

## HAND OPERATED SIEVE ANALYSIS KIT Instruction Manual

**Note: The Grind Sizer is designed to give an approximate volumetric analysis of coffee grind size distribution in a field or retail setting. Results may vary relative to the size range and moisture level of the particles, as well as the time and level of shaking. A balance may be used to more accurately reflect retained amounts.**

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# DOCUMENTATION CONVENTIONS

This manual 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.

## **Chapter 1: System Description**

### **Function and Theory**

The Coffee Grind Sizer is a mechanical sieve kit designed to provide reliable grain size analysis. It features 6 stainless steel coffee grind screens ranging in size from US sieve No. 12 to 60, plus an additional 14 sieves. The sample is placed into the top of five clear acrylic cylinders and shaken to distribute particles. Volumetric percentages are indicated on the Shaker frame.

## System Components

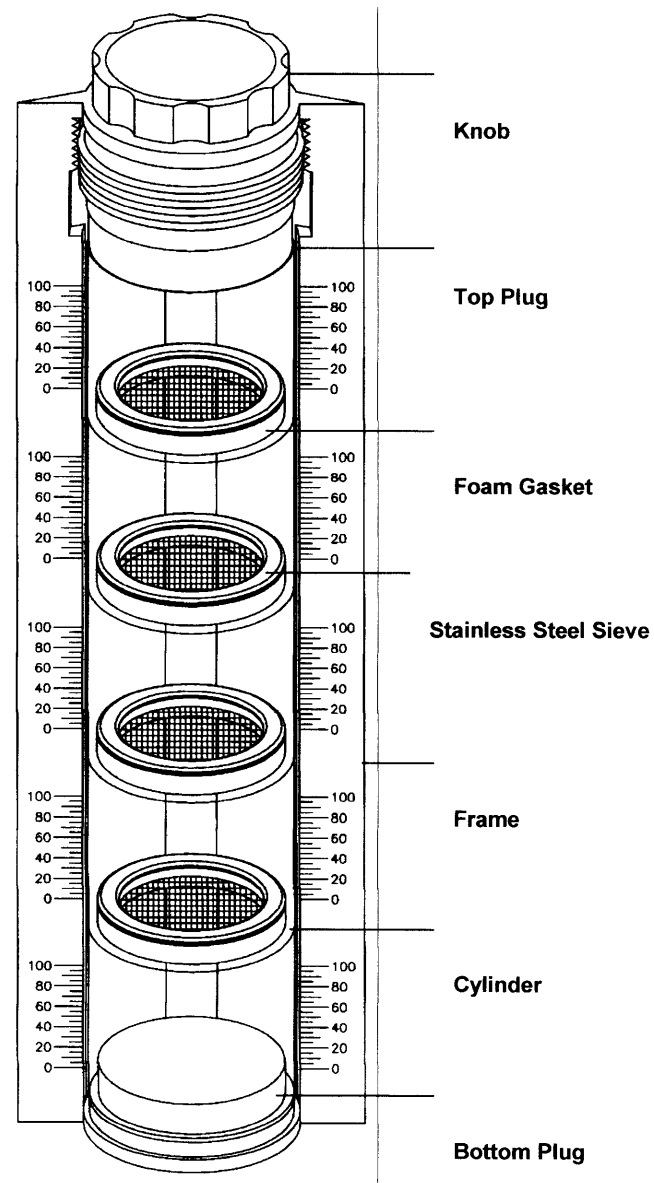


Figure 1

<u>Quantity</u>	<u>Description</u>
1	Frame
5	Cylinders
1	Top cap
1	Bottom Plug
4	Foam gaskets
6	Sieves

- Sieves:**
- Stainless steel mesh and edging
  - Twenty (20) interchangeable units
  - Sizes:

**Standard Coffee Grind Analysis Mesh Sizes**

Sieve Designation	ASTME 11 Designation
60 OPN	#12
46 OPN	#16
30 OPN	#20
23 OPN	#30
15 OPN	#40
09 OPN	#60

**Other Sizes**

187 OPN	#4
132 OPN	#6
90 OPN	#8
72 OPN	#10
51 OPN	#14
40 OPN	#18
26 OPN	#25
20 OPN	#35
055 OPN	#100
041 OPN	#140
029 OPN	#200
024 OPN	#230
021 OPN	#270

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

- Cylinders:**
- Clear acrylic cylinders
  - 2" I.D.
  - 1.85" long

- Frame:**
- ABS plastic
  - 4" O.D.
  - 14.5" long

## Chapter 2: System Installation

Your Grind Sizer comes as an assembled unit. When unpacking, be sure that all necessary components have been included and are not damaged. Refer to page 5, System Components for a complete list.

## Chapter 3: System Operation

1. 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.
2. Insert the foam gasket ring which compensates for the variable thickness of the sieves.
3. Stack the cylinders; the plug is the bottom pan and the cap is the top of the assembly.
5. Measure the amount of sample to be sieved. About half of one cylinder works best with coffee grinds
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 =  $100ml = 100\text{ percent}$ ).

**NOTE: For coffee grinds it is often more practical, and useful, to ensure that the amount of fines below #30 mesh size does not exceed 20% by weight.** The larger aperture screens are useful in separating out the larger particles, and keeping them from clogging up the next size screen down.

## Chapter 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 small grinds.
- Allow to air dry.

## Chapter 5: System Troubleshooting

**PROBLEM:** GRIND SHAKER WILL NOT SCREW TOGETHER.

**SOLUTION:** Make certain that clear cylinders do not have particles or other foreign matter between them.

**PROBLEM:** SIEVE OPERATION IS INCORRECT

**SOLUTION:**

A. Check for damaged gaskets. B. Check for damaged screens.

C. Make certain screens have been properly installed.

## CHAPTER 6: System Schematic

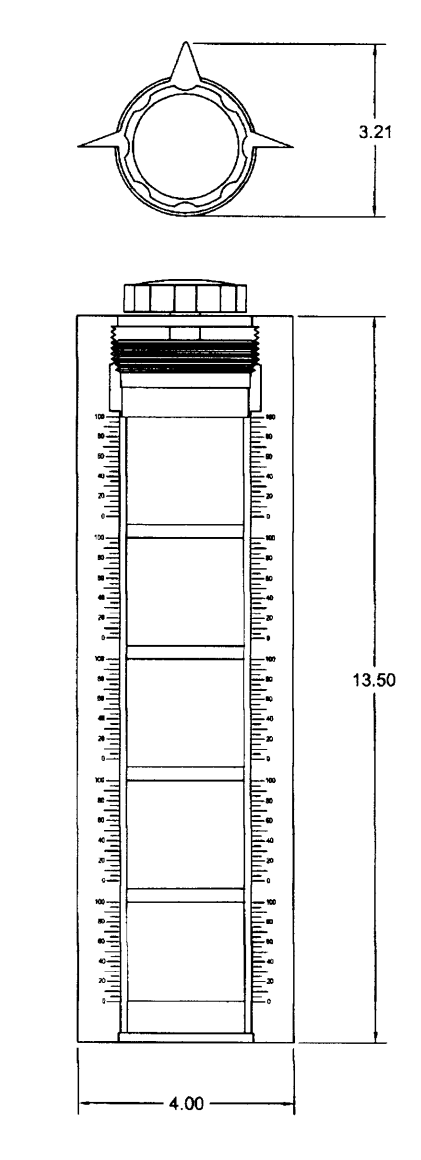


Figure 3

## Chapter 7: Replacement Parts List

Part Number	Part Description
51450001	Assy, Screen Pack, SS, Grind Shaker
51450002	Assy, Frame, PC, Grind Shaker
21450001	Cylinder, ACR, Grind Shaker
11450001	Gasket, Grind Shaker
21450002	Plug, ACR, Grind Shaker
21450003	Cap, ACR, Grind Shaker
11450022	Manual, Grind Shaker

### 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. Coffee Laboratory agrees to repair or replace, at Coffee Laboratory's option, the portion proving defective, or at our option to refund the purchase price thereof. Coffee Laboratory 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 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 1-804-435-5522

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date: \_\_\_\_\_

### 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.

Coffee Laboratory reserves the right to refuse any equipment not properly decontaminated. Coffee Laboratory may also choose to decontaminate equipment for a fee, which will be applied to the repair order invoice.

## HELPFUL HINTS AND APPLICATIONS

The Coffee Grind Sizer is a manual sieve kit designed to provide a quick visual analysis of coffee grind size distribution. It features six stainless steel screens ranging in size from US sieve No. 12 to 30, plus an additional 14 sieves. The sample is placed into the top of the five clear acrylic cylinders, then shaken to distribute the coffee particles.

For an actual detailed grind analysis, a sieve shaker is required, but for a quick check to ensure that the amount of fines passing the #30 sieve, don't exceed 24% (\*COFFEE:AN EXPORTERS GUIDE Geneva 2002) as this may cause bitterness, the Grind Sizer can be a useful tool, especially for use in remote locations and cafe's, where a sieve shaker isn't practical.