Concrete

Testing Equipment For Construction Materials

HUMBOLDT

H-2784


H-2784.500


H-2783

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 10 different 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 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.

Humboldt Super Air Meter **H-2784**
Ship wt. 4lbs. (15.9kg)

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. 4lbs. (15.9kg)

Humboldt Concrete Air Meter

ASTM C231, AASHTO T152

The H-2783 air meter features the Humboldt, all-brass super pump, the most reliable and highest quality pump available. The meter's easy-to-use, 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. A large, easy-to-read, 4-inch diameter, direct percentage gauge with calibration adjustments is accurate to the nearest 0.1%. The bucket features cast handles, which improve usability, especially when using bucket 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.

Humboldt Concrete Air Meter **H-2783**
Ship wt. 3lbs. (15.9kg)


H-2789


H-2793


H-2788

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. 3 lb (1.3kg)


H-2786C

H-2756


H-2755


H-2786


H-2786P

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)

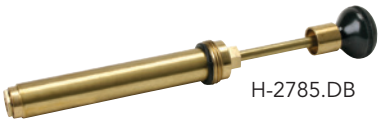
Air Meter Replacement Accessories

Item	Part No.
Calibration Vessel, plastic	H-2783.30
Calibration Vessel, metal	H-2785.31
Calibration Tube (outside)	H-2785.32
Calibration Tube (inside)	H-2785.33
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
Plastic Case, Horizontal	H-2783.62H
Wooden Case, Press-Ur-Meter	H-2785.38
Plastic Case, Press-Ur-Meter, Horizontal	H-2785.38HP

Press-Ur-Meter Concrete Air Meter
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. The kit includes a wood or 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 Concrete Air Meter — H-2786P
Press-Ur-Meter with vertical wood case — H-2786
Ship wt. 30lbs. (15.9kg)


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. 0.5lbs. (.45kg)

Chace Concrete Air Indicator Kit
AASHTO T199

(Isopropyl-Alcohol Method) Complete kit for measuring air content of fresh concrete includes H-2755 air indicator, instructions, cleaning brush and plastic squeeze-type bottle for alcohol in plastic storage box. Kit does not replace conventional air meters.

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

Chace Concrete Air Indicator
AASHTO T199

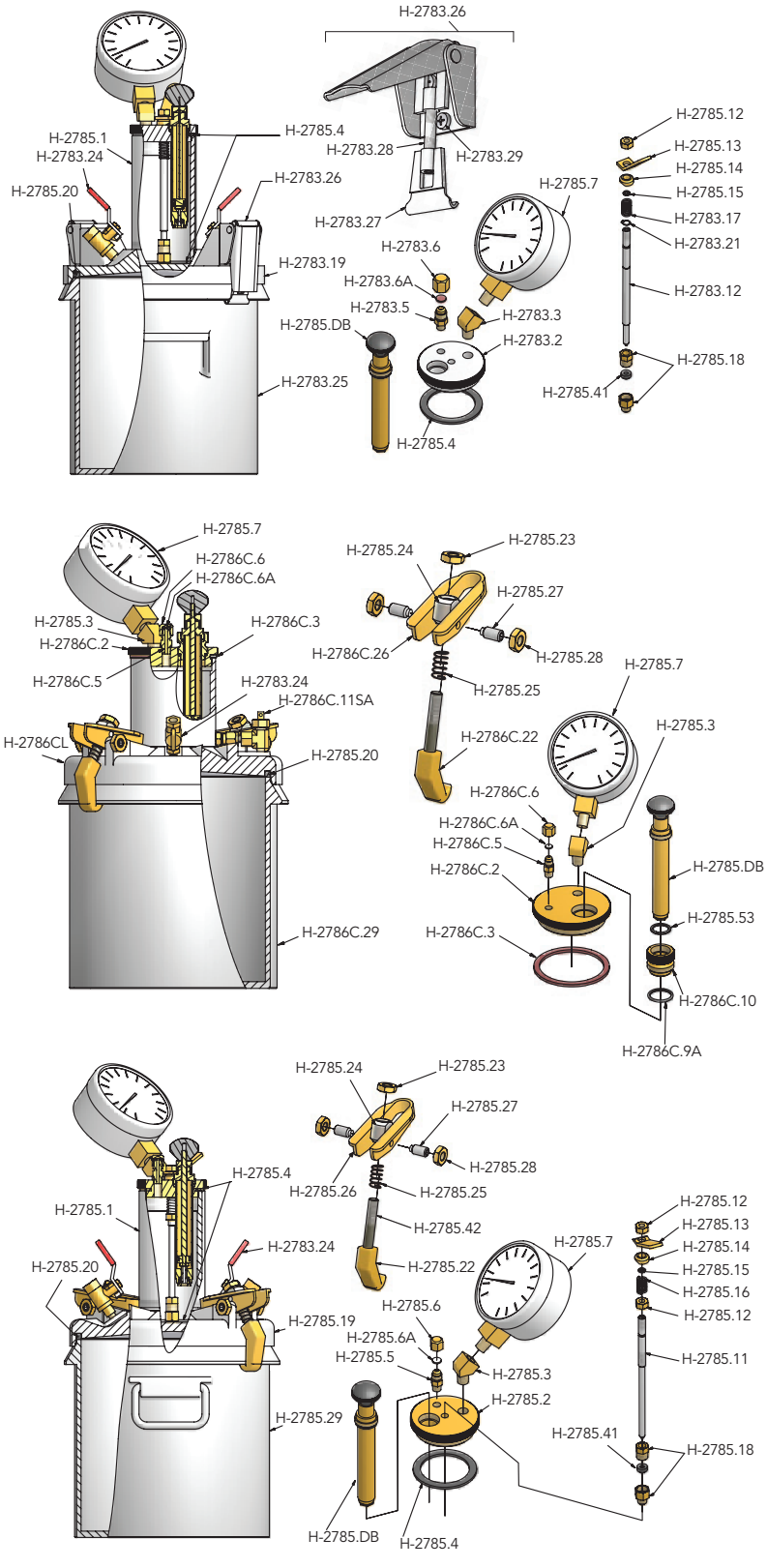
For quick field checks for air content of fresh concrete in about three minutes, pocket-sized unit air meter is furnished with instructions and correlation chart. Unit does not replace conventional air meters. Overall dimensions: 6.25 x 1.125" dia. (159 x 29mm).

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

Chace Air Indicator Glass Filter Tube Only
AASHTO T199

Chace Glass Filter Tube only — H-2755.2
Ship wt. 0.2lbs. (.45kg)

Air Meter Replacement Parts



Humboldt provides Repair and calibration services for air meters
Call: 1.800.544.7220

H-2783 Air Meter Replacement Items

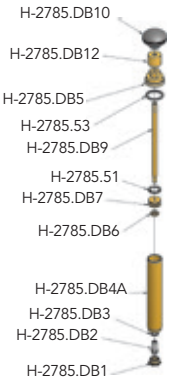
Part No.	Description	Part No.	Description
H-2785.1	Pressure chamber	H-2785.18	Needle valve seat assembly
H-2783.2	Pressure chamber cap	H-2783.19	Cover
H-2783.3	Pressure chamber elbow	H-2785.20	Cover O-ring
H-2785.4	Pressure chamber gasket	H-2783.21	Needle valve spring retainer
H-2783.5	Air-release stem	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-2785.1	Pressure chamber	H-2785.20	Cover O-ring
H-2783.2	Pressure chamber cap	H-2783.24	Cover Petcock
H-2783.3	Pressure chamber elbow	H-2785.22	Clamp with stud
H-2785.4	Pressure chamber gasket	H-2785.23	Clamp nut
H-2783.5	Air-release stem	H-2785.24	Clamp trunnion
H-2783.6	Air-release cap	H-2785.25	Clamp spring
H-2783.6A	Release cap gasket	H-2785.26	Clamp toggle
H-2785.7	Air meter gauge	H-2785.27	Clamp toggle set screw
H-2783.12	Needle valve stem	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-2783.17	Needle valve spring	H-2785.DB	Super Pump Assembly
H-2785.18	Needle valve seat assy.	H-2785.55	Gasket replacement kit
H-2785.19	Cover		

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-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.DB9	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


H-2795P


H-2796A


H-3650


ASTM Unit Weight Measures

Non-ASTM Unit Weight Measures

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
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
Ship wt. 19lbs. (6.8kg)

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
Ship wt. 3lbs. (0.9kg)

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.

Strike-Off Plates — see chart
Ship wt. see chart

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)

NOTE: Use 2" larger plate than the diameter of the unit weight measure.

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

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 Unit Weight Measures — see chart
Ship wt. see chart

Non-ASTM Unit Weight Measures

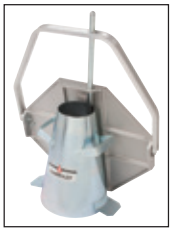
Capacity cu. ft. (liter)	Inside Dia. in. (mm)	Inside Ht. in. (mm)	Ship Wt. lbs. (kg)	Model
1/10 (2.8)	6 (152)	6.1 (155)	6.5 (3.2)	H-3660
1/4 (7.1)	8 (203)	8.8 (224)	15 (6.8)	H-3664
1/3 (9.3)	8 (203)	11.5 (292)	15.8 (8.7)	H-3663
1/2 (14.1)	10 (254)	11 (279)	20 (10)	H-3661
1 (28.3)	14 (356)	11.2 (155)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

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 Unit Weight Measures — see chart
Ship wt. see chart

See Pages 297 to 298 for Portable Scales for use in Unit Weight measure


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


H-3645


H-3655


H-3637


H-3656


H-3643

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
Ship wt. 34.5lbs. (18kg)

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)


H-3640
H-3640M


H-3640P


H-3650

H-3651


H-4901


H-3636


H-3725


H-3639.8


H-3800


H-3731


H-3638


H-3760


H-3639.20

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, ASTM C138M, ASTM C143, ASTM C143M, ASTM C173, ASTM C173M, ASTM C31, ASTM C31M, AASHTO M 205, AASHTO T 119, AASHTO T 152, 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)


H-4134


H-4134F


H-4132


HC-4972


H-4133

H-4133N

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 500psi.

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)

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 RS-232 interface.

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

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 16mm^2). 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.

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


H-3647


H-3648


H-3649


H-2950.RCA


H-4137

Vebe Consistometer
EN 12350-3; BS1881:104; UNI 9419

The Vebe Consitometer 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

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

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)

Mold Assembly for Vibrating Table Apparatus
ASTM C1176, C470

Test mold assembly for use with the H-3649 cylinder mold vibrating table apparatus. Test mold is 6" x 12"and can be locked into place on the vibrating table.

Test Mold Assembly	H-2950.RCA
	Ship wt. 1.15lbs. (9.1kg)

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, 16mm^2).

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.

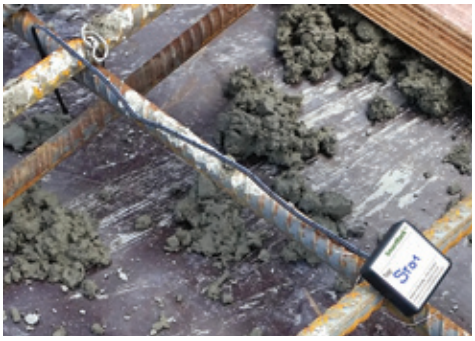
Resistance Needle Set	H-4143
	Ship wt. 0.5lb (1.0kg)

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

Maturity

H-2682

HG-4040



Installation Example of HG-4040

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, and**
- 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 with120V 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

Smart Rock, 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 formwork, 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 onsite 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 onsite.

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

- Hardening of concrete (formwork removal timing)
- Optimization of curing conditions
- Heating and cooling processes
- Quality control in the field
- Concrete maturity
- Estimation of strength (ASTM C1074)
- Concrete mix design optimization

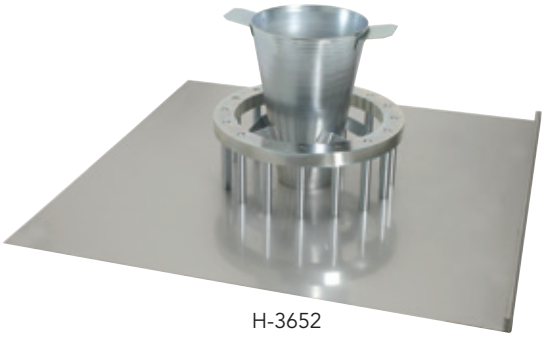
Features and Benefits

- Wireless Bluetooth technology
- Ruggedized and waterproof design
- Real-time data (e.g. temperature, strength, maturity, max-min temperature) display
- Continuous measurement and recording of temperature
- Easy activation through tying the wires together (this can be used onsite to hold the sensor around rebar)
- Extended temperature sensor for deep elements and mass concrete
- Maturity calibration curve database
- Long battery life (about 4 months in room temperature)
- Operation software (Android and iOS apps) for smartphone and tablet
- Easy data sharing
- Extended cable for temperature measurement, within 45 cm (18") from the concrete surface
- Measurement and calculation in both metric and imperial units

Smart Rock Maturity Sensor, 18"	HG-4040
Smart Rock Maturity Sensor, 10 ft.	HG-4040.10
Smart Rock Maturity Sensor, 20 ft.	HG-4040.20

Ship wt. 1lbs. (0.4kg)

Self Consolidating Concrete



H-3652

H-3658

HC-3666

HC-3668

HC-3665

J-Ring Test Set

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 engraved positioning rings.

J-Ring Test Set, Smooth Rods	H-3652
J-Ring Test Set, Rebar Rods	H-3652R
	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, Engraved, Stainless	H-3653
Slump Cone	H-3640

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)

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)

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)


H-3847A


H-3849A


H-3849A.G

H-3846A

Utility Mixer with Steel Drum

ASTM C192

Drum mixing capacity is 3 cu. ft. (85 Liters). Drum size: 5.5 cu. ft. (156 Liters). Compact, sturdy, lightweight concrete mixer for concrete, mortar, etc., can be bolted to floor or skid for permanent installation. Convenient drum lock allows the operator to secure the drum in one of five positions. Welded steel frame and heavy bushings for a long dependable life. Precision case, one-piece ring gear provides years of service. Quad-mixing system utilizes a four-piece, replaceable paddle and blade combination that creates four different mixing patterns for a more consistent mix. Overall dimensions (mixer only): 41" x 26" x 55" (1041 x 660 x 1397mm) **See chart for tow kit options.**

Utility Mixer with Steel Drum	
1/2HP Electric, 110V 60Hz	H-3847A
1/2HP Electric, 220V 60Hz	H-3847A.2F
1/2HP Electric, 220V 50Hz	H-3847A.5F
3.5HP Gasoline Motor	H-3847A.G
	Ship wt. 366lbs. (166kg)

Utility Mixer with Poly Drum

ASTM C192

Drum mixing capacity is 3 cu. ft. (85 Liters). Drum size: 5.5 cu. ft. (156 Liters). Compact, sturdy, lightweight concrete mixer for concrete, mortar, etc., can be bolted to floor or skid for permanent installation. Convenient drum lock allows the operator to secure the drum in one of five positions. Welded steel frame and heavy bushings for a long dependable life. Precision case, one-piece ring gear provides years of service. Non-stick, polyethylene drum provides easy clean-up and is replaceable. Sturdy, in-mold mixing blades. Overall dimensions: 41" x 26" x 55" (1041 x 660 x 1397mm).**See chart for tow kit options.**

Utility Mixer with Poly Drum	
1/2HP Electric, 110V 60Hz	H-3849A
1/2HP Electric, 220V 60Hz	H-3849A.2F
1/2HP Electric, 220V 50Hz	H-3849A.5F
3.5HP Gasoline Motor	H-3849A.G
	Ship wt. 346lbs. (156kg)

Poly Drum Replacement

3 cu. ft. replacement liner for H-3849 mixer.

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

Lightweight Wheelbarrow Mixer

ASTM C192

Drum mixing capacity is 3 cu. ft. (85 Liters). Lightweight, portable mixer only weighs 125 lbs. High-torque, 1/2 HP 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
1/2HP Electric, 220V 60Hz	H-3846A.2F
1/2HP Electric, 220V 50Hz	H-3846A.5F
	Ship wt. 121lbs. (54kg)

Poly Drum Cover

Snug-fitting drum cover for H-3849 mixer.

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


Hand Tow Kit


H-3849PC


High-Speed Tow Kit


H-3849PL

H-3847 Tow Kit Options	Hand Tow Kit	High-Speed Tow Kit
Mixer with Hand Tow Kit with 2.75" x 10" Semi-Pneumatic Tires	H-3847AHT	H-3847AHS
	H-3847AHT.2F	H-3847AHS.2F
	H-3847AHT.5F	H-3847AHS.5F
	H-3847AHT.G	H-3847AHS.G
H-3849 Tow Kit Options	**Hand Tow Kit**	**High-Speed Tow Kit**
Mixer with High-Speed Tow Kit with 4.8" x 12" Pneumatic Tires	H-3849AHT	H-3849AHS
	H-3849AHT.2F	H-3849AHS.2F
	H-3849AHT.5F	H-3849AHS.5F
	H-3849AHT.G	H-3849AHS.G

H-3030A

H-3030CL

Concrete Beam Tester

Self-contained, shock-proof portable concrete beam tester accurately and easily determines flexural strengths of 6" x 6" cross-section test beams. Hydraulically driven unit uses center-point loading method with continuous readings to the break and retains maximum reading to eliminate lost data. Gauge resets to zero for repeat tests. Lightweight aluminum unit has dual registration of modulus of 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.

The unit is not in full compliance with ASTM C293 since it uses a hand pump, but numerous government agencies including Illinois DOT have found its results acceptable for their purposes.

Concrete Beam Tester

16", Single-Point	H-3030A
18", Single-Point	H-3032A
18", Third-Point	H-3033A

Ship wt. 87lbs. (39.4kg)

Concrete Beam Tester w/ Micro-pump

ASTM C293,C78; AASHTO T177

By adding the Micro-pump to our Beam Tester allows the user to put a continuous load pressure to the beam, which complies 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.

Concrete Beam Tester w/ Micro-pump

16", Single-Point	H-3030CL
18", Single-Point	H-3032CL
18", Three-Point	H-3033CL

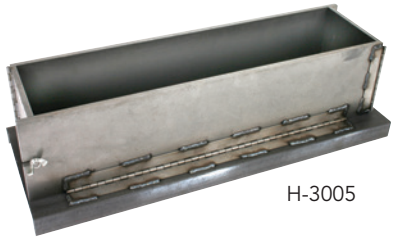
Ship wt. 90lbs. (40.8kg)

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



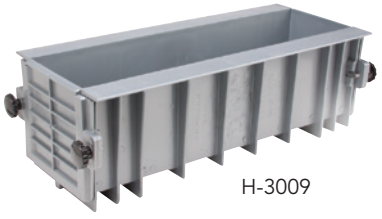
H-3005

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



H-3009

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.

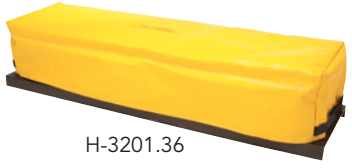
Description	Ship wt.	Part No.
6" x 6" x 22" (152 x 152 x 559mm)	29.2lbs (13kg)	H-3007

H-3007

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



H-3201.36

Cube Molds and Mold Strippers

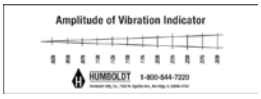

H-3755


H-2999A


H-3041S


H-3041SMA


H-3045 H-3046



H-3754A


H-3753


H-2827


H-2827MP


H-2905.1 H-3650

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
Ship wt. 27lbs. (12kg)

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)

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)

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)

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. 90lbs. (41kg)

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


H-3046.1

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

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

TempGuard Insulated Cylinder Molds

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

TempGuard (patent pending) cylinder molds are a convenient and easy-to-use insulated concrete cylinder mold. TempGuard cylinders improve field curing year-round and save you time and money. Because TempGuard keeps the concrete test cylinder at a more consistent and constant temperature, which better matches the project concrete, you get a more realistic representation of the project concrete's actual properties and they are easy to strip. Available in cartons of (36) 4" x 8" cylinders with lids.

TempGuard Cylinder Molds 18 lbs (8.2kg) H-3042

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

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

Cylinder Testing


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


H-2977C


H-2970.1


H-2970A


HC-2963


HC-2965
HC-2966

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)

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)

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)

Perfa-Cure Curing Box, Heating & Cooling

ASTM C31; AASHTO T23

Lightweight Perfa-Cure Curing Box provides storage and protection for concrete test specimens on the job site to meet required initial curing conditions. Users plug in the unit and set the thermostat to the desired temperature. This model provides both heating and cooling functions. The heating panel uses a safe, aluminum base to radiate heat. The cooling feature uses a blower fan to circulate cool air inside the box and automatically switch from heating to cooling based on conditions. The green indicator light illuminates when the unit is in operation. Compliant with current ASTM C31 and AASHTO T23 specifications for initial curing of concrete test specimens in the field. Robust carrying handles on each end make transporting empty units easy. The Heater Panel and AC Cooling Units on the inner lid are easily replaceable. A max-min registering thermometer is mounted inside the box to monitor curing conditions. Accommodates (10) 6" x 12" (152 x 305mm) or (32) 4" x 8" (102 x 203mm) concrete cylinders

Perfa-Cure Box, Heating & Cooling HC-2965
Perfa-Cure Box, Heating Only HC-2966
Ship wt. 40lbs. (18kg)

Perfa-Cure Mini Curing Box, Heat Only

ASTM C31; AASHTO T23

Small, Lightweight Perfa-Cure Curing Box provides storage and protection for concrete test specimens on the jobsite to meet required initial curing conditions. Provides heat only. Accommodates (4) 6" x 12" (152 x 305mm) or (10) 4" x 8" (102 x 203mm) concrete cylinders

Perfa-Cure Minni, Heat Only HC-2963
Ship wt. 30lbs. (13.6kg)


H-2968


H-2969.6


H-2985


H-2986A


H-2988A


H-2735

Concrete Curing Box, Deluxe

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. 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, Deluxe, 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)

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

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)

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)

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)

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

H-2734
H-2735.5F

H-2737

H-2738

H-2914B

Fogging Fan for Humidity Control

Designed specifically for small spaces that need a dependable unit in environments up to 100% RH (relative humidity). Well suited for areas between 16 to 30 feet in length, (and can be used in smaller areas down to 12 foot) this model has a maximum fogging output of 5 GPH and can propel fog up to 20 feet. The H-2734 utilizes a two-blade fan, making it about 30% quieter than larger units. The nozzle-free fans can atomize ordinary water supplies into a very fine mist-like fog. Utilizing high-speed centrifugal force and powerful air flow, these units can propel a misty-fog stream up to 20 feet away.

The powerful H-2734 is engineered to withstand humid conditions as high as 100% RH and above, and corrosive environments containing salts, lime, ammonia and other acidic compounds. Units are constructed of impenetrable components like Nema 4 connections, all 304 SST hardware, UV stabilized polyethylene plastics, PVC dip-coated steel, and sulfuric anodized aluminum. Standard configuration includes a 1/2 HP Baldor wash-down-duty motor that is specifically designed for wet, corrosive environments, 115/230V, 1ph, 60Hz.

Included with unit is an: adjustable-angle hanging bracket; visual flowmeter panel with strainer, 12 ft. SJO indoor/outdoor, heavy-duty power cord; 20 ft. Poly-flo water line tubing; 16 ft. water drainage line; 100% stainless steel hardware, and easy-to-follow operator's manual.

Fogging Fan, 115V, 50/60Hz — H-2734
Ship wt. 60lbs. (27kg)

Fogging Fan for Humidity Control

Similar to the H-2734 Fan above, but utilizes a 1/3 HP Baldor wash-down-duty motor that is specifically designed for wet, corrosive environments.

Fogging Fan, 240V, 50/60Hz — H-2735.5F
Ship wt. 48lbs. (22kg)

Accessories for H-2734 & H-2735.5F

Description	Part No.
Floor Stand (Econo)	H-2734.1
Ceiling Support	H-2734.2
Wall Mount	H-2734.3
24-Hour Timer	H-2734.4
Humidistat	H-2734.5

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.

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)

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.

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
Mini 360° Oscillator	H-2737.4

HumiDisk Humidifier

HumiDisk is a small, sturdy and easy-to-install humidifier. It operates on a standard water supply line and is based on a simple and effective principle. By exploiting the centrifugal force produced by a spinning disk, the humidifier atomizes the water into very fine droplets that can easily be absorbed by the surrounding air, humidifying and cooling at the same time. The energy consumption is just 34 W/(kg/h).

HumiDisk is easy to install and requires minimum maintenance. Operating conditions are 34 to 95°F (1.1 to 35°C), 0–100% RH non-condensing. The humidifier can be fitted with optional heaters that are activated automatically at temperatures around 0°C, allowing operation down to -2°C.

The unit is supplied with assembly brackets for easy wall mounting, or can be hung from the ceiling using metal chains.

HumiDisk, 120 60Hz — H-2914B
HumiDisk, 220V 50/60Hz — H-2914B.4F
Ship wt. 8lbs. (3.6kg)


H-2736


H-2732


H-2736.SW


H-2743


H-2736.3


H-2736.2


H-2736.1


H-2736.4


H-2743.1

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)

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

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 H-2736.SW
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. 0.5bs. (.22kg)

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)

Thermo Recorder, Temperature/RH Logger
The thermo recorder is a data logger capable of measuring, displaying and recording temperature and humidity. It features one temperature channel and one humidity channel. The measuring accuracy of ±2.5%RH enables more precise measurements and allows for measurement within a wider range. The data recorded into the unit can then be downloaded quickly via USB communication cable to your computer whereby with the exclusive software you can easily process the data into graphs, tables, save to files and/or print it out to help you analyze the data collected. Humidity measuring range: 0 to 99%RH. The H-2743 with the sensor included in this package can simultaneously measure and record temperature in a range of -30 to 80°C and humidity in a range of 0 to 99% RH. Data recording capacity: 8,000 readings × 2 channels. One channel can record and hold up to 8,000 measurement readings. At the longest recording interval of 60 minutes, recording can continue consecutively for one year. Low energy consumption design gives you ten months of continuous operation with only one AA alkaline battery. This enables measuring and recording over long periods of time.

Thermo Recorder, Temp./RH Logger H-2743
Ship wt. 1l.3bs. (.58kg)

Extension Cable for Thermo Logger
3 ft. cable for use in extending distance between logger and sensor

Extension Cable for Thermo Logger H-2743.1
Ship wt. 0.5bs. (.22kg)

Cylinder Prep

HC-2980

HC-2971

HC-2972

Specimen Grinding Machine

ASTM standards 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 by proper locking stirrups. See chart for specimen types and sizes.

The revolving abrasive head is radially and alternatively 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 in 0.05mm graduations by using the top handwheel. The machine is made from rugged plate and is supplied complete with: control panel; coolant/decantation tank for water and emulsifying oil; motor pump; set of abrasive sectors; safety chip guard that automatically stops the machine if it is removed.

Specimen Grinder, 120V, 60Hz — HC-2980
Specimen Grinder, 240V, 60Hz — HC-2980.2F
Cylinder End Grinder, 240V, 50Hz — HC-2980.5F

Ship wt. 904lbs. (410kg)

NOTE: Must separately purchase the appropriate Locking Stirrups or Fast Locking Device for application to be used. Not included with Grinder.

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, 100, 150, 4" x 8"and 6" x 12". Complete with distance piece 60mm high. **Note: must purchase HC-2980.3 for proper operation.**

Locking Stirrups, Cylinders — HC-2980.2

Ship wt. 25 lb (11.3kg)

HC-2975 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 Cube 150mm Cube 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 50Hz 3ph 4500W
Dimensions	48" x 42.5" x 68" (W x D x H) (1220 x 1080 x 1730mm)

Locking Stirrups, Cubes

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

Locking Stirrups, Cubes — HC-2980.3

Ship wt. 25 lb (11.3kg)

Locking Stirrups, Block

For use with block specimens 390 x 250mm.

Locking Stirrups, Block — HC-2980.4

Ship wt. 25 lb (11.3kg)

Abrasive Grinding Sections

Set of 8 abrasive grinding sections provide excellent grinding capabilities and long life.

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)

Masonry Saw

Saw for use in cutting concrete and mortar cylinders and blocks. Blade capacity is 20" (508mm), which allows a cutting depth of 8" (203mm). Capable of cutting 8" x 8" x 16" block. Unit features a 3hp, 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 below.

Masonry Saw, 230V, 60Hz — HC-2970.2F
Masonry Saw, 230V, 50Hz — HC-2970.5F

Ship wt. 334lbs. (152kg)

Masonry Saw Blade, 20"

High-quality, 20" fast cutting blade for a variety of materials. Designed for dry or wet cutting. The segment height is .275", segment thickness is .125".

Masonry Saw Blade, 20" — HC-2971

Ship wt. 15lbs. (6.8kg)

Saw Blade, Silent Runner 20"

A diamond blade for medium to large jobs and maximum production at a low cost per cut. It features a laminated core for maximum noise reduction. The segment height is .390", segment thickness is 14".

Saw Blade, Silent Runner 20" — HC-2972

Ship wt. 15bs. (6.8kg)


H-2819.12


HC-2817


H-2939


H-2945


H-2900.4
H-2900.6


H-2938

H-2937
H-2937M


H-2945G


H-2943

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, Cetified	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 gradations on one end of 0.10" (2.5mm) apart and the other end is every 2mm.

Core Length Measuring Device	H-2939

Ship wt. 10.4bs. (0.1kg)

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)

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)

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)

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)

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. Instrument has a range of 5.5 to 6.5 inches; readings can be made to hundredths or thousandths in decimals.

Concrete Micrometer	H-2938

Ship wt. 3.8lbs. (1.7kg)

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)

Cylinder Capping

H-2952

H-2925A

H-2946C

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)

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)

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 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)

Econ-o-Cap Cylinder Pads	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
Old-Style Cylinder Pads	**Part #**
6.1875" Pad, 50 Durometer	H-2946DOCP50
6.1875" Pad, 60 Durometer	H-2946DOCP60
6.1875" Pad, 70 Durometer	H-2946DOCP70

Econ-o-Cap Capping Pads see chart above

see chart above

Econ-o-Cap Capping Rings

ASTM C1231; AASHTO T22

Single Cylinder Rings, sold individually.

Econ-o-Cap Sets	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

H-2951 Kit

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

Introducing Humboldt's New HC-5090 and HC-5070 Compression Machine Controllers

Humboldt's new concrete compression machine controllers are designed to make breaking cylinders, cubes and beams easier and more precise. Available in a bolt-on and a console configuration, Humboldt's new HC-5090 and HC-5070 concrete compression machine controllers deliver a whole new level of speed, accuracy and ease-of-use for compression machines. Their 7" color screens provide a large and clean layout of information and makes quick, visual monitoring a breeze.

However, what really makes these controllers stand out from other controllers are their four (4) integral and independent data acquisition channels, which can be utilized in stand-alone configurations or accessed through a LAN-net-worked computer using Humboldt's Next Software.

These controllers allow you to control up to four different compression frames from a single, hydraulic power pack, as well as compressometers/extensometers with ease all directly from the controller or from a networked computer.

Auto Testing

The controllers are set up to run standard tests, such as ASTM C39, C78, C109, C293, C469, C496, C1019 and C1604 among others at the push of a button. Just pick the test you want to run and the controller will handle it, and, at the end of the test the piston will return to the start position for the next test. The controller can also automatically hold a load at any desired point for a specific time.

Calibration

Also, the controllers provide several calibration features that will make calibrating your machine a breeze, as well as accurate, including automatic calibration and micro adjustments of up to 10 points for dialing in the calibration accuracy.

In stand-alone mode, these controllers provide a 7" (178mm) touch-screen controller, giving you finger-tip control of your testing processes, as well as providing real-time, visual views of your data in both tabular and graph formats. The touch screen provides colorful, at-a-glance monitoring of testing functions without the use of a computer.

Operators can see all the data in several formats at the machine while the test is running. Data can then be viewed simultaneously or downloaded later to a computer in the lab, in the next room or at a different location, while also providing report generating capabilities using Humboldt's NEXT software. Both controllers feature four independent, data acquisition channels provide you with enough options to control all your data needs with one controller. A typical setup would provide logging of Load, Stress and Rate in channel one. With channels two and three, you could monitor a compressometer/extensometer set up and with the fourth channel you could monitor a separate load frame set up for flexural testing. All this information could simultaneously be tracked at the controller interface or by a networked computer at any location.

Controller Specifications	
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	50 reading per second
Multi-test storage	1000
Points per test	2500

Both Controllers provide:

- 4-channel data acquisition
- Hi-res, 7", waterproof, touch-screen provide total control and real-time graphical display of tests
- Machine control and data acquisition via machine touch-screen or network PC
- Real-time graphical chart and numerical display of test via touch-screen display or network PC
- Basic, user-defined software included
- Effective sampling rate of 1 reading per second
- Stores up to 1000 tests with 3000 points per test
- USB port provides data transfer to thumb drive, PC or tablet, plus it can power a wireless access point for wireless communications

Perfect for Upgrades

Looking to upgrade the controller on your existing compression machines? The HCM-5090 is the perfect controller for that. It is easy to install and the result is you will now have an advanced controller for your compression machine with all the features, including standard test programs, easy and accurate calibration, four data channels, data acquisition and all the other features the HCM-5090 offers.

Controller	HC-5090.3F
UPS	Ship wt. 6lbs. (2.7kg)
Console Controller	HC-5070
Console Controller	HC-5070.4F
	Ship wt. 200 lbs. (90.7kg)

HC-5070 Console Controller shown with Compression machine set up to break cylinders and an auxiliary machine for beams.

HC-5070

Compression Testing

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 ±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.
- Three choices of digital control (see page 109)
- Optional test platens and accessories available on pages 169-170
- 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 166 for models and ordering information.

HCM-2500 Series Compression Machines
Ship wt. 885 lbs. (401kg)

HCM-3000 Series Compression Machines
ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of standard strength concrete mixes
- 3000 to 300,000 lbf (13.3 to 1334kN) testing range with accuracy of ±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.
- Three choices of digital control (see page 109)
- Optional test platens and accessories available on pages 169-170
- **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 66 for models and ordering information.

HCM-3000 Series Compression Machines
Ship wt. 1078 lbs. (488kg)

HCM-4000 Series Compression Machines
ASTM C39, E4, AASHTO T22

- Suitable for cylinders, cubes, beams and cores of high-strength concrete mixes
- 4000 to 400,000 lbf (17.8 to 1780kN) testing range with accuracy of ±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.
- Three choices of digital control (see page 109)
- Optional test platens and accessories available on pages 169-170
- 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 166 for models and ordering information.

HCM-4000 Series Compression Machines
Ship wt. 1700 lbs. (771kg)

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

Shown with Optional Flexural Attachment for Beams.

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 ±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.
- Three choices of digital control (see page 109)
- Optional test platens and accessories available on pages 169-170
- 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 166 for models and ordering information.
HCM-5000 Series Compression Machines
Ship wt. 2500 lbs. (1134kg)

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 ±5% of indicated load
- Standard configuration includes no platens. Order HCM-0119Al for beam testing
- Three choices of digital control (see page 109)
- Optional test platens and accessories available on pages 169-170
- Available as an auxiliary frame design with no controller or pump; includes mounting stand, load frame selector valve and overload protection.
- **Mounting stand: OPTIONAL**, order: HCM-0032

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

See Page 166 for models and ordering information.
HCM-0030 Series Compression Machines
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 ±5% of indicated load
- 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 166 for models and ordering information.
HCM-1000 Series Compression Machines
Ship wt. 655lbs. (297kg)

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

Concrete Compression Machine Ordering Matrix

HCM-4000iHA.5F

- Load Capacity
- Load Indicating System: iH or i7
- Pump: 1/2hp use no suffix; 3/4hp use P suffix; Automatic use A suffix
- Electrical Configuration: 110V 60Hz use no suffix; 220V 60Hz use .2F suffix; 220V 50Hz use .5F suffix; 220V 50/60Hz use .4F suffix

HCM-0030 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-0030iHA	30,000 lbs. (133.5 kN)	iH	120V 60Hz	1hp Automatic
HCM-0030iHA.4F			230V 50-60Hz	
HCM-0030iH			120V 60Hz	1/2hp Manual
HCM-0030iH.2F			230V 60Hz	1/2hp Manual
HCM-0030iH.5F			230V 50Hz	1/2hp Manual
HCM-0030i7		i7	120V 60Hz	1/2hp Manual
HCM-0030i7.2F			230V 60Hz	1/2hp Manual
HCM-0030i7.5F			230V 50Hz	1/2hp Manual

HCM-1000 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-1000iHA	100,000 lbs. (445 kN)	iH	120V 60Hz	1hp Automatic
HCM-1000iHA.4F			230V 50-60Hz	
HCM-1000iH			120V 60Hz	1/2hp Manual
HCM-1000iH.2F			230V 60Hz	1/2hp Manual
HCM-1000iH.5F			230V 50Hz	1/2hp Manual
HCM-1000i7		i7	120V 60Hz	1/2hp Manual
HCM-1000i7.2F			230V 60Hz	1/2hp Manual
HCM-1000i7.5F			230V 50Hz	1/2hp Manual

HCM-2500 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-2500iHA	250,000 lbs. (1,112 kN)	iH	120V 60Hz	1hp Automatic
HCM-2500iHA.4F			230V 50-60Hz	
HCM-2500iH			120V 60Hz	1/2hp Manual
HCM-2500iHP				3/4hp Manual
HCM-2500iH.2F			230V 60Hz	1/2hp Manual
HCM-2500iHP.2F				3/4hp Manual
HCM-2500iH.5F			230V 50Hz	1/2hp Manual
HCM-2500iHP.5F				3/4hp Manual
HCM-2500i7		i7	120V 60Hz	1/2hp Manual
HCM-2500i7P				3/4hp Manual
HCM-2500i7.2F			230V 60Hz	1/2hp Manual
HCM-2500i7P.2F				3/4hp Manual
HCM-2500i7.5F			230V 50Hz	1/2hp Manual
HCM-2500i7P.5F				3/4hp Manual

HCM-3000 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-3000iHA	300,000 lbs. (1,334 kN)	iH	120V 60Hz	1hp Automatic
HCM-3000iHA.4F			230V 50-60Hz	
HCM-3000iH			120V 60Hz	1/2hp Manual
HCM-3000iHP				3/4hp Manual
HCM-3000iH.2F			230V 60Hz	1/2hp Manual
HCM-3000iHP.2F				3/4hp Manual
HCM-3000iH.5F			230V 50Hz	1/2hp Manual
HCM-3000iHP.5F				3/4hp Manual
HCM-3000i7		i7	120V 60Hz	1/2hp Manual
HCM-3000i7P				3/4hp Manual
HCM-3000i7.2F			230V 60Hz	1/2hp Manual
HCM-3000i7P.2F				3/4hp Manual
HCM-3000i7.5F			230V 50Hz	1/2hp Manual
HCM-3000i7P.5F				3/4hp Manual

HCM-4000 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-4000iHA	400,000 lbs. (1,780 kN)	iH	120V 60Hz	1hp Automatic
HCM-4000iHA.4F			230V 50-60Hz	
HCM-4000iHP			120V 60Hz	3/4hp Manual
HCM-4000iHP.2F			230V 60Hz	3/4hp Manual
HCM-4000iHP.5F			230V 50Hz	3/4hp Manual
HCM-4000i7P		i7	120V 60Hz	3/4hp Manual
HCM-4000i7P.2F			230V 60Hz	3/4hp Manual
HCM-4000i7P.5F			230V 50Hz	3/4hp Manual

HCM-5000 Series Compression Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-5000iHA	500,000 lbs. (2,224 kN)	iH	120V 60Hz	1hp Automatic
HCM-5000iHA.4F			230V 50-60Hz	
HCM-5000iHP			120V 60Hz	3/4hp Manual
HCM-5000iHP.2F			230V 60Hz	3/4hp Manual
HCM-5000iHP.5F			230V 50Hz	3/4hp Manual
HCM-5000i7P		i7	120V 60Hz	3/4hp Manual
HCM-5000i7P.2F			230V 60Hz	3/4hp Manual
HCM-5000i7P.5F			230V 50Hz	3/4hp Manual

Concrete Compression Machine Ordering Matrix

HCM-4000B Masonry Series Block Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-4000BiHA	400,000 lbs. (1,780kN)	iH	120V 60Hz	1hp Automatic
HCM-4000BiHA.4F			230V 50-60Hz	
HCM-4000BiHP			120V 60Hz	3/4hp Manual
HCM-4000BiHP.2F			230V 60Hz	3/4hp Manual
HCM-4000BiH.5F			230V 50Hz	1/2hp Manual
HCM-4000BiHP.5F				3/4hp Manual
HCM-4000Bi7P		i7	120V 60Hz	3/4hp Manual
HCM-4000Bi7P.2F			230V 60Hz	3/4hp Manual
HCM-4000Bi7P.5F			230V 50Hz	3/4hp Manual

HCM-5000B Masonry Series Block Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-5000BiHA	500,000 lbs. (2,224kN)	iH	120V 60Hz	1hp Automatic
HCM-5000BiHA.4F			230V 50-60Hz	
HCM-5000BiHP			120V 60Hz	3/4hp Manual
HCM-5000BiHP.2F			230V 60Hz	3/4hp Manual
HCM-5000BiH.5F			230V 50Hz	1/2hp Manual
HCM-5000BiHP.5F				3/4hp Manual
HCM-5000Bi7P		i7	120V 60Hz	3/4hp Manual
HCM-5000Bi7P.2F			230V 60Hz	3/4hp Manual
HCM-5000Bi7P.5F			230V 50Hz	3/4hp Manual

HCM-4000P Masonry Series Prism Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-4000PiHA	400,000 lbs. (1,780kN)	iH	120V 60Hz	1hp Automatic
HCM-4000PiHA.4F			230V 50-60Hz	
HCM-4000PiHP			120V 60Hz	3/4hp Manual
HCM-4000PiHP.2F			230V 60Hz	3/4hp Manual
HCM-4000PiH.5F			230V 50Hz	1/2hp Manual
HCM-4000PiHP.5F				3/4hp Manual
HCM-4000Pi7P		i7	120V 60Hz	3/4hp Manual
HCM-4000Pi7P.2F			230V 60Hz	3/4hp Manual
HCM-4000Pi7P.5F			230V 50Hz	3/4hp Manual

HCM-5000P Masonry Series Prism Machines	Capacity	Controller	Electrical	Pump Size and Control
HCM-5000PiHA	500,000 lbs. (2,224kN)	iH	120V 60Hz	1hp Automatic
HCM-5000PiHA.4F			230V 50-60Hz	
HCM-5000PiHP			120V 60Hz	3/4hp Manual
HCM-5000PiHP.2F			230V 60Hz	3/4hp Manual
HCM-5000PiH.5F			230V 50Hz	1/2hp Manual
HCM-5000PiHP.5F				3/4hp Manual
HCM-5000Pi7P		i7	120V 60Hz	3/4hp Manual
HCM-5000Pi7P.2F			230V 60Hz	3/4hp Manual
HCM-5000Pi7P.5F			230V 50Hz	3/4hp Manual

HCM-720

i7 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 available as a retrofit package.

i7 Digital Indicator — HCM-720
Ship wt. 13 lbs. (5.9kg)

Optional Travel Limit Switch

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

Limit Switch, HCM-2500 Series	HCM-TM0101
Limit Switch, HCM-3000 Series	HCM-TM0106
Limit Switch, HCM-4000 Series	HCM-TM0100
Limit Switch, HCM-5000 Series	HCM-TM0102

Ship wt. 3 lbs. (1.4kg)

Compression Testing

shown with optional Platen Carrier Bracket

HCM-5000P

Masonry Series Compression Machines

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

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

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

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

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

Optional test platens and accessories add to the versatility of the block and prism machines, see pages 169-170.

See Pages 166-167- for models and ordering information.

HCM-4000B Series Block Machines — Ship wt. 1,700 lbs. (771kg)

See Page 111 for models and ordering information.

HCM-4000P Series Prism Machines — Ship wt. 1,700 lbs. (771kg)

See Page 111 for models and ordering information.

HCM-5000B Series Block Machines — Ship wt. 2700 lbs. (1224kg)

See Page 111 for models and ordering information.

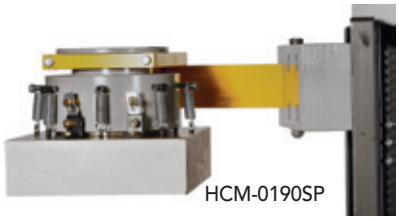
HCM-5000P Series Prism Machines — Ship wt. 2700 lbs. (1224kg)

HCM-0802

Draw Rod Assembly

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

Draw Rod Assembly — HCM-0802 — Ship wt. 38 lbs. (17.3kg)



HCM-0190SP

Platen Carrier Brackets

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

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

HCM-4000 Carrier Bracket — HCM-0190SP — Ship wt. 120 lbs. (54.4kg)

HCM-5000 Carrier Bracket — HCM-0190P — Ship wt. 155 lbs. (70.3kg)

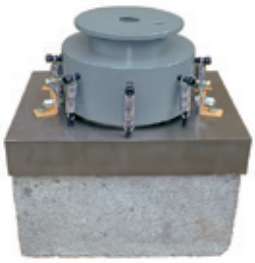
Masonry Series Compression Machines

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


HCM-0101


HCM-0113


HCM-0112A


HCM-0107P


HCM-0119A

Cylinder Platens

ASTM C39, AASHTO T-22

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

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

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

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

Cylinder Platens — see chart above
Ship wt. 1078 lbs. (488.7kg)

6" (152mm) Cube Platen Test Sets

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

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

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

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

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

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

6" (152mm) Cube Platen Set — see chart above
2500 Platen — Ship wt. 38 lbs. (17.2kg)
3000 Platen — Ship wt. 116 lbs. (52.6kg)
4000 & 5000 Platen — Ship wt. 100 lbs. (45.3kg)

2" (50mm) Cube Platen Test Sets

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

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

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

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

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

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

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

2" (50mm) Cube Platen Set — see chart above
Ship wt. 14lbs. (6.3kg)

Masonry Platens

ASTM C140, C1314 for HCM-0107P Only!

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

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

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

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

Masonry Platen — see chart above
Ship wt. 135 lbs. (61.2kg)

Flexural Beam Attachment

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

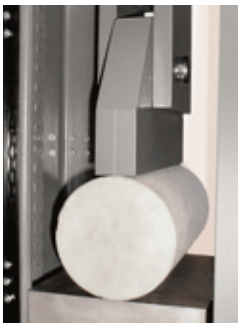
Used to determine the modulus of rupture of center or third-point beams with a depth of 6" (150 mm). The upper heads load bearing blocks are easily changed for either a center or third-point testing configuration. Bottom support blocks are set in the lower support channel with a fixed 18" (457 mm) span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

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

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

Flexural Beam Attachment — see chart above
Ship wt.134 lbs. (60.7kg)

Compression Testing


HCM-0120


HCM-00127


HCM-0135


HCM-0718

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 CM-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)

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" (203mmm) 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)

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 crosshead 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

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)

AbleCable

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

AbleCable — HCM-0718
Ship wt. 0.4lbs. (0.181g)

AbleCable Extension, 25' (7.6m) — HCM-0707.25
Ship wt. 5lbs. (2.2kg)

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

Supplied: Item comes with machine, NR: Not required

H-2912L

H-2911

H-2918D

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

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

Compressometer-Extensometers

ASTM C469

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

Compressometer-Extensometers **see chart above**

Ship wt. 9.6 lbs. (4.3kg)

Compressometers

ASTM C469

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

Compressometers **see chart above**

Ship wt. 10 lbs. (4.5kg)

Data Acquisition Setups

ASTM C469

You can fully automate your test data collection, as well as control any concrete compression frame with the Humboldt HC-5090.3F Controller.

The HCM-5090's four independent, data acquisition channels provide you with enough options to control all your data needs with one controller. A typical setup would provide logging of Load, Stress and Rate in channel one. With channels two and three, you could monitor a compressometer/extensometer set up and with the fourth channel you could monitor a separate load frame set up for flexural testing. All this information could simultaneously be tracked at the controller interface or by a networked computer at any location. In standalone mode, this controller provides a 7" (178mm) touch-screen controller, provides you finger-tip control of your testing processes, as well as providing real-time, visual views of your data in both tabular and graph formats. These new touch screens provide colorful, at-a-glance monitoring of testing functions without the use of a computer. Operators can see all the data in several formats at the machine while the test is running. Data can then be viewed simultaneously or downloaded later to a computer in the lab, in the next room or at a different location, while also providing report generating capabilities using Humboldt's NEXT software

Humboldt Controller, 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 plug for HCM-5090

Pressure Transducer **HM-4177**

Ship wt. 1lbs. (453g)

HCM-5090.3F

HM-2310.04

HM-4177

Rebound Test Hammers

Concrete Rebound Hammers
ASTM C805, D5873; BS 1881: Part 202; ISOIDIS8045; ENV 206; IGJ/T 23-2001

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

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

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/mm^2) 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/mm^2) — H-2975LM
Ship wt. 4.8lbs. (2.2kg)

Digi-Schmidt Concrete Test Hammer

The Digi-Schmidt concrete Test hammer couples the original Schmidt hammer with rebound measuring sensors and microprocessor technology to provide an instrument designed for applications requiring numerous measurements. The method is rapid, reproducible, and has resolution previously unattainable by manual models.

The hammer is connected to a control and display unit by means of a connecting cable. Strength values are shown digitally as they are taken and also displayed as groups of bars on the 128 x 128 pixel graphic LCD. Mean value and standard deviation for a preset number of measurements are computed and displayed. Via the menu display, the user can select: hammer impact direction (up, down, horizontal, etc.); desired engineering units (psi, MPa, kg/cm^2, or N/mm^2), and indicate the specimen size and type (cylinders, cubes, etc.) for the strength data to be predicted.

The instrument measuring range is 1,450 to 10,150 psi (10-70 N/mm^2) using 2.207 Nm impact energy. Accuracy is ±0.2R with 0.5R reproducibility. Rebound vs. strength correlation curves for 7 and 28 day strengths are installed in memory, or the users own data may be installed via keyboard entry. The Internal memory holds 5000 measurements, each with date and time. Data can be transferred via the RS-232C interface to a PC in Microsoft Excel using the included cable and software. Direct printing is possible.

The Digi-Schmidt consists of the test hammer, control and display unit, connecting cable, PC cable, carrying strap, rubbing stone, instruction manual and a plastic carrying case.

Digi-Schmidt Concrete Test Hammer — H-2976
Ship wt. 12lbs. (5.4 kg)

Silver Schmidt Hammer

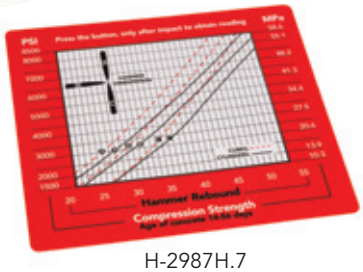
The Proceq Silver Schmidt test hammer has been redesigned to provide unmatched accuracy, repeatability and easy, intuitive operation. The Silver Schmidt features quicker and more accurate testing while addressing the previous insufficiencies of the traditional hammers. With the Silver Schmidt impact 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 eliminates cocking the hammer for each blow and recording the results, the Silver Schmidt 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. 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.

H-2975.27

H-2975.25
H-2975.25N

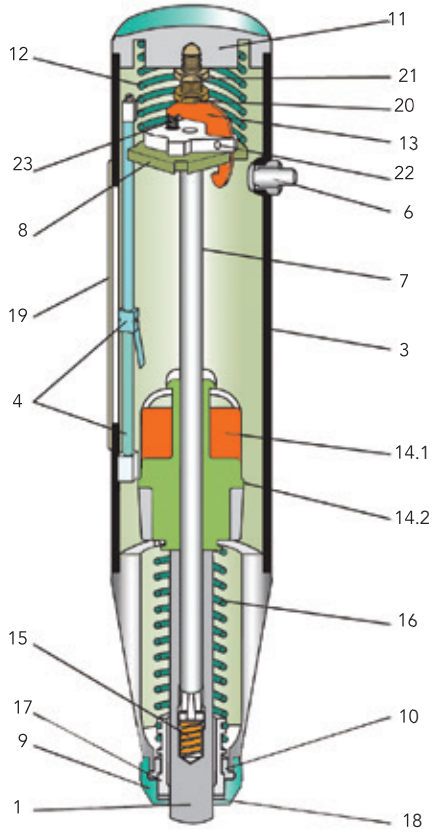
H-2975NRP



H-2987H.7

H-2972

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



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. 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.

Silver Schmidt Hammer H-2971STN
Ship wt. 4.9lbs. (2.2kg)

Silver Schmidt Hammer w/ Hammerlink Software

Same as H-2971STN, but includes complete Hammerlink software. Hammerlink software features include: extended memory usage; rapid uniformity assessment with summary view; sorting of data; user-defined conversion curves (polynomial and exponential); user-defined statistical methods; highlighting of mean, median and outliers; carbonation correction; print outs, and export to third party software.

Silver Schmidt w/ Software H-2971U
Ship wt. 4.3lbs. (1.9kg)

Schmidt Hammer, Type NR

The H-2975NR Schmidt® hammer, type NR, 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 H-2975NR includes an integral paper strip recorder, which provides rebound values as a bar chart on a paper strip, providing a hard-copy record of the test data. One roll of paper can document 4,000 test impacts.

Schmidt Hammer, Type NR H-2975NR
Ship wt. 6.5lbs. (2.9kg)

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

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. 58bs. (26.3kg)

Conversion Chart Labels

Replacement conversion chart for rebound hammers.

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

Replacement Paper for NR Hammer

Five-pack of chart paper used with the type NR Schmidt hammers.

Replacement Paper (NR Hammer) H-2975NRP
Ship wt. 0.9lbs. (0.4kg)

Optional Printer Cable (Digi-Schmidt)

Five-pack of chart paper used with the type NR Schmidt hammers.

Optional Printer Cable (Digi-Schmidt) H-2976C
Ship wt. 0.5lbs. (0.4kg)

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

Strength, Pull-Off


H-2978


HC-2978

HC-2985

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)

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

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.

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)

Pull-off Tester, DY-2
ASTM C1583, D4541, D7234, D7522; BS 1881 Part 207; EN 1542, 1015, 1348; ISO 4624

Pull-off testing is one of the most widely used test methods in the construction industry. This is reflected in the huge number of standards dedicated to the method. It has long been known that one of the major influences on the result of a pull-off test is operator influence in the application of a constant load rate. The DY-2 pull-off testers, with their integrated, feedback-controlled motor remove this variable completely, by providing a fully automated test at a constant load rate, which can be verified.

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

- Test disc size;
- Maximum load applied;
- Automatic calculation of bond strength;
- Applied load rate with graphical record;
- Time and date of the test;
- Complete time of test, and
- Failure mode.

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
Ship wt. 16lbs. (7.2kg)

Pull-off Tester Accessories

Item	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 Disc Set, Alum.	HC-2985.6
100 x 100mm/M10 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

HC-2988

HC-2989

HC-2957

HC-2957D

HC-2958

Bond Test Kit with 15 and 25kN Gauges
ASTM D4541,D7234

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 is 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; 15kN and 25kN gauges; 10 x 50 mm steel bond discs; 10 x 75 mm steel bond discs and a calibration certificate

Bond Test with 15 and 25kN Gauges HC-2988
Ship wt. 50lbs. (22.6kg)

Bond Tester with Digital Gauge (Wireless App)
ASTM D4541,D7234

This Bond Test Kit features a wireless, mobile App and digital gauge. 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 and eye-bolts. Test results are produced in real-time visual graphs for each test.

The Bond Tester enables engineers to confirm adequate direct tensile strength or bonding strength between two layers after repairs. The tensile load of up to 25kN is applied to the fixing mechanically and hydraulics are used to register the load through an accurate analog gauge, making the tester very reliable. (Requires WiFi 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.

The Bond Test Kit comes with a digital gauge that covers a range from 0 to 25kN.

Bond Tester w/Digital Gauge (App) HC-2989
Ship wt. 42lbs. (19kg)

Anchor Test Kit with 15 and 25kN Gauges

The 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 two gauges, 15 and 25kN, 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 with 15 and 25kN Gauges HC-2957
Ship wt. 25lbs. (11.3kg)

Anchor Test Kit with Digital Gauge (Wireless App)

The 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 ta digital gauge, to suit most applications; threaded rods, studs and slotted button adapters in 1/4", 3/8" and 7/8" sizes and a calibration certificate.

Anchor Test with Digital Gauge HC-2957D
Ship wt. 42lbs. (19kg)

Wireless App and Digital Gauge for Testers

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 WiFi 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**

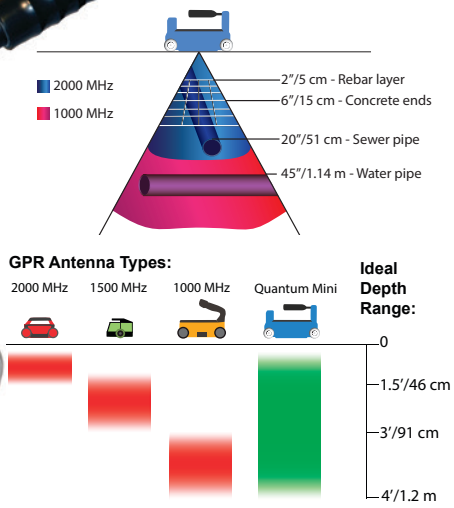
Wireless App & Digital Gauge for Testers HC-2958
Ship wt. 5lbs. (2.26kg)

Bond and Anchor Test Accessories

Item	Part No.
50mm Hexagon Extension Legs	HC-2988.1
75mm Hexagon Extension Legs	HC-2988.2
100mm Hexagon Extension Legs	HC-2988.3
5kN Gauge	HC-2988.4
10kN Gauge	HC-2988.5
20kN Gauge	HC-2988.6

Special size adaptors available, please enquire.

Ground Penetrating Radar



HC-2976

Quantum Mini Concrete Scanner
ASTM C803; BS 1881

With the benefits of deep lower frequency 1000 MHz antenna and a high resolution 2000 MHz antenna in a compact form factor, the Quantum Mini is suitable for ALL concrete scanning applications.

The dual frequency Quantum Mini by US Radar is the only concrete scanning GPR you will ever need. It features a 1000 MHz antenna for analyzing deep structures and targets under slabs. It also features a 2000 MHz antenna for high resolution analysis of fine targets. It is no longer necessary to have to choose antennas or find out afterwards that the scan should have been done with a different antenna. The Quantum Mini offers these benefits in a compact, wireless form factor that is perfect for scanning walls, floors, ceilings, etc.

All other concrete scanners on the market only offer ONE frequency or the other. This means the average user must sacrifice depth for high resolution scales, or vice versa.

With both 1000 and 2000 MHz antennas, you get the detail associated with high resolution, while also being able to see far beyond the concrete slab. This ensures concrete can be properly laid and that a firm understanding of what lies underneath is achieved. Dual frequency gives users the assurance of a job well done.

The Quantum Mini offers a variety of software in on-board and desktop configurations including:

- GPS
- 3D
- Google Earth Integration
- Satellite Imaging Integration
- Report Generation
- and more!

The Quantum Mini is also compatible with a wide variety of third party processing software packages.

Specifications
Radar Controller Computer
Processor: Multi-core Intel Atom
Radar interface: proprietary military connector
32 GB Solid State Hard Drive
10.1 Inch daylight readable LCD Color display
Power Supply: 10.5-18V DC @ 25W
Operating System: Windows 7 Embedded
System Scan Modes
Trigger Modes: Free run, timed interval, shaft encoder, manual
Maximum Sampling Rate: 100 gigasamples per second
Nominal Sampling Rate: 650,000,000 samples per second
Gain: 45dB hardware, 90 dB Software, 60 dB Software Flat Gain
Radar Head Electronics Specifications
Sampling Interval: 10 ps-6.4 nsl
Time Range Adjustment Interval: 10 ps
Pulse Repetition Frequency: 0.1-4 MHz-adjustable
Sample per Trace: 2-8192, Adjustable
Effective Bandwidth (typ.): >4 GHz
Stacking: Automatic
Transmitter
Dual Frequency 1000 & 2000 MHz

Quantum Mini Concrete Scanner HC-2975
Ship wt. 25lbs (11.4kgs)

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 inches (152 mm) 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 MT 6 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 1⁄2 inch (13 mm) and depth to the nearest inch (25 mm)

Helps map out the grid of metal through any non-metallic construction material, including concrete, tile, and marble

Zircon MT 6 Rebar Locator HC-2976
Ship wt. 3lbs (1.4kgs)

HC-2983A

HC-2981A

HC-2982A

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 180 mm 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)

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 rebars.

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

HC-2873
(shown with electrode not included)

HC-2873.2

HC-2873.5

HC-2873.3

HC-2873.6

HC-2873.4

HC-2873.7

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
- 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 touchscreen; 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
Antiglare 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

HC-2873.1

Profometer 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

HG-9049

H-2872

HG-9036

Giatec XCell™
ASTM C876

Giatec XCell™ is a novel tablet/smartphone-based NDT probe for fast, accurate and efficient detection of in-situ analysis of corrosion in reinforced concrete structures. It benefits from an advanced Bluetooth-enabled, maintenance-free sensor that measures the corrosion potential and sends it wirelessly to a tablet for generating half-cell contour plots (i.e. corrosion maps) in real-time. The results can be shared easily with remote locations. Giatec XCell™ significantly reduces the labor cost associated with data collection and subsequent contour plot generation and reporting.

The results are analyzed using the Android-based application on site for the identification of locations with high probability of corrosion. The output includes an equipotential contour map for the examined area. The measured potential values are indicative of corrosion probability. The contour plots are color coded for more clarity.

Three models of the Giatec XCell™ are available. These include the HG-9049, which is essentially the half-cell electrode. With this model the user can download an app from the Google play store for free and install it on their Android smartphone. The mobile app records the measurements sequentially, but does not generate contour plots. The HG-9050 adds a tablet and tablet app for contour plot generation, carrying support, and basic extension arm. The HG-9051 adds an advanced extension arm instead of the basic model, a verification kit (an accurate reference electrode and filling solution), and an extension reel, all in a larger carrying case.

Giatec XCell™ Essential Pkg.	HG-9049
Giatec XCell™ Enhanced Pkg.	HG-9050
Giatec XCell™ Comprehensive Pkg.	HG-9051

Ship wt. 9lbs. (4kg)

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 Optional, user-friendly PC software and USB connection to computers is also available.

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, gauged vacuum pump assembly, desiccator assembly

Perma2™ Complete,	
120V 60Hz	HG-9036
220V 50/60Hz	HG-9036.4F

Ship wt. 125 lbs. (56.6 kg.)

Perma2™ less Pump and Desiccator,	
120/220V 50/60Hz	HG-9020.3F

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" (100mmm) Dia. .	HG-9028
Rubber Gasket Core - Pair 3.75" (95mm) Dia	HG-9039
Test Cable Set	HG-9022
Temperature Sensor	HG-9023

Corrosion, Ultrasonic


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

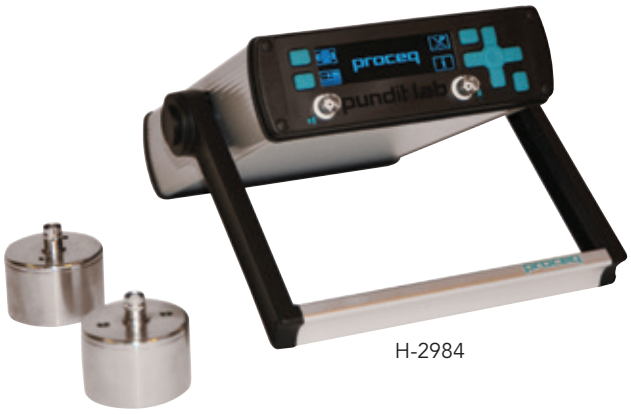
Used to determine the presence of faults, voids, cracks, etc. in in-situ or precast concrete and for long-term monitoring of structures subject to environmental conditions. Gives data concerning the homogeneity of the concrete, by generating pulses of sound into the concrete and measuring the time the sound takes to travel from the transmitter probe to the receiver probe through the material. Capable of providing dynamic modulus of elasticity. 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

The Pundit Lab+ 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-2984
Pundit Lab+ Ultrasonic Test Device	H-2983

Ship wt. 13.4lbs. (6kg)

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 Ultrasonic Pulse Velocity and 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-6440

Rapid Ultrasonic Pulse Echoing Imaging

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

Rapid Ultrasonic Pulse Echoing Upgrade Kit

Upgrade Kit for upgrading Pundit 200 to 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.

Pundit 250 Array (Pulse Echo) — **HC-6451**
Ship wt. 5.5lbs. (2.4kg)

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

Cross Hole Ultrasonic Monitor

ASTM D6760; AFNOR NF P 94-160-1

The CHUM (Cross Hole Ultrasonic Monitor) uses the Crosshole Sonic Logging (CSL) method (ASTM D6760-08) 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).

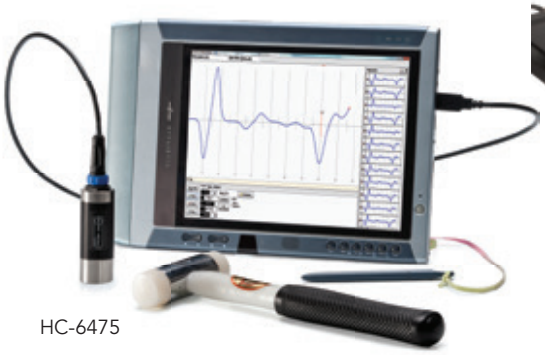
Main features:

- 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 — **H-6440**
Ship wt. 20lbs. (9.1kg)



HC-6475

H-2851

HC-6485

Pulse Echo Foundation Tester
ASTM D5882

Piletest's Pile Echo Tester (PET) is a user-friendly, highly flexible solution for testing a large number of deep foundations quickly and accurately. Requiring little-to-no training, PET is a modular, computer independent system that attaches to the USB port of any regular notebook or a Tablet PC. The PET system utilizes the pulse-echo method (compliant to the ASTM D5882-07 international standard). To test a pile, the user strikes it with PET's lightweight hand-held hammer. The resulting signal, or reflectogram, is captured by PET's digital accelerometer. It is than transmitted to the computer to produce information about the pile's length and shape.

Main Advantages

• Ease of use: PET's user-friendly software makes it possible to master the system in less than a day. No additional expensive training is required

• Excellent signal quality: PET's super low noise level enables the system to handle extremely long piles.

• Computer independence: Unlike other system based on an embedded computer (which may quickly become obsolete) PET connects to the USB port of your regular notebook computer or Tablet PC.

• Labor saving: PET includes a number of labor-saving features, such as advanced project organization; software suggested wave velocity; Smart Trigger™ and AutoSort to reject anomalous blows; one-touch controls of scale, amplification, and filtering; plus many more features.

• Robustness: Specially designed for testing piles, shafts and caissons in construction site environments. The PET sensor is IP67 waterproof and comes with a three (3) year warranty.

The PET Pro USB package includes:

• A digital transducer with waterproof USB cable

• A nylon hammer, spare tips, special putty

• Testing, analysis and reporting software (unlimited number of licenses)

• Interpretation assistance package

Specifications	
Temp. Range	-20°C to 55°C
Pile Lengths	2m to 80m
Productivity	up to 100 piles per hour
Sensitivity	100mV/g
Linearity	within 1%, 0 to 50g
Resonance Frequency	30kHz
Sampling Frequency	50kHz
Sampling Resolution	24 bit

Pulse Echo Foundation Tester HC-6475
Ship wt 10lbs. (4.5kg)

Impact Echo Concrete Test System
ASTM C1383-98a

System includes one pistol-grip transducer and one dual-head wave speed transducer. This will cover all possible testing needs. For determining the depth of surface-opening cracks, one end of the dual-head transducer can be used in conjunction with the pistol grip transducer. By itself, the dual-head transducer is used for independent measurements of wave speed. The system also includes a laptop computer and the necessary software to operate the system.

The pistol grip transducer is used for routine impact-echo testing. When the transducer is put in place on the test surface it is armed by depressing a trigger or button. The pistol grip transducer is armed with a trigger on the underside of the handle. It is especially well suited to flat surfaces.

The dual-head provides accurate measurements of depth and thickness by measuring the wave speed (speed of sound) in concrete, which can vary from about 3000 to 6000 meters/sec, depending on concrete quality and type of aggregate. The dual-head transducer shown is used only for independent measurements of wave speed (required for determining plate or slab thickness in accordance with ASTM standard C1383-98a). It cannot be used for impact-echo testing. Wave speed can be measured using a single cylindrical or pistol grip transducer only if tests can be performed on a slab of precisely known thickness in the region of the structure where testing will be carried out (not acceptable under ASTM standard C1383-98a).

Other configurations are available, please contact Humboldt for information.

Impact Echo Concrete Test System H-2851
Ship wt. 29 lbs. (13.1 kg.)

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)

H-2879

H-2879.200

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 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

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)

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)

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

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

HG-9037.3F

HG-9035.3F

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 × 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™ 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: the RCON2™ unit, power adapter, test cable set, alligator test clip, sample holder, verification kit, Fresh concrete probe, User manual, communication software, USB cable, conductive gels, and 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	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

Freeze-Thaw

HC-3186S

Specifications	
Condensor 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.

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 include:

- 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.
- Complete report generation from with the Humboldt NEXT software. Test data can also be exported to computers via a network or thumb drive.
- Remote control and monitoring via network and internet.

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. These graphs and tabular data can be used to produce reports of tests within the Humboldt NEXT software or downloaded to other computers or software for reports.

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

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

Freeze-Thaw Cabinet, 220V 50/60Hz **HC-3186S.4F**

Ship wt. 1200lbs. (544kg)

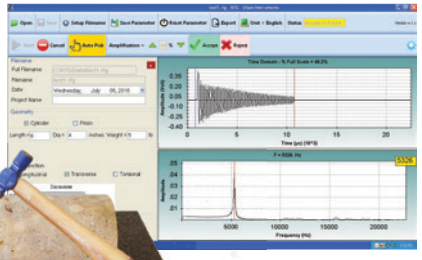
Controller Specifications	
Display	7" (178mm) VGA (480 x 800) Resistive-touch screen
Real-time test data	Graphic and tabulation
Processor	Dual 32-bit ARM
RAM	64MB
Memory, non-volatile	4GB
Data acquisition	1 Channel
Logging speed	1 reading every 5 minutes
Multi-test storage	1000
Points per test	3000
USB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

Freeze-Thaw, Flexural Resonance

H-3195, H-3198, H-3198M

H-3185TA

H-3185TSA



H-3185SH

H-3176

HC-3177

Replacement Parts

Item	Part No.
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)

A very detailed instruction manual accompanies each sonometer. The chassis measures 17" x 14" x 11" (43 x 36 x 28cm). Standard voltage characteristics are 115/60/1

Sonometer, 115V 60Hz — H-3175
Sonometer, 230V 50Hz — H-3175.5F
Ship wt. 50 lb. (22.7kg)

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: Youngs modulus of elasticity, modulus of rigidity, Poissons 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 (v) (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)

Moisture in Slabs


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 waterborne 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 gravitiy 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)

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 insitu method, and ASTM F2420 RH hood method.

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

Concrete Inspection Kit

ASTM F2659, F21703

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 simultaniously.

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)

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
Calibraton 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

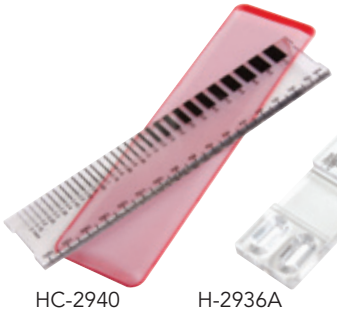
ASTM E1907, F1869

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)

For use with HC-3000 and HC-3001

Crack Monitors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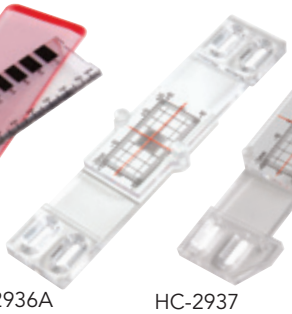
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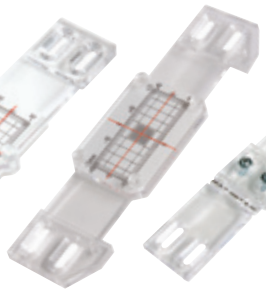
HC-2937


HC-2938


HC-2939


HC-2942A


HC-2943

HC-2964


HC-2944


H-2816.8

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 x 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)