Cement


H-2810


H-2820


H-2823


H-2804

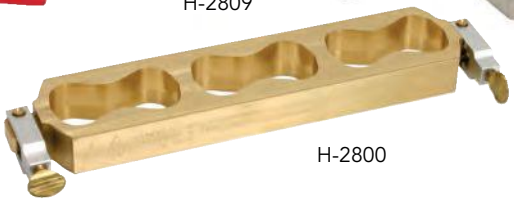

H-2822

H-3820

H-3825


H-2805


H-2809


H-2800

Cube Molds
For Compression strength tests of Portland cement, mortars, lime and gypsum. ASTM C87, C91, C109, C141, C267, C307, C311, C472, C617, C618, C1073; AASHTO T71, T106.

2" Cube Mold, parallel arrangement— H-2810
2" Cube Mold, parallel arrangement, 316 stainless steel. Fitted with angles for attaching to studs threaded into detachable baseplate. Shipping wt. 15lbs (6.8kg)

50mm Cube Mold, parallel arrangement— H-2810M
50mm Cube Mold, parallel arrangement, 316 stainless steel. Fitted with angles for attaching to studs threaded into detachable baseplate. Shipping wt. 15lbs (6.8kg)

2" Cube Mold, diagonal arrangement— H-2820
2" Cube Mold, diagonal arrangement, forged bronze. Reinforcing rib prevents spreading. Detachable base plate. Shipping wt. 15lbs (6.8kg)

50mm Cube Mold, diagonal arrangement— H-2820M
50mm Cube Mold, diagonal arrangement, forged bronze. Reinforcing rib prevents spreading. Detachable base plate. Shipping wt. 15lbs (6.8kg)

Cover Plate for H-2820 Cube Mold— H-2822
Cover plate for slowing the cooling rate as compound is poured. Shipping wt. 7lbs (3.2kg)

Expansive Grout Cube Mold— H-2823
2" Cube Mold for expansive grout with diagonal arrangement, forged bronze. Reinforcing rib prevents spreading. Detachable base plate and top plate. Shipping wt. 19lbs (8.6kg)

Stamped Cube Mold— H-2809
2" Cube Mold with diagonal arrangement. Used with cement, gypsum, lime, mortars, etc. These molds do not meet ASTM or AASHTO specifications and must be individually measured. Shipping wt. 3 lb (1kg)

Briquette Mold— H-2800
Cast bronze briquette mold for hydraulic cement mortar tensile strength tests. Bronze clamps with pins hold the two mold halves securely. Designed to prevent spreading during molding. Complies with ASTM C307. Shipping wt. 5 lb (2kg)

ASTM 20-30 Test Sand— H-3820
Sand is specially graded natural silica sand to pass a No. 20 (850µ) sieve. Specific gravity is 2.65. Packed in 50 lb. (22.7kg) bags. Complies with ASTM C91, C141, C185, C359, C778; AASHTO T132, T137, T185. Shipping wt. 50 lbs. (22.7kg)

Cube Test Ottawa Sand C109— H-3825
Sand is specially graded natural silica sand graded to retain 98% on a No. 100 (150µ) sieve, 75% on a No. 50 (300µ) 30% on a No. 40 (425µ) and 2% on a No. 30 (600µ). Specific gravity is 2.65. Packed in 50 lbs. (22.7kg) bags. Complies with ASTM C87, C109, C348, C359, C593, C778; AASHTO T71, T106, T185. Shipping wt. 50 lbs. (22.7kg)

2" Retainer Caps— H-2804
Stainless steel retainer caps for use with 2" cube specimens. Use with 2" compression pads to eliminate the need for capping compound. Sold in sets of 2. Shipping wt. 2.5lbs (1kg)

2" Compression Pads— H-2805
Compression pads used with H-2804 Retainer Caps. Sold in sets of 4, 2 red (70 duro) and 2 amber (85 duro). Shipping wt. .5lbs (.3kg)

H-3841


H-3844


H-3841.1


H-3841.2

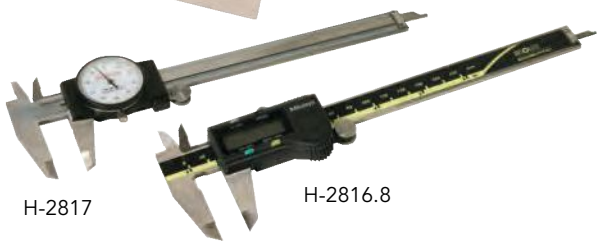

H-3841WW


H-2812


H-2860


H-2860W


H-3855


H-2817

H-2816.8

ASTM-Compliant Mixer, 5-Qt. (4.73L), 120V 60Hz— H-3841
ASTM-compliant mixer for mixing hydraulic cement pastes and mortars of plastic consistency. Mixer includes H-3844 Bowl Positioning Adapter, a 5-qt. (4.73L) stainless steel bowl and 1 flat, stainless steel beater for mixing heavy materials. Hobart Model No. N-50 operates on principle of planetary action—beater reaches every part of the batch, rotating on its axis in opposite directions as it moves around the bowl. Thoroughly blends, mixes and aerates all ingredients for consistent, predictable finished batches. Selective agitator transmission has 3 speed settings: 139, 285 and 591 RPM. Base dimensions: 10-3/8 x 15" (264 x 381mm). Height: 17" (432mm). Features U/L listed cord and plug.
Complies with ASTM C227, C305; AASHTO T162. Shipping wt. 55 lb (25kg)

Mixer, 5-Qt. (4.73L), 230V 60Hz— H-3841.2F
Mixer, 5-Qt. (4.73L), 230V 50Hz— H-3841.5F
Identical to H-3841 mixer above, except that the electrical configurations cause the mixer to run at a slightly slower speed, which renders them non-ASTM compliant.

Mixer Components	Part #
Bowl Positioning Adapter	H-3844
Bowl Lid, acrylic	H-3846L
Beater—Stainless Steel, Flat-type	H-3841.1
Bowl—Stainless Steel, 5 qt. (4.73L)	H-3841.2
Wire Loop Whip—Stainless Steel	H-3841WW
Wire Loop Whip—Stainless Steel, 1/4" dia. wire	H-3841HW

Humboldt Extreme-Duty 12 Qt. Whisk— H-3842HW
Humboldt Extreme-Duty 20 Qt. Whisk— H-3843HW
Custom, hand-made extreme duty whisks are formed from 1/4" dia. stainless steel rod. Designed to stand up to the abuse of mixing heavy aggregate asphalt mixes in the Mixers listed above.

Humboldt Extreme-Duty Whisks

Description	Model
For H-3842A (Hobart HL-120 1/2HP) Current	H-3842AHW
For H-3843A (Hobart HL-200 1/2HP) Current	H-3843AHW
For H-3841 (Hobart N-50A-10) Current	H-3841HW
Hobart 20-Quart Mixer Old Model (prior to 2007)	H-3843HW
Hobart 12-Quart Mixer Old Model (prior to 2007)	H-3842HW

Tamper, Rubber Compound— H-2860
Rubber compound tamper is 6" (152mm) long with 1/2 x 1" (13 x 25mm) cross section.

Tamper, Wood— H-2860W
Wood tamper is 6" (152mm) long with 1/2 x 1" (13 x 25mm) cross section. H-2860W complies with ASTM C87, C109, C157, C185, C596; AASHTO T106, T137, T160.

Tapping Stick— H-3855
Maple wood with 5/8" (16mm) dia. and 6" (152mm) length. Complies with ASTM C185; AASHTO T137.

Rubbing Block— H-2812
Ground steel block 3" dia. x 1" (76 x 25mm) for removing lose sand grains and encrustations from concrete specimen surfaces before compressive testing.

Digital Caliper (0-200mm)— H-2816.8
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.

Stainless Steel Dial Caliper 6" (150mm)— H-2817M
Easy to read black face dial caliper with combination inch and metric scales features 0.001" / 0.1mm graduations, hardened and ground stainless steel main beam with hardened, ground and lapped measuring faces.

Stainless Steel Dial Caliper (6 inch)— H-2817
Similar to above, features a 6" measuring range with .001" graduations and .100" per revolution.

See all Caliper offerings on page 263


H-3843AHW

H-3842HW

H-3250D

H-3250

H-3250.8

H-3260

Length Comparators
Length comparators measure length changes of hardened cement paste, mortar and concrete prismatic specimens. Indicators are mounted on a sturdy upright support attached to a solid triangular base. All units Include stationary and movable anvils designed to fit H-3260 gauge studs, which are cast into test specimens and an invar reference bar. Complies with ASTM C151, C157, C227, C311, C341, C342, C452, C490, C596; AASHTO M210, T107, T160.
Custom lengths are also available, contact us for details.

10" Effective Length Comparator/dial indicator— H-3250
16" Effective Length Comparator, dial indicator— H-3248
Comparators for 10" (254mm) or 16" (406mm) effective length samples with 3-5/8" (92mm) dia. dial gauge with a range of .400" and gradations of .0001". The Dial is marked 0-10. Includes stationary and movable anvils designed to fit the H-3260 gauge studs that are cast on test specimens and an invar reference bar. Unit accommodates test specimens up to 4 x 4" (102 x 102mm) cross section.
Shipping wt.: H-3250: 32 lb (14.5kg), H-3248: 38 lb (17.2kg).

Gauge Studs— H-3260
Gauge Studs have stainless steel contact points and are knurled and threaded for use with cement prism molds. Packaged 10 per bag. Complies with ASTM C151, C157, C227, C490; AASHTO M210, T107.

10" Effective Length Comparator, digital indicator, 120V 60Hz— H-3250D

10" Effective Length Comparator, digital indicator, 220V 50Hz— H-3250D.4F

16" Effective Length Comparator, digital indicator, 120V 60Hz— H-3248D

16" Effective Length Comparator, digital indicator, 220V 50Hz— H-3248D.4F
Comparators for 10" (254mm) or 16" (406mm) effective length samples with digital indicator with a range of .600" and resolution of .0001". Measures inches and millimeters includes batteries and AC adapter. Unit can be zeroed at any point on the range and can be switched from inches to mm by pressing a button. Includes stationary and movable anvils designed to fit the H-3260 gauge studs that are cast on test specimens and an invar reference bar. Unit accommodates test specimens up to 4 x 4" (102 x 102mm) cross section.
Shipping wt.: H-3250: 32 lb (14.5kg), H-3248: 38 lb (17.2kg).

Replacement Components

Description	Model
Invar Reference Bar for use with H-3250 and 10" (254mm) specimens	H-3249A
Invar Reference Bar for use with H-3248 and 16" (406mm) specimens	H-3249A.16
Dial Indicator	H-3250.3
Digital Indicator, 120V 60Hz	H-3250.3D
Digital Indicator, 220V 50Hz	H-3250.3D.4F
Anvil with collar (one each)	H-3250.4
Anvil only	H-3250.4.4
Collar only	H-3250.4.3
Elevating Screw, nut collar & anvil assembly	H-3250.7
Adapter for 5" specimens	H-3250.8


H-3251


H-3267


H-3265


H-3252


H-3256


H-3251RC

Prism Molds
Designed to produce required 10" effective gauge length, prism test bars. Molds feature removable partitions, base and end plates. Effective gauge length is measured from inside end of the studs. Molds produce cement prism specimens 11-1/4" long. Including studs, outside to outside length of specimen is 11-5/8". See table for product specifications.

Description	Ship wt.	Model
Application: Volume change tests of mortars		
2" x 2" x 10" (51 x 51 x 254mm), 2-mold, cold-rolled steel	27 lb (12.2kg)	H-3251
1" x 1" x 5" (25 x 25 x 127mm), 2-mold, cold-rolled steel	25 lb (11.4kg)	H-3255
Application: Autoclave expansion of Portland cement; length change of mortar and concrete; potential alkali reactivity of cement/aggregate combinations; linear change of magnesium and oxychloride cements; volume change of cement paste		
1" x 1" x 10" (25 x 25 x 254mm), 1-mold, cold-rolled steel	10 lb (4.5kg)	H-3252
1" x 1" x 10" (25 x 25 x 254mm), 2-mold, cold-rolled steel	10 lb (4.5kg)	H-3253
1" x 1" x 5" (25 x 25 x 127mm), 2-mold, stainless steel	25 lb (11.4kg)	H-3255S
Application: Volume change of cement past; length change of mortar and concrete		
3" x 3" x 10" (76 x 76 x 254mm), 1-mold, cold-rolled steel	25 lb (11.4kg)	H-3254
Application: Volume change tests		
4" x 4" x 10" (102 x 102 x 254mm), 1-mold, cold-rolled steel	35 lb (15.8kg)	H-3256
40 x 40 x 160mm (1.6 x 1.6 x 6.3"), 3-gang mold, cold-rolled steel	35 lb (15.8kg)	H-3270

Tamping Rod— H-2905.1
Round, straight steel 3/8" dia. x 12" (10 x 305mm). Both ends rounded to a hemispherical tip the same diameter as the rod. Complies with ASTM C157, C192; AASHTO T160.

Rectangular Mortar Bar Container— H-3265
Stainless steel container for storing test specimens has tight-fitting cover that prevents moisture loss. Supports up to 36 bars vertically. Dimensions: 9" x 11" x 15-1/2" (229 x 279 x 394mm). Complies with ASTM C227 and C1260. Shipping wt. 25 lbs. (11.3kg)

Round Mortar Bar Container— H-3267
Plastic container includes test bar rack that supports 8 bars vertically. Dimensions: 6" x 17" (152 x 432mm). Complies with ASTM C227. Shipping wt. 12 lbs. (5.44kg)

Mortar Bar Container— H-3264
Stainless steel. Dimensions: 1-1/4" x 3-1/2" x 12" (32 x 89 x 305mm) ID Tight-fitting cover prevents moisture loss. Capacity not more than 315ml of water, which completely immerses three specimens supported above bottom of container. Complies with ASTM C342, C33 and C856.

Retaining Cage, Mortar Bar Container— H-3251RC
For 2" x 2" x 10" (51 x 51 x 254mm) prism molds. Features 1/4-20 continuous threaded rod and acorn nuts. Complies with ASTM C806.

Retaining Cage— H-3257
For 3" x 3" x 10" (76 x 76 x 254mm) prism molds. Features 10-24 continuous threaded rod. Complies with ASTM C878.

Gauge Studs, see page 134


H-3050

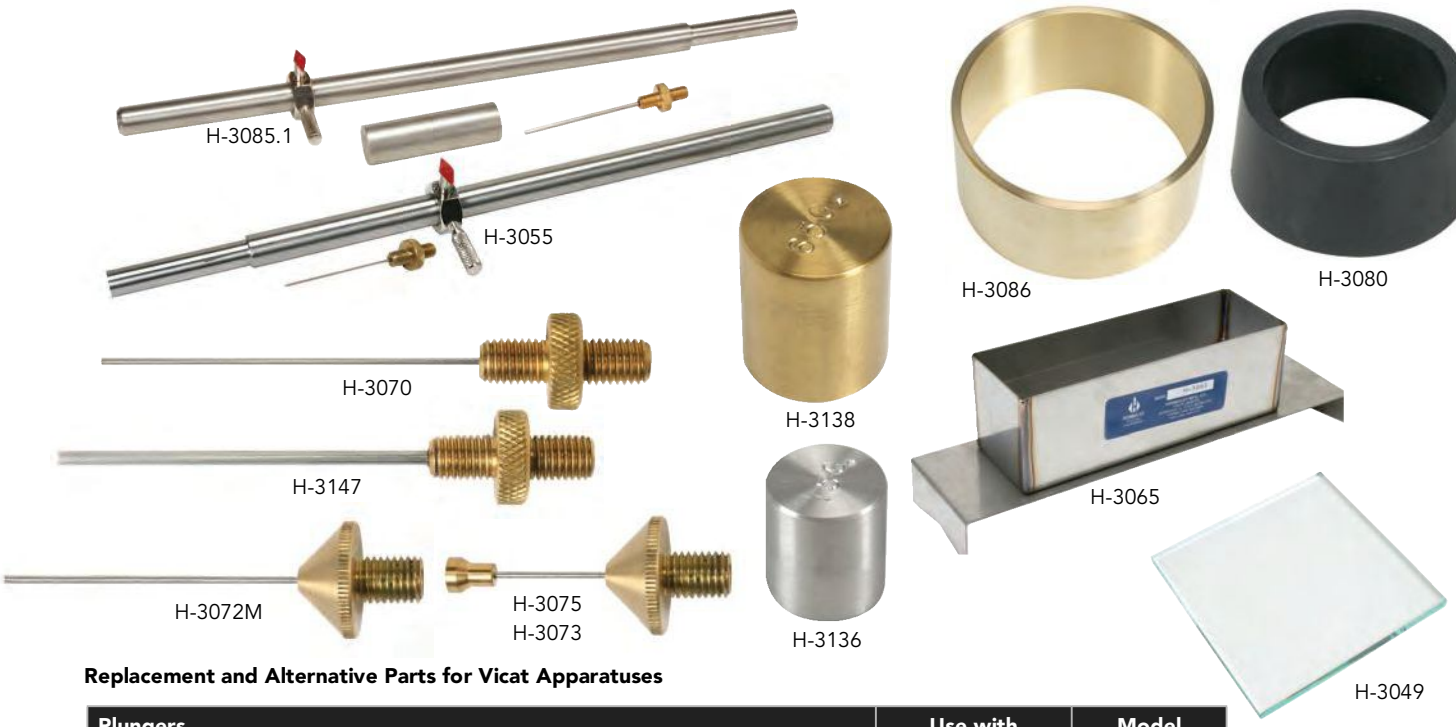

H-3133


H-3085


H-3137

Vicat Apparatus	Specification	Model
Vicat Consistency Apparatus— Reversible stainless steel plunger with 10mm dia. on one end and threaded, H-3070 1mm dia. stainless steel needle on the other. Weight of plunger assembly with adjustable indicator is 300g. Graduated 0-50mm scale. Includes frame, graduated 0-50mm scale, plunger assembly, H-3080 conical mold and H-3049 glass plate. Shipping wt. 8 lbs (3.6kg)	ASTM C91, C141, C187, C191, C308, C451, C472; AASHTO T129, T131, T186	H-3050
Modified Vicat Apparatus— Same as H-3050, but weight of plunger assembly with adjustable indicator is 400g. Shipping wt. 8 lbs (3.6kg)	ASTM C1191, AASHTO T131, EN196/3	H-3060
Time of Set & Consistency Vicat Apparatus— Designed to switch between 17.5mm dia. needle for consistency determinations and a 2mm dia. needle for time of set determinations. Plunger assembly with adjustable indicator weighs 400g with 17.5mm needle attached and 300g with 2mm needle. Includes H-3086, 76mm ID x 40mm brass ring mold. Shipping wt. 6 lbs (2.7kg).	ASTM C807	H-3085
Modified Vicat Consistency Apparatus— Features 19mm dia.plunger with a weight of 50g. Includes plunger rod and indicator, frame, H-3080 conical mold and H-3049 glass plate. Shipping wt. 6 lbs (2.7kg).	ASTM C110	H-3090
Modified Vicat Cone Penetrometer— Features 10cm scale, attached aluminum cone and plunger. Total weight of plunger assembly, 200g. Includes frame, moveable rod with variable weights and plunger assemblies. Includes H-3840 400ml measure for sample as specified by ASTM C185. Shipping wt. 6 lbs (2.7kg).	ASTM C780	H-3133
Modified Vicat Cone Penetrometer— 35g magnesium cone and added 65g weight for 100g plunger weight. Includes frame, moveable rod with variable weights and plunger assemblies. Includes H-3080 mold. Shipping wt. 6lbs (2.7kg)	American Dental Association	H-3134
Modified Vicat Cone Penetrometer— Includes magnesium cone on plunger with total weight of 35g. Use on unsanded plaster. Includes H-3080 conical mold. Shipping wt. 6 lbs (2.7kg).	ASTM C472	H-3135
Modified Vicat Cone Penetrometer— Same as H-3135 with additional 15g weight for 50g total weight for use on sanded plaster. Includes H-3080 mold. Shipping wt. 6 lbs (2.7kg).		H-3137

Replacement Parts Listed on Page 137



Replacement and Alternative Parts for Vicat Apparatuses

Plungers	Use with	Model
Replacement plunger, includes plunger, needle & indicator	H-3050	H-3055
Replacement plunger, includes plunger & bushings	H-3050 H-3090	H-3110
Replacement plunger, includes plunger & bushings	H-3050 H-3120	H-3130
Replacement plunger, includes plunger, cone, indicator & spacers	H-3135	H-3135.1
Replacement plunger, includes plunger, needle, weight, & indicator	H-3085	H-3085.1
Replacement plunger, includes plunger, cone, weight, & indicator	H-3137	H-3137.1
Needles	Use with	Model
1mm dia. stainless steel with knurled threaded holder	H-3050	H-3070
Needle for initial set. Conforms to BS EN 196-3.	H-3050	H-3072M
Needle for final set. Conforms to BS EN 196-3.	H-3050	H-3073
Determination of initial and final setting of cement. Needle has an air vent and an annular attachment	H-3050	H-3075
2mm stainless steel vicat needle	H-3085	H-3147
17.5mm stainless steel vicat needle	H-3085	H-3085-1
Weights	Use with	Model
Replaces 1mm needle. Threaded one end. Provides 400g uncalibrated total weight.	H-3060	H-3061
One end bored to fit over 1/4" (6.4mm) dial. plunger shaft; 100g to increase weight of plunger furnished with H-3090 to 150g	H-3090	H-3100
One end bored to fit over plunger. Total weight: 15g	H-3137	H-3136
One end bored to fit over plunger. Total weight: 65g	H-3135 H-3134	H-3138

Plastic Conical Mold— H-3080
For use with all Vicat apparatuses. Plastic mold, 70mm bottom dia. x 60mm top x 40mm high.

Brass Conical Mold— H-3086
For use with H-3085 Vicat apparatuses. Brass mold, 76mm dia. x 40mm high.

Mold Container— H-3065
Mold for use in false set test. 2" x 2" x 6" (51mm x 51mm x 152mm) Overall length including base is 9-1/4" (235mm). Complies with ASTM C359.

Glass Plate— H-3049
For use with Vicat apparatuses, 4" x 4" x 3/16" (101.6mm x 101.6mm x 4.8mm).

H-3052.4F

H-3150

H-3152

H-3151

Automatic Vicat Machine,120V 60Hz— H-3052
Automatic Vicat Machine, 230V 50/60Hz— H-3052.4F
The Vicatronic apparatus provides a completely automatic method for determining the initial and final setting time of cements or mortar pastes. The automated test operation provides for precise and repeatable results, which are automatically printed out from the integral printer built into the apparatus. The Vicatronic can also be connected to a PC via a RS232 cable allowing data to be downloaded via programs like Microsoft Hyper Terminal. The Vicat-Win software (H-3052.4) allows the receiving, managing, processing and completing test data; the software can automatically create graphs, personalise them and print test reports.

The Vicatronic has a large high-contrast, high-resolution LCD display, which shows the test data together with the general functions of the unit. The easy-to-see menu provides a simplified guide to running a test. During the test, the display also provides a real-time graph of the results, which can be monitored.

The Vicatronic is supplied with firmware that allows the automatic performance of tests in accordance with the following standards: ASTM C191, AASHTO T131, EN 196/3, DIN 1164, DIN 1168 gypsum, NF P15/431 and BS4550. Additional programs can be developed by the operator. This is particularly useful when testing new mortars, additives or research tests requiring sophisticated and flexible applications.

The Vicatronic is supplied complete with the integral printer, two hardened needles (one with 1mm diameter and one with 1.13mm. diameter), two conical molds EN and ASTM, and a glass plate to hold the conical mold. Dimensions:
15.75" x 7.87" x 18.5" (400 x 200 x 470mm). Weight: 28.6 lb (13kg).

Vicat-Win Software— H-3052.1
Allows the receiving, managing, processing and completion of test data on a PC. This software can automatically create graphs, personalise them and print test reports.

Replacement Needle— H-3052.1
1.13mm diameter replacemnt needle.

Replacement Needle— H-3052.5
1mm diameter replacemnt needle.

Weight, 700g— H-3052.45

Mold Tank for Tests in Water— H-3052.3

Replacement Paper for Printer— H-3052.6
Box of 5 rolls of printer paper for use with H-3052 Vicat Machine.

Gillmore Apparatus— H-3150
Used to determine initial and final set times of Portland cement, masonry cement, hydraulic hydrated lime and certain mortars. Complies with ASTM standards C91, C141, C150, C266, C414; AASHTO T154. Comprised of two stainless steel needles with 3/16" (4.8mm) cylindrical flat-end needles. One is 1/12" (2.12mm) dia. 1/4lb. (113.4g) weight for initial set. The second is 1/24" (1.06mm) dia., 1lb (453.6g) weight for final set. Shipping wt. 10lb (4.5kg)

Gillmore Apparatus Replacement Parts

Description	Model
Flat plate with 1/2" sides for striking off sample to exact 1/2" thickness for Gillmore test	H-3154
1/24" (1.06mm) dia. needle with weight	H-3151
1/12" (2.12mm) dia. needle with weight	H-3152
.050" dia. Gillmore Needle	H-3152.4


H-3240


H-3240.22

H-3240.21M
H-3240.21N


H-3243B


H-3245


H-3244

Cement Autoclave, 120V 60Hz— H-3240
Cement Autoclave, 220V 50/60Hz w/ transformer— H-3240.4F
Uses accelerated means of estimating delayed expansion of Portland cement caused by hydration of CaO and MgO. Test bars are exposed to controlled steam pressure and corresponding constant temperature. Unit produces 60-350 psi (0.4-2.4MPa) range of pressures and consists of steam vessel, pressure regulator, pressure gauge (0-600 psi x 5 psi), air vent valve, power switches and safety pop valve set at 350psi. Includes thermometer, wrench and 5 gaskets. Additional gaskets, heating units and safety pop valves are available as replacement parts. Chamber dimensions: 6-1/8" ID x 16". Overall dimensions: 17 x 48 x 28" (431 x 1219 x 711mm) 1700W maximum power demand. Complies with ASTM C151; AASHTO T107. Shipping wt. 171 lbs. (77.7kg)

Autoclave Replacement Parts

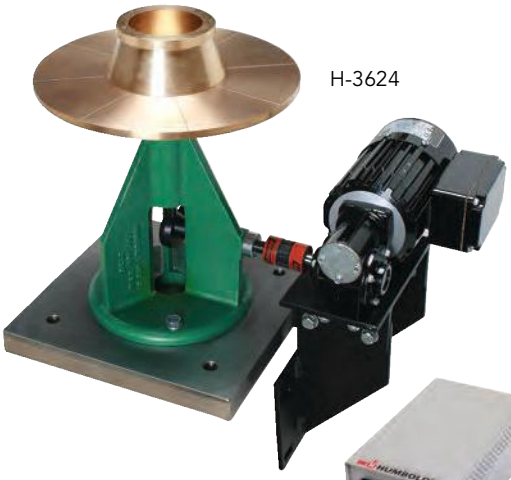
Description	Model
Air vent valve	H-3240.2
Safety pop-off valve	H-3240.3
Pressure gauge	H-3240.4
Pressure-control switch	H-3240.5
Set of cap screws, 16 per set	H-3240.6
Relay 60Hz	H-3240.7
Gaskets, graphite, 100 per package	H-3242
Lower heating unit; two heaters in one housing. 115V. 50/60Hz	H-3244
Upper heating element; two-piece wrap-around type. 115V. 50/60Hz	H-3245
Thermometer, 20 to 580°F	H-2600.2F
Thermometer, -5 to 300°C	H-2610.2C

Rupture Disk, Monel— H-3240.21M
Rupture Disk, Nickel— H-3240.21N
Rupture disks are used as safety devices in systems that involve pressure vessels, eliminating the need for a safety valve. The rupture disk is designed to be the weakest part of a pressure system so if there is a situation when excessive pressures occur, then the rupture disk fractures or opens thus releasing the built-up energy rendering the system safe. Rupture disks are a simple, yet reliable method for providing a safe system, which does not require calibration.

Rupture Disk Holder— H-3240.22
Rupture disk holder, complete with piping to attach to cement autoclave. Order rupture disks separately above.

Test Bar Holder— H-3243B
Test bar holder for 10"-long (254mm) gauge bars; 8-bar capacity. Holds specimens vertically, above water level, so each test bar is exposed to steam. Complies with ASTM C141, C151; AASHTO T107.

Test Bar Holder— H-3243A
Test bar holder for 5"-long (127mm) samples.


H-3624


H-3620


H-3624F


H-3622


H-3840


H-4144.8


H-3621

Flow Tables

Used to determine the flow of hydraulic cement, mortars and cement pastes. A test specimen is molded on the table to a specified volume and shape. Then, with the mold removed, leaving the test specimen on the table. The table is dropped and raised (via a hand crank or optional motor) a specified number of cycles, after which the flow (or increase in average diameter of the specimen) is measured.

Motorized Flow Table with Counter, 120V 60Hz— H-3624
Motorized Flow Table with Counter, 220V, 50Hz— H-3624.5F
Motorized flow table with 10" (254mm) dia. cast-bronze table/platen and automatic digital counter. Motor stops automatically once pre-set number of drops is achieved. Includes heavy-duty table/platen assembly, standard H-3622 cast bronze, 2-3/4" top dia. x 2" high x 4" bottom dia. cone mold, motor and H-3614B counter. Designed to be mounted to concrete mounting block. Order H-3624F, Pedestal Form and easily create your own mounting block.

Applications include: compression strength and air content tests of cement mortar; flow tests of hydraulic cement mortars; consistency tests of magnesium oxychloride cements; flexural strength test for bond strength or mortar to masonry units. ASTM C87, C109, C110, C185, C230, C243, C348, C593; AASHTO T71, T106, T137 and T152.
Shipping wt. 82 lbs (37kg)

Motorized Flow Table with Mold, 120V 60Hz— H-3625
Motorized Flow Table with Mold, 220V, 50Hz— H-3625.5F
Motorized flow table with 10" (254mm) dia. cast-bronze table/platen Same as H-3624, but without counter. Includes standard H-3622 cast bronze, 2-3/4" top dia. x 2" high x 4" bottom dia. cone mold. Shipping wt. 30 lb (13.6kg). Used in determining consistency of cement mortars. ASTM C230. Shipping wt. 82 lbs (37kg)

Hand-Driven Flow Table with Mold— H-3620
Hand-driven flow table with 10" (254mm) dia. cast-bronze table/platen. Includes standard H-3622 cast bronze, 2-3/4" top dia. x 2" high x 4" bottom dia. cone mold.Shipping wt. 30 lb (13.6kg). Used in determining consistency of cement mortars. ASTM C230.
Shipping wt. 27 lbs (12kg)

Automatic Counter, 120V 60Hz— H-3614B
Automatic Counter, 220V 50/60Hz— H-3614B.4F
Can be used to upgrade H-3625 Motorized Flow Table so a pre-determined number of drops can be set to run automatically. Use H-3614B.4F with H-3625.5F.

Caliper, Mortar Diameter— H-3621
Used to measure mortar diameter and indicate percentage of flow. ASTM C87, C185, C230; AASHTO M152, T71, T137.

Flow Mold— H-3622
Cast bronze 2-3/4" top dia. x 2" high x 4" bottom dia. cone mold.

Flow Mold— H-3622M
Cast bronze 70mm top dia. x 50mm high x 100mm bottom dia. cone mold.

400ml Measure— H-3840
Calibrated to 400ml, this measure is used to determine air content of hydraulic cement mortar. Cylindrical with 3" (76mm) ID, approximately 3-15/32" (88mm) depth. ASTM C185, C780; AASHTO T137.

Shield— H-3623
Circular shield for use with H-3622 flow mold to prevent mortar from spilling on table top. ASTM C230; AASHTO M152.

Straight Edge— H-4144.8
Straight edge of ground steel with bevelled edge. 1/8" x 1-1/4" x 8" (3 x 32 x 200mm) ASTM C185, D558, D559, D560, D698; AASHTO T137.

Pedestal Form— H-3624F
Wooden form to create concrete base for flow tables.
Shipping wt. 60 lbs (27kg)


H-3600


H-3813B


H-3631


H-3816


H-3817.20


H-3630A


H-3817


H-3810

Water Retention Apparatus— H-3630A
The apparatus is used in specification tests of masonry cement and physical testing of quicklime and hydrated lime. Unlike older models, the newly designed unit incorporates a vacuum regulator and gauge system in place of the old mercury manometer and relief column. The complete unit consists of an aspirator pump, vacuum regulator, vacuum gauge, three-way stopcock, flask, rubber gasket, brass funnel, perforated brass dish, filter paper and hardwood stand. Complies with ASTM C1506, C110, C207 and E149. Shipping wt. 25 lbs (37kg)

Water Retention Apparatus Replacement Parts

Description	Model
Funnel	H-3630.3
Stopcock	H-3630.4
Rubber Gasket	H-3630.18
Filter Paper, 15cm, Package of 100	H-3630.21
Perforated Brass Dish	H-3631
Flask, 1000ml	H-4913.1M

Cement Bleeding Apparatus— H-3600
Used to determine bleeding rate and bleeding capacity of cement paste and mortar by direct and continuous procedure. Includes noncorrosive metal container for paste or mortar, collecting ring, support stand and necessary glassware. Rubber-covered double V-jaw burette clamp holds stopcock in position; single rubber-covered jaw clamp supports the burette and funnel assembly.
Shipping wt. 20 lbs. (9.0kg)

Blaine Air Permeability Apparatus— H-3810
Determines fineness of Portland cement in terms of specific surface expressed as total surface area in square centimeters per gram of cement. Consists of: calibrated U-tube manometer, ground glass joint, stainless steel test cell and plunger, rubber aspirator bulb and perforated disc. Includes 8 oz (226.8g) bottle of red manometer fluid, filter paper, wood block for holding test cell during filling and funnel. Mounted on finished wood panel with rubber-footed base. Complies with ASTM C204; AASHTO T153. Shipping wt. 15 lbs. (11kg)

Blaine Air Permeability Replacement Parts

Description	Model
Rubber Bulb	H-3811
Stopcock, Cell and Plunger	H-3812
Perforated Brass Disc	H-3813B
Perforated Stainless Steel Disc	H-3813S
Manometer Fluid, 8oz (240ml)	H-3814
Monometer U-tube, calibrated	H-3815
Filter Paper Discs, Medium retentive, pkg 500	H-3816

SRM 114q - Portland Cement Fineness Standard— H-3817
This Standard Reference Material (SRM) is used in calibrating fineness testing equipment according to ASTM Standard Methods. The SRM unit consists of a glass vial with plastic caps containing powdered cement (each vial is contained in a sealed foil bag). Each vial contains approximately 5g of cement.

SRM 114q, Portland Cement Fineness Standard— H-3817.20
Package of 20, H-3817 individual vials.

H-3160 H-3493 H-3492 H-3320

H-3161 H-3491 H-3490A H-3805

Cement Calorimeter— H-3160
Cement Calorimeter, 230V 60Hz— H-3160.2F
Cement Calorimeter, 230V 50Hz— H-3160.5F
For determining heat of hydration of cements by measuring difference between heat of solution of dry cement and heat of solution of a separate sample partially hydrated for 7 to 28 days. Constant-speed stirrer maintains uniform temperature throughout liquid and supplies sufficient agitation to keep solid reactant suspended in the acid mixture. Includes insulated wood case, insulated 1G (3.8L) can; 1 pt. (0.47L) vacuum jar with stopper; differential thermometer plus holder, rod and reading magnifier; plastic funnel; stirring paddle and chuck; geared synchronous motor. Complies with ASTM C186.
Shipping wt. 82 lbs (37kg)

Digital Cement Calorimeter— H-3161
Digital Cement Calorimeter, 230V 60Hz— H-3161.2F
Digital Cement Calorimeter, 230V 50Hz— H-3161.5F
For determining heat of hydration of cements by measuring difference between heat of solution of dry cement and heat of solution of a separate sample partially hydrated for 7 to 28 days. Constant-speed stirrer maintains uniform temperature throughout liquid and supplies sufficient agitation to keep solid reactant suspended in the acid mixture. Includes insulated wood case, insulated 1G (3.8L) can; 1 pt. (0.47L) vacuum jar with stopper; 2-channel, Precision Digital Thermometer; plastic funnel; stirring paddle and chuck; geared synchronous motor. Complies with ASTM C186.
Shipping wt. 82 lbs (37kg)

Wagner Turbidimeter— H-3805
Wagner Turbidimeter, 230V 60Hz— H-3805.2F
Wagner Turbidimeter, 230V 50Hz— H-3805.5F
Determines fineness of Portland cement, using photoelectric cell to measure light passing through suspended pulverized material. Microamp meter measures current generated in the cell; indicated reading is measure of turbidity of the suspension. Includes photoelectric cell {and light source in metal cabinet, timing burette and stand, wet sieving assembly including gauge and spray nozzle, microamp meter, 3 flasks, 4 test tubes, stirring apparatus and instruction book. Battery not included. Complies with ASTM C115; AASHTO T98.
Shipping wt. 140 lbs. (63.5kg)

Reaction Container— H-3320
For determining potential alkali reactivity of aggregates (chemical method) when used with high alkali cements. Stainless steel unit is 2" dia. x 2-1/4" high (51mm dia. x 57mm) fitted with air-tight cover. 50-75ML capacity. Complies with ASTM C289.

Organic Color Wheel for ASTM C40— H-3492
Color comparison wheel for use with Organic Impurties Test (ASTM C40). Color wheel has five different color filters to compare to test solution.

Organic Impurities Test Set— H-3493
Determines presence of injurious organic compounds in sands used in cement mortar or concrete. Test serves as warning that further tests of sands are necessary before they can be approved for use. Complies with ASTM C40; AASHTO T21. Air shipments must meet Dangerous Goods requirements because of Sodium Hydroxide Beads. Order H-3493X without Sodium Hydroxide Beads to avoid Dangerous Goods requirements. Shipping wt. 10 lbs (5kg)

Organic Impurities Test Set— H-3493X
Organic Impurities Test Set without Sodium Hydroxide Beads

Sodium Hydroxide Beads— H-3491
1lb (454g) Container of Sodium Hydroxide Beads. Air shipments must meet Dangerous Goods requirements.

Graduated Bottle— H-3490A
Graduated, 12 oz. (.35L)

Tube Sampler with Compartments, Bulk Cement— H-3341
For sampling hydraulic cement in bulk shipments or bulk storage. Has two polished brass telescopic tubes with registering slots (with partitions) that open or close by rotation of the inner tube. Outer tube has sharp point to facilitate penetration. Sampler is 1-3/8" (35mm) dia. x approximately 63" (160cm) long. Complies with ASTM C183; AASHTO T127. Shipping wt. 11 lbs. (5kg)

Tube Sampler without Compartments, Bulk Cement— H-3342
For sampling hydraulic cement in bulk shipments or bulk storage. Has two polished brass telescopic tubes with registering slots (without partitions) that open or close by rotation of the inner tube. Outer tube has sharp point to facilitate penetration. Sampler is 1-3/8" (35mm) dia. x approximately 63" (160cm) long. Complies with ASTM C183; AASHTO T127. Shipping wt. 11 lbs. (5kg)

Tube Sampler, Packaged Cement— H-3340
For sampling hydraulic packaged cement, brass unit has hardwood handle. Unit is 1-1/4" (32mm) dia.x 28-3/4 (730mm) long. Complies with ASTM C183; AASHTO T127.

Grout Flow Cone Set, 1/2" (13mm)— HC-2834S
Test set for measuring the flow of grout for preplaced, aggregate concrete. Intended for neat grout and grouts containing fine aggregate capable of passing a No. 8 sieve and grouts which have an eflux time of less than 35 seconds. Kit includes: (1) H-2834 Interchangeable Orifice Flow Cone and Adjustable Point Gauge Assembly, (1) H-2833 Stand, and (1) H-2834SSB Stainless Steel, 6 liter Beaker. ASTM C939. Shipping wt. 30 lbs. (13.6kg)

Grout Flow Cone Set, 3/4" (19mm)— HC-2835S
Test set same as above but with 3/4" (19mm) orifice.

Grout Flow Cone, 1/2" (13mm)— H-2834
Cast-aluminum flow cone from above set, has 1/2" (13mm) replaceable orifice. Can also accommodate 3/4" (19mm) orifice, which can be purchased below. Includes adjustable point gauge assembly. Overall dimensions: 8" dia. x 12"H (203 x 305mm). ASTM C939.

Grout Flow Cone, 3/4" (19mm)— H-2835
Cast-aluminum flow cone from above set, has 3/4" (19mm) replaceable orifice. Can also accommodate 1/2" (13mm) orifice, which can be purchased below. Includes adjustable point gauge assembly. Overall dimensions: 8" dia. x 12"H (203 x 305mm). ASTM D6449.

Replacement Orifice, 1/2" (13mm)— H-2834.500

Replacement Orifice, 3/4" (19mm)— H-2834.750

Flow Cone Stand— H-2833
Sturdy well-constructed steel stand to support flow cones so the top is level and the cone free from vibration. Overall dimensions: 21"W x 9-1⁄2"D x 23"H. Shipping wt. 17 lbs. (7.7kg)

6-Liter, Stainless Steel Beaker— H-2834SSB

Grout Box— H-2838
Cardboard box designed to be used to mold grout test samples. Each box forms 4 molds and can be used as a transport/shipping container as well. Boxes yield consistent, identical prism samples, while the engineered, slotted corrugation retains moisture while closely simulating CMU absorption rates. 25 boxes to a package. Overall dimensions: 7½" x 7½" x 7" (190 x 190 x 178mm). Section: 3¼" x 3¼" x 6¾" (83 x 83 x 171mm)


H-2901


H-2904

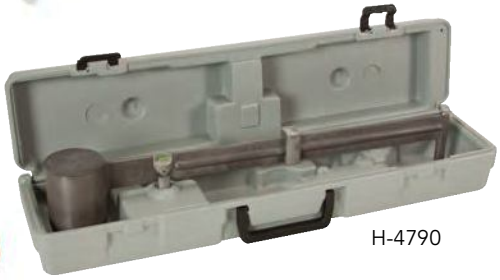

H-2902


H-2905.1


H-2818


H-2905.2


H-2905.3


H-4790


HC-2842


HC-2843

Micrometer Bridge Set— H-2903
Designed to hold one cylinder to permit repeated volume change measurements without moving or disturbing the specimen. Includes the following items: H-2901 Micrometer Bridge, H-2902 Micrometer Depth Gauge, H-2904 Tapered Cylinder Mold, H-2905.2 Tamping Rod, H-2905.2 glass plate and H-2905.3 Weight. Shipping wt. 12 lbs (5kg)

Tapered Cylinder Mold— H-2904
Used to determine volume change of grout, mold is constructed of steel tubing 1/4" wall x 3" dia. x 6"H (6 x 76 x 152mm). Mold is split longitudinally with two quick-acting clamps welded to the mold. Top edge of mold is machine tapered to a narrow rim. Includes detachable base plate. Complies with ASTM C1090. Shipping wt. 6 lbs. (2.7kg)

Micrometer Depth Gauge— H-2902
Graduations in the thousandths of an inch (.001"), range 0 to 3", 1/8" rod dia. Sleeve is designed with staggered lines, hardened and precision ground screw; lock nut holds the setting at the precise measurement. Includes protective case. Base length is 2-1/2".

Micrometer Bridge— H-2901
Bridge is used to hold the H-2904 mold in place while repeated volume change measurements are made. Shipping wt. 3 lbs (1kg)

Tamping Rod— H-2905.1
Round, straight steel rod is 3/8" (10mm) dia. x 12" (305mm) long. Both ends are rounded to a hemispherical tip of the same diameter as the rod. Complies with ASTM C157, C192.

Glass Plate— H-2905.2
Glass plate used with Micrometer Bridge Setup

Weight— H-2905.3
3 lb weight for use with Micrometer Bridge Setup

Fireproofing Mat Depth Gauge— H-2818
Gauge for measuring the depth of fireproofing. Plastic body with steel probe.

Marsh Funnel Viscometer— H-2842
The Marsh Funnel Viscometer is a rugged, easy to operate instrument that is used for making rapid, on the spot measurements of drilling mud viscosity. Marsh Funnel readings are only general measurements, but the frequent reporting of the Marsh Funnel Viscosity will alert the mud engineer to sudden changes in the mud viscosity that could require corrective action. The Marsh Funnel Viscosity is the ratio of the speed of the mud as it passes through the outlet tube (the Shear Rate) to the amount of force— the weight of the mud itself, which is causing the mud to flow (the Shear Stress). Marsh Funnel Viscosity is reported as the number of seconds required for one quart of mud to flow out of a full Marsh Funnel. Shipping wt. 5 lbs (2kg)

1L Measuring Cup for Marsh Funnel— HC-2843
1 liter, plastic measuring cup used for collecting sample from Marsh Funnel.

Mud Balance— H-4790
The Mud Balance provides a simple, practical method for the accurate determination of fluid density. The item's durable construction makes it ideal for field use. It's high-impact plastic case protects the balance during transport while providing a secure base for the balance during use. Scale reads in pounds per gallon (6-24 lb/gal); specific gravity (0.72-2.88 gms/cm^3); pounds per cubic foot (45-180 lb.cu ft), and pounds per square inch per 1,000 feet of depth (310-1250 lb/sq in/100ft of depth). The H-4790 Mud Balance meets all the requirements of the API standard procedures for testing water base drilling fluids, oil base drilling fluids and oil well cements. Shipping wt. 5 lbs (2kg)