

**ATM SONIC SIFTER  
MODEL L3P**

**OPERATING  
INSTRUCTIONS  
MANUAL  
AND  
ACCESSORY  
GUIDE**



**ATM CORPORATION**  
SONIC SIFTER DIVISION

645 S. 94th Place • Milwaukee, WI 53214 • Tel. (414) 453-1100



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For information concerning our production size  
Sonic Sifters, contact your ATM Representative  
or call/write to:

ATM Corporation  
645 S. 94th Place  
Milwaukee, WI 53214  
(414) 453-1100

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**ATM CORPORATION**  
**MODEL L3P SONIC SIFTER**  
**PURCHASER'S 1 YEAR WARRANTY**

The ATM Corporation guarantees all its apparatus against defective material and workmanship for a period of one year from the date of delivery. This guarantee is limited to repair or replacement of the defective apparatus in our factory in Milwaukee, Wisconsin. The company does not assume responsibility or accept invoices for unauthorized repairs to its apparatus. Under no circumstances shall the ATM Corporation be liable for loss of profits or other damages.

The ATM Corporation is not responsible for damage to apparatus due to improper installation or operation beyond its rated capacity (intentional or otherwise.)

It is distinctly understood that the above covers all conditions under which ATM Corporation apparatus is sold. This warranty is valid only if the purchaser returns the attached warranty registration card (see back cover) to us within 30 days of purchase.

ATM Corporation, 645 S. 94th Place, Milwaukee, WI 53214



# SPECIFICATIONS FOR THE ATM SONIC SIFTER MODEL L3P

## POWER REQUIREMENTS

Power Input ..... 120 Volts, 60 Cycles  
110 Volts, 50 Cycles

## GENERAL SPECIFICATIONS

Stainless Steel Test Table  
Steel Cabinet and Frame  
Acrylic Sieve Frames, Spacers and Cone  
Aluminum Fines Collector Holder  
Aluminum and Stainless Steel Column Lock

## PORTABLE

Weight: 34 lbs. (15.4 kg)  
Height: 23" (58.4 cm) - requires less than 1 square foot of counter space and need not be fastened down.

## SCREEN SIZES

U.S. Standard Sieves - In order to utilize the full capabilities of the ATM Sonic Sifter, it is recommended that the ATM sieves with the exclusive "See-Through" feature be used. Sieves are available in U.S. Standard Sieve Series and International Standards Organization mesh sizes from No. 3½ through No. 400. When selecting sizes larger than No. 20 (850 microns), please consult your ATM Corporation representative.

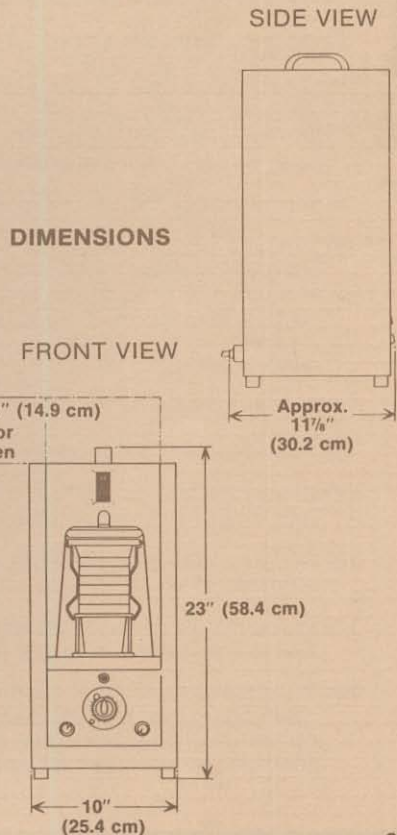
Precision Sieves - ATM can also supply sieves having mesh sizes from 150 microns down to 5 microns. These sieves are made of electroformed nickel mesh.

See Page 8 for a complete listing of ATM Sonic Sifter Sieves.

## OPERATING CONDITIONS

This device will function properly at any humidity level within the temperature limits of 0° to 120° F (-18°C to 50°C). However, for test repeatability, it is recommended that the ambient temperature and humidity be controlled.

Sieves should never be subjected to temperatures beyond +125° F (52°C) and -45° F (-43°C). External vibrations of low energy level will have little effect upon the accuracy of results. To insure optimum results, the instrument should operate on a level surface. This helps to even out the layer of particles on each sieve.

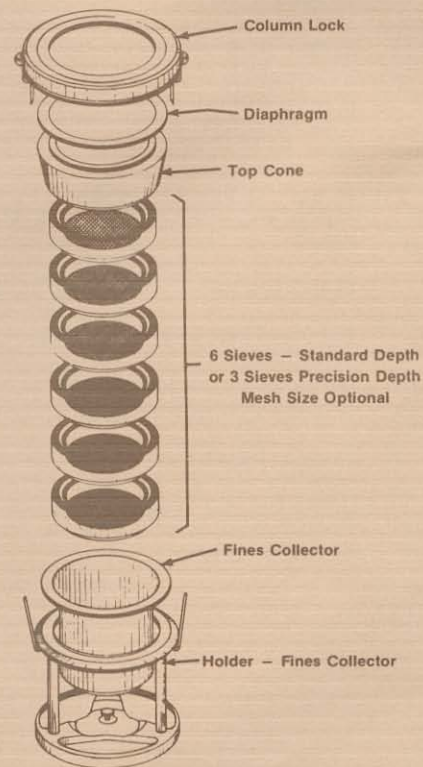


## OPERATING INSTRUCTIONS

- 1) Place Sonic Sifter on a level surface for operation.
- 2) Plug the line cord into the socket at the rear of the unit and then into a 120 volt, 60 cycle power source or a 110 volt, 50 cycle power source.
- 3) Turn the three position switch (See control panel diagram, A) to the 'SIFT-PULSE' position. At this point, the light at the rear of the sift chamber should be illuminated.
- 4) Select the sieves required for analysis. Up to six standard height, or three precision height sieves can be used at a time.
- 5) Weigh and record tare weights of sieves, spacers, diaphragm, fines collector and top cone.
- 6) Install the fines collector by setting the collector in the fines collector holder. Fasten the round plate at the bottom of the collector to the holder by slipping the keyhole slot over the fastener head.
- 7) Assemble the sieve stack with the coarsest sieve on the top of the stack and the finest sieve at the bottom. If less than six standard height or three precision height sieves are used, add spacers as required to fill out the stack to the proper height. Generally, the spacers should be placed toward the top of the sieve stack. Place the sieve stack on the fines collector holder with a fines collector installed.
- 8) Place the top cone on the sieve stack.
- 9) Select a proper weight of powder sample. When sieving materials larger than 38 microns, do not exceed 20 grams. When sieving materials smaller than 38 microns, do not exceed 10 grams. A good starting point for most tests is one gram. The sample size can be gradually increased until the optimal combination of sample size, sift interval and amplitude is determined.
- 10) Place the powder sample on the top sieve.
- 11) Position the diaphragm (with ring protruding downward) on the top cone.
- 12) Place column lock onto the sieve stack and press down until the latch bars lock onto the fines collector holder.
- 13) Position both the amplitude control and timer dial at '0'. (See control panel diagram, B & C)
- 14) Place the sieve stack assembly in the sift chamber. Note: Be sure that the stack is positioned snugly between the pins.
- 15) To seal the sieve stack assembly, insert your thumb and forefinger into the openings between the lowest sieve and the column lock bars and push outward on both bars. The latch bars will release to form a spring-loaded seal for the enclosed air column.



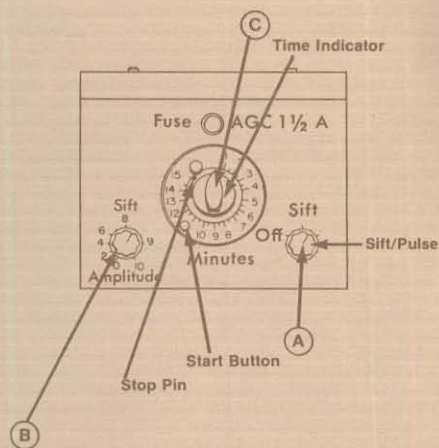
### SIEVE STACK





- 16) Close the door. Using the black scale on the timer dial for 60 cycle operation or the red scale for 50 cycle operation, set the timer dial to any arbitrary time interval. To set the time interval for future tests, loosen the stop pin lock screw and set the stop pin to the interval desired. Tighten the stop pin lock screw. To run future tests, just rotate the timer dial to the stop pin and push the start button.
- 17) Push the start button to begin the timer interval.
- 18) Increase the Amplitude Control **SLOWLY** until the largest of the particles begin rolling on the sieve surface. Within seconds, material should start passing through the sieve. As the Sonic Sifter concept allows each particle to be lifted off the sieve surface and set back down at a rate of 3600 times per minute, increasing the amplitude past this original setting will not add significantly to the sifting process. Excessive amplitude will cause fine material to cling to the sieve walls and stack parts, reducing the accuracy of the test results. Properly adjusted amplitude is particularly important with the Precision Sieve series. Due to the fragile nature of the electroformed sieve material, excessive amplitude can cause sieve failures.
- 19) When no more material can be seen passing through the sieves, note the time interval that has elapsed. This time period should be used for subsequent testing to ensure repeatable results.
- 20) Open the door and pull down on the latch bars to relock the sieve stack. Remove the stack from the sift chamber and disassemble the sieve stack. Reweigh all parts and record. The percentage of material retained at any fraction can be easily calculated.
- 21) For help with special test procedure questions or assistance in developing efficient Sonic Sifter analysis procedures, contact the ATM Corporation.

## CONTROL PANEL

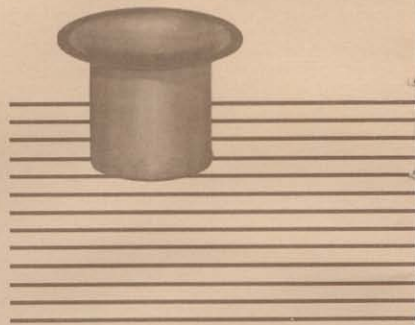


## SONIC SIFTER AND ACCESSORY CARE

The L3P Sonic Sifter and accessories will perform satisfactorily for many years if the following basic care instructions are observed:

- 1) For best results, sieve stack components and sieves should be cleaned in an ultrasonic cleaner of 150 watts or less. General cleaning is best accomplished in a mild solution of dishwashing detergent ('JOY', or its equivalent) maintained at 75-80°F (24-27°C). If an ultrasonic cleaner is not available, immerse items to be cleaned in the same mild solution.
- 2) Do not brush or use compressed air to clean any precision series sieve. This also applies to standard woven sieve cloth of 100 mesh or finer.
- 3) Another cleaning option which has proven especially useful when running a large number of sieve tests during the day, is the use of **FREON-TF** as a cleaning solvent. The **FREON-TF** evaporates rapidly and causes no perceptible changes in tare weight, eliminating the need for reweighing. The solvent also reduces the down-time experienced while waiting for water-washed sieves to dry. Approximately 3" (7.6 cm) of **FREON-TF** is placed in a 2000 ml beaker. The sieve is inserted edgewise into the beaker, and the entire beaker is placed in the ultrasonic cleaner. Gently rotate the sieve and remove from the solvent while the ultrasonic action continues. Just a few words of caution are necessary. **DO NOT SUBSTITUTE ANY OTHER SOLVENT FOR FREON-TF. OTHER SOLVENTS WILL DAMAGE THE SIEVE FRAME AND CLOTH.** Other **FREON** compounds contain acetone and various alcohols which are incompatible with the acrylic material of the sieve. Also, do not clean the Latex parts (fines collector and diaphragm) in the **FREON-TF** as the latex compounds will disintegrate.
- 4) Due to the especially fragile nature of the precision sieve cloth, do not touch the precision cloth with your fingers. Natural acids in the skin will permanently etch and discolor the mesh. **Any** contact with the sieve mesh increases the possibility of punctures or tears.
- 5) Always store precision sieves in the plastic storage box provided.
- 6) Do not expose sieves to heat sources of **any** kind.
- 7) Fines collectors and diaphragms should be cleaned with mild detergent solutions **only**. Solvents of any kind will cause disintegration and failure of these natural Latex parts. After the diaphragm and collector have dried, dust lightly with a fine talcum powder (NYTAL 200 or its equivalent) and store in protective foil pouch in a cool location. Avoid heat and direct sunlight on all Latex parts.
- 8) The Sonic Sifter cabinet, test chamber and aluminum stack components should be wiped clean periodically with a soft, damp cloth.

Fines Collector  
L3-N5



Column Lock  
L3-N1



Diaphragm  
L3-N2



Top Cone  
L3-N3

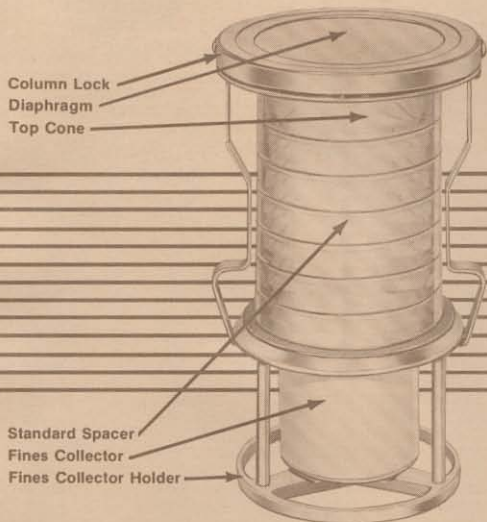


Standard Spacer  
L3-N4





## ACCESSORIES AND REPLACEMENT PARTS\*



**Complete Stack Assembly**  
L3-N7 (includes: column lock, one diaphragm, top cone, set of 6 standard spacers, one fines collector, collector holder)

Standard Spacer  
Fines Collector  
Fines Collector Holder



**Fines Collector Holder**  
L3-N6



**Horizontal Pulse Attachment**  
L3N8

Creates high speed shock wave to help eliminate agglomeration.

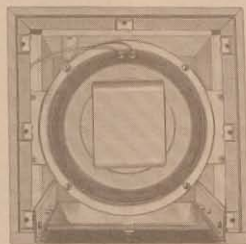
**Set of Door Springs**  
X-327537

**Door Assembly**  
X-399157

**Door (Only)**  
X-327539

**Handle (Only)**  
B-35374

**Rubber Door Stop (Only)**  
F-24027



**Driver Assembly**  
X-465030

**Set of Bumpers**  
F24025

**Lamp**  
X-327550  
**Lamp Socket**  
X-327548  
**Lamp Ballast**  
X-327549



**Lamp Cover Assembly**  
X-327538



**Power Cord Assembly**  
X-441329

▲ **Washer**  
M-7554

▲ **Stop Screw**  
M-7553

**Amplitude Knob**  
X-327545 Ea.

▲ **Timer Dial Assembly**  
X-327630

▲ **Stop Plate Assembly**  
X-327629

▲ **Timer Knob**  
X-327628



**Timer Hardware Repair Kit**  
Z-34024  
(▲ Included in Repair Kit)

**ORDERING INFORMATION** – Your order must include the following information: a description of the part, the part number, as well as the series letter and serial number of the sifter.

\* Call the ATM Corporation for information concerning any parts not listed above. Orders may be placed by contacting your ATM Representative or by calling/writing to:

ATM Corporation  
645 S. 94th Place  
Milwaukee, WI 53214  
(414) 453-1100





### SPECIAL SIEVES

Stack column accommodates  
a maximum of 3 sieves

Sieve Opening Microns	Cat. No. Stainless Steel
32	L3SM32
25	L3SM25
20	L3SM20



### U.S. STANDARD SIEVES

Stack column accommodates  
a maximum of 6 sieves

Sieve No.	Sieve Opening mm	Cat. No. Brass	Cat. No. Stainless Steel
3.5	5.6mm	L3-B3.5	L3-S3.5
4	4.75mm	B4	S4
5	4.00mm	B5	S5
6	3.35mm	B6	S6
7	2.80mm	B7	S7
8	5.36mm	L3-B8	L3-S8
10	2.00mm	B10	S10
12	1.70mm	B12	S12
14	1.40mm	B14	S14
16	1.18mm	B16	S16
18	1.00mm	L3-B18	L3-S18
20	850 $\mu$ m	B20	S20
25	710 $\mu$ m	B25	S25
30	600 $\mu$ m	B30	S30
35	500 $\mu$ m	B35	S35
40	425 $\mu$ m	L3-B40	L3-S40
45	355 $\mu$ m	B45	S45
50	300 $\mu$ m	B50	S50
60	250 $\mu$ m	B60	S60
70	212 $\mu$ m	B70	S70
80	180 $\mu$ m	L3-B80	L3-S80
100	150 $\mu$ m	P100*	S100
120	125 $\mu$ m	P120*	S120
140	106 $\mu$ m	P140*	S140
170	90 $\mu$ m	P170*	S170
200	75 $\mu$ m	L3-P200*	L3-S200
230	63 $\mu$ m	P230*	S230
270	53 $\mu$ m	P270*	S270
325	45 $\mu$ m	P325*	S325
400	38 $\mu$ m	P400*	S400



### PRECISION SIEVES†

Stack column accommodates  
a maximum of 3 sieves

Sieve Opening Microns	Cat. No.
150	L3-M150
125	M125
105	M105
100	M100
95	M95
90	L3-M90
85	M85
80	M80
75	M75
70	M70
65	L3-M65
60	M60
55	M55
50	M50
45	M45
40	L3-M40
35	M35
30	M30
25	M25
20	M20
15	L3-M15
10	M10
5	M5

## SIEVE CHARTS

**U.S. STANDARD SIEVES** — In order to utilize the full capabilities of the ATM Sonic Sifter it is recommended that the ATM sieves with the exclusive "SEE-THRU" feature be used. Sieves are available in U.S. Standard Sieve Series and International Standards Organization mesh sizes from No. 3½ through No. 400. When selecting sizes larger than No. 20 (850 microns), please consult your ATM representative.

**PRECISION SIEVES** — ATM can also supply sieves having mesh sizes from 150 microns down to 5 microns. These sieves are made of electroformed nickel mesh.

**ORDER INFORMATION** — When ordering sieves, specify the Catalog Number and the screen material. Orders may be placed by contacting your ATM Representative or by calling/writing to:

ATM Corporation  
645 S. 94th Place  
Milwaukee, WI 53214  
(414) 453-1100

\* These sizes available in phosphor bronze or stainless steel only.

† Precision sieves are double depth thus three will fit in the sieve stack. However, we recommend one sieve per separation in finer sizes due to the fragile nature of the electroformed nickel mesh.

**NOTE** — If you are in need of a special sieve configuration not listed above, please contact the ATM Corporation.