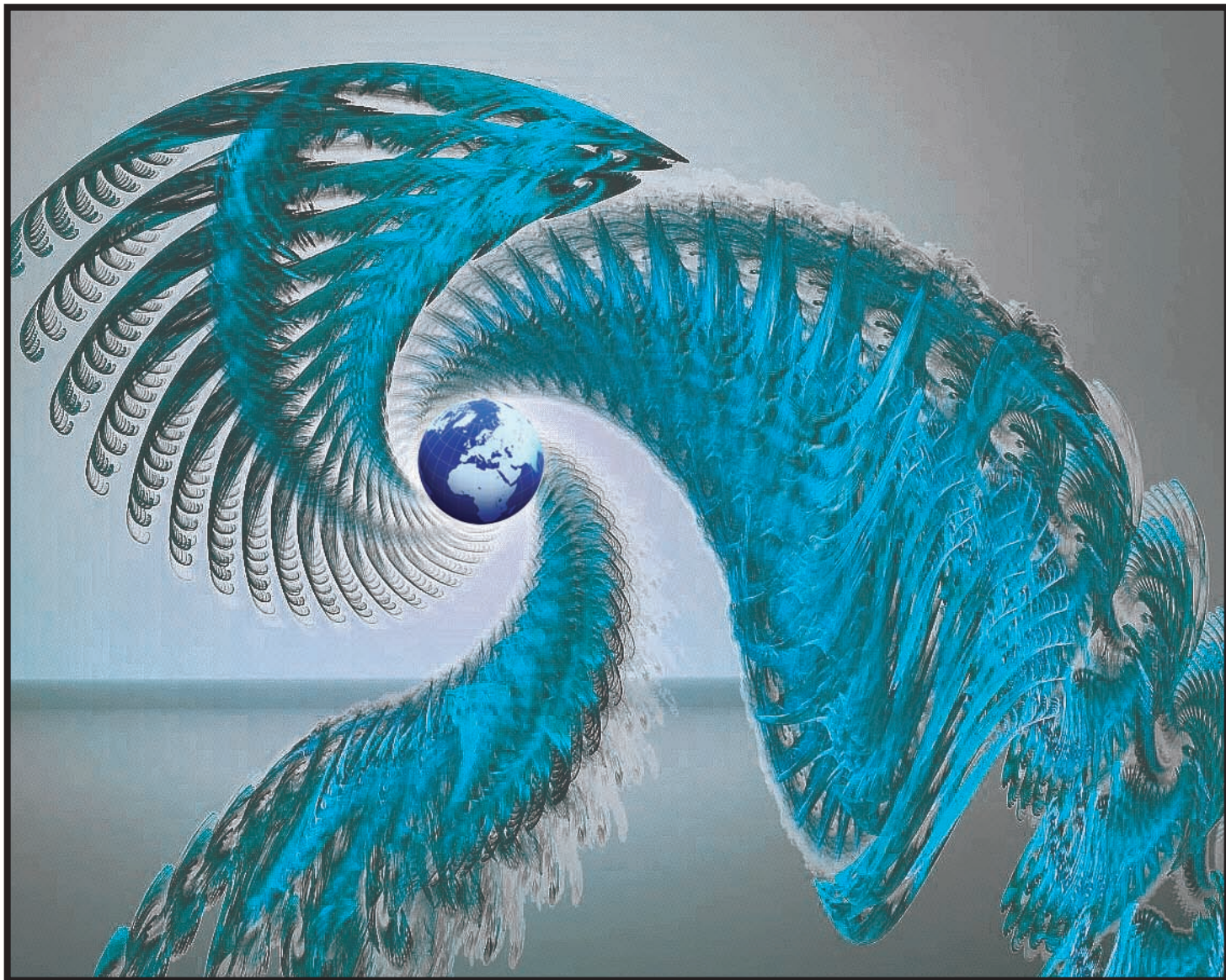


FOR OVER 50 YEARS, INNOVATIVE INSTRUMENTS BUILT ON UNDERSTANDING SOIL, WATER AND PLANTS



PRODUCT CATALOG





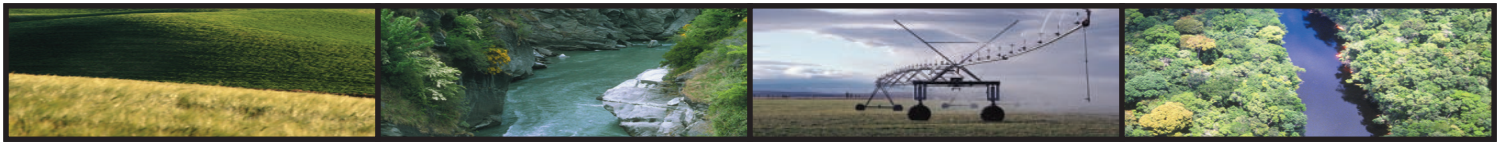
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Whitney Skaling, President  
Soilmoisture Equipment Corp.



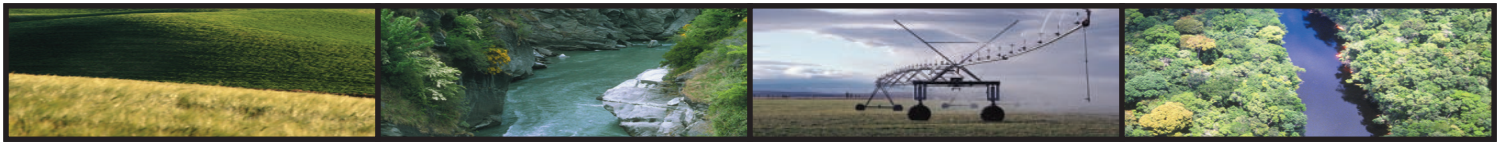
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## 0192K1 ROOT SAMPLER

**When root density or root activity is required from an almost totally undisturbed core**

Research into root ability, depth and complexity of root systems in soil layers. The ability to "cut a core" makes this the perfect sampling system for soils with massive rooting. Sampling in urban landscaped areas or for crop rooting health, it's a winner. Sampling of compost, in combination with the Edelman auger adds to the capabilities. The bi-partite root auger can be used in almost any kind of soil, regardless of the resistance to penetration. The standard set allows sampling to a depth of 6.56 ft. (2 m). The samples obtained are practically undisturbed and equal in size and volume 3.15" X 5.91" = 750 ml (8 cm X 15 cm = 750 cc volume); roots to 2 cm in diameter can be sampled.

### SPECIFICATIONS:

0192K1 Bi-Partite Root Sampling Auger Kit; Standard Auger Handle; Beating Head Handle; Conical Screw Thread, 39.3 in (100 cm) Long Extension; Root Drilling Crown; Shock Absorbing Hammer; Utility probe, Spanner (wrench) 20x22mm; Field Data Registration set; Work Gloves pair; Maintenance Kit; Spatula bent.

### SHIPPING INFORMATION :

Kit comes in a heavy-duty aluminum carrying case.  
Kit weight 59.5 lbs (27 kgs)  
Kit length 46" L X 10.5" W X 9" H  
(117cm L X 27cm W X 23cm H)



## 0194 SOIL SURFACE SAMPLER

**When undisturbed root sampling or soil profile sampling for soil monoliths is required**

An excellent tool for taking rectangular samples in crop soils, turf, or landscaped areas. Cored flat samples provide excellent bed for germination studies. Provides an excellent vertical profile of rooting habits or in determining soil structures. The Profile sampler may be used to collect a relatively undisturbed large soil column with soil structure, rooting and other physical characteristics that remain intact. An excellent tool for turf, grass and grains management and/or sampling routines and analysis. A plant /soil profile sample block of 3.94 in x 1.97in 15.75 in long (10 cm X 5 cm, X 40 cm in length) may be obtained. All roots to 2 cm in diameter are included in the sample. Used for Root Growth Research and in Soil surveying.

### SPECIFICATIONS:

0194 Soil Surface Sampler  
3.94 in x 1.97in 15.75 in long (10 cm X 5 cm, X 40 cm) in length

### SHIPPING INFORMATION:

Kit weight 11 lbs. (5 kgs)  
Kit Length 529" L X 22" W X 4" H  
(72cm L X 56cm W X 11cm H)





## 0196 SPLIT TUBE SAMPLER KIT

### When an undisturbed core sample is required

Being able to view soil cores in field is an immense help in understanding soil variation, structure and distribution. A great tool for teaching, or investigative work. The split tube sampler has the advantage of easily removing an undisturbed soil core from the sampler since the coring barrel can be removed intact. The sample may be taken within a sample liner or solely within the split tube sampler. The split tube consists of two stainless steel tube halves with a working length of 16.14 in. (40 cm) and ID of 2.09 in. (53 mm). The split tube uses conical screw threads and can be attached to the Beating Head Handle by the use of the threads.

#### SPECIFICATIONS:

0196 SPLIT TUBE SAMPLER KIT Handle; short beating; c.sc.; Split tube sampler; 2.08 in. (53 mm) ID x 15.74 in. (40 cm) length; c. sc.; Steel Hammer; w/nylon head caps 4.4 lbs. (2.0 kg) impact absorbing; Sample Liners; 1.97in. (50 mm) x 15.74 in. (40 cm) length; 10 pc; Plastic; Sample Liner retainers; Steel Lifting Jack; Lifting lever and wrap chain; Spanner .78 in. (20 mm) x 8.7 in. (22 mm) Bent Spatula; .78 in. (20 mm)

#### SHIPPING INFORMATION

Kit comes in a heavy-duty vinyl-carrying bag.  
Kit weight 77 lbs. (34.9 kg)  
Kit Length 50" L X 26" W X 20" H (126cm L X 65cm W X 50cm H)



## 0198C1K1 SOIL CORING KIT, CHEMICAL SOIL RESEARCH

### When undisturbed soil core samples are required for soil chemical research

When sampling the soil for volatile organic contaminants, it is important to take representative (large samples) that have undisturbed soil structure. This prevents exposure to air while the sample is transported to the laboratory maintaining a clear "chain of custody" for regulators. Includes stainless steel coring tubes 5 ea 1.50 in ID X .787 in long (38 mm ID X 20 cm length), stainless steel coring apparatus 1.50 in (38 mm OD) and adapter to conical screw threads, stainless steel filling blocks and insulation plates. A collected sample is transported in the stainless steel sample tube with filler blocks and insulation plates by capping the tube ends with the provided PE caps to prevent volatile losses. A sample extruder is used to remove the sample from the sample tube for laboratory analysis. All stainless steel components can be washed in detergent, rinsed in distilled/de-ionized water and re-used indefinitely. The stainless steel tubes have thin walls .042 in. (1.0 mm) and easily cut the soil core in both wet or dry (soft or hard) soils.

#### SPECIFICATIONS:

0198C1K1 SOIL CORING KIT, CHEMICAL SOIL RESEARCH  
An Edelman Auger; 2.76 in. (7 cm), conical screw thread; a Riverside Auger 2.76 in. (7 cm) conical screw thread; 5ea. - 39.37 in long (100 cm) extension rods; conical screw thread; standard handle 23.62 in. (60 cm) with detachable grip; beating head handle; steel hammer with nylon caps; 4.5 lbs. (2.0 Kg) down hole hammer; 11.81 in. (30 cm) stroke; utility probe; 41.34 in. (105 cm) length x .50 in (12.5 mm) dia. miscellaneous brushes; wrenches; a spatula and gloves.

#### SHIPPING INFORMATION

Kit comes in a heavy-duty aluminum carrying case.  
Kit weighs 90.5 lbs. (41 kgs)  
Kit Length 46" L X 12" W X 9.5" H  
(117cm L X 30cm W X 24cm H)



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## 0198C2K1 LINER SAMPLER SET, HARD SOILS

**When undisturbed soil core sample in a plastic sleeve is required in a hard soil**

Often soil investigations require visual observations of soil structure and soil color to distinguish soil boundaries when mapping soils. Samples collected with the liner sampler may be observed immediately without disturbing the physical specimen and they may be transported back to the lab in the sample liner containers with end caps for further undisturbed analysis. Samples collected in this manner can be further analyzed for fertility. An excellent sampler set for field research studies, training or teaching the complexities of soils and soil science.

**SPECIFICATIONS:**

0198C2K1 LINER SAMPLER SET, HARD SOILS An Edelman Auger; 2 in. (7 cm) conical screw; a Riverside Auger; 2 in. (7 cm) conical screw; 7 ea - 3 ft. (100 cm) extension rods; conical screw; standard handle 24 in. (60 cm) with detachable grip; conical screw; beating handle; conical screw; push/pull handle; steel hammer; shock absorbing; nylon caps; 4.5 lb. utility probe 42" x 0.5" (105cm X 12.5mm); miscellaneous brushes; wrenches; spatula and gloves; coring tube; 1.96" ID x 8.6" length (50 mm ID x 22 cm length); cutting shoe; 1.96" ID (50 mm ID) liners; sample liner container.

**SHIPPING INFORMATION:**

Kit comes in a heavy-duty aluminum carrying case.  
Kit weight 84 lbs. (38 kgs)  
Kit Length 46" L X 11" W X 11" H  
(117cm L X 27cm W X 28cm H)

## 0199K SOIL SAMPLE RING KIT

**When undisturbed soil core sample in a stainless steel ring is required for medium to hard soil**

A universal sampling kit that applies for most common types of soils normally encountered in the field. Undisturbed samples are often very important to obtain essential data about the bulk density of a soil or permeability characteristics. The 0199K Soil Sample Ring Kit, will enable you to take very precise undisturbed samples. Suitable for taking undisturbed soil core samples from surface soils, auger holes, back-hoe pits or under the ground water level in light to heavy soils. The standard model takes core samples 2.08 in. (53 mm) in diameter by 1.96 in. (50 mm) depth;. All sample rings of a size use seamless stainless steel tubing stock. The closed ring holder has a conical screw thread and is used with the Beating Head Handle and the impact-absorbing hammer to drive the core to depth. Extension rods are 19.6 in. (50 cm) in length and can extend the sampling depth to a 6.5 ft (2-m) depth. The kit includes an aluminum carrying case for the sample rings.

**SPECIFICATIONS:****0199K SOIL SAMPLE RING KIT**

Handle; short beating; conical screw thread; Steel Hammer; w/nylon head caps.; 4.4 lbs. (2.0 kg) impact absorbing; Case with 24 Sampling Rings; 2.08" diam. x 1.96" length (50 mm x 53 mm length); Closed Ring Holder 2.08 in. (53 mm) diameter Spare Cutting shoe; Edelman Auger; 2 in. (7 cm); conical screw thread Riverside Auger; 2 in. (7 cm); Guide Cylinder; Spanner 0.78 in. x 0.86 in. (20 x 22 mm); Bent Spatula 0.78 in. (20 mm) wide. Moisture and temperature resistant Clean-out brush; Heavy duty carrying Bag.

**SHIPPING INFORMATION:**

Kit comes in a heavy-duty vinyl-carrying bag.  
Kit weight 44 lbs. (20 kgs)  
Kit Length 46" L X 11" W X 9" H  
(117cm L X 27cm W X 23cm H)





## 0200 SOIL CORE SAMPLER

### Undisturbed Cores 2-1/4 (5.7cm) Dia. of multiple heights all in one sample

The standard for gathering near surface soil cores of multiple heights of 1,3,and 6 cm long. A simple but effective tool for field gathering of undisturbed cores of differing sizes all in one sample making it easy to prepare samples for lab work. A core 2-1/4" (5.7cm) in diameter is extracted and held in a brass cylinder. The cylinder and soil sample can then be placed in all extractors or Tempe Cell apparatus, where the water holding characteristics of the sample can be determined. The cylinder can be used to provide a sample of known volume, allowing the bulk density to be determined. The sampler is supplied with two wedge coring tips, driving hammer, core extractor, spanner and strap wrench for replacing coring tips, six cylinder caps, and five brass cylinders; one 2.3 inch (6 cm) long, two 1.18 inch (3 cm) long, and two 0.39 inch (1 cm) long.

#### SPECIFICATIONS:

0200 SOIL CORE SAMPLER, complete with hammer, 1ea. 206L01-1 cm ring, 2ea. 206L03-3 cm ring, 1ea. 206L06-6 cm rings.

0200CS Soil Core Sampler model 0200, complete in carrying case.

#### SHIPPING INFORMATION:

Weight 11.5 lbs. (5.2 kgs)

Length 23" L X 11" W X 5" H, (58.5cm L X 28cm W X 13cm H)



## 0212 SOIL CORE SAMPLER

### Undisturbed Cores 3-1/2 (8.9cm) Dia. of multiple heights all in one sample

When larger diameter undisturbed samples are required, the 0212 Soil Core Samplers should be your selection. The tool for gathering near surface soil cores of multiple heights of 3,and 6 cm long. The Model 0212 Soil Sampler allows the extraction of intact soil cores of multiple heights. A core 3-1/2" (8.9cm) in diameter is extracted and held in a brass cylinder. The cylinder and the soil sample can then be placed in a pressure plate extractor or Tempe cell apparatus where the water holding characteristics of the sample can be determined. The cylinder can be used to provide a sample of known volume, allowing the bulk density to be determined.

#### SPECIFICATIONS:

0212 SOIL CORE SAMPLER The sampler is supplied with two wedge coring tips, hammer, spanner wrench for replacing coring tips, and six brass cylinders; two 2.3 inch (6 cm) long and four 1.18 inch (3 cm) long.

#### SHIPPING INFORMATION:

Kit weight 38 lbs. (17 kgs)

Kit Length 47" L X 10" W X 10" H  
(119cm L X 25cm W X 25cm H)



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## 0215 DEEP SOIL SAMPLING SYSTEM



### Manual Deep Coring System, 3/4" (1.9 cm) dia. complete profile cores to 16ft. depths

In remote and hard to get to places that don't have power or hydraulic coring capabilities, the 0215 is your deep coring answer. The 0215 Soil Sampling Tube is an excellent tool to retrieve a smaller diameter sample, to various depths, with minimal disturbance. 1-1/4" (3.2 cm) diameter, while extracting a soil sample 3/4" (1.9 cm) in diameter. The optional drop hammer 34.5" (87.6 cm) long inserts and can extract sampling tubes. The Z0216G1 Replaceable Coring Tip is made from hardened tool steel and can easily be replaced on all tubes. The optional Puller Jack, Model 0220, is highly recommended for tube extraction, available to aid in removing deep sampling tubes from the soil.

#### SPECIFICATIONS:

0215F1L04	Soil Sampling Tube, 4 ft.	(1.2 m) length	4.2 lbs.	(1.88 kgs)
0215F1L05	Soil Sampling Tube, 5 ft.	(1.5 m) length	4.9 lbs.	(2.22 kgs)
0215F1L06	Soil Sampling Tube, 6 ft.	(1.8 m) length	5.4 lbs.	(2.45 kgs)
0215F1L08	Soil Sampling Tube, 8 ft.	(2.4 m) length	7.0 lbs.	(3.18 kgs)
0215F1L12	Soil Sampling Tube, 12 ft.	(3.6 m) length	9.8 lbs.	(4.46 kgs)
0215F1L16	Soil Sampling Tube, 16 ft.	(4.8 m) length	12.6 lbs.	(5.75 kgs)

#### SHIPPING INFORMATION:

0215 Tubes shipped separately or shipped together with drop hammers in 5"X5" X L +2lbs (.91 kg)  
0220 Puller Jack packed in a 15" X 15" X 9" (38.1cm X 38.1 cm X 22.7 cm)

#### ACCESSORY ITEMS

0218F Drop Hammer 15lbs (6.80 Kg) – for insertion and extraction  
0220 Puller Jack for tube extraction – 15 X 15 X 9 ( 31.8 X 31.8 X 22.7 cm)  
Z0216G1 Replaceable point

## 0225 LORD SOIL SAMPLER

### Portable hand profile sampler – large 1ft. (30.4 cm ) viewing & retrieval slot



An ideal tool for fast sampling of smaller cores. Whether you need to take a soil sample for nutrient analysis, or you need to determine soil structure, distribution or moisture content, the Lord Probe is the best tool for the job. Designed by working field consultants Lord Soil Sampler is 3 feet (.91 m) in overall length and 1 inch (2.5 cm) in diameter, and is made from tough, chrome-molly steel. A one-foot opening on the side permits easy removal of the sample from the polished, nickel-plated unit. The coring tip is replaceable and fabricated from heat-treated nickel-plated tool steel. The handle unscrews at the top to permit addition of a 2-foot (.68 m) extension tube for deep sampling. The sampler, as well as extension tube, is marked at 6" (15.2 cm) intervals for depth measurements.

#### SPECIFICATIONS:

0225 LORD SOIL SAMPLER	3 lbs. (1.35 kgs)
0226L24 EXTENSION TUBE - 24"	(60 cm) 1.8 lbs. (0.82 kgs)

#### ACCESSORY ITEMS

0225-001 Replaceable Cutting Tip 1-1/4 (2.86 cm) .64 oz (18.1 gm)



## 0228SHK1 SOIL CORE SAMPLING KIT, HARD SOILS

### Gouge Augers – “Push and Turn” sampling for Hard Soils

When soil mapping or soil fertility sampling is required in very hard soils, the 0228 core sampler -gouge auger, model Purckhauer is the solution. This rugged unit that tapers from top to bottom is made for abuse in tough and hardened soils. The lesser resistance to insertion of the “half round” gouge type augers and the ability to “turn” them while cutting a core, provides a reasonable working environment for even the toughest sampling situations. Suitable for very hard soils, using the large synthetic hammer and a smart mechanical extraction system that allows easy sampling in difficult environments.

#### SPECIFICATIONS:

0228SHK1 SOIL CORE SAMPLING KIT, HARD SOILS Complete kit with single piece gouge auger, 39 in (100-cm) length, and hammer with mechanical extraction system and carrying bag.

#### SHIPPING INFORMATION:

Kit comes in a heavy-duty vinyl-carrying bag.  
Kit weight 29 lbs. (13 kgs)  
Kit Length 46” L X 11” W X 9” H  
(117cm L X 27cm W X 23cm H)



## 0228SMK1 SOIL CORE SAMPLING KIT, MEDIUM SOILS

### Gouge Augers – “Push and Turn” sampling for Medium soils

Quick and easy sampling to considerable depth with minimal disturbance to soil cores. The perfect match for some medium and fine textured soils. The lesser resistance to insertion of the “half round” gouge type augers and the ability to “turn” them while cutting a core, provides an excellent survey -sampling tool set. Suitable for most soils and environments. A complete compact auger kit, suitable to hammer into denser soils. The single gouge auger has a beating head and can be hammered into the soil with the supplied impact absorbing design hammer.

#### SPECIFICATIONS:

0228SMK1 SOIL CORE SAMPLING KIT, MEDIUM SOILS complete with a Single Gouge auger, length 39 inch (100 cm) heavy type with beating head, steel hammer impact absorbing 4.8 lbs. (2.2 kg), bent spatula and a carrying bag.

#### SHIPPING INFORMATION:

Kit comes in a heavy-duty vinyl-carrying bag.  
Kit weight 9 lbs. (4 kgs)  
Kit Length 51” L X 15” W X 4” H  
(130cm L X 38cm W X 10cm H)



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## 0228SSK1 SOIL CORE SAMPLING KIT, SOFT SOILS



### Gouge Augers – “Push and Turn” sampling for soft soils

If your interests are in sampling moist clays, marls, and other fine textured soils this is the sampling kit for you. The lesser resistance to insertion of the “half round” gouge type augers and the ability to “turn” them while cutting a core, provides an excellent survey sampling tool set. Suitable for moist clays and softer soil types to extract the core from the gouge auger in the same manner. Used for soil mapping, fertility studies. With a sampling diameter of almost 1.2-inch (30-mm), you will be able to retrieve enough sample volume for physical analysis in the field and in the lab.

#### SPECIFICATIONS:

0228SSK1 SOIL CORE SAMPLING KIT, SOFT SOILS the kit comes with 2 Single Gouge augers that have a sampling length of 1 feet (50 cm) and 3 feet (100 cm), The kit is completed with a carrying bag and a bent spatula.  
Kit comes in a heavy-duty vinyl-carrying bag.  
Kit weight 9 lbs. (4 kgs)  
Kit Length 51” L X 15” W X 4” H (130cm L X 38cm W X 10cm H)

## 0234EHLB ERGONOMIC HANDLE, BAYONET TYPE



Bayonet - style connection

### The ergonomic handle is a breakthrough in field auguring.

Working ergonomically is most important when frequent volumetric sampling is part of your field duties. Ergonomic designs have a proven ability to reduce cumulative stress for the repetitive movements of turning and twisting associated with volumetric augering. This means a more pleasant work situation for the tedious task of large scale sampling. The built-in internal ratchet and extendable handle virtually eliminate wear and tear on the operator. The ergonomical handle offers a solution that fits your work needs and will last a lifetime. To be used with the ergonomical auger bodies, that will meet the dimension requirements to operate ergonomically.

Shown (from left to right) typical auger types suited for the ergonomic handle use:  
Stone, 7 cm diameter, Bayonet-style connection 0234ESTN07  
Coarse Sand, 7 cm, Bayonet-style connection 0234ECSDB07  
Riverside, 7 cm diameter, Bayonet-style connection 0234ERVS07  
Sold separately

#### SPECIFICATIONS:

0234EHLB ERGONOMIC HANDLE, Bayonet type  
Weight 6.6 lbs. (3 kgs)  
Length 24” L X 39” W X 4.8” H  
(60cm L X 100cm W X 12cm H)



## 0235BBK1 BAILER BORING KIT

### When you need to take soil samples both above and below a groundwater surface

There are a multitude of sampling systems for above water table sampling and fewer yet for sampling below the water table, but only the 0235BBK1 gives you both. The perfect all in one kit for getting a profile above and below a water surface. If your working with impoundments, reservoirs, any near surface water tables, this is the set you need. The bailer boring kit is suitable for sampling up-to 23 feet (7 meters) both above and below the groundwater table. The bailer boring kit is an extensive kit with suite of soil type augers, to explore the soils in all kinds of areas complete with two bailer samplers. A very complete and portable kit, ideal for areas where motorized drilling is not permitted or not possible. Special tools and accessories will help to reach the desired depth below the ground water table without the risk that the borehole will collapse or cave in during sampling.

#### SPECIFICATIONS:

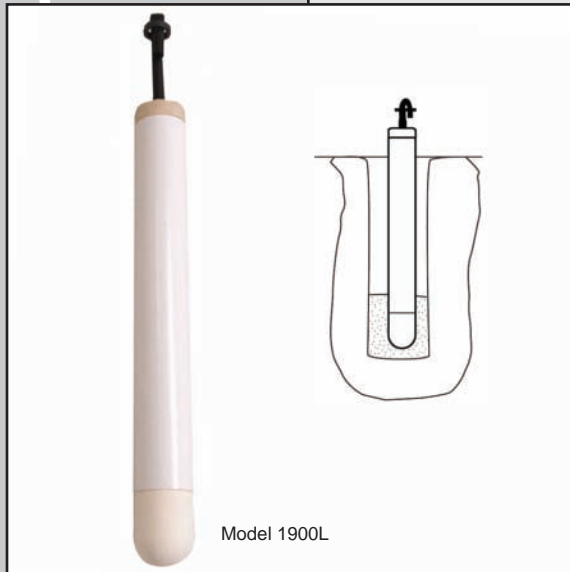
0235BBK1 BAILER BORING KIT suitable for sampling up-to 23 feet (7 meters)  
Kit comes in 2 heavy-duty aluminum carrying cases.  
Kit weight 210 lbs. (95 kgs)  
Kit Length 47" L X 32" W X 20" H  
(120cm L X 80cm W X 50cm H)



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## 1900L SOIL WATER SAMPLER



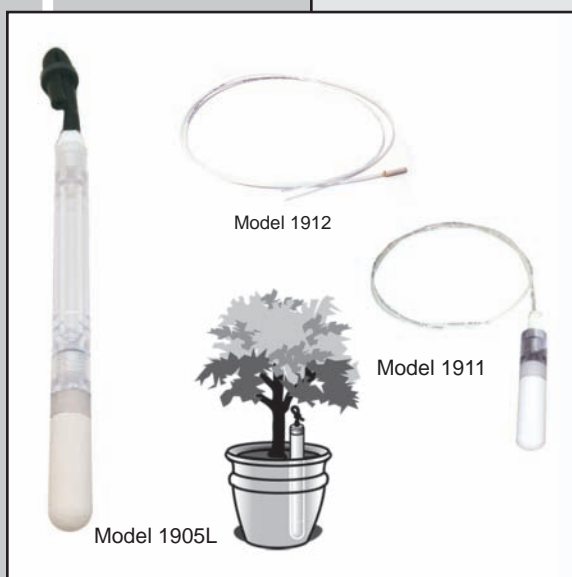
### For near-surface, environmental, ground water, crop health - pore water sampling

The Model 1900 Soil Water Sampler has been a standard for over 30 years in near surface environmental, ground water and plant rooting health where soil pore water is required. It's a large-volume sampler designed for near-surface installation at depths ranging from 6 inches (15 cm) to 6 feet (1.8 m). Most commonly used to collect pore water in near surface profiles, for the analysis of nutrients, pollutants, or other dissolved ions that have an effect on ground waters, environment and crop health.. The unit consists of a 1.9" (4.8 cm) outside diameter PVC tube, with a 2 bar (200-kPa) porous cup, Santoprene stopper, and Neoprene access tube for evacuation. Clamping rings slip over the folded Neoprene tubing to seal the sampler after evacuation. We recommend an extraction kit, model 1900K2 (50ml) or 1900K3 (1liter) required for sample retrieval and you'll need a vacuum pump required to evacuate the sampler.

#### SPECIFICATIONS:

1900L06-B02M2 soil water sampler, 6" Length (15.24cm), 0.45 lbs. (0.20 kgs) - 250 ml  
 1900L12-B02M2 soil water sampler, 12" Length (30.84cm), 0.59 lbs. (0.27 kgs) - 500 ml  
 1900L24-B02M2 soil water sampler, 24" Length (60.96cm), 0.85 lbs. (0.38 kgs) - 1000 ml  
 1900L36-B02M2 soil water sampler, 36" Length (91.44cm), 1.07 lbs. (0.48 kgs) - >1000 ml  
 1900L48-B02M2 soil water sampler, 48" Length (121.92cm), 1.33 lbs. (0.60 kgs) - >1000 ml  
 1900L60-B02M2 soil water sampler, 60" Length (152.4cm), 1.54 lbs. (0.70 kgs) - >1000 ml  
 1900L72-B02M2 soil water sampler, 72" Length (182.88cm), 2.02 lbs. (0.92 kgs) - >1000 ml

## 1905L & 1911 (SMALL) SOIL WATER SAMPLERS



### For container or restricted access pore water sampling

The model 1905L "Slim Tube" soil water sampler is a small 7/8" (2.2cm) diameter sampler designed for taking discrete samples where installation space is limited. The slim tube sampler comes complete with a 1 bar (100 kPa) high-flow, screw in porous ceramic cup, screw on cap. The perfect sampler for container sampling. Extension tubes can be added to increase the depth of operation.

If you need to sample in a cored soil sample or block, or deep in a pit sidewall you will want to consider the 1911 sampler as it can go almost anywhere and at any angle or position to get a pore water sample. The model 1911 Remote Sampler "Only" is configured more for remote sampling using a selection of top fittings for either 1/8" (.317 cm) or 1/4" (.635 cm) diameter. The 1911L10 (4 or 8) comes complete with 10 ft. (3 m) of either 1/8" (.317 cm) or 1/4" (.635 cm) tubing making attachment a snap. The vacuum reservoir / collection vessel (purchased separately) is normally situated at a site adjacent to the sampling site. You'll want to consider our model 1900K2 (50ml) or 1900K3 (1liter) extraction kits to address this need.

#### SPECIFICATIONS:

1905L06 SLIM TUBE SOIL WATER SAMPLER, 6" LENGTH (15 cm) 0.30 lbs. (0.13 kgs)  
 1905L12 SLIM TUBE SOIL WATER SAMPLER, 12" LENGTH (30 cm) 0.44 lbs. (0.19 kgs)  
 1905L24 SLIM TUBE SOIL WATER SAMPLER, 24" LENGTH (60 cm) 0.70 lbs. (0.31 kgs)  
 1905L60 SLIM TUBE SOIL WATER SAMPLER, 60" LENGTH (150 cm) 1.50 lbs. (0.68 kgs)

1911 REMOTE SAMPLER, 3" (7.62 cm) SAMPLE HEAD, ONLY  
 1911L108 REMOTE SAMPLER, 3" (7.62 cm) SAMPLE HEAD, 10 ft. (3.04 m) -1/8 in (.317 cm) dia. Tubing  
 1911L104 REMOTE SAMPLER, 3" (7.62 cm) SAMPLE HEAD, 10 ft. (3.04 m) -1/4 in (.635 cm) dia. Tubing



## 1908DL SERIES MICRO SAMPLERS

### Tiny "micro & macro" diameter sampling for columns, tight profiles, or limited space

A disposable miniature pore water sampler that is ideal for extraction work in column studies or other small containers, when space, congested point sampling may itself influence the study. Composed of porous hydro-phillic plastic, these samplers wet spontaneously making them ideal. The 0.1 micron pore size within the porous material (having a 217 psi bubbling pressure) comes with Luer Lock Connector and Terminal Cap 1 mm internal diameter 0.5 ml "dead volume". These samplers are normally inserted into a soil column through a the sidewall of a column. Can be used in near surface rooting environments. Uses continuous vacuum or use an evacuated vials to collect the pore liquids.

#### SPECIFICATIONS:

1908D2.5L10	Micro Sampler - Body 0.09" (2.5 mm) diameter x 3.54" ( 09 cm) Length.
1908D4.5L09	Macro Sampler -Body .177" (2.5 cm) diameter x 3.93" (10 cm) Length
1908D2.5L10Pkg05	Package of 5 ea. Micro Samplers
1908D2.5L10Pkg10	Package of 10 ea. Micro Samplers
1908D4.5L09Pkg05	Package of 5 ea. Macro Samplers
1908D4.5L09Pkg10	Package of 10 ea. Macro Samplers
1908D2.5L10K05	Complete Sampling Kit for 5 Micro Sample, includes vacuum vials, needles & samplers
1908D2.5L10K10	Complete Sampling Kit for 10 Micro Sample, includes vacuum vials, needles & samplers
1908D4.5L09K05	Complete Sampling Kit for 5 Macro Samples, includes syringe, collecting container & sampler
1908D4.5L09K10	Complete Sampling Kit for 10 Macro Samples, includes syringe, collecting container & sampler



## 1906DC SERIES STAINLESS SAMPLER

### The sampler to use when pore liquids are susceptible to PVC leaching or Alumina exchanges

There are instances where very powerful organics or in-organics (such a toxic land farms, impoundments and contamination sites) have dissolved powerful pore water constituents that will "eat", interact and react with PVC's or Alumina. The 1906C series provide a set of samplers specifically built wholly from stainless steel. These samplers can be used to collect pore water samples from saturated to  $-50$  cb ( $-50$  kPa) suction level. A good product solution for these toxic organics or most in-organics. Not recommended for sensitive chromium sampling. Choose the dual chamber model "C2" for installations greater than 10 ft (3 m) or single chamber models "C1" for sampling at depths <10 ft (3 m).

#### SPECIFICATIONS:

1906D20V0.5C2	2.0" Dia.(5.08 cm), 18" L (45 cm), Outlet 4 and 6.5" L (10.16-16.51cm), 575 ml Sample, Duel Chamber unit
1906D20V1.0C2	2.0" Dia.(5.08 cm), 26" L (66 cm), Outlet 4 and 6.5" L (10.16-16.51cm), 1000 ml Sample, Duel Chamber unit
1906D20V1.5C2	2.0" Dia.(5.08 cm), 36" L (91.5 cm), Outlet 4 and 6.5" L (10.16-16.51cm), 1500 ml Sample, Duel Chamber unit
1906D20V0.3C1	2.0" Dia. (5.08 cm),10.7" L (27.2cm) Outlet 4 and 6.5" L (10.16-16.51cm), 260 ml Sample, Single Chamber unit
1906D08C1	0.8 Dia. (2.03 cm),4.5" L (11.4cm) Outlet 6 and 11" L (15.24-27.94cmcm), No holding capacity, Single Chamber unit.



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## 1920 PRESSURE/VACUUM SOIL WATER SAMPLER



### The standard used around the world for PPM pore water sampling

Our best selling pore liquid sampler. Used by regulatory agencies to protect ground water contamination at landfills, impoundments and land farms. Whether your interests concern environmental safety, monitoring pesticide migration, or solubility of nutrients, you can be assured of a history of quality and care in every sampler, spanning more than 30 years. The model 1920F1L provides excellent performance for pore liquid sampling with parts per million (PPM) sensitivity in the unsaturated (vadose) zone. Designed for remote access sampling, spanning hundreds of feet to the sampler. The standard 1920F1L is composed of a porcelain (2 Bar) ceramic cup, epoxy bonded to a Food Grade PVC body. Pressure / vacuum type sampler, is designed to collect samples under a landfill or at depth. It has a sample line to retrieve sample, and a pressure/vacuum line (to evacuate and purge the sampler). It is typically installed at depths to 50 ft (15 meter) in depth with about 100 ft (30 meter) lateral displacement, or they can be installed to 10 ft (3 meter) depth and up to 500 ft (152 meter) lateral displacement.

#### SPECIFICATIONS:

All 1920 have an outer diameter of 1.9" (5 cm)  
 1920F1L06 Nominal length 6" (15 cm), sample volume 75 ml, weight 0.38 lbs. (0.20 kgs)  
 1920F1L12 Nominal length 12" (30 cm), sample volume 150 ml, weight 0.58 lbs. (0.26kgs)  
 1920F1L24 Nominal length 24" (61 cm), sample volume 300 ml, weight 0.90 lbs. (0.40 kgs)  
 1920F1L36 Nominal length 36" (91 cm), sample volume 450 ml, weight 1.50 lbs. (0.68 kgs)

## 1922 & 1923 "ULTRA PURE" SAMPLERS



### Parts per billion, sampling for trace quantities, extreme purity required in sampling

Only a very pure, all ceramic sampler complete with Teflon seals can give you that degree cleanliness. There simply is no better product for finding trace elements in the realm of super sensitive subsurface pore water investigative work. Comprised 1 bar High Flow (B01M3) High Fired Alumina Ceramic, with glazed joints, and interior glazed cup having Teflon seals, Teflon fittings, and stainless steel access tube all designed purity. The ULTRA PURE pore liquid sampler design is that of a pressure / vacuum type sampler. Pore liquid pulled from surrounding soil, captured in the glazed interior of the ceramic. Sample liquids "pushed" out under moderate pressure. The porous alumina ceramic material used throughout is a high flow body ceramic with very low adsorption characteristic and (>1.0 bar, -100 kPa) bubbling pressure.

#### SPECIFICATIONS:

1922 Outside Diameter 1.9" (4.8 cm), Inside Diameter 1.6" (4.1 cm), Length 10" (25.4 cm)  
 Weight: 1.00 lbs. (0.45 kgs), sample volume 80 ml  
 1923 Outside Diameter 4.0" (10.2 cm), Inside Diameter 3.37" (8.6 cm), Length 15" (38.1 cm)  
 Weight: 4.25 lbs. (1.93 kgs), sample volume 560 ml

#### Accessory Item:

1922K1 ULTRA CASING CLAMP KIT - Diameter 3 in (7.62 cm) long, 2.25 in (5.71 cm)  
 Weight 5oz (162 gm)





## 1940 & 1942 DEEP SAMPLERS

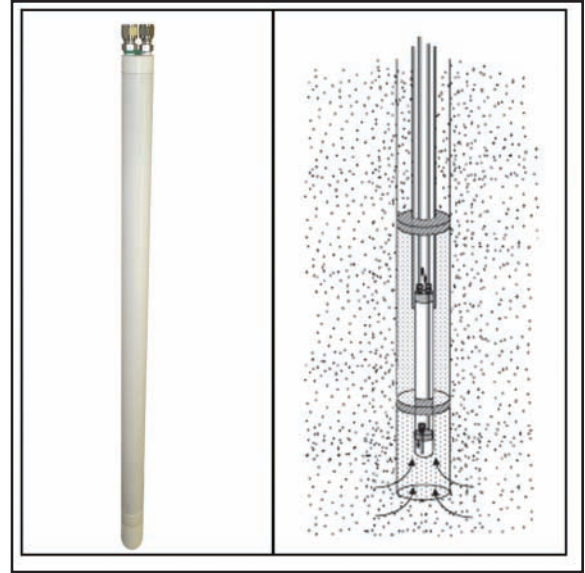
### Deep universal sampling at depths up to 300 ft (100 meters)

These samplers have been the preeminent choice of customers around the world looking for deep pore water sampling. If you are in an area with deep water tables, pollutants that are deep into strata, or there are extensive lateral distances from the sample point all are reachable with the 1940 series. The models 1940 & 1942, are designed for high pressure operating conditions in deep bore holes to a depth of 300 ft. (100 meters) These samplers are typically used in applications deeper than 50 ft (15 meters) depth. However, the installation depth can be increased indefinitely, when the collected samples are staged in up to 300-ft (100 meters) lifts using the 1940 Sampling Stage. Both the 1940 and 1942 samplers provide excellent performance for pore liquid sampling with parts per million sensitivity from vadose zone investigations. The cup-end plug assembly provides a threaded seat for the stainless steel check valve, and a stepped shoulder to epoxy bond the high temperature ceramic (B02M2) cup. The 1942 is a slimmer version of the 1940 having a 1.312" (3.3 cm) OD compared to the 1940's 1.9" (4.83 cm) OD and both having the same body length (30"-77cm).

#### SPECIFICATIONS:

1940 Deep Sampler - 1.90" (4.83 cm) Diameter, length is 30" (77 cm),  
Weight: 4.5 lbs. (2 kgs), Holding Volume 250 ml

1942 Deep Sampler (slim version) - 1.3" (3.30 cm) Diameter, length is 30" (cm),  
Weight 2.18 (1Kg), Holding Volume 80ml



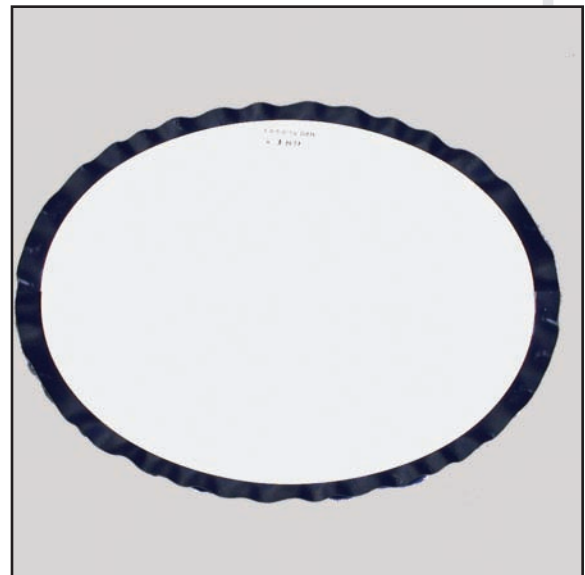
## 1950B.5 SOIL WATER SAMPLING PLATE

### For PPM sampling - under soil columns or side cuts in access holes

Need a subsurface sampling plate for cutouts in large diameter access hole, or need a small suction plate for column analysis? The 1950B.5 is a good choice. Provides a large sampling surface for conditions saturated to 50 cb. of suction. This large surface area design 10.5 inch diameter (27 cm diameter) 86.6 square-inch (558 square cm), with a capability of 837 ml/min. flow rate. The sampling plate is a vacuum-type sampler and requires continuous vacuum and a trap flask assembly to collect pore liquids, situated remotely from the sampling plate. The sampling plate has a butyl rubber backing and uses a stainless steel tie wire, sampler outflow stem on the bottom side of the sampling plate. The ceramic is our high flow 0.5 bar ceramic mix (B0.5M2), ideally suited to collect pore liquids under very low moisture-tensions less than 50 kPa.

#### SPECIFICATIONS:

1950B.5 SOIL WATER SAMPLING PLATE - 10.5" (27 cm) diameter, 1/2" (1.27 cm) Thick,  
weight 2.42 lbs. (1.10 kgs)

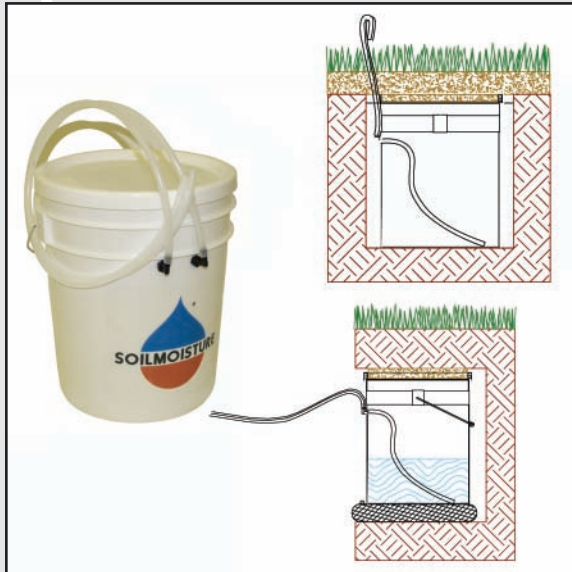


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## 1960 PAN LYSIMETER

### Saturated Soil - Drainage Sampling



A Pan Lysimeter (pore water sampler) is the perfect device for taking samples in conditions of soil saturation and subsequent drainage conditions. Placed near surface or at some depth it provides a good way to collect soluble agrochemical surface residue, near surface salt accumulations (created over the dry season), or in gaining a better understanding of the infiltration properties of a particular soil type under high flow conditions. Top screen allows for placement of cover crop, etc. over the collection bucket. Easy access provided by "flush & sample removal" access tubes to the surface. The Pan Lysimeter requires minimum maintenance after installation. For the best results, the lysimeter should be checked and pumped on a regular basis.

#### SPECIFICATIONS:

1960 PAN LYSIMETER Diameter 12" (30.5 cm), Height 15" (38.1 cm)  
Weight 2.6 lbs. (1.2 kgs) Volume 5 gal (15L)

## SOIL WATER SAMPLING ACCESSORIES

### 2005G2 & 2006G2 HAND PUMPS

#### Portable hand pumps for vacuum and pressure availability in the field



Model 2006G2

Model 2005G2

In using the variety of our 1900 series soil (pore) water samplers one needs to have a reliable vacuum source. Many times you need to have it working now, without failed batteries, or line voltages for motorized units. In those cases we have several alternatives to meet those needs. The 2005G2 is a hardy small hand operated vacuum pump (with vacuum gauge) for creating the necessary vacuum (up to -80 cb or -80kPa vacuum) within a sampler and also useful in the extraction of solution from the samplers having a 6 cu in (100ml) volume stroke capacity. Recommended for 1900 Series Samplers. The Model 2006G2 is a very sturdy and rugged foot held hand pump when you want move a volume of air ( 28 cu in - 500ml) per stroke. The 2006G2 provide up to 75 psi (500kPa) pressure and a -90cb or -90kPa vacuum. Recommended for the 1920 -1942 series samplers. Both vacuum pumps are constructed of non-ferrous metals, plastics and laminates that assure years of functionality in wet and dirty field conditions. You may want to consider the 1900K3 Extraction Kit as an accompaniment (see soil water sampler accessories)

#### SPECIFICATIONS:

2005G2 VACUUM HAND PUMP 10 in (25.4 cm) Long X 1.2 in (3.05 cm) Dia.  
Weight 1.25 lbs. (.57 kgs)  
2006G2 VACUUM HAND PUMP 22 in (55.8 cm) Long X 1.5 in (3.81 cm) Dia.  
Weight 6.3 lbs. (2.85 kgs)



# SOIL WATER SAMPLING ACCESSORIES

## 2008 ELECTRIC PRESSURE/VACUUM PUMP

### Motorized Electric Pressure/Vacuum Pump for easy servicing of Samplers

If you're a consultant, commercial enterprise or research facility having to service multiple soil water samplers at a multitude of locations this is the tool. The 2008 provides the easiest way to service each location with fast, large volume vacuum capabilities, and in developing quickly the needed "sample" push pressures. A welcome helper for reducing labor in your sampler servicing field work. The Electric Pressure Vacuum Pump is battery-operated combination pump, with 2 sealed lead acid batteries for total continuous working time of 5 hrs. With both pressure (Pressure 0-100 psi; with max pressure setting) and vacuum (0-100 cbar) gauges. Comes with a number of features including readout dials for both pressure and vacuum ports, a pressure regulator output limits, and a valve for controlling speed to pressurization or vacuum creation. Quick connects on the pump console and on output connection hose assemblies provided for easy and trouble free connection. Comes complete with inline filter, 2ea. "Stretch Coil" hoses each 3ft. long and output assemblage having readout dials and control valves. All this encased in a portable, splash water proof pelican carrying case.



#### SPECIFICATIONS:

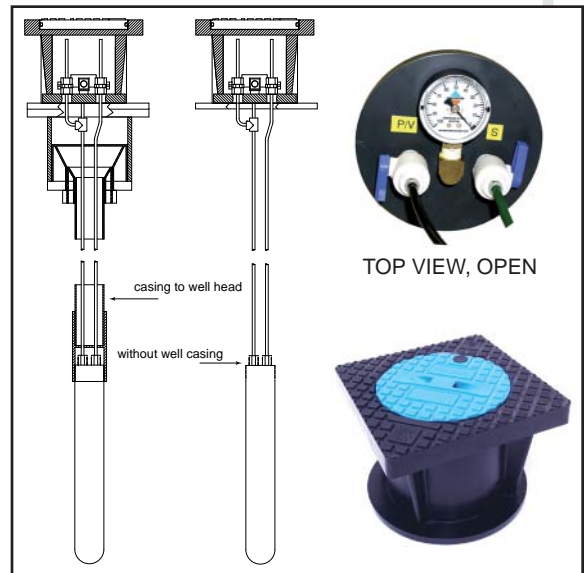
2008 PORTABLE ELECTRIC PRESSURE / VACUUM PUMP  
 Length: 18.5" (47cm) X 14.5" (36.5) Width X 7" (17.8 cm) High,  
 Weight 20 lbs. (9.07 kgs) -12 VDC ( 110-220 Charger)

## INSTALLING

### 1919T SAMPLER WELL HEAD CAPS

#### Security and Safety in protecting your sampler installation from tampering or vandals

Today it's hard enough to get the permits, drillers, and subcontractors to put the samplers in the right place in the right way and be assured it's all in working correctly when it's complete. If you're a researcher, regulator or compliance oriented organization it's extremely important that the data you get is free of bias by tampering or outright vandalism. The 1919 Series of Soil Water sampling well heads provide that type of security and professional termination for your sampler installation. Low profile, lockable, and service friendly, the 1919 well head caps provide a trouble free access to your sub-surface sampler. Our well heads come complete with a water tight top cover, internal vacuum gauge to monitor suction values at the sampler and values for servicing the pressure / vacuum ports of the sampler. They can be purchased alone as the final step in a pre-designed enclosure or with a 1-1/2 PVC casing adapter so that it sits atop your casing string at the surface. Made from high density polypropylene and PVC the unit is rugged, water resistant and corrosion free. The T1 Model is a simple cap for direct connection to the sampler access tubing at the sub-surface T2 Model is for connecting to 1-1/2 PVC casing tubing from the sub-surface sampler assuring a closed and protected route for access tubes from sampler to surface. Either in the ground or embedded in a cement pad the well cap is the way to finish your professional soil water sampler installation.



#### SPECIFICATIONS:

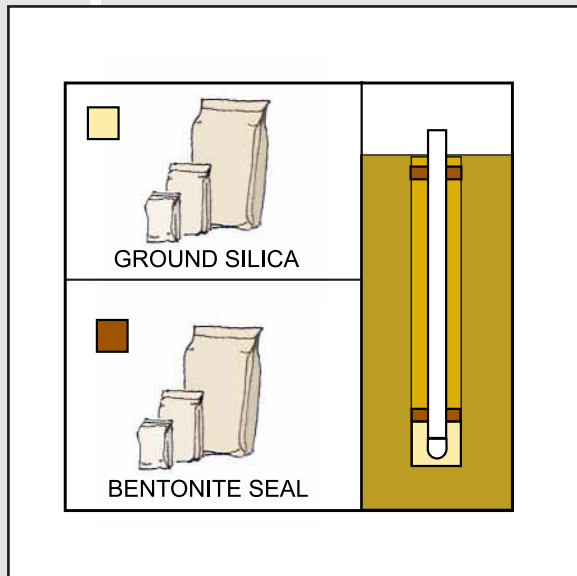
1919T1 SAMPLER WELL HEAD CAP -  
 8 in (20.3 cm) Wide, 8 in (20.3 cm) Deep, 6 in (15.2 cm) Long, Weight 2.3 lbs. (1.04Kg)  
 1919T2 SAMPLER WELL HEAD CAP (casing adapter)  
 8 in (20.3 cm) Wide, 8 in (20.3 cm) Deep, 9 in (15.2 cm) Long, Weight 3.2 lbs. (1.45Kg)

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## INSTALLING

### 0922W BENTONITE SEAL & 0930W GROUND SILICA



**The 2 critical ingredients for a proper sampler install, don't install without them**

**0922W BENTONITE SEAL** is extremely important in "sealing" the sampler into the installation hole and preventing back flow down the drill hole. If your expecting to get realistic samples of soil pore water then it's paramount to prevent bias from rain water, irrigations etc. from preferentially travel down the installation drill hole. This NSF approved, 30-50 Mesh, high density (65lbs /cu ft.- 29.45 Kg /.028 cu m), granular bentonite is the prefect expanding clay sealant used above the silica fill near the drill hole bottom and as a top seal near the surface.

**0930W GROUND SILICA** (referred to as "silica flour") is probably the most important element needed to properly install a sampler. The high purity 200 Mesh silica flour is put in the hole prior to install to assure that the sampler sits on a firm level base assuring hydraulic contact with the bottom of the hole. Subsequent back filling above the ceramic cup assures contact to hole side walls. In all the pure ground silica provides the necessary interface access allowing the sampler pull soil pore waters from the surrounding soil profile created by the drill hole pulling pure water out of the sampler cup without biasing the pore water sample.

**SPECIFICATIONS:**

0930W005 BENTONITE SEAL, NSF approved, 5 lbs (2.27Kg)  
 0930W010 BENTONITE SEAL, NSF approved, 10 lbs (2.27Kg)  
 0930W050 BENTONITE SEAL, NSF approved, 50 lbs (4.54Kg)  
 0930W100 BENTONITE SEAL, NSF approved, 100 lbs (22.7Kg)

0922W005 GROUND SILICA, High Purity, 5 lbs (2.27Kg)  
 0922W010 GROUND SILICA, High Purity, 10 lbs (4.54Kg)  
 0922W050 GROUND SILICA, High Purity, 50 lbs (22.7Kg)  
 0922W100 GROUND SILICA, High Purity, 100 lbs (45.4Kg)

### 1901PECL ACCESS TUBING, POLYETHYLENE



**High quality Polyethylene sampler access tubing – from sampler to the surface**

To provide an acceptable link from the sub-surface sampler to the surface one is generally looking for the best cost effective solution. The Model 1901PE series is an excellent fit. The tubing comes in rolls of 50 -1000 ft. in multiple colors (Black "N" –pressure/vacuum port, Green "G" -sample collection port, Blue "B"- utility tubing used in special applications) specifically manufactured for sampler access use. The tubing we provide is a nominal .250 in (+/- .010) - (63mm +/- 2.54mm) Diameter. with a .065 in (16.5 mm) wall, with smooth and unpitted to assuring a good "crimp" seal.

**SPECIFICATIONS:**

**BLACK**  
 1901PECNL0050 BLACK ACCESS TUBING, .250 in (63 mm), .065 in (16.5 mm) Wall, 50 ft roll  
 1901PECNL0100 BLACK ACCESS TUBING, .250 in (63 mm), .065 in (16.5 mm) Wall, 100 ft roll  
 1901PECNL0500 BLACK ACCESS TUBING, .250 in (63 mm), .065 in (16.5 mm) Wall, 500 ft roll  
 1901PECNL1000 BLACK ACCESS TUBING, .250 in (63 mm), .065 in (16.5 mm) Wall, 1000 ft roll

**BLUE**  
 1901PECBL0050 BLUE ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 50 ft roll  
 1901PECBL0100 BLUE ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 100 ft roll  
 1901PECBL0500 BLUE ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 500 ft roll  
 1901PECBL1000 BLUE ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 1000 ft roll

**GREEN**  
 1901PECGL0050 GREEN ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 50 ft roll  
 1901PECGL0100 GREEN ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 100 ft roll  
 1901PECGL0500 GREEN ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 500 ft roll  
 1901PECGL1000 GREEN ACCESS TUBING, 250 in (63 mm), .065 in (16.5 mm) Wall, 1000 ft roll



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 Contact: sales@soilmoisture.com



## INSTALLING 1901PTDL ACCESS TUBING, PTFE (TEFLON)

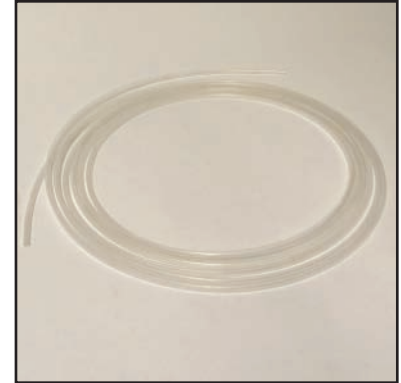
**Highest purity sampler access tubing –  
from sampler to the surface**

If your samples are subject to low PPM or Parts Per Billion scrutiny then you'll want to consider using our 1901PTDL series PTFE tubing. PTFE is known for its cleanliness and purity in all forms of scientific sample collection and storage. This highly inert and pure tubing comes in its natural white color in 1/8 in (31.7mm) diameter, .031 in (7.87 mm) wall or .250 in (63.5 mm) diameter and .031 in (7.78 mm) wall in any number of lengths to meet your sampler access needs.

**SPECIFICATIONS:**

1/8" .125 ( 31.7 mm) OUTSIDE DIAMETER  
 1901PTD125L025 PTFE (Teflon) ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.  
 1901PTD125L050 PTFE (Teflon) ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.  
 1901PTD125L100 PTFE (Teflon) ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.  
 1901PTD125L500 PTFE (Teflon) ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.

1/4" .250 (63.5 mm) OUTSIDE DIAMETER  
 1901PTD250L025 PTFE (Teflon) ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.  
 1901PTD250L050 PTFE (Teflon) ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.  
 1901PTD250L100 PTFE (Teflon) ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.  
 1901PTD250L500 PTFE (Teflon) ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.



## 1901PNDL ACCESS TUBING, NYLON

**Nylon pressure/vacuum access tubing –  
from sampler to the surface**

Nylon is a cost effective answer to providing a clean and reliable access to the pressure / vacuum port of pressure / vacuum samplers. It is also great used in sample collection retrieving in 1900 series samplers. Since nylon adsorbs water and will lengthen and shorten it's not recommended for the sample side of pressure / vacuum samplers or where other long term water holding capabilities are required and length changes may cause problems. Model 1901PNDL is a universal tubing for many applications. It comes in its natural white color in 1/8 in (31.7mm) diameter, .031 in (7.87 mm) wall or .250 in (63.5 mm) diameter and .031 in (7.78 mm) wall in any number of lengths to meet your sampler access needs.

**SPECIFICATIONS:**

1/8" .125 ( 31.7 mm) OUTSIDE DIAMETER  
 1901PND125L025 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.  
 1901PND125L050 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.  
 1901PND125L100 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.  
 1901PND125L500 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.

1/4" .250 ( 63.5 mm) OUTSIDE DIAMETER  
 1901PND250L025 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.  
 1901PND250L050 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.  
 1901PND250L100 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.  
 1901PND250L500 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.



## 1901REDL ELASTOMER CONNECTION TUBING

You have a number of choices in the selection of access tubing from sampler to the surface you'll want to terminate your access tubes with a sturdy and reliable "rubber" tube that pliable if your not using a well head cap. The 1901REDL is an outstanding EPDM elastomer developed for it's ability to retain flexibility in outdoor applications with high sunlight and ozone conditions. A clean and "unfilled" rubber type tubing is black in color having a 50-60A Shore. There are two sizes 1901RED062 1/16" [.062 (15.7mm)] ID for 1/8" [.125 in (31.7 mm)] OD access tubing, and the 1901RED187 3/16" [.187 in (47.6 mm)] ID for the 1/4" [.250 in (63.5 mm)] OD access tubing. Both come in a number of sizes to meet your needs.

**SPECIFICATIONS**

1/16 .062 ( 15.7 mm) INSIDE DIAMETER  
 1901RED062L010 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 10 ft.  
 1901RED062L025 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 25 ft.  
 1901RED062L050 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 50 ft.

3/16" .187 ( 63.5 mm) INSIDE DIAMETER  
 1901RED187L010 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 10 ft.  
 1901RED187L025 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 25 ft.  
 1901RED187L050 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 50 ft.



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## INSTALLING

## 1901UTD PFA (TEFLON) TUBING CONNECTOR

## PTFE (Teflon) connectors to join access tubes together

Access tubes can break or get damaged on site during installation making a discontinuity from sampler to surface at those times you need a tubing connection fast. The Model 1901UTD series of PFA fluoropolymer connectors is there to do the job. Extremely clean and inert PFA material meets the tough ppb sampling requirements using dual crimp ferrule type end assemblies to join two similar size tubes to both ends. With a 275 psi (1868 kPa) working pressure you're assured of a reliable, long term connectivity to your sampler with absolutely no bias from it being there.

## SPECIFICATIONS:

FOR 1/8" .125 (31.7 mm) DIAMETER TUBING

1901UTD125PKG05 PFA (Teflon) TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 5 ea.

1901UTD125PKG10 PFA (Teflon) TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 10 ea.

1901UTD125PKG50 PFA (Teflon) TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 50 ea.

FOR 1/4" .250 (63.5 mm) DIAMETER TUBING

1901UTD250PKG05 PFA (Teflon) TUBE CONNECTOR, for .250 in (63.5 mm) Dia., both ends, package of 5 ea.

1901UTD250PKG10 PFA (Teflon) TUBE CONNECTOR, for .250 in (63.5 mm) Dia., both ends, package of 10 ea.

1901UTD250PKG50 PFA (Teflon) TUBE CONNECTOR, for .250 in (63.5 mm) Dia., both ends, package of 50 ea.

## TUBING TEES ALSO AVAILABLE

1901TTD125 PTFE TUBING TEES for 1/8" -.125 in (31.7) Dia. all ports, available in similar packaged sets.

1901TTD250 PTFE TUBING TEES for 1/4" -.250 in (63.5) Dia. all ports, available in similar packaged sets.



## 1901UBD BRASS - QUICK TUBE CONNECTOR

## Brass quick-push connectors join access tubes quickly no tools required

Looking to get the job done quickly and with quality you might want to consider highly reliable sturdy brass connectors made for easy sealing and good working pressures 300 psi (2068 kPa). The nickel plated brass "push" connectors have a Nitrile o-ring seal, Polyacetal push button and stainless steel grab ring allowing for a pressure / vacuum seal at the push of a button. Available for both 1/8" .125 in (31.7 mm) tubing O.D. and 1/4" .250 (63.5 mm) tubing O.D.'s. Not recommended for low level sampling (low ppm -ppb levels) for copper, zinc or chromium.

## SPECIFICATIONS:

FOR 1/8" .125 (31.7 mm) DIAMETER TUBING

1901UBD125PKG05 BRASS QUICK TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 5 ea.

1901UBD125PKG10 BRASS QUICK TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 10 ea.

1901UBD125PKG50 BRASS QUICK TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 50 ea.

FOR 1/4" .250 (63.5 mm) DIAMETER TUBING

1901UBD250PKG05 BRASS QUICK TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 5 ea.

1901UBD250PKG10 BRASS QUICK TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 10 ea.

1901UBD250PKG50 BRASS QUICK TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 50 ea.

## TUBING TEES ALSO AVAILABLE

1901TBD125 BRASS TUBING TEES for 1/8" -.125 in (31.7) Dia. all ports, available in similar packaged sets.

1901TBD250 BRASS TUBING TEES for 1/4" -.250 in (63.5) Dia. all ports, available in similar packaged sets.



## 1901USD STAINLESS STEEL TUBING CONNECTOR

## Stainless steel connectors to join access tubes together

Stainless has always meant the clean metal for all types of non-contamination uses. These connectors provide unequalled strength and operating pressures (>1000 psi (6894 kPa) / vacuum sealing capabilities. The unit comes with crimp ferrules to assure an extremely reliable seal. These connectors are highly recommended any time one considers joining plastic to metal tubing. Available for both 1/8" .125 in (31.7 mm) tubing O.D. and 1/4" .250 (63.5 mm) tubing O.D.'s. Not recommended for low level sampling (low ppm -ppb levels) for chromium.

## SPECIFICATIONS:

FOR 1/8" .125 (31.7 mm) DIAMETER TUBING

1901USD125PKG05 STAINLESS TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 5 ea.

1901USD125PKG10 STAINLESS TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 10 ea.

1901USD125PKG50 STAINLESS TUBE CONNECTOR, for .125 in (31.7 mm) Dia., both ends, package of 50 ea.

FOR 1/4" .250 (63.5 mm) DIAMETER TUBING

1901USD250PKG05 STAINLESS TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 5 ea.

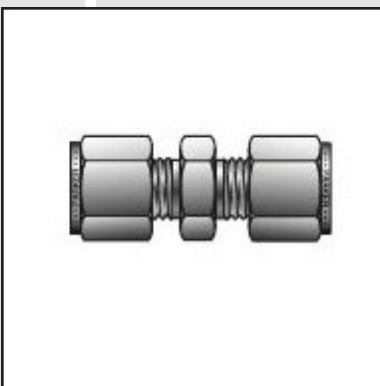
1901USD250PKG10 STAINLESS TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 10 ea.

1901USD250PKG50 STAINLESS TUBE CONNECTOR, for .250 in (63.6 mm) Dia., both ends, package of 50 ea.

## TUBING TEES ALSO AVAILABLE

1901TSD125 STAINLESS TUBING TEES for 1/8" -.125 in (31.7) Dia. all ports, available in similar packaged sets.

1901TSD250 STAINLESS TUBING TEES for 1/4" -.250 in (63.5) Dia. all ports, available in similar packaged sets.



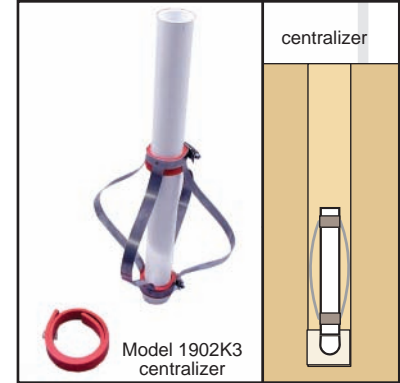


## INSTALLING 1902K3 SAMPLER CENTRALIZER KIT

### Making sure that your sampler is oriented to the center of the hole and vertical

When your installing a soil water sampler it's important to know the sub-surface orientation of the sampler. Is the unit situated in the center of the hole? and in a vertical position? this sometimes hundreds of feet below your vantage point. The stainless steel centralizer is sturdy in construction and with two screw clamps at either end will do the job. Simply tighten down one end of the centralizer then push the other end, bulging out the stainless steel lands to the interior size of the drill hole. Tighten the other end to keep the bulge at the proper distance and the sampler is ready to lower down the hole and in perfect alignment for placement in the sub surface. Comes with red silicon rubber padding and the centralizer unit - fits all 1.90 in (4.83 cm) diameter samplers

**SPECIFICATIONS**  
1902K3 SAMPLER CENTRALIZER KIT for 1.90 in (4.83 cm) diameter, 15" x 4" x 4" (38 cm X 10.15 cm X 10.15 cm), weight 0.68 lbs (.31 kgs), opens from 2.5" to 14" hole size

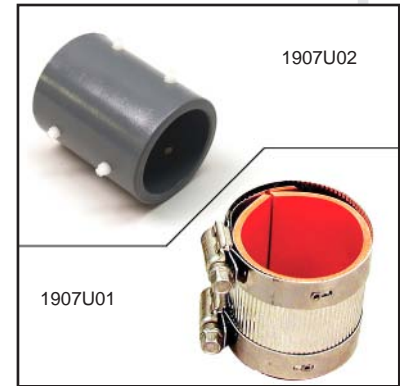


## 1907U CASING CLAMPS

### Joining well casing lengths without using solvent welding or chemical solvents

When your interests are determining organic transfer in pore water solutions it's a good idea to make sure the installers don't join any PVC casing lengths with solvent glues or adhesives. The best way to join those lengths is by mechanical means. We have several alternatives to do just that. The U01 Clamp is a stainless steel band type with screw clamps at either end. The U02 Clamp relies on 3 set screws located 120 degrees apart on either side of a slip fit pipe connector. The U02 is fabricated from PVC coupling and 1/4 " .250 in (63.5 mm) nylon set screws.

**SPECIFICATIONS**  
1907U01 STAINLESS CLAMP FOR 1-1/2 " PVC CASING LENGTHS, 3" x 3" x 3" (7.6 cm x 7.6 cm x 7.6 cm)  
Weight 0.25 lbs (0.11 kgs)  
1907U02 PLASTIC COUPLING CLAMP FOR 1-1/2" PVC CASING LENGTHS, 3" x 3" x 3" (7.6 cm x 7.6 cm x 7.6 cm)  
Weight 0.28 lbs (0.13 kgs)



## SAMPLING

### 1900K2 50ML SAMPLE EXTRACTION KIT

#### The simple way to get the solution samples from a 1900 Sampler into a container

Nothing beats a simple pull push method of collecting samples from a near surface 1900 sampler than with this simple device. It easily pulls the sample from the sampler into the syringe then you push it out to a sample bottle or container. Do the same process in distilled water to clean the unit and you're ready for the next sampler. Comes with 10 ft. (3.04 m) of 1/8" .125 in (31.7 mm) nylon connecting tubing to reach even the deepest sampler solution.

**SPECIFICATIONS**  
1900K2 1900 SERIES SOLUTION EXTRACTION KIT with 1/8" .125 (31.7mm) x10 ft. (3.04 m), 10" x 6" x 2" (24.4 cm x 15.24 cm x 5 cm), Weight 0.059 lbs (0.13 kgs)



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## 1900K SAMPLE EXTRACTION KITS



Include in 1900K4

### Removing solution samples the quick and easy way from 1900 Samplers

The 1900K series kits bring to the field the essentials for quickly removing solution samples from the 1900 series extractors. Comes with 1 liter polypropylene flask stoppers and accessory nylon tubing for access to the bottom of your 1900 sampler. The 1900K3 has all the items necessary for extraction assuming you already have a vacuum hand pump. The 1900K4 has all the same items however it also includes the vacuum hand pump and carrying case (not shown) for all the items.

#### SPECIFICATIONS:

1900K3 SOLUTION EXTRACTION KIT, 1000 ml capacity, flask, associated tubing and stoppers.  
1900K4 SOLUTION EXTRACTION KIT, 1000 ml capacity, with case, vacuum pump, flask, associated tubing and stoppers.

## 1301V LABORATORY SAMPLE BOTTLES, CLEAR

### When your solution sample is important, only lab grade glass assure purity



If your research is working in the ppb's or simply making sure that you are analyzing what was removed in the ground you want only the purity that clean borosilicate glass (type 1, Class A) can assure. This is extremely important in those circumstances that involve a "chain of custody" requirement and assurances that the sample is unbiased by the container in which it was held. Across the world labs insist their solutions are kept in their pristine condition, that's the way we feel about your sample. Model 1301V# are clear sample bottles with autoclave-able polypropylene (PTFE available) caps assuring samples bottle can remain pure use after use. Comes with exterior gradations for easy determination of volume contents, permanent identity label for marking content information. Caps available in a number of colors to identify site location or region and even a septum cap for syringe sampling.

#### SPECIFICATIONS:

1301V050PKG03 SAMPLE BOTTLE, Clear, 50ml, 3 ea. - must specify cap color and type "T"  
1301V100PKG03 SAMPLE BOTTLE, Clear, 100ml, 3ea. - specify cap color and type "T"  
1301V250PKG03 SAMPLE BOTTLE, Clear, 500ml, specify cap color and type "T"  
1301V500PKG03 SAMPLE BOTTLE, Clear, 500ml, specify cap color and type "T"  
ALSO AVAILABLE IN PACKAGES OF PKG06 - 6ea. and PKG12 - 12ea. in all sized CAPS -TG "Green", TB "Blue", TR "Red" TO "Orange", TP "Purple" TS "Septum Cap"

## 1302V LABORATORY SAMPLE BOTTLES, LIGHT SENSITIVE

### When your solution sample is important, only lab grade glass assures purity



If your research is working with organics in ppb's or simply making sure that you are analyzing what was removed in the ground that may be light sensitive, you want only the purity that darkened borosilicate glass (type 1, Class A) can assure. This is extremely important in those circumstances that involve a "chain of custody" requirement and assurances that the sample is unbiased by sunlight or UV exposure while it was held. In labs across the world that insist their light sensitive solutions are kept in their pristine condition, and that's the way we feel about your sample. The Model 1302V# are special dark brown transparent bottles with autoclave-able polypropylene (PTFE available) caps assuring sample bottles can remain pure use after use. Comes with exterior gradations for easy determination of volume contents, permanent identity label for marking content information. Caps available in a number of colors to identify site location or region and even a septum cap for syringe sampling.

#### SPECIFICATIONS:

1302V050PKG03 SAMPLE BOTTLE, Dk Brown, Light Sensitive, 50ml, 3 ea. - must specify cap color and type "T"  
1302V100PKG03 SAMPLE BOTTLE, Dk Brown, Light Sensitive, 100ml, 3ea. - specify cap color and type "T"  
1302V250PKG03 SAMPLE BOTTLE, Dk Brown, Light Sensitive, 500ml, specify cap color and type "T"  
1302V500PKG03 SAMPLE BOTTLE, Dk Brown, Light Sensitive, 500ml, specify cap color and type "T"  
ALSO AVAILABLE IN PACKAGES OF PKG06 - 6ea. and PKG12 - 12ea. in all sized CAPS -TG "Green", TB "Blue", TR "Red" TO "Orange", TP "Purple" TS "Septum Cap"



## 1400D TEMPE CELLS

### “The” item for Hydrology of Undisturbed Soil Samples 0-2 Bar, Lab or Field

The Tempe Cell Model 1400 has for years been a staple of accurate hydraulic properties of soils. Developed at the University of Arizona, Tempe, it's found numerous uses in all areas of soil water flow relationships. It's based on undisturbed soil cores obtained in the field, easily prepared from precision brass retaining rings in either 2.25 in (5.72 cm) outside diameter or the larger 3.50 in (8.85 cm) outside diameter rings. The rings for undisturbed soil samples come in 3cm (1.18 in) or 6cm (2.36 in) heights, other materials and longer lengths available for soil columns. Made from strong clear acrylic with O-ring seals on both top and bottom surfaces for all sealing. Comes complete with a selection of ceramics 0-2 Bars (0-200kPa) base plates with various flow rates. Cylinders and hold downs sold separately see Model 1403TL series. If you're doing saturated flows, water retention characteristics or the measurement of other hydraulic properties there's simply nothing better, or better proven, with years of reliable performance than the model 1400 series

**SPECIFICATIONS:** Customer must specify 1403TL Cylinder Series for Length and Type of Cylinders used.

2.25 in Dia. Tempe Cell, 2-1/4 in (5.72 cm) Diameter, Weight 1.25lbs (0.57 kgs)  
 1400D2.25-B0.5M2 Tempe, 2-1/4"Dia, .5 bar, HF plate,  
 1400D2.25-B01M1 Tempe, 2-1/4"Dia, 1 bar STD plate,  
 1400D2.25-B01M3 Tempe, 2-1/4"Dia, 1 bar HF plate,  
 1400D2.25-B02M1 Tempe, 2-1/4"Dia, 2 bar STD plate,

3.50 in Dia. Tempe Cell, 3.50 in (8.89 cm) Diameter, Weight 2.26 lbs (1.03 kgs)  
 1400D3.50-B0.5M2 Tempe, 3-1/2"Dia, .5 bar, HF plate,  
 1400D3.50-B01M1 Tempe, 3-1/2"Dia, 1 bar STD plate,  
 1400D3.50-B01M3 Tempe, 3-1/2"Dia, 1 bar HF plate,  
 1400D3.50-B02M1 Tempe, 3-1/2"Dia, 2 bar STD plate,  
 (CYLINDER AND HOLD DOWNS NOT INCLUDED -SEE MODEL 1403DTL)



1400D2.25 Series (typ)

When assembled with 1403L Cylinder

## 1403DTL CYLINDER SETS FOR 1400 TEMPE CELLS

### Choose from, Brass, Clear PVC, Clear Acrylic, Clear Polycarbonate, and Stainless

Today everyone has different needs and requirements. From making hydraulic measurements and determining flow characteristics to modeling soil surfaces columns, it's important to have the right retaining materials. The Tempe Cell now sports a variety of cylinder materials as well as the usual brass retaining rings. Find the right material for your job. By adding a "U1" at the end of the number we'll include the all studs, wing nuts, washers to get you going. If you already have a Tempe the right size and want simply a different material just use the number as is. All materials are of premium quality and specified dimensions.

**SPECIFICATIONS:**

1403 CYLINDER SETS FOR 1400 SERIES - REMEMBER ADDING A "U1" TO THE NUMBER, ADDS STUDS, WING NUTS, HARDWARE.

**CLEAR ACRYLIC "PA" CYLINDERS** - Remember to add a U1 at the end of the number for hardware to be included.  
 1403D2.25TPAL06, 2.25" dia, 6" long, 1403D2.25TPAL12, 2.25" dia, 12" long, 1403D2.25TPAL18, 2.25" dia, 18" long  
 1403D3.50TPAL06, 3.50" dia, 6" long, 1403D3.50TPAL12, 3.50" dia, 12" long, 1403D3.50TPAL18, 3.50" dia, 18" long

**CLEAR PVC "PV" CYLINDERS** - Remember to add a U1 at the end of the number for hardware to be included.  
 1403D2.25TPVL06, 2.25" dia, 6" long, 1403D2.25TPVL12, 2.25" dia, 12" long, 1403D2.25TPVL18, 2.25" dia, 18" long  
 1403D3.50TPVL06, 3.50" dia, 6" long, 1403D3.50TPVL12, 3.50" dia, 12" long, 1403D3.50TPVL18, 3.50" dia, 18" long

**CLEAR POLYCARBONATE "PC" CYLINDERS** - Remember to add a U1 at the end of the number for hardware to be included.  
 1403D2.25TPCL06, 2.25" dia, 6" long, 1403D2.25TPCL12, 2.25" dia, 12" long, 1403D2.25TPCL18, 2.25" dia, 18" long  
 1403D3.50TPCL06, 3.50" dia, 6" long, 1403D3.50TPCL12, 3.50" dia, 12" long, 1403D3.50TPCL18, 3.50" dia, 18" long

**STAINLESS STEEL "MS" CYLINDERS** - Remember to add a U1 at the end of the number for hardware to be included.  
 1403D2.25TMSL06, 2.25" dia, 6" long, 1403D2.25TMSL12, 2.25" dia, 12" long, 1403D2.25TMSL18, 2.25" dia, 18" long  
 1403D3.50TMSL06, 3.50" dia, 6" long, 1403D3.50TMSL12, 3.50" dia, 12" long, 1403D3.50TMSL18, 3.50" dia, 18" long

For undisturbed cores used Model 200 206MSL03, 2.25" dia, 3 cm long, 206MSL06 2.25" dia, 6 cm long  
 Model 212 212MSL03, 3.50" dia, 3 cm long, 212MSL06 3.50" dia, 6 cm long

**BRASS "MB" CYLINDERS** - Remember to add a U1 at the end of the number for hardware to be included.  
 1403D2.25TMBL06, 2.25" dia, 6" long, 1403D2.25TMBL12, 2.25" dia, 12" long, 1403D2.25TMBL18, 2.25" dia, 18" long  
 1403D3.50TMBL06, 3.50" dia, 6" long, 1403D3.50TMBL12, 3.50" dia, 12" long, 1403D3.50TMBL18, 3.50" dia, 18" long

For undisturbed cores use Model 200 - 206MBL03, 2.25" dia, 3 cm long, 206MBL06 2.25" dia, 6 cm long  
 Model 212 - 212MBL03, 3.50 in dia, 3 cm long, 212MBL06 3.50 in dia, 6 cm long



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## 1428K REMOTE TEMPE KIT

### The complete mobile setup for vacuum /pressure extraction and soil hydrology studies

There are times when you'd like to have a portable soils lab to get reasonable moisture retention curves for the 1 Bar range or do some flow studies in a remote location without compressors or electricity. Why not consider the model 1428 K series for doing those tests right on the spot. It's all packed away in a waterproof case for easy transport and includes everything you'll need. 1428K1 Remote Tempe Kit, for vacuum extractions - Includes 5ea. 1400D2.25-B1M5 Tempe Cells with 5 ea. 206L06TB Brass Cylinders 6cm long - all assembled and ready to go. In addition there's 2005G2 Vacuum Hand Pump with gauge, Pressure - Vacuum Reservoir with 5 port inlet (not shown), 5ea. 50 ml vacuum flask (not shown), 1ea. battery operated scale 500 gm -.01g precision (not shown), Specialized Tempe Stand (for 5 Tempe's) and all associated clamps, tubing, tees to get it all up and running. 1428K2 Remote Tempe Kit, for pressure or vacuum extractions replaces the 2005G2 Vacuum Pump with our portable 2008 Electric Pressure/Vacuum pump housed in its own separate carrying case (not shown see product 2008) and 5 ea. 1405B02M1 Tempe porous plates, 2.25 dia., 2 Bar. for pressure extraction to 2 Bars.



#### SPECIFICATIONS:

1428K1 REMOTE TEMPE KIT, Vacuum Extraction Kit, Includes, 5ea. 1400D2.25, Vacuum Flasks, Hand Vacuum Pump, Vacuum/Pressure Reservoir, Special Tempe Stand, associated hoses connectors. In carrying case.

1428K2 REMOTE TEMPE KIT, Pressure/ Vacuum Extraction Kit, 5ea. 1400D2.25, Vacuum Flasks, 2008 Pres./Vacuum Pump, Vacuum Flasks, Vacuum /Pressure Reservoir, Special Tempe Stand, 5ea. 1405B02M1 2 Bar Plates, associated hoses connectors. In carrying case.

#### ACCESSORY ITEMS

0200 SOIL CORE SAMPLER, using 6cm long brass or stainless steel cylinders  
6952V12-110 12VDC to 110 VAC charger for the 2008 Pressure /Vacuum pump.

## 1425 TEMPE CELL STAND

### The simple and utilitarian stand for 1400 Tempe Cells

The Model 1425 is a good choice for mounting Tempe's under test. The Model 1425 will hold 5 individual 1400D2.25 Tempe Cells or 4 ea. of the larger 1400 D3.50 sizes. Both are made from light weight aluminum and epoxy coated for rugged water rich environments that they'll be exposed to. Common drain channel is provided in the structure and top slit allows the base plate to easily drain into the channel drain.

#### SPECIFICATIONS:

1425 TEMPE CELL STAND, Holds 5ea.- 1400D2.25, or 4ea. 1400D3.50  
Length 18.5" L X 5" W X 6" H (46.9cm L X 12.7cm W X 15.2cm H)  
Weight 2.0 lbs. (0.9 kgs). (Tempe Cells Sold Separately)





## 1440DL SERIES FLOW CELLS

### A massive collection of flow cell possibilities for your column-soil profile testing

The Model 1440DL Series of Flow Cells are columns, designed for measuring the hydraulic properties of porous materials, and the movement of chemicals in soil. Typical uses are for modeling water-retention curves, saturated and unsaturated hydraulic conductivities, contaminant and gas transport parameters, and for break-through curves. Designed for saturation to 600 mb suctions each unit is constructed from sturdy clear acrylic for "see through" experimentation and held together with hardy stainless steel hardware for years of use. All units come assembled, including support screens and filter membranes for quick contact / high flow capabilities with interior soils.

Easy assembly, interchangeable parts, with a variety of porous end sections, supplied in a wide selection of diameters and lengths you can create almost any hydraulic profile. We can also provide tensiometer data logging ports as required with the accessory 1710P series Tensiometer Transducer Assemblies and Model 1442 Laboratory Stands will support 2 Cells of the same size.

#### SPECIFICATIONS:

1440DL Series Flow Cells, in a Variety of Diameters and Lengths -combine Diameters and Lengths when ordering. (see example below)  
 OD Sizes D1.50 = 1.5"(3.81cm) dia., D2.00=2.0"(5.08cm) dia.  
 D2.50=2.5"(6.35cm) dia., D3.00= 3.0" (7.62cm) dia., D3.50=3.5"(8.89cm) dia.  
 D4.00=4.0" (10.16) Dia, D5.25=5.25"(13.34cm) dia.  
 Standard Lengths L06= 6.0" (15.24 cm) length, L12=12.0" (30.48 cm) length, L24=24" (60.96 cm) Length

EXAMPLE TO ORDER - a 3" (7.62cm) diameter Flow Cell x 12" long would be ordered as follows = Model 1440D3.00L12

We can also provide specialized services for fabrication of monitoring ports on flow cylinders and other specialized needs.



## 1441DL FLOW CELL SYSTEMS

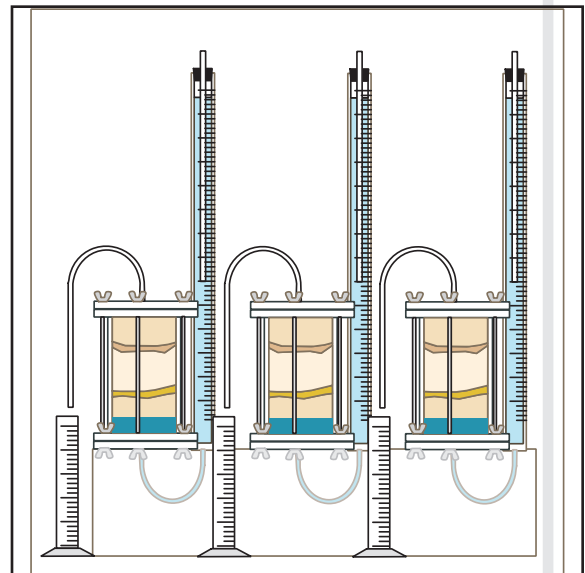
### Need more than a cell? Get a complete system of 1, 3 or 6 cells ready to go

If your lab already has the needed equipment to work with flow cells you're in luck. If not consider the purchase of a flow cell system. Every thing you need will be provided. Flow cells, Marriott Bubbler, Stand, clamps containers etc., simply add soil and start a K-Sat measurement. Marriott Bubbler constructed of clear acrylic for easy calibrations, your selection of 1440DL series Flow cells, heavy duty lab stand (holds up to 3 bubblers), connection tubing, and accessory containers.

#### SPECIFICATIONS:

1441 DL Flow Cell Systems, are based on 1440 series Flow Cells -combined Diameters and Lengths when ordering. (see example below)  
 Flow Cell Diameters D1.50 = 1.5"(3.81cm) dia. , D2.00=2.0"(5.08cm) dia., D2.50=2.5"(6.35cm) dia., D3.00= 3.0" (7.62cm) dia., D3.50=3.5"(8.89cm) dia.  
 D4.00=4.0" (10.16) Dia, D5.25=5.25"(13.34cm) dia.  
 Flow Cell Lengths L06= 6.0" (15.24 cm) length, L12=12.0" (30.48 cm) length, L24=24" (60.96 cm) Length  
 Standard Packages (PKG) PKG01= 1ea Flow Cell, System, PKG03=3 ea. Flow Cells, System, PKG06= 6 ea. Flow Cells, System

EXAMPLE TO ORDER choose the Flow Cell you'd like to use, for instance a 3" (7.62cm) diameter Flow Cell x 12" long, and you want a 3 cell system you'd order Model 1441D3.00L12PKG03  
 Please contact us if you need to mix flow cells in multiple system packages (PKG03, PKG06)



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## 1448 COLUMN TRANSPORT SYSTEM



### An easy and reliable way to measure chemicals-salt transport in soils

Our 1440DL Series Test Cell is used to study the movement of water and contaminants, tracers, nutrients, colloids, etc. through soil. The Test Cells have multiple testing functions. Primarily they are used as Flow Cells designed to measure the hydraulic properties (both saturated and un-saturated hydraulic conductivity) of porous matter; contaminant and gas transport parameters, and for break-through curves. In their least function, they can be used to determine moisture retention relationships on disturbed columns. You get precision control of application parameters using programmable 10 port specialty syringe pump in determining the solution provided. 3ml syringes provided with the system with other sizes available separately in 6 and 10 ml volumes. The system requires 1440DL Series of Flow Cells (sold separately) to hold soil samples under study. The large evacuated Column Transport Chamber allows for fraction collection of up to 3 flow cells mounted on the acrylic cover. Comes Complete.

#### SPECIFICATIONS:

1448 COLUMN TRANSPORT SYSTEM, for 3ea. 1440DL Flow Cells, complete with syringe pump,. Will require additional 1440DL Flow Cells sold separately.

#### Shipping Information:

5 Boxes 10 Cubic Feet, 92 lbs

## Column Accessory

### 8050VP COLUMN TENSIO METER / TRANSDUCER

#### Measure soil suction values within your soil column, monitor gradient and flux -27/7/365

If you have access to a logger or other data collecting device then why not install or have Soilmoisture create access ports in your 1400 Tempe or 1440 Flow. Create a 3/8in NPT female thread in your cylinder to accept the 8050V Tensiometer / Transducer. The easily installed nylon bulkhead fitting with 3 way valve and small 1/4 in (.635 cm) diameter porous cup x .5 in (1.27 cm) long fit easily into the column wall for intimate contact with the soil profile. Valve provides filling and evacuation of the tensiometer cup attached to transducer. This is a temperature compensated, output calibrated, transducer with +/- 15 psi (103 kPa), 100 mV FS span, with a 6.6mV/psi sensitivity. Supply voltage required 10 -15 Vdc.

#### SPECIFICATIONS:

8050V12P15 COLUMN TENSIO METER / TRANSDUCER, 0-100 mV FS span, +/- 15PSI, temp comp, output cal. with valve and bulkhead fitting.



### 1442DT ACRYLIC FLOW CELL STAND

#### The elegant and easy way to mount 1440 flow cells for your experiments

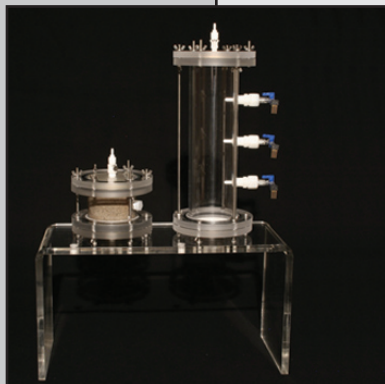
The elegant flow cell stand is simple and provides an elevated and stable platform to carry out any number of experiments. The one piece, 1/2" (1.27in) thick acrylic stand comes in 3 and 6 cell capacities. Tell us the flow cells you'll be using on the stand and we'll custom make one just for your setup. A beautiful addition to your work.

#### SPECIFICATIONS:

1442DT ACRYLIC FLOW CELL STAND

Tell us the 1440 Flow Cells you'll be using, specify the diameter and either a T3 = 3 Cell capacity or T6 = 6 Cell capacity

ORDERING EXAMPLE 1442D2.25T3 provides a stand for 1-3 Cells being 2.25" in diameter.





## 2800K1 GUELPH PERMEAMETER KIT

**The fastest way to get Field Soil Hydraulic Data in 3D,  
the data of natural flow patterns**

Too often measurements of hydraulic properties have been confined to vertical parameters only, take hours of time and are not related in many ways to the reality of 3 dimensional flow in nature. The Guelph has been a break through in the science of soil permeability allowing for multiple depth, multiple head heights all in the same bore hole. Measurements are based on both vertical (gravity) and lateral (capillary) flow from a point source of known head height forming saturated flow patterns as would be the case in nature. The ideal instrument obtaining in-situ hydraulic conductivity data, when designing a Landfill Site for Monitoring Hazardous Waste Disposal or Hydrological Investigations in Drainage or Soil Erosion Studies. The model 2800K1 Guelph Permeameter is an easy to use instrument for quickly and accurately measuring in-situ hydraulic conductivity, generally less than 20 minutes. These quick measurements, at various depths will provide efficiency of irrigation and drainage, optimizing the availability of water for plants, improving the yield of crops and minimizing erosion. This instrument with accessory items 2805D Pressure Infiltrometer attachments can also be used to check clay liners in water and solution holding farms. Constructed of tough polycarbonate and acrylic, it has no items to corrode or get plugged over years of use. The stand included with the unit allows for easy setup and take down in a matter of minutes. The valve at the base of the reservoirs allows you to choose an inner (for very low flow soils) and larger outer reservoir capacity (for moderate and high flow soils). Measurement with the Guelph Permeameter may be made from 0 to 20-ft (610-cm) depth. Meeting the requirements of ASTM – 5126, our permeameters and infiltrometers are rugged field ready kits that are lightweight and durable, and can be operated by one person.

### SPECIFICATIONS:

2800K1 GUELPH PERMEATEER KIT, complete in carrying case, with auger, filling bottle, dual reservoirs, hand vacuum pump, stand and instructions.  
 50" L X 17.5" W X 6" H (132.1x44.4x15.2 cm)  
 Weight 44 lbs. (19.9 kg)  
 Operating Range  $10^{-2}$  cm/s to  $10^{-6}$  cm/s.  
 Operating Depth 6"-15" (15-38 cm) (standard) or 6"-20" (15-610cm) (extended)  
 Volume.0.9 gal (3.5 liter)  
 Water container 2.9 gal (11 liter)



## 2805D PRESSURE INFILTRMETER ATTACHMENT

**The easy way to measure permeability in ponded  
situations, soil liner capabilities**

The 2805D series provides a confining vertical element to assess the integrity of clay liners or other soil barriers to solution impoundments. If the specifications for a clay soil liner having a maximum flow value it's important to be able to test the actual constructed liner. With the 2805D and a 2800 Guelph you can do just that. The Pressure Infiltrometer comes in 10 cm (3.93") Diameter or 20 cm (7.87") Diameter version for your needs. Constructed of steel and nickel plated it's meant for years of use in the field. The attachment is driven into the liner and the Guelph attached and a reasonable head height established and the permeability determined for several head heights at the site. Done at several points within the liner or containment area the overall permeability is established using standard calculations.

### SPECIFICATIONS

2805D10 PRESSURE INFILTRMETER ATTACHMENT,  
 10 cm diameter Length 10" L X 10" W X 10" H (25.4cm L X 25.4cm W X 25.4cm H)  
 Weight 4.4 lbs. (1.9 kgs)  
 2805D20 PRESSURE INFILTRMETER ATTACHMENT,  
 20 cm diameter Length 10" L X 10" W X 10" H (25.4cm L X 25.4cm W X 25.4cm H)  
 Weight 9.6 lbs. (4.3 kgs)



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## 2825 TENSION INFILTRMETER ATTACHMENT

### The easiest way to measure soil surface flow characteristics

Often it's the soil surface that will determine the flow of water applied by irrigation or storm that makes it into the sub surface. The soil surface will determine in large part the runoff for watersheds, or the ability to recharge the subsurface over a rainy season all extremely important to environmental health or determining flooding hazards. These measurements also apply to understanding irrigation efficiencies, infiltration rates, plant rooting preferences, and where runoff to furrow or channel can be expected. The 2825 can measure these changing surface conditions caused compaction, and settling that effect water sorptivity and permeability into the soil. 2825 Tension Permeameter sorptivity measurements help discriminate between gravity and capillarity flow through near surface soils structures. It uses the Guelph 2800 proven rugged polycarbonate and Santoprene body with a reservoir capacity of either 3.18 L (both reservoirs) or 235 ml (inner reservoir only) The model 2825 is a 20 cm (7.87 in) diameter Tension Infiltrometer attachment that fits directly onto a Guelph 2800 and provides accurate reservoir and flow data. The 2825 separate Mariott Bubbler provides the tension head of 0 - 22 mb of tension. Constructed from rugged clear polycarbonate base that includes a heavy duty special porous plastic plate (vapor ionized for permanent hydrophilic behavior), acrylic Mariott Bubbler and polycarbonate attachment tube. The 2825K1 Tension Infiltrometer Kit is a "stand alone" unit and comes complete with Guelph Body Reservoir, filling container, hand pump telescoping carrying case for Guelph Reservoir and backpack for all other Tension Attachment items.



#### SPECIFICATIONS:

2825 TENSION INFILTRMETER ATTACHMENT, comes complete with attachment tube & Mariott Bubbler for use with 2800 Guelph  
Accessories 10" L x 10"W x 10"H (25cmx25cmx25cm) Weight 3.5 lbs. (1.6 kg)  
2825K1 TENSION INFILTRMETER KIT, stand alone configuration, complete with Guelph Body, Mariott Bubbler, hoses ,  
Carrying case for Guelph Reservoir and backpack for other Tension Attachments.  
Accessories 72" L x 13"W x 13"H (182cmx33cmx33cm) Weight 15 lbs. (6.8 kg)

## 2826D TENSION INFILTRMETERS

### Light weight, portable tension infiltrmeters for field or lab

Results are plainly clear when you're using the 2826 series of Tension Infiltrmeters since everything is produced from crystal clear acrylic allowing you to see it all. Made from durable acrylic, this unit is light weight and easy to tote to the field. A great tool for the lab as well in teaching others. When more precise and accurate measurements are required, one may think of using a smaller D08 size infiltrmeters which will measure with more sensitivity due to its smaller reservoir and accelerated water drops. The 2826 are porous membrane surface interface designs for speedy reactions. The 2826D20 Reservoir holds 1.65 Liters and the smaller D08 model reservoir holds 410 ml, bubbler is similar for both having 0-28 mb of tension settings. The model 2826D Tension Infiltrmeters comes in two sizes a 3.1" (8-cm) or 7.8" (20-cm) diameter system. With adjustable head heights, low volume of water used to obtain qualified data, and the ability to add pressure transducers to automate, makes the 2826D a serious choice for the researcher. A field rugged carrying case is a valuable option for this unit protecting your instrument and investment during transport and storage. To add this feature add "CS" to the product number.

#### SPECIFICATIONS:

2628D08 Series  
2826D08 TENSION INFILTRMETER, 8 cm dia. tension disc., comes complete no carrying case  
2826D08CS TENSION INFILTRMETER, 8 cm dia. tension disc, comes complete with case.  
2826D08UCS CARRYING CASE, for 2826D08 Tension Infiltrmeters, only no infiltrmeters

2628D08 Series  
2826D20 TENSION INFILTRMETER, 20 cm dia. tension disc., comes complete no carrying case  
2826D20CS TENSION INFILTRMETER, 20 cm dia. tension disc, comes complete with case.  
2826D20UCS CARRYING CASE, for 2826D20 Tension Infiltrmeters, only no infiltrmeters  
In the case Dim. 42" L x 15" W x 10" H (106.7"cm L x 38.1cm W x 25.4cm H),  
Weight 21 lbs (9.5 kgs)  
No case Dim. 41" L x 11" W x 10" H (104.1"cm L x 27.9cm W x 25.4cm H),  
Weight 13 lbs (5.9 kgs)



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## 2830K1 DOUBLE RING INFILTRATOR KIT

### The original method for determining permeability in soils

Often used by regulatory entities for determinations of leach lines spacing for sewage treatment, runoff determinations this was the standard for decades and remains so in many areas today. It's even more important in today's world with increased cost of water, increased needs to not pollute the environment while improving the efficiency of irrigation and drainage. It's an ASTM D3385-03 Standard Test Method. The 2830K1 is based on continued vertical flow from a falling head source. Our double ring system uses an inner pond and outer pond to obtain one dimensional flow rates using the falling head procedure. Using the installing "cross" the inner ring is driven into the ground and a second bigger ring around that to help control the flow of water through the first ring. A float support bar is placed across the smaller ring and then filled with water. The operator records how much water infiltrated by measurement of the float level within the smaller inner ring. Made from strong galvanized steel with three ring set pairs (11.02 in. & 20.9 in. diameters), (12.6 in. & 22.4 in diameters), (11.8 in. & 21.7 in diameters). The 2830K1 provides all the equipment necessary to perform the standard Double Ring Infiltrator method for infiltration rates

#### SPECIFICATION:

2830K1 DOUBLE RING INFILTRATOR KIT, complete with 3 ring sets, installing hardware and removal hooks.

#### SHIPPING INFORMATION:

2830K1 26" L x 26" W x 20" H (65 x 65 x50 cm) Weight: 110 lbs. (50 kgs)



## 2828KV SATURATED SOIL PERMEABILITY SYSTEM

### Get fast saturated soil permeability tests (K-SAT) in the laboratory for a lot of samples

If you're doing a number of K-sat tests in a laboriously and time consuming manner think about a faster better way. The 2828 Saturated Soil Permeability System is your answer to those needs. The knowledge of soil saturated flow and its movement in soil is important for planning irrigation runoff and drainage limits or any other agricultural, environmental and hydrological research studies that deal with rainy and wet conditions. Knowing the air / water relationships that effect permeability and flow through a soil determines ponding and outflows of watersheds and wetlands for instance. Durable construction, burettes, reservoir, recirculation pump all make it a complete system, just add water. Features include adjustable head heights of 2mm to 20mm, constant or falling head measurements. In the "closed system" configuration, one may use special test fluids or specific water qualities to investigate K-Sat. In the "open system," only water is used and a separate water supply is required. The models 2828K10 or 2828K25 are laboratory test sets for the measurement of Saturated Hydraulic Conductivity (K-Sat) on undisturbed cores of 2.08 inch (53mm) or 2.36 inch (60 mm) diameters. The undisturbed cores can be taken in soil sample rings with the soil sample ring kit 0199K1. The 2828K10 set-up handles up to 10 cores samples simultaneously or the 2828K25 can handle up to 25 individual core samples.

#### SPECIFICATION:

2828K10V1 SATURATED SOIL PERMEABILITY SYSTEM, 110 V AC-60 Hz., comes complete, 33" L x 26" W x 52" H (84x62x130 cm) Weight 77 lbs. (35 kg)  
 2828K10V2 SATURATED SOIL PERMEABILITY SYSTEM, 230 V AC -50 Hz., comes complete, 33" L x 26" W x 52" H (84x62x130 cm) Weight 77 lbs. (35 kg)  
 2828K25V1 SATURATED SOIL PERMEABILITY SYSTEM, 110 VAC -60 Hz, comes complete, 40" L x 29" W x 52" H (100x73x130 cm), Weight 121 lbs. (55 kg)  
 2828K25V2 SATURATED SOIL PERMEABILITY SYSTEM, 230 VAC -50 Hz, comes complete, 40" L x 29" W x 52" H (100x73x130 cm), Weight



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# SOIL PHYSICAL CHARACTERISTICS

## 0310 WET SIEVING APPARATUS

### Determine the aggregate stability of a soil



The wet sieving apparatus is used to determine the aggregate stability of a soil. Soil aggregates are groups of soil particles that bind to each other more strongly than to adjacent particles. The spaces between the aggregates provide pore space for retention and exchange of air and water. Soil structure is one of the main factors controlling plant growth by its influence on root penetration, water holding capacities, water transport and oxygen access for seedling emergence and therefore a real concern to growers for instance. Aggregate stability will also effect how soils might behave under loading conditions when wetted as well as other parameters associated with construction. The rugged thick metal construction assures years of use. The smooth reciprocal motion of 34 dunks / min immerse the samples into their own separate water holding cans to affect the wet sieving process. Processing can be set for standard 3 minute interval or to a "continuous" process. The standard 0310 unit includes a reciprocal processor unit for wet sieving method, 110-240 50-60 Hz motor, 8 sieve sampler holders, 39 mm (1.53 in) diameter X 39mm (1.53 in) high. -sieve opening 0.009" (0.250 mm), complete with 16 stainless water holding cans 64mm (2.51in) diameter X 45mm (1.77 in) high

#### SPECIFICATION:

0310 WET SIEVING APPRATUS, Complete, processor unit, 115-240, 50-60 Hz, 8 sieve sample holders, 16 SS Water retainer cans and acces. 24"L x 16"W x 16"H (60x40x40 cm) Weight 19.85 Lbs. (9.00 kgs)

## 0325KL1 HAND PENETROMETER KIT

### The economical way to determine the bearing capacity of the soil



Determining the load-bearing capacity of a soil is extremely important, when you need to know the ease of root penetration for agricultural and cultivation purposes or when designing foundations for civil engineering works (building work, laying runways, the design of roads, etc.) The bearing capacity or penetration resistance of soil is the maximum average contact pressure between the foundation and the soil which will not produce shear failure in the soil. Penetrometers are used to determine the resistance to penetration (bearing capacity) of a soil. The 0325KL1 Hand Penetrometer Kit can be used for fast and reliable probing to a depth of 3.2-ft. (1-meter). The probing rod with a 60 degree cone is pushed perpendicular into the soil by applying equal pressure on both grips of the Penetrometer.

The resistance measured by the cone can be read from the large pressure dial gauge. The set comprises various cones 60 degrees, 1 – 5 cm<sup>2</sup>, (0.155 – 0.775 inch<sup>2</sup>) Probing- and extension rods. A comprehensive and complete kit includes a measuring instrument with a dial gauge, a tool set; Cone check to inspect the wear of the cones, a calibration certificate; instruction manual and all is placed in a rugged aluminum carrying case.

Measuring range 10,000 kN/m<sup>2</sup> (=10,000 kPa) Accuracy +/- 8% FS

#### SPECIFICATION:

0325KL1 HAND PENETROMETER KIT, complete with carrying case, for details see above. 23x7.5x11" (59x19x28 cm) Weight 24.26 Lbs. (1 kgs)



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## 0325KL3 HAND PENETROMETER KIT

### Go to 10 ft (3m) in determining soil structure, loading, penetration or compaction

Often the soil structure that will play the most important factor in a relationship of porosity or strength is the layers under the immediate surface. Layers of hardpan, a layer susceptible to compaction all are hidden from shallow surface investigations. The perfect instrument to determine foundation acceptability for buildings, compaction characteristics of soils due to road use or settling, problems. In Ag it's helpful in determining plant root migration or sprouting or in determining compacting of various layers at depth within a soil profile. The 0325KL3 Hand Penetrometer is a complete kit for obtaining penetration values in most soils to a depth of 10-ft (3 meters). The auger provided with this set is to make measurements at greater depth than 1 meter without probe hole soil adhesion to the probe rods at deeper depths. It's an easy to operate system with little maintenance needs that transports conveniently to and from the field in its protective aluminum case. With a measuring range of 0-10000kN/sqm and 1 kPa scaled meter and max hold off indicator it's everything you need for deeper penetration measurements.



#### SPECIFICATION:

0325KL3 HAND PENETROMETER KIT 3m depth, comes complete with carrying case.  
24"L x 16"W x 8"H (60x40x20 cm) Weight 44.10 Lbs. (20.00 kgs)

## 0326K1 PENETROLOGGER

### The ultimate professional tool for soil structure determination in the field

Whether you need to determine the penetration resistance or the cone vehicle index of a soil, the penetrometer with built-in data logger with GPS will provide you the ultimate in field soil structure data collecting. Accurate sensors, a bi-partite probing rod, a cone, the depth reference plate, a communication port and a GPS system all contained in a water-resistant housing make the penetrometer complete. The penetrometer is fitted with an adjustable LCD screen for a clear display, also in direct sunlight. The logger is battery operated (5ea. MH AA size rechargeable), comes with universal recharging adapter. The standard kit, among other items, contains: the penetrometer, a cable for the connection of the penetrometer to the PC, a manual for the penetrometer and for the PC-software, the software itself, a battery charger, probing rods, various cones, cone check and bag of tools. Prior to going into the field, a measuring plan is programmed on a PC or on the logger itself. Name your project, the required number of measurements; the type of cone, the speed of penetration, etc. After programming, a cone is screwed on to the 32 inch (80 cm) probing rod, which is connected with quick coupling to the force sensor on the penetrometer. Now the cone is pushed slowly and regularly into the soil. The depth reference plate, which is on the soil surface, reflects the signals of the ultrasonic sensor, which results in a very accurate depth measurement. The measured resistance to penetration and the GPS coordinates are stored in the internal logger of the penetrometer. Optional is the possibility of soil moisture measurement with an external soil moisture sensor (1 moisture measurement per penetration). The logger has a capacity for 1,500 measurements.



#### SPECIFICATION:

0326K1 PENETROLOGGER 80cm, GPS, software, PC link, and much more, complete with carrying case. 6" L x 12" W x 9"H (92x30x24 cm)  
Weight 34.18 Lbs. (15.50 kgs)

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## 5500 SALINITY BRIDGE

### Measuring of TSD's in field pore water, the first In-Situ sensors for salinity

As water becomes more precious and salts intrude former productive fields, it is more important than ever to be able to measure migrating salinity in the pore waters over time. Only In-Situ 5000 Salinity Sensors and our 5500 Salinity Bridge allow you to measure these effects. The Model 5500 Salinity Bridge provides a means of measuring salinity (TDS) on-site, under ground and at a 25 0 C. The efficiency of use in both field and in laboratory setups, makes it the perfect tool in monitoring salinity movements and accumulations. All aluminum case, precision readout dials and associated potentiometers assure accurate salinity readings either in ohms or in mmho values. Reads out directly in mmho/cm corrected to 25 C (77 F) using 1KHz AC signal. Provides measurement of conductivity in the range of 2-40 mmho/cm. 3 Ohm scale ranges available 0-1K, 0-10K and 0-100K . Battery powered by 4ea. 9V batteries that will take 1000's of readings. Works with 5000L series sensors.

#### SPECIFICATIONS:

5500 SALINITY BRIDGE, comes complete in carrying case, manual and batteries included. 14" L X 14" W X 10" H (35.56 cm L X 35.56 cm W X 25.4 cm H), Weight 10 lbs. (4.53 kgs)



## 5000L IN-SITU SALINITY SENSOR

### The salinity sensor that measures "in place" subsurface pore water salinity content

If you need to monitor the progression of salt build up in soil profiles, or need to see the effects of "leaching" sequences, the 5000L Series can do that at specific points in the profile. Only the 5000L sensors give discrete point evaluations of In-Situ total dissolved salt contents in the pore waters. Fabricated from proprietary 15 bar porous ceramics the pore water is measured through the full range of plant growth and remains "saturated" with ambient pore waters from saturated 0 to 1500 kpa Bar matric suction environments. Constructed of durable acrylic housing and epoxied for years of subsurface use the spring loaded head provides assurances that the sensor is in contact with the soil when deployed. It comes in various lengths, and is used with the 5500 Salinity Bridge shown above.

#### SPECIFICATIONS:

5000L04 IN-SITU SALINITY SENSOR, 4 ft (1.22 m) long, complete, spring loaded type.  
5000L10 IN-SITU SALINITY SENSOR, 10ft.(3.05 m) long, complete, spring loaded type.  
5000L25 IN-SITU SALINITY SENSOR, 25ft (7.62 m) long, complete, spring loaded type.



## 5510KL1 EC-PROBE

### Collect estimates of in situ electrical conductivity

Salinization means an increased salt concentration of the soil. The occurrence of salt in rooted soil impedes the water absorption of plants, creating higher osmotic suction and plant stresses. This in turn leads to a decrease in crop production. Using the 5510KL1 EC-probe and the earth resistivity meter for measurements of the electric conductivity in moist soils proves to be a quick, easy and relatively cheap method to determine the salt content of the soil. The set is particularly suitable for use in irrigation projects and eco-hydrologic research. The soil salinity / conductivity kit (probe and meter) are sufficient to monitor to a 100 cm (3 feet) depth with the direct push – type probe. 5510 has 3 resistive scales 0-19.9ohms, 20-199.9 ohms, and 200-1900 ohms with 2% accuracy and a response time of 4-8 seconds. The 6 AA size batteries power the unit for up to 1800 readings. Use the supplied gouge auger to pre-core the hole for easy insertion. All measurements are in terms of soil resistivity and then converted to electrical conductivity.

#### SPECIFICATIONS

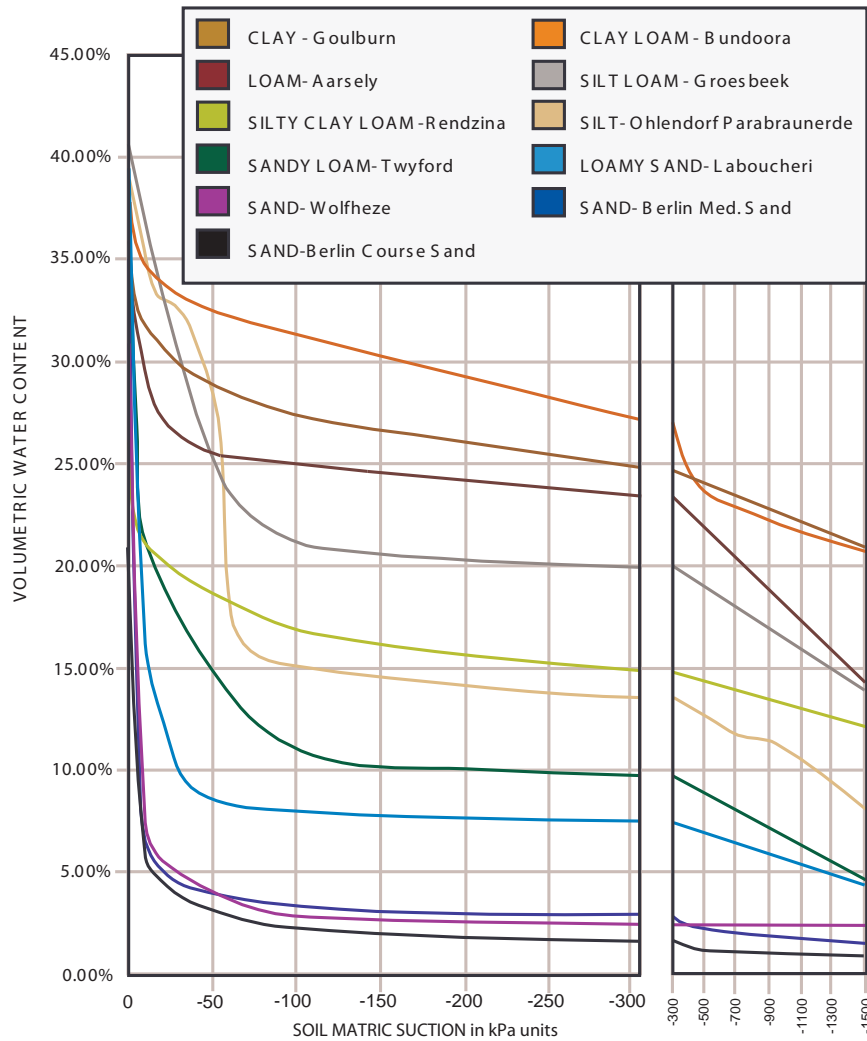
5510KL1 EC-PROBE 1m depth, complete with probe, carrying case and auger. 46" L X 11" W X 9" H (117 cm L X 27 cm W X 23 cm H)  
Weight 15.44 lbs. (7.00 kgs)





## MEASURING A WORLD OF DIFFERENT SOILS

### SOIL WATER RETENTION CURVES



The next section of the catalog deals with Water Retention Equipment. Creating a Water Retention Curve is perhaps one of the most important aspects of plant soil relationships in soil physics. The developed curve establishes how the major stress factor associated with water uptake by a plant and the work needed to receive nutrients will affect a plants health and ability to produce at optimum levels with associated optimum quality. It provides growers, irrigators and specialists around the world the knowledge of when to water, how often to water and the duration of those irrigations. Using these curves results in considerable savings in water, power and amendment usage to the grower, while increasing the field, farm, or orchard yield and grade.

## Pressure Membrane Extractors

## 1000 PRESSURE MEMBRANE EXTRACTOR 15 BAR

Water retention curves from shrink / swell soils –  
15 Bars

A common problem in soils research is determining water retention curves for various soil types. The problem is that many soils around the world that provide excellent plant growth potentials are "shrink-swell" soils. This applies to non soil experiments where the material under study "curls" as it dries. The model 1000 is a pressure / membrane type extractor. It is designed to contain shrink-swell soils during extraction. A special EDPM rubber "hold down" diaphragm is inflated, with 4lbs (1.81Kg) of force holding the soil in hydraulic contact with the cellulose membrane surface. The cellulose membrane material is a pure cellulose and has a pore size of 24 angstrom. The cellulose membrane can withstand over 10,000 kPa bubbling pressure. The standard model 1000 (1002G1) can test up to 12, 2" diameter x 0.39" (2.5 x 1 cm) high samples and operates in the 0 to 1500 kPa (0 to 15 bar) soil suction. Choose an optional PM cylinder height, to handle undisturbed cores up to 3 inch high.

## SPECIFICATIONS

1000 15 Bar Membrane Extractor 18" L X 18" W X 14" H (45.72 cm X 45.72 cm X 35.56 cm),  
Weight: 72 lbs. (32.66 kgs)

## ACCESSORIES:

1002G1	Standard 5/8" (1.58 cm) cylinder,	weight 2.8 lbs (1.3 kgs)
1002G2	Tall 1-1/4" (3.2 cm) cylinder,	weight 6.7 lbs (3.0 kgs)
1002G3	Extra tall 1-7/8" (4.75 cm) cylinder,	weight 10.7 lbs (4.8 kgs)
1002G4	Super tall 3-1/2" (8.8 cm) cylinder,	weight 19.8 lbs (9.0 kgs)

## 1020 PRESSURE MEMBRANE EXTRACTOR 100 BAR

Water retention curves for extremely dry conditions –  
100 Bar

In desert research projects where dry soils are the norm, the 100 bar pressure membrane extractor is a valuable instrument. The Model 1020 is also useful in specialized extractions of porous media, including rock cores and mineral cores where hydraulic characteristics of liquids like oil or other types of liquids are to be extracted from fine pore structures. The Pressure Membrane Extractor uses a cellulose membrane supported on a screen drain plate. The cylinder is 2" (5 cm) high, with an inside diameter of 10" (25 cm). The Model 1020 consists of heavy duty; heat treated steel top and bottom plates, a cylinder and 16 hardened steel connecting bolts and seals, a pressure relief valve and a side exhaust valve, which makes it a safe instrument to operate. A high-pressure hose and special high pressure manifold with regulator for connecting the extractor to a pressure source must be ordered separately. Cellulose membranes, soil sample retaining rings and an electrical lead-through are additional accessories that make the extractor complete for operation.

## SPECIFICATIONS

1020 100 bar Pressure Membrane extractor: 18" L X 17" W X 14" H (45.72 cm X 43.18 cm X 35.56 cm)  
Weight: 146.00 lbs. (66.22 kgs)

## ACCESSORIES:

1041D12	Cut cellulose membrane discs, one dozen	0.21 lbs (0.10 kgs)
3030L60	Flexible high pressure hose, 5-ft., JIC type	0.56 lbs (0.25 kgs)
1093	Soil sample retaining rings, one dozen	0.15 lbs (0.06 kgs)
1066	High pressure electrical lead through	0.22 lbs (0.10 kgs)
0750G4	Manifold (high pressure regulator)	5.00 lbs (2.26 kgs)



# Pressure Plate Extractors

## 1500F1 PRESSURE PLATE EXTRACTOR 15 BAR

### The world standard for obtaining water retention curves, and solution extraction

Water relationships are among the most important physical phenomena that affects agricultural production or structural characteristics of soils. The Model 1500 is used in laboratory study of these many physical relationships, as well as the extraction of soil solution for chemical analysis. For over 60 years universities, colleges, research institutes, and commercial labs around the world continue to rely on Soilmoisture's pressure plate extractors to meet their needs. The extended height of the new Model 1500F1 now allows for 4 pressure plate cells increasing capacity by 25%. The model 1500F1 – 15 bar (1500 kPa) Pressure Plate Extractor is the flagship of moisture retention analysis in the 0 to 15 bar range (theoretical wilting point for most plants). Designed to hold up to 48 – 0.4" (1 cm) height samples, 24 – 1.2" (3 cm) height core samples or 12 – 2.4" (6 cm) height cores. Choose plate cells from 0.5 bar, 1.0 bar, 1.0 bar High Flow, 3.0, 5.0 and 15 bars to suit your needs. You'll need to have a pressure manifold available, or select from our various models in the Air Distribution & System Manifold section of the catalog -of course you'll also need a compressor or compressed air tank as well.

#### SPECIFICATIONS:

1500F1 15 BAR PRESSURE PLATE EXTRACTOR ONLY  
18" L X 17" W X 14" H (45.72 cm X 43.18 cm X 35.56 cm), Weight:94 lbs (43 kgs)

#### ACCESSORIES:

0675 PRESSURE PLATE CELLS, choose from a wide selection for your unit. (See porous ceramic section)  
1093 RETAINING RINGS, 9" L X 9" W X 1" H (22.8 cm X 22.8 cm X 2.5 cm), Weight:94 lbs (43 kgs)  
1080G1 PM HINGE, 9" L X 5" W X 5" H (22.8 cm X 12.7 cm X 12.7 cm), Weight:5.38 lbs (2.44 kgs)  
1065 ELECTRICAL LEAD THRU 9" L X 5" W X 5" H (7.6 cm X 7.6 cm X 5 cm), Weight:0.08lbs (0.04 kgs)



## 1600 PRESSURE PLATE EXTRACTOR 5 BAR

### The standard in obtaining water retention curves, solution extraction in the 0-5 Bar range

For many, their interests are concerned in the optimum plant growth range of 0-5 Bar soil suction range. For engineers it's the wet zone where soil behavior becomes unstable. The 1600 Pressure Plate Extractor is the choice of all worldwide when there's a need for careful and precise measurement of water retention, prepping for stability tests or pore water extraction. This versatile Pressure Extractor also finds application in the calibration of various moisture-measuring equipment assuring that the readings match reality of soil moisture by volume or soil water tension. Easy to clean the epoxy coated interior and exterior complete with safety relief valve. The Model 1600 Pressure Plate Extractor allows analysis of the water-holding characteristics of soil samples in the 0 to 5 bar pressure range. The pressure vessel is 9" (22 cm) deep and has an inside diameter of 12" (30 cm). Up to 4 ceramic plates can be accommodated at one time, allowing approximately 48 each 2-1/4" (5.7 cm) diameter samples to be analyzed simultaneously. Requires a regulated pressure source for operation (see our Air Distribution and System Manifold of the catalog) and a compressor or compressed air tank.

#### SPECIFICATIONS:

1600 5 BAR PRESSURE PLATE EXTRACTOR ONLY  
16" L X 16" W X 16" H (40.64 cm X 40.64 cm X 40.64 cm), Weight:46 lbs (21 kgs)

#### ACCESSORIES:

0675 PRESSURE PLATE CELLS, choose from a wide selection for your unit. (See porous ceramic section)  
1093 RETAINING RINGS, 9" L X 9" W X 1" H (22.8 cm X 22.8 cm X 2.5 cm), Weight:94 lbs (43 kgs)  
1080G1 PM HINGE, 9" L X 5" W X 5" H (22.8 cm X 12.7 cm X 12.7 cm), Weight:5.38 lbs (2.44 kgs)  
1065 ELECTRICAL LEAD THRU 9" L X 5" W X 5" H (7.6 cm X 7.6 cm X 5 cm), Weight:0.08lbs (0.04 kgs)



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## Pressure Plate Extractors

### 1250B VOLUMETRIC PRESSURE PLATE EXTRACTOR



#### Precision volumetric measurement and control of soils to 5 Bar

A precision instrument in measuring soil water volumetric properties in wetting and drying circumstances. With the Model 1250 you're in control of how the soil is wetted and dried (extracted) by changing the interior pressures applied to the soil sample. The specialized base plate structure assures a constant hydraulic contact between sample and porous plate media below. Pore water taken up by the sample from reduced pressure can be accurately measured as well as pore water outflow under increased pressures, making this a perfect representation of real world conditions. Constructed from rugged aluminum and brass with a selection of ceramic plates the Volumetric extractor remains the "key" instrument in precision determination of water movement in soils in the 0-5 Bar (500kPa) range. The (shown but not included) accessory 1252 Heater Block is used to gently heat the top cap to assure that condensation is minimized in the measurements. The Volumetric Pressure Plate Extractor when joined with the 1275 Hysteresis Attachments below makes it possible to measure these capillary conductivity characteristics of soils to a very accurate degree. Comes with a large selection of ceramic plates

#### SPECIFICATION:

1250B# 5 BAR VOLUMETRIC EXTRACTOR, choose ceramic below,  
9" L X 9" W X 9" H (22.86 cm X 22.86 cm X 22.86 cm), Weight: 7.7 lbs. (3.5 kgs)

CERAMIC PLATE FOR 1250 - (ACCESSORY ITEM 1253B)

1253B.05M2 POROUS CERAMIC, 0.5 bar 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1253B01M1 POROUS CERAMIC, 1 bar 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1253B01M3 POROUS CERAMIC, 1 bar HF 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1253B02M1 POROUS CERAMIC, 2 bar 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1253B03M1 POROUS CERAMIC, 3 bar 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1253B05M1 POROUS CERAMIC, 5 bar 6" x 6" x 1" (15.2 cm x 15.2 cm x 2.5 cm), Weight .32 lbs (.15 kgs)  
1252 HEATER BLOCK, 12 VDC comes complete with 110-220VDC-12VDC adapter.

### 1275 HYSTERESIS ATTACHMENTS

#### Precisely measure the volumetric changes from wetting and drying in soils (Hysteresis)



There's a difference as soils change from wet to dry and those changes are often difficult if not impossible to measure but with the 1250 Volumetric Extractor and our 1275 Hysteresis it's very do-able. The Hysteresis Attachments have been designed specifically to operate with the Volumetric Pressure Plate Extractor. The purpose of the Hysteresis Attachments is to accurately retain all of the moisture removed from a sample during the pressurizing cycle and to permit the back flow of captured pore waters from the storage area back into the sample as pressure is reduced in the extractor. This process corresponds to the drying and wetting cycle that occurs naturally within soils. Constructed of specialized precision glass elements, comes complete with a burette, air filters, holder stand, clamps and hoses and all associated tubing. Requires model 1250B Volumetric Extractor and a recommended 1253 Heater Block.

#### SPECIFICATION:

1275 HYSTERESIS ATTACHMENTS

Dimensions 44" L X 13" W X 13" H (111 cm X 33 cm X 33 cm), Weight: 9 lbs. (4 kgs)



# Vacuum Extractors

## 1725D22 LARGE SURFACE EXTRACTION PLATE – 22” DIAMETER

**Low tension surface plate to extract or control pore suction values to 1 Bar (100kPa)**

Our new large-scale 22-inch diameter (55.88 cm) vacuum plate provides a tremendous amount of surface area to control suction or sampling on a big scale. You can place multiple samples or growing plants on one of these large plates and induce a common matrix suction to all up to 1 bar of suction. Forget the mess of sand tables and other crude devices, this is a complete, “system level” vacuum plate assembly, which is also extremely easy to use. Simply wet up the samples on the plate, tie into a vacuum reservoir and pull the suction level required - it couldn't be easier. The extractor plate comes with 5 removable legs and a 90 degree outlet barbed hose connector (for .250 in (63.5 mm ID) on the bottom of the plate. If you're doing any kind of vacuum work, you should seriously consider our new large capacity plate.

**SPECIFICATIONS:**

1725D22-B01M3 LARGE SURFACE EXTRACTION PLATE, 26 in. (66 cm) Diameter \*x3.5 in. (8.89cm) Deep  
Weight: 81 Lbs. (36.7 kgs)



## 1300F1 FILTER FUNNEL EXTRACTOR

**Low Tension solution filtering system using vacuum**

The new 1300F1 adds extended capability to easily extract solution of 5 samples all at once. Soil dilutions have been a standard of assessing dissolvable soil constituents, solution extraction of mineral contents or any number of other solvent /solution based tests commonly done on soils that will require filtered extract. Using a vacuum extraction method helps assure that your extracting all the solution possible from a test sample and not losing a drop. Whether it's working with soil pastes or slurries the 1300F1 will get it done quickly and effectively. Constructed of durable aluminium and epoxy coated, the “push – pull” control knob at each sample port give complete control of suction intensity and is unique to the 1300. Funnel tube end extends into the glass sample bottles preventing any contact bias from outside sources.

**SPECIFICATIONS:**

1300F1 FILTER FUNNEL EXTRACTOR ONLY, 18"x 6" x 5" (45.7 x 15.2 x 12.7 cm)  
Weight: 1.3 lbs. (0.6 kgs)

1300F1DV COMPLETE EXTRACTOR SETS, 1ea Filter Funnel Extractor,  
1 box 100 Filters, 5 ea. Funnels, 10 ea Sample Bottles.

D= 55 (mm) or 90 (mm) Funnel Interior and Filter size.

V= 01 oz. (29.6ml) or 02 oz. (59.2ml) or 05 oz (148 ml) Glass Sample Bottles with caps.

Example 1300F1D90V02 Complete Set with 1ea. 1300F1,

1 Box 90 mm Filters (100), 5 ea. 90mm Funnels, 10 ea. 2 oz (59.2ml)

Bottles



**ACCESSORY ITEMS**

1302U1.6D55 FUNNEL FILTERS, glass micro fiber, 1.6 micron pore size, 55 mm diameter, Box of 100

1302U1.6D90 FUNNEL FILTERS, glass micro fiber, 1.6 micron pore size, 90 mm diameter, Box of 100

1303D55 FILTER FUNNELS, 55mm dia, Buchner type, Polypropylene, white, 83 ml capacity, 1ea.

1303D55PKG5 FILTER FUNNELS, 55 mm dia., Buchner type, Polypropylene, white, 83 ml capacity, Package of 5 ea.

1303D90 FILTER FUNNELS, 90 mm dia. Buchner type, Polypropylene, white, 358 ml cap., 1ea.

1303D90PKG5 FILTER FUNNELS, 90mm dia., Buchner type, Polypropylene, white, 358 ml cap. Package of 5 ea.

1305V01 GLASS SAMPLE BOTTLES, 1 oz. (29.6 ml), Clear, Rd. Bot. food grade, with thd. Polyethylene cap seal, 10 ea.

1305V02 GLASS SAMPLE BOTTLES, 2 oz. (59.2 ml), Clear, Rd. Bot. food grade, with thd. Polyethylene cap seal, 10 ea.

1305V05 GLASS SAMPLE BOTTLES, 5 OZ. (148 ml), Clear, Rd. Bot. food grade, with thd. Polyethylene cap seal, 10 ea.

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## 2100F SOILMOISTURE PROBE



### The Tensiometer for columns, remote locations, limited access - 1/4 in (6mm) Dia. sensor

Laboratory research in soil columns, in tight corners, or near the soil surfaces cannot be done with a large inflexible standard tensiometer. The Model 2100F Soilmoisture Probe is a specialized unit designed for investigation of soil suction in such small regimes. Ideal for laboratory work such as measuring soil suction values at various levels in soil columns. In getting measurements near surface conditions with minimal disturbance or in places where the readout must be remotely located. The Soilmoisture Probe has a tiny porous ceramic cup is 0.25" (6 mm) in diameter and 1" (2.5 cm) long and attaches to the tensiometer body via a 6 ft. (1.8 m) length of Nylon tubing, which will cause minimal disturbance in the soil. A 1/16 in (3.81 mm) OD. filler tube is also incorporated to allow for easy filling. A 1/4 in.-20 bolt is located at the bottom of the readout tree for easy mounting. The measuring range for soil suction is from 0 – 100 cb, read on the stainless steel cased, hermetic sealed readout gauge. The 2100F will also accept a pressure transducer (optional) when results are required for automated purposes and need to be stored in a data logger.

#### SPECIFICATIONS:

2100F1 SOILMOISTURE PROBE ,with Vacuum Gauge, 8" L X 5" W X 3" H (20.32 cm L X 12.7 cm W X 7.62 cm H) Weight:0.86 lbs. (0.39 kgs)

2100F1 SERIES can be modified to meet any special requirement for remote reading ask about out special services.

#### ACCESSORIES:

5301-B.5 TENSIO METER TRANSDUCER, Vacuum, Atm to -7 psi, 4-20 MA, (0-50 cbar)  
5301-B1 TENSIO METER TRANSDUCER, Vacuum, Atm to -14.5 psi, 4-20 MA, (0-100 cbar)  
5302 TENSIO METER TRANSDUCER, Vacuum, Atm to -14.5 psi, (0-100 mV)

## 2710ARL SOILMOISTURE TENSIO METER

### The economical solution in a Tensiometer for quality, precision, and ruggedness

A good tensiometer can save thousands of dollars in preventing over watering or under watering both causing damage to a commercial grower. "A good tensiometer is the irrigation schedulers alarm clock." For researchers it's a matter of accuracy and longevity to carry out numerous field plots. The 2710ARL when used with an accurate soil suction curve for their soils can produce a perfect crop year after year at minimal costs in pump time and water use. The Model 2710ARL Tensiometer is a precision but rugged, versatile, and inexpensive instrument, which provides a direct measurement of soil water tension. The heavy walled 1/4 in (63.5mm) of durable butyrate tubing 7/8 in. (2.22 cm) OD with screw cap is designed to allow for easy replacement of the ceramic cup, o-ring sealed dial gauge, and use of addition of extension tubes. Easy and time tested readout gauges hermetically sealed in a stainless steel case with vent access to assure precision readings. The tensiometer is available in a variety of lengths, ranging from 6 inches (15 cm) to 60 inches (1.5 m). Series 0240 Insertion Tools can be used for coring a hole in the soil to accept these units. The Model 2710K1 Service Kit, available separately, is used to refill and maintain the tensiometer.

#### SPECIFICATIONS:

2710ARL06	SOILMOISTURE TENSIO METER 6" SIZE (15 cm),	0.63 lbs. (0.28 kgs)
2710ARL12	SOILMOISTURE TENSIO METER 12" SIZE (30 cm),	0.78 lbs. (0.35 kgs)
2710ARL18	SOILMOISTURE TENSIO METER 18" SIZE (45 cm),	0.90 lbs. (0.40 kgs)
2710ARL24	SOILMOISTURE TENSIO METER 24" SIZE (60 cm),	1.02 lbs. (0.46 kgs)
2710ARL36	SOILMOISTURE TENSIO METER 36" SIZE (90 cm),	1.29 lbs. (0.58 kgs)
2710ARL48	SOILMOISTURE TENSIO METER 48" SIZE (120 cm),	1.55 lbs. (0.70 kgs)
2710ARL60	SOILMOISTURE TENSIO METER 60" SIZE (150 cm),	1.81 lbs. (0.82 kgs)

#### ACCESSORIES:

2790K1 SERVICE KIT (includes 2005G2 hand pump, 2034 blue fluid, Tensiometer service cap, neoprene tubing and special filler bottle)

0240L30	7/8" INSERTION TOOL, 30 inch (76 cm) length,	1.0 lbs. (0.5 kgs)
0240L54	7/8" INSERTION TOOL, 54 inch (137 cm) length,	1.9 lbs. (0.8 kgs)
0240L78	7/8" INSERTION TOOL, 78 inch (198 cm) length,	2.9 lbs. (1.3 kgs)



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## 2725ARL JET FILL TENSIO METER

### Jet Fill Tensiometers, fastest, most reliable - considered gold standard of Tensiometers

Jet-Fill's revolutionary changes brought new standards of quality and performance to the industry when first introduced. Today they still are the premier Tensiometer in a field, now filled with numerous mediocre and cheap knock-offs, many not lasting a single season. The Jet-Fill was designed for years of service, easy replacements if it's ever needed. The high quality of the design, manufacture and materials used provide unusual long term savings through their years of use. In the sciences it's the precision, repeatability from unit to unit, field proven ruggedness and their very fast reaction time. Whether your using tensiometers to manage irrigation scheduling, monitor sampling conditions, or in crop field plots there's simply no better instrument than a Jet-Fill. The Model 2725ARL series Jet Fill Tensiometer features the patented Jet Fill reservoir with push-button convenience assuring minimal disturbance and a ultra fast fills. Constructed from heavy walled 1/4 in. (63.5mm) of durable butyrate tubing 7/8 in. (2.22 cm) OD. it's 3 in. (7.62 cm) long replaceable high flow ceramic tip provides the fastest sensitivity to soil suction changes available. The replaceable, O-ring sealed, 3 in. (7.26 cm) diameter readout gauge is hermetically sealed in a stainless steel case, with convenient access venting giving years of accurate and precise data. The Jet Fill Reservoir holds additional 70 ml of water for replacing water used by the unit in prolonged high suction values. Our "gold standard" Jet-Fill Tensiometers are available in a variety of lengths, ranging from 6 inches (15 cm) to 60 inches (1.5 m). Series 0240 Insertion Tools can be used for coring a hole in the soil to accept these units.

#### SPECIFICATIONS:

2725ARL06	JET FILL TENSIO METER, 6" SIZE (15 cm)	0.76 lbs. (0.3 kgs)
2725ARL12	JET FILL TENSIO METER, 12" SIZE (30 cm)	0.90 lbs. (0.4 kgs)
2725ARL18	JET FILL TENSIO METER, 18" SIZE (45 cm)	1.03 lbs. (0.4 kgs)
2725ARL24	JET FILL TENSIO METER, 24" SIZE (60 cm)	1.15 lbs. (0.5 kgs)
2725ARL36	JET FILL TENSIO METER, 36" SIZE (90 cm)	1.42 lbs. (0.6 kgs)
2725ARL48	JET FILL TENSIO METER, 48" SIZE (120 cm)	1.68 lbs. (0.7 kgs)
2725ARL60	JET FILL TENSIO METER, 60" SIZE (150 cm)	1.94 lbs. (0.8 kgs)

#### ACCESSORIES:

0240L30	7/8" INSERTION TOOL, 30 inch (76 cm) length	1.0 lbs. (0.5 kgs)
0240L54	7/8" INSERTION TOOL, 54 inch (137 cm) length	1.9 lbs. (0.8 kgs)
0240L78	7/8" INSERTION TOOL, 78 inch (198 cm) length	2.9 lbs. (1.3 kgs)



## 2900F1 QUICK DRAW TENSIO METER

### Simply the best portable Tensiometer measurements for Field or Lab

If you need to know the soil suction values at multiple depths, have diverse locations, and demand a quick response, with accurate values there's nothing better than a 2900F Quick Draw. The patented Model 2900F1 Quick Draw Tensiometer is designed for portable field or lab use. It responds quickly and equilibrates rapidly with the immediate soil tensions providing accurate measurements many times in less than a minute. The specialized Null Knob provides a "bracket" technique allowing one to deduce or interpolate the final tensional value in few seconds to a few minutes depending on soil type and conditions. Constructed from heavy duty brass, nickel plated, with interior micro tubing to eliminate fluctuations in readings due to temperature changes. Large, hermetically sealed 3in (7.62 cm) dial gauge provides easy 1cb reading precision. Comes with carrying case for 2900, Coring Tool and Clean Out Rod. The Soil Coring Tool is first used to core an access hole to the desired depth of measurement. The Quick Draw is then inserted into the access hole and the ceramic sensing tip is now in contact with the soil. The Null- Knob is used to bracket above actual value (gauge value drops as water is pulled from the soil), then it's set below actual value (gauge value rises as the water is removed from the Quick-Draw). Done several times it's "bracketed to a solution" the final value. The coring tool, cleaning tool, and tensiometer are then returned to the carrying case for transportation and storage. An accessory kit is also provided, which contains a replacement ceramic sensing tip, O-rings, screwdriver, and allen wrench. Gauge shown to display face readout, comes ready for vertical viewing.

#### SPECIFICATIONS:

2900F1L12	QUICK DRAW SOILMOISTURE PROBE, 12-INCH LENGTH (30 cm)	2.30 lbs. (1.04 kgs)
2900F1L18	QUICK DRAW SOILMOISTURE PROBE, 18-INCH LENGTH (45 cm)	2.70 lbs. (1.22 kgs)
2900F1L24	QUICK DRAW SOILMOISTURE PROBE, 24-INCH LENGTH (60 cm)	3.35 lbs. (1.51 kgs)



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 Contact: sales@soilmoisture.com



## TENSIOMETER ACCESSORIES

### 2790K1 & 2790K2 TENSIO METER SERVICE KITS



#### The kit that makes tensiometer servicing easy and quick

The 2791K1 formally 2710K1 is a handy and useful addition to any tensiometer. The kit provides all the essentials for servicing a tensiometer. Kit includes a 2005G2 vacuum hand pump, 2034 blue fluid algacide, a service cap & neoprene tubing for vacuum hand pump attachment, 16 oz.(473 ml) polyethylene filler bottle with tube cap (for insertion into tensiometer for filling), small re-calibration screw driver, and 12 sheets of monthly tensiometer reading logs. The 2790K2 has all the same items as the 2790K1 with the inclusion of the 2790U1 Tensiometer Filling Fixture show below.

#### SPECIFICATIONS

2790K1 TENSIO METER SERVICE KIT, without 2790U1 Tensiometer Filling Fixture  
12" L x 12" W x 4" H (30 L x 30 W x 10 H cm), Weight: 1.5 lbs. (0.68 kgs)  
2790K2 TENSIO METER SERVICE KIT, with Tensiometer Filling Fixture  
12" L x 12" W x 4" H (30 L x 30 W x 10 H cm), Weight: 1.7 lbs. (0.77 kgs)

### 2790U1 TENSIO METER FILLING FIXTURE



#### Filling and evacuating a Soilmoisture Tensiometer even made easier

When you need to service at the beginning of a season or simply in the initial prep you want to fill and evacuate the unit in one easy step. The 2790U1 Fixture allows one to do just that. Fill the fixture with water place it over a tensiometer or Quick Draw and apply a vacuum air bubbles into the reservoir and water goes out to fill the unit. Could not be easier.

#### SPECIFICATIONS

2790U1 TENSIO METER FILLING FIXTURE 9" L x 1" W x 1" H (22.9 cm X 2.5 cm X 2.5 cm)  
Weight 0.115 lbs (0.052 kgs)

### 0240 TENSIO METER INSERTION TOOL

#### Making installation of the 2700 series Tensiometers easier

The Insertion Tool series can make the installation of the 2700 Series Tensiometers a lot easier and correct. The tools make a 7/8" (2.2 cm) diameter hole, which ensures good hydraulic contact between the tensiometer and the soil. The 0240 Insertion tools are available in different lengths and a "must have" for proper installation of your tensiometers.



#### SPECIFICATIONS:

0240L30 INSERTION TOOL, 30" (76 cm) length 1 lbs. (0.59 kgs)  
0240L54 INSERTION TOOL, 54" (1.3 m) length 2 lbs.(0.90 kgs)  
0240L78 INSERTION TOOL, 78" (2 m) length 3 lbs. (1.36 kgs)



## 5201F1L SOILMOISTURE'S G-BLOCKS

**Finally a gypsum block that's made Great,  
repeatability is Great, Gentle on pocket**

Soilmoisture has a better approach to gypsum measuring blocks, design them for use in plant growing moisture conditions, assure they're made in a consistent manner and test them prior to shipping. All these factors make the 5201F1 Series G-Blocks a better block with substantial superior difference to others. Each block is fabricated with care for consistency, repeatability and response, tested prior to stocking (not done by any other manufacturer). If you're looking to measure sub surface moisture for irrigation scheduling, in a potted plant, or to determine when to pull a suction on a remote soil water sampler the 5201 is your basic tool. These sensors are designed to dissolve slowly producing a consistent buffered pore solution that minimizes the effect of salinity in the impedance (resistance) measured. As pore waters diminish in hot dry weather or replenish after a rain or irrigation system these blocks respond within minutes. Readings are estimates of volumetric water content, or soil water tension with a 3.2% from block to block differences. To be used with Soilmoisture's 5910F1 Soilmoisture Meter.

### SPECIFICATIONS:

AVAILABLE IN THE FOLLOWING QUANTITIES AND LENGTHS (Longer lengths available)

5201F1L03PKG06, 6ea - 3ft. (.91m) Length	5201F1L0PKG06 6ea - 6ft. (1.83m) Length
5201F1L03PKG12 12ea - 3ft. (.91m) Length	5201F1L06PKG12 12ea - 6ft. (1.83m) Length
5201F1L03PKG24 24ea - 3ft. (.91m) Length	5201F1L06PKG24 24ea - 6ft. (1.83m) Length

5201F1L09PKG06, 6ea - 9ft. (2.74 m) Length	5201F1L12PKG06 6ea - 12 ft. (3.65 m) Length
5201F1L09PKG12 12ea - 9ft. (2.74 m) Length	5201F1L12PKG12 12ea - 12 ft. (3.65 m) Length
5201F1L09PKG24 24ea - 9ft. (2.74m) Length	5201F1L12PKG24 24ea - 12 ft. (.3.65 m) Length

5201F1L15PKG06, 6ea - 15 ft. (4.57 m) Length	5201F1L25PKG06 6ea - 25ft. (7.62 m) Length
5201F1L15PKG12 12ea - 15 ft. (4.57 m) Length	5201F1L25PKG12 12ea - 25ft. (7.62 m) Length
5201F1L15PKG24 24ea - 15 ft. (4.57m) Length	5201F1L25PKG24 24ea - 25ft. (7.62 m) Length



## 5910F1 SOILMOISTURE METER

**Read sub-surface moisture quickly to schedule,  
monitor and plan**

The 5910F1 provides a quick and easy assessment of sub-surface moisture content when used in conjunction with the 5201L series G-Blocks. The very low power device lasts months in the field and when not in use is protected by a rugged belt carrying case (not shown). Simply place the leads of the G-Blocks on to the two post of the meter and read the relative moisture content in values of 1-100. Large readout, push-button ease, and zeroing feature all make for a highly effective and cost effective electronic solution to reading sub-surface moisture values. The meter produces a .5 volt differential, 60 Hz square wave excitation that assures you get a valid impedance (resistance) reading on the G-Blocks unbiased by DC offsets found on many other meters and DVOM devices. Comes complete with batteries and carrying case.

### SPECIFICATIONS:

5910F1 SOILMOISTURE METER, with batteries and belt carrying case (not shown)  
 5910F1K1 SOILMOISTURE METER STARTER KIT, 5910F1 Meter, batteries, carrying case and 3 ea. 5201L, G-Blocks in the following sized, 6ft, 9ft, and 15ft. lengths.  
 Dimensions: 7" L X 4" W X 2" H (17.8 cm X 10.2 cm X 5.1 cm).  
 Weight: 0.07 Lbs. (0.32 kgs)



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## 6050X3K1B MINI TRASE

### Auto-logging, Light, portable, world class “real” TDR, for field, lab or remote locations

The MiniTrase is based on Time Domain Reflectometry (TDR) to measure within seconds, the volumetric water content of soils and other porous media. True TDR is accepted as “The” method of measurement of water in porous media such as soil. Since the broadband step pulse (60kHz-4GHz) measures the delay time through the dielectric of the material it passes, it can be used for finding volumetric % of differing liquids in one another or water in, grains, mixtures, gels and slurries. The Mini is packed with features not found in other TDR instruments, like a 1200 pt. waveform capture for exceptional details, or a powerful 1.25 Volt (125ps rise time) pulse assuring you get a reflection in almost any condition. A complete system designed to allow special probes and lookup tables for automating your new and exciting ideas. There are a variety of optional connectors and waveguides for your consideration, ranging from depths of 10 cm (3.39 in.) to 1.83 m (6 ft.) all available, used in a portable manner or permanently installed for periodic moisture monitoring. You can add our multiplexer option and read up to 256 waveguides monitoring the most complex water /soil/ media relationships all at the lowest cost / measurement point. Volumetric data is provided via Bluetooth technology to a Palm Terminal or laptop computer if you have one. Waveforms can be downloaded to computers directly or remotely via dial-up modem or over the internet via CDMA or GSM network carriers. MiniTrase is configured to a small, environmentally sealed, all aluminum case for rugged field use, quick “push-pull” rechargeable battery pack, slip-turn BNC coaxial waveguide connector add to the numerous capacities. Comes complete in backpack with all the items needed to start your TDR field or lab work.

#### SPECIFICATIONS:

6050X3K1B Mini-TRASE, a kit, includes Mini-Trase, backpack, Bluetooth module, Palm PDA (with Bluetooth capacity), charger, waveguide holders, 15 cm. long probes, 12VDC operation, software and manual (not shown)  
6050X3K2 Mini-TRASE, a kit includes Mini-Trase, backpack, Bluetooth module, charger, software and manual, no Palm PDA provided.

## 6050X1 TRASE SYSTEM I

### TDR Waveform viewing, logging, portability, “the” TDR standard for lab or remote field use

The TRASE System I is the original auto-logging, self-contained, portable unit designed for field use for fast and accurate measurements of moisture in various materials (e.g. soil, cement, powders, grains etc) using Time Domain Reflectometry (TDR). This is a true, full featured TDR instrument with full touch panel access, automatic beginning and end point determinations and large view graphing abilities, allowing automatic or discrete determination of time and detailed observations of impedance differences along a waveguide (waveform). Of course, like all Trase systems, it measures 0-100% volumetric water content, +/- 2% FS, and 1200 pt. resolution. A powerful 1.25 Volt (125ps rise time) pulse, you get reflections in almost any condition. A complete system designed to allow special probes and lookup tables for automating your new and exciting ideas. There are a variety of optional connectors and waveguides for your consideration, ranging from depths of 10 cm (3.39 in.) to 1.83 m (6 ft.) all available, used in a portable manner or permanently installed for periodic moisture monitoring. You can add our multiplexer option and read up to 256 waveguides monitoring the most complex water /soil/ media relationships all at the lowest cost / measurement point. Large LCD matrix display screen for direct viewing of TDR waveforms or reviewing collected data, both can be downloaded to computers directly or remotely via dial-up modem or over the internet via CDMA or GSM network carriers. Trase X1 is configured for long term use in remote field conditions, or for unattended lab use. Environmentally sealed case, one for instrumentation another for 2 battery power service. It comes complete with 15 cm. long waveguides, charger and associated software.

#### SPECIFICATIONS:

6050X1 TRASE SYSTEM I, complete with Trase System I, battery case, charger, RS-232 interface cable, 15cm. long probes, 12VDC operation, software and operational manual



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## 6050X2 TRASE BE

### The lab version of Trase for unattended TDR measurements – for up to 256 points

The Trase BE was designed for use in a stationary location where electrical power is available and you need lots of measuring capability. It's designed with the same quality, precision and durability in mind like all other Trase systems. It measures 0-100% volumetric water content, +/- 2% FS, and 1200 pt. resolution. A powerful 1.25 Volt (125ps rise time) pulse assuring you get a reflection in almost any condition. A complete system designed to allow special probes and lookup tables for automating your new and exciting ideas. There are a variety of optional connectors and waveguides for your consideration, ranging from depths of 10 cm (3.39 in.) to 1.83 m (6 ft.) all available for use in study plots, columns or other research applications needing the TDR difference. Generally this model Trase is combined with our multiplexer option allowing you to read up to 256 waveguides monitoring the most complex water /soil/ media relationships all at the lowest cost / measurement point. A computer linked by a RS232 serial port or Bluetooth option establishes the link to the on-site or remote BE and uses our WinTrase commands to control the instrument as if it were a 6050XI sitting on your screen. Download TDR waveforms as their captured or review and download collected data, both can be downloaded to your computer directly using WinTrase or remotely via dial-up modem or over the internet via CDMA or GSM network carriers. The BE 110-230VAC, 50-60Hz unit comes complete, software and operating manuals.

#### SPECIFICATIONS:

6050X2 TRASE BE, comes complete with software, and operating manual.



## 6090TW TRASE SYSTEM IN A BOX

### Complete mini-Trase system for field or remote locations in a rugged NEMA case

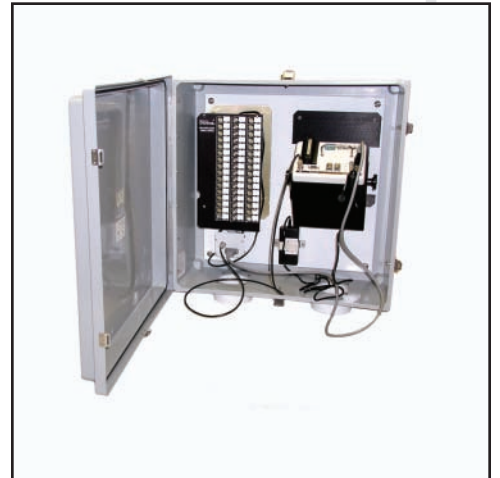
The 6090 Series provides a complete mini-Trase system for field or remote location. It's the way to get all the things you need in one comprehensive package of items. All the multiplexer hardware and circuit boards together with the mini, it's a perfect match. The whole system is based on 12VDC power supplies from optional solar panels and locally purchased heavy duty batteries. The system and its enclosures provide for all the convince needed, like the tilt down full access mini-Trase holder, the overhead night light for dark days or after hours maintenance. If you're fortunate enough to have line power we'll convert it for 12VDC Trase Systems operation (remember we battery back everything) so even if you lost power you don't lose readings or consistency. The rugged, locking, NEMA case with 4" PVC outlets provides rugged weatherproof enclosure for your Trase TDR instrumentation. You'll need to select the probes you'll be needing and purchase those separately, but everything else has been taken care of.

#### SPECIFICATIONS: Call or e-mail for more information to suit your special needs

6090T45W25 TRASE SYSTEM IN A BOX, a 3 mux card system in NEMA enclosure, complete with mini-Trase, multiplexing for 45 TDR Probes, interior light, mini-tilt holder, converters and 25Watt, Solar Panel

60690T76W50 TRASE SYSTEM IN A BOX, a 5 mux card system in NEMA enclosure, complete with mini-Trase, multiplexing for 76 TDR Probes, interior light, mini-tilt holder, onverters and 50Watt, Solar Panel

60690T256W50 TRASE SYSTEM IN A BOX, a 17 mux card system in NEMA enclosure, complete with mini-Trase, multiplexing for 256 TDR Probes, interior light, mini-tilt holder, converters and 75 Watt, Solar Panel



## 6020B TRASE MULTIPLEXER & ENCLOSURE, ONLY

### For those that only need multiplexing capabilities and already have a Trase

If you've been contemplating expanding your abilities to monitor and read multiple sights perhaps it's time to consider purchasing a multiplexer station to put along side your mini X3 or standard X1 Trase TDR unit. It will increase your ability to monitor anywhere from 76 points to 256 points. Comes in a rugged PVC housing, with 4" PVC pipe fitting for easy routing of subsurface probes. You'll need to purchase the waveguide separately.

#### SPECIFICATIONS:

6020B05 TRASE MULTIPLEXER & ENCLOSURE, 5 mux card system, multiplexing for 76 probes, interconnect and cables for connection to all Trase models.

6020B17 TRASE MULTIPLEXER & ENCLOSURE, 17 mux card system, multiplexing for 256 probes, interconnect and cables for connection to all Trase models.



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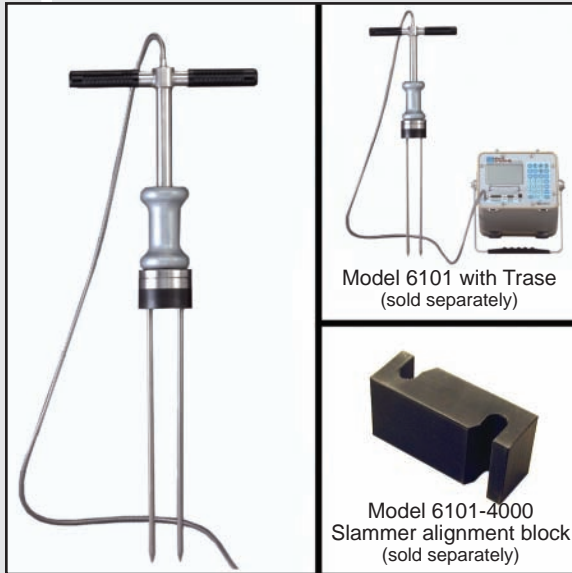
## 6101L SLAMMER PROBE

**The answer for measurements up to 60 cm, in hard, dry, or compacted soils**

Only Soilmoisture can offer this unique tool for TDR measurements. Strong and rugged for years of use you can use it as a "push-in" probe for moist and easily penetrated soils. On the other hand if the soils dry to hardened and difficult to penetrate soils you can apply the hammer to "pound" the .375 in. (.953 cm) diameter waveguides into soils or materials that other TDR equipment can't get. You can purchase your slammer with waveguide 10 cm (3.39in) , 20 cm (7.87in), 30 cm (11.81in), 40 cm (15.74in), 50 cm (19.68in) or 60 cm (23.6in) long. The removable 2.5 lb sliding hammer can be used to insert waveguides under the most difficult of conditions. All electronics are solid state "G" force rugged to withstand the harshest of punishment.

**SPECIFICATIONS:** Specify length of probes at the time of purchase use "L" length designations below. "6101L SLAMMER PROBE, with connecting cable and hammer "L" = Waveguide length for 6009L Waveguide select 10, 20,30,40,50 or 60cm long. ORDER EXAMPLE to purchase a 6101 with 40cm long wave guides order : 6101L40 SLAMMER PROBE, 40 cm long waveguide

**ACCESSORIES**  
6009L SLAMMER WAVEGUIDES L= Waveguide Length, L10=10cm, L20=20cm,L30=30cm, L40=40cm, L50=50cm, L60=60cm specify your "L" Length



## TRASE TDR ACCESSORIES

### 6005TLC BURIABLE WAVEGUIDES

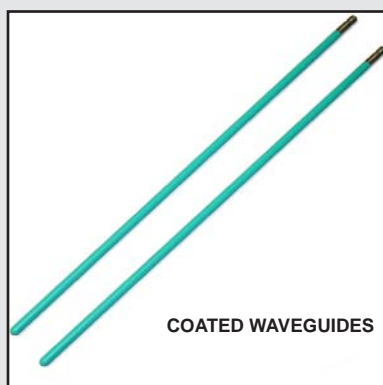
**When you want to know what's going on underground**

The 6005, is perhaps our best selling probe type is the one that it can be buried at great depths or distances while making your volumetric moisture readings. It's the model to use if you have a multiplexer. The waveguide come in several sizes and conditions so that you have the widest selection possible. Waveguides fabricated from stainless steel come in sizes of 10cm., 20cm., 30cm.,40cm.,50cm.,for 60cm. either "U" uncoated or "C" coated. The 5cm(1.97in.) width spacing assures a wide area of influence in making your measurements. The coated "C" waveguides have a polymer coating that allows for measurements in very saline conditions that prohibit other types of measurement with standard waveguides. 6005 standard connector lengths are 2 meters (6.56 ft), but can be fabricated to your special needs.

**SPECIFICATIONS:** Cable length for all waveguide is 2 m (6.56ft) of a "C" =02 example a 6005TUL20C02 uncoated 20cm long.  
6005TLC BURIABLE WAVEGUIDES, You must specify the type, U=Uncoated or C=Coated, and length of waveguide, 10,20,30,40,50 or 60cm L10=10cm, L20=20cm L30=30cm, L40=40cm, L50=50cm, L60=60cm

ORDER EXAMPLE if you'd like to purchase a 30cm long, coated buriable waveguide you'd order 6005TCL30C02

The 6111 Mini-Buriable Waveguide is special small version of the 6005 series designed for use in making near-surface shallow measurements, and in laboratory column studies. The rods are 8 cm (3.14 in) long, with a 2.5 cm (.984 in.) spacing between the outer rods, 3 m (9.84ft) cable length.



### 6008TL STANDARD WAVEGUIDE SETS

**Waveguide Handle probes (waveguides), inexpensive, long lasting for permanent or portable use**

These are the waveguides used with the standard Waveguide Connector Handle found with the 6050XI and 6050X3. Fabricated from .250 in(.635cm) diameter stainless steel stock to make sure that over time corrosion for permanent installations won't become a factor in your readings. Special undercuts at the top of each probe assure the proper fit and holding capacity when used in Soilmoisture's Waveguide Handle. They come 2 to a set.

**SPECIFICATIONS**

6008TL STANDARD WAVEGUIDE SET – a set of 2ea

You must specify the type, U=Uncoated or C=Coated, and length of waveguide, 10,20,30,40,50 or 60cm L10=10cm, L20=20cm L30=30cm, L40=40cm, L50=50cm, L60=60cm ORDER EXAMPLE if you'd like to purchase a 30cm long, coated standard waveguide you'd order 6008TCL30



## 7005L02 BLUETOOTH ADAPTER

### Wireless connectivity from Trase to desktop, laptop or Palm PDA via Bluetooth

Our new Bluetooth module for Trase systems allows you to wirelessly connect between a Trase and any other Bluetooth enabled desktop, laptop or Palm PDA. This Class 1 Bluetooth device connects your Trase unit wirelessly to your host device either in the field or lab. 4 AA batteries provide power for days of unattended use even where there is no power available on site. You can easily see if your Trase is connected to, and communicating with, the Bluetooth module, and that power is on, simply look in the window. This new module supports all Bluetooth wireless enabled Palm devices running Trase Term applications or with any Bluetooth enabled Laptop or Desktop PC's running WinTrase Software. Enjoy the freedom and ease of working in a cable free environment. Stop being forced to buy yet another adapter so that your Trase system will communicate with the newest computer manufacturer's latest I/O port arrangement. Solve the problem permanently by making life easy and eliminating it all together.

#### SPECIFICATIONS:

7005L02 BLUETOOTH ADAPTER, comes complete with battery powered (4AA) Bluetooth class 1 link to the Trase RS-232 serial port.  
3.75" (9.53cm) high x 2.65" (6.73cm) wide x 1.75 (4.45cm) thick  
7005L02K1 Includes Palm Tungsten, equivalent or better.



7005L02K1

## 7010GSM - GPRS/GSM WIRELESS MODEM 7110CDMA - CDMA WIRELESS MODEM

### Connect to anywhere in the world via the Internet, use your GSM or CDMA carrier

The 7010 Wireless Modems configured and supplied in two varieties. The "D" version for domestic (US and Canada) users and the "F" model for those customers outside the United States or Canada. The modem is perfect for remote locations where there may not be dedicated land line access to phones but where an authorized carrier such as T-Mobile, AT&T, Verizon, Orange or other local carrier supplies wireless connectivity for mobile or cellular phones. If you're in a zone serviced by either CDMA or GPRS/GSM wireless coverage and want inexpensive coverage over time you might want to consider our 7110 series of wireless modems. In either case you'll need to sign up for wireless data coverage and in the case of GSM secure an activated SIM card as well. We caution that all carriers MUST support a consistent and reliable CSD protocol—"Circuit Switched Data" a signal sequence for interconnecting digital non-voice devices. If you're unsure call us. This is the perfect remote access accessory for Trase Systems in the field. A practical, inexpensive solution to running a high cost dedicated phone line to a remote location. AT command set is automatically configured to provide consistent and reliable connections. No difficult key switches or byte tweaking we've done it all for you. Add this accessory to an existing Trase unit to provide remote access or have us build a full Trase system with this included.

#### SPECIFICATIONS:

7110GSM D WIRELESS MODEM, GSM, Domestic Version, complete with software modem hardware 2.30" wide (5.842cm) x 3.75" long (9.53cm) x 1.00" thick (2.54cm)  
7110GSM F WIRELESS MODEM, GSM, Foreign Version, complete with software modem hardware 2.30" wide (5.842cm) x 3.75" long (9.53cm) x 1.00" thick (2.54cm)  
7110CDMA D WIRELESS MODEM, CDMA, Domestic Version, complete with software modem hardware 2.30" wide (5.842cm) x 3.75" long (9.53cm) x 1.00" thick (2.54cm)  
7110CDMA F WIRELESS MODEM, CDMA, Foreign Version, complete with software modem hardware 2.30" wide (5.842cm) x 3.75" long (9.53cm) x



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## 3115PGV COMPACT PLANT WATER STATUS CONSOLE



### Economical, field portability, with case and special "high point" gauge

When you're out in the early morning or mid day taking plant water stress readings you want something that's light, compact and foolproof. That's our newest 3115 Plant Water Status series. Mounted to a 4 wheeler or back of a pick-up truck this is built for years of field use in all types of weather. Rugged case protects the heavy duty 5" (12.7 cm) high pressure vessel fabricated from thick wall stainless steel 3.25 in (8.26 cm) OD and 2.73 in (6.93 cm) ID. The system includes Soilmoisture's unique -solid stock -"Cam Locking" stainless steel G4 type specimen holder, with complete set of soft silicone rubber grommets for the quickest reading around. Operates 0-40 Bars and uses our unique 4in. (10.16 cm) dia. readout gauge that has our special "high point" indicator feature - it retains the highest pressure reached prior to shut off. A real help in remembering your reading after exhausting the pressure vessel. Comes complete with a quick-connect coupling, high pressure regulator, and selection of air tanks meeting DOT 3AL2216 requirements. Everything you'll need to get you measuring plant water status the day it arrives.

#### SPECIFICATIONS:

ORDERING A 3115P40 - 40 BAR PLANT WATER STATUS CONSOLE - Please select from the different specimen holders and pressure in ordering your unit. G4 - Standard Specimen Holder for most plants, G2 - Broad Leaf plants and grains.  
 V22 - A tank that holds 22 cu ft. of compressed air ( size and weight of tank)  
 V33 - A tank that holds 33 cu ft. of compressed air (size and weight of tank)  
 EXAMPLE IS A 3115P40 that has a G4 Specimen Holder and 33 cu ft tank  
 PLEASE ORDER 3115P40G4V33

## 3005HGPL PLANT WATER STATUS CONSOLE WITH TANK

### The "original" PWSC, compact, large 6" swivel dial, sturdy construction



3005H07G4P40L08

The original, and perhaps best instrument around for taking numerous readings quickly, accurately and with precision. The only commercial plant water series instruments having quick "cam lock" sealing features, a swiveling super large 6" dial for easy reading in all types of sunlight conditions, and our "speedy" grommet insert closure make it a premium value. These all contribute to a super easy way to get your sample from shrub, tree or vine to measurement station. With the 3005 tank type console you have the widest selection possible from pressure vessel height of 7" (18 cm) to 20" (51 cm). two specimen holder types, G4 for either round stemmed plants or a G2 for broad leafed plants, two operating pressure ranges, 0 to 40 bars and 0 to 80 bars, and legs from 4" to 32" long. Fabricated from stainless steel for years of use, to the incorporated cutting board and stand you simply can't find a better more reliable instrument.

#### SPECIFICATIONS:

3005HGBL COMES IN MANY VARIETIES AND OPTIONS

A FAVORITE IS THE 3005H07G4B40L08 (Previously a 3005-1412) has a 7" high Pressure Vessel, 3015G4 Specimen Holder, 0 to 40 bar range, and set of 8" legs. In making a selection to purchase select from the following:  
 H = Pressure Vessel Height in Inches H07= 7 in. high, H12=12 in. high, H20=20 in high  
 G= The Type of Specimen Holder, G4= For round stemmed plants G2= Broad leafed plants  
 P= Operating Pressure Max. P40 = 40 Bars max., P80 = 80 Bars max.  
 L= Leg Lengths for stand, L04=4 in. legs, L08=8 in. legs, L32 32 in. legs.  
 EXAMPLE IS A 3005 with 7" high pressure vessel, type G4 Specimen Holder, 40 Bar max and 32" legs would be ordered  
 3005H07G4B40L32 - Approx. Wt. 35.83lbs (16.25 Kg)





## 3000HGBL PLANT WATER STATUS CONSOLE, NO TANK

### The "original" PWSC, compact, large 6" swivel dial, sturdy construction

The 3000 is the non tank model 3005 providing all the same features in a tank-less configuration. Like the original, it's perhaps the best instrument around for taking numerous readings quickly, accurately and with precision. The only commercial plant water series instrument having quick "cam lock" sealing features, a swiveling super large 6" dial for easy reading in all types of sunlight conditions, and our "speedy" grommet insert closure make it a premium value. These all contribute to a super easy way to get your sample from shrub, tree or vine to measurement station. With the 3000 type console you have the widest selection possible from pressure vessel height of 7" (18 cm) to 20" (51 cm) two specimen holder types, G4 for either round stemmed plants or a G2 for broad leafed plants, two operating pressure ranges, 0 to 40 bars and 0 to 80 bars, and legs from 4" to 32" long. Fabricated from stainless steel for years of use, to the incorporated cutting board and stand you simply can't find a better more reliable instrument.

#### SPECIFICATIONS:

3000HGBL COMES IN MANY VARIETIES AND OPTIONS

A FAVORITE IS THE 3000H07G4B40L08 (Previously a 3000-1412) has a 7" high Pressure Vessel, 3015G4 Specimen Holder, 0 to 40 bar range, and set of 8" legs. In making a selection to purchase select from the following:

H = Pressure Vessel Height in Inches H07= 7 in. high, H12=12 in. high, H20=20 in high  
 G= The Type of Specimen Holder, G4= For round stemmed plants G2= Broad leafed plants  
 P= Operating Pressure Max. P40 = 40 Bars max., P80 = 80 Bars max.  
 L= Leg Lengths for stand, L04=4 in. legs, L08=8 in. legs, L32 32 in. legs.

EXAMPLE IS A 3000 with 7" high pressure vessel, type G4 Specimen Holder, 40 Bar max and 32" legs would be ordered  
 3000H07G4B40L32 - Approx. Wt. 23.83lbs (10.81 Kg)



3000H20G4P40L08

## PLANT WATER ACCESSORIES

### 3015G2 BROAD LEAF SPECIMEN HOLDER

#### The specimen holder for broad leaf plants and stems

Constructed from solid stainless steel bar stock the 3015 with it's incorporated safety relief, provides unequalled lifelong service in making your measurements. Three set screws when pulled down, provide the light "squeeze" needed to seal but not break fragile broad leaves and stems. Support washers provide the backing to assure a uniform seal without disturbance to the plant being measured. Model 3015G2 is designed to accept blade-type leaves up to 1" (2.5 cm) in width. Comes with two support washers and four sealing plugs with 1" diameter having slots ranging from [ 0.984" x 0.094], [0.984" x 0.050"], blank and razor slit.

#### SPECIFICATIONS:

3015G2 BROAD LEAF SPECIMEN HOLDER, cam-lock, complete with 3017K1 plug set, support washers, Wt:1.96 lbs (.89 kgs)

#### ACCESSORY ITEMS

3017G2 PUCK GROMMET series see next page



### 3015G4 ROUND STEM SPECIMEN HOLDER

#### The general type specimen holder for most round stemmed plants

Constructed from solid stainless steel bar stock the 3015 with it incorporated safety relief, provides unequalled lifelong service in making your measurements. Hardened inserts in the stainless assure years of closures without thread wear or distortion. Our "quick seal" technique allows the fastest sealing in the industry. That assures a seal with just a turn or two on the compression ring. It's a seal within a seal. This is a general purpose specimen holder specifically designed for round stemmed plants to accept round petioles from .031in. (.079 cm) diameter to .500 in. (1.27cm) diameter, and short petioles .375 (.952 cm) long. It can also be used with blade-type leaves up to .500 in(1.27cm) wide, and on mid-vein of larger leaves. Comes with a full 3018 Grommet set made from soft, pliable inert silicon rubber with "Quick Seal" holding capacities for the following diameters: .062 in.(.157 cm), .125 in. (.317cm), .187 in.(.476 cm), and .250 (.635 cm) and blank sealing sleeves, and support washers with .250 in (.635cm) diameter hole and .140 in (.357 cm) diameter hole.

#### SPECIFICATIONS:

3015 G4 ROUND STEM SPECIMEN HOLDER, cam-lock, complete with 3018K1 grommet set, support washers Wt.2.13 lbs (.96 kgs)

#### ACCESSORIES

3018G4 QUICK SEAL GROMMETS series, see next page

3019G4 ROUND GROMMET series, see next page



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## PLANT WATER ACCESSORIES

### 3017G2 PUCK GROMMETS FOR BROAD LEAFS

#### G2 Grommets made specifically for gentle sealing on broad leaf specimens

If you're trying to seal on a broad leaf plant you know that it's a tricky task to seal the plant for pressurization while not cutting off the flow you want to measure. The 3015G2 Specimen Holder was designed to do just that to gently compress the whole "soft puck" sealing grommet against all the large surface area that a broad leaf presents. With 3 compressing screws the 3015G2 top compression element presses firmly on the puck squeezing close the slotted puck around the leaf from all directions. Made from food grade 30 shore, white, soft silicon rubber. It's about as clean and pliable as possible for this delicate job. The full set includes 3017G2WBLK, a blank puck grommet for your custom slot needs that you can cut yourself; the 3017G2 WRZR a puck grommet with a razor cut x .989 in long, the 3017G2W050 = .050 in. slot x .989 in long, 3017G2W090=.090 in slot x .989 long. They can be purchased in packages "PKG" of 5 ea. or the complete set including support washers as 3017G2K. For more details see our web site.

#### SPECIFICATIONS:

Individual Puck Grommets  
 3017G2WBLKPKG05 PUCK GROMMET, BLANK , 5ea., 30 shore, white  
 3017G2WRZRPKG05 PUCK GROMMET, RAZOR CUT, 5ea., 30 shore, white  
 3017G2W050PKG05 PUCK GROMMET, .050 (1.27mm) SLOT, 5ea., 30 shore, white  
 3017G2W090PKG05 PUCK GROMMET, .090 (2.29mm) SLOT, 5ea., 30 shore, white

Full Set including support washers  
 3017G2K1 PUCK GROMMET, FULL SET includes 1ea. all grommets and support washers



### 3018G4 "QUICK SEAL" ROUND STEM GROMMETS

#### The G4 "Sleeved " Grommets for variable stem sizes, a need to seal quickly

On a number of occasions you'll be working with a wide variety of stem sizes from tree base to top canopy and you want to get a reading as quickly as possible. The 3018G4 series was made for use with the 3015G4 Specimen Holder and is just for that type of occasion. It's the best fit for stems as small as .062 in. ( 1.57 mm) to .250 in. (6.35 mm). All Quick Seal grommets are .500 in (1.27cm) outside diameter with differing interior sealing diameters. Simply slip the appropriate Quick Seal sleeve over the stems place it in the compressing grommet, a couple of turns and you're sealed in a matter of seconds. Made from food grade 30 shore, white soft silicon rubber it's as clean and pliable as possible for the delicate stem sealing needs. The compression Grommet has a .500 in. (1.27cm) Inside Diameter and is used to compress the sealing sleeves as the 3015G4 specimen holder is turned. For more details see our web site.

#### SPECIFICATIONS:

Individual "Quick Seal" Grommet Sealing Sleeves – Compressing Grommet  
 3018G4DBLKPKG05 SEALING SLEEVE, Blank –no hole, 30 shore, white  
 3018G4D062PKG05 SEALING SLEEVE, .062 (1.57mm) Dia. Seal, 5ea., 30 shore, white  
 3018G4D125PKG05 SEALING SLEEVE, .125 (3.18mm) Dia. Seal, 5ea., 30 shore, white  
 3018G4D187PKG05 SEALING SLEEVE, .187 (4.76mm) Dia. Seal, 5ea., 30 shore, white  
 3018G4D250PKG05 SEALING SLEEVE, .250 (6.35mm) Dia. Seal, 5ea., 30 shore, white  
 3019G4D500PKG05 COMPRESSING GROMMET, .500 in ID, 5ea., 30 shore, white

Sets of Grommets and support washers  
 3018G4K1 FULL SET, includes all sealing sleeves, compressing grommet and support washers  
 3018G4K2 SEALING SLEEVE SET, includes all sealing sleeves only  
 3018G4K3 SEALING SLEEVE SET WITH COMPRESSING GROMMET  
 3018G4K4 SUPPORT WASHER SET, a set of all support washers





## PLANT WATER ACCESSORIES

### 3019G4 COMPRESSION GROMMETS FOR ROUND STEMS

#### G4 Grommets used when your sealing on a typical uniform stem size

Made specifically for the 3015G4 Specimen Holder these are durable and heavy duty grommets for repeated use of a similar size petioles and stems. Whether you're working with pine needles or vines often they're fairly uniform in size and diameters and can be quickly fitted to one of the many 3019G4 compression grommets. There's no need for sleeves or additional adjustments when you're working with similar size plant stocks just place the stem into the compression grommet, turn down on the sealing knob of the 3015G4 specimen holder and you're ready to apply the pressure test. Made from food grade 30 shore, white, soft silicon rubber the grommets are about as clean and pliable as possible for this delicate job. Sealing sizes range from 1/16" - .125 in (1.57mm) to a full 1/2" - .500 in. (1.27cm)., there is even a blank for you to create your own seal. They can be purchased separately or as part of a set. For more details see our web site.

#### SPECIFICATIONS:

Individual Compression Grommets

3019G4DBLKP5 COMPRESSION GROMMET, BLANK, 5ea., 30 shore, white	
3019G4D062PK5 COMPRESSION GROMMET, .062 in.(1.57 mm)	dia. Seal, 5ea., 30 shore, white
3019G4D093PK5 COMPRESSION GROMMET, .093 in.(2.38 mm)	dia. Seal, 5ea., 30 shore, white
3019G4D125PK5 COMPRESSION GROMMET, .125 in.(3.16 mm)	dia. Seal, 5ea., 30 shore, white
3019G4D187PK5 COMPRESSION GROMMET, .187 in.(4.76 mm)	dia. Seal, 5ea., 30 shore, white
3019G4D375PK5 COMPRESSION GROMMET, .375 in.(9.52 mm)	dia. Seal, 5ea., 30 shore, white
3019G4D500PK5 COMPRESSION GROMMET, .500 in.(1.27 cm)	dia. Seal, 5ea., 30 shore, white

Full Set including support washers

3019G4K1 SMALL DIAMETER SEALING SET, includes D060 to D187, round, compression grommets, and support washers.

3019G4K11 LARGE DIAMETER SEALING SET, includes D375 & D500 round compression grommets, and support washers.

3019G4K12 FULL SEALING SET, includes all round sealing sizes of compression grommets, and all support washers.



### 3019G4U SPECIALITY GROMMETS FOR UNUSUAL STEM CONFIGURATIONS

#### Special G4 Grommets used when you need to seal the unusual stem

Perhaps it's sorghum or some other stem configuration that's unusual, We may already have the grommet to fit the situation. Right now we have three distinct types the "TE" Cat's Eye configuration with several to select from. The 3019G4UTE01 is a small .062 in (1.57 mm) x .250 in. (6.35 mm) long, The 3019G4TEU02 is a larger version .125 in. (3.16 mm) wide x .500 in (1.27 cm) long. The "TA" Arc or Half Moon configuration we have one item that is .125 in (3.16 mm) wide at the top of the arch and .500 in (1.27 cm) long the 3019G4TA01. The "TS" typical slot configuration has one grommet the 3019G4TS01 a .050 in (1.27 mm) wide slot x .500 in (1.27 cm) long. Made from food grade 30 shore, white, soft silicon rubber the grommets are about as clean and pliable as possible for this delicate job. They can be purchased separately or in sets. For more details see our web site.

#### SPECIFICATIONS:

Individual Speciality Grommets

3019G4UTE01PK5 SPECIALITY GROMMET, Eye Type	01 seal,	5ea.,	30 shore, white
3019G4UTE02PK5 SPECIALITY GROMMET, Eye Type	02 seal,	5ea.,	30 shore, white
3019G4UTA01PK5 SPECIALITY GROMMET, Arc Type	01 seal,	5ea.,	30 shore, white
3019G4UTS01PK5 SPECIALITY GROMMET, Slot Type	01 seal,	5ea.,	30 shore, white

Full Set including support washers

3019G4UK1 COMPLETE SET OF SPECIALITY GROMMETS, includes all grommets and support washers

3019G4UK2 SPECIALITY GROMMET SET, grommets only no support washers.

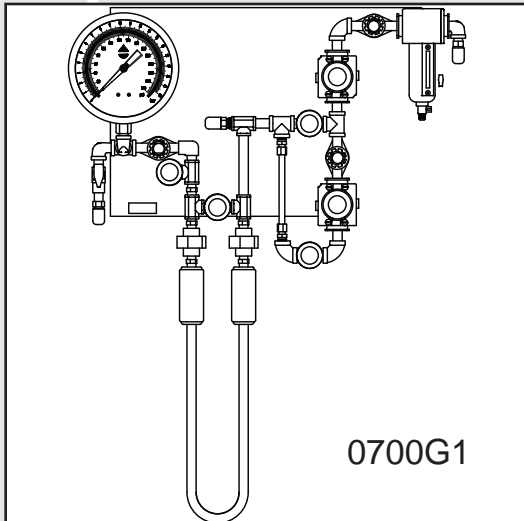


**FOR THE COMPREHENSIVE SET OF ALL G4 TYPES OF GROMMETS AND WASHERS PLEASE ORDER 3019K3**

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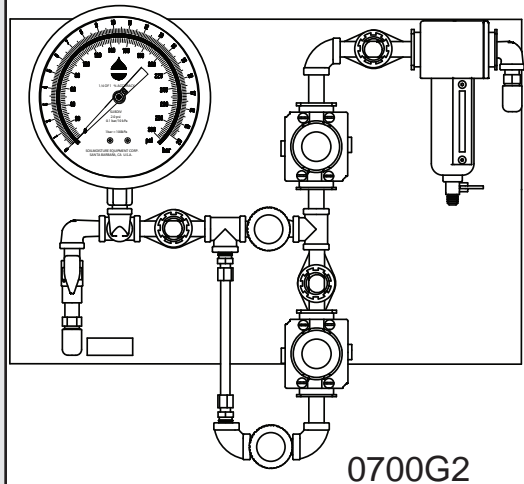
### 0700 SERIES PRESSURE MANIFOLD



0700G1

The Model 0700G1 Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. . Designed for use with the Model 1000 Pressure Membrane Extractor, it incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required for operation - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars). Double regulation is provided in the 5 to 150 psi (0.3 to 10 bars) range. Readout pressure test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals.

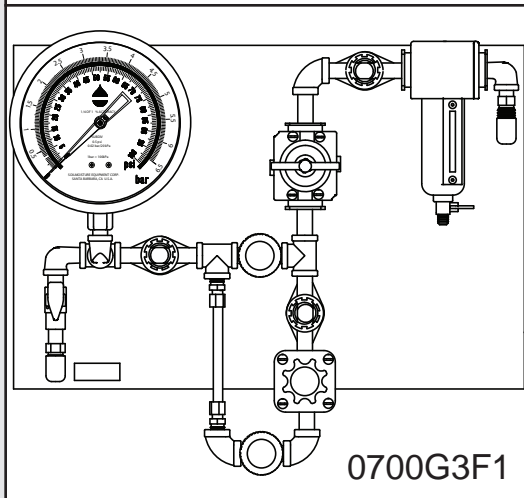
**SPECIFICATION:**  
 0700G2 PRESSURE MANIFOLD  
 Weight: 18.00 Lbs(8.16 kgs)  
 Dimensions: 26" X 19" X 11" (66 cm X 48.25 cm X 28 cm)



0700G2

The Model 0700G2F1 Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. (The Connecting Hose, 0779G1, from the manifold to the compressor is ordered separately). Designed for use with the Model 1500 15 Bar Pressure Plate Extractor. Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars). Double regulation is provided in the 5 to 150 psi (0.3 to 10 bars) range. Readout pressure test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals.

**SPECIFICATION:**  
 0700G2F1 PRESSURE MANIFOLD  
 Weight: 14.51 Lbs(6.58 kgs)  
 Dimensions: 30" X 27" X 11" (76.2 cm X 68.6 cm X 28 cm)



0700G3F1

The Model 0700G3F1 Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. (The Connecting Hose, 0779G1, from the manifold to the compressor is ordered separately). Precise low-pressure control manifold designed for use with the Model 1600 5 Bar Pressure Plate Extractor. Output pressure can be regulated from 3 to 60 psi (0.2 to 4 bars). Double regulation is provided. Readout pressure test gauge is graduated from 0 to 60 psi (0 to 4 bars) in 0.2 psi and 0.02 bar intervals.

**SPECIFICATION:**  
 0700G3F1 PRESSURE MANIFOLD  
 Weight: 12.40 Lbs(5.62 kgs)  
 Dimensions: 24" X 24" X 11" (61 cm X 61 cm X 28 cm)

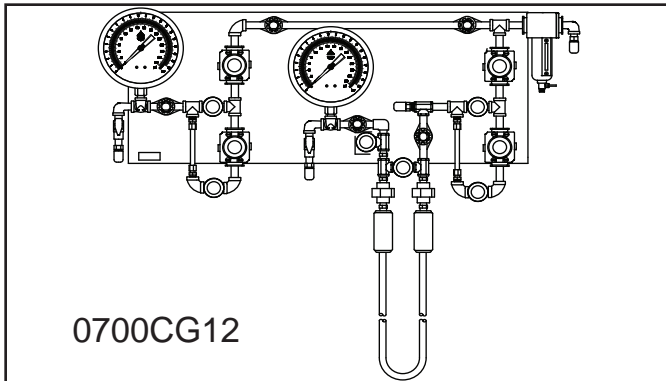


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# AIR DISTRIBUTION & SYSTEM MANIFOLD

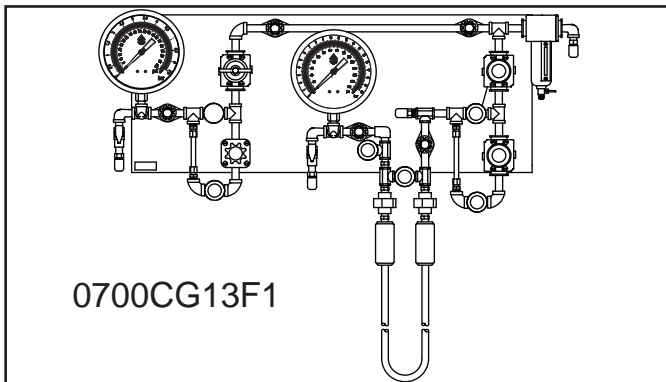
## 0700 SERIES PRESSURE MANIFOLD



**The Model 0700CG12** manifold combines the 0700G1 and 0700G2 manifolds and allows operation of both the 1000 Pressure Membrane Extractor and the 1500F1 15 Bar Pressure Plate Extractor. This combination manifold incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required for operation - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars), and double regulation is provided in the 5 to 150 psi (0.3 to 10 bars) range. Readout pressure test gauges are graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals.

**SPECIFICATION:**

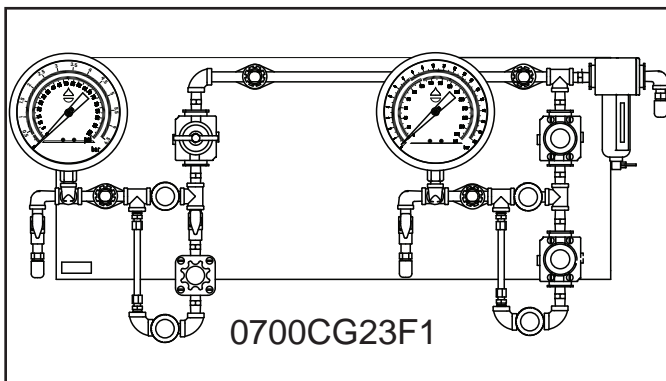
0700CG12 manifold to operate the 1500F1 15 bar pressure plate extractor and the 1000 15 bar pressure membrane extractor.  
 Weight: 29.75 Lbs (13.50 kgs)  
 Dimensions: 35" X 23" X 11" (88.9 cm X 58.4 cm X 28 cm)



**The Model 0700CG13F1** manifold combines the 0700G1 and 0700G3F1 manifolds and allows operation of both the 1000 Pressure Membrane Extractor and the 1600 5 Bar Pressure Plate Extractor. This combination manifold incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required for operation - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 75 psi (0.1 to 5 bars). Double regulation is provided. The 300 psi readout test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. The 100 psi readout test gauge is graduated from 0.5 psi and .02 bar intervals.

**SPECIFICATION:**

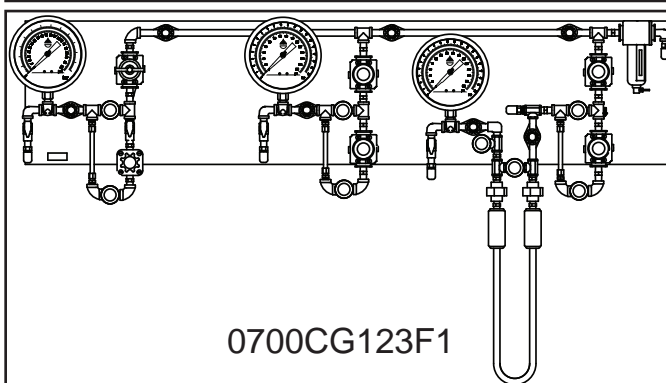
0700CG13F1 PRESSURE MANIFOLD TO OPERATE the 1000 15 bar pressure membrane extractor and the 1600 5 bar pressure plate extractor.  
 Weight: 27.00 Lbs (12.25 kgs)  
 Dimensions: 35" X 23" X 11" (88.9 cm X 58.4 cm X 28 cm)



**The Model 0700CG23F1** manifold combines the 0700G2 and 0700G3F1 manifolds and allows operation of the 1500 15 Bar Pressure Plate Extractor and the 1600 5 Bar Pressure Plate Extractor. Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 75 psi range (0.1 to 5 bars). Double regulation is provided. The 300 psi readout test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. The 100 psi readout test gauge is graduated from 0.5 psi and .02 bar intervals.

**SPECIFICATION:**

0700CG23F1 PRESSURE MANIFOLD to operate the 1500F1 15 bar pressure plate extractor and the 1600 5 bar pressure plate extractor.  
 Weight: 21.92 Lbs (9.94 kgs)  
 Dimensions: 38" X 19" X 14" (96.5 cm X 48 cm X 35.6 cm)



**The Model 0700CG123F1** manifold combines the 0700G1, 0700G2, and 0700G3F1 manifolds and allows operation of the 1000 Pressure Membrane Extractor, the 1500 15 Bar Pressure Plate Extractor, and the 1600 5 Bar Pressure Plate Extractor. This combination manifold incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required for operation - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 75 psi range (0.1 to 5 bars). Double regulation is provided. The 300 psi readout test gauges are graduated from 0 to 300 psi. The 100 psi readout test gauge is graduated from 0.5 psi and .02 bar intervals.

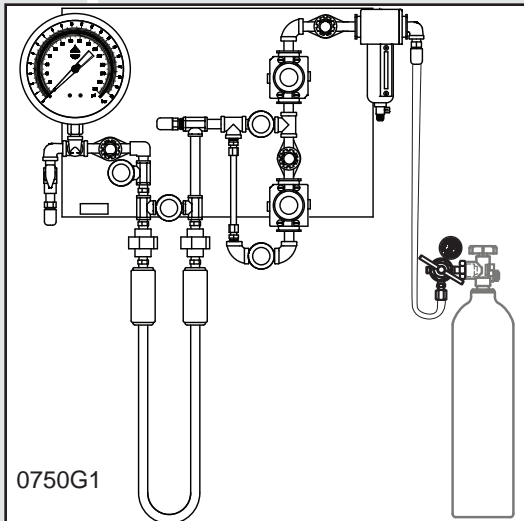
**SPECIFICATION:**

0700CG123F1 PRESSURE MANIFOLD to operate the 1500F1 15 bar pressure plate extractor and the 1600 5 bar pressure plate extractor the 1000 15 bar pressure membrane extractor  
 Weight: 42.00 Lbs (19.05 kgs)  
 Dimensions: 56" X 23" X 11" (142 cm X 58.4 cm X 28 cm)

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### 0750 SERIES PRESSURE MANIFOLD

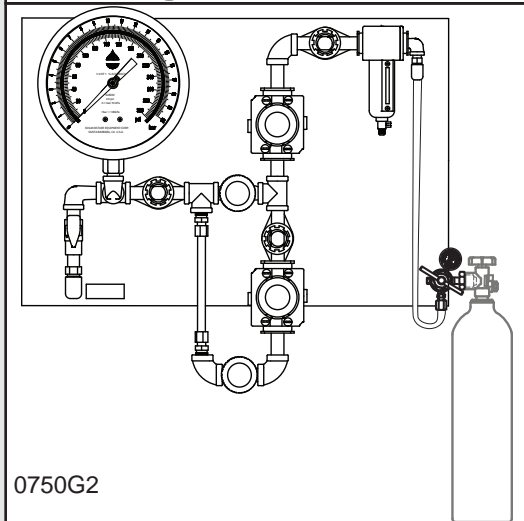


0750G1

**The Model 0750G1** Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. Designed for use with the Model 1000 Pressure Membrane Extractor, it incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required for operation - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars). Double regulation is provided in the 5 to 150 psi (0.3 to 10 bars) range. Readout pressure test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. Includes Gas Tank Regulator 0767P0300G1

**SPECIFICATIONS:**

0750G1 PRESSURE MANIFOLD to operate the model 1000 15 bar pressure membrane extractor.  
 Weight: 18.00 Lbs (8.16 kgs)  
 Dimensions: 26" X 19" X 11" (66 cm X 48.25 cm X 28 cm)

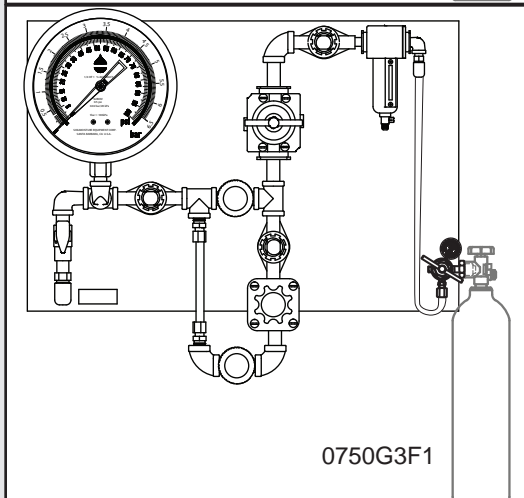


0750G2

**The Model 0750G2** Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. Designed for use with the Model 1500F1 15 Bar Pressure Plate Extractor. Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars). Double regulation is provided in the 5 to 150 psi (0.3 to 10 bars) range. Readout pressure test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. Includes Gas Tank Regulator 0767P0300G1

**SPECIFICATIONS:**

0750G2 PRESSURE MANIFOLD to operate the model 1500F1 15 bar pressure plate extractor.  
 Weight: 14.51 Lbs (6.58 kgs)  
 Dimensions: 30" X 27" X 11" (76.2 cm X 68.6 cm X 28 cm)



0750G3F1

**The Model 0750G3F1** Pressure Manifold is designed for regulating and monitoring the pressure supplied to pressure extractors. It is comprised of an air filter, pressure regulators, control valves, and test gauges. Mounted by standoffs to a 3/4" (19 mm) thick baseboard suitable for mounting on a laboratory wall. Precise low-pressure control manifold designed for use with the Model 1600 5 Bar Pressure Plate Extractor. Output pressure can be regulated from 1 to 75 psi (0.1 to 5 bars). Double regulation is provided. Readout pressure test gauge is graduated from 0 to 100 psi (0 to 6.5 bars) in 0.5 psi and 0.02 bar intervals. Includes Gas Tank Regulator 0767P0300G1

**SPECIFICATIONS:**

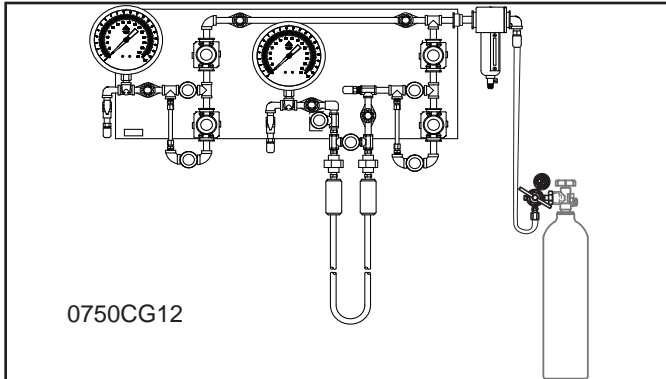
0750G3F1 PRESSURE MANIFOLD to operate the model 1600 5 bar pressure plate extractor.  
 Weight: 12.40 Lbs (5.62 kgs)  
 Dimensions: 24" X 24" X 11" (61 cm X 61 cm X 28 cm)





# AIR DISTRIBUTION & SYSTEM MANIFOLD

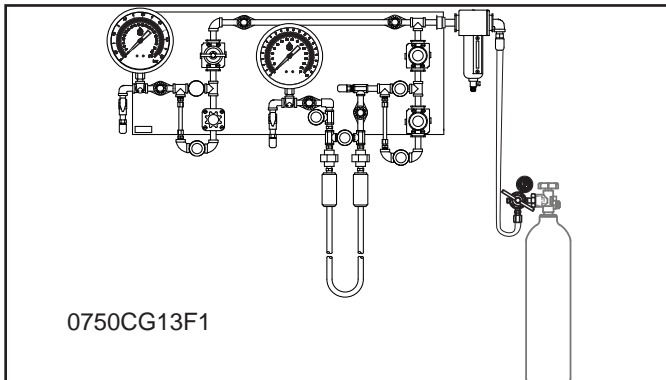
## 0750 SERIES PRESSURE MANIFOLD



The **Model 0750CG12** Pressure Manifold combines the 0750G1 and 0750G2 manifolds and allows operation of the 1000 Pressure Membrane Extractor and the 1500F1 15 Bar Pressure Plate Extractor. Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars). Incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required - mercury not supplied). Double regulation is available on the manifold, without changing the Gas Tank Regulator 0767P0300G1 for 750 manifolds. The readout test gauges are graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals.

**SPECIFICATIONS:**

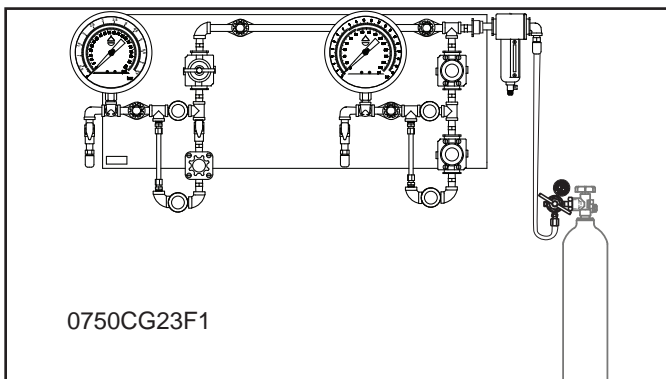
0750CG12 PRESSURE MANIFOLD to operate 15 bar membrane extractor and 15 bar pressure plate extractor. Tank Regulator 0767P0300G1 and connection hose included.  
 Weight: 29.75 Lbs (13.50 kgs)  
 Dimensions: 35" X 23" X 11" (88.9 cm X 58.4 cm X 28 cm)



The **Model 0750CG13F1** Pressure Manifold combines the 0750G1 and 0750G3F1 manifolds and allows operation of the 1000 Pressure Membrane Extractor and the 1600 5 Bar Pressure Plate Extractor. Incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs of mercury is required - mercury not supplied). Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 150 psi (0.1 to 10 bars). Double regulation is available on the manifold, without changing the Gas Tank Regulator 0767P0300G1 for 750 manifolds. The 300 psi readout test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals.

**SPECIFICATIONS:**

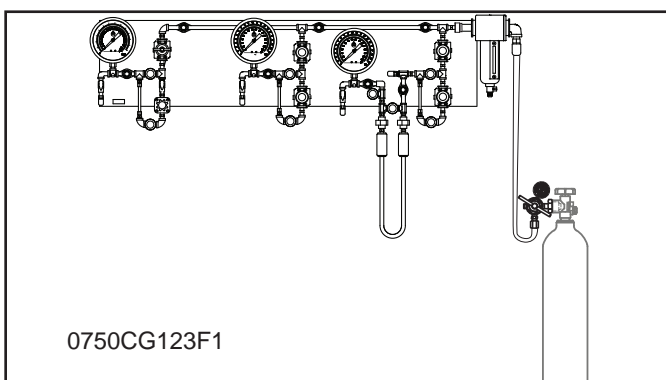
0750CG13F1 PRESSURE MANIFOLD to operate 5 Bar Pressure Plate Extractor and 15 bar pressure membrane extractor. Tank Regulator 0767P0300G1 and connection hose included.  
 Weight: 27.00 Lbs (12.25 kgs)  
 Dimensions: 35" X 23" X 11" (88.9 cm X 58.4 cm X 28 cm)



The **Model 0750CG23F1** Pressure Manifold combines the 0750G2 and 0750G3F1 manifolds and allows operation of the 1500F1 15 Bar Pressure Plate Extractor and the 1600 5 Bar Pressure Plate Extractor. Output pressure can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 150 psi (0.1 to 10 bars). Double regulation is available on the manifold, without changing the Gas Tank Regulator 0767P0300G1 for 750 manifolds. The 300 psi readout test gauge is graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. The 100 psi readout test gauge is graduated from 0.5 psi and .02 bar intervals.

**SPECIFICATIONS:**

0750CG23F1 PRESSURE MANIFOLD to operate 5 Bar Pressure Plate Extractor and 15 bar pressure plate extractor. Tank Regulator 0767P0300G1 and connection hose included.  
 Weight: 21.92 Lbs (9.94 kgs)  
 Dimensions: 38" X 19" X 14" (96.5 cm X 48 cm X 35.6 cm)



The **Model 0750CG123F1** Pressure Manifold combines the 0750G1, 0750G2, and 0750G3F1 manifolds and allows the operation of the 1000 Pressure Membrane Extractor, the 1500F1 15 Bar Pressure Plate Extractor, and the 1600 5 Bar Pressure Plate Extractor. Incorporates the 0769G1 Mercury Differential Regulator (0.6 lbs. of mercury is required - mercury not supplied). Output pressures can be regulated from 10 to 250 psi (0.7 to 16 bars) and from 1 to 150 psi (0.1 to 10 bars). Double regulation is available on the manifold, without changing the Gas Tank Regulator 0767P0300G1 for 750 manifolds. The 300 psi readout test gauges are graduated from 0 to 300 psi (0 to 20 bars), in 2 psi and 0.1 bar intervals. The 100 psi readout test gauge is graduated from 0.5 psi and .02 bar intervals.

**SPECIFICATIONS:**

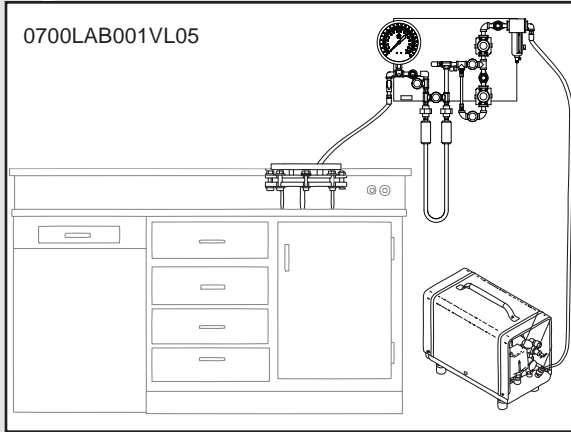
0750CG123 PRESSURE MANIFOLD to operate the 5 Bar and 15 bar pressure plate extractor and 15 bar pressure membrane extractor. Tank Regulator 0767P0300G1 and connection hose included.  
 Weight: 42.00 Lbs (19.05 kgs)  
 Dimensions: 56" X 23" X 11" (142 cm X 58.4 cm X 28 cm)

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## Laboratory Systems

### LAB 0700 SERIES



The Model **0700LAB001VL05** is a complete porous membrane extraction system for the laboratory, specially suited for Shrink-swell soils, clays and specialty uses such as pulps, other mixes with low contact capabilities, etc. Designed to provide a "hold down bladder" that lightly presses on samples to assure good contact with the porous membrane interface material. Maximum extraction pressure is 15 Bar provided by Model 505V compressor. User must supply the mercury used in the mercury differential regulator (included in the 0700G1 Manifold) from local sources.

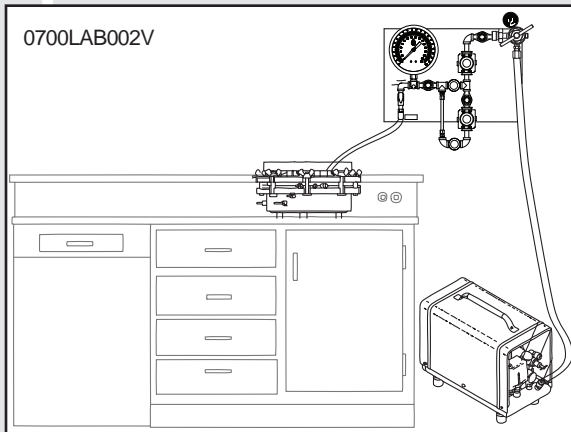
#### SPECIFICATIONS:

**0700LAB001VL05** 15 Bar Limit - with Lab Compressor - Comes Complete:

1.0 EA	0505V	20 BAR LABORATORY COMPRESSOR
1.0 EA	0700G1	MANIFOLD FOR 1000 EXTRACTOR ONLY
2.0 EA	0775L60	CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS
1.0 EA	1000	PRESSURE MEMBRANE EXTRACTOR
6.0 DZ	1041D12	CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN
1.0 EA	1080G1	PM HINGE, INCLUDES 1081 ADAPTER PLATE
1.0 EA	1090	TORQUE WRENCH & SOCKET FOR MODEL 1000
1.0 EA	1093	SOIL SAMPLE RETAINING RINGS, ONE DOZEN

0700LAB001V1L05 for 110 VAC compressor operations  
0700LAB001V2L05 for 220 VAC compressor operations

SHIPPING: 4 Boxes, Total Weight 203 lbs (92 Kg), Total Volume 12.24 cu ft (0.346 cu m).



The Model **0700LAB002V** is a complete porous plate extraction system for the laboratory. Extract water from a wide variety of soils where one is interested in plotting soil water retention samples to the "wilting point" accepted as 15 bars. Designed for a wide selection of uses to high pressures it comes with differing porous plates for low to high extraction sequences. The perfect starter system for a small commercial or private soils lab, or in teaching the fundamentals of developing "water retention curves" to students.

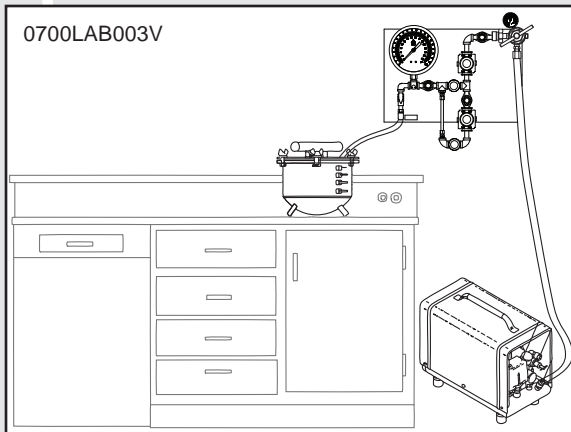
#### SPECIFICATIONS:

**0700LAB002V** - 15 Bar Limit - with Lab Compressor - Comes Complete:

1.0 EA	0505V	20 BAR LABORATORY COMPRESSOR
4.0 EA	0675B01M1	1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0 EA	0675B03M1	3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0 EA	0675B05M1	5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0 EA	0675B15M1	15 BAR PRESSURE PLATE CELL FOR EXTRACTOR
1.0 EA	0700G2	MANIFOLD FOR 1500 EXTRACTOR ONLY
1.0 EA	0775L60	CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS
1.0 EA	1080G1	PM HINGE, INCLUDES 1081 ADAPTER PLATE
4.0 EA	1093	SOIL SAMPLE RETAINING RINGS, ONE DOZEN
1.0 EA	1500F1	15 BAR PRESSURE PLATE EXTRACTOR, ONLY

0700LAB002V1 for 110 VAC compressor operations  
0700LAB002V2 for 220 VAC compressor operations

SHIPPING: 5 Boxes, Total Weight 258 lbs (117 Kg), Total Volume 17. Cu. ft. (0.48 cu m)



The Model **0700LAB003V** is a complete porous plate extraction system for the laboratory. The perfect system for developing "water retention" values for optimum plant growth ranges. Since optimal plant growth takes place in the 0.5 - 5 Bar range this system provides an entry level assemblage for these start-up needs.

#### SPECIFICATIONS:

**0700LAB003V** - 5 Bar Limit - with Lab Compressor - Comes Complete:

1.0 EA	0505V	20 BAR LABORATORY COMPRESSOR
4.0 EA	0675B01M1	1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0 EA	0675B03M1	3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0 EA	0675B05M1	5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
1.0 EA	0700G3F1	MANIFOLD, FOR RUNNING THE 1600 EXTRACTOR
1.0 EA	0776L60	CONNECTING HOSE 60", FOR 1250 & 1600 EXTRACTORS
4.0 EA	1093	SOIL SAMPLE RETAINING RINGS, ONE DOZEN
1.0 EA	1600	5 BAR PRESSURE PLATE EXTRACTOR, ONLY

0700LAB003V1 for 110 VAC compressor operations  
0700LAB003V2 for 220 VAC compressor operations

SHIPPING: 4 Boxes, Total Weight 187 lbs. (84.8 Kg), Total Volume 15.24 cu ft. (0.43 cu. m)





# Laboratory Systems

## LAB 0700 SERIES

The Model 0700LAB012VL05 is a complete membrane and porous plate extraction system for laboratory use. This is the system of those who will be working with differing samples that need to be brought to the 15 Bar level. The Model 1000 providing hold down capability for shrink /swell clays & low contact materials, the 1500F1 providing a large capacity for most other soil samples. An excellent choice for institutional, commercial or private, soils, and earth sciences labs working the full range of plant growth and water retention limits of study. User must supply the mercury used in the mercury differential regulator (included in the 0700G1 Manifold) from local sources.

### SPECIFICATIONS:

0700LAB012VL05 15 Bar Limit - with Lab Compressor - Comes Complete:

1.0	EA	0505V	20 BAR LABORATORY COMPRESSOR
4.0	EA	0675B01M1	1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B03M1	3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B05M1	5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B15M1	15 BAR PRESSURE PLATE CELL FOR EXTRACTOR
1.0	EA	0700CG12	MANIFOLD, FOR RUNNING BOTH 1000&1500F1 EXTRACTOR
3.0	EA	0775L60	CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS
1.0	EA	1000	PRESSURE MEMBRANE EXTRACTOR
6.0	DZ	1041D12	CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN
2.0	EA	1080G1	PM HINGE, INCLUDES 1081ADAPTER PLATE
1.0	EA	1090	TORQUE WRENCH & SOCKET FOR MODEL 1000
6.0	EA	1093	SOIL SAMPLE RETAINING RINGS, ONE DOZEN
1.0	EA	1500F1	15 BAR CERAMIC PLATE EXTRACTOR ONLY, 4 CELL CAP

0700LAB012V1L05 for 110 VAC compressor operations

0700LAB012V2L05 for 220 VAC compressor operations

SHIPPING: 6 Boxes, Total Weight 360 lbs (163 Kg), Total Volume 20.72 cu ft (0.587 cu m) .

The Model 0700LAB022V is a multiple porous plate extraction system for laboratory use. This system provides the ability to calibrate a high volume of samples that requires the full 15 Bar range. With 2 ea. 1500F1 Pressure Plate Extractors and a multitude of porous plates it allow you an optimum processing flexibility for a range of pressures(0-5 Bar, 0-15 Bar) and numerous soil types.

### SPECIFICATIONS:

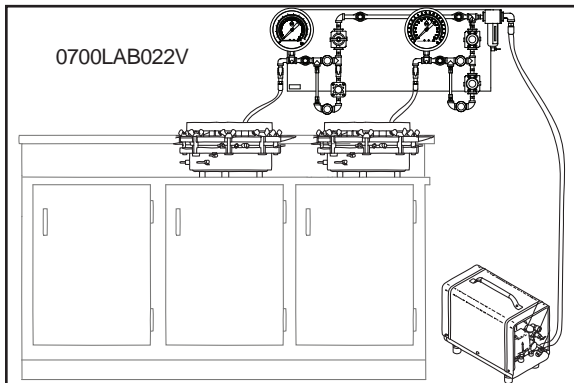
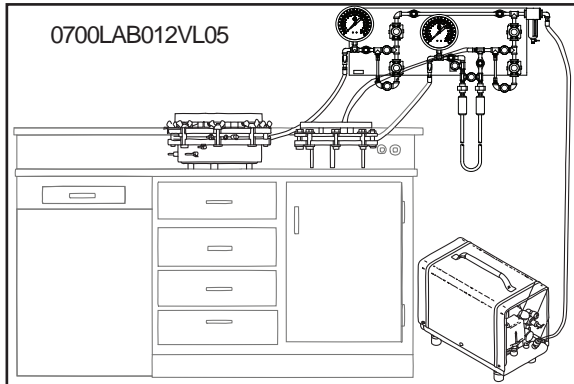
0700LAB022V 15 Bar Limit - with Lab Compressor - Comes Complete:

1.0	EA	0505V	20 BAR LABORATORY COMPRESSOR
4.0	EA	0675B01M1	1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B03M1	3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B05M1	5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
4.0	EA	0675B15M1	15 BAR PRESSURE PLATE CELL FOR EXTRACTOR
1.0	EA	0700CG22	MANIFOLD FOR 2 ea. 1500EXTRACTORS
2.0	EA	0775L60	CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS
2.0	EA	1080G1	PM HINGE, INCLUDES 1081ADAPTER PLATE
8.0	EA	1093	SOIL SAMPLE RETAINING RINGS, ONE DOZEN
2.0	EA	1500F1	15 BAR PRESSURE PLATE EXTRACTOR, ONLY

0700LAB022V1 for 110 VAC compressor operations

0700LAB022V2 for 220 VAC compressor operations

SHIPPING: 5 Boxes, Total Weight 325 lbs (147 Kg), Total Volume 16.29 cu ft. (0.461 cu m)



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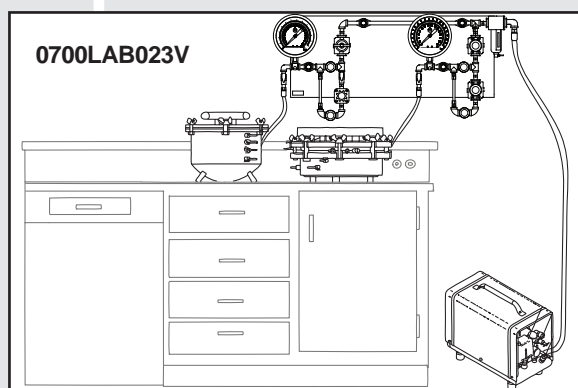


# LAB

# 700 COMPLETE SYSTEM

## Laboratory Systems

### LAB 0700 SERIES

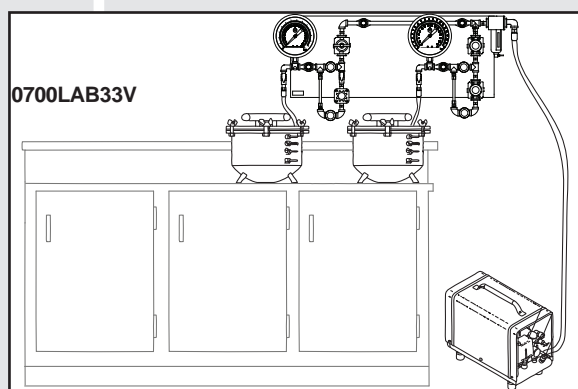


**The Model 0700LAB023V#** is a multiple porous plate extraction system for laboratory use. This is our most popular lab system providing capabilities for a variety of soils and conditions. The 1500 and 1600 extractors together provide ample flexibility and capacity for low or high water content extraction routines. The combination provides for 2 extractor units for optimum plant growth studies (0-5 Bar Water Retention Studies) while having 15 Bar capabilities as well.

**SPECIFICATIONS - 5 & 15 Bar Limit - with Lab Compressor - Comes Complete:**

- 1.0 EA 0505V# 20 BAR LABORATORY COMPRESSOR
- 4.0 EA0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B15M1 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 1.0 EA 0700G23F1 MANIFOLD, FOR RUNNING THE 1500 & 1600 EXTRACTOR
- 1.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS
- 1.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1500 EXTRACTORS
- 8.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN
- 1.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY
- 1.0 EA 1500F1 15 BAR PRESSURE PLATE EXTRACTOR, ONLY
- 1.0 EA 1080G1 PM HINGE, INCLUDES 1081ADAPTER PLATE 0700LAB023V1 for 110 VAC compressor operations  
0700LAB023V2 for 220 VAC compressor operations

# USER must specify V1 for 110 VAC or V2 for 220 VAC compressor operations  
SHIPPING - 6 Boxes, Total Weight 315 lbs.(142 Kg), Total Volume 21.08 cu ft.(.60 cu m)



**The Model 0700LAB033V#** is a multiple porous plate extraction system for laboratory use. This is the extraction system for those that are working in optimum plant water retention values of 5 Bars or less and need extra capacity. Since most water retention studies revolve around optimum plant growth conditions with matric suctions of 5 Bars or less it seems only proper to have a system capacity to handle a number of soils and conditions of most interest.

**SPECIFICATIONS - 5 Bar Limit - with Lab Compressor - Comes Complete:**

- 1.0 EA 0505V# 20 BAR LABORATORY COMPRESSOR
- 4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 1.0 EA 0700G33F1 MANIFOLD, FOR RUNNING 2ea. 1600 EXTRACTORS
- 2.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS
- 8.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN
- 2.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY

0700LAB033V1 for 110 VAC compressor operations  
0700LAB033V2 for 220 VAC compressor operations

# USER must specify V1 for 110 VAC or V2 for 220 VAC compressor operations  
SHIPPING - 5 Boxes, Total Weight 246 lbs.(111 Kg), Total Volume 19.32 cu ft.(.547 cu m)

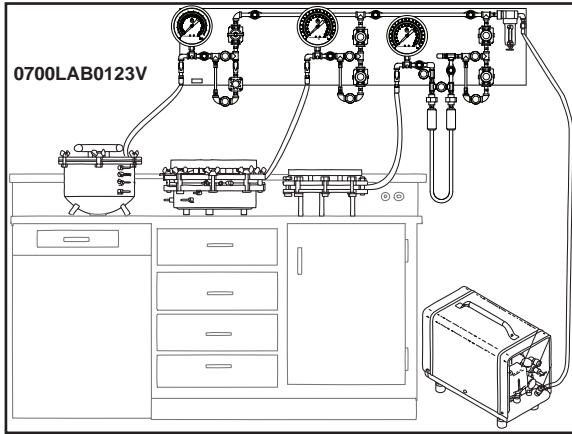


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# Laboratory Systems

## LAB 0700 SERIES



The Model 0700LAB123V#L05 is a multiple porous plate and membrane extraction system for laboratory use. This system provides the most complete range of extractors for determining water holding capacities (water retention curves) of soils and porous materials. The 1600 extractor provides pressure plate processing of low soil suction values (0-5Bars), the 1500 provide "plate" extraction methods up to 15 bars, and the 1000 provides the specialized processing required on shrink / swell clays and materials with low contact capabilities. The 0700LAB123 simply provides the most complete professional extraction system available. A system covering all aspects of soil water retention studies. User must supply the mercury used in the mercury differential regulator (included in the 0700G1 Manifold) from local sources.

**SPECIFICATIONS - 5 & 15 Bar Limit - with Lab Compressor - Comes Complete:**

- 1.0 EA 0505V# 20 BAR LABORATORY COMPRESSOR
- 4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 4.0 EA 0675B15M1 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR
- 1.0 EA 0700G123F1 MANIFOLD, FOR RUNNING THE 1500 & 1600 EXTRACTOR
- 1.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS
- 3.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS
- 9.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN
- 1.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY
- 1.0 EA1500F1 15 BAR PRESSURE PLATE EXTRACTOR, ONLY
- 6.0 DZ 1041D12 CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN
- 1.0 EA 1090TORQUE WRENCH & SOCKET FOR MODEL 1000
- 2.0 EA 1080G1PM HINGE, INCLUDES 1081ADAPTER PLATE
- 1.0 EA 1000 PRESSURE MEMBRANE EXTRACTOR

0700LAB123V1L05 for 110 VAC compressor operations  
 0700LAB123V2L05 for 220 VAC compressor operations

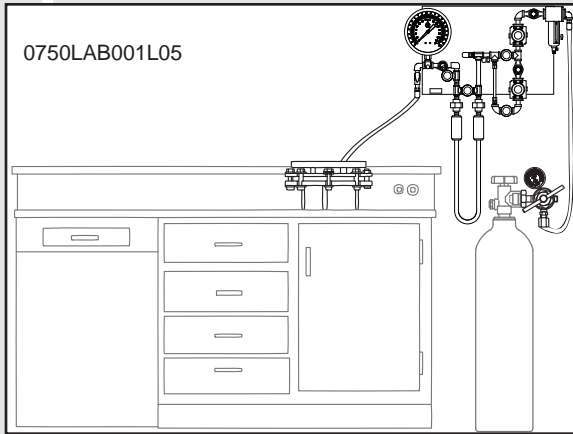
# USER must specify V1 for 110 VAC or V2 for 220 VAC compressor operations  
 SHIPPING -7Boxes, Total Weight 420 lbs.(190 Kg), Total Volume 26.09 cu ft.(.74 cu m)

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## Laboratory Systems

### LAB 0750 SERIES

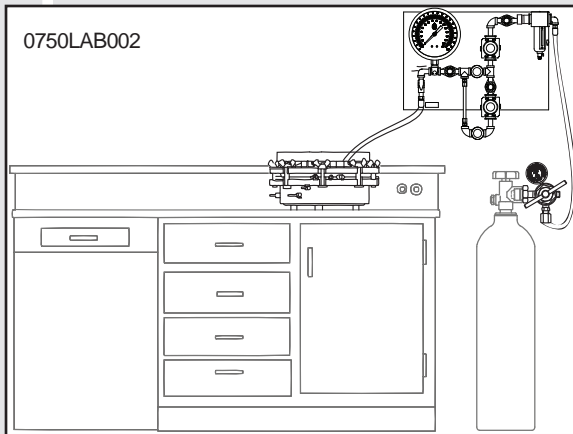


The Model 0750LAB001L05 is a complete porous membrane extraction system for the laboratory, specialty suited for Shrink-swell soils, clays and specialty uses such as pulps, other mixes with low contact capabilities, etc. Designed to provide a "hold down bladder" that lightly presses on samples to assure good contact with the porous membrane interface material. Maximum extraction pressure is 15 Bar provided by high pressure air tank. User must supply the compressed air, nitrogen or other non-corrosive or non hazardous gas in CGA approved tank having a standard (female) CGA 580 tank valve fitting. Ask for adapter kits to other international recognized compressed tank fittings.

**SPECIFICATIONS:**

- |  |  |
|--|--|
| 0750LAB001L05 - 15 Bar Limit - with CGA 580 Regulators - Comes Complete: |  |
| 1.0 EA 0700G1  | MANIFOLD FOR 1000 EXTRACTOR ONLY                 |
| 2.0 EA 0775L60   | CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS |
| 1.0 EA 1000  | PRESSURE MEMBRANE EXTRACTOR                      |
| 6.0 DZ 1041D12   | CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN          |
| 1.0 EA 0767P0300G1   | TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE      |
| 1.0 EA 1080G1  | PM HINGE, INCLUDES 1081ADAPTER PLATE             |
| 1.0 EA 1090  | TORQUE WRENCH & SOCKET FOR MODEL 1000            |
| 1.0 EA 1093  | SOIL SAMPLE RETAINING RINGS, ONE DOZEN           |

SHIPPING Details: 4 Boxes, Total Weight 208 lbs (93 Kg), Total Volume 12.24 cu ft (0.346 cu m).

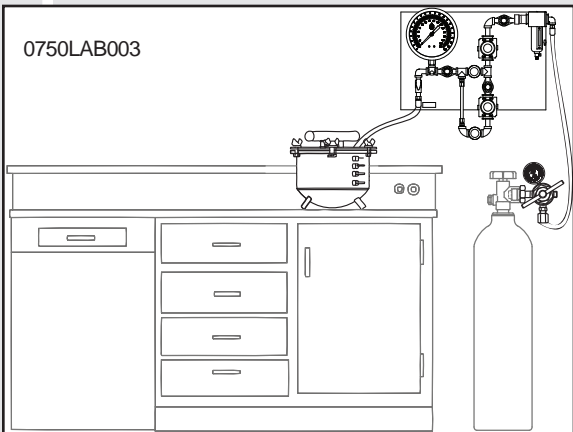


The Model 0750LAB002 is a complete porous plate extraction system for the laboratory. Extract water from a wide variety of soils where one is interested in plotting soil water retention samples to the "wilting point" accepted as 15 bars. Designed for a wide selection of uses to high pressures it comes with differing porous plates for low to high extraction sequences. The perfect starter system for a small commercial or private soils lab, or in teaching the fundamentals of developing "water retention curves" to students. . User must supply the compressed air, nitrogen or other non-corrosive or non hazardous gas in CGA approved tank having a standard (female) CGA 580 tank valve fitting. Ask for adapter kits to other international recognized compressed tank fittings.

**SPECIFICATIONS:**

- |   |  |
|---|--|
| 0750LAB002 - 15 Bar Limit - with CGA 580 Regulators - Comes Complete: |  |
| 4.0 EA 0675B01M1  | 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR          |
| 4.0 EA 0675B03M1  | 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR          |
| 4.0 EA 0675B05M1  | 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR          |
| 4.0 EA 0675B15M1  | 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR         |
| 1.0 EA 0767P0300G1  | TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE      |
| 1.0 EA 0700G2   | MANIFOLD FOR 1500 EXTRACTOR ONLY                 |
| 1.0 EA 0775L60  | CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS |
| 1.0 EA 1080G1   | PM HINGE, INCLUDES 1081ADAPTER PLATE             |
| 4.0 EA 1093   | SOIL SAMPLE RETAINING RINGS, ONE DOZEN           |
| 1.0 EA 1500F1   | 15 BAR PRESSURE PLATE EXTRACTOR, ONLY            |

SHIPPING Details: Boxes, Total Weight 266 lbs (121 Kg), Total Volume 17. cu ft (0.48 cu m) valve fitting. Ask for adapter kits to other international recognized compressed tank fittings.



The Model 0750LAB003 is a complete porous plate extraction system for the laboratory. The perfect system for developing "water retention" values for optimum plant growth ranges. Since optimal plant growth takes place in the 0.5 – 5 bar range this system provides an entry level assemblage for these start-up needs. User must supply the compressed air, nitrogen or other non-corrosive or non hazardous gas in CGA approved tank having a standard (female) CGA 580 tank valve fitting. Ask for adapter kits to other international recognized compressed tank fittings.

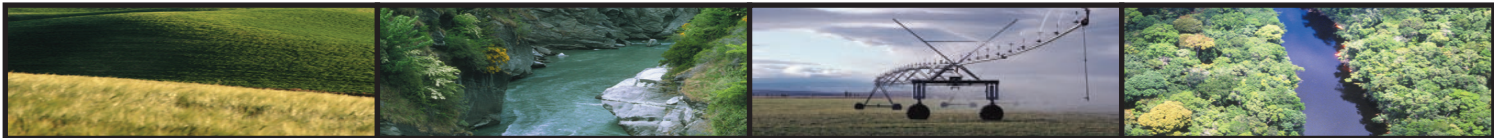
**SPECIFICATIONS:**

- |  |   |
|--|---|
| 0750LAB003 - 5 Bar Limit - with CGA 580 Regulators - Comes Complete: |   |
| 4.0 EA 0675B01M1   | 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR         |
| 4.0 EA 0675B03M1   | 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR         |
| 4.0 EA 0675B05M1   | 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR         |
| 1.0 EA 0767P0300G1   | TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE     |
| 1.0 EA 0700CG3F1   | MANIFOLD, FOR RUNNING THE 1600 EXTRACTOR        |
| 1.0 EA 0776L60   | CONNECTING HOSE 60", FOR 1250 & 1600 EXTRACTORS |
| 4.0 EA 1093  | SOIL SAMPLE RETAINING RINGS, ONE DOZEN          |
| 1.0 EA 1600  | 5 BAR PRESSURE PLATE EXTRACTOR, ONLY            |

SHIPPING Details: 4 Boxes, Total Weight 192 lbs. (87.1 Kg), Total Volume 15.24 cu ft. (0.43 cu. m)

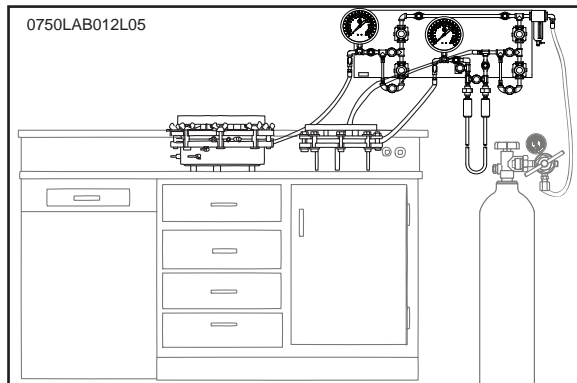


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# Laboratory Systems

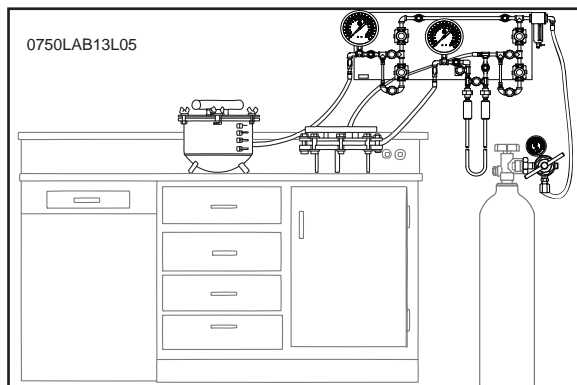
## LAB 0750 SERIES



**The Model 0750LAB012L05** is a complete membrane and porous plate extraction system for laboratory use. This is the system of those who will be working with differing samples that need to be brought to the 15 Bar level. The Model 1000, with a 5/8" (1.6 cm) high cylinder (L05), providing hold down capability for shrink /swell clays & low contact materials, the 1500F1 providing a large capacity for most other soil samples. An excellent choice for institutional, commercial or private, soils and earth sciences labs working the full range of plant growth and water retention limits of study. User must supply the mercury used in the mercury differential regulator (included in the Manifold) from local sources.

### SPECIFICATIONS:

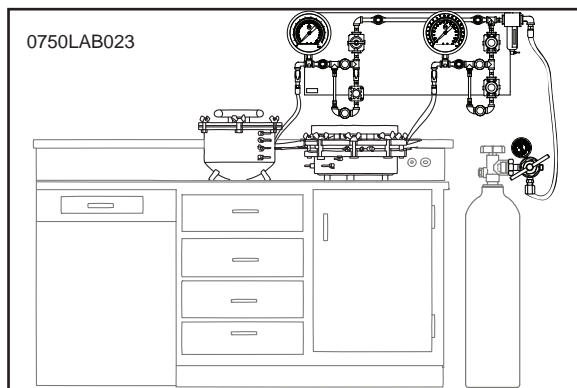
**0750LAB012L05 15 Bar Limit - CGA 580 Regulators - Comes Complete:**  
 4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B15M1 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 1.0 EA 0700CG12 MANIFOLD, FOR RUNNING BOTH 1000&1500F1 EXTRACTOR  
 1.0 EA 0767P0300G1 TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE  
 3.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS  
 1.0 EA 1000 PRESSURE MEMBRANE EXTRACTOR  
 6.0 DZ 1041D12 CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN  
 2.0 EA 1080G1 PM HINGE, INCLUDES 1081ADAPTER PLATE  
 1.0 EA 1090 TORQUE WRENCH & SOCKET FOR MODEL 1000  
 6.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN  
 1.0 EA 1500F1 15 BAR CERAMIC PLATE EXTRACTOR ONLY, 4 CELL CA  
 SHIPPING - 3 Boxes, Total Weight 230 lbs (104 Kg), Total Volume 6.2 cu ft (0.18 cu m).



**The Model 0750LAB13L05** is a multiple porous plate and membrane extraction system for laboratory use. This system provides the most complete range of extractors for determining water holding capacities (water retention curves) of soils and porous materials. The 1600 extractor provides pressure plate processing of low soil suction values (0-5Bars) and the 1000, with a 5/8" (1.6 cm) high cylinder (L05), provides the specialized processing required on shrink / swell clays and materials with low contact capabilities. The 0750LAB13L05 simply provides the most complete professional extraction system available. A system covering all aspects of soil water retention studies. User must supply the mercury used in the mercury differential regulator (included in the Manifold) from local sources.

### SPECIFICATIONS - 0750LAB13L05 5 & 15 Bar Limit - CGA 580 Regulators - Comes Complete:

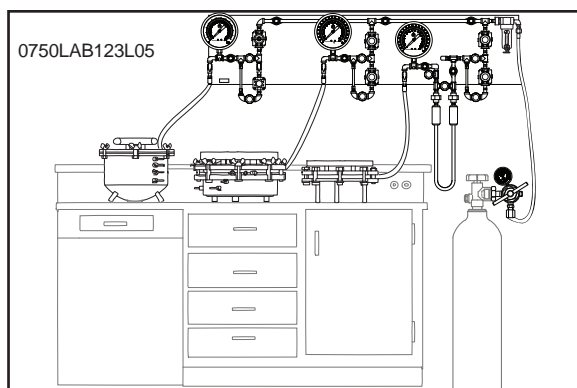
4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 1.0 EA 0700CG13 MANIFOLD, FOR RUNNING THE 1500 & 1600 EXTRACTOR  
 1.0 EA 0767P0300G1 TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE  
 1.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS  
 3.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS  
 9.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN  
 1.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY  
 6.0 DZ 1041D12 CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN  
 1.0 EA 1090 TORQUE WRENCH & SOCKET FOR MODEL 1000  
 2.0 EA 1080G1 PM HINGE, INCLUDES 1081ADAPTER PLATE  
 1.0 EA 1000 PRESSURE MEMBRANE EXTRACTOR  
 SHIPPING - 4 Boxes, Total Weight 230 lbs.(190 Kg), Total Volume 17.8 cu ft.(0.50 cu m)



**The Model 0750LAB023** is a multiple porous plate extraction system for laboratory use. This is one of the most popular lab system providing capabilities for a variety of soils and conditions. The 1500 and 1600 extractors together provide ample flexibility and capacity for low or high water content extraction routines. The combination provides for 2 extractor units for optimum plant growth studies (0-5 Bar Water Retention Studies) while having 15 Bar capabilities as well.

### SPECIFICATIONS - 0750LAB023 5 & 15 Bar Limit - 580 Regulators - Comes Complete:

4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B15M1 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 1.0 EA 0700CG23F1 MANIFOLD, FOR RUNNING THE 1500 & 1600 EXTRACTOR  
 1.0 EA 0767P0300G1 TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE  
 1.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS  
 1.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1500 EXTRACTORS  
 8.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN  
 1.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY  
 1.0 EA 1080G1 PM HINGE, INCLUDES 1081ADAPTER PLATE  
 1.0 EA 1500F1 15 BAR PRESSURE PLATE EXTRACTOR, ONLY  
 SHIPPING - 4 Boxes, Total Weight 299 lbs.(136 Kg), Total Volume 14 cu ft.(0.40 cu m)



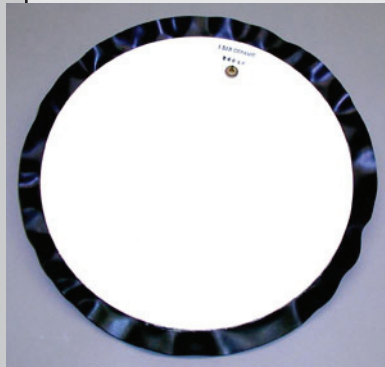
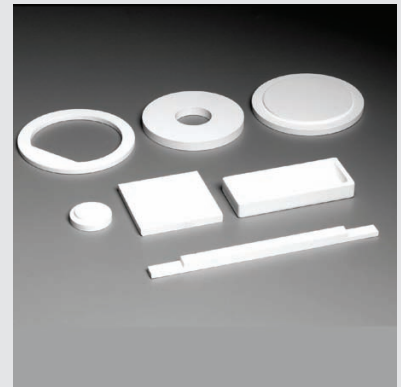
**The Model 0750LAB123L05** is a multiple porous plate and membrane extraction system for laboratory use. This system provides the most complete range of extractors for determining water holding capacities (water retention curves) of soils and porous materials. The 1600 extractor provides pressure plate processing of low soil suction values (0-5Bars), the 1500 provide "plate" extraction methods up to 15 bars, and the 1000 with a 5/8" (1.6 cm) high cylinder (L05), provides the specialized processing required on shrink / swell clays and materials with low contact capabilities. The 0750LAB123 simply provides the most complete professional extraction system available. A system covering all aspects of soil water retention studies. User must supply the mercury used in the mercury differential regulator (included in the Manifold) from local sources.

### SPECIFICATIONS:

**0750LAB123L05 5 & 15 Bar Limit - 580 Regulators - Comes Complete:**  
 4.0 EA 0675B01M1 1 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B03M1 3 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B05M1 5 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 4.0 EA 0675B15M1 15 BAR PRESSURE PLATE CELL FOR EXTRACTOR  
 1.0 EA 0700CG123F1 MANIFOLD, FOR RUNNING THE 1500 & 1600 EXTRACTOR  
 1.0 EA 0767P0300G1 TANK REGULATOR FOR 750 MANIFOLDS, PLUS HOSE  
 1.0 EA 0776L60 CONNECTING HOSE 60", FOR 1600 EXTRACTORS  
 3.0 EA 0775L60 CONNECTING HOSE, 60", FOR 1000 & 1500 EXTRACTORS  
 9.0 EA 1093 SOIL SAMPLE RETAINING RINGS, ONE DOZEN  
 1.0 EA 1600 5 BAR PRESSURE PLATE EXTRACTOR, ONLY  
 1.0 EA 1500F1 15 BAR PRESSURE PLATE EXTRACTOR, ONLY  
 6.0 DZ 1041D12 CUT CELLULOSE MEMBRANE DISCS, ONE DOZEN  
 1.0 EA 1090 TORQUE WRENCH & SOCKET FOR MODEL 1000  
 2.0 EA 1080G1 PM HINGE, INCLUDES 1081ADAPTER PLATE  
 1.0 EA 1000 PRESSURE MEMBRANE EXTRACTOR  
 SHIPPING - 5 Boxes, Total Weight 362 lbs. (164 Kg), Total Volume 18.7 cu ft. (0.52 cu m)

# POROUS

# CERAMICS



You will find some of the world's best porous ceramics in numerous shapes and sizes within this section. Soilmoisture manufactures the widest choice of air entry values and flow characteristics combined with a large selection of material types. Each porous ceramic part is produced with the utmost attention paid to detail and quality. These careful production procedures assure consistently close, uniform tolerances from purchase to purchase.

Perhaps your interests peak at incorporating a porous ceramic plate to filter or interface with a slurry or soil or finding a porous cup housing for a sensor. In any case, Soilmoisture most likely has a standard porous product to match your needs. For those with interests and needs a bit more unusual, let us provide you with a reasonable quote for a special ceramic in a size and shape that will specifically meet your needs.

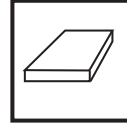
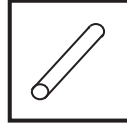


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Contact: [sales@soilmoisture.com](mailto:sales@soilmoisture.com)



## CHOOSING A POROUS MATERIAL ADVANTAGES OF SOILMOISTURE PRECISION POROUS CERAMICS

### Porous Plastic sheet and stock



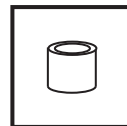
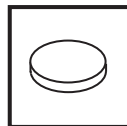
These materials, generally available in small rod or sheet form, are fabricated from one of several plastic materials. The most common are products formed by beads of Polyethylene or Polypropylene joined together or, in other cases, an expanded Teflon product. Generally the pores created are rather large, having discontinuities and bubbling pressures in the 1-5 psi range. To achieve a wetted surface takes special etchants to chemically etch the surface (usually hydrofluoric acids) and surface additives to achieve a reasonable capillary capacity. The life of these artificial hydrophilic coatings can substantially vary with use and are not generally guaranteed for extended use. Newer PVC extrusions or injected products that employ naturally porous additives result in a product with a wettable surface but rather moderate flow rates and, again, limited selection of low bubbling pressures. One might question these types of materials in any long term applications or projects requiring pressures or extraction differentials exceeding 5 psi, where the capillarity and flow characteristics must remain constant.



### Porous Plastic Films

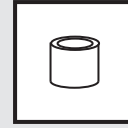
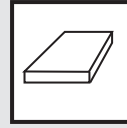
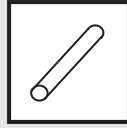
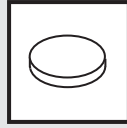
Special porous films can be purchased in a wide range of thicknesses and pore sizes. Some are naturally wettable, while others require special coatings to assure wet ability. The films themselves are, unfortunately, quite flimsy and almost always require supportive backing materials and mechanical support to assure stability. The thinness of these materials also leaves them vulnerable to tearing and scratching. In the lab these film materials and devices work well in the filtering of solutions. Applying this technology, however, to in-situ work associated with soils, agricultural, and earth sciences applications would cause one to question their practicality. For instance, real hazards exist at the time of installation into soils for tearing, scratching, or pitting of the thin films or subsequent adequate and uniform surface by a contact highly flexible film. Then there are the other long term problems of loss or disassociation of the backing materials and supporting structures from the films that cause significant concerns.

### Porous Metals



Generally found in disk form and occasionally in tubes, porous metals are comprised of small particles (soot size) pressed under high pressures and temperatures into a finished product. Most porous metal products are naturally wettable having a high ratio of pores, some of very large size. The result is that the products often have small amounts of leakage at bubbling pressures under 3 psi making them unsuitable for high pressures or extended extraction work. If the porous metals are fabricated from ferric metals, the product will quickly oxidize, "rusting" closed all possible pore pathways.

## Precision Porous Ceramics

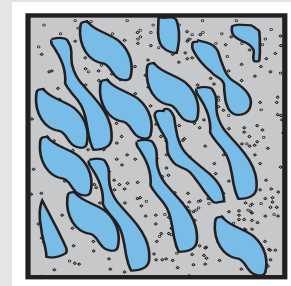
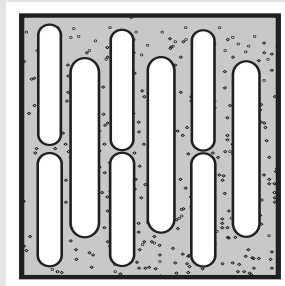


Unlike porous materials developed from plastics that are hydrophobic (water hating), ceramics are naturally wettable and hydrophilic (water loving). The tough durable nature of a fired porous ceramic makes it the preferential material of choice in the field of in-situ measurements, sampling or processing. Unlike porous metals that may oxidize or leak, porous ceramics are generally inert and can be produced with very consistent and uniform pore structures. Structures and devices fabricated from thick-walled porous ceramics can take the punishment of mechanical installation. With a wide selection of pore sizes, our precision porous ceramics can meet the most demanding pressure differential or suction values without leaks. The porous ceramic products we have available today have been proven for more than 40 years in all types of real world use. Each ceramic production batch and many individual ceramic products are individually tested for hydraulic properties and bubbling pressures. Our specialized knowledge of ceramics, glazing, assembly, or slip casting techniques allow us to meet your needs with creativity and value.

## UNDERSTANDING POROUS CERAMICS

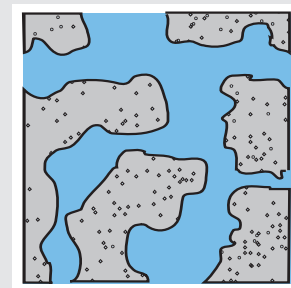
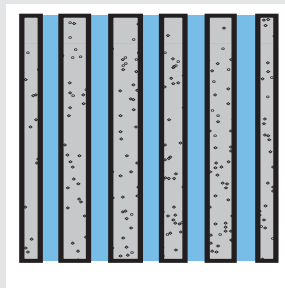
**POROUS MATERIALS** : Materials containing a passage or channel, a small opening for absorbing or discharging fluids.

### The Closed Pore Structures



As the name would imply, this is a material in which the pathways or channels are blocked and do not provide the fluid a continuous and interconnected network of channels to connect one surface of the material to an opposing surface.

### The Open Pore Structures



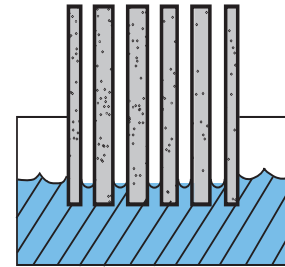
An open pore structure denotes a material that permits a fluid to move from one surface to an opposing surface in the material through a convoluted pathway of interconnecting networked channels. Soilmoisture ceramics are an example of an open pore structured material.





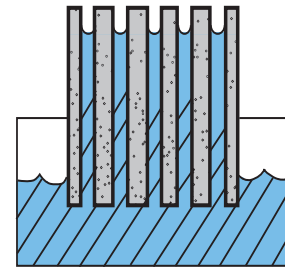


## Hydrophobic Material - Water repelling



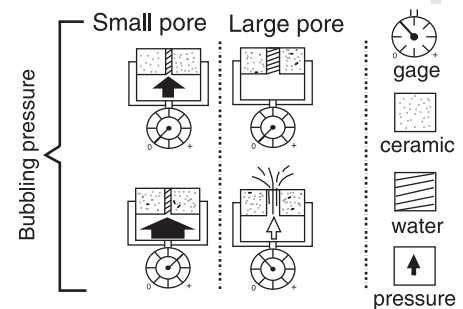
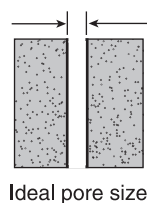
This term refers to materials such as porous plastics that have no affinity to wetting by water. These substances may have pores and channels but have no surface ability to wick water into the pores by the action of capillarity. Such materials are generally made from long chain organic molecules which have no substantial surface charges. Without a charged surface, there is no attractive or bonding effects on the polar molecules of water, and such substances must be specially treated.

## Hydrophilic Material- Water accepting



This term refers to those materials, such as porous ceramics and metals, that have a natural ability to fill pores by capillary action. This means the pores and channels of a ceramic have a highly charged pore surface that attracts and bonds the polar molecules of water and other polar fluids. The net effect is called “wicking” --- the ability to pull fluids into the material and transport that fluid by capillary forces. Soilmoisture ceramics are all hydrophilic.

## Pore Size



The pore size of a porous ceramic is of critical importance because it directly affects the ceramic’s air entry value or “bubbling pressure” and hydraulic conductivity. The air entry value is the pressure at which air will break through a wetted pore channel. The hydraulic (liquid) conductivity of a porous ceramic is a measure of the rate at which a ceramic material of known thickness may conduct liquid from one surface to an opposing surface under a known pressure. The hydraulic conductivity will vary with the type of pore fluid used which is generally water, but can be oils or other natural and artificial liquids. The effective pore size is determined by the minimum orifice within a channel or pore. These properties that are determined by pore size are intrinsic to ceramics and to all other porous materials. How a porous material behaves in any application is directly related to these pore properties and the material from which it is made. Soilmoisture assures consistent pore sizing by testing each batch and many individual porous products. See Table #1 that describes these properties.

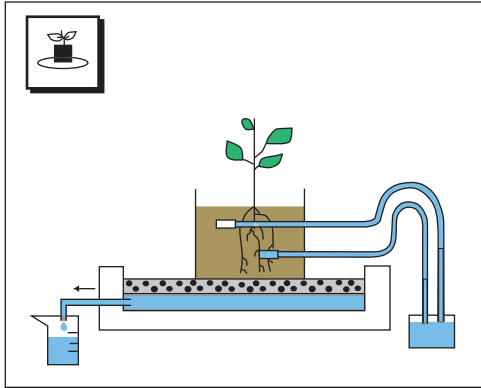
**Table 1. Physical properties of porous ceramics**

AIR ENTRY VALUE	BUBBLING PRESSURE (PSI)	APPROXIMATE POROSITY (% vol.)	SATURATED HYDRAULIC CONDUCTIVITY (cm/sec)	MAXIMUM PORE SIZE (µm)	FLOW THROUGH 1/4-INCH PLATE (ml/hr/cm <sup>2</sup> /14.7 psi)
0.5 BAR (-B0.5M2)* HIGH FLOW	7 TO 9	50%	3.11 x 10 <sup>-5</sup>	6.0	180
1BAR (-B01M3)* HIGH FLOW	19 to 28	45%	8.6 x 10 <sup>-6</sup>	2.5	50
1 BAR (-B01M1)* STANDARD FLOW	20 to 30	34%	7.56 x 10 <sup>-7</sup>	1.7	5.0
2 BAR (-B02M1)* STANDARD FLOW	38 to 45	32%	6.30 x 10 <sup>-7</sup>	1.1	4.2
2 BAR (-B02M2)* HIGH FLOW	32 to 42	38%	6.93 x 10 <sup>-7</sup>	1.3	4.6
3 BAR (-B03M1)* STANDARD FLOW	46 to 70	34%	2.5 x 10 <sup>-7</sup>	0.7	1.6
5 BAR (-B05M1)* STANDARD FLOW	80	31%	1.21 x 10 <sup>-7</sup>	0.5	0.7
15 BAR (-B15M1)* STANDARD FLOW	220	32%	2.59 X 10 <sup>-9</sup>	0.16	0.015

\*Part number suffix corresponding to the appropriate air entry value and mix number. See addendum page for more details.

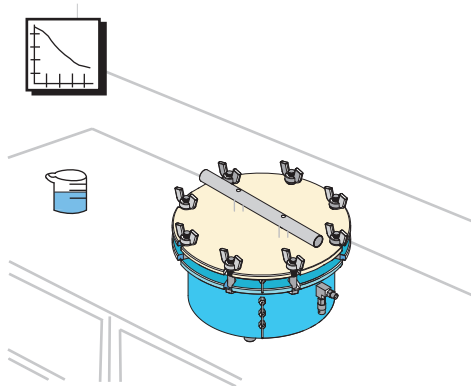


## POROUS CERAMICS APPLICATIONS AND USES



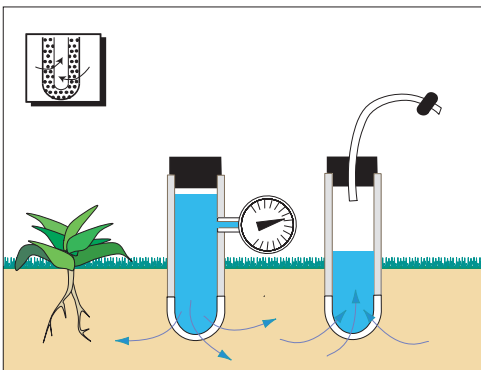
### Column work

Laboratory soil columns or boxes are easily constructed and are a common way to simulate complex field conditions of interest. It's an easy way to monitor and see what's happening in real time. Whether the problem is field drainage, creating the proper matrix suction values for growth, or measuring changes in hydraulic potentials, Soilmoisture's porous ceramic products can help provide the answers.



### MOISTURE RETENTION CURVES

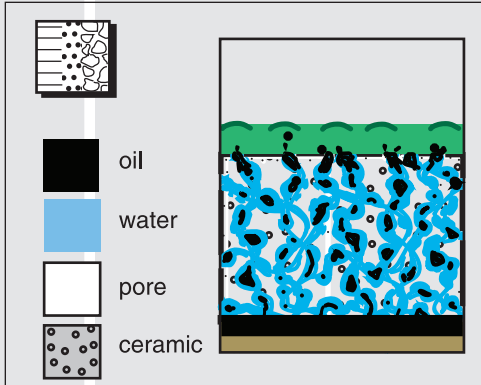
A basic of any soils study is the relationship between its water holding capability and the release of any held water. The universally recognized method for gaining this vital information is by using Soilmoisture Pressure Extractors, soil samples, and our porous ceramic plate or cup assemblies. The result of such testing, commonly known as a "moisture retention curve", is the relationship between volumetric or gravimetric water content and the extraction pressures necessary for a plant to remove that water. Soilmoisture has both the extractors and porous ceramic products you will need to run your own moisture retention curves.



### SOLUTION EXTRACTION OR TENSION MEASUREMENTS

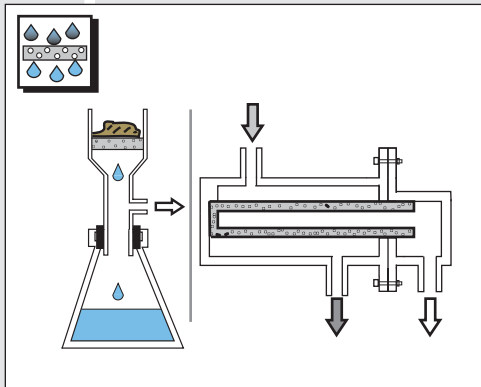
Simply attaching a porous ceramic cup to the end of a piece of connecting tubing and sealing the end makes a simple device that will provide significant scientific information. If a vacuum measuring device is tied into the connecting tube while water is withdrawn through the porous cup, water tension is measured (a tensiometer). On the other hand, if a vacuum is induced within a closed connecting tube, it is now possible to pull in water from the surrounding soil or material (a suction lysimeter or "soil water sampler").

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Contact: [sales@soilmoisture.com](mailto:sales@soilmoisture.com)



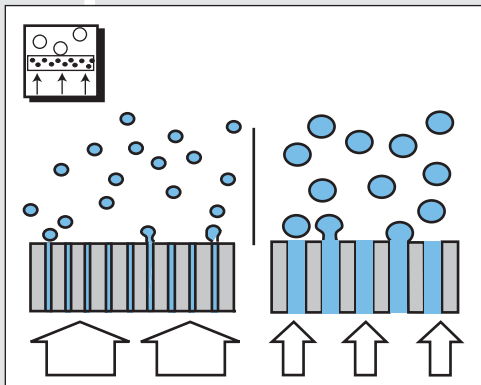
### PORE WATER INTERFACE

The unique characteristics of a wetted (pores filled with water) porous ceramic is its ability to join with wetted surfaces of materials nearby, therein creating a pore/water interface. With a wide variety of pore sizes, air entry values, shapes and sizes you are able to interface and measure hydraulic conductivity and flow rate properties without impedance from ceramic materials that are too fine or coarse for your work. The ability to monitor the interactive effects of water and 2 or 3 party systems having one or more immiscible liquids such as oils, etc., and their effects within natural pore structures are of great interest to oil and gas industries.



### FILTERS/DRAINS

Porous ceramics are a natural for a wide variety of filtering applications using liquids and pastes. Porous ceramics provide the tough and rigid capability suited to those filtering requirements that will not work with softer pliable paper or membrane filters. Because of their naturally hydrophilic surfaces, variety of fine pores sizes, and ability to be used under pressure or suction conditions, they assure that only the liquid portion of any phase mixture comes through.



### AERATORS

The infusion of gases into liquids and pastes are important to process industries. Control of the size and volume of those bubbles is very important and Soilmoisture's porous ceramics provide a rich selection of aeration materials. Whether it's air sparging to accelerate bacterial digestion deep in underground remediation wells or the foaming of a liquid in an infusion process, there is probably a porous ceramic to fit the need.



## POROUS CERAMICS 0600 TO 0699

- Hundreds of stock items in various formats
- A wide selection of tough rugged shapes and sizes
- Naturally wetting pores of very uniform sizes
- Standard tight tolerances or custom shapes with the precision you need
- Most can be modified by standard techniques
- Customs and Special available usually in 4 weeks.
- Glazing and machining to exacting standards.
- We'll create specialized assemblies to meet specific needs.

## FEATURES

The ceramic products offered in these sections are our most popular which have been sold for decades to discriminating customers like yourself who demand the very best. Each specialty area of our ceramics product line represents the finest quality products available to you as a consumer. Many of the items are used in the fabrication of our quality field and research laboratory equipment sold under the Soilmoisture name.

The unique characteristics and quality of our porous ceramics allow them to be used in a variety of applications. The natural wetting abilities of a porous ceramic, the uniform pore sizing, and inert raw materials provide an excellent finished product for research or industrial applications. Combine these attractive features with the strength and durability capabilities of a variety of ceramic shapes and you have a limitless number of excellent possibilities.

For your convenience, at the back of this ceramics section we have provided a compendium of accessories and materials that you might find helpful in completing your project. We are constantly adding new ceramic products, and we encourage you to consult our web site at <http://www.soilmoisture.com> in the ceramic section for these new additions. If you can't find the right product to meet your special porous ceramic needs, please send us a sketch including the tolerances and quantities required for a quick bid. For those O.E.M.s looking for large commercial quantities, Soilmoisture can provide your specialty item at substantial savings.

## TYPICAL APPLICATIONS

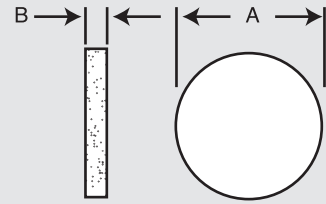


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## 0600 Ceramic Plates

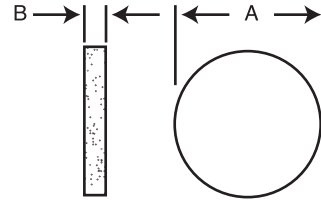
Plates listed are "as cast". We can provide special plates to meet specific requirements. Soilmoisture's technical staff may be contacted for more information on placing special orders.



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part Number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
0.5 BAR HF	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.16	4.53	0604D0.5-B0.5M2
0.5 BAR HF	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.24	6.91	0604D01-B0.5M2
0.5 BAR HF	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.51	14.41	0604D01.5-B0.5M2
0.5 BAR HF	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.87	24.65	0604D02-B0.5M2
0.5 BAR HF	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.44	4.82	0604D02.5-B0.5M2
0.5 BAR HF	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.88	53.31	0604D03-B0.5M2
0.5 BAR HF	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	3.28	92.88	0604D04-B0.5M2
0.5 BAR HF	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	5.06	143.37	0604D05-B0.5M2
0.5 BAR HF	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.281 +0.031 -0.016	0.714 +0.079 -0.041	7.22	204.78	0604D06-B0.5M2
0.5 BAR HF	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.16	4.53	0606D0.5-B0.5M2
0.5 BAR HF	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.32	9.07	0606D01-B0.5M2
0.5 BAR HF	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.64	18.14	0606D01.5-B0.5M2
0.5 BAR HF	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	1.26	35.61	0606D02-B0.5M2
0.5 BAR HF	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.24	63.50	0606D02.5-B0.5M2

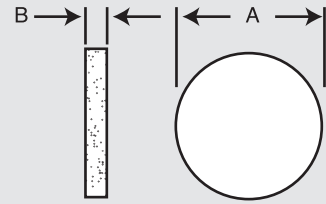


## 0600 Ceramic Plates (Continued)



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
0.5 BAR HF	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.72	77.02	0606D03-B0.5M2
0.5 BAR HF	4.125 +0.063 -0.063	1.478 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	4.73	134.20	0606D04-B0.5M2
0.5 BAR HF	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	7.31	207.15	0606D05-B0.5M2
0.5 BAR HF	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.406 +0.031 -0.031	1.031 +0.079 -0.079	32.90	932.72	0606D11-B0.5M2
1 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.09	2.52	0604D0.5-B01M1
1 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.13	3.64	0606D0.5-B01M1
1 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.29	8.17	0604D01-B01M1
1 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.42	11.80	0606D01-B01M1
1 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.60	17.05	0604D01.5-B01M1
1 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.87	24.62	0606D01.5-B01M1
1 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.03	29.14	0604D02-B01M1
1 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	1.48	42.10	0606D02-B01M1
1 BAR STD	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.57	44.46	0604D02.5-B01M1
1 BAR STD	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.27	64.24	0606D02.5-B01M1

## 0600 Ceramic Plates (Continued)



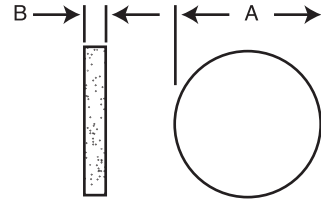
AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
1 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	2.22	63.01	0604D03-B01M1
1 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	3.21	81.04	0606D03-B01M1
1 BAR STD	4.125 +0.063 -0.063	1.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	3.87	92.88	0604D04-B01M1
1 BAR STD	4.125 +0.063 -0.063	1.478 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	4.73	134.20	0606D04-B01M1
1 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	.281 +0.031 -0.016	0.714 +0.079 -0.041	5.98	143.37	0604D05-B01M1
1 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	8.64	244.86	0606D05-B01M1
1 BAR STD	6.125 +0.090 -0.090	15.558 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	8.54	242.06	0604D06-B01M1
1 BAR STD	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.406 +0.031 -0.016	1.031 +0.079 -0.041	12.34	349.74	0606D06-B01M1
1 BAR STD	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.281 +0.031 -0.031	0.714 +0.079 -0.079	26.92	763.09	0604D11-B01M1
1 BAR STD	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.406 +0.031 -0.031	1.031 +0.079 -0.079	38.89	1102.54	0606D11-B01M1
1 BAR HF	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.10	2.72	0604D0.5-B01M3
1 BAR HF	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.14	3.84	0606D0.5-B01M3
1 BAR HF	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.31	8.83	0604D01-B01M3
1 BAR HF	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.45	12.75	0606D01-B01M3







## 0600 Ceramic Plates (Continued)

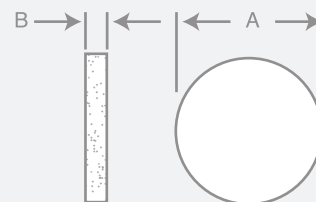


AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
1 BAR HF	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.65	18.41	0604D01.5-B01M3
1 BAR HF	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.94	26.61	0606D01.5-B01M3
1 BAR HF	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.11	31.49	0604D02-B01M3
1 BAR HF	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.69	48.05	0604D02.5-B01M3
1 BAR HF	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	1.44	4.82	0606D02.5-B01M3
1 BAR HF	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.45	69.43	0606D02.5-B01M3
1 BAR HF	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	2.40	68.10	0604D03-B01M3
1 BAR HF	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	3.47	98.39	0606D03-B01M3
1 BAR HF	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	4.19	118.66	0604D04-B01M3
1 BAR HF	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	6.05	171.40	0606D04-B01M3
1 BAR HF	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	6.46	183.16	0604D05-B01M3
1 BAR HF	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	9.33	264.86	0606D05-B01M3
1 BAR HF	6.125 +0.063 -0.063	15.558 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	9.23	261.61	0604D06-B01M3
1 BAR HF	6.125 +0.063 -0.063	15.558 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	12.64	358.34	0606D06-B01M3

# POROUS

# CERAMICS

## 0600 Ceramic Plates (Continued)



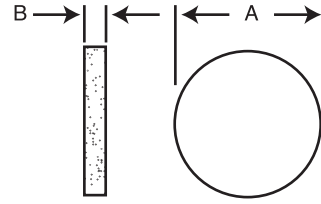
AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
1 BAR HF	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.406 +0.031 -0.031	1.031 +0.079 -0.079	13.4	379.88	0606D11-B01M3
2 BAR STD	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	3.62	102.50	0604D04-B02M1
2 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	5.58	158.23	0604D05-B02M1
2 BAR STD	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.281 +0.031 -0.031	0.714 +0.079 -0.079	25.13	712.45	0604D11-B02M1
3 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.09	2.35	0604D0.5-B03M1
3 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.12	3.54	0606D0.5-B03M1
3 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.28	7.93	0604D01-B03M1
3 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.40	11.46	0606D01-B03M1
3 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.58	16.55	0604D01.5-B03M1
3 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.84	23.91	0606D01.5-B03M1
3 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.00	28.30	0604D02-B03M1
3 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	1.44	4.89	0606D02-B03M1
3 BAR STD	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.52	43.19	0604D02.5-B03M1
3 BAR STD	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.20	62.40	0606D02.5-B03M1



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## 0600 Ceramic Plates (Continued)

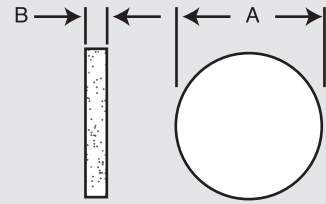


AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
3 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	8.65	61.20	0604D03-B03M1
3 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	3.12	88.44	0606D03-B03M1
3 BAR STD	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	3.76	106.65	0604D04-B03M1
3 BAR STD	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	5.44	154.10	0606D04-B03M1
3 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	5.81	164.63	0604D05-B03M1
3 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	8.39	237.86	0606D05-B03M1
3 BAR STD	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.281 +0.031 -0.016	0.714 +0.079 -0.041	8.29	235.14	0604D06-B03M1
3 BAR STD	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.406 +0.031 -0.016	1.031 +0.079 -0.041	11.98	339.75	0606D06-B03M1
3 BAR STD	10.875 +0.125 -0.125	27.623 +0.318 -0.318	0.281 +0.031 -0.031	0.714 +0.079 -0.079	26.15	741.28	0604D11-B03M1
5 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.09	2.45	0604D0.5-B05M1
5 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.12	3.54	0606D0.5-B05M1
5 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.28	7.94	0604D01-B05M1
5 BAR STD	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.40	11.47	0606D01-B05M1
5 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.58	16.57	0604D01.5-B05M1

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## 0600 Ceramic Plates (Continued)

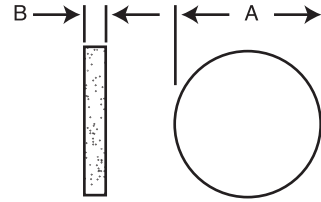


AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
5 BAR STD	1.625 +0.063 -0.063	4.128 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	0.84	23.94	0606D01.5-B05M1
5 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.00	28.33	0604D02-B05M1
5 BAR STD	2.125 +0.063 -0.063	5.398 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	1.44	4.93	0606D02-B05M1
5 BAR STD.	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	1.524	3.23	0604D02.5-B05M1
5 BAR STD.	2.625 +0.063 -0.063	6.668 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	2.20	62.46	0606D02.5-B05M1
5 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.281 +0.031 -0.031	0.714 +0.079 -0.041	2.16	61.27	0604D03-B05M1
5 BAR STD	3.125 +0.063 -0.063	7.938 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	3.12	88.53	0606D03-B05M1
5 BAR STD	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	3.77	106.76	0604D04-B05M1
5 BAR STD	4.125 +0.063 -0.063	10.478 +0.160 -0.160	0.406 +0.031 -0.016	1.031 +0.079 -0.041	5.44	154.25	0606D04-B05M1
5 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	5.81	164.79	0604D05-B05M1
5 BAR STD	5.125 +0.063 -0.063	13.018 +0.160 -0.229	0.406 +0.031 -0.016	1.031 +0.079 -0.041	8.40	238.10	0606D05-B05M1
5 BAR STD	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.281 +0.031 -0.016	0.714 +0.079 -0.041	8.30	235.37	0604D06-B05M1
5 BAR STD	6.125 +0.090 -0.090	15.558 +0.229 -0.229	0.406 +0.031 -0.016	1.031 +0.079 -0.041	12.00	34.08	0606D06-B05M1
15 BAR STD	0.625 +0.063 -0.063	1.588 +0.160 -0.160	0.281 +0.031 -0.016	0.714 +0.079 -0.041	0.16	4.53	0604D0.5-B15M1



## 0600 Ceramic Plates

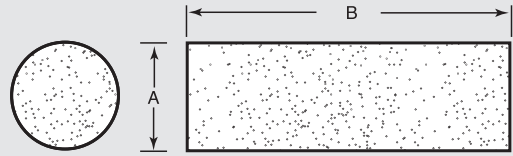
(Continued)



AIR ENTRY VALUE							Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
15 BAR STD	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>0.28</b>	<b>7.91</b>	<b>0604D01-B15M1</b>
15 BAR STD	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.406</b> +0.031 -0.016	<b>1.031</b> +0.079 -0.041	<b>0.58</b>	<b>16.44</b>	<b>0606D01-B15M1</b>
15 BAR STD	<b>1.625</b> +0.063 -0.063	<b>4.128</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>0.58</b>	<b>16.50</b>	<b>0604D01.5-B15M1</b>
15 BAR STD	<b>2.125</b> +0.063 -0.063	<b>5.398</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>1.00</b>	<b>28.33</b>	<b>0604D02-B15M1</b>
15 BAR STD	<b>2.625</b> +0.063 -0.063	<b>6.668</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>1.44</b>	<b>4.82</b>	<b>0604D02.5-B15M1</b>
15 BAR STD	<b>3.125</b> +0.063 -0.063	<b>7.938</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>2.15</b>	<b>81.03</b>	<b>0604D03-B15M1</b>
15 BAR STD	<b>4.125</b> +0.063 -0.063	<b>10.478</b> +0.160 -0.160	<b>0.281</b> +0.031 -0.016	<b>0.714</b> +0.079 -0.041	<b>3.75</b>	<b>106.34</b>	<b>0604D04-B15M1</b>

## 0630 CERAMIC RODS

Rods listed are "as cast". We can provide special rods to meet specific requirements. Soilmoisture technical staff may be contacted for more information on placing special orders.

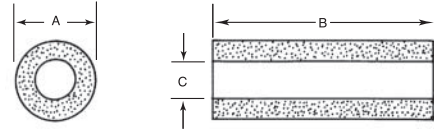


AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						Part number
	A		B		Weight		
	Inches	cm	Inches	cm	oz.	gms	
<b>0.5 BAR HF</b>	<b>0.5</b> +0.020 -0.020	<b>1.27</b> +0.051 -0.051	<b>2.00</b> +0.063 -0.063	<b>5.08</b> +0.160 -0.160	<b>0.34</b>	<b>9.71</b>	<b>0630D00.5L2-B0.5M2</b>
<b>0.5 BARHF</b>	<b>1.00</b> +0.020 -0.020	<b>2.54</b> +0.051 -0.051	<b>2.00</b> +0.063 -0.063	<b>5.08</b> +0.160 -0.160	<b>1.37</b>	<b>38.85</b>	<b>0630D01L2-B0.5M2</b>
<b>1 BAR HF</b>	<b>0.50</b> +0.020 -0.020	<b>1.27</b> +0.051 -0.051	<b>2.00</b> +0.063 -0.063	<b>5.08</b> +0.160 -0.160	<b>0.44</b>	<b>12.41</b>	<b>0630D00.5L2-B01M3</b>
<b>1 BAR HF</b>	<b>1.00</b> +0.020 -0.020	<b>2.54</b> +0.051 -0.051	<b>2.00</b> +0.063 -0.063	<b>5.08</b> +0.160 -0.160	<b>1.75</b>	<b>49.63</b>	<b>0630D01L2-B01M3</b>



## 0640 POROUS CERAMIC CYLINDERS

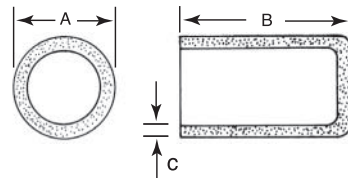
Cylinders listed are "as cast". Diameters can be machined to provide shoulders or special dimensions. We can also make up special cylinders to meet specific requirements. Soilmoisture's technical staff may be contacted for more information on placing special orders.



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES								Part Number
	A		B		C		Weight		
	inches	cm	inches	cm	inches	cm	oz.	gms	
1 BAR STD	0.500 +0.063 -0.000	1.270 +0.160 -0.000	11.000 +0.063 -0.063	27.940 +0.160 -0.160	0.375 +0.075 -0.040	0.953 -0.191 -0.102	0.97	27.63	0640X05-B01M1
1 BAR HF	1.000 +0.063 -0.000	2.540 +0.160 -0.000	12.000 +0.063 -0.063	30.480 +0.160 -0.160	0.750 +0.020 -0.020	1.905 -0.051 -0.051	4.60	13.29	0640X07-B01M3
1 BAR HF	1.570 +0.063 -0.000	3.988 +0.160 -0.000	5.906 +0.063 -0.063	15.001 +0.160 -0.160	1.175 +0.020 -0.060	2.985 -0.051 -0.125	5.61	158.92	0640X08-B01M3
1 BAR HF	1.375 +0.063 -0.000	3.493 +0.160 -0.000	11.500 +0.063 -0.063	29.210 +0.160 -0.160	0.875 +0.020 -0.060	2.223 -0.051 -0.125	11.32	321.07	0640X09-B01M3

## 0651 FLAT BOTTOM, STRAIGHT WALL CUPS

Cups listed are "as cast". Please contact Soilmoisture's technical staff for special orders.



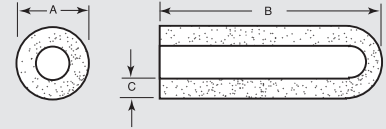
AIR ENTRY VALUE	DIMENSIONS/TOLERANCES								Part Number
	A		B		C		Weight		
	inches	cm	inches	cm	inches	cm	oz.	gms	
1 BAR STD	0.500 +0.030 -0.000	1.270 +0.076 -0.000	12.000 +0.250 -0.000	30.480 +0.635 -0.000	0.063 +0.030 -0.000	0.160 +0.076 -0.000	1.08	3.71	0651X02-B01M1

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Contact: sales@soilmoisture.com



## 0652 ROUND BOTTOM, STRAIGHT WALL CUPS

Cups listed are "as cast". We can cut these cups to make them shorter or cut off the closed ends to make cylinders. Diameters can be machined to provide shoulders or special dimensions. We can also make up special cups to meet specific requirements. Please contact Soilmoisture's technical staff for special orders.



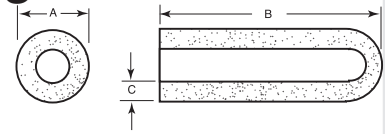
AIR ENTRY VALUE	DIMENSIONS/TOLERANCES								Part number
	A		B		C		Weight		
	Inches	cm	Inches	cm	oz.	gms	oz	gms	
<b>0.5 BAR HF</b>	<b>1.510</b> +0.063 -0.000	<b>3.988</b> +0.160 -0.000	<b>7.500</b> +0.090 -0.063	<b>17.050</b> +0.225 -0.160	<b>0.200</b> +0.063 -0.000	<b>0.508</b> +0.160 -0.000	<b>0.35</b>	<b>7.22</b>	<b>0652X18-B0.5M2</b>
<b>1 BAR STD</b>	<b>0.236</b> +0.030 -0.000	<b>0.599</b> +0.076 -0.000	<b>2.550</b> +0.063 -0.063	<b>6.477</b> +0.160 -0.160	<b>0.039</b> +0.030 -0.000	<b>0.099</b> +0.076 -0.000	<b>0.07</b>	<b>1.97</b>	<b>0652X01-B01M1</b>
<b>1 BAR STD</b>	<b>0.236</b> +0.030 -0.000	<b>0.599</b> +0.076 -0.000	<b>3.150</b> +0.063 -0.063	<b>8.001</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.13</b>	<b>3.76</b>	<b>0652X02-B01M1</b>
<b>1 BAR STD</b>	<b>0.250</b> +0.030 -0.000	<b>0.635</b> +0.076 -0.000	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.04</b>	<b>1.15</b>	<b>0652X03-B01M1</b>
<b>1 BAR STD</b>	<b>0.394</b> +0.030 -0.000	<b>1.001</b> +0.076 -0.000	<b>3.937</b> +0.063 -0.063	<b>10.000</b> +0.160 -0.160	<b>0.156</b> +0.030 -0.000	<b>0.396</b> +0.076 -0.000	<b>0.45</b>	<b>12.83</b>	<b>0652X04-B01M1</b>
<b>1 BAR STD</b>	<b>0.375</b> +0.030 -0.000	<b>0.953</b> +0.076 -0.000	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.07</b>	<b>1.93</b>	<b>0652X07-B01M1</b>
<b>1 BAR STD</b>	<b>0.875</b> +0.030 -0.000	<b>2.223</b> +0.076 -0.000	<b>3.125</b> +0.090 -0.063	<b>7.938</b> +0.229 -0.160	<b>0.156</b> +0.030 -0.000	<b>0.396</b> +0.076 -0.000	<b>1.08</b>	<b>0.61</b>	<b>0652X08-B01M1</b>
<b>1 BAR STD</b>	<b>0.750</b> +0.030 -0.000	<b>1.905</b> +0.076 -0.000	<b>2.625</b> +0.090 -0.063	<b>6.668</b> +0.229 -0.160	<b>0.156</b> +0.030 -0.000	<b>0.396</b> +0.076 -0.000	<b>0.75</b>	<b>21.16</b>	<b>0652X16-B01M1</b>
<b>1 BAR HF</b>	<b>0.250</b> +0.030 -0.000	<b>0.635</b> +0.076 -0.000	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.04</b>	<b>1.16</b>	<b>0652X03-B01M3</b>
<b>1 BAR HF</b>	<b>0.394</b> +0.030 -0.000	<b>1.001</b> +0.076 -0.000	<b>3.937</b> +0.063 -0.063	<b>10.000</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.26</b>	<b>7.29</b>	<b>0652X04-B01M3</b>
<b>1 BAR HF</b>	<b>0.375</b> +0.030 -0.000	<b>0.953</b> +0.076 -0.000	<b>1.125</b> +0.063 -0.063	<b>2.858</b> +0.160 -0.160	<b>0.063</b> +0.030 -0.000	<b>0.160</b> +0.076 -0.000	<b>0.07</b>	<b>1.93</b>	<b>0652X07-B01M3</b>
<b>1 BAR HF</b>	<b>0.875</b> +0.030 -0.000	<b>2.223</b> +0.076 -0.000	<b>3.500</b> +0.090 -0.063	<b>8.890</b> +0.229 -0.160	<b>0.250</b> +0.030 -0.000	<b>0.653</b> +0.076 -0.000	<b>3.75</b>	<b>106.29</b>	<b>0652X09-B01M3</b>





# 0652 ROUND BOTTOM, STRAIGHT WALL CUPS

(Continued)



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES								Part number
	A		B		C		Weight		
	Inches	cm	Inches	cm	oz.	gms	oz	gms	
1 BAR HF	0.875 +0.030 -0.000	2.223 +0.076 -0.000	3.500 +0.090 -0.063	8.890 +0.229 -0.160	0.125 +0.030 -0.000	0.318 +0.076 -0.000	2.61	74.10	0652X10-B01M3
1 BAR HF	0.500 +0.030 -0.000	1.270 +0.076 -0.000	2.500 +0.090 -0.063	6.350 +0.229 -0.160	0.125 +0.030 -0.000	0.318 +0.076 -0.000	0.36	1.30	0652X11-B01M3
1 BAR HF	0.750 +0.030 -0.000	1.905 +0.076 -0.000	2.625 +0.090 -0.063	6.668 +0.229 -0.160	0.156 +0.030 -0.000	0.396 +0.076 -0.000	0.75	21.36	0652X16-B01M3
1 BAR HF	1.570 +0.030 -0.000	3.988 +0.076 -0.000	7.500 +0.090 -0.063	19.050 +0.229 -0.160	0.200 +0.063 -0.000	0.508 +0.160 -0.000	32.04	908.24	0652X18-B01M3
2 BAR STD	0.375 +0.030 -0.000	0.953 +0.076 -0.000	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.063 +0.030 -0.000	0.160 +0.076 -0.000	0.07	1.91	0652X07-B02M1
3 BAR STD	0.375 +0.030 -0.000	0.953 +0.076 -0.000	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.063 +0.030 -0.000	0.160 +0.076 -0.000	0.07	1.92	0652X07-B03M1
5 BAR STD	0.375 +0.030 -0.000	0.953 +0.076 -0.000	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0.063 +0.030 -0.000	0.160 +0.076 -0.000	0.07	1.92	0652X07-B05M1

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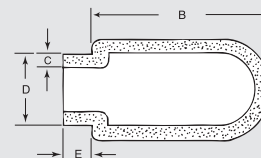
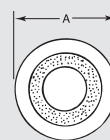


# POROUS

# CERAMICS

## 0653 ROUND BOTTOM NECK TOP CUPS

Cups listed are "as cast". Please contact Soilmoisture's technical staff for special orders.



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES										PART NUMBER/WEIGHT
	A		B		C		D		E		
	Inches	cm	Inches	cm	oz.	gms	Inches	cm	inches	cm	
0.5 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.094 +0.061 -0.000	0.239 +0.155 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	0653X01-B0.5M2 1.48oz/42.01gms
0.5 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.156 +0.030 -0.000	0.396 +0.076 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	0653X02-B0.5M2 2.40oz/67.96gms
1 BAR STD	1.417 +0.060 -0.000	3.599 +0.152 -0.000	2.950 +0.063 -0.063	7.493 +0.160 -0.160	0.095 +0.040 -0.000	0.241 +0.102 -0.000	1.024 +0.030 -0.000	2.601 +0.076 -0.000	0.787 +0.063 -0.063	1.999 +0.160 -0.160	0653X06-B01M1 1.45oz/41.07gms
1 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.094 +0.061 -0.000	0.239 +0.155 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	653X01-B01M3 1.60oz/45.31gms
1. BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.156 +0.030 -0.000	0.396 +0.076 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	0653X02-B01M3 2.58oz/73.09gms
1 BAR HF	2.375 +0.060 -0.000	6.033 +0.152 -0.000	2.130 +0.063 -0.063	5.410 +0.160 -0.160	0.125 +0.030 -0.000	0.318 +0.076 -0.000	2.020 +0.030 -0.000	5.131 +0.076 -0.000	0.375 +0.063 -0.063	0.953 +0.160 -0.160	0653X05-B01M3 2.47 oz/7.05gms
1 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	10.00 +0.063 -0.063	25.400 +0.160 -0.160	0.156 +0.030 -0.000	0.396 +0.076 -0.000	1.000 +0.030 -0.000	2.540 +0.076 -0.000	1.125 +0.063 -0.063	2.858 +0.160 -0.160	0653X07-B01M3 9.37oz/265.52gms
2 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.094 +0.061 -0.000	0.239 +0.155 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	0653X01-B02M2 1.53oz/42.34gms
2 BAR HF	1.900 +0.060 -0.000	4.826 +0.152 -0.000	2.380 +0.063 -0.063	6.045 +0.160 -0.160	0.156 +0.030 -0.000	0.396 +0.076 -0.000	1.725 +0.010 -0.015	4.382 +0.025 -0.038	0.438 +0.063 -0.063	1.113 +0.160 -0.160	0653X02-B02M2 2.46oz/69.87gms

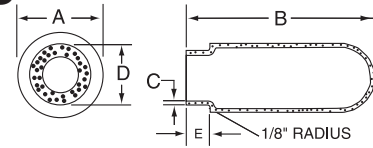


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Contact: sales@soilmoisture.com



## 0655 ROUND BOTTOM TAPERED NECK CUPS

Cups listed are "as cast". Please contact Soilmoisture's technical staff for special orders.



AIR ENTRY VALUE											PART NUMBER/ WEIGHT
	A		B		C		D		E		
	Inches	cm	Inches	cm	oz.	gms	Inches	cm	inches	cm	
<b>0.5 BAR HF</b>	<b>0.875</b> +0.030 -0.020	<b>2.223</b> +0.076 -0.051	<b>2.750</b> +0.063 -0.063	<b>6.985</b> +0.160 -0.160	<b>0.100</b> +0.050 -0.000	<b>0.254</b> +0.127 -0.000	<b>0.531</b> +0.035 -0.015	<b>1.349</b> +0.089 -0.038	<b>0.500</b> +0.063 -0.063	<b>17.07</b> +0.160 -0.160	<b>0655X01-B0.5M2</b> 1.270oz/60gms
<b>1 BAR HF</b>	<b>0.875</b> +0.030 -0.020	<b>2.223</b> +0.076 -0.051	<b>2.750</b> +0.063 -0.063	<b>6.985</b> +0.160 -0.160	<b>0.100</b> +0.050 -0.000	<b>0.254</b> +0.127 -0.000	<b>0.531</b> +0.035 -0.015	<b>1.349</b> +0.089 -0.038	<b>0.500</b> +0.063 -0.063	<b>1.270</b> +0.160 -0.160	<b>0655X01-B01M3</b> 0.60oz/17.03gms
<b>1 BAR STD</b>	<b>0.875</b> +0.030 0.020	<b>2.223</b> +0.076 -0.051	<b>2.750</b> +0.063 -0.063	<b>6.985</b> +0.160 -0.160	<b>0.100</b> +0.050 -0.000	<b>0.254</b> +0.127 -0.000	<b>0.531</b> +0.035 -0.015	<b>1.349</b> +0.089 -0.038	<b>0.500</b> +0.063 -0.063	<b>1.270</b> +0.160 -0.160	<b>0655X01-B01M1</b> 0.65oz/18.45gms

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Contact: sales@soilmoisture.com



## CUSTOM SHAPES 0660 SERIES



- A wide selection of air entry values
- Specialized glazing of surfaces
- Secondary machining of cast parts
- Fired as assembly/multiple parts
- Available in small or large quantities
- Holes, grooves and undercuts possible
- Full Assemblies or Sub-Assemblies available
- We'll assemble and test completed units
- Lets us join our ceramics to your acrylic, polycarbonate, Teflon, glass or metal idea

## FEATURES & APPLICATIONS

The 0660 Series provides a few unusual examples shown below, that can be adapted or used directly on your special project. Our special ceramics and custom shapes have been used in a wide variety of applications and configurations to meet the most demanding needs. From the more mundane areas of agricultural and petroleum research to unique shields for underground nuclear blasts or specialized interface products in hydroponics, we can provide the solution. No matter what your interest, we have the facilities, background, and expertise to fabricate a porous ceramic product that will meet or exceed your goals.



COLUMN WORK



MOISTURE RETENTION CURVES



SOLUTION EXTRACTION MEASUREMENT



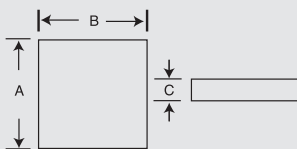
PORE/WATER INTERFACE



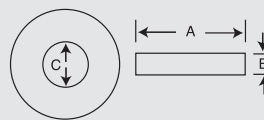
FILTERS



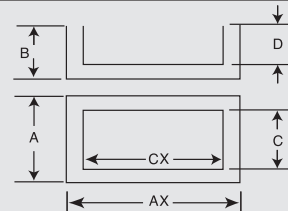
AERATORS



0660X01



0660X02



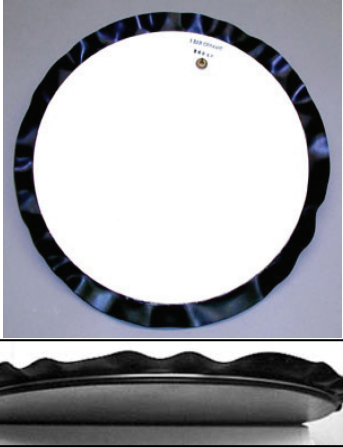
0660X04

AIR ENTRY VALUE	DIMENSIONS/TOLERANCES										Part number
	A		B		C		D		Weight		
	Inches	cm	Inches	cm	oz.	gms	oz.	gms	oz.	gms	
1 BAR HF	2.00	5.08	2.00	5.08	0.25	0.64			0.05	0.11	0660X01-B01M3
1 BAR HF	2.00	5.08	0.25	0.64	1.00	2.54			0.02	0.06	0660X02-B01M3
1 BAR HF	1.00 x 2.00	2.54 x 5.08	0.50	1.27	0.80 x 1.80	2.03 x 4.57	0.30	0.76	0.05	0.12	0660X04-B01M3

Tolerances A,B +/- .063; C=+/- 0.030; D=+0.030/-0.000



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## PRESSURE PLATE CELLS 0675 SERIES

- The global standard used for soil water retention measurements and extractions
- The widest selection of 0.5 bar to 15 bar
- Reusable for years of cost effective service
- Each plate tested for air entry and flow
- Fits all Soilmoisture pressure extractors and most competitive extractors

### TYPICAL APPLICATIONS



These pressure plate cells have been the de-facto standard for the measurement of soil moisture retention studies worldwide. The development of these ceramic cells by Soilmoisture in the 1950's led to the now universally accepted method for measurement of multiple soil samples extracted on a single reusable ceramic plate. Researchers' dedication to our Soilmoisture cells is understandable. Each cell is carefully hand fabricated from our fine porous ceramic plate materials and wrapped in a tough Butyl rubber backing with a non-metallic screen support. The unit is tied around the edges with stainless steel wire. Each cell is tested at the rated air entry value to assure that there is no bleeding through the porous ceramic and there are no leaks in the rubber backing.

AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						PART NUMBER
	DIAMETER		THICKNESS		WEIGHT		
	Inches	cm	inches	cm	oz	gms	
5 BAR HF	10.50	26.67	0.375	0.953	1.03	2.28	0675B0.5M2
1 BAR	10.75	27.30	0.276	0.701	1.02	2.26	0675B01M1
1 BAR HF	10.50	26.67	0.375	0.953	0.78	1.73	0675B01M3
3 BAR	10.75	27.30	0.276	0.701	1.00	2.20	0675B03M1
5 BAR	10.75	27.30	0.276	0.701	1.05	2.31	0675B05M1
15 BAR	10.19	25.88	0.234	0.594	0.81	1.80	0675B15M1

Packaged Sets of Plates are also available for your plate extractors Model 1500 and 1600.

0675 PKG1FUL 1ea. Our complete range of porous plates Includes, B0.5M2, B01M1, B01M3, B03M1, B05M1, B15M1  
 0675PKG2B01HF 2ea. Range of High Flow (HF) porous plates for 1 BAR includes B0.5M2 and B01M3 plates.  
 0675PKG4B01HF 4ea Range of High Flow (HF) porous plates for 1 BAR includes B0.5M2 and B01M3 plates.  
 0675PKG8B01HF 8ea Range of High Flow (HF) porous plates for 1 BAR includes B0.5M2 and B01M3 plates  
 0675PKG2B05 2ea. Range of porous plates for 5 Bar extractions, includes, B01M1, B03M1, B05M1  
 0675PKG4B05 4ea. Range of porous plates for 5 Bar extractions, includes, B01M1, B03M1, B05M1  
 0675PKG8B05 8ea. Range of porous plates for 5 Bar extractions, includes, B01M1, B03M1, B05M1  
 0675PKG2B15 2ea. Range of porous plates for 15 Bar extractions, includes, B01M1, B03M1, B05M1, and B15M1  
 0675PKG4B15 4ea. Range of porous plates for 15 Bar extractions, includes, B01M1, B03M1, B05M1, and B15M1  
 0675PKG8B15 8ea. Range of porous plates for 15 Bar extractions, includes, B01M1, B03M1, B05M1, and B15M1

Specific porous plates can also be ordered in sets of 2ea (0675PKG2), 4ea (0675PKG4), and 8 ea (0675PKG8). Please specify the Bar and Mix for example -4ea., B01M3 plates is ordered as "0675PKG4-B01M3"

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## MODEL 0676 SOIL RETAINER ASSEMBLIES

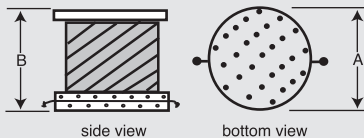
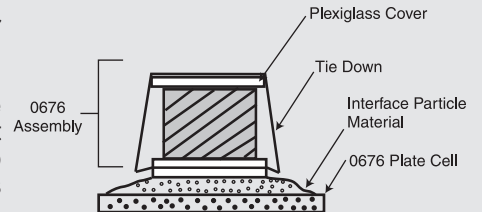
- The preferred way to handle undisturbed or prepared soil samples for water retention studies
- Simple construction and easy maintenance
- Transport samples to and from weighings without disturbance

### FEATURES

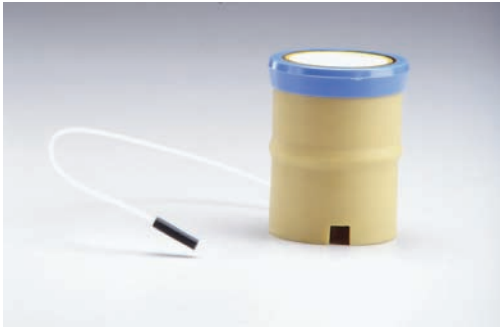
These useful assemblies are used in conjunction with sampling equipment using “undisturbed” soil samples or prepared samples for discrete determination of soil water retention characteristics. The unit consists of a 1/4 in. x 2-1/4 in. ceramic plate with stainless steel tie downs, clear plastic cover and 3 cm long brass sampling cylinder (Model 0206L03).

### TYPICAL APPLICATIONS

The 0676 allows researchers to measure a single sample over extended pressure ranges in conjunction with moisture retention measurements. Once wetted to saturation, the sample within the brass cylinder can easily be placed on an intermediate particle bed covering the pressure plate cell and pressurized to a specific value. Upon reaching a state of equilibrium, the extractor is opened and the sample retainer assembly is weighed and then returned to the extractor for the next pressure value. This method allows the researcher a quick and repeatable way to measure the same sample accurately over numerous pressure values. It eliminates the need for large quantities of replacement samples for each pressure value.



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES						PART NUMBER
	A		B		Weight		
	Inches	cm	Inches	cm	oz	gms	
1 BAR STD	2.25	5.72	1.50	3.81	4.64	130	0676



### MODEL 0685 POROUS CUP ASSEMBLIES

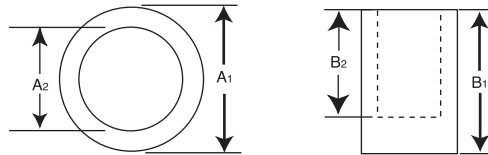
- Fast determination of prepared soil samples
- Available in 1 and 15 bar values
- Small, compact, fits most all extractors
- A controlled suction environment for growth

### FEATURES

This injection molded outer elastomer casing and tough interior porous ceramic cup make it a great combination. The elastomer protects the ceramic from damage and adjusts to applied pressures while the porous ceramic provides an easy interface for water pushed from the sample. A sandwiched coarse nylon screen provides a continuous drainage path for the water. The enormous interior surface area of the cup makes it an ideal receptacle for large prepared samples that must reach equilibrium quickly, reducing waiting times by factors of 10 or more in many cases. All parts are nonmetallic, permanently joined, and free from possible contamination from volatile sealants or compounds.

### TYPICAL APPLICATIONS

The 0685 Series are generally used for the quick determination of soil moisture retention values. The development of a moisture retention curve is much easier and accurate with a cup assembly that can be removed and weighed without disturbing the sample. The large interior ceramic surface areas assure reaching equilibrium in the fastest time possible. Of course, the adaptable unit can be used in the extractor for pressure extractions of pastes and thick solutions or outside the extractor for stand alone, weighable, suction environments for seedlings and other small plants.



AIR ENTRY VALUE	DIMENSIONS/TOLERANCES										PART NUMBER
	A <sub>1</sub>		A <sub>2</sub>		B <sub>1</sub>		B <sub>2</sub>		WEIGHT		
	Inches	cm	Inches	cm	oz	gms					
1 BAR HF	2.40	6.10	1.76	4.47	3.20	8.13	2.21	5.61	7.20	220	0685B01F
15 BAR	2.40	6.10	1.76	4.47	3.20	8.13	2.21	5.61	6.72	190	0685B15F

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## ACCESSORY ITEMS



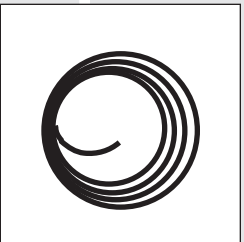
### model 0980 Epoxy kits

Soilmoisture's Model 0980 Epoxy Kit is a clean, time proven, 2-part, semi-flexible inert epoxy joining material in kit form. A superb combination (Furane-type epoxy and hardener) that, when mixed together, is capable of joining materials of dissimilar coefficients of expansion.

The epoxy makes an excellent seal for porous ceramics and such dissimilar materials as PVC pipe, neoprenes, and Butyl elastomers.

Since this epoxy process contains no activators and uses nonvolatile organic components, it provides contaminate-free joints and seals. In addition the epoxy is virtually inert to most all bases, acids, and salts making it perfect for sensitive research and tough operating environments. It is not recommended for use with lucite. Each kit contains equal amounts of epoxy and hardener.

- 0980V004      04oz Kit (Epoxy & Hardener, makes a total of 8 oz.)
- 0980V016      16oz Kit (Epoxy & Hardener, makes a total of 32 oz.)
- 0980V032      32oz Kit (Epoxy & Hardener, makes a total of 64 oz.)



### model MRT series Rubber Tubing

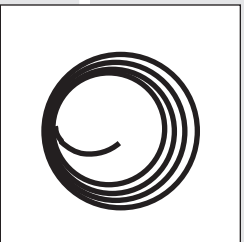
The MRT series is a selection of black opaque Neoprene or Butyl tubing you may find helpful for your specific project. Since Neoprene and Butyl are hardy and stretchable synthetic rubbers they make good primary flexible joints, they also act as a link to join the more rigid parts and tubing sections sometimes of fairly dissimilar size. In general, a Butyl product has fewer ingredients and amendments and is considered a "cleaner" product.

#### 1/16" .062 ( 15.7 mm) INSIDE DIAMETER

- 1901RED062L010 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 10 ft.
- 1901RED062L025 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 25 ft.
- 1901RED062L050 EPDM ELASTOMER CONNECTING TUBING .062 in (15.7 mm) Dia., .062 in (15.7 mm) Wall, 50 ft.

#### 3/16" .187 ( 63.5 mm) INSIDE DIAMETER

- 1901RED187L010 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 10 ft.
- 1901RED187L025 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 25 ft.
- 1901RED187L050 EPDM ELASTOMER CONNECTING TUBING .187 in (47.7 mm) Dia., .125 in (31.7 mm) Wall, 50 ft.



### model MYT series nylon tubing

The MYT series is a selection of translucent white Nylon tubing available to transport solutions, water, and air, to and from ceramics parts and assemblies. The tough tubing is perfect for field and commercial use where elevated pressures and vacuums may be applied. It should be remembered that Nylon will absorb a small water content over time lengthening the tubing; of course the reverse is true once wetted.

#### 1/8" .125 ( 31.7 mm) OUTSIDE DIAMETER

- 1901PND125L025 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.
- 1901PND125L050 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.
- 1901PND125L100 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.
- 1901PND125L500 NYLON ACCESS TUBING, .125 in (31.7 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.

#### 1/4" .250 ( 63.5 mm) OUTSIDE DIAMETER

- 1901PND250L025 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 25 ft.
- 1901PND250L050 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 50 ft.
- 1901PND250L100 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 100 ft.
- 1901PND250L500 NYLON ACCESS TUBING, .250 in (63.5 mm) Dia., .031 in (7.87 mm) Wall, 500 ft.





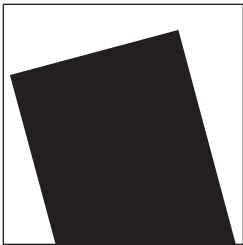
## ACCESSORY ITEMS



### **model MBT series copper tubing**

Used for evacuation of soil water samples which utilize our porous ceramic cups and plates.

MBT013L50 1/4" O.D. x .030" wall, 50 ft. roll



### **model MRF butyl sheeting**

Used for backing on our porous ceramic plates and as rubber boots in our porous ceramic cup assemblies.

MRF 002-003 36" wide sold by linear foot

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**Formulas or Mixes (M) and associated specific (B) Bar values:**

**B0.5 - 1/2 Bar (7.25 psi or 50KPa) Air Entry Ceramics**

**CERAMIC-B0.5M2**

This ceramic is developed from a high fired, Alumina body. The resulting ceramic is an excellent material which is extremely porous, inert to most all solutions, possesses hard exterior and interior surfaces, and is pure white in color. This material is recommended for low pressure differentials not exceeding 7.4 psi. The tremendous porosity and high conductivity of fluids or gases make it ideal for quick extractions or in creating, monitoring or extracting pulse hydrological events. The material is ideal for liquid or gas sampling as the Alumina material has almost no ionic exchange sites or "leachable" mineralogy. This is a truly superior ceramic for both industrial and scientific work where high volume transfer or testing at low pressure differentials is necessary .

**B01 - 1 Bar (14.5 psi or 100KPa) Air Entry Ceramics**

**CERAMIC-B01M1**

This ceramic is developed from a moderately fired largely Talc body. The resulting ceramic material, made from a time proven formula, is a utilitarian ceramic having good porosity, tough exterior and interior surfaces, and is ivory white in color. This material is recommended for general purpose uses that involve pressure differentials under 15 psi. This ceramic is an excellent choice where cost and precise content of fluids or extracts are not at issue. This material has been applied successfully to tensiometers, pressure plate assemblies, suction tables and the like for nearly 50 years. This ceramic is not recommended for precision fluid sampling work as it has some ionic exchange sites and a mineralogy that is leachable with strong acids over the years. This is the perfect choice for those needing a low cost industrial ceramic product or where the science requires minimal fluid content determinations.

**CERAMIC-B01M3**

This ceramic, like the B0.5M2, is developed from a high fired Alumina body. The resulting ceramic is an excellent material. It is extremely porous, inert to most all solutions, possesses hard exterior and interior surfaces, and is pure white in color. This material is recommended for standard pressure differentials not exceeding 15 psi. The tremendous porosity and ability to conduct large amounts of fluids or gases makes it ideal for quick extractions, and creating, monitoring or extracting pulse hydrological events. The material is ideal for liquid or gas sampling as the Alumina material has almost no ionic exchange sites or "leachable" mineralogy. A great material for most any application involving sampling, testing, monitoring or infusion where precision and actual liquid contents are of importance.

**B02 - 2 Bar (29.4 psi or 200KPa) Air Entry Ceramics**

**CERAMIC - B02M1**

This ceramic is developed from a variety of ball clays into a moderately fired ceramic body. The fired product has an effective porosity and good hydrologic flow capability. Bubbling pressures for this ceramic are pressure differentials less than 29.4 psi. This general use ceramic is most often used on specialized plates for soil water retention or in unique oil and gas industries for reclamation studies. The material is moderately hard and creamy white in color. This ceramic is recommended for specialized applications using plates.





### **B02 - 2 Bar (29 psi or 200KPa) Air Entry Ceramics**

#### **CERAMIC - B02M2**

This porcelain ceramic is developed from a high fire Silica body. The resulting ceramic is an excellent material for slightly elevated pressure differentials not exceeding 29.4 psi. The material has a somewhat grainy texture and pure white appearance. A good material for sampling fluids and gases as porcelain has few ionic exchange sites or “leachable” mineralogy. With the good porosity and hydrologic characteristics, this ceramic provides a material that can be used by oil companies or agricultural research scientists. This ceramic is an excellent choice for those needing the added capacity of elevated pressure differentials and precise fluid content measurements.

### **B03 - 3 Bar (43.5 psi or 300Kpa) Air Entry Ceramics**

#### **CERAMIC B03M1**

This ceramic is developed from a complex mixture of ball clays into a moderately fired ceramic body. The resulting ceramic has good porosity and good hydrologic flow capability. Bubbling pressures for this ceramic are pressure differentials exceeding 44 psi. This ceramic is generally used within pressure vessel equipment for the determination of soil water retention or in oil and gas industries for reclamation studies. The material is moderately hard and tannish-white in color. This ceramic is recommended for specialized applications where the differential pressures will be less than 44 psi.

### **B05 - 5 Bar (72.5 psi or 500Kpa) Air Entry Ceramics**

#### **CERAMIC - B05M1**

This ceramic, like the “B03M1”, is developed from a complex mixture of ball clays into a fired ceramic body. The resulting ceramic has good porosity and good hydrologic flow capability. Bubbling pressure or air entry values are pressure differentials exceeding 74 psi or greater. It is generally used within pressure vessel equipment for the determination of soil water retention or in oil and gas industries for reclamation studies. The material is very hard and brownish-white in color. This ceramic is recommended for specialized applications where the differential pressures will be less than 74 psi.

### **B15 - 15 Bar (217.5 psi or 1500KPa) Air Entry Ceramics**

#### **CERAMIC - B15M1**

This ceramic is developed from a proprietary mixture of ball clays fired to a ceramic body. The resulting ceramic material is pinkish-tan in color, moderately hard and will withstand pressure differentials of 220 psi. This unique ceramic, incorporated into 0675 pressure plate cells, has been used in Agronomy for many years in water retention studies to a theoretical wilting point of 15 bars. It has also found use in the oil and gas industries in studies of reclamation and production techniques. It remains the worldwide choice of experts when they need to know the behavior of liquids to a 3 dimensional porous material that mimics soil and stone. The B15M1 is still the only ceramic in the world that, when wetted, can withstand a pressure differential of 220 psi and not leak or bubble. The unique characteristics of the B15M1 ceramic make it the selection of experts and scientists who are involved in liquid movements and transfer conditions at elevated pressure differentials.

### **NOTE: Formulas and Mixes**

The above formula descriptions for our ceramics are keyed to the “bubbling” (B) or air entry value of a ceramic. There may be one or more “mixes” (M) associated with a particular air entry value. M1 will denote the first formula, M2 the second, and so forth. An example of this non-relationship: M1 mix for a B1 (one bar air entry value) is not in any manner related to the mix or formula M1 for a B5 (five bar entry value ceramic).

## Glazing

All glazing used in conjunction with the fabrication of standard or special products is of highest quality and contains no lead. How to specify or heavy metals that could leach into solution samples. Glazes come in several firing temperatures and can be applied in one or two step processes to meet the most demanding requirements. Glazing can also be applied to one or more surfaces to create the wicking or capillary pathways of desired width and direction.

## HELPFUL HINTS

### ACID WASHING A CERAMIC? - IT'S GENERALLY NOT NEEDED

There are some who believe that all ceramics need to be washed with a strong acid to "clean" pores of possible ionic exchange sites prior to use in liquid sampling. This misconception is based upon older ceramic mix formulas (1960's) of moderately fired ceramics such as our B01M1 which has a talc component with potential ion exchange sites. In those early cases, some ionic exchange did occur during the first sampling periods as weak mineralogical lattice sites exchanged larger ions for more highly charged smaller ions. In reality, however, after several weeks in situ the transfer of ions was completed and the saturated lattice sites within the ceramic were at equilibrium with local soil waters. Acid washing cleaned most of the susceptible lattice sites in pore areas of these moderately fired ceramics leaving new holes within the ceramic lattice. As before, the first samples lacked uniformity with pore water content as the highly charged ions found these preferential "cleaned" mineralogical sites within the ceramic. After several weeks of installation and use, the cleaned sampler ionic sites were saturated and at equilibrium with the surrounding soil waters.

For solution sampling we recommend only the use of high fired, very stable and clean porous ceramics like the B0.5M2, B01M3, B02M2 that provide not only the hydraulic properties and air entry values that far exceed older formulas, but also possess the levels of cleanliness and stability designed for liquid content sampling. Even these extremely clean ceramics may, upon first use, attract some cations that have an affinity for the generally negative surfaces within the ceramic. All naturally hydrophilic materials will have these tendencies to affect initial ionic content in some slight manner no matter how pure and inert the hydrophilic material. The rule of thumb is "pore structure and pore liquids reach an equilibrium state after 5 to 8 pore volumes have traveled the pore spaces". This is the reason why the first several samples should be ignored as the samples will probably not precisely represent the actual pore fluids.

### IF YOU MUST WASH

If you must consider solution sampling using our moderately fired materials such as B01M1, B03M1, B05M1, B15M1 (not recommended for solution sampling), we would suggest a simple acid wash as described below:

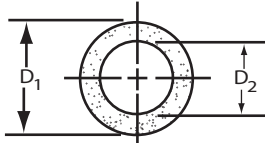
Prepare a 1 Normal solution Hydrochloric Acid (HCl) and pass 30 pore volumes of the acid wash through the ceramic by gravity or slight pressure. Rinse with 20 pore volumes of deionized or distilled water.

Again, as pointed out earlier, the washing process will result in a ceramic that has a fair amount of empty lattice sites waiting to snag the unwary ionic traveler. Once in situ, these sites are filled and a state of equilibrium will exist between soil solution contents and pore solution contents.

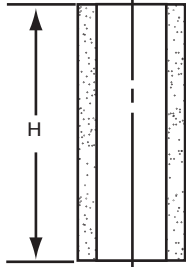




## How to specify special ceramics



640 POROUS  
CERAMIC  
CYLINDER



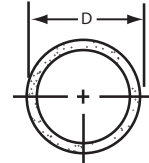
D1= TOL=

D2= TOL=

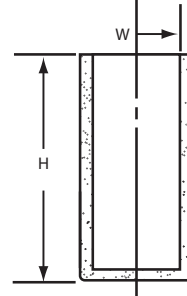
H= TOL=

Air entry values=

\_\_\_\_\_ Bar



651 FLAT  
BOTTOM  
STRAIGHT  
WALL CUP



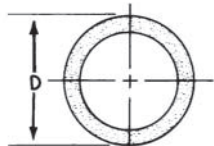
D = TOL=

H = TOL=

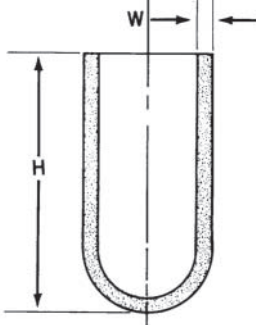
W = TOL=

Air entry values=

\_\_\_\_\_ Bar



652 ROUND  
BOTTOM  
STRAIGHT  
WALL CUP



D1= TOL=

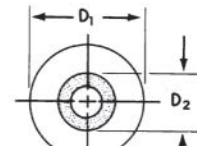
D2= TOL=

H= TOL=

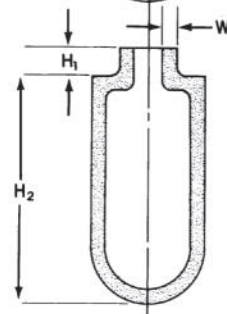
W= TOL=

Air entry values=

\_\_\_\_\_ Bar



653 ROUND  
BOTTOM  
NECK TOP CUP



D1= TOL=

D2= TOL=

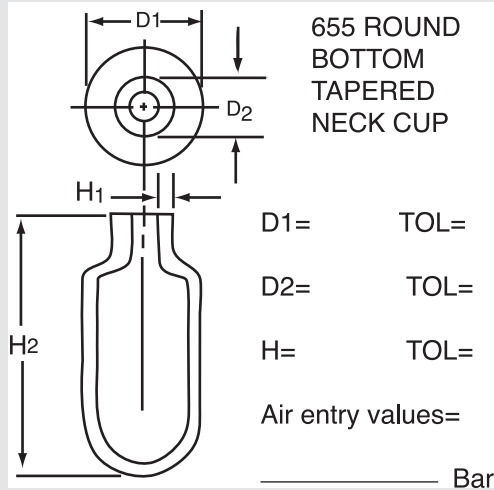
H1= TOL=

H2= TOL=

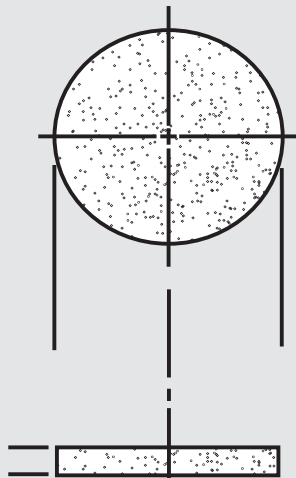
Air entry values=

\_\_\_\_\_ Bar

Remember that you can request specialized machining or glazing on your parts as well.



### Special Ceramics Specifications

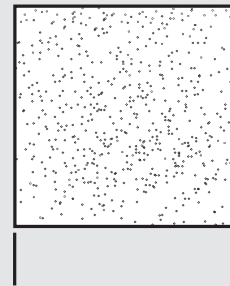


SPECIAL ROUND CERAMIC PLATE

D=      TOL=

T=      TOL=

Air entry values= \_\_\_\_\_ Bar



SPECIAL SQUARE CERAMIC PLATE

D=      TOL=

T=      TOL=

Air entry values= \_\_\_\_\_ Bar

Remember that you can request specialized machining or glazing on your parts as well.





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