel linings; determining localized defects such as voids, honeycombing and depth and extent of delaminations and the detection of objects in the concrete such as pipes and tendon ducts beyond the rebar layer. The Pundit 250 Array is based on the ultrasonic multi-channel pulse echo technology using 8 channels. One channel transmits and the echoes are received by the other seven channels. Each channel transmits in turn.

A complete measurement consists of 56 A-scans. These are used to compute and display a B-scan in real-time using the Synthetic Aperture Focusing Technique (SAFT). Coupling two transducers results in a 16 channel aperture processing a total of 240 A-scans per measurement cycle.

The 250 Array provides high-resolution scanning with high-quality images of defects, rebar and tendon ducts with superior near-field performance. No couplant is required due to the dry point contact technology.

The Pundit Array includes a clear rear display for status information and immediate feedback of readings, an integrated laser for guided measurements and a removable battery pack with rechargeable AA batteries.

The unit is extremely flexible, allowing single-handed positioning, as well as double-handed positioning for increased control. Upgradeable to 16 channels, which doubles the scan width.

The Pundit 250 Array consists of: Pundit Touchscreen, Pundit Array transducer, Pundit 250 Array software, Pundit Array Cable 12-pin 1.5m, Pundit Array contact tester, 6x Rechargeable AA NiMH batteries, power supply, USB cable, calibrated tape, DVD with software, documentation, carrying strap and carrying case.

Specifications	
Gain	0 to 80dB
Analog Bandwidth	15 to 100kHz
Range	0 to 1000µs
Resolution	1µs
Pulse Voltage	± 150V
Pulse Shape	Rectangle
PRF	8 to 200ms
Operating Time	7 Hr (min.)
Number of Channels	8

Pundit 250 Pulse Echo Array **HC-6450**
UPS Ship wt. 13.2lbs. (6kg)

Rapid Ultrasonic Pulse Echoing Upgrade Kit
 Upgrade Kit for upgrading Pundit 200 Pulse Echo to a Pundit 250 Array consisting of: Pundit Array transducer, Pundit 250 Array software, Pundit Array Cable 12-pin 1.5m, Pundit Array contact tester, 6x Rechargeable AA NiMH batteries, calibrated tape, DVD with software, documentation, carrying case.

Pulse Echo Upgrade Kit for Pundit 200 **HC-6451**
UPS Ship wt. 5.5lbs. (2.4kg)

Pundit PD8000 Pro Live Array

ACI 228.2R-13

Pundit PD8000, the wireless inspection solution with multi-channel ultrasonic pulse echo technology, brings on-site structural concrete assessment and imaging to the next level when it comes to pragmatism and productivity.

Pundit PD8000 is powered by intelligent software for real-time visualization providing unmatched precision, sharpness, focus and image stability for the longest scans and at unheard-of before penetration depths. The A.I.-powered data analysis makes it easy to identify features and flaws, interpret them, and communicate the value of your inspection work to your customer.

The rugged and robust housing makes Pundit PD8000 perfect for the demands of a harsh construction environment. The ergonomic design of the probe and its controls enhance your productivity: they are placed directly on the handles, making seamless and convenient operation possible under any conditions.

A.I.-assisted positioning and automated image stitching drastically improve the quality of your insights, while accelerating your overall inspection process. PD8000 probe wirelessly connects to the Pundit Live Array app for iPad providing unmatched concrete imaging thanks to crisp, high-resolution touchscreen. The gesture driven and user-friendly app is rich with intelligent features and sophisticated algorithms and together with superb mobile processing power enable on-site analysis and immediate visualization on-site including the true 3D view together with Augmented Reality, with the highest precision, focus and clarity. A.I. assisted data analysis and material identification algorithms allow to identify and interpret inspection results precisely and reliably.





Finally achieve clarity of your data thanks to voice, image and text annotations that enrich the built-in Logbook of each measurement. Thanks to the cloud services make sharing data and collaborating with your colleagues instantaneously possible from anywhere, anytime.

Specifications	
Measurement Modes	Line scan Stripe scan
Frequency range	40 kHz (30 - 80 kHz)
Nominal Transducer Frequency	50 kHz
Measuring Range	Up to 3 m / 118 in (depending on concrete quality)
Channels	8 (16 with upgrade)
Bandwidth	20 - 70 kHz

Proceq PD8000, Basic	HC-6460A
Proceq PD8000, Pro	HC-6461A
	Ship wt. 5lbs. (2.3kg)
Proceq PD8000 Basic Software	HC-6460.10
Proceq PD8000 Pro Software	HC-6461.10
	Ship wt. 0.4lbs. (0.1kg)

Pundit Live Array Accessories	
Pundit Array transducer	HC-6450.1
Transducer extension kit	HC-6450.2
Dual-handle kit	HC-6450.3
Battery Pack, complete	HC-6450.4
Battery, Rechargeable (6)	HC-6450.5
Calibrated Tape, set of (5)	HC-6450.6

Sonic Echo Foundation Tester

ASTM D5882

The FTG is a small laptop or tablet powered, non-destructive system for measuring the depth and integrity of drilled shafts, driven piles, concrete mats, and timber foundations using the Sonic Echo principle (also called the PIT or Low Strain Integrity, as well as other names).

Requires only minimal training for use — connect the FTG to your laptop or tablet and start testing with the FTG software. The system includes everything you need for testing except for a user-provided Windows 7, 8, or 10 laptop or tablet - including an accelerometer receiver and a hammer.

Features:

- Small, lightweight and easily transported
- Fast and accurate field measurements
- Real-time waveform display while testing
- Digital filtering of data
- Switch between English and metric units
- Save results for later review
- Includes accelerometer receiver and cables
- Includes 3 lb (1.4 kg) non-instrumented hammer with removable tips

For use with a Windows 7-10 devices supplied by the user

Sonic Echo Foundation Tester	HC-6485
	Ship wt 10lbs. (4.5kg)

Cross Hole Ultrasonic Monitor (CHUM)

ASTM D6760; AFNOR NF P 94-160-1

The CHUM (Cross Hole Ultrasonic Monitor) uses the Crosshole Sonic Logging (CSL) method (ASTM D6760-16) to perform high-resolution quality control on deep foundations.

The system uses an ultrasonic wave sent from an

emitter to a receiver while both are pulled through water-filled access tubes embedded in the concrete. The measured arrival time and energy are directly related to concrete quality.

Additional methods supported by the CHUM are Single Hole Ultrasonic Testing (SHUT) and Tomography (two- and three-dimensional).

Main Features:

- Easy to use; The user-friendly software makes it possible to master the CHUM in less than a day. No additional expensive training required
 - Powerful tomography features
 - Unlike other system based on an embedded computer (which may soon become obsolete), CHUM connects to the USB port of your regular notebook computer or Tablet PC.
- The basic CHUM package includes everything required to perform CSL and 2D tomography:
- The CHUM instrument, two ultrasonic transducers, two 50m cable reels, two depth meter pulleys, cables and AC power adapter
 - Optional: 100m/150m cable reels, 3D tomography
 - Testing, analysis and reporting software
 - Interpretation assistance package
 - 10 years of free software upgrades
 - 3 year warranty on hardware

Cross Hole Ultrasonic Monitor	HC-6440
	Ship wt. 20lbs. (9.1kg)

CHUM Accessories	
Transceiver, 100m reel	HC-6440.1
Transceiver, 150m reel	HC-6440.2
CHUM 3DT Software	HC-6440.3



H-2880

Concrete Thickness Gauge

ASTM C1383

The Concrete thickness gauge measures concrete slab thickness without drilling. With this device you no longer need to drill, core, or excavate sites to determine concrete slab thickness. The CTG-2 is a nondestructive system for measuring the thickness and integrity of concrete slabs. The Concrete thickness gauge detects: voids, honeycomb areas, cracks and delamination.

It can be used on pavements, tunnel linings, walls and other plate-like structures using the Impact Echo principle. Easy-to-use, this unit requires no special knowledge or training—just follow the easy instructions and connect the unit to a user-provided Windows-based computer or tablet and start testing using the included WinCTG2 software.

Software Features:

- Olson's WinCTG-2 Software is used for data acquisition and analysis.
- Report Capability: Use X and Y coordinates to set up a test grid. Generate a thickness summary table which can be exported to most spreadsheets in comma separated format. For greater accuracy, calibrate the unit at a location of known thickness to obtain the concrete velocity for the job.

Thickness Gauge Specifications	
Thickness range	3.2" to 6' (81mm to 1.8m)
Power	CR123A 3V Lithium battery
Frequency resolution	10Hz
Samples per test	4545
Sampling Rate	45454/sec.
Cable length (test head)	3' (910mm)

Concrete Thickness Gauge

H-2880



Ship wt. 6 lbs. (2.7kg.)

CONCRETE



H-2879.200



H-2879

Resipod Resistivity Meter

AASHTO T358-15

Resipod is a fully integrated 4-point Wenner probe, designed to measure the electrical resistivity of concrete in a completely non-destructive test.

Operating on the principle of the Wenner probe, the Resipod is designed to measure the electrical resistivity of concrete or rock. A current is applied to the two outer probes, and the potential difference is measured between the two inner probes. The current is carried by ions in the pore liquid. The calculated resistivity depends on the spacing of the probes.

It is extremely fast and stable and packaged in a robust, waterproof housing designed to operate in a demanding site environment. The Resipod is the successor of the classic CNS Farnell resistivity meter.

Surface resistivity measurement provides extremely useful information about the state of a concrete structure. Not only has it been proven to be directly linked to the likelihood of corrosion and the corrosion rate, recent studies have shown that there is a direct correlation between resistivity and chloride diffusion rate and even to determination

Resipod Specifications	
Range	0.1 – ca. 1000 kΩcm
Resolution, 200μA	±0.2 kΩcm or ±1%
Resolution, 50μA	±0.3 kΩcm or ±2%
Resolution, <50μA	±2 kΩcm or ±5%
Frequency	40 Hz
Memory	500 measured values
Power	>50 hours autonomy
Charger	USB type B, (5V, 100mA)

of early compressive strength. This makes it one of the most versatile NDT methods for concrete.

- Waterproof and designed to float

- Supplied with a USB connection and dedicated Resipod Link PC software, rugged carrying case, test block and documentation
- DOT tested and field proven through highway department studies

Resipod Resistivity Meter, 1.5" (38mm) H-2879

Resipod Resistivity Meter, 2" (50mm) H-2879.50

Ship wt. 5.5lbs. (2.4kg)

Resipod Geometric Accessory

Resipod geometric is designed to comply with the latest research intended to extend the current limits of the AASHTO T358-15 standard, which is limited to particular sample geometries and a maximum aggregate size of 1.5" (38mm).

Resipod Geometric Accessory H-2879.200

Ship wt. 5lbs. (2.2kg)

Resipod Bulk Resistivity Accessory

The bulk resistivity test is an alternative method where the sample resistivity is measured between electrical plates placed at either end of the sample. The geometry factor is very simple and the test is rapid to perform, with similar advantages as the surface resistivity test. The resipod bulk resistivity kit provides everything necessary for carrying out this test on standard 4" (100mm) diameter cylinders.

Resipod Bulk Resistivity Accessory H-2879.300

Ship wt. 2lbs. (.9kg)



HG-9037.3F



HG-9035.3F

Surf™ Surface Resistivity

AASHTO T358-15

Surf™ is a laboratory non-destructive test device for rapid, easy and accurate measurement of the surface electrical resistivity of concrete based on the four-probe (Wenner-Array) technique according to AASHTO TP 95-11, and pending ASTM specifications. Surf™ has a unique and customized setup, which enables the measurement of electrical resistivity with high accuracy by reducing the duration of the test and minimizing ambient effects.

The Surf™ provides a test cradle for 4" x 8" and 6" x 12" cylinders, which provides four (4) 4-sensor arrays positioned at 90° intervals around the cradle. Surf™'s patented technology automatically takes measurements at each of the sensor points around the cylinder and then repeats the process for all 8 measurements in less than 15 seconds. The included PC software takes this information and generates the reports required by the standards

Applications:

- Performance-based, quality control testing
- Estimation of chloride diffusion coefficient
- Service-life design of concrete structures
- Remaining life estimation of structures
- Crack detection in under load concrete
- Monitoring the setting time of fresh concrete

Features:

- Patented technology
- Fully compliant with both AASHTO T358-15 and the upcoming ASTM standard
- Fast measurement (8 measurements < 15s)
- Four-channel surface resistivity meter
- Variable frequency (13 - 100 Hz)
- Limits moisture loss
- Automatic report generation with PC software
- Fresh concrete testing/crack detection

The Giatec Surf™ kit includes" the Surf™ unit, 100 x 200mm (4" x 8") sample holder, power adapter, USB cable, communication software, user manual, and conductive gel.

Giatec Surf™ Complete Kit **HG-9037.3F**

Giatec Surf™ Device Only **HG-9030.3F**

Ship wt. 15 lbs. (6.8 kg.)

SURF™ Specifications	
Measurement Channels	4
Measurement Display	Yes
LCD Display Area	65 x 33 mm
Dimensions of Device	200 x 160 x 70 mm
Software.	Surf™ Data Monitor

Surf™ Accessories / Replacement Parts	
Surf™ Sample Holder, 4" x 8" (100 x 200mm) Dia.	HG-9031
Surf™ Verification Kit, High and Low range	HG-9032
Conductive Gel - Low Viscosity, 250ml	HG-9038
Surf™ Test Cable, Four-point with clip.	HG-9033
Surf™ Contact Sponge Set, 16 pcs.	HG-9034

RCON2™ Concrete Resistivity

ASTM C1202

RCON2™ is a non-destructive testing device that measures the electrical resistivity of concrete samples. Resistivity has been shown to be an excellent method for evaluating the micro-structural properties of concrete, including: diffusion of chloride in concrete; rebar corrosion in concrete; setting time of fresh concrete; curing of concrete; moisture transfer in concrete; cathodic protection design, and crack detection in concrete.

Since RCON2 is a non-destructive testing method and requires no special sample prep, it can utilize the same samples that are currently being used for compressive strength testing without affecting that test.

RCON2 is fast (measurement time is less than 5 seconds), accurate (±2%, utilizing variable frequency method) and flexible (the measurement can be taken with different settings and test configurations). It also allows for continuous measurement of electrical resistivity over time, which can

be used to monitor several other parameters such as the changes of water content and time of setting in concrete specimens.

In concrete materials, electrical resistivity has been well correlated with important durability parameters such as permeability and diffusivity. In addition, this non-destructive test can easily be conducted on fresh or hardened concrete specimens at different ages or various stages of hydration in order to study workability, setting times and durability performance of the concrete. The electrical resistivity method has also been applied to investigate corrosion of rebar in concrete, creep, aggregate segregation and freeze/thaw of concrete since they affect the pore network properties. The concrete electrical resistivity techniques is also a suitable replacement for the rapid chloride permeability test of concrete (as per ASTM C1202) since there is a strong correlation between the electrical resistivity and durability performance of concrete.

The Giatec RCON2™ device, complete package includes: RCON2™ unit, Power adapter, Test cable set, Alligator test clip, Sample holder, Verification kit, Fresh concrete probe, User manual, Communication PC software, USB cable, 2 bottles of conductive gels, 2 pairs of contact sponges.

Giatec RCON2™ Complete **HG-9035.3F**
Shipping wt. 16 lbs. (7.2 kg.)

Giatec RCON2™ Device only **HG-9011.3F**
Shipping wt. 20 lbs. (9 kg.)

RCON2™ Accessories / Replacement Parts	
Verification Kit	HG-9012
Sample Holder, 2 pair Contact Sponges	HG-9013
Contact Sponge, 1 pair 150mm	HG-9014
Conductive Gel - Low Viscosity, 250ml	HG-9015
Conductive Gel - Medium Viscosity, 250 ml.	HG-9016
Fresh Concrete Probe	HG-9017
Test Cable Set	HG-9018



Pull-off Tester, DY-2

ASTM C1583, D4541, D7234, D7522; BS 1881 Part 207; EN 1542, 1015, 1348; ISO 4624

The quality of concrete repairs is determined by the adhesive strength between the repair material and the substrate. Pull-off testing is the most widely used test method to assess bond strength. The DY-2 family of automated pull-off testers covers the complete range of pull-off applications with unmatched ease of operation and the ability to store a complete record of the test. The DY-2 with its integrated feedback controlled motor provides a regulated load rate as specified by all standards, thereby providing a fully automated test for the most repeatable results. It is lightweight for easy operation even on walls and overhead.

The DY-2 pull-off testers are also unique, in that they record every single test parameter required by specifications:

With the DY-2 pull-off testers, the operator is able to provide a complete record of the pull-off test, proving that the test was carried out in accordance with applicable standards.

Three versions are available, the HC-2985: 135 - 1349 lbf (0.6 - 6kN) covers most common applications, while HC-2986: 360 - 3597 lbf (1.6 - 16kN) provides increased accuracy for low-strength applications, and, the HC-2987: 360 - 562 - 5620 lbf (2.5 - 25kN) can be used for very high strength applications such as testing of fibre-reinforced polymers bonded to concrete structures or testing the bond strength of repair and overlay materials. **Disc set is not included with this product and must be ordered separately.**

135 - 1349 lbf (0.6 - 6kN) Tensile Force	HC-2985
360 - 3597 lbf (1.6 - 16kN) Tensile Force	HC-2986
562 - 5620 lbf (2.5 - 25kN) Tensile Force	HC-2987
<small>Ship wt. 16lbs. (7.2kg)</small>	



Pull-off Tester DY-2 Accessories	Part No.
50mm/M10 Disc Set, steel	HC-2985.1
50mm/M10 Disc Set, Alum.	HC-2985.2
20mm/M10 Disc Set, Alum.	HC-2985.3
50 x 50mm/M10 Disc Set, Alum.	HC-2985.4
40 x 40mm/M10 Disc Set, Alum.	HC-2985.5
100mm/M10 - 3-Disc Set, Alum.	HC-2985.6
100 x 100mm/M10-3-Disc Set Alum.	HC-2985.7
75mm/M10 Disc Set, Alum.	HC-2985.8
Draw Bolt, M10 Short	HC-2985.9
Draw Bolt, M8 Short	HC-2985.10
Draw Bolt, M12 Short	HC-2985.11
Adapter Plate for Large Discs	HC-2985.12
Fixing Kit for vertical and overhead surfaces	HC-2985.13

Bond Test Kit with 25kN Gauge

ASTM D4541, D7234, C1583

The bonding strengths of a wide and varied range of materials including concrete, screeds, repair mortars, epoxy resin coatings, laminates, plastics, paints and enamels may be accurately determined using this Bond Tester. Adequate direct tensile strength or bonding strength between two layers is important if repairs to concrete structures or additional overlays and screeding on existing concrete is to be structurally sound. The pull-off test as a means of projecting the compressive strength of concrete and other materials involves bonding a circular steel disk to the surface by means of an epoxy resin adhesive. A controlled tensile force is then applied to the disk, and as the strength of the bond becomes greater than that of the material under stress it will eventually fail in tension. From the area of the disk and the force applied at failure it is possible to calculate a nominal tensile strength for the material. The standard kit includes: 50mm of stroke, a 25kN gauge; 10 x 50 mm steel bond discs; 10 x 75 mm steel bond discs and a calibration certificate

Bond Test Kit with 25kN Gauge HC-2988A
Ship wt. 50lbs. (22.6kg)

Standard-Duty Anchor Test Kit with 25kN Gauge

ASTM D4541, D7234

This Anchor Test Kit is designed for testing fixings, fasteners and anchors. It consists of a mechanical screw arrangement acting through a hydraulic load cell, which measures the load applied to the fixing directly. The resulting load value is then indicated on the dial type analog gauge. This Kit features the 25kN Gauge, to suit most applications. (Other gauges are available); threaded rods, studs and slotted button adapters in 1/4", 3/8" and 7/8" sizes and a calibration certificate.

Anchor Test - 25kN Gauge, UNC Thread HC-2957U
 Anchor Test - 25kN Gauge, Metric Thread HC-2957M
Ship wt. 40lbs. (18kg)

Kits with Digital Gauge

All Bond and Anchor Test sets are available with a standard digital gauge. The use of digital gauges provides many advantages including improved accuracy of ± 0.5% full-scale deflection (the analog gauge has an accuracy of ± 2%). Other features include:

- Backlight facility for improved viewing in low-light applications
- Ability to change the screen orientation, allowing easy reading from any angle
- Tougher outer gauge protective cover included
- Improved interface, allowing easier setup and operation of facilities, such as "peak hold"
- Improved transducer, 1000 bar is standard
- Range of display units kN, lbg, Kips, psi or bar

Anchor Test - 25kN Digital, UNC Thread HD-2957DU
 Anchor Test - 25kN Digital, Metric Thread HD-2957DM
Ship wt. 40lbs. (18kg)



HC-2960



HC-2959



HC-2988.10

HC-2988.11

HC-2958

Medium-Duty Anchor Test Kit with 50kN Gauge
ASTM D4541,D7234

The medium-duty tester kit bridges the middle ground of testing applications from 30kN to 50kN loads. This tester kit features upgraded engineering to accommodate the increased load requirements. While it appears similar to the 25kN models, internal components have been upgraded. To sustain the 50kn load, the HC-2960 features a reinforced, load-spreading bridge featuring three extended-length legs, which can be adjusted to fit up to six positions using an integral pin arrangement. An upgraded turning handle is used to match the increased loads and an integrated M24 operating nut is included to use with a ratchet wrench for operation in confined spaces. Kit Contents: Includes tester body and operating nut; Analog gauge (0-50kN); Spreading bridge with telescopic legs and hardened pins; Turning handle with integral 24mm Nut; M12 locking adapter; Bolt tester adapter; Threaded stud adapters: M16, M20 and M24; Button Adapters: M10, M12 threaded and 6.5, 8.5, 10.5 and 12.5 slotted, robust carrying case with grab handle.

Anchor Test – 50kN Gauge, UNC Thread HC-2960
Ship wt. 40lbs. (18kg)

Heavy-Duty Tester Kit –145kN Digital Gauge
ASTM D4541,D7234

The HC-2959 portable, self-contained, 145kN Heavy-Duty Tester has been designed to meet the demand for proof load testing of larger construction fixings. A lightweight, triangular-shaped, aluminum load spreading bridge has been designed specifically for the this tester and directs reaction loads away from the fixing. This, combined with the tester, weighs only 31lbs. (14kg).

Applications:

- Proof and failure load testing of most fixing types
- High load expanding and resin anchors
- Cast-in sockets and channel
- Hold-down bolts for stanchion base plates
- Base plate fixings for column lighting
- Anchorage for crash barrier and safety fences
- Bridge parapet anchors

The HC-2959 comes with three (3)k fully-adaptable, telescopic aluminum legs are held in place with steel ball pins, offering easy assembly and adjustment. The swivel feet offer 30mm of fine adjustment. Load application is achieved via a ratchet handle, which drives a hydraulic multiplier and the applied load is recorded on a integral digital gauge.

Kit Contents: Includes tester body and operating nut; Digital gauge (0-145kN); Offset load spreading bridge with 10mm eye hook; (3) telescopic legs with fully-adjustable swivel feet; 400mm M20 connecting rod; M20 adjustable nut; 22mm Ratchet spanner; (5) M20 threaded adapters – M12, M16, M20, M24, M30; Dual spirit level; Hex wrenches and spare screws, carrying case and calibration certificate.

Heavy-Duty Tester Kit, Digital Gauge- HC-2959
Ship wt. 40lbs. (18kg)

Digital Gauge with Wireless App

Revolutionary digital technology captures test results using a mobile phone or tablet device, allowing for instant visual graphs on-site for bond testing, including anchors & eyebolts. Test results are produced in real time visual graphs for each test. Can be used with most current bond testers from most manufacturers. (Requires Wi-Fi or Mobile Network Signal) Compatible with Android or Apple-based devices such as smartphone/Tablet. Android system 4.4 onwards or Apple iOS 7 and above is required. Data enabled SIM with email function required for dispatching reports.

Note: Does not include bond tester or mobile device

Wireless App & Digital Gauge for Testers HC-2958
Ship wt. 5lbs. (2.26kg)

Standard Gauges	Part No.
5kN Gauge, Analog	HC-2988.4
10kN Gauge, Analog	HC-2988.5
15kN Gauge, Analog	HC-2988.7
20kN Gauge, Analog	HC-2988.6
25kN Gauge, Analog	HC-2988.8
30kN Gauge, Analog	HC-2988.9
25kN Gauge, Digital	HC-2988.10
30kN Gauge, Digital	HC-2988.11

Adapters	Part No.
Threaded Stud adapter, M10	HC-2957TSA.10
Threaded Stud adapter, M12	HC-2957TSA.12
Threaded Stud adapter, M30	HC-2957TSA.30
Threaded Button adap., M4	HC-2957TBA.04
Threaded Button adap., M5	HC-2957TBA.05
Threaded Button adap., M6	HC-2957TBA.06
Threaded Button adap., M8	HC-2957TBA.08
Slotted Button adap., M4.5	HC-2957SBA.04
Slotted Button adap., M5.5	HC-2957SBA.05
Bolt Test Adapter, M16	HC-2957BTA.16
1" Threaded rod adapter	HC-2959.M100
1.25" Threaded rod adapter	HC-2959.M125
0.875" Threaded rod adapter	HC-2959.M875
Ring Bolt Adapter	HC-2957RBAM12

Bond Tester Extension Legs	Part No.
50mm Hex extension legs	HC-2988.1
75mm Hex extension legs	HC-2988.2
100mm Hex extension legs	HC-2988.3

Bond Discs	Part No.
50mm Bond Disc (set of 10)	HC-2988.50
75mm Bond Disc (set of 10)	HC-2988.75



HC-3186S.4F

Rapid, Freeze-Thaw Cabinet

ASTM C666, procedure A; AASHTO T161

Humboldt's Elite Series, Freeze-Thaw Cabinet is used to measure the resistance of concrete to deterioration caused by repeated cycles of freezing and thawing. The HC-3186S.4F Freeze-Thaw is designed to test up to eighteen 3" x 4" x 16" (76 x 102 x 406cm) concrete specimens simultaneously, with one being a control. Key features of the **Freeze-Thaw Includes:**

- Fully automatic operation frees operator to perform other lab duties.
- Allows users to establish field control using correlations between concrete strength and durability
- Permits the evaluation of variables in concrete properties and conditioning.
- Useful in the evaluation of the durability of aggregates, as well as the properties of admixtures.

Humboldt's touch-screen controller provides you with full, graphical monitoring of all testing functions in a stand-alone application. Now you can have full, finger-tip control and monitoring of all testing functions with Humboldt's touch-screen controller, found on our Freeze-Thaw Cabinet. The seven-inch, waterproof screen provides at-a-glance monitoring of testing functions, in a real-time graphical display, without the use of a computer.

Now, in a stand-alone application, you will be able to run tests and display results while viewing tabulation, basic x-y graphs and temperature readings in real-time during the test, using user-defined, basic data acquisition. Test data is stored in the device and can be downloaded to a USB drive via the machine's USB port.

The HC-3186S Freeze-Thaw provides the following capabilities:

- User-created test control is possible, for changing freeze time, minimum temperature, maximum temperature and the number of cycles desired.
- Real-time, on-screen control and monitoring with graphing, allowing different data views to be chosen.
- Test data can be reviewed after a test is completed, which includes tabulation and graph views.
- Touch-screen interface for easy navigation.
- Test data can be downloaded or exported via the front USB port and a flash drive. Reports can be generated by using Humboldt's HM-Data Download software and the exported data.

It is possible to have up to eight freeze-thaw cycles within a 24-hour period, however, the exact number of cycles is dependent upon the time required for the temperature at the center of the control prism to fall from 40 to 0°F (4.4 to -17.8°C) and then back to 40°F (4.4°C). The temperature at the center of the control specimen is controlled with the use of a 0.75HP (0.6KW) refrigeration unit and electric resistance heaters with fully automatic controls.

Current temperature of the control specimen can be checked by a glance at the large, 7" color display on the controller. It is also possible to track the temperatures of freeze-thaw cycles in real-time with a glance at the display. For corrosion resistance and long service life, the HC-3186S Freeze-Thaw features a stainless steel, 84"L x 32"W x 35.75"H (213 x 81 x 91cm) cabinet construction with 3" (76mm) insulation on all sides. The internal test compartment measures 74" x 26" x 6" (188 x 66 x 15cm). A 30-amp circuit is required for operation.

Specifications	
Condenser Operating Temperature Range	-30°F to 45°F (-34°C to 7°C) evap (R-404A) Designed for up to 110°F (43°C) ambient
Data channels	1
Data storage	1000 tests and up to 3000 readings per test
Cabinet Dims	84"L x 32"W x 35.75"H (213 x 81 x 91cm)
Controller Dims	22.25"H x 16.25"W x 6"D (56 x 41 x 15cm)
Voltage	208/230V 50/60Hz Single Phase - 30amps

Order H-3195 freeze-thaw molds separately, on next page.

Freeze-Thaw Cabinet Includes:

- (17) H-3185TA Stainless Steel Sample Trays, 3" x 4" x 16.375" (76 x 102 x 406mm)
- (1) H-3185TSA Stainless Steel Sample Tray with spout, 3" x 4" x 16.375" (76 x 102 x 406mm)

Freeze-Thaw Cabinet, 220V 50/60Hz HC-3186S.4F
Ship wt. 1200lbs. (544kg)

Controller Specifications	
Display	7" (178mm) VGA (480 x 800) Resistive-touch screen
Real-time test data	Graphic and tabulation
Processor	Dual 32-bit ARM
RAM	64MB
Memory, non-volatile	4GB
Data acquisition	1 Channel
Logging speed	1 reading every 5 minutes
Multi-test storage	1000
Points per test	3000
USB port	used to export data via thumb drive
Ethernet connection	for network connectivity
Firmware Update	Ethernet or flash drive





Replacement Parts

Item	Part No.
Thermocouple for HC-3186S.4F	H-3186S.3
Thermocouple for H-3185B	H-3185B.3
Thermocouple for H-3185SD	H-3185SD.3
Heating Element specify 115V or 230V	H-3185SH
7-Day Chart Paper (100/Bx) -20 to +80°F	H-3185.1
7-Day Chart Paper (100/Bx) -30 to +10°C	H-3185.1AC
7-Day Chart Paper (100/Bx) -20 to +50°F	H-3185.1AF
Pan Replacement Kit (1 per kit)	H-3185.3A

Freeze-Thaw Specimen Mold

ASTM C233, C666; AASHTO T157, T161

For 3" x 4" x 16" (76 x 102 x 406mm) specimens exposed to rapidly repeated freeze-thaw cycles in water or air. Mold is cold-rolled steel with detachable base plate.

Freeze-Thaw Specimen Mold H-3195
 Ship wt. 37.1 lb. (16.82kg)

Freeze-Thaw Specimen Mold
 Mold for 4" x 4" x 16" specimens.

Freeze-Thaw Specimen Mold H-3198
 Ship wt. 40 lb. (18.1kg)

Freeze-Thaw Specimen Mold
 Mold for 100 x 100 x 400mm specimens.

Freeze-Thaw Specimen Mold H-3198M
 Ship wt. 40 lb. (18.1kg)

Stainless Steel Sample Tray

3" x 4" x 16.375" (76 x 102 x 406mm) specimens.

Stainless Steel Sample Tray H-3185TA
 Ship wt. 4 lb. (1.8kg)

Stainless Steel Sample Tray

100 x 100 x 400mm specimens.

Stainless Steel Sample Tray H-3185TM
 Ship wt. 2 lb. (0.9kg)

Stainless Steel Sample Tray with Spout

3" x 4" x 16.375" (76 x 102 x 406mm) with spout.

SS Sample Tray with Spout H-3185TSA
 Ship wt. 3 lb. (1.3kg)

E-Meter for Flexural Resonance of Concrete

ASTM C215, C666

The E-meter can determine flexural resonance of concrete under accelerated freezing and thawing cycles and aggressive environments, conforming to ASTM C215 and C666. It determines the resonant frequencies of the three modes of vibration and is the only method of calculating the following material parameters non destructively: Young's modulus of elasticity, modulus of rigidity, Poisson ratio and damping constant. Frequencies are automatically scanned in one of four ranges. It can handle specimen sizes up to 6 inches (150mm) in cross section and from 1.75 inches (45mm) to 28 inches (711mm) in length. A semi-automatic feature facilitates the fast identification of resonance. Oscillator frequency range: 10 Hz to 100 kHz in 4 switched range Frequency indicator display: 6 digit LED Gate times: 1 sec. or 10 sec. switch selected, LED indicated accuracy: 20 ppm + 1 count over full operating temperature range.

E-Meter for Flexural Resonance H-3176
 Ship wt. 113 lb. (51.2kg)

Resonance Test Gauge

ASTM C215, C666

Designed for lab use, the Resonance Test Gauge (RTG) connects to the customer's Windows device for longitudinal, Flexural and torsional resonance testing of concrete, rock, asphalt and masonry (cylinders, beams and cores). Results can be exported to the Calculations Spreadsheet which automatically determines dynamic properties such as Young's modulus (E), shear modulus (G) and Poisson's ratio (ν) (meets ASTM C215 standard for resonance testing of concrete for dynamic properties and ASTM C666 standard for freeze-thaw durability testing).

Unit includes the following: 2 oz. Spherical Head Hammer; Spatula for Adhesive Grease; RTG Device, Jump Drive with RTG Software; Adhesive Grease; Accelerometer, Microdot BNC Cable, Mounting Block; Sponge Rubber Mat for Specimen Support. The RTG system must be used with a Windows 7-10 device running the RTG software. The computer or tablet is supplied by the user.

- Real-time waveform display while testing
- Automatic frequency calculation
- Full user selection of gain and units

Specifications	
Sampling Rate	45,455 samples/second
Accelerometer Flat Frequency Response Measurement Range	20,000 Hz
Number of Samples Acquired Per Test	1024 samples
Nyquist Frequency	22,727 Hz
Frequency Resolution	44.39 Hz

Resonance Test Gauge HC-3177
 Ship wt 10lbs. (4.5kg)



H-2784



H-2784.500



HC-3706

Humboldt Super Air Meter

ASTM C231, AASHTO T152

The H-2784 Super Air Meter (SAM) is a testing device that measures both the air void spacing and air volume of plastic (fresh) concrete in about 10 minutes. Air void spacing has been shown to be a better indicator of concrete freeze-thaw durability than total air content; however, until now, it has been challenging to measure in fresh concrete. By being able to measure the actual air-void spacing in fresh concrete, the meter helps users better understand the freeze-thaw durability of their concrete before it is placed.

The meter can function in two ways. First, it provides all the same information as a Type B meter, under the same analytical conditions as a conventional pressure meter. After completing the conventional testing the meter is then able to move into a second mode of operation that places the concrete under a series of higher pressures. By understanding how the concrete responds to the series of high pressures, the meter can assess properties of the air-void system beyond the air content.

The H-2784 Super Air Meter is a modified version of a typical pressure meter (ASTM 231). The primary modification is that two sequential pressurizations are applied to the concrete. The deformation of the concrete is first investigated at 14.5, 30, and 45 psi, the pressure is then released, and the same pressure steps are used again to measure the deformation. The differences between the first and second pressure steps are used to calculate the SAM number, which is correlated with the average spacing between air voids in the concrete mixture. If the spacing between the voids is too high, then this could mean the concrete is susceptible to freeze-thaw deterioration. A SAM number of 0.20 has been shown to correctly determine over 90% of the time whether the spacing between the

bubbles meets the recommendations of the ACI 201 Concrete Durability Committee.

This new air meter has been investigated using more than 300 lab and field mixtures at Oklahoma State University and the FHWA Turner Fairbanks Laboratories. As part of an ongoing Pooled Fund Study, the SAM is being used by multiple DOTs on field concrete. The results of this testing are also being compared to performance in an ASTM C666 rapid freeze-thaw test*. An AASHTO Provisional Standard for this test has been approved. The meter is currently being used in more than 22 different U.S. States and one Canadian Province. The SAM has been specified in Oklahoma and Michigan on transportation projects.


The H-2784 includes one Super Air Meter testing device, and all accessories required to calibrate the meter and perform the type B or SAM tests. This includes a calibrator; a mallet; safety glasses; strike-off board; a tamping rod; filling bulb and a durable, protective case. It is recommended that the CAPE System (below) be used with the Super Air Meter.

Humboldt Super Air Meter **H-2784**
 Ship wt. 46lbs. (21kg)

CAPE System for Super Air Meter

ASTM C231, AASHTO T152

The CAPE Tank Accessory simplifies pressurization of the H-2784 Super Air Meter during testing, eliminating the need to manually pump to the required pressures. The tank is fitted with three inflation chucks including regulators that are easily attached to the pressurization valve of the Super Air Meter.


Super Air Meter CAPE System **H-2784.500**
 Ship wt. 21lbs. (9.5kg)

Water Impermeability Test Device

EN 12390-8, ISO 7031, UNI 9533

Used to determine the surface impermeability of concrete by water using concrete test specimens. The device determines the depth of water penetration into hardened concrete under a known time and pressure. Specimens are put into the test chamber, clamped with suitable flanges and gaskets, and then a known water pressure is applied to the specimen's surface for a time as called for by the Standard. An air compressor is used to provide an adequate and constant pressure. The water penetration is measured by quantitative water penetration measurement using the graduated burettes.

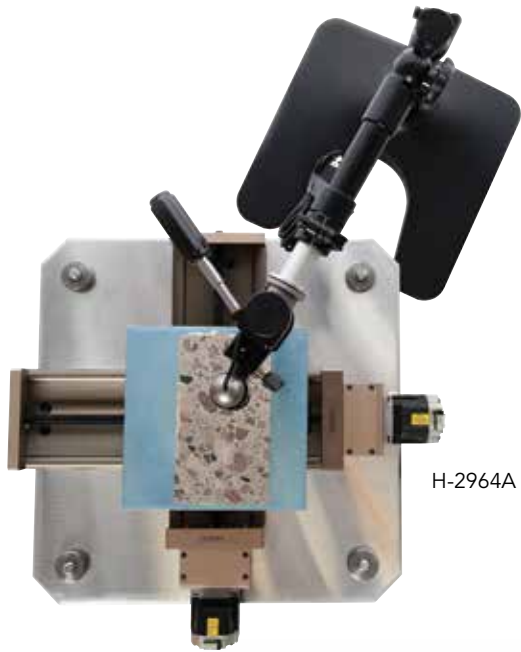
Available with either 3 or 6 test stations, these Impermeability test devices can be used with the following test specimen sizes: 150 x 150 x 120mm, 150 x 150 x 150mm, 200 x 200 x 120mm or 150 x 300mm (requires accessory).

Impermeability Device, 3 Station **HC-3703**
Impermeability Device, 6 Station **HC-3706**
 Ship wt. 348 lbs. (158kg)

Accessories

Item	Part No.
Air Compression, 120V 50/60Hz	HM-4220
Air Compression, 220V 50/60H	HM-4220.4F
Roughing plate, 100mm	HC-3703.6
Roughing plate, 75mm	HC-3703.7
Steel Inserts, 200x200x80mm	HC-3703.8
Steel Inserts, 150x150x30mm	HC-3703.9
Plastic Inserts, 200x200x80mm	HC-3703.10
Plastic Inserts, 150x150x30mm	HC-3703.11





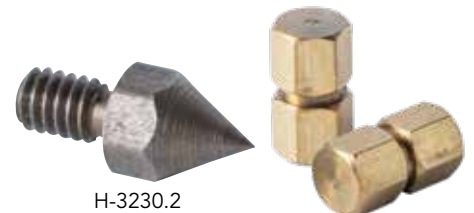
H-2964A



H-2964A (shown with computer, not included)



H-3230



H-3230.2

H-3230.3



H-3230.4

H-3230.7



H-3230.5



H-3230.6

Linear Traverse Machine

ASTM C457 Part B

The linear traverse machine is used to facilitate the counting of microscopic voids in concrete. The H-2964A complies or exceeds ASTM C457 specifications. Computer software controls the motorized specimen table with solid-state positioning motors. The software controls the traverse patterns and distances between measurements based on test sample parameters. The software also provides counting determinations to be made to material-type categories. Test results can be exported to Microsoft Excel for analysis and printing. Printable reports can be configured to Canadian Ministry of Transport or ASTM requirements.

Unit Includes:

- Digital microscopic video camera with integral light source
- Computer-controlled motorized specimen table with solid-state positioning motors
- Software CD with controller
- Multi-adjustable camera stand

Computer is not included.

Linear Traverse, 120V 60Hz

H-2964A

Linear Traverse, 220V 50/60Hz

H-2964A.4F

Ship wt. 100lbs. (45.3 kg)

Multi-Length Strain Gauge Set

ASTM C426

Mechanical gauge is recommended as a substitute for the Whittemore strain gauge for many applications. Designed to measure strain in masonry-type materials, structural components under load, opening or closing of structural cracks, measuring relative structural displacements, rock mechanics testing and drying shrinkage of concrete block testing. Instrument frame is cast aluminum alloy with 5 master settings of 2, 4, 6, 8 and 10 inches, easily set for gauging. Dial indicator has .0001" minimum graduation; effective strain range is 0.3". Maximum linear measurement is 0.4". Set includes: strain gauge, dial indicator, 8 brass inserts, 2 contact seats, 2 mounted contact points, invar master bar, punch bar and one compartmented wood storage case. Metric model has 5, 10, 15, 20 and 25cm settings and dial indicator with 0.02mm graduations.

- Strain Gauge Set H-3230
- Strain Gauge Set, Metric H-3231
- Strain Gauge Set, Digital H-3230D
- Strain Gauge Set, Digital, Metric H-3231D

Ship wt. 1 lbs. (.45 kg.)

Strain Gauge Replacement Parts	
Contact Point	H-3230.2
Contact Seat	H-3230.4
Brass Inserts (pkg. of 100)	H-3230.3
Invar Master Bar	H-3230.5
Invar Master Bar, Metric	H-3230.5M
Punch Bar Point	H-3230.7
Punch Bar	H-3230.6
Punch Bar, Metric	H-3230.6M

**Crack Width Gauge**

ACI 2242-01

The crack width gauge is designed specifically to measure widths and locations of cracks prior to beginning a monitoring program. The crack width gauge is suitable for internal and external use. It is made of polycarbonate, which has a coefficient of linear thermal expansion of 7.0×10^{-5} cm/cm/°C for ambient temperatures between -30°C and 30°C. The scale is calibrated from the end of the gauge to facilitate measuring cracks in corners. Supplied in protective case.

Crack Width Gauge

HC-2940



Ship wt. 0.3lb. (.13kg)

Standard Crack Gauge

Crack gauges can be used to monitor horizontal or vertical movement across a crack on a flat surface. The H-2936A standard crack gauge is a precision device that consists of two plates, which overlap for a part of their length. The bottom plate is transparent and marked with a hairline cursor in the form of a cross. Can be fixed to the surface with screws or adhesive (not included). Supplied with instructions and record sheet.

Crack Width Gauge

H-2936A



Ship wt. 0.15lb. (.06kg)

Crack Gauge Plus

The crack gauge plus can be used to monitor horizontal or vertical movement across a crack on a flat surface. The Plus offers two upgrades to the standard design. Rather than presetting the two measuring plates together at zero with tape, the plus uses four small pegs, which ensure alignment during installation and then removed during monitoring. The plus also provides measuring flats, which allow accurate readings to be taken with calipers during monitoring. Can be fixed to the surface with screws or adhesive (not included). Supplied with instructions and record sheet.

Crack Gauge Plus

HC-2937



Ship wt. 0.2lb. (.09kg)

Corner Crack Gauge

The corner crack gauge uses a hinged mounting bracket to allow monitoring of cracks in corners with angles between 70° and 180°. Monitors both internal and external corners. Corner gauges use the design of the plus gauge using four small pegs, which ensure alignment during installation and are then removed during monitoring. The corner gauge also provides measuring flats, which allow accurate readings to be taken with calipers during monitoring. Can be fixed to the surface with screws or adhesive (not included). Supplied with instructions and record sheet. Sold in pairs.

Corner Crack Gauge, (2-pack)

HC-2938



Ship wt. 0.4lb. (.18kg)

Displacement Crack Gauge

The displacement crack gauge monitors horizontal and displacement movement where there is a step across a crack due to displacement of "out-of-plane" movement. The gauge consists of a base plate (not calibrated), a top plate (calibrated) and a graduated ruler. The ruler is removed from the gauge when not taking a measurement, but used to measure the relative movement in the plates. Can be fixed to the surface with screws or adhesive (not included). Supplied with instructions and record sheet.

Corner Crack Gauge

HC-2939



Ship wt. 0.4lb. (.18kg)

Crack Monitor Adhesive

Crack monitor adhesive is a fast-hardening 2-component epoxy adhesive for use in affixing crack monitors to concrete surfaces. Comes in a one ounce dual-tube syringe for easy application.

Crack Monitor Adhesive

HC-2942A



Ship wt. 0.3lb. (.13kg)

Caliper Marks

Caliper marks can be affixed with adhesive to either side of a crack to be monitored and then used to measure crack movements with a caliper.

Caliper Marks (Pkg of 100)

HC-2943



Ship wt. 0.3lb. (.13kg)

Caliper Mark Discs, Stainless Steel

Caliper marks can be affixed with adhesive to either side of a crack to be monitored and then used to measure crack movements with a caliper. Pkg. of 100.

Caliper Mark Discs, Stainless Steel

HC-2964



Ship wt. 0.3lb. (.13kg)

Screws and Plugs for Crack Gauge

Package of (4) four zinc-plated screws and four plastic plugs, suitable for affixing a crack gauge to a flat surface.

Screws and Plugs for Crack Gauge

HC-2944



Ship wt. 0.2lb. (.09kg)

Digital Caliper, 8" (200mm)

Provides accurate outside, inside, depth and step measurements and features large, easy-to-read LCD digits, rolling thumb wheel; plus control buttons for zero, on/off and inch/mm functions. Range: 0-8" (0-200mm); Accuracy: ± 0.001 .

Digital Caliper, 8" (200mm)

H-2816.8



Ship wt. 2.2lb. (.9kg)

Crack Monitoring Kit

A kit designed to provide all the products needed to set up a crack monitoring program. Supplied with a courier bag with shoulder strap, the kit includes: (1) crack width gauge; (5) crack gauge plus (1) pair of corner crack gauges; (7) packs of fixing screws; (1) crack monitor adhesive; instruction booklet and record sheets.

Crack Monitoring Kit

HC-2941



Ship wt. 3.5lb. (1.5kg)

Essential, Digital Crack Monitoring Kit

This set contains all the essential components needed to set up a crack monitoring system using precision digital calipers. This kit includes a crack width gauge to measure the width of cracks prior to monitoring, a digital caliper, a pack of stainless steel discs and crack record sheets. Also included is an illustrated manual with full instructions, which describes best practice methods for using the calipers. All the components can be re-ordered separately in order to replenish the kit.

Essential, Digital Crack Monitoring Kit

HC-2947



Ship wt. 3.5lb. (1.5kg)



HC-2941



HC-2947

HC-2948



HC-2955



HC-2956



HC-2950



HC-2955.1

Professional, Digital Crack Monitoring Kit

This set contains all that is needed to set up a crack monitoring system using precision calipers. This kit includes a crack width gauge to measure the width of cracks prior to monitoring, a digital caliper with data port, a pack of stainless steel discs, a pack of caliper marks, a pair of corner discs and crack record sheets. Also included is an illustrated manual with full instructions, which describes best practice methods for using the calipers. All the components can be re-ordered separately in order to replenish the kit.

Pro, Digital Crack Monitoring Kit HC-2948
Ship wt. 4lb. (1.8kg)

Concrete Crack Data Logger

The HC-2955 crack data logger provides a method to monitor cracks and linear displacements in concrete structures, featuring an integrated data logger, which measures both displacement and ambient temperature. This crack detector measures cracks, with a resolution of 0.01mm, by using a rotary, precision potentiometer, which is driven by the winding/unwinding of a stainless steel wire with an 80mm stroke. It is also possible to add an extension to the steel cable to monitor cracks over wide expanses or areas that are not readily accessible, such as bridge decks, multi-faceted structures and other hard-to-reach places. The crack detector is configured using a graphic, user interface operating on a Windows® computer.

Temperature measurement range is -4°F to 176°F (-20°C - +80°C) with 1° resolution. The unit is powered by a user-replaceable battery, which should last between six months and five years, depending on how the unit is configured and frequency of downloads.

The measurements are stored in internal memory and are downloaded to a Windows PC using a USB cable (supplied). Data logger capacity is: 51062 readings

or 18236 readings with redundant CRC, Acquisition frequency is adjustable from 10 seconds to 91 hours. Includes a download link for the latest version of the user guide and software.

Concrete Crack Data Logger HC-2955
Ship wt. 1lb. (.45kg)

Concrete Crack Data Logger, Wi-Fi

The HC-2956 wireless crack data logger provides a method to monitor cracks and linear displacements in concrete structures, featuring an integrated data logger, which measures both displacement and ambient temperature. This crack detector measures cracks, with a resolution of 0.01mm, by using a rotary, precision potentiometer, which is driven by the winding/unwinding of a stainless steel wire with an 80mm stroke. It is also possible to add an extension to the steel cable to monitor cracks over wide expanses or areas that are not readily accessible, such as bridge decks, multi-faceted structures and other hard-to-reach places. The crack detector is configured using a graphic, user interface operating on a Windows® computer.

Temperature measurement range is -4°F to 176°F (-20°C - +80°C) with 1° resolution. The unit is powered by a user-replaceable battery, which should last between six months and five years, depending on how the unit is configured and frequency of downloads.

Measurements are stored in internal memory, which can be downloaded to a Windows PC via a wireless connection from a range of up to 150m using a graphic user interface on a PC computer. Data logger capacity is: 51062 readings or 18236 readings with redundant CRC, Acquisition frequency is adjustable from 10 seconds to 91 hours. Includes a download link for the latest version of the user guide and software.

Concrete Crack Data Logger HC-2956
Ship wt. 1lb. (.45kg)

Extension Cables for Concrete Crack Data Loggers

Extension kit for the HC-2955 and HC-2956 Concrete Crack Data Loggers for those applications requiring a longer span across larger cracks and joints or where mounting points require a longer expanse. These cables are available in 4 sizes: 12" (30cm); 20" (50cm); 39" (100cm) and 79" (200cm).

Cable Extension, 12" (30cm)	HC-2955.1
Cable Extension, 20" (50cm)	HC-2955.2
Cable Extension, 39" (100cm)	HC-2955.3
Cable Extension, 79" (200cm)	HC-2955.4

Ship wt. 1lb. (.45kg)

Concrete Crack Measuring Microscope

The crack measuring microscope is a precision, hand-made product, which is designed specifically for measuring cracks in concrete. This high-definition microscope is further enhanced by having its own adjustable light source for darkened conditions. Overall height of the microscope is 5.125" (130mm).

The image is focused by turning a knurled knob on the side of the instrument and the eyepiece scale can be rotated through 360° to align with the direction of the crack. The 4mm width of measurement has a lower scale, divided into 0.2mm divisions, which are subdivided into 0.02mm divisions. Comes complete in its own sturdy wooden pocket-size case.

Concrete Crack Measuring Microscope HC-2950
Ship wt. 2lb. (0.9kg)



HC-3000



HC-3001



HC-3000.1
HC-3000.6
HC-3000.7



HC-3000.2

HC-3000.2C



HC-3000.11

HC-3000.3



HC-3000.4
HC-3000.5



HC-3000.10

HC-3000.9



HC-3000.8

RH/Moisture Meter Kit with BluePeg Sensor
ASTM F2170

The HC-3000 concrete moisture meter for contractors, floor covering installers and restoration specialists to use as a Thermo-Hygrometer or for in-depth moisture testing of concrete following ASTM F2170-11 RH in-situ probe test. Moisture meter indicates relative humidity, temperature, GPP and DPT.

If you are looking for an accurate Hygrometer, the HC-3000 concrete moisture meter with RH BluePeg probe should be your choice. The RH BluePeg probe uses a hi-accuracy sensor with a short acclimation time. The RH BluePeg probe can be connected with a small Adapter directly to the meter. For extended reach, a cable up to 50ft long can be added. All cables have easy-to-connect and fail-proof 35mm stereo connectors.

The RH BluePeg Probe, sleeves, cable and RH concrete moisture meter have been designed for a simple and fail-proof measuring procedure.

The RH BluePeg probe drops easily into the sleeve. The cap fits perfectly and is as flat as can be. The 3.5mm stereo connector can be easily connected. No pin alignment of the cable needs to be fitted. Plug in and read, that's what our customers like.

RH Moisture Meter w/BluePeg Sensors HC-3000
Ship wt 2.9lbs. (1.3kg)

BW/Moisture Non-Invasive Meter Kit with BluePeg Sensor
ASTM F2170, F2659

The HC-3001 is a non-invasive moisture meter with dual-depth measuring capabilities. The RH BluePeg Probe can be added to use as a Thermo-Hygrometer or for RH in-situ probe testing of concrete following the latest ASTM F2170 standard. The HC-3001's unique dual-depth pinless moisture meters allows the user to have more versatility. Two moisture meters in one. Great for thinner and thicker boards, engineered floor planks, and water-borne finishes.

Wood in Scan Mode: the HC-3001 gives wood moisture readings in percent. Corrections are built-in for a measuring depth of 1/4" and for 3/4" for each wood species setting (specific gravity 0.3 to 1.0). Included are 7 different settings for bamboo.

Building Materials in Scan Mode: the HC-3001 gives moisture content in percent for drywall. For concrete and light-weight building materials comparative readings can be taken to evaluate moisture conditions and find wet spots. 1/4" and 3/4" measuring depth are available. Conforms to ASTM 2659.

Air in RH Mode: Add RH BluePeg Probe for ambient relative humidity and temperature, GPP and DPT. Use meter as Thermo-Hygrometer.

Concrete in RH Mode: Add RH BluePeg Probes and RH accessories for in-situ moisture testing of concrete. Conforms to ASTM F2170.

BW Moisture Non-Invasive Meter w/BluePeg Sensors HC-3001
Ship wt 5lbs. (2.26kg)

HC-3000 & HC-3001 Moisture Meter Accessories	
Blue-Peg Sensors, 5-pk.	HC-3000.1
Blue-Peg Sensors, 10-pk.	HC-3000.7
Blue-Peg Sensors, 1-pk.	HC-3000.6
RH Cable	HC-3000.2
RH Cable for In-Situ Concrete	HC-3000.2C
RH Adapter for Sleeves	HC-3000.3
RH Adapter for Meter	HC-3000.11
Sleeves, 20-pk., 1.8"	HC-3000.4
Sleeves, 100-pk., 1.8"	HC-3000.5
Sleeves, 10-pk., 3.0"	HC-3000.10
Calibration Salt	HC-3000.9
Brush	HC-3000.8





HC-2994

HC-2995A

HC-2990

HC-2993B

HC-2994.4

HC-2994.7

HC-2994.2

HC-2994.9

HC-2994.8

Concrete Moisture Meter

ASTM F2659, F2170, F2420, BS 5325 and BS 8293
Tramex CMEX II is a digital display version of the concrete encounter. It operates on the principle of non-destructive impedance measurement. Parallel co-planar electrodes are mounted on the base, which during operation transmit a low-frequency signal into a concrete slab. Quickly and easily measures moisture content. Can be used with the Hygro-i relative humidity probe, which when connected, changes the moisture meter into hygrometer mode. This combination provides an ideal solution for measurements of ambient relative humidity, temperature and dew-point conditions within a building structure, especially concrete flooring. Humidity readings are displayed in both % relative humidity and mixing ratio (grains/lb or grams/kg). Provides accurate and fast results allowing concrete slab testing per ASTM F2170 in-situ method, and ASTM F2420 RH hood method.

Concrete Moisture Meter **HC-2994**
Ship wt 3lbs. (1.6kg)

Concrete Inspection Kit

ASTM F2659, F2170
A complete kit for testing concrete moisture per ASTM F2659 & ASTM F2170, featuring the HC-2994 moisture meter and Hygro-i® relative humidity probes. The Concrete Inspection Kit includes:

- CMEX II Digital, concrete moisture meter.
- 4 Hygro-i® RH probes for testing to ASTM F2170.
- Hygro-i® Electronic Interface Cable
- 12 Hole liners for testing to ASTM F2170.
- Calibration check salts for RH probes.
- IRTX Infrared surface thermometer and heavy-duty carry case.

Features:

- Instant, non-destructive concrete moisture content test from 0 - 6.9% to ASTM F2659.
- Fastest, most reliable Hygro-i® RH probe for testing to ASTM F2170.
- Perform multiple tests simultaneously.
- Re-usable Hygro-i® Relative Humidity probes prove to be the lowest cost per ASTM F2170.
- Test ambient site conditions of Temperature, RH, Dew Point & Mixing Ratio.
- Backlit display for ease of reading in low level lighting.
- Check calibration of RH probes as often as required by standards.
- Instant surface temperature readings to avoid condensation.

Concrete Moisture Meter **HC-2995A**
Ship wt 9lbs. (4.1kg)

Relative Humidity, Hygro-i Probe

ASTM F2170, F2420, BS 5325 and BS 8203
Relative humidity probe for use with HC-2994 concrete moisture meter.

Relative Humidity Hygro-i Probe **HC-2994.5**
Ship wt 2lbs. (.9kg)

HC-2994 Moisture Meter Accessories	
Hygro-i® Probe, 1 probe	HC-2994.1
Hygro-i® Probe, 3-pk.	HC-2994.2
Hygro-i® Probe, 6-pk.	HC-2994.3
Hygro-i® Probe, 12-pk.	HC-2994.6
Hygro-i® Interface Cable	HC-2994.4
Insulated RH Hood	HC-2994.7
Calibration Check	HC-2994.8
Calibration Check Plate	HC-2994.9
Hole Liners, 50-pk.	HC-2994.10
Hole Liners, 100-pk.	HC-2994.11

Concrete Encounter (Moisture)

The concrete encounter is a hand-held electronic moisture meter, which uses non-destructive impedance measurement to determine moisture levels in concrete floors. The concrete encounter will give you an instant reading of moisture content to over 6% for concrete and 0-10 comparative for gypsum floor screeds, enabling you to make an informed decision on when to install floor coverings. Designed to be used on clean, dust-free slabs, just switch on and press the instrument firmly against the floor surface. Readings are then read directly from the analog meter. Coplanar electrodes with spring-loaded contacts enhance signal depth and sensitivity to a depth of .5" (12.5mm).

Concrete Encounter (Moisture) **HC-2990**
Ship wt 1.4lbs. (0.6kg)

Vapor Emission Test Kit

ASTM E1907, F1869
The vapor emission test is used for determining the moisture acceptability for the placement of floor coverings and coatings over concrete slab surfaces. Using this method, users can easily quantify the volume of water vapor emitting from a 1,000 square foot concrete slab over a 24-hour period. Commonly known as the anhydrous calcium chloride vapor emission method, the test is directly specified by the vast majority of the floor covering industry as the primary measure of moisture acceptability for floor covering or coating installations. The kit consists of a calcium chloride container, a specifically designed dome cover with seal and step-by-step instructions. A balance or scale readable to 0.1 grams is required, but must be purchased separately.

Vapor Emission Test Kit
 12-pak (10,000 sq. ft. coverage) **HC-2993B**
 3-pak (1,000 sq. ft. coverage) **HC-2993A**
Ship wt 4.4lbs. (1.9kg)