

The Endecotts Air Sizer and Cyclone Air Sizer User Guide
Air Jet Sieving Systems

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DESCRIPTION

Air Sizer (A.S.)

The A.S. which comes supplied with a separate vacuum unit, provides an ideal and economic solution for the sieving of very fine dry materials from 5 μ m upward.

The A. S. is supplied with additional rear mounted electrical outlet and suction pipe sockets for easy connection of the vacuum extraction unit which collects the undersized (passed) sieved samples for analysis if required.

Cyclone Air Sizer (C.A.S.)

The C.A.S. can be used with materials of 40 μ m and upward, it does not require a separate unit to generate a vacuum and is completely self contained. It generates its own air flow by means of an internal vacuum motor. Undersize samples are deposited into a small receiver and can be accessed by a small drawer on the left hand side of the unit

Principle of Operation

The principle of operation is the same for both machines. A measured quantity of the sample to be screened is placed on the selected sieve and the polycarbonate lid is then placed on top. The powerful vacuum unit generates a negative pressure in the bowl below the sieve, which induces an airflow dislodging the sample above the sieve surface by means of a rotating nozzle located below the sieve creating a "blade" of air. The same airflow simultaneously draws the undersize air borne particles from the sample back through the sieve apertures. The undersize particles are deposited as defined above for either A.S. or C.A.S. machines.

SETTING UP

Unpacking

Ensure the following contents are available before commencement of set up.

Air Sizer:-

1 off	Air Sizer
1 off	Polycarbonate lid
1 off	Cord set
1 off	Instruction manual
1 off	Vacuum unit
1 off	Vacuum hose
1 off	Spare filter for vacuum unit

Cyclone Air Sizer:-

1 off	Cyclone Air Sizer
1 off	Polycarbonate lid
1 off	Cord set
1 off	Instruction manual

ASSEMBLY

Air Sizer

The A.S. should be mounted on a level bench top allowing access to the rear panel connections for the vacuum hose and electrical power cables. The vacuum unit should ideally be positioned on the floor at a distance that will enable connection of the 2 metre long flexible hose to the inlet nozzle located in the rear panel of the A.S. Connect the power lead of the vacuum unit to the power outlet socket also in the rear panel of the A.S.

Cyclone Air Sizer

The C.A.S requires no additional pieces of equipment. Mount the unit on a level bench allowing access to the rear panel for the connection of the mains power cable.

Electrical Connection to mains supply

Ensure that the voltage and frequency on the rating label at the rear of the Air Sizer/Cyclone Air Sizer correspond with the local electrical mains supply. If there is any discrepancy please consult your supplier or a qualified electrician.

Do not connect to any other supply other than that stated on the nameplate

Important – This equipment must be connected to mains earth

The Air Sizer/Cyclonic Air sizer, is provided with a detachable mains cable incorporating an IEC moulded connector plug suitable for connecting to the local mains supply. Certain models may be supplied with a fused plug. In the event of failure the fuse must be replaced with a fuse of identical rating.

OPERATING INSTRUCTIONS

Controls

The main controls are easily accessible and are laid out on the angled front face and for A.S. left hand side of the unit.

- Green power on indicator, energised when the 'mains switch on the rear panel is 'on'.
- Function switch for selecting either 'CONSTANT' or 'TIMED' operation.
- The electrical supply to the outlet socket on the rear panel is also controlled by these functions, which will run the vacuum unit in conjunction with the nozzle motor. *A.S. only.*
- Vacuum pressure control valve actuator lever (supplementary control provided by vacuum unit speed control and bleed slide on suction hose nozzle). *A.S. only.*
- Vacuum motor speed controller. *C.A.S. only.*
- Vacuum Gauge.

Timer controls

- The constant setting will allow an indefinite sieving time.
- The timed position selects a digital count down timer where the sieving time can be set for up to 9.59 minutes.
- There are three buttons on the timer: - minus, mode and plus.
 - Mode - press once for time setting.
 - Minus – decrease set time.
 - Plus – increase set time.
 - Mode – press again to start the time cycle.
 - Mode – press once at the end of a timed cycle to reset into time setting mode, pressing twice will start the timed cycle again with the original setting.
- Mode – press to pause and resume within a timed cycle.
- The green illuminating 'on/off' rocker switch will start and stop the process in the function that has been selected.

The rear panels on both units house the mains on/off switch, electrical inlet filter and fuse holders.

**Note: For A.S. operation ensure that the on/off switch on the vacuum unit is in the 'on' position.*

Sieving Procedure

Safety (Micro) Switch

The Nozzle motor will not operate unless there is a sieve fitted into the bowl; the bottom rim of the sieve makes contact with the actuator of the micro switch which closes the electrical circuit to allow the sieving process to commence if or when the required operating parameters (functions) have been set. The nozzle will stop rotating as soon as the sieve is removed.

Connect power cable to mains supply paying attention to the information for Electrical connection to mains supply, (page 3). Turn the mains ON/OFF switch at the rear of the A.S./C.A.S. unit on. The green mains indicator will illuminate. Select the required sieve and ensure that it is fitted with an 'O' ring. Check that the rotating nozzle is clear of the micro switch which protrudes from the inside rim of the bowl, manually rotate the nozzle to a convenient position if necessary. This will facilitate easier access when fitting the sieve to the top of the bowl. Place the sieve on top of the bowl and gently press it into position ensuring that the 'O' ring comes to rest on top of the bowl rim. This operation will also set the micro switch to a closed state. Evenly distribute the sample over the sieve and **fit the polycarbonate lid ensuring that it is properly located into the sieve recess**. Failure to fit the lid correctly will result in a loss of vacuum and some of the sample could be expelled into the air.

Constant Run Time

For a constant run time set the function switch to 'CONSTANT'. Set the green ON/OFF switch to 'ON'. Sieving operating should now be functioning. To regulate the vacuum pressure for C.A.S., adjust the vacuum motor speed control located beneath the pressure gauge. For A.S. machine, adjust the control valve actuator, further pressure adjustment on A.S. can be achieved by the motor speed control switch and hose bleed valve the on vacuum unit. Stop the sieving operation by setting the green ON/OFF switch to 'OFF'.

Timed Cycle

For a timed sieving cycle set the function switch to 'TIMED'. To set the required time, follow instructions for timer controls on page 4. When the set time has elapsed a beeper will sound, this can be stopped by pressing the mode button once. The timer memory is volatile, removal of electrical power to the timer after a time cycle has been set will result in loss of the setting. The time will have to be entered again after power to the timer has been re-established.

Operational Data

- Nozzle rotation 24 rpm
- Nozzle type Supplied with 2mm slot, other gap widths available.
- Screening time Timed setting up to 9.59 min.

Technical Specification

- Housing: Powder coated aluminium
- Screen receiver: Aluminium Alloy
- Nozzle: Aluminium Alloy
- Dimensions for A.S. Width: 345mm, Depth: 375mm, Height: 295mm.
- C.A.S. Width: 345mm, Depth: 480mm, Height: 345mm.
- Weight for A.S. 12 Kg
- for C.A.S. 23 Kg
- Air pressure: Adjustable from 10 – 85 millibar (negative pressure)
- Sieve diameter: 200mm
- Operating voltage: 220-240 (110 available)
- Frequency: 50Hz (60Hz for 110V)
- Phase 1
- Power consumption: 20W + (1.8 Kw for vacuum Extractor Unit)
A.S.
- Power consumption: 800W
C.A.S.

Endecotts policy is one of continuous development and we reserve the right to modify future models.

General Advice

Endecotts Air Sizers are fully tested and factory checked before shipping to customers. No parts require lubrication or resetting unless disturbed.

Cleaning Filter

The filter box for C.A.S. should be cleaned and the filter washed periodically. To gain access to the filter box, first disconnect the unit from the mains supply. Remove the top and side access panel by removing the four screws. Release the single latch on top of the filter box and pivot the lid back. The filter can now be withdrawn for washing and the box cleaned. Re-assemble all the parts before resuming sieving process.

Cleaning Vacuum Unit

For the A.S. the vacuum unit will require emptying periodically. Always disconnect the unit from the mains supply before carrying out this procedure.

The air jet sieve has been constructed and factory tested to ensure correct operation when connected to the specified electrical supply as indicated on the machines rating label.

Use of unapproved spares or alteration to the machine would invalidate all warranties and compliance with European directives for 'CE' marking.

Endecotts Ltd. does not accept any responsibility if the operating instructions contained within this manual are not strictly followed.