

Advantech

Arrow[®]

Testing Sieve Shaker

Operation & Set-up Manual

Models:

168

258

268

1612

2512

2612



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A Product of the United States of America

Introduction

Thank you for selecting this high-quality piece of testing apparatus. We appreciate *your* support and pledge to support you in the specific application for which this device was purchased.

We strive to listen to your needs. Assembled with components of the highest quality, this testing sieve shaker was designed to answer *your* requirements in the field. Machined steel parts replace plastic and composite parts so frequently requiring replacement in the field on other testing sieve shakers.

Besides the physical nuts and bolts, this device is backed by a company with decades of experience in the dedicated service of users in the powder and particulate industries. We look forward to servicing you as well.

If we can be of any assistance in your application or upcoming applications, covering everything from the design of sampling programs to refining sieve analysis and calibration programs, please don't hesitate to contact your local representative or the Advantech Manufacturing office directly.

“The Leader in Sieving Technology[®]”

Specifications

Model Designations and Power Requirements

- Model 168.....110VAC/60Hz operation, 8” (203.2mm) Ø sieve capacity
- Model 268.....220VAC/60Hz operation, 8” (203.2mm) Ø sieve capacity
- Model 258.....220VAC/50Hz operation, 8” (203.2mm) Ø sieve capacity
- Model 1612.....110VAC/60Hz operation, 12” (304.8mm) Ø sieve capacity
- Model 2612.....220VAC/60Hz operation, 12” (304.8mm) Ø sieve capacity
- Model 2512.....220VAC/50Hz operation, 12” (304.8mm) Ø sieve capacity

Timer

- 0-99 hours, reported accuracy $\pm 5\%$

Dimensional Specifications

- Unit base: 28” (71.1 cm) L x 23” (59.4 cm) W x 25” (63.5cm) H

General Specifications

- Steel weldment base
- Durable, baked epoxy finish
- Unit capacity: 7 full height sieves with full height pan and cover
15 half height sieves with half height pan and cover

Installation & Set-up Instructions

The Advantech Arrow® Testing Sieve Shaker is designed to give years of trouble-free service. To assure that the device delivers optimum performance, several points must be observed before putting the device into service.

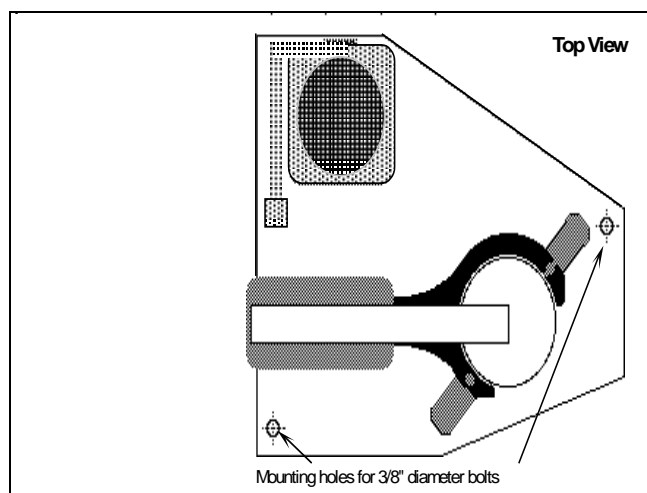
1) Mounting

For best results, the unit must be permanently mounted. It is recommended that unit be bolted to a steel table, heavily constructed wooden bench or other suitable structure that will be able to withstand the vibratory and hammering action of the unit. The diagram below shows the location of bolt holes provided for the mounting.

Use $\frac{3}{8}$ " diameter bolts (purchased locally) to secure the unit. Inspect the mounting periodically for loosening due to vibration.

2) Cleaning

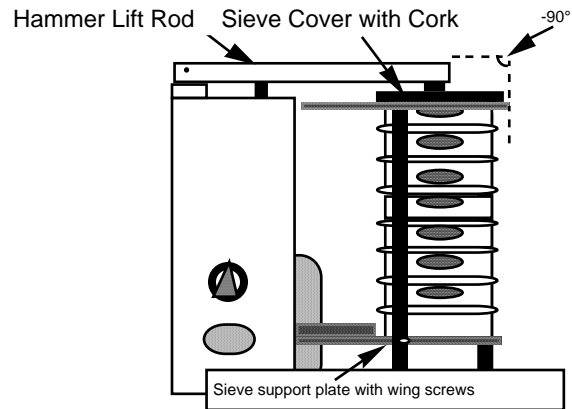
The unit is painted with a baked epoxy finish that will clean readily with a soft damp cloth. For best results, vacuum any loose particulate materials prior to wiping the machine clean.



3) Sieve Stack Height Adjustment

To assure repeatable and reproducible results in testing, the drop of the hammer arm has been precalibrated during assembly. It is essential, however, that the stack of sieves be installed at the proper height to obtain optimal results. To adjust the sieve stack height, please observe the following:

- Be sure the hammer lift rod is at the lowest point of travel
- Load the stack of sieves, pan, cover and sieve cover with cork on to the sieve support plate
- Loosen the two wing screws on the sieve support plate
- Raise the sieve support plate along with the sieve stack until the hammer arm comes to an approximately level position (see diagram)
- Tighten the wing screws and begin testing



4) Lubrication Instructions

This unit requires periodic lubrication at two different points in the mechanism. After every **5 hours** of operation, apply any general-purpose grease containing graphite to the grease fitting at the rear of the top yoke. At the same time, apply grease to the bulkhead grease fitting located on the left side of the machine base. Wipe off excess grease before operating. **Do not over apply grease.**

Performing a Sieve Analysis using the Advantech Arrow® Testing Sieve Shaker

- 1) Complete installation of the Advantech Arrow® Testing Sieve Shaker per instructions.
- 2) Plug device into the proper power source (be sure that voltage and cycle requirements are observed).
- 3) Prepare the material sample to be tested using industry-specified sampling and preparation procedures.
- 4) Select the sieves for the analysis.
- 5) Assemble the sieve stack, (coarsest sieve at the top, finest at the bottom) with bottom pan.
- 6) Pour the sample to be tested onto the top sieve. Install a standard sieve cover to prevent sample loss.
- 7) Place the spun sieve cover with cork from the Advantech Arrow® on top of the assembly.
- 8) Swing the hammer arm up past vertical until it comes to rest.
- 9) Slide the sieve stack assembly into the Advantech Arrow®.
- 10) Adjust the height of the sieve stack assembly and sieve support plate per instructions.
- 11) Bring hammer arm back down into place over the sieve cover.
- 12) Set the timer for the desired test interval.
- 13) Upon completion of the test interval, the unit will switch off automatically.
- 14) Swing the hammer arm up past vertical until it comes to rest.
- 15) Remove the sieve stack assembly, and proceed to weigh-up the retained fractions.

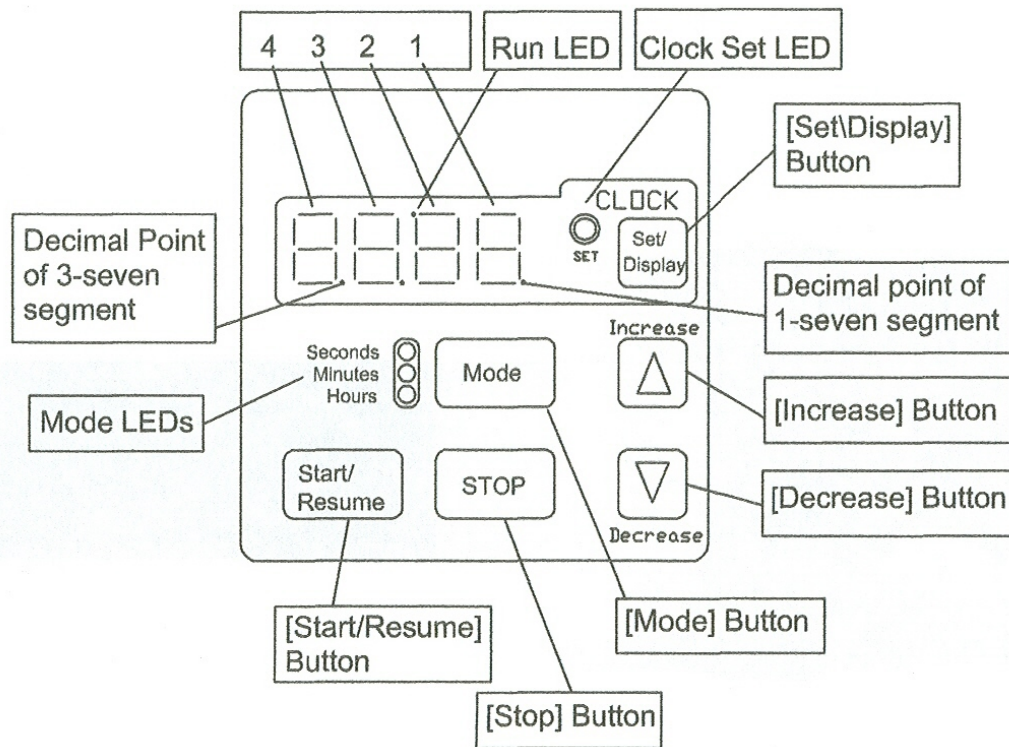
Electronic Timer

In an effort to make our products even more responsive to needs of the users, the Advantech Arrow® Testing Sieve Shaker now features a digital timer, with greater reliability and precision than most conventional mechanical timers.

Digital Timer

The timer controls the cycle time of the sieving operation, as well as functioning as a 24-hour clock. The timer and clock setting procedure are described below.

Minimum operating time is 2 seconds, maximum 99 minutes 59 seconds.



1. After applying an appropriate AC to the power input terminals, the display will be blank and the beeper will beep for $\frac{1}{4}$ second giving the user notification that the timer is now activated. The units' default is in Minute [Mode].
2. **Setting Time of Day** - Push and hold the button [SET/DISPLAY] for 1 second, the unit will default the time to 12:00am and enter the 'Clock Set' mode. While in this mode, buttons [MODE], [STOP] & [START/RESUME] are disabled and the clock set LED will be turned ON. The user now can set the time by pressing and holding either [INCREASE] or [DECREASE] button until the desired time is achieved. If you do not wish to set the time of day, skip step number 3.

The clock mode is a 12-hour with an am/pm display element. When the clock is being displayed and the clock is in the pm time frame, the decimal point of number 1-seven segment will be ON.

Once the user has achieved the proper clock value, they need to exit the clock set mode by pressing and holding the button [SET/DISPLAY] for 1 second. After the 1 second, the beeper will beep for 1 second giving the user notification that the mode is now exited. Once the clock is set, the display will go blank and the clock set LED will turn OFF.

If the clock has been set and the user presses the button [SET/DISPLAY] for less than 1 second, the display will show the current time for a 5 second period and revert back to what was previously on the display.

3. **Setting Interval Timer** - In modes 1 – 3, the device functions as a simple countdown timer. When you set the value, press the button [START/RESUME]. When the value reaches 0, the relay is turned OFF and the beeper beeps 6 sets of 2 (250ms) beeps.

Repeat Feature- the timer will remember the last time set. If you desire to change the setting from the original setting, press start switch to recall previous setting then input new setting.

To enter one of the 3 countdown modes, press and hold the button [MODE] for 1 second. Holding down this button the mode will switch every 2 seconds. Each time the mode switches, the appropriate LED of mode LEDs will be turned ON and the value displayed will change to the modes default value. An audible ¼ beep will also be heard.

Mode 1 0 – 99 second:	DEFAULT DISPLAY = 01
Mode 2 0 – 99 minute:	DEFAULT DISPLAY = 00.00
Mode 3 0 – 99 hour:	DEFAULT DISPLAY = 00.00

Once the countdown value has been set, you can now start the timer by pressing the button [START/RESUME]. The relay is turned ON. While the timer is counting down the user can stop the event by pressing the button [STOP]. The current countdown value will remain on the display. If you want to resume the session you just need to press the start button again. Counting will proceed from the point where stopped. During this operation, the run LED is blinked at once a second.

Once the timer has counted down to 0 and stopped, you can execute the same session (time value) by pressing the [START/RESUME] button again. This will recall the timer value and display it. At this point, you have two options. The first being the ability to change the value by using the [INCREASE] or [DECREASE] buttons and the second being the ability to use the same value and starting the event again by pressing the [START/RESUME] button.

For More Information...

For recommendations on sampling procedures, sample size, sieve selection, calibration, test intervals, sieve care and cleaning and related topics, please see Advantech Manufacturing publication R1986AS, *Test Sieving: Principles and Procedures*. Please contact your local Advantech Manufacturing representative, Advantech Manufacturing, or order directly from our website www.advantechmfg.com.