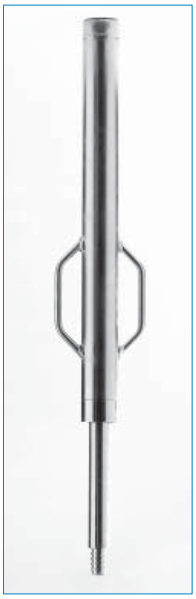
Dynamic Cone Penetrometer (DCP)

S-205



S-20000

The original Dynamic Cone Penetrometer (DCP) was developed in 1959 by the late Professor George F. Sowers. The DCP uses a 15 lb (6.8 kg) steel mass falling 20 in (50.8 cm) that strikes the anvil to cause penetration of a 1.5 in (3.8 cm) diameter cone (45° vertex angle) that has been seated in the bottom of a hand augered hole. The blows required to drive the embedded cone a depth of 1-3/4 in have been correlated by others to N values derived from the Standard Penetration Test (SPT). Experience has shown that the DCP can be used effectively in augered holes to depths of 15 to 20 ft (4.6 to 6.1 m).

Heat treated cone, zinc plated components. The cone can be replaced with a plated Drive Tube Assembly for collection of 3 x 10 in (7.6 x 25.4 cm) tube samples in hand augered holes.

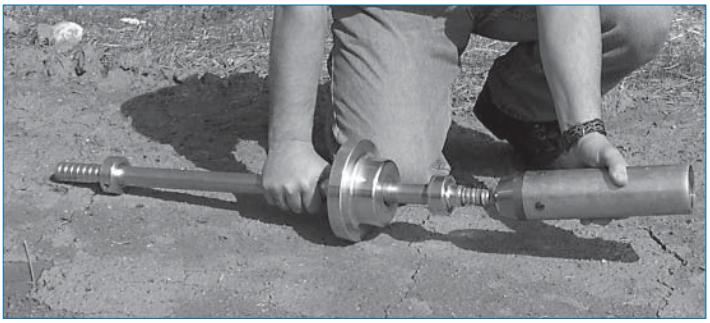
The S-200 DCP and Auger Test Set for 10 ft depth includes:

- Standard Sliding Drive Hammer Assembly
- Cone Penetrometer Point with 1-ft Adaptor Rod
- 4 each 30 in “E” Drill Rods
- Standard Auger Head
- 4 each 36-in Auger Extensions
- Tee Handle and Operating Instructions

The S-205 Cone Penetrometer Test Set for 10-ft depth is similar to the S-200 set above but does not include auger items.

As a related item, the Sleeved Drive Hammer, S-20000, provides an alternative method of conducting the DCP Test. It is designed to fit standard “E” drill rod extensions and the penetrometer point assembly. There are no exterior impact zones on the sleeved Drive Hammer sides. The 15-lb sleeved Drive Hammer unit is compact, easy to transport, zinc-plated for protection against corrosion and capable of being disassembled by the user for periodic inspection and cleaning. Patent Pending.

Notice: *Sleeve Drive Hammer, S-20000, is manufactured by DGSI under an exclusive license. DGSI has not performed comparative tests with Sower's hammer.*



1 - Sampler (Shelby) Tube, S-20035, already attached to the Drive Tube Head Assembly, S-20037, is being threaded onto the Sliding Drive Hammer, S-20003.

2 - Driving the Sampler Tube. The operator is about to release the 15-lb mass.

3 - Showing the filled Sampler.

S-20037 w/ 3 x 10-in Sampler (Shelby) Tube

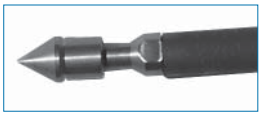
4 - Removing the Sampler Tube.

S-200

S-200	DCP (w/ Standard Hammer) and Auger Test Set	78 lb
S-201	DCP (Sleeved Hammer) and Auger Test Set	78 lb
S-205	DCP (w/ Standard Hammer) Test Set	72 lb
S-206	DCP (Sleeved Hammer) Test Set	72 lb
Accessories		
S-20010	1 ft (0.3 m) E Drill Rod Extension	
S-20025	30 in (0.76 m) E Drill Rod Extension (recommended)	
S-20050	5 ft (1.75 m) E Drill Rod Extension	
S-20037	3 in Drive Tube Head Assembly, zinc plated	
S-20035	3 x 10 in Sampler Tube, swaged end, zinc plated, (includes 10 caps)	
DS-630	Plastic Cap for 3 in OD Tube	
Replacement Parts		
S-20000	Modified Sliding DCP Sleeved Drive Hammer	
S-20001	Heat-Treated Drive Point w/ 1 ft Adaptor Rod	
S-20001-1	Roll Pin for the Point	
S-20002	Heat-Treated Drive Point w/ Roll Pin	
S-20003	Sliding Drive Hammer Assembly	
S-20003-1	Roll Pin for the Stop Block	
S-20004	Operating Instructions	
S-20005	#399 Publication	
124803	Hammer Shaft	
125101	15 lb Weight Mass	
124901	Top Stop Block	
601189	Hammer Stem, forged / machined, for S-20000	

Static Cone Penetrometer

S-215



S-21018

S-215 in use

DGSI Static Cone Penetrometers are used to evaluate the consistency of soils, their level of compaction and the bearing capacity of shallow foundations and pavement subgrades. Specifically developed for use in fine grained soils, particularly soft soils, they use a 60° cone with a surface area of 1.5 cm^2. An optional cone with a 3 cm^2 surface area is available for use in very soft soils.

- Dual rod construction isolates cone resistance from shaft friction
- Pressure gauge ranging from 0 to 70 kg/cm^2 reads cone resistance directly, eliminating need for proving ring conversions
- Stainless steel and anodized aluminum construction for reliable performance
- 24-in starter rod and optional 24-in extension rods

Standard models include:

- A 60° cone with a maximum area of 1.5 cm^2
- A Starter Rod Assembly designed to withstand an axial force of 250 lbf (340 N•m) maximum
- Pressure gauge marked in kg/cm^2
- Operating Instructions and parts list

S-215	Static Cone Penetrometer, with 24-in Starter Rod Assembly	8 lb
Replacement Parts		
AP-2100-1	Head Assembly	
S-21018	60° Cone w/maximum area of 1.5 cm^2	
S-21511	24-in Starter Rod Assembly	
S-21510	24-in Extension Rod Assembly	
S-212M	Instruction Manual	
S-21021	"O" Ring Packing Kit (2 ea. 2404013)	
Accessory Items		
S-21010	60° Cone with maximum area of 3 cm^2	
S-21501	24-in Outer Rod Only	
S-21502	24-in Starter Inner Rod Only (actual OAL: 24.875 in)	
S-21503	24-in extension Inner Rod Only (actual OAL: 24 in)	

Note: To function properly, the penetrometer gauge requires high-grade, non-detergent, hydraulic fluid. Always drain existing fluid from the gauge prior to refilling and refill the gauge with the starter rod attached w/ zero load.

Corps of Engineers Single and Dual-Mass Cone Penetrometers

ASTM D 6951

The Dual-mass Cone Penetrometer, S-218, drops an 8-kg mass a distance of 575 mm onto an anvil driving a 60° cone with a maximum diameter of 20 mm. When used in weaker subgrades having a CBR value less than 10, the driving mass is reduced to 4.6 kg. The Corps of Engineers has developed a correlation between CBR and mm/blow. S-218 includes a dual mass hammer assembly, mm scale, assorted hand tools, 25 single-use cones, data reduction program diskette and manual.

S-216 in use

The Single Mass Cone Penetrometer, S-216, has a fixed 8-kg mass and is recommended for pavement sections with anticipated CBR values between 10 and 100. The kit includes the sliding mass assembly, mm scale to measure penetration, 25 single-use cones, data reduction program diskette and instruction manual.

S-216	Single Mass Cone Penetrometer	26.0 lb
S-218	Dual Mass Cone Penetrometer	35.0 lb
Replacement Parts		
S-21601	Single Use Cones, pack of 25	
S-21602	Adapter to connect Single Use Cone to shaft	
Accessory Items		
S-21802	Re-useable Cone, hardened, individual	
S-21605	Carrying Case	

Pocket Penetrometer

DGSI's Pocket Penetrometers are commonly used on split spoon and thin-walled tube samples to evaluate consistency and approximate unconfined compressive strength of saturated cohesive soils. They may also be used for the same purpose in freshly excavated trenches or test pits.

(L-R) S-170 and S-170B

We offer two models of Pocket Penetrometers, each has the scale marked in kg/cm^2 and TSF (i.e., 1 kg/cm^2 = 1 TSF) and is supplied with a carrying pouch, operating and calibration instruction sheet.

- The S-170 has a Delrin® body and laser etched markings on the scale.
- The S-170B has a nickel plated brass body and laser etched markings on the sliding scale.
- Both have the same stainless steel shaft and internal components.

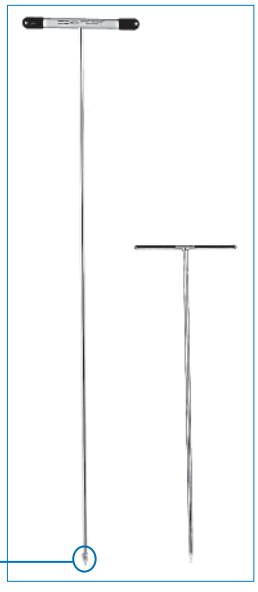
An optional foot adapter is available for use with both models. This increases the piston area 16 times, making it suitable for use in very soft clays.

S-170	Pocket Penetrometer, Delrin™ body	1 lb
S-170B	Pocket Penetrometer, nickel plated body	1 lb
Related Item		
S-17010	Foot Adapter, 1 in diameter	

Probe Rods

Safe, non-conducting probe is ideal for locating irrigation, power and water lines. The shaft diameter is 1/2 inch and has a zinc tip and a 13¾-in Tee Bar Handle. The Steel Probe Rod is used to locate soft zones in and under compacted areas or subgrades, footing excavations, etc. The S-171 Steel Probe Rod has a 3-ft long shaft by 1/2-in. diameter. It is zinc plated.

S-171	Steel Probe Rod	5 lb
S-173	Fiberglass Probe Rod, 60 in	2.5 lb
S-17348	Fiberglass Probe Rod, 48 in	2.3 lb
Replacement Part		
S-17399	Steel tip replacement for fiberglass probe rod	



(L-R) S-173 and S-171

S-17399

TORVANE®

S-160

The TORVANE is a hand held vane shear device for rapid determination of shear strength in cohesive soils either in the laboratory or the f eld. The TORVANE allows shear strength to be measured in the sides of test pits, trenches or excavations. It may also be used on the ends of thin wall or split spoon samples and soil chunks removed from test pits, etc. The TORVANE set includes three vanes with conversion dial and carrying case:

- **Standard vane** (0 to 1 kg/cm²): used for fully saturated cohesive soils with undrained strength independent of normal pressure. The stress range permits it to be used for clays varying in consistency from very soft to stiff.
- **Large vane** (0.2 kg/cm²): use with remolded samples
- **Small vane** (2.5 kg/cm²): for stiffer clays

The index mark on the dial will indicate the maximum shear value. This number must be multiplied by the vane ratio (1, 0.2 or 2.5) to obtain the actual shear strength.

S-160	Torvane Shear Measurement Device	1.0 lb
Replacement Parts		
S-16001	Vane Adapter, 2.5 kg/cm² (small)	
S-16002	Vane Adapter, 1.0 kg.cm² (standard)	
S-16003	Vane Adapter, 0.2 kg/cm² (large)	

Torvane is a registered trademark of Durham Geo Enterprise, Inc.

Vane Shear Test Kit with Adapters

For operation in three sizes of pipe or casing.

The Vane Shear Test Kit has everything needed to obtain fast, accurate "in-place" shear readings to depths of 100 feet. Two torque wrenches are included in the kit with a high and low range for shearing soft, cohesive materials or heavier clays. Designed to accept standard AW drill rod.

DS-41003-16

DS-41003-16	Vane Shear Test Kit with Adapters. Complete Kit Assembly with Case	95 lb

Vane Shear Test Kit with Calibrated Torque Head

For extreme accuracy and where extensive testing justifies additional equipment expense, the calibrated torque head is recommended. The high ratio geared head permits even angular rotation of the vane.

Readings are shown on a precision force gauge that features a maximum reading hand for precise accuracy without guess work! The torque arm has 3 positions for shearing soft, medium or stiff soils. The base is divided into 10 degree intervals for ease in recording data. Designed to accept standard AW drill rod.

DS-41003-3	Vane Shear Test Kit with calibrated torque head. Complete kit assembly with case.	204 lb

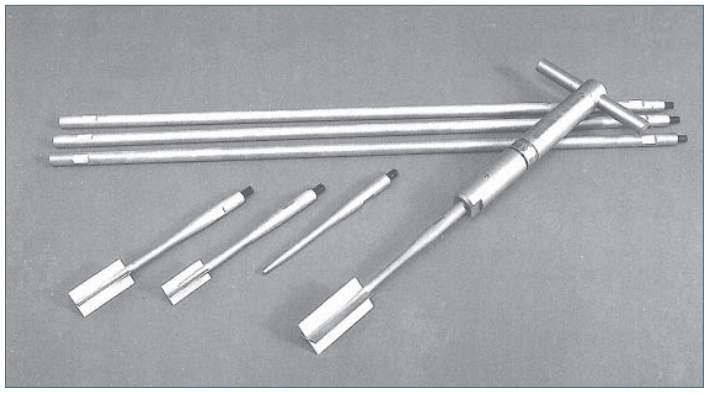
Hand Held Field Vane Shear Tester

The Vane Shear Tester takes direct readings of shear strength to depths up to 3 meters (10 ft). Three vane sizes allow for the direct determination of undrained shear strength of soft to stiff clays. The peak vane value is determined by a calibrated scale ring built into the head assembly. The tee handle is used both to push the vane to the desired test depth and apply the shearing torque.

To correct for the skin friction of the extension rods, a dummy probe replaces the vane and a skin friction test is performed adjacent to the vane test location.

The Field Vane Shear Tester includes:

- Torque Head Assembly
- Six Extension Rods, 50 cm long by 1 cm diameter
- Three Vanes, 16 x 32 mm, 20 x 40 mm, 25.4 x 50.8 mm, (0.63 x 1.25 in, 0.79 x 1.58 in, 1 x 2 in)
- Skin Friction Probe
- Double Ended Wrench and Leather Carrying Pouch

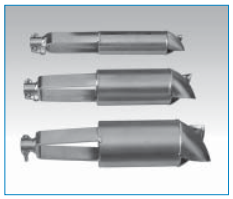


S-162

S-162	Hand Held Vane Shear Tester	12 lb
Related Items		
S-16201	Extension Rod, 50 cm x 1 cm	
S-16202	Vane, 16 x 32 mm, 0-200 kPa capacity	
S-16203	Vane, 20 x 40 mm, 0-100 kPa capacity	
S-16204	Vane, 24.4 x 50.8 mm, 0-50 kPa capacity	

DGSI Hand Augers

S-11008
S-11010
S-11012



S-11004

The DGSI Hand Auger with unique hard-faced and cupped blades is ideal for shallow holes in fine grained soils. Little effort is needed to turn the auger and advance the hole as the blade diameter exceeds the bucket diameter by 3/8 in to reduce friction. S-110 and S-111 Hand Auger Assemblies consist of an auger head, tee handle and an extension with quick connectors. A tee handle with rubber grips is optional (see right column).

- Heavy gauge, heat-treated carbon steel bucket for long life.
- Carbon steel auger heads, extensions and tee handle are zinc electroplated for rust resistance
- All-stainless steel hand auger assembly is available for environmental sampling
- A special “windowed" (open) bucket is available for use in sticky clay soils

S-110	3¼-in Standard Hand Auger Assembly	6 lb
S-11004	3¼-in Standard Hand Auger Assembly with (3) extra extensions	10 lb
S-110M	3¼-in Mud (Windowed) Hand Auger Assembly	6 lb
S-11004M	3¼-in Mud (Windowed) Hand Auger Assembly with (3) extra extensions	10 lb
S-111	3¼-in Stainless Steel Hand Auger Assembly	6 lb
Replacement Parts		
S-11010	3¼-in Standard Auger Head with Connector	
S-11020	Standard Tee Handle with Connector	
S-11030	Standard 36-in Extension with Connector	
S-11040	Standard Quick Connector	
S-11050	3¼-in Standard Mud (Open) Auger Head with Connector	
S-11110	3¼-in Stainless Steel Auger Head with Connector	
S-11120	Stainless Steel Tee Handle with Connector	
S-11130	Stainless 36-in Extension with Connector	
S-11140	Stainless Quick Connect	
S-11150	3¼-in Stainless Steel Mud (Windowed) Auger Head	
Accessory Items		
S-11008	2¼-in Standard Auger Head	
S-11012	4-in Standard Auger Head	
S-11021	Tee Handle with rubber grips	
S-11048	2¼-in Mud (Windowed) Auger Head	
S-11052	4-in Mud (Windowed) Auger Head	
S-11099	Polycanvas Case for Hand Augers	
S-11121	Stainless Steel Auger Tee Handle with rubber grips	
S-11160	5/8-in Adapter, NC BX x BK Quick BX S/S	
S-11170	3/4-in Adapter, NC BX x BK Quick BX S/S	
S-11060	5/8-in Adapter, NC BX x BK Quick BX	
S-11070	3/4-in Adapter, NC BX x BK Quick BX	
S-11061	5/8-in Adapter, Male-to-Male, QC	

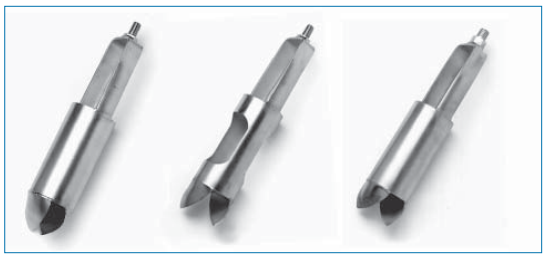
Tee Handle with Rubber Grips

S-11021 is an optional Tee Handle for DGSI Hand Augers. The rubber grips provide added comfort and control.

S-11021

S-11021	Tee Handle	3 lb

AMS Hand Augers



AMS Regular, Mud and Sand Auger Heads

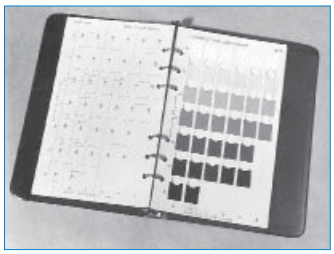
The AMS Hand Augers with threaded connections are available in models designed for regular, mud/clay and sandy soils as shown above. These Standard Augers are made with a stainless steel cylinder, formed carbon steel bail and hand forged, heat treated, high carbon steel bits. The bits dig in as the auger is turned and cut a hole from 3/8 to 3/4 inch (1-2 cm) larger than the cylinder to reduce the effort required. Available in nine cylinder sizes from 1½ to 6 in (3.8 to 15.2 cm), popular sizes are detailed in the table.

A threaded coupling is used to connect the auger head and cross handle to the extension. The Extensions are available in lengths of 3, 4 or 5 ft (91, 122 or 152 cm) and are made from strong, but lightweight, chrome molybdenum steel. Select from the available standard, rubber coated or ratcheting cross handles. Available in stainless steel.

S-11403	Regular Auger, 3¼ inch threaded, AMS	3 lb
Accessory Items		
S-11433	AMS Extension, 3 ft, threaded	2 lb
S-11434	AMS Extension, 4 ft, threaded	3 lb
S-11435	AMS Extension, 5 ft, threaded	3 lb
S-11453	18-in Cross Handle, rubber ctd., ⅝ in threaded	2 lb
S-11454	16-in Cross Handle, ratchet, threaded	3 lb

For other sizes, please call.

Soil Color Chart Set



S-176

New water-resistant, washable color sheets are now standard in this improved Munsell Soil Guide. The guide has been developed in cooperation with the U.S. Soil Conservation Service guidelines for classifying colors of various soils. Can also be used for rocks, archaeological specimens, animal pelage and other natural products in this color range. The new Munsell guide comes in loose-leaf binder with waterproof, washable text pages. One Rite-in-the-Rain text page also features a small ruler for on-the-spot measuring. Matte color chips are mounted on 9 washable tabbed charts: 10R, 2.5YR, 5YR, 7.5YR, 2.5Y, and 5Y, plus two Gley (blue and green colors, and gray scale for submerged soils). Has two washable masks (black/gray). Illustrations of soil grain structures and charts for estimating proportions of mottles and coarse fragments, color name diagrams and instructions. Chart size: 4.25” x 7.25”. Chip size 1/2” x 5/8”.

S-176	Soil Color Chart Set	1.0 lb
Related Items		
S-17620	Soil Chart from above collection, specify hue	
S-17621	Supplementary Chart 7.5 R for tropical & semi-tropical soils, with color name diagram	
S-17623	Supplementary Chart Gley, submerged soils: weak chromas and neutrals on value levels 4/-7/, for hues 5Y, 5GY, 5G, 5BG & 5B, with color name diagram	

Field Classification Tester

S-165

The Classification Tester is used to obtain a quick estimate of unconfined compressive strength in the laboratory or the field. One common application is the testing of a trimmed portion of a split spoon sample taken during drilling operations. This tester has a 4¼ in (10.8 cm) dial face with graduations in pounds and kilograms, and a maximum load pointer. The testing capacity is 350 lb with an accuracy of ±1%. The body is made from cast aluminum, with the base plate drilled for bench mounting.

S-165	Field Classification Tester	32.0 lb
Related Item		
S-16510	Calibrated springs to provide given loads at predetermined heights	

Drive Pin Hammer for Nuclear Gauges

(L-R) N-205 and N-210

N-200

The Drive Pin Hammer is designed to safely and efficiently prepare probe transmission holes for density testing with nuclear gaug es. Using a drive pin and sledge hammer to make probe holes can be tiring and difficult, especially in cohesive and rocky soils. The Drive Pin Hammer is designed to eliminate these prob- lems.

The Drive Pin Hammer uses a sliding weight to strike an anvil to drive the probe to the desired depth. The operator stands rather than stoops to drive the pin. A stop at the upper end of the shaft allows the impact hammer to be used as a convenient extraction tool. Two handles are provided for safety and ease of operation. The all-steel construction is zinc-plated to resist rust.

N-200	Drive Pin Hammer	23.0 lb
N-210	Forged Steel Drive Pin and Extraction Rod	2.0 lb
Related Item		
N-205	Aluminum Footplate	7.0 lb

Leak Test Kit for Nuclear Gauges

Radioactive material license regulations require that the sealed sources used in nuclear moisture/density gauges be “leak tested” either once or twice a year (depending on the governing agency in your area) to ensure that the radioactive material is secure in the source capsule and is not leaking. These leak test kits contain all the necessary materials for per form ing the test as well as materials and instructions for mailing the obtained sample to the proper facility for analysis and certification.

N-400	Leak Test Kit	1.0 lb

Density Drive Sampler

ASTM D 2937

AASHTO T 204

The Density Drive Sampler is used to determine the in-place density of soil by driving a thin-walled tube to obtain a soil sample of known volume. The Sampler consists of a zinc-plated steel drive head and sliding 10-lb hammer. The drive head is provided with a shock spring. Wall thickness is .083 in.

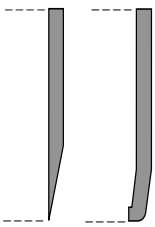
Drive tubes are zinc plated and are available in three sizes:

- 2 in x 6.25 in (0.01 ft^3)
- 3 in x 2.75 in (0.01 ft^3)
- 4 in x 5 in (0.033 ft^3)

Note: Only 4-in tube meets ASTM D 2937

Note: Because of the difficulty sometimes encountered with sample removal from the tube, swaged end tubes are not recommended in stiff soils.

(L-R) S-103, S-104



Beveled Edge Rolled (swaged) Edge

S-104 in use

S-103	Density Drive Sampler with 3-in Head	22 lb
S-104	Density Drive Sampler with 4-in Head	23 lb
Related Items		
S-10220	Drive Tube, 3 in (7.6 cm) dia. (0.01 ft^3 vol), Beveled, Box of 10	
S-10230	Drive Tube, 4 in (10.2 cm) dia. (0.033 ft^3 vol), Beveled, Box of 10	
S-10220A	Drive Tube, 3 in dia., Swaged end, Box of 10	
S-10230A	Drive Tube, 4 in dia., Swaged end, Box of 10	
DS-610	Plastic Cap, 2 in	
DS-630	Plastic Cap, 3 in	
DS-634	Plastic Cap, 4 in	
S-35710	Straight Edge	
GW-115	Triple Beam Scale & Weights, 2610 g.	
GW-11905	Plastic Carrying Case for GW-115	
GW-2600	Compact Digital Scale, 2600 x 0.1 g, AC/Battery	
GW-26099	Carrying Case for GW-2600 Scale	

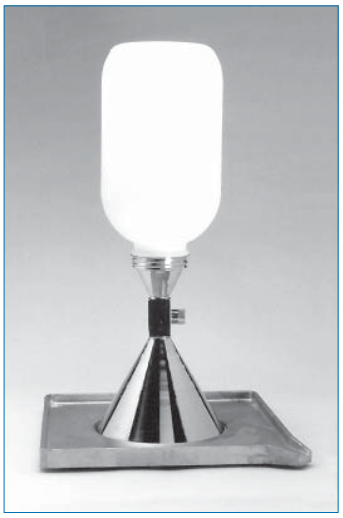
Balloon Density

Available upon request

Sand Cone Apparatus

ASTM D 1556 AASHTO T-191

The Sand Cone Apparatus is used to determine the in-place density of any soil that can be excavated to a stable condition with hand tools. This method is generally limited to materials with a maximum particle size of 2 in (5.1 cm).



S-120, with S-121

The Sand Cone Density Apparatus consists of a one-gallon plastic container and a 6 ½ in (16.5 cm) detachable metal cone with valve.

The cone as sem bly is cor ro- sion resistant. The Density Base Plate, also shown in the picture, pro vides a stable base for the Sand Cone. A center flanged 6 ½ in (16.5 cm) diameter hole receives the standard Sand Cone Funnel (S-120). The center hole may also be used as a template to gauge the diameter of the test hole. The flanged Density Base Plate also helps in preventing loss of soil removed from the test hole. It is made from cast aluminum alloy. Size 12 x 12 in (30.5 x 30.5 cm).

Ottawa Density Sand is used with the Sand Cone Density Apparatus to determine the volume of the excavated test hole.

S-120	Sand Cone Apparatus, 6.5 in	2 lb
S-12000	Sand Cone Density Kit: (includes 1 ea) S-120 Sand cone and jug, S-121 Field density plate, S-127 Plastic jug for sand cone, G-29201 Small round bottom scoop, 2 D x 5 L (No. 0), G-510 Rubber mallet, G-29101 SS Sampling spoon, GW-130 Field scale (36 lb), G-515 1-in steel chisel, G-311 Field can (gallon, 12 ea) and 2190B Density sand, (50 lb, 2 ea, paper bag). Carrying case included.	
S-121	Density Base Plate	5 lb
S-125	Ottawa Density Sand (100 lb), w/ vinyl bag	105 lb
2190B	Sand, paper bag	50 lb
Related Items		
S-127	One Gallon Plastic Container	
S-147	6 g Speedy 2000 w/ 200 g Balance & Plastic Case	
S-142	20 g Speedy 2000 w/ 200 g Balance & Plastic Case	
G-500	Density Pick/Hammer	
G-515	Steel Chisel	
G-29101	Sampling Spoon	
G-29001	Brush	
GW-130	Field Scale, 36 lb capacity	
GW-50030	Electronic Balance, 15 Kg (30 lb)	
GW-50099	Carrying Case for GW-50030	
G-510	Rubber Mallet	
GW-115	Triple Beam Scale, 2610 g capacity	
G-311	Field Can, 4 qt capacity	

Moisture Testing Kits

ASTM* D 4944 AASHTO T 217

* See Standards Buyer's Guide at www.DGSI.info/3000.

S-142

Determine the moisture content as percent water of most soils in about 3 minutes. The measured sample is placed in the pressure chamber with calcium carbide reagent. The water in the soil and the reagent react to produce acetylene gas. The gauge reads the percent water content from 0-20% based on weight with an accuracy of 0.5%.

The original Moisture Testing Kit (S-142) is comprised of a large, highly polished pressure chamber with dial gauge for 20 g samples, a 200 g electronic balance, cleaning brushes, cloth and measuring scoop packed in a sturdy plastic case.

The 20 gram Aqua-Check (S-142A) is similar but is supplied with a tough wear-resistant coated canister instead of the polished one that is supplied with the S-142.

Moitsture testing kits are available in two sizes, 6 gram for fine grained materials and powders and 20 gram for sand, aggregates and lumpy materials. Reagent and calibration kit are available separately.

DGSI maintains a full line of repair parts, accessories and service for the Testing Kits.

S-147	6 g Speedy® 2000 w/ 200 g balance and plastic case	14 lb
S-142	20 g Speedy® 2000 w/ 200 g balance and plastic case	18 lb
S-142A	20 g Aqua-Check w/ 200 g balance and plastic case	18 lb

Related Items

S-144	Calcium Carbide Reagent, 24 x 1-pint cans*
S-145	Calibration Kit
S-14144	Pulverisers, 1-1/4 in (3.2 cm)
S-14044	Pulverisers, 5/8 in (1.6 cm)

* Keep Calcium Carbide sealed and dry as it forms acetylene gas when wet. Use only in ventilated area. Shipment made only by surface truck or authorized hazardous material carrier.

(L-R) 20 g and 6 g canisters

Parts, Repair and Calibration for Speedy® Moisture Tester

DGSI is an authorized repair and calibration facility for Speedy Moisture Devices.

DGSI maintains a spare parts inventory for the 6 and 20 gram Speedy Moisture Devices. A limited number of parts are shown here. Contact us for your specif c needs.

VM-620	Speedy Moisture Tester Calibration (6 or 20 g version), per ASTM standard, (1/2 division)
VM-625	Speedy Moisture Tester Calibration (6 or 20 g version), (1/4 division)

Most Commonly Used Parts	
S-14001	Top screw
S-14005	Rubber Washer
S-14012	Gauge Type D.2 - 0-20%
S-14020	Measuring Scoop
S-14022	Cleaning Cloth
S-14030	6 g Brush
S-14117	Brass Weight, 10 g
S14130	Large Brush
GW-205	Replacement Scale for S-142

Portable Soil Resistivity Meter

ASTM G 57-78 AASHTO T 288

The S-298 Soil Resistivity Meter is a battery operated, solid state device to evaluate ground conductivity as well as a tool for per form ing shallow subsurface surveys. Useful in many field studies such as geotechnical site characterization, soil conductivity for corrosion potential and groundwater depth or extent of contamination. Range from 0.01 ohm to 1.1 megohm in 8 ranges with 10% overlap on all ranges. Can be used with 4-, 3-, or 2-pin methods. Single 100 division dial balance for easy readability.

Soil Resistivity Meter only.


S-297

Rugged, weatherproof case protects instrument that weighs 7.5 lb and measures 9 (L) x 6 (W) x 8 (D) in. Powered by one 12-V lantern battery.

The S-298 Soil Resistivity Meter includes: Instrument in rugged carrying case with shoulder strap, four electrode rods, cable storage reel and four lengths of cable (5, 25, 45, or 65 ft).

The S-297 Soil Moisture Box is made of plexiglass. Inside dimensions are 1.5 in W x 8.75 in L x 1.5 in deep. Capacity: 323 ml

For detailed specifications, see **www.DGSI.info/3092.**

S-298 K	Soil Resistivity Meter Set, with Nilsson 400, cable, reel, and 4 electrodes	24 lb
RNTL-NEL400	Monthly rental for FR-400	
Replacement Parts		
S-29800	Meter only	
S-29805	Wire head only (reel-to-meter)	
S-29801	Copper soil pin	
S-29802	Cable reel with cable and wire leads	
Accessory Items		
S-297	Soil moisture box (large)	8 lb
S-29750	Soil moisture box (small)	7 lb

Blast and Vibration Monitoring


FS-700

Instantel's MiniMate Plus™ is a compact, full-featured, advanced vibration and overpressure monitor. It provides manual, single-shot, continuous, and programmed waveform recordings and histogram recordings. Key features include:

* Compact size with easy-to-use keyboard and display.
* Autocall Home feature transfers event data from the field to the office via cell, satellite, RF, GSM, or phone modems.
* Histogram Combo mode allows full waveform recording while in histogram mode.
* Sample rates from 1 to 16K samples per second for each channel, and up to 65K samples per second for a single channel.
* Stores 300 one-second waveform events or 1500 events with memory upgrade.
* Stores 46K histogram intervals.
* Available 8 channel option allows simulataneous recording of two microphones and two geophones.
* Zero dead-time between events.
* Individually configurable channels.

For detailed specifications, see **www.DGSI.info/3091.**

FS-700	MiniMate Plus™ Base Unit (w/o microphone). Built-in three-axis seismic transducer, 300 event capacity, 4 channels, AC power, charger, RS-232 cable, compliance module software, manual and case.	5 lb
FS-705	MiniMate Plus™ Base Unit to use external sensors: (w/o sensors or microphone), 300 event capacity, 4 channels, AC power, charger, RS-232 cable, compliance module software, manual and case.	5 lb
FS-710	Stand, 3-axis transducer	3 lb
FS-714	Microphone Assembly, Linear, Range 100 to 142 db, w/2 m cable	3 lb
FS-715	Microphone Assembly, A Weight, Range 50 to 110 db, w/2 m cable	3 lb
FS-720	Advance Module Software. Requires MS Windows 3.1 or higher	3 lb

Sand Content Set

For determining the sand content of drilling fluid. The Set contains a sand screen (a sieve mounted in a plastic cylinder, 2¼ in dia x 3¾ in L), a plastic funnel that fits over the end of the screen cylinder with a small end fitting into a glass measuring tube and a wash bottle. The measuring tube has a scale that is graduated from 0 to 20% to measure percentage of sand by the volume of drilling f uid.

DE-11600

DE-11600	Sand Content Set	3.0 lb

Sample Jars

Glass jars have a white threaded metal cap with inner waxed liner.

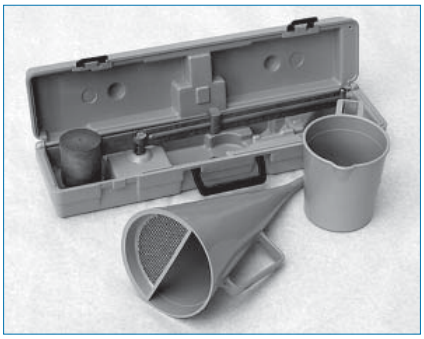
Capacity: 8 oz; 1⅞ in. dia. x 5¼ in. H. Box of 12.

G-305

G-305	8 oz Sample Jar, Box of 12 w/Caps	8.0 lb
Related Items:		
G-30510	Lid for G-305	

Marsh Funnel Viscometer

The 1000 cc high-impact plastic measuring cup, which is graduated in cubic centimeters and fluid ounces, is designed specifically for use with the Marsh Funnel Viscometer. Lines are molded in at 350 ml and 1 quart (32 fl oz) to aid in these tests. The funnel's metal orifice assures accurate readings.



DE-11000

Durable, break resistant construction. Resists temperature change and maintains volumetric accuracy. Consists of a base, graduated arm and cup, lid, knife edge, rider, built-in spirit level, and a counterweight. Plastic carrying case provided.

DE-11000	Marsh Viscosity Kit	6 lb
DE-11010	Marsh Funnel	
DE-11020	Marsh Funnel Cup	
DE-11500	Mud Balance with Case	

Thin-Walled Sampling ("Shelby") Tubes

ASTM D 1587

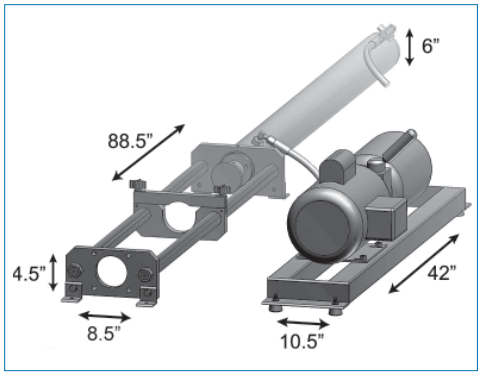
Shelby tubes are packaged 9 per box but sold individually.

Diedrich 2 x 24-in Heat Treated (HT) Heavy Duty ("Lynac") Split-Spoon Samplers are available. See **www.DGSI.info/30089**

Tube Dia. (in)	2		2.5		3					
Tube Length (in)	30	36	30	36	10	12	18	24	30	36
Galvz. Tube (ea)	DS-15130	DS-15136	DS-15230	DS-15236	DS-20035	DS-15312	DS-15318	DS-15324	DS-15330	DS-15336
E Head Ass'y	N/A		N/A		DS-20037	DS-20037	N/A			
AW Head Ass'y	DS-171		DS-172		DS-173					
AWJ Head Ass'y	DS-171J		DS-172J		DS-173J					
Plastic Caps	DS-610		DS-620		DS-630					

Sample Extruder

The DGSI Sample Extruder will efficiently extrude samples up to 3 x 36 inches from Shelby tubes. It is powered by a 2-hp electric motor driving a hydraulic ram with 38 in (96.5 cm) of travel and a force of up to 11,000 lbf (49.5 kN). It extends at a rate of 52 in/min (133 cm/min).



S-240

Designed for bench mounting, an optional leg assembly allows it to be free standing. An adapter set is available for use with 2 in (5.1 cm) sample tubes.

The unit can be adapted for mounting on truck-mounted drill rigs and be powered by the drill's hydraulic system.

S-240*	Sample Extruder, 2 hp, 120 V, 60 Hz	295 lb
S-240X	Sample Extruder without pump and motor	
Accessories:		
S-24010	Leg Assembly	
S-24020	2 in (5.1 cm) Adaptor Set	
S-24030	Sample tray for extruded samples (30 in)	

*Other voltages available.

Also available: Static compactor/extruder (S-242) to compact 2.8-in x 5.6-in specimens (AASHTO T 307). See page 30.