

Geotech Sand Shaker

Mechanical Sieve Field Analysis Kit
Operation Manual



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DOCUMENTATION CONVENTIONS

This uses the following conventions to present information:



WARNING

An exclamation point icon indicates a **WARNING** of a situation or condition that could lead to personal injury or death. You should not proceed until you read and thoroughly understand the **WARNING** message.



CAUTION

A raised hand icon indicates **CAUTION** information that relates to a situation or condition that could lead to equipment malfunction or damage. You should not proceed until you read and thoroughly understand the **CAUTION** message.



NOTE

A note icon indicates **NOTE** information. Notes provide additional or supplementary information about an activity or concept.

Section 1: System Description

Function and Theory

The Geotech Sand Shaker is a mechanical sieve kit designed to provide reliable grain size analysis. It features 20 stainless steel screens ranging in size from US sieve No. 4 to 270. The sample is placed into the top of five clear acrylic cylinders and shaken to distribute particles. Volumetric percentages are indicated on the Sand Shaker frame.

System Components

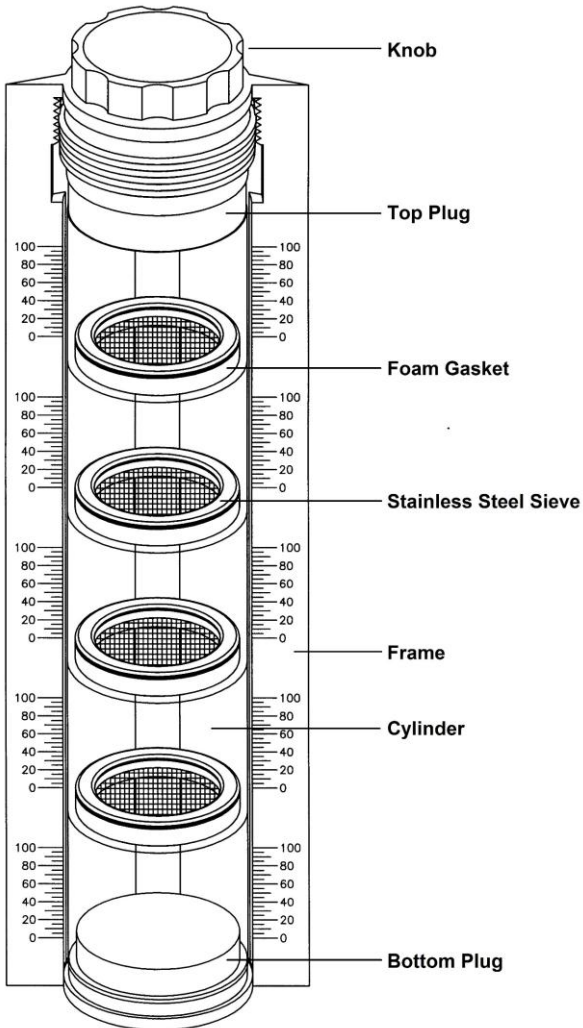


Figure 1-1 – Sand Shaker Assembly

Description	Quantity
Frame	1
Cylinders	5
Top cap	1
Bottom Plug	1
Foam gaskets	4
Sieves	20

Sieves:

- Stainless steel mesh and edging
- Twenty (20) interchangeable units

Sizes:

Sieve Designation	Mesh Opening (inches)	Mesh Opening (mm)	US Standard Sieve No.
187 OPN	0.1870	4.7498	4
132 OPN	0.1320	3.3528	6
90 OPN	0.0900	2.2860	8
72 OPN	0.0720	1.8288	10
60 OPN	0.0600	1.5240	12
51 OPN	0.0510	1.2954	14
46 OPN	0.0460	1.1684	16
40 OPN	0.0400	1.0160	18
30 OPN	0.0300	0.7620	20
26 OPN	0.0260	0.6604	25
23 OPN	0.0230	0.5842	30
20 OPN	0.0200	0.5080	35
15 OPN	0.0150	0.3810	40
09 OPN	0.0090	0.2286	60
055 OPN	0.0055	0.1397	100
046 OPN	0.0046	0.1168	120
041 OPN	0.0041	0.1041	140
029 OPN	0.0029	0.0737	200
024 OPN	0.0024	0.0610	230
021 OPN	0.0021	0.0533	270

The mesh-opening size is stamped on the flat face edge of each sieve.

Cylinders:

- Clear acrylic cylinders
- 2" (5 cm) ID
- 1.85" (4.7 cm) long

Frame:

- ABS plastic
- 4" (10 cm) OD
- 14.5" (37 cm) long

Section 2: System Installation

Your Geotech Sand Shaker comes as an assembled unit. When unpacking, be sure that all necessary components have been included and are not damaged. Refer to System Components in Section 1 for a complete list.

Section 3: System Operation

1. Dry the soil or formation sample.
2. Press the selected sieves into the recess of the cylinders; the flat side of the sieve should be pressed against the flat face of the cylinder (the sieve has been constructed to fit tightly within the cylinder). Apply pressure to the metal edge when inserting or removing the pieces.
3. Insert the foam gasket ring, which compensates for the variable thickness of the sieves.
4. Stack the cylinders; the plug is the bottom pan and the cap is the top of the assembly.
5. Measure the amount of soil to be sieved.
6. Remove the top and pour the measured sample into the upper cylinder.
7. Replace the top and insert the stack of cylinders into the frame.
8. Turn the knob to secure the stack of cylinders within the frame.
9. Check to ensure that the top of each sieve corresponds to the “zero” graduation.
10. Shake the unit to distribute the different sized particles.
11. Read the percentages of each of the quantities retained by the various sieves and the bottom pan (if the amount to be sieved corresponds to the volume on the graduated scale, the size distribution can be read as a percent of the total sample: volume = 100ml = 100 percent).

Section 4: System Maintenance

- Clean component pieces with mild detergent and water. Rinse with clean tap water.
- A soft bristle plastic brush may be used to dislodge dirt.
- Allow to air dry.

Section 5: System Troubleshooting

Problem: Sand Shaker will not screw together.

Solution:

- Make certain that clear cylinders do not have sand or other foreign matter between them.

Problem: Sieve operation is incorrect.

Solutions:

- Check for damaged gaskets.
- Check for damaged screens.
- Make certain screens have been properly installed.

Section 6: System Specifications

Guide to the Textural Classification of Soil
(U.S. Department of Agriculture Soil Conservation Service)

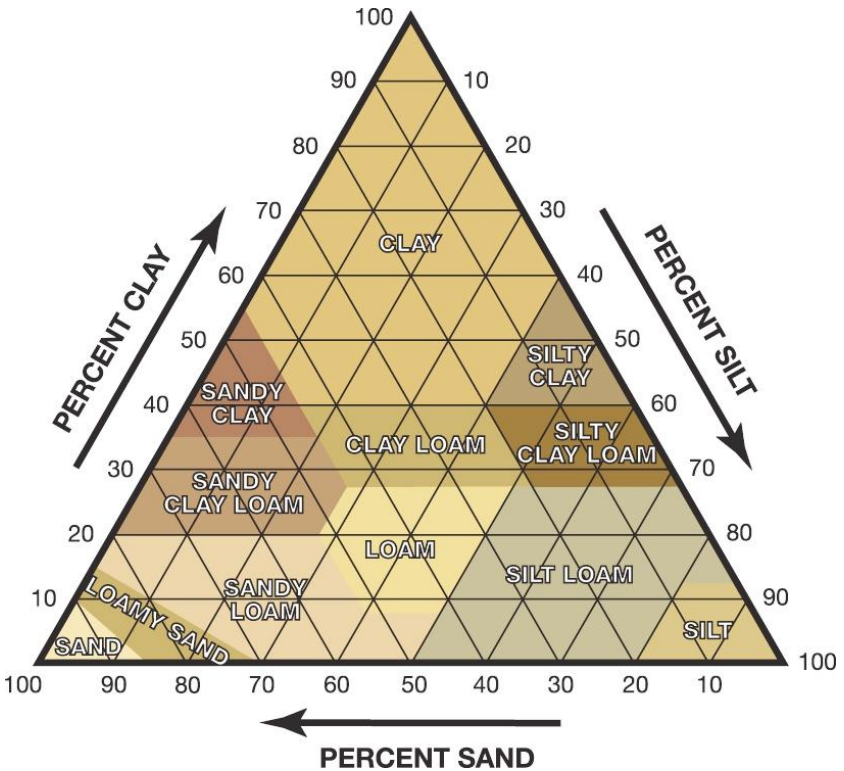


Figure 6-1

Section 7: System Schematic

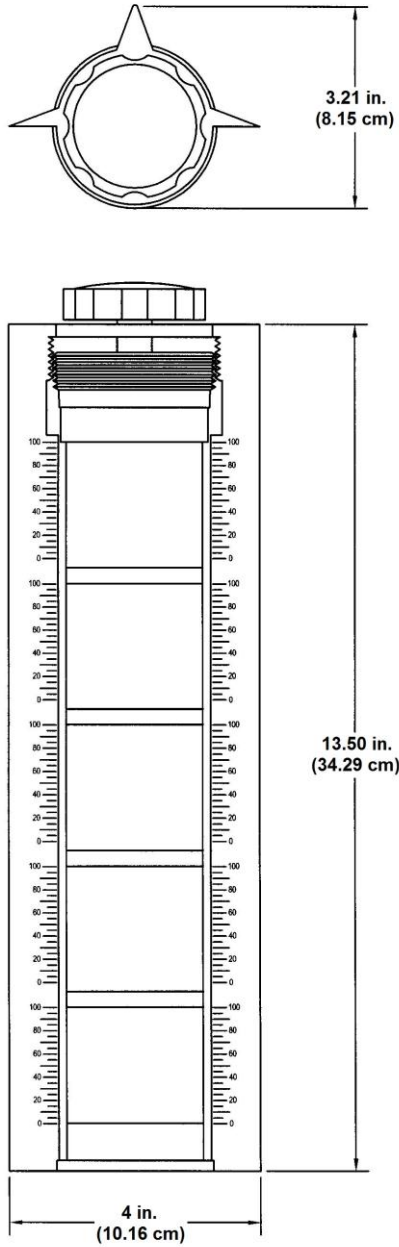


Figure 7-1

Section 8: Replacement Parts List

Parts Description	Parts List
ASSY,SCREEN PACK,SS,SANDSHAKER QTY 20	51450001
ASSY,FRAME,PC,SANDSHAKER	51450002
CYLINDER,ACR,SANDSHAKER	21450001
GASKET,SANDSHAKER	11450001
PLUG,ACR,SANDSHAKER	21450002
CAP,ACR,SANDSHAKER	21450003
MANUAL,SANDSHAKER	11450022

The Warranty

For a period of one (1) year from date of first sale, product is warranted to be free from defects in materials and workmanship. Geotech agrees to repair or replace, at Geotech's option, the portion proving defective, or at our option to refund the purchase price thereof. Geotech will have no warranty obligation if the product is subjected to abnormal operating conditions, accident, abuse, misuse, unauthorized modification, alteration, repair, or replacement of wear parts. User assumes all other risk, if any, including the risk of injury, loss, or damage, direct or consequential, arising out of the use, misuse, or inability to use this product. User agrees to use, maintain and install product in accordance with recommendations and instructions. User is responsible for transportation charges connected to the repair or replacement of product under this warranty.

Equipment Return Policy

A Return Material Authorization number (RMA #) is required prior to return of any equipment to our facilities, please call our 800 number for appropriate location. An RMA # will be issued upon receipt of your request to return equipment, which should include reasons for the return. Your return shipment to us must have this RMA # clearly marked on the outside of the package. Proof of date of purchase is required for processing of all warranty requests.

This policy applies to both equipment sales and repair orders.

FOR A RETURN MATERIAL AUTHORIZATION, PLEASE CALL OUR
SERVICE DEPARTMENT AT 1-800-833-7958.

Model Number: _____

Serial Number: _____

Date of Purchase: _____

Equipment Decontamination

Prior to return, all equipment must be thoroughly cleaned and decontaminated. Please make note on RMA form, the use of equipment, contaminants equipment was exposed to, and decontamination solutions/methods used. Geotech reserves the right to refuse any equipment not properly decontaminated. Geotech may also choose to decontaminate the equipment for a fee, which will be applied to the repair order invoice.

Geotech Environmental Equipment, Inc.

2650 East 40th Avenue Denver, Colorado 80205

(303) 320-4764 • **(800) 833-7958** • FAX (303) 322-7242

email: sales@geotechenv.com website: www.geotechenv.com