

USER GUIDE  
AIR SIZER  
Air Jet Sieving System



# The Air – Jet Sizer User Guide

## Air Jet Sieving System

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## Description

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### **Air – Jet Sizer**

The Air – Jet Sizer can be supplied with a standard domestic vacuum or more refined industrial unit. This provides an ideal and economic solution for the sieving of very fine dry materials from 20µm upward.

The Air – Jet Sizer 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.

### **Principle of Operation**

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.



# Setting Up

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## **Unpacking**

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

### **Air – Jet Sizer:-**

- 1 off Air – Jet Sizer
- 1 off Polycarbonate lid
- 1 off Cord set
- 1 off Instruction manual

### **Optional**

- 1 off Vacuum unit, domestic or Industrial
- 1 off Vacuum hose as appropriate
- 1 off Spare filter / bags for vacuum unit as appropriate

## **Assembly**

### **Air- jet Sizer**

The Air – Jet Sizer 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 Air – Jet Sizer. Connect the power lead of the vacuum unit to the power outlet socket also in the rear panel of the Air – Jet Sizer.

## Electrical Connections

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### Electrical Connection to mains supply

Ensure that the voltage and frequency on the rating label at the rear of the Air – Jet 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 - Jet 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 Air – Jet Sizer identical rating.

## Operating Instructions

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### **Controls**

Main controls are easily accessible, laid out on the angled front face for:

- 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.
- Vacuum pressure control valve actuator lever on left side of unit (supplementary control provided by vacuum unit speed control or bleed slide on suction hose nozzle). Depending on vacuum unit supplied. .
- 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 seconds.
- 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 panel houses the mains on/off switch, electrical inlet filter and fuse holders.

\*Note: Ensure that the on/off switch on the vacuum unit is in the 'on' position.

## Sieving Procedure

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### **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. 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 operation should now be functioning. Adjust the pressure by means of the control valve actuator, further pressure adjustment can be achieved by the motor speed control switch or hose bleed valve the on vacuum unit depending on the unit supplied. 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

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### **Operational Data**

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

### **Technical Specification**

- Housing: Powder coated aluminium
- Screen receiver: Aluminium Alloy
- Nozzle: Aluminium Alloy
- Dimensions for Air- Jet Sizer Width: 345 mm, Depth: 375 mm, Height: 295 mm.
- Weight for Air – Jet Sizer 12 Kg
- Air pressure: Adjustable from 10 – 85 milli bar  
(negative pressure)
- Sieve diameter: 200 mm
- Operating voltage: 220-240 V (110 V available)
- Frequency: 50 Hz (60Hz for 110 V)
- Phase1
- Power consumption:  
20W + (1.8 Kw for Domestic vacuum Extractor Unit) Air – Jet Sizer  
20W + (2.4 Kw for Industrial vacuum Extractor Unit) Air – Jet Sizer



## General Advice

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

The Air – Jet Sizer has been constructed and factory tested to ensure correct operation when connected to the specified electrical supply as indicated on the machines rating labels.

Use of approved spares or alternations to the machine would invalidate all warranties and compliances with European directives for 'CE' marking.

### **Cleaning Vacuum Unit**

The vacuum unit require emptying periodically. Always disconnect the unit form the mains supply before carrying out this procedure.

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

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



The Air- Jet Sizer is fully EMC and LVD compliant and complies with all relevant European directives.

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