



WHEN PARTICLE SIZE MATTERS

SIEVING MACHINES

Operating Instructions



Minor 200



Octagon 200



Octagon 200CL



Air Sizer 200



EFL 300



Titan 450



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Manual can be subject to technical modification and errors.

1. Operating instructions notes

These operating instructions for the Endecotts test sieving machines give all necessary information on the sections mentioned in the contents.

They give instructions to the target group(s) defined in the respective sections for safe, correct handling of the Endecotts machines. It is important that each target group(s) is (are) familiar with the relevant section, in order to ensure safe, reliable handling of the machine according to its intended use.

This technical documentation is for use as a reference work and as a learning aid.

The information of each individual product (sieving machines) is complete within their section.

Repair instructions are not included in this manual. If repairs are necessary please contact your supplier or Endecotts Ltd directly.

Endecotts Ltd www.Endecotts.com

Warnings

The following signs are used to warn of hazards:



Personal injuries

Material damage



Repairs

This operating manual does not contain any repair instructions.

In the interests of your own safety, repairs should only be performed by Endecotts Ltd or an authorised representative (service technician).

In this case, please notify the following:

The local Endecotts representative
Your supplier
Endecotts Ltd direct

Your address for service:

Safety

Target group:

All persons concerned with the machine in any way.

The entire Endecotts machine range is a modern, highly efficient product of Endecotts Ltd, corresponding to state of the art works. If the machine is used according to the intended purpose with knowledge of this technical documentation it is completely safe and reliable to operate.

Safety instructions

As the operator it is your duty to ensure that all persons charged with working on the Endecotts machine:

- Have read and understood all the instructions on safety,
- Before beginning work know all the instructions and regulations for the target group relevant to their work,
- Have access to the technical documentation for this machine at all times, without problems.
- New personnel should be familiarised with safe, proper handling of the machine before beginning work on the Endecotts machine, either by verbal instruction from a competent person or through this technical documentation.
- Improper operation can cause injury to persons or damage to the equipment. You are responsible for your own safety and that of your employees.
- Ensure that unauthorised persons have no access to the Endecotts machine.

For your own protection have your employees confirm that they have been instructed in operation of the Endecotts machine. The draft of a suitable form is given at the end of the section on safety.



We exclude claims for damages in any form for damage to persons or property caused through non-observance of the following safety instructions.

Summary of safety instructions

Safety instructions



We exclude claims for damages in any form for damage to persons or property caused through non-observance of the following safety instructions.

Technical data



Do not make any changes to the machine and use only spare parts and accessories which have been approved by Endecotts.
The declaration of conformity to the European directives by Endecotts will otherwise lose its validity. Furthermore this will result in the loss of any kind of guarantee claims.

Packing



Please keep the packing material during the guarantee period in case of a complaint your guarantee claim will be at risk if the machine is returned in inadequate packing.

Transport



The **Endecotts machine** must not be knocked, shaken or thrown during transport; otherwise the electronic and mechanical components may be damaged.

Temperature fluctuations



If subjected to high temperature fluctuations (e.g. during transport by plane) the **Endecotts machine** must be protected against condensed water. If not damage to the electronic components may be caused.

Supply schedule



If the delivery is incomplete and/or transport damage has occurred, you must immediately notify the transport agent and Endecotts Ltd (within 24 hrs.). It is possible that later complaints may not be considered.

Ambient temperature



If the ambient temperature is exceeded or drops below the normal value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Installation / transport protection - IMPORTANT



If the machine is operated with **the transit bolts**, or is transported without transit bolts, mechanical components may become damaged.

Electrical connection / connecting the mains power supply



If the values given on the rating label are not observed electrical and mechanical components may become damaged.

Wet sieving



Never operate your **Endecotts machine** directly in water.
Danger through current surge.



During wet sieving always operate your **Endecotts machine** connected to a mains socket which is protected by an FI protective (safety) switch.



The water quantity added should always be dosed in such a way that the sieve surface is only just wetted.

Sieving aids



Make sure that the wire mesh of the sieves is not excessively stretched through overloading with sieving aids, since this will impair the precision of your test sieves.



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

Cleaning



Do not clean the **Endecotts machine** under running water.
Danger to life through current surge.
Use only a cloth moistened with water; solvents are not allowed.

Wearing parts



These operating instructions do not include repair instructions.
For your own safety, repairs should be carried out only by Endecotts Ltd or an authorised agency or Endecotts service technicians.

Confirmation

I have read and taken note of the sections – preliminary
comments and safety

Signature of operator

Signature of service technician

2. Transport and installation

Packing has been adapted to the transport method and conforms to generally applicable packing guidelines.

Packing



Please keep the packing material during the guarantee period in case of a complaint, your guarantee claim will be at risk if the machine is returned in inadequate packing.

Transport



The **Endecotts Machine** must not be knocked, shaken or thrown during transport; otherwise the electronic and mechanical components may become damaged.



Please make sure you have removed **all transit bolts** before using the Endecotts machine.
Specific operating instructions can be found on the relevant pages for every single Endecotts machine in this manual.

Temperature fluctuations



If subjected to high temperature fluctuations (e.g. during transport by plane) the **Endecotts machine** must be protected against condensed water. If not damage to the electronic components may be caused.

Intermediate storage

Ensure that the **Endecotts machine** is kept dry also during intermediate storage.



3. Operating instructions: **Minor 200**



Technical specifications

SIEVE SHAKER MODEL:

Minor 200

General Information

The Minor 200 has been developed and manufactured to combine low cost with the benefits of a well-designed and engineered shaker. It incorporates many features usually found only on larger, more expensive models. It is ideal for the use in laboratories and a plant since it is compact and genuinely portable (weighing only 16 kg).

The sieve stack is held firmly in position by a clamping belt system. Removing it allows the whole unit to be stored in a space less than 200 mm high. There are no rotating parts in the Minor 200 - consequently it is quiet in operation and maintenance free.

Advantages

- Electromagnetic drive for quiet and virtually maintenance free operation
- Compact and portable (weighing only 16 kg)
- Requires only small storage space due to small footprint
- Easily removable clamping belt system (included)
- Easy to use
- Different voltages available
- Complies with the requirements of AASHTO T 27



The Minor 200 **is not recommended for any wet sieving operations!**



Do not make any changes to the machine and use only spare parts and accessories approved by Endecotts Ltd.

The declaration of conformity to the European directives by Endecotts will otherwise lose its validity.

Furthermore this will result in the loss of any kind of guarantee claims.



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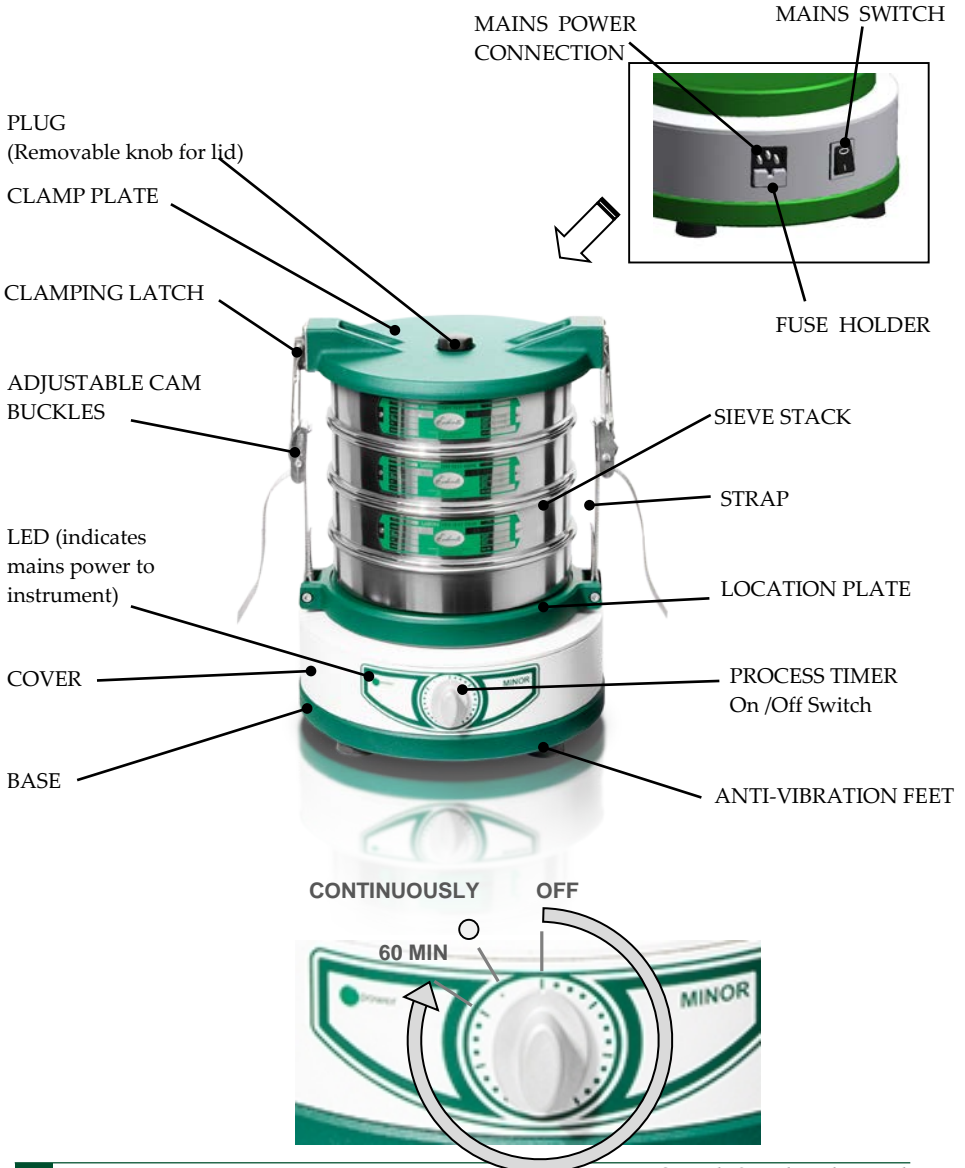
Specifications

Range	38 μm to 125 mm
Drive / sieving motion	electromagnetic
Max. Batch / feed capacity	3 kg
Max. Number of fractions	8 full height / 16 half height (200 mm or 8")
Amplitude	~ 1.6 mm* fixed
Speed	3,000 min^{-1} at 50 Hz
Time display	analogue, 0 - 60 min or continuously
Suitable for dry sieving	yes
Suitable for wet sieving	no
Sieve diameter	100 / 200 mm or 3" / 8"
Clamping device	clamping belt system (included)
Model	bench top
Protection code	IP 20
Electrical supply	different voltages available
Power connection	1-phase
$\text{\O} \times \text{H}$	262 x 126 mm
Net weight	16 kg

(*) depending on load

Controls and Functions

Operators should be familiar with and fully understand the controls and indicators before operating this machine.



Setting Up

Electrical connections

Ensure that the voltage and frequency on the rating label, at the rear of the shaker, correspond with the local electrical mains supply.

- Connect the Minor 200 to the power supply using the connection cable provided.



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

- ***Mains power connection***
Mains power connection with integral line filter. Ensure the IEC connector on the mains lead is pushed fully into the mains inlet at the rear of the machine.
- ***L.E.D (Mains Connected Indication)***
This is a green L.E.D that indicates electrical power is connected to the equipment. The L.E.D is illuminated when the IEC connector is pushed fully into the inlet and power is switched on at the local outlet.
If the L.E.D fails to light with the local outlet switch in the ON position then the fuse (see “Fuse holder”) has blown or power is not present at the mains.
- ***Fuse (Fuse Holder)***
The fuse is a ceramic fuse. It is important that the recommended current rating is not exceeded and the fuse is replaced with the same type and size. If the fuse blows after replacement then a fault exists in the equipment which must be rectified.

- **Process Timer**

The process timer is a mechanical 0-60 minute timer which also provides continuous running if desired. Operating periods are increased by rotating clockwise and decreased by rotating anticlockwise (the timer will commence timing down as soon as the knob is released, regardless of electrical power being connected or not). When the knob is turned anti-clockwise from off position to the continuous running mark, the shaker will continue running until the knob is returned to the off position.

Start-up and commissioning

The shaker should be set up according to the following procedure.

The following items should be removed from the case and checked before the shaker is operated (Take care the shaker weighs 16 kg):

- 1 off Set-up Instructions.
- 1 off Instruction Manual.
- 1 off Mains Cable.
- 1 off Clamp Plate Assembly.
- 1 off Minor Shaker fitted with Clamping Straps and Buckles.

Position the shaker on a level, rigid and robust bench, suitable for the operation of the sieve shaker. Being placed on a level surface ensures symmetrical distribution of the sample over the sieves, during operation.

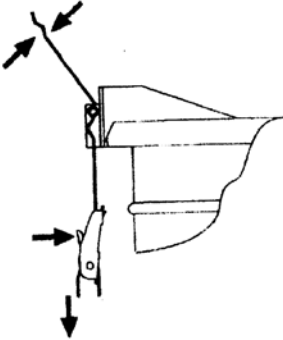
Operating Instructions

1. Place the receiver centrally on the location plate..
2. Stack the required test sieves on top of the receiver (min. 1x receiver + 2x sieves + 1x lid).
3. Put the sample in the top sieve and fit the lid.

In order to guarantee exact results under fast sieving conditions, the quantity of material to be sieved should be adapted to the sieve diameter and the nominal mesh size.

More detail information is displayed in our "TEST SIEVING MANUAL".

4. Place the clamp plate on top of the sieve stack.
5. Raise the clamping latch lever upwards to expose the latch hook.



While holding the clamping latch using one hand, press the lever on the cam buckle with the other hand. Slide the cam buckle along the clamping strap until it can be engaged into the latch hook. Release the cam buckle, pull the loose end of the strap downwards to partially tension the strap.

Do not over tension. The clamping latch lever will remain in the raised position 20-30 degrees from the vertical when partially tensioned. Repeat these actions for the second clamping latch.

6. Press both levers down, closing the latches to clamp the sieve stack. **Do not use excessive force, it may be necessary to loosen the straps slightly to secure.**
7. Repeat previous action to release or increase tension in the strap as necessary to ensure a firm grip!

The Endecotts Minor 200 sieve shaker is maintenance free other than keeping external surfaces clean.

Cleaning - The machine can be cleaned with a soft damp cloth using a solution of water and a mild liquid detergent. **Do not use any solvents for cleaning**

Fuse - Should a fuse require replacement this must be of the identical type and rating as the original! The rating of the fuse is marked on a label above the fuse. Disconnect from the mains supply. Remove the blown fuse and place the new fuse in.

Do not over tighten



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

Endecotts machines are fully tested and factory checked before shipping to customers. No parts require lubrication or resetting unless disturbed. The sieve shaker has been constructed and factory tested to ensure correct operation when connected to the specified electricity supply indicated on the machines rating label.

All replacement parts must be ordered by quoting the shaker serial number and the correct part number. Use of unapproved spares or any alteration to the machine would invalidate all warranties and compliance with the European directives for 'CE' marking.



WHEN PARTICLE SIZE MATTERS

CERTIFICATE OF CE-CONFORMITY
TEST SIEVE SHAKER
MINOR 200

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:
EN ISO 12100 Security of machines

EC Directive Electromagnetic Compatibility 2004/108/EC

Applied standards, in particular:

EN55011:2009+A1:2010, Group 1, Class B Radio disturbance characteristics –
Limits and methods of measurement

EN 61000-3-2:2006+A1:2009+A2:2009
EN 61000-3-3:2008
EN61326-1:2006

Additional applied standards, in particular

EN 61010 Safety prescriptions concerning measuring, operating, controlling and laboratory equipment

Authorised for the compilation of technical documents:

Endecotts Ltd (technical documentation)

The following records are held by Endecotts Ltd in the form of Technical Documentation:

Detailed records of engineering development, construction plans, study (analysis) of the measures required for conformity assurance, analysis of the residual risks involved and operating instructions in due form according to the approved regulations for preparation of user information data.

The CE-conformity of the Endecotts Test Sieve Shaker Type Minor 200 is assured herewith.

In case of a modification to the machine not previously agreed with us as well as the use of not licensed spare parts and accessories this certificate will lose its validity.

Endecotts Ltd

London, July 2014



4. Operating instructions: Octagon 200



Technical specifications

SIEVE SHAKER MODEL: Octagon 200

General Information

The sieve shaker Octagon 200 is suitable for all sieving tasks in laboratories as well as onsite and provides optimum sieving action for fast and reproducible results.

It is robust, compact and sufficiently lightweight to be portable. Its electromagnetic drive combined with a 3D sieving motion ensures excellent separation efficiency in a short amount of time.

A digital display as well as a quick-release clamping system makes operation very easy and straightforward.

Advantages

- Easy-to-use sieve clamping system
- Accepts up to 8 full height 200 mm or 8" diameter sieves
- Suitable for dry and wet sieving
- 10 amplitude settings and digital timer
- 3D sieving motion allows for high separation efficiency and non-blinding sieving action
- Different voltages available
- No mechanical moving parts
- Compact and portable



Do not make any changes to the machine and use only spare parts and accessories approved by Endecotts Ltd.

The declaration of conformity to the European directives by Endecotts will otherwise lose its validity.

Furthermore this will result in the loss of any kind of guarantee claims.



Specifications

Range	20 μm to 125 mm
Drive / sieving motion	electromagnetic 3D
Max. Batch / feed capacity	3 kg
Max. Number of fractions	8 full height / 16 half height (200 mm or 8")
Amplitude	0 - 3 mm digital setting in 10 steps
Speed	3,000 min^{-1} at 50 Hz
Time display	digital, 0:10-99:50 min
Interval operation	yes (one mode)
Suitable for dry sieving	yes
Suitable for wet sieving	yes
Serial interface	-
Sieve diameter	100 / 200 mm or 3" / 8"
Max. Height of sieve stack	up to 450 mm
Clamping device	quick-release clamping system (included)
Model	bench top
Protection code	IP 54
Electrical supply	different voltages available
Power connection	1 – Phase
W x H x D	418 x 232 x 435 mm
Net weight	35 kg
Standards	CE

Noise characteristic values:

Example 1:

Emission value related to workplace $L_{pAeq} = 63$ dB (A)

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 1.5 mm)

Example 2:

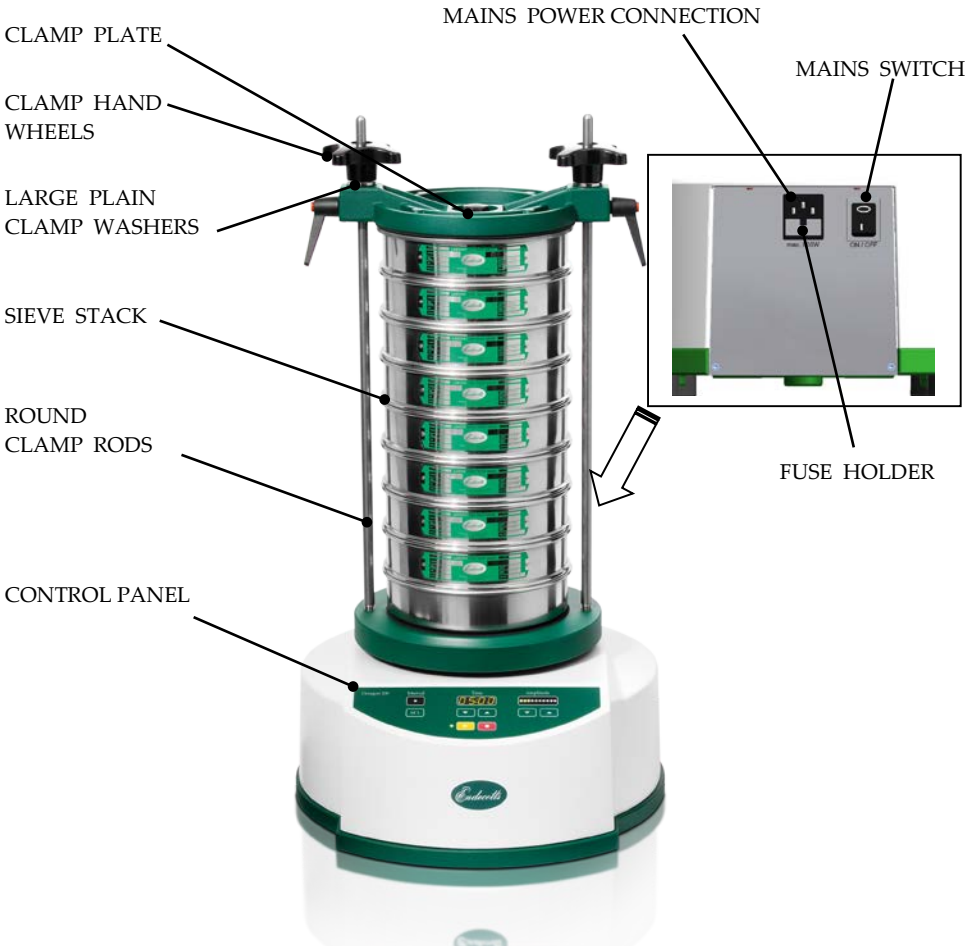
Emission value related to workplace $L_{pAeq} = 67$ dB (A)

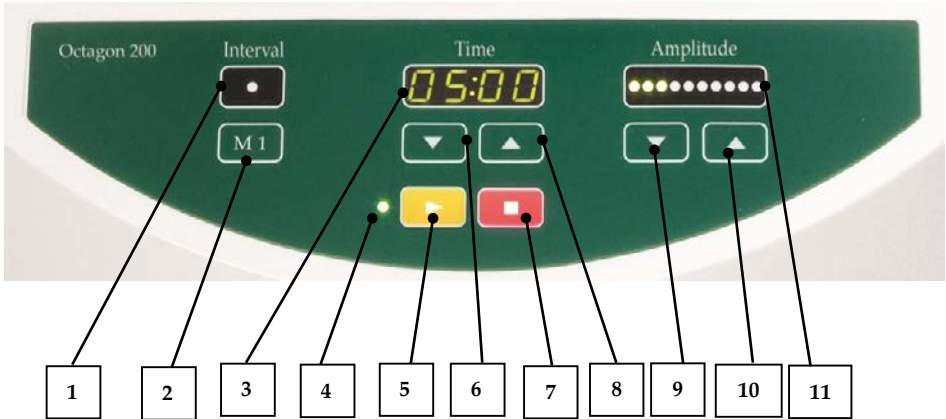
(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 3 mm)

Controls and functions

The sieve shaker should be placed on a level surface to ensure symmetrical distribution of the sample over the sieve mesh. The surface should be rigid and robust where vibration will not cause problems.

Operators should be familiar with and fully understand the controls and indicators before operating this machine. This should be done in conjunction with the diagram below and control panel description.





1	LED light to indicate interval operation ON.
2	Interval mode button M1 switches interval operation ON/OFF, upper LED lights up; 10 seconds on, 2 seconds off
3	Display shows the preselected sieving time, 00:10 – 99:50 min.
4	LED light to indicate START button “>” ON
5	Start the machine by pressing the START button “>”.
6 & 8	“v” and “^” button reduces/increases the sieving time, 00:10 – 99:50 min
7	Stop the machine by pressing the STOP button “□”.
9 & 10	“v” and “^” button reduces/increases the amplitude, in 10 steps
11	10 LED’s for the Power bar indicating amplitude setting in 10 steps

Setting Up

Electrical connections

- * The voltage and frequency for the **Octagon 200** is given on the rating label.
- * Ensure that the values agree with the existing power supply.
- * Connect the **Octagon 200** to the power supply using the connection cable provided.
- * When connecting the power cable to the mains external fusing is necessary according to the regulations of the installation location



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Transport protection



Place the **Octagon 200** on a stable laboratory bench, since otherwise unpleasant vibrations will be transmitted. Being placed on a level surface ensures symmetrical distribution of the sample over the sieves, during operation.

- Unscrew the two hexagon screws (transit bolts) on the bottom of the sieve shaker with an open ended spanner until the sieve plate is movable.
- Keep hexagon screws (**transit bolts**) for possible transport at a later date.



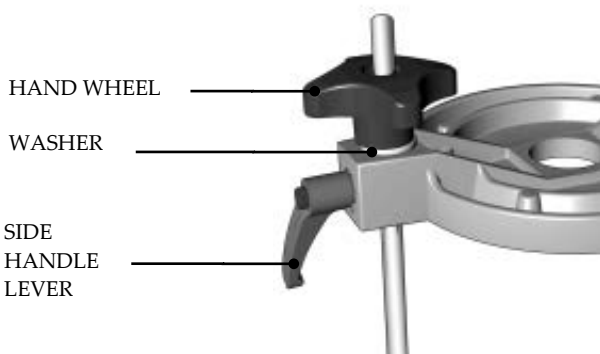
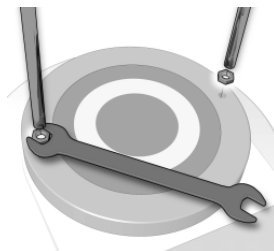
If the machine is operated with the transit bolts, or is transported without transit bolts, mechanical components may become damaged.

Reusing transit bolts

- Dismount the clamping unit.
- Screw the hexagon screws (transit bolts) into the two holes on the bottom of the sieve shaker and tighten with open ended spanner until the sieve plate is no longer movable.

Mount sieve clamping unit

Fit one M12 nut onto each clamp rod selected for use, then screw the pair of clamp rods into the location plate and tighten the locknuts.



Place the two large plain washers over the 20 mm threads of the clamp sleeves. These can be seen protruding vertically from the two side lugs on the clamp plate. Screw the two hand wheels loosely onto the 20 mm threads; leave a gap of 5 mm between the large washer and the hand wheel face. Do not tighten right down at this point.

Operating Instructions



1. Place the receiver centrally on the location plate in the appropriate recess.
2. Stack the required test sieves on top of the receiver (min. 1x receiver + 2x sieves + 1x lid).
3. Put the sample in the top sieve and fit the lid

In order to guarantee exact results under fast sieving conditions, the quantity of material to be sieved should be adapted to the sieve diameter and the nominal mesh size.

More detailed information is displayed in our "TEST SIEVING MANUAL".

4. Align the locking assemblies in figure 1 the two side lugs of the clamp plate with the round clamp rods. Slide the clamp plate down squarely onto the lid at the top of the sieve stack.

Ensure that the clamping hand wheels at the top (figure 2) are loose and the locking assemblies are fully pushed down. There should be a 5mm gap between the large plain washer and the face of the hand wheel.

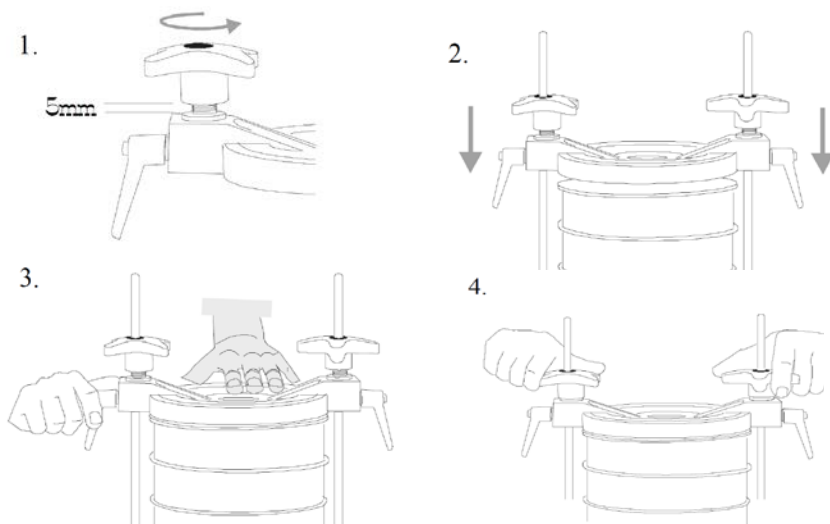
Place one hand on the top of the clamp plate (figure 3) and hold square while locking one side handle lever. Repeat for the opposite side handle lever.

The side handle levers can be set vertically downwards by pressing on the Red button and pulling the handle outwards to release (figure 4). Turn the handle to a safe, convenient angle downwards and

release to engage the teeth. Screw the two clamping hand wheels down simultaneously to ensure the clamping plate is square.

Continue until the hand wheels are tight against the internal stop. Hand tightness must be exerted so that the assembly does not loosen during vibration.

The locking side handle levers and clamping hand wheels must be tightened sufficiently to ensure that the sieves and receiver are clamped securely during operation.



5. Set time, interval and amplitude.

6. Press START



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

Wet sieving

The Wet Sieving Adaptor Kit is supplied as an optional extra for 200 mm or 8" diameter sieves and should be ordered separately.

The Wet Sieving Adaptor Kit consists of the following items:

- 1 off Special Wet Sieving Clamp Plate.
- 1 Set off O-ring Seals (One required for each sieve in the stack.)
- 1 off Special Wet Sieving Receiver with a spout. (Specify for 200 mm or 8" diameter sieves)



The O-ring seals are fitted on to the outside of the bottom rim of each sieve, which means the sieves are stacked onto each other and they form a seal.

The bottom sieve is placed on the special receiver with a spout.

A nylon hose tail must be fitted and must have a suitable length of hose fitted to drain into a convenient drainage point.

Fit a suitable length of hose to the spout to drain into a convenient drainage point.

The clamp plate is usually supplied with the rose reversed to avoid damage. Undo and reverse, so that the rose head is on the inside. Remove the lid from the sieve stack and replace the standard clamp plate with the wet sieving clamp plate. Fit a suitable length of hose to the inlet of the rose on the clamp plate and connect to the fluid supply with flow regulation.



Never operate your **Sieve shaker** directly in water.
Danger through current surge.



During wet sieving always operate your **Sieve shaker** connected to a mains socket protected by an FI protective (safety) switch.



The water quantity added should always be dosed in such a way that the sieve surface is only just wetted.



WHEN PARTICLE SIZE MATTERS

CERTIFICATE OF CE-CONFORMITY
TEST SIEVE SHAKER
OCTAGON 200

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:
EN ISO 12100 Security of machines

EC Directive Electromagnetic Compatibility 2004/108/EC

Applied standards, in particular:

EN55011:2009+A1:2010, Group 1, Class B Radio disturbance characteristics –
Limits and methods of measurement

EN 61000-3-2:2006+A1:2009+A2:2009
EN 61000-3-3:2008
EN61326-1:2006

Additional applied standards, in particular

EN 61010 Safety prescriptions concerning measuring, operating, controlling and laboratory equipment

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The CE-conformity of the Endecotts Test Sieve Shaker Type Octagon 200 is assured herewith.

In case of a modification to the machine not previously agreed with us as well as the use of not licensed spare parts and accessories this certificate will lose its validity.

Endecotts Ltd

London, July 2014



5. Operating instructions: Octagon 200CL



Technical specifications

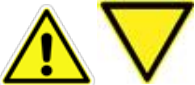
SIEVE SHAKER MODEL: Octagon 200CL

General Information

The new Octagon 200CL for precise, reproducible and error-free sieving processes competes with the most advanced sieve shakers in the world. Several unique features have been developed specifically for this machine, including the 'Closed Loop' amplitude control for ultimate reproducibility. The Octagon 200CL is designed to work with Endecotts SieveWare, the new software for easy evaluation and documentation of the sieving process.

Advantages

- 'Closed Loop' total amplitude control ensures reproducible sieving
- Digital controls for easy and reliable operation
- Easy-to-use sieve clamping system
- Accepts up to 8 full height 200 mm or 8" diameter sieves
- Suitable for dry and wet sieving
- 3D sieving motion allows for high separation efficiency and non-blinding sieving action
- Full compatibility with new SieveWare evaluation and control software via RS232 Port (printed or digital protocols)
- Voltage-independent
- No mechanical moving parts
- Compact and portable



Do not make any changes to the machine and use only spare parts and accessories approved by Endecotts Ltd.

The declaration of conformity to the European directives by Endecotts will otherwise lose its validity.

Furthermore this will result in the loss of any kind of guarantee claims.



Specifications

Range	20 μm to 125 mm
Drive / sieving motion	electromagnetic 3D
Max. Batch / feed capacity	3 kg
Max. Number of fractions	8 full height / 16 half height (200 mm or 8")
Amplitude	0 - 3 mm digital setting in 0.1 mm steps " Closed Loop" amplitude control
Speed	3,000 min^{-1} at 50 Hz
Time display	digital, 0:10-99:50 min
Interval operation	yes (two modes)
Suitable for dry sieving	yes
Suitable for wet sieving	yes
Serial interface	yes (RS232)
Sieve diameter	100 / 200 mm or 3" / 8"
Max. Height of sieve stack	up to 450 mm
Clamping device	quick-release clamping system (included)
Model	bench top
Protection code	IP 54
Electrical supply	100-240V 50/60Hz
Power connection	1 - Phase
W x H x D	418 x 232 x 435 mm
Net weight	35 kg
Standards	CE

Noise characteristic values:

Example 1:

Emission value related to workplace $L_{pAeq} = 63$ dB (A)

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 1.5 mm)

Example 2:

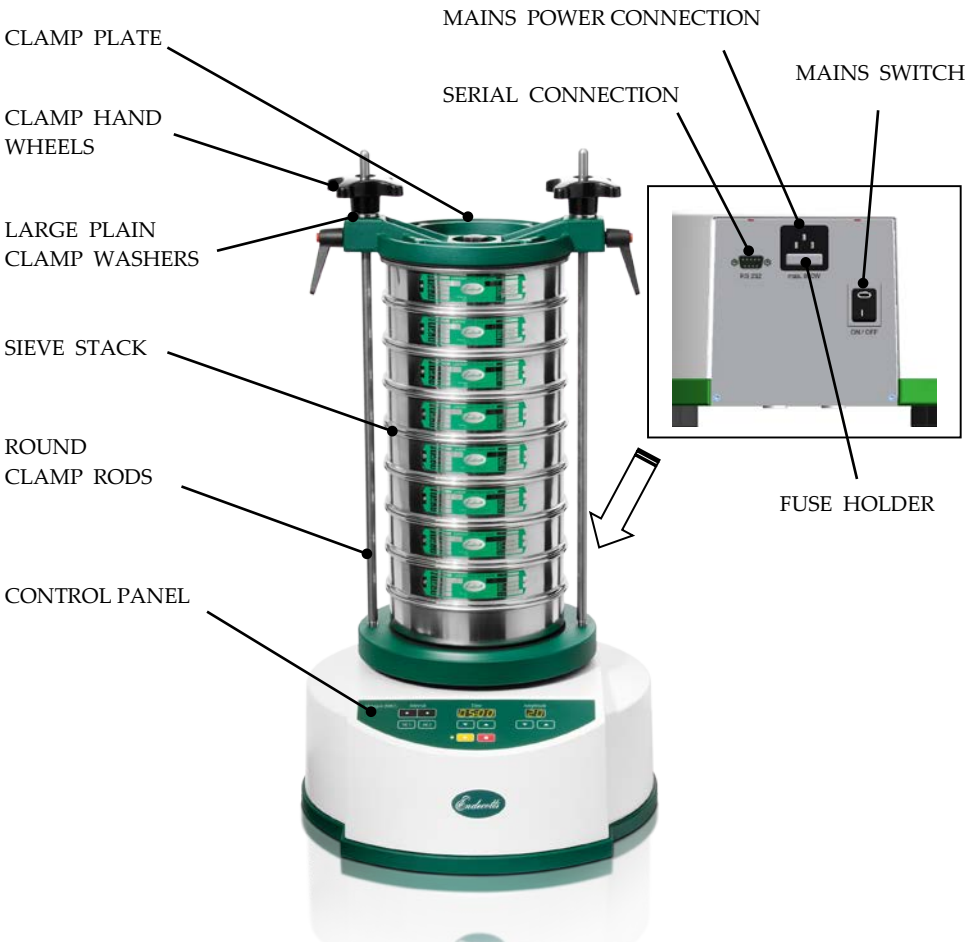
Emission value related to workplace $L_{pAeq} = 67$ dB (A)

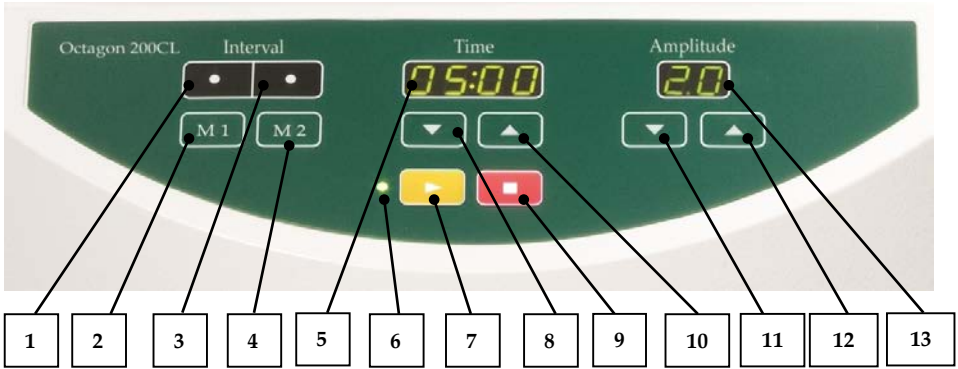
(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 3 mm)

Controls and functions

The sieve shaker should be placed on a level surface to ensure symmetrical distribution of the sample over the sieve mesh. The surface should be rigid and robust where vibration will not cause problems.

Operators should be familiar with and fully understand the controls and indicators before operating this machine. This should be done in conjunction with the diagram below and control panel description.





1 & 3	LED light to indicate chosen interval operation, ON.
2	Interval mode button M1 switches interval operation ON/OFF, upper LED lights up – 1 second on, 1 second off.
3	Interval mode button M2 switches interval operation ON/OFF, upper LED lights up – 10 seconds on, 2 seconds off.
5	Display shows the preselected sieving time, 00:10 – 99:50 sec's.
6	LED light to indicate START button ">" ON.
7	Start the machine by pressing the START button ">".
8 & 10	"v" and "^" button reduces/increases the sieving time, 00:10 – 99:50 min.
9	Stop the machine by pressing the STOP button "□".
11 & 12	"v" and "^" button reduces/increases the amplitude, 0.20 – 3.00mm, with digital display
13	Display amplitude shows the amplitude of 0.20 – 3.00mm

Setting Up

Electrical connections

- * The voltage and frequency for the **Octagon 200CL** is given on the rating label.
- * Ensure that the values agree with the existing power supply.
- * Connect the **Octagon 200CL** to the power supply using the connection cable provided.
- * When connecting the power cable to the mains external fusing is necessary according to the regulations of the installation location



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Transport protection



Place the **Octagon 200CL** on a stable laboratory bench, since otherwise unpleasant vibrations will be transmitted. Being placed on a level surface ensures symmetrical distribution of the sample over the sieves, during operation.

- Unscrew the two hexagon screws (transit bolts) on the bottom of the sieve shaker with an open ended spanner until the sieve plate is movable.
- Keep hexagon screws (transit bolts) for possible transport at a later date.



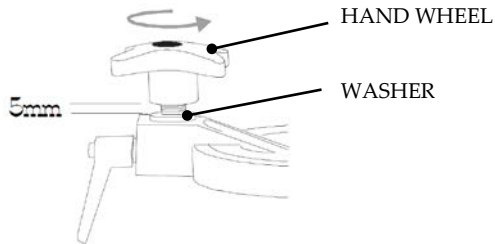
If the machine is operated with **the transit bolts**, or is transported without transit bolts, mechanical components may become damaged.

Reusing transit bolts

- Dismount the clamping unit.
- Screw the hexagon screws (transit bolts) into the two holes on the bottom of the sieve shaker and tighten with open ended spanner until the sieve plate is no longer movable.

Mount sieve clamping unit

Fit one M12 nut onto each clamp rod selected for use, then screw the pair of clamp rods into the location plate and tighten the locknuts.



Place the two large plain washers over the 20mm threads of the clamp sleeves. These can be seen protruding vertically from the two side lugs on the clamp plate. Screw the two hand wheels loosely onto the 20mm threads; leave a gap of 5 mm between the large washer and the hand wheel face. Do not tighten right down at this point.

Operating Instructions



- 1 Place the receiver centrally on the location plate in the appropriate recess.
- 2 Stack the required test sieves on top of the receiver (min. 1x receiver + 2x sieves + 1x lid).
- 3 Put the sample in the top sieve and fit the lid

In order to guarantee exact results under fast sieving conditions, the quantity of material to be sieved should be adapted to the sieve diameter and the nominal mesh size.

More detailed information is displayed in our “TEST SIEVING MANUAL”.

- 4 Align the locking assemblies in figure 1 the two side lugs of the clamp plate with the round clamp rods. Slide the clamp plate down squarely onto the lid at the top of the sieve stack.

Ensure that the clamping hand wheels at the top (figure 2) are loose and the locking assemblies are fully pushed down. There should be a 5mm gap between the large plain washer and the face of the hand wheel.

Place one hand on the top of the clamp plate (figure 3) and hold square while locking one side handle lever. Repeat for the opposite side handle lever.

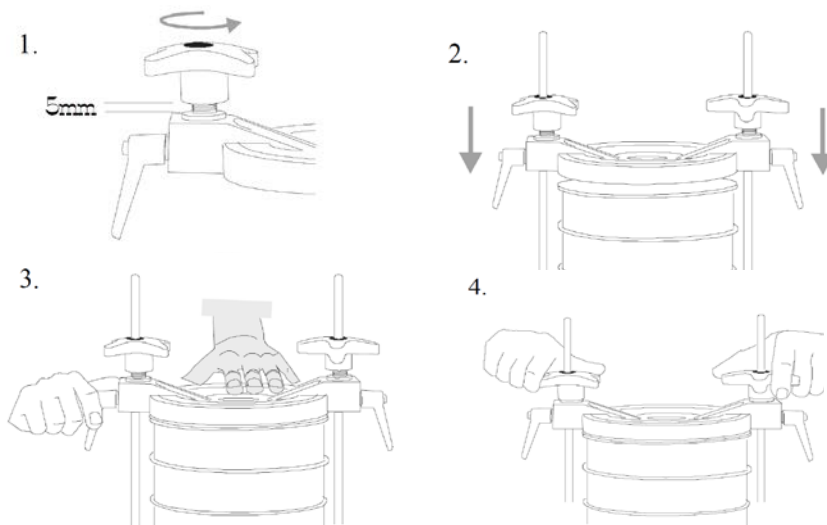
The side handle levers can be set vertically downwards by pressing on the Red button and pulling the handle outwards to release (figure 4). Turn the handle to a safe, convenient angle downwards and

1. Setting up

release to engage the teeth. Screw the two clamping hand wheels down simultaneously to ensure the clamping plate is square.

Continue until the hand wheels are tight against the internal stop. Hand tightness must be exerted so that the assembly does not loosen during vibration.

The locking side handle levers and clamping hand wheels must be tightened sufficiently to ensure that the sieves and receiver are clamped securely during operation.



5 Set time, interval and amplitude

6 Press START



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

Wet sieving

The Wet Sieving Adaptor Kit is supplied as an optional extra for 200 mm or 8" diameter sieves and should be ordered separately.

The Wet Sieving Adaptor Kit consists of the following items:

- 1 off Special Wet Sieving Clamp Plate.
- 1 Set off O-ring Seals (One required for each sieve in the stack.)
- 1 off Special Wet Sieving Receiver with a spout (Specify for 200 mm or 8" diameter sieves)



The O-ring seals are fitted on to the outside of the bottom rim of each sieve, which means the sieves are stacked onto each other and they form a seal.

The bottom sieve is placed on the special receiver with a spout.

A nylon hose tail must be fitted and must have a suitable length of hose fitted to drain into a convenient drainage point.

Fit a suitable length of hose to the spout to drain into a convenient drainage point.

The clamp plate is usually supplied with the rose reversed to avoid damage. Undo and reverse, so that the rose head is on the inside. Remove the lid from the sieve stack and replace the standard clamp plate with the wet sieving clamp plate. Fit a suitable length of hose to the inlet of the rose on the clamp plate and connect to the fluid supply with flow regulation.



Never operate your **Sieve shaker** directly in water.
Danger through current surge.



During wet sieving always operate your **Sieve shaker** connected to a mains socket protected by an FI protective (safety) switch.



The water quantity added should always be dosed in such a way that the sieve surface is only just wetted.



WHEN PARTICLE SIZE MATTERS

CERTIFICATE OF CE-CONFORMITY

TEST SIEVE SHAKER OCTAGON 200CL

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:

EN ISO 12100 Security of machines

EC Directive Electromagnetic Compatibility 2004/108/EC

Applied standards, in particular:

EN55011:2009+A1:2010, Group 1, Class B Radio disturbance characteristics –
Limits and methods of measurement

EN 61000-3-2:2006+A1:2009+A2:2009

EN 61000-3-3:2008

EN61326-1:2006

Additional applied standards, in particular

EN 61010 Safety prescriptions concerning measuring, operating, controlling and laboratory equipment

Authorised for the compilation of technical documents:

Endecotts Ltd (technical documentation)

The following records are held by Endecotts Ltd in the form of Technical Documentation:

Detailed records of engineering development, construction plans, study (analysis) of the measures required for conformity assurance, analysis of the residual risks involved and operating instructions in due form according to the approved regulations for preparation of user information data.

The CE-conformity of the Endecotts Test Sieve Shaker Type Octagon 200CL is assured herewith.

In case of a modification to the machine not previously agreed with us as well as the use of not licensed spare parts and accessories this certificate will lose its validity.

Endecotts Ltd

London, July 2014



6. Operating instructions: Air Sizer 200



Technical specifications

SIEVING MACHINE MODEL:

Air Sizer 200

General Information

The Air Sizer 200 has an air nozzle, which is set rotating. The sieve with a Plexiglas lid is put on top of that. A vacuum unit generates a jet of air, which disperses the particles through the air nozzle on the sieve.

The material, which is smaller than the mesh size of the air jet sieve, is transported by the backflow of the air into the filter unit or directly into the vacuum cleaner. The jet of air de-agglomerates the particles and cleans the sieve mesh constantly.

The Air Sizer 200 is specially designed for the dry sieving and the particle size determination of fine-grained, dry, pourable and dispersed bulk materials. The sieve holder is suitable for 8" (203 mm) diameter test sieves (premium air jet sieves)

Advantages

- Compact and portable (weighing only 14 kg)
- Requires only small storage space due to small footprint
- The device is essentially maintenance free if cleaned regularly
- Easy to use
- Ideal for electrostatic materials
- Wide range voltage supply
- Can reduce the average sieving times in samples with a high fine fraction
- Variable vacuum control



The Air Sizer 200 **is not** recommended **for any wet sieving** operations!



WHEN PARTICLE SIZE MATTERS

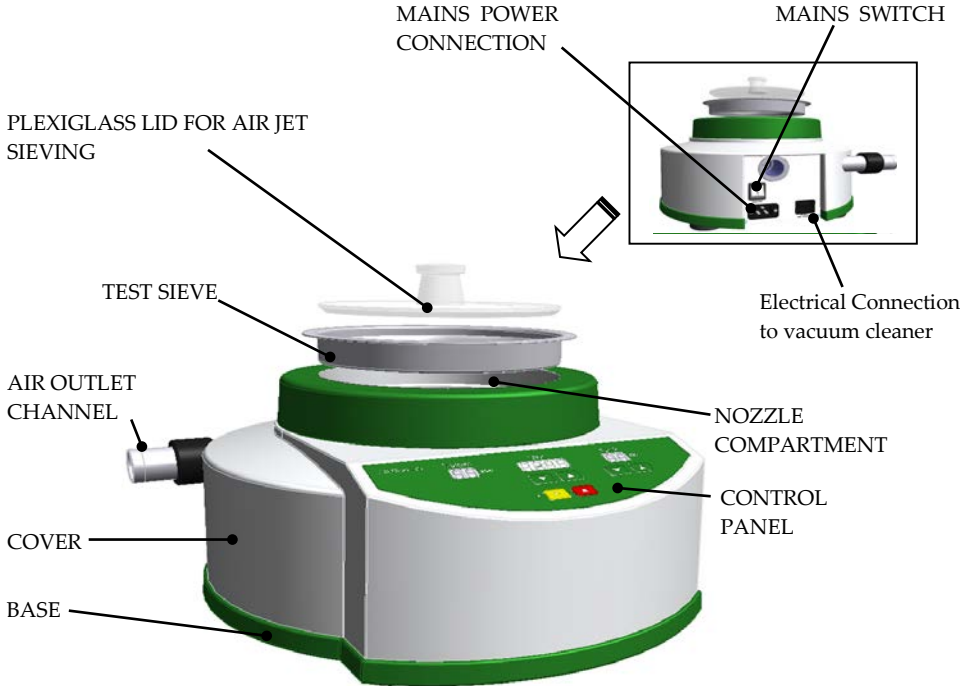
Specifications

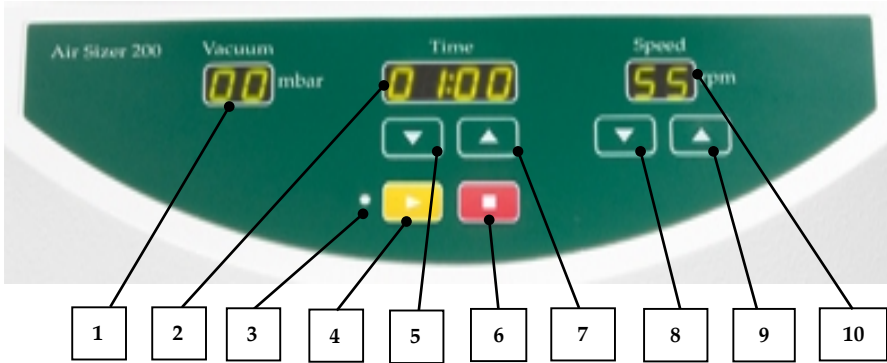
1. Technical specifications

Range	20 µm to 4 mm
Drive / sieving motion	stepping motor
Max. Batch / feed capacity	100 g (depending on material and mesh)
Max. Number of fractions	1
Amplitude	N/A
Speed	5 to 55 rpm
Time display	digital, 00:10 – 99:50 min
Suitable for dry sieving	yes
Suitable for wet sieving	no
Sieve diameter	203 mm = 8" (premium air jet sieves)
Clamping device	N/A
Model	bench top
Protection code	IP 40
Electrical supply	100 - 240V 50/60 Hz
Power connection	1-phase
W x H x D	430 x 235 x 435 mm
Net weight	14 kg
Standards	CE

Controls and functions

Operators should be familiar with and fully understand the controls and indicators before operating this machine.





1	Vacuum pressure in mbar
2	Display shows the preselected sieving time, 00:10 – 99:50 min
3	LED light to indicate START button “>” ON.
4	Start the machine by pressing the START button “>”.
5 & 7	“√” and “^” button reduces/increases the sieving time, 00:10 – 99:50 min
6	Stop the machine by pressing the STOP button “□”.
8 & 9	“√” and “^” button reduces/increases the rpm, 5-55rpm, with digital display
10	Display speed shows the speed of 5-55rpm

Setting Up

Electrical connections

- Ensure that the voltage and frequency on the rating label, at the rear of the Air Sizer 200 correspond with the local electrical mains supply.
- Connect the Air Sizer 200 to the power supply using the connection cable provided.



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

- ***Mains power connection***
Mains power connection with integral line filter. Ensure the IEC connector on the mains lead is pushed fully into the mains inlet at the rear of the machine.
- ***Mains Connection Indication***
If the power of the Air sizer 200 is switched “ON”, the display LED lights up.
- ***Process Timer***
The process timer is a digital 00:10-99:50 minute timer. Operating periods are increased by pressing the “^” button and decreased by pressing the “v” button.



Start-up and commissioning

The machine should be set up according to the following procedure.

The following items should be removed from the carton and checked before the Air Sizer 200 is operated (Take Care the Air sizer 200 weighs 14 kg):

- 1 off Set-up Instructions.
- 1 off Mains Cable.
- 1 off Air Sizer fitted
- 1 off Plexiglas lid
- Soft-Faced Mallet
- Test Sieving Manual.

Position the Air Sizer 200 on a level, rigid and robust bench, suitable for the operation of the Air Sizer. Being placed on a level surface ensures symmetrical distribution of the sample over the sieve, during operation.

Operating Instructions

Switching On and Off

- Press the on/off switch at the back to turn on the device.

When the switch is in the "off" position, the device must be disconnected completely from the mains power supply (f.e. before cleaning the device).

Inserting the test sieve

The Air Sizer 200 is intended for test sieves with a diameter of 203mm (8 inches). The range of mesh fineness extends from 10 μ m to approx. 4mm.

- Place the sieve in the nozzle compartment.
- Fit the Plexiglas lid provided.

NOTE:

The Air Sizer 200 cannot be started until the sieve has been inserted and the lid put on.



Soft-faced mallet – Application and Use

Any caking that has built up during the sieving process is knocked off the inside of the lid by means of the soft-faced mallet.

Tap lightly, striking the centre of the knob as far as possible.

Use of the machine for the intended purpose



Risk of explosion or fire

- On account of its design, the device is not suitable for use in hazardous (potentially explosive) atmospheres.
- Do not operate the device in a hazardous atmosphere.



Risk of explosion or fire

Changing sample characteristics

- Note that the characteristics and accordingly the danger presented by a sample can change during sieving.
- Do not sieve any potentially explosive or combustible materials in this device.



Danger of personal injury

Dangerous nature of the sample

- Depending on the dangerous nature of your sample, take the necessary measures to rule out any danger to persons.
- Observe the safety guidelines and datasheets of your sample material.

Note: **Area of use of the machine**

- This machine is a laboratory machine designed for 8-hour single-shift operation.
- This machine may not be used as a production machine nor is it intended for continuous operation.

Note: **Defects in components due to liquids**

Penetration of liquids inside the housing

- Components are damaged and the correct functioning of the device is no longer assured.
- Do not use this device for any wet sieving.



Hearing damage or hearing loss

Suction noise at the suction opening

- The volume and/or force of drawn-in air can damage hearing or cause hearing loss.
- Keep your ears away from the air inlet in the channel. Use hearing protection.



Failure to hear acoustic signals

Loud suction noise on the air inlet

- It is possible that some acoustic warnings and voice communication may not be noticed.
- Take the strength of the suction noise into consideration when designing your acoustic signals in the working environment. Possibly additionally use visual signals.

Noise characteristics:

The Air Sizer 200 itself is constructed in a manner that prevents any significant development of noise. The noise characteristics of the connected industrial vacuum cleaner depend on the set suction force and suction load.

Note: Ensure that the differential pressure or vacuum generated by your vacuum cleaner or the suction is not greater than 99 mbar.
The maximum quantity of material to be sieved depends on the mesh size and sieve size.

Rated Power:

Air Sizer 200 : maximum 50 watts

Air Sizer 200 + vacuum cleaner: maximum 1450 watts



When connecting the power cable to the mains supply, use an external fuse that complies with the regulations applicable to the place of installation .

- Please check the rating label for details on the necessary voltage and frequency for the device.
- Make sure the levels agree with the existing mains power supply.
- Use the supplied connection cable to connect the device to the mains power supply.

The external fuse must be at least T15A (230V) T15A (100/120V).



Danger to life through electric shock

- An electric shock can lead to burns and to cardiac arrhythmias or to respiratory arrest and cardiac arrest.
- The device may only be operated with plugs that have a protective conductor (earthed).

Connecting the external Industrial Vacuum cleaner

Electric shock

Faulty power cable

- When you switch the device on there is danger of an electrical shock if the power cable for the external suction device is damaged.
- Before use, check the power cable between the sieve device and the suction device for possible damage.
- Never use a damaged power cable!



Objects thrown-out or falling down

Connection of compressed air instead of vacuum cleaner

- If compressed air is connected to one of the two air openings, the sieve lid and the sieve will be hurled out.
- This device may not be operated with compressed air.

The Air Sizer 200 can be operated only with a suction extractor, such as for example a vacuum cleaner.



Connection of the industrial vacuum cleaner

- Connect your vacuum cleaners suction tube to the air outlet channel
- Insert the type F IEC C14 connector on the vacuum cleaner into the IEC C13 panel-mounted outlet. **The power for the industrial vacuum cleaner is supplied from the Air Sizer 200.**

Negative Pressure

Display shows the neg. Pressure..... (Range from 00 to 99 mbar)

NOTE:

If the neg. pressure is more than 99 mbar -> sensor could be destroyed

The air jet can be changed by turning the manual air jet setting.

[1] Air entry opening closed è maximum air jet

[2] Air entry opening open è minimum air jet

The difference in air pressure (differential pressure) between the air inlet and air outlet at a given moment is displayed.

Operating Software

The operating software version is displayed for 5 seconds having switched on the machine.

➤ Starting, Stopping

- Switch the device on by pressing the on/off switch at the back.
- set the sieving parameters you want.
- Put the test sieve with the sample onto the nozzle compartment.
- Place the lid on the sieve.

NOTE:

The sieving will not start if the lid is not on.

- Start sieving by pressing the START button ">".
- Stop the sieving by pressing the STOP button "□".

Filter (Option)

Electrostatic charge inside the devices is prevented by earthing the device via the protective conductor on the electrical connection. Ensure the correct assembly of filter unit in order to guarantee sufficient earthing.

NOTICE:

Despite this, electrostatic charge separation may however still occur between the sample and receptacle wall inside the collecting receptacle depending on the sample property, flow speed and air humidity.

Cleaning and service

WARNING:

Risk of a fatal electric shock

- An electric shock can cause injuries in the form of burns and cardiac arrhythmia, respiratory arrest or cardiac arrest.

- Do not clean the machine under running water. Use only a cloth dampened with water.
- Disconnect the power supply plug before cleaning the blender.

➤ **Cleaning**

We recommend ultrasonic baths for thorough, gentle and time-saving cleaning of your test sieves.

Clean the air outlet channel regularly using a brush to remove any deposits.

- Vacuum cleaner – changing the vacuum cleaner bag
 - Change the vacuum cleaner bag or empty the dust container on your vacuum cleaner regularly as required.



- Check the degree of soiling of the vacuum cleaner filter regularly and change the filter where applicable.
- The vacuum or differential pressure generated by the vacuum cleaner may otherwise be too low for sieving.
- Maintenance

This device is essentially maintenance-free if cleaned regularly.

E11	MOTOR FAULTY/BLOCKED	Service required
E83	VACUUM TOO LOW	Check whether <ul style="list-style-type: none">• the suction apparatus is connected;• the suction apparatus is generating sufficient vacuum;• The collecting receptacle in the suction apparatus is full;• the sieve cover is attached.
E84	DROP IN VACUUM	Check whether <ul style="list-style-type: none">• the sieve cover is attached;• the suction hose has been connected;• the vacuum cleaner bag is full.



WHEN PARTICLE SIZE MATTERS

CERTIFICATE OF CE-CONFORMITY
ANALYTICAL SIEVE SHAKER
Air Sizer 200

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:
EN ISO 12100 Security of machines

EC Directive Electromagnetic Compatibility 2004/108/EC

Applied standards, in particular:

EN55011:2009+A1:2010, Group 1, Class B Radio disturbance characteristics –
Limits and methods of measurement

EN 61000-3-2:2006+A1:2009+A2:2009

EN 61000-3-3:2008

EN61326-1:2006

Additional applied standards, in particular

EN 61010 Safety prescriptions concerning measuring, operating, controlling and laboratory equipment

Authorised for the compilation of technical documents:

Endecotts Ltd (technical documentation)

The following records are held by Endecotts Ltd in the form of Technical Documentation:

Detailed records of engineering development, construction plans, study (analysis) of the measures required for conformity assurance, analysis of the residual risks involved and operating instructions in due form according to the approved regulations for preparation of user information data.

The CE-conformity of the Endecotts Analytical Sieve Shaker Type Air Sizer 200 is assured herewith.

In case of a modification to the machine not previously agreed with us as well as the use of not licensed spare parts and accessories this certificate will lose its validity.

Endecotts Ltd

London, July 2014



7. Operating instructions: EFL 300



Technical specifications

SIEVE SHAKER MODEL: EFL 300

General Information

The new EFL 300 combines the best features of the EFL2 whilst incorporating modern sieve shaker technology. It is still extremely robust but lightweight and more powerful than its predecessor. Heavier and larger samples can be sieved with the new EFL 300.

It is extremely versatile. **Amplitude setting is now standard and interval mode possible.** The heavy electric motor is replaced by the electromagnetic system found in all modern sieve shakers. Its lighter form means that it can be either floor standing or even bench mounted making it suitable for the both laboratory and industrial environments. Sieving parameters are set by the remote control unit. Its functions are logical and very simple to operate.

Advantages

- New electromagnetic drive for EFL 300
- Adjustable amplitude
- Floor or table mounted
- Suitable for wet or dry sieving
- Digital controls for easy and reliable operation via external interface
- Economical



Do not make any changes to the machine and use only spare parts and accessories approved by Endecotts Ltd.

The declaration of conformity to the European directives by Endecotts will otherwise lose its validity.

Furthermore this will result in the loss of any kind of guarantee claims.



WHEN PARTICLE SIZE MATTERS

Specifications

Range	20 µm to 125 mm
Drive / sieving motion	electromagnetic 3D
Max. Batch / feed capacity	6 kg
Max. Number of fractions	6 full height / 12 half height (300 mm or 12")
Amplitude	0 - 2 mm digital setting in 10 steps
Speed	3,000 min ⁻¹ at 50 Hz
Time display	digital, 0:10-99:50 min
Interval operation	yes (one mode)
Suitable for dry sieving	yes
Suitable for wet sieving	yes
Serial interface	-
Sieve diameter	100 / 150 / 200 / 250 / 300 / 315 mm or 3" / 8" / 12"
Clamping device	quick-release clamping system (included)
Model	bench top or floor standing
Protection code	IP 54
Electrical supply	different voltages available
Power connection	1 – Phase
Ø x H	427mm x 240 mm (without clamping unit)
Net weight	~ 45 kg
Standards	CE

Noise characteristic values:

Example 1:

Emission value related to workplace LpAeq = 63 dB (A)

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 1.5 mm)

Example 2:

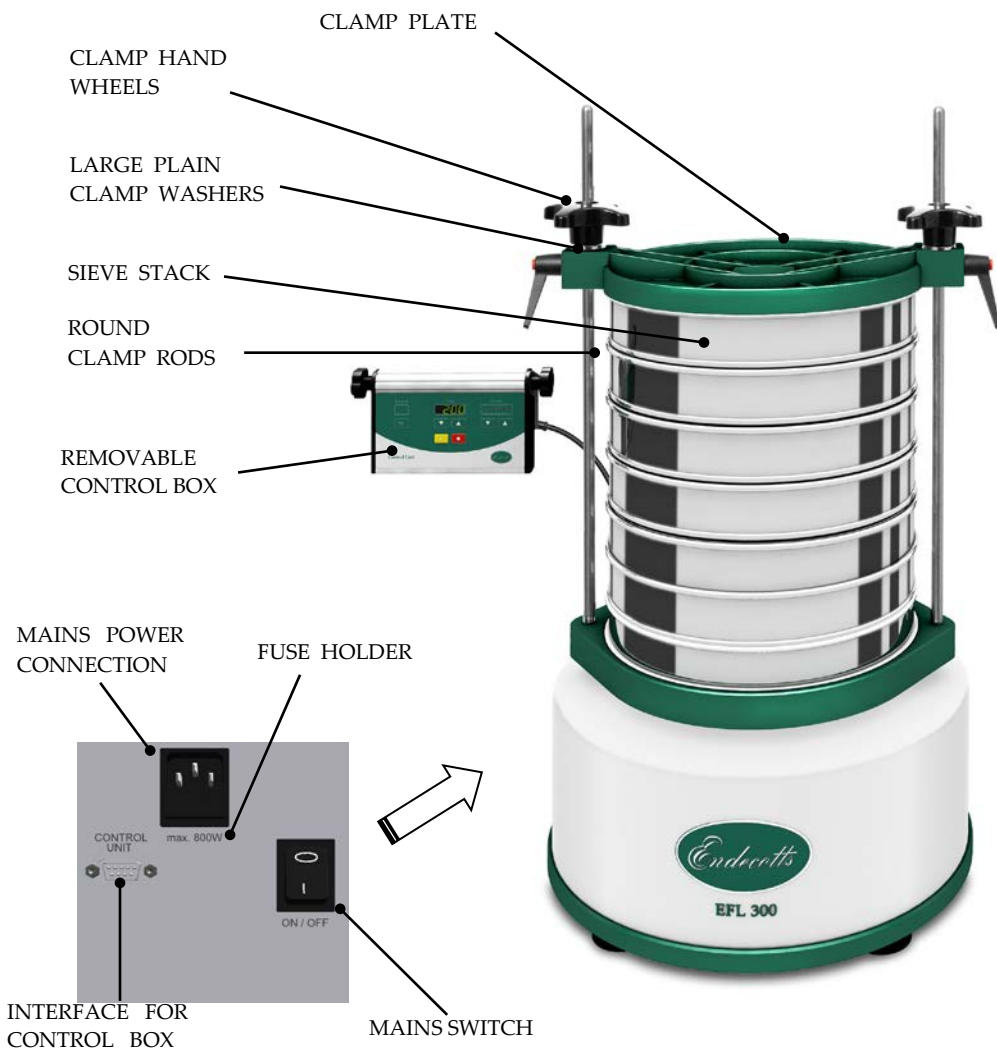
Emission value related to workplace LpAeq = 67 dB (A)

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 3 mm)

Controls and functions

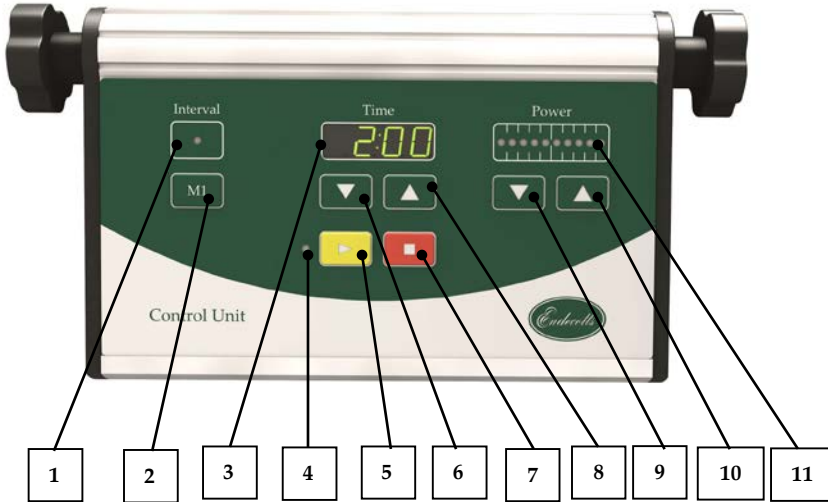
The sieve shaker should be placed on a level surface to ensure symmetrical distribution of the sample over the sieve mesh. The surface should be rigid and robust where vibration will not cause problems.

Operators should be familiar with and fully understand the controls and indicators before operating this machine. This should be done in conjunction with the diagram below and control panel description.



Control Box

- Connected to the machine by a 2 m serial line
- Could be mounted on the wall or placed on a table next to the machine



1	LED light to indicate interval operation ON.
2	Interval mode button M1 switches interval operation ON/OFF, upper LED lights up; 10 seconds on, 2 seconds off
3	Display shows the preselected sieving time, 00:10 – 99:50 min.
4	LED light to indicate START button “>” ON
5	Start the machine by pressing the START button “>”.
6 & 8	“v” and “^” button reduces/increases the sieving time, 00:10 – 99:50 min.
7	Stop the machine by pressing the STOP button “□”.
9 & 10	“v” and “^” button reduces/increases the amplitude, in 10 steps
11	10 LED’s for the Power bar indicating amplitude setting in 10 steps

Setting Up

Electrical connections

- * The voltage and frequency for the **EFL 300** is given on the rating label.
- * Ensure that the values agree with the existing power supply.
- * Connect the **EFL 300** to the power supply using the connection cable provided.
- * When connecting the power cable to the mains external fusing is necessary according to the regulations of the installation location



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Transport protection



Warning!

Serious personal injury

- THE APPLIANCE IS VERY HEAVY AND CAN THEREFORE CAUSE SERIOUS PERSONAL INJURIES.
- NEVER LIFT ABOVE HEAD HEIGHT.

Unscrew the screws on either side of the machine



NOTICE

The transport lock can also be used as carrying aid



You can also use the transport lock for lifting the device with a crane.

NOTICE

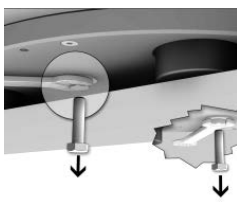
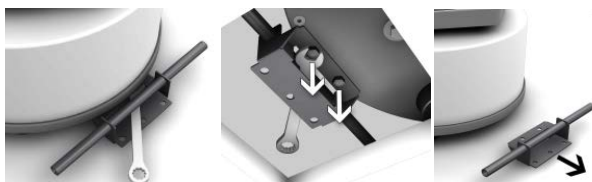
The housing can be damaged if the lifting straps are too short.

- Use 4 sufficiently long lifting straps.
- Observe the minimum distance between the device and the lifting gear.

IMPORTANT



If the machine is operated with **the transit bolts**, or is transported without transit bolts, mechanical components may become damaged.



The **transit bolts** are fixed to the underneath of the device. Use a 13 mm wrench to attach and remove the four screws.

Place the **EFL 300** on a stable floor, since otherwise unpleasant vibrations will be transmitted. Being placed on a level surface ensures symmetrical distribution of the sample over the sieves, during operation.

- Unscrew the two hexagon screws (transit bolts) on the bottom of the sieve shaker with an open ended spanner until the sieve plate is movable.
- Keep hexagon screws (transit bolts) for possible transport at a later date.

IMPORTANT



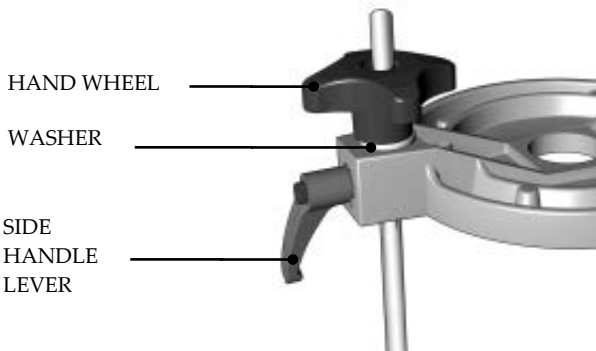
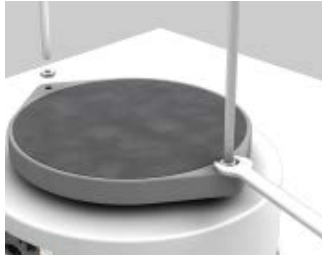
If the machine is operated with **the transit bolts**, or is transported without transit bolts, mechanical components may become damaged.

Reusing transit bolts

- Dismount the clamping unit.
- Screw the hexagon screws (transit bolts) into the two holes on the bottom of the sieve shaker and tighten with open ended spanner until the sieve plate is no longer movable.

Mount sieve clamping unit

Fit one M12 nut onto each clamp rod selected for use, then screw the pair of clamp rods into the location plate and tighten the locknuts.



Place the two large plain washers over the 20mm threads of the clamp sleeves. These can be seen protruding vertically from the two side lugs on the clamp plate.

Screw the two hand wheels loosely onto the 20mm threads; leave a gap of 5 mm between the large washer and the hand wheel face. Do not tighten right down at this point.

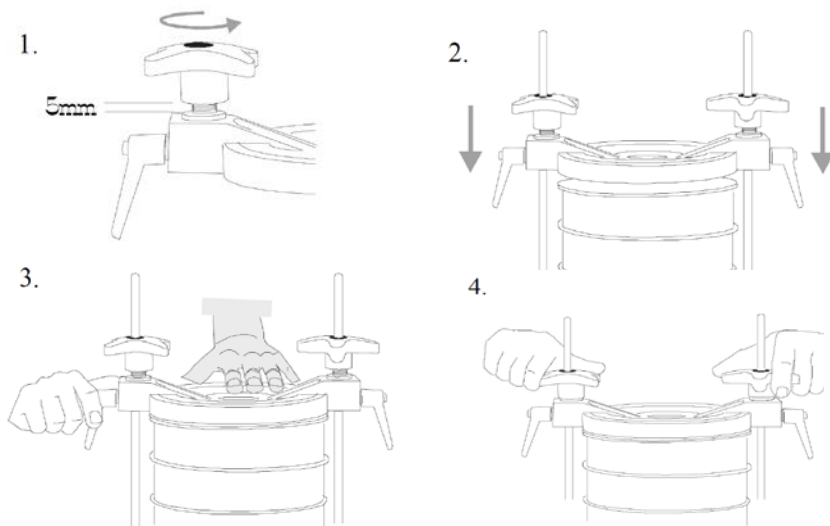
Operating Instructions

1. Place the receiver centrally on the location plate in the appropriate recess.
2. Stack the required test sieves on top of the receiver (min. 1x receiver + 2x sieves + 1x lid).
3. Put the sample in the top sieve and fit the lid

In order to guarantee exact results under fast sieving conditions, the quantity of material to be sieved should be adapted to the sieve diameter and the nominal mesh size.

More detailed information is displayed in our "TEST SIEVING MANUAL".

4. Align the locking assemblies in figure 1 the two side lugs of the clamp plate with the round clamp rods. Slide the clamp plate down squarely onto the lid at the top of the sieve stack.



Ensure that the clamping hand wheels at the top (figure 2) are loose and the locking assemblies are fully pushed down. There should be a 5mm gap between the large plain washer and the face of the hand wheel.

Place one hand on the top of the clamp plate (figure 3) and hold square while locking one side handle lever. Repeat for the opposite side handle lever.

The side handle levers can be set vertically downwards by pressing on the Red button and pulling the handle outwards to release (figure 4). Turn the handle to a safe, convenient angle downwards and release to engage the teeth. Screw the two clamping hand wheels down simultaneously to ensure the clamping plate is square.

Continue until the hand wheels are tight against the internal stop. Hand tightness must be exerted so that the assembly does not loosen during vibration.

The locking side handle levers and clamping hand wheels must be tightened sufficiently to ensure that the sieves and receiver are clamped securely during operation.

5. Set time and amplitude.
6. Press START



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

Wet sieving

The Wet Sieving Adaptor Kit is supplied as an optional extra for 300mm or 12" diameter sieves and should be ordered separately.

The Wet Sieving Adaptor Kit consists of the following items:

- 1 off Special Wet Sieving Clamp Plate.
- 1 Set off O-ring Seals (One required for each sieve in the stack.)
- 1 off Special Wet Sieving Receiver with a spout (Specify for 300 mm or 12" diameter sieves)

The O-ring seals are fitted on to the outside of the bottom rim of each sieve, which means the sieves are stacked onto each other and they form a seal.

The bottom sieve is placed on the special receiver with a spout.

A nylon hose tail must be fitted and must have a suitable length of hose fitted to drain into a convenient drainage point.

Fit a suitable length of hose to the spout to drain into a convenient drainage point.

The clamp plate is usually supplied with the rose reversed to avoid damage. Undo and reverse, so that the rose head is on the inside. Remove the lid from the sieve stack and replace the standard clamp plate with the wet sieving clamp plate. Fit a suitable length of hose to the inlet of the rose on the clamp plate and connect to the fluid supply with flow regulation.



Never operate your **Sieve shaker** directly in water.
Danger through current surge.

During wet sieving always operate your **Sieve shaker** connected to a mains socket protected by an FI protective (safety) switch.

The water quantity added should always be dosed in such a way that the sieve surface is only just wetted.



WHEN PARTICLE SIZE MATTERS



WHEN PARTICLE SIZE MATTERS

CERTIFICATE OF CE-CONFORMITY
ANALYTICAL SIEVE SHAKER
EFL 300

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:

EN ISO 12100 Security of machines

EC Directive Electromagnetic Compatibility 2004/108/EC

Applied standards, in particular:

EN55011:2009+A1:2010, Group 1, Class B Radio disturbance characteristics –
Limits and methods of measurement

EN 61000-3-2:2006+A1:2009+A2:2009

EN 61000-3-3:2008

EN61326-1:2006

Additional applied standards, in particular

EN 61010 Safety prescriptions concerning measuring, operating, controlling and laboratory equipment

Authorised for the compilation of technical documents:

Endecotts Ltd (technical documentation)

The following records are held by Endecotts Ltd in the form of Technical Documentation:

Detailed records of engineering development, construction plans, study (analysis) of the measures required for conformity assurance, analysis of the residual risks involved and operating instructions in due form according to the approved regulations for preparation of user information data.

The CE-conformity of the Endecotts Analytical Sieve Shaker Type EFL300 is assured herewith.

In case of a modification to the machine not previously agreed with us as well as the use of not licensed spare parts and accessories this certificate will lose its validity.

Endecotts Ltd

London, June 2015





WHEN PARTICLE SIZE MATTERS

1. Setting up

8. Operating instructions: Titan 450



Technical specifications

SIEVE SHAKER MODEL:

Titan 450

General Information

The Titan 450 is a natural successor to the D450. It has been given a fresher look and small improvements to make the Titan 450 an even better machine than its predecessor.

It retains its place as Endecotts' most powerful sieve shaker. It is built for large sieve diameters and can now take up to 7 test sieves in 450 mm or in 18" diameter test sieves.



Do not make any changes to the machine and use only spare parts and accessories approved by Endecotts Ltd.

The declaration of conformity to the European directives by Endecotts will otherwise lose its validity.

Furthermore this will result in the loss of any kind of guarantee claims.



Specifications

Range	20 μm to 125 mm
Drive / sieving motion	electromagnetic 3D
Max. Batch / feed capacity	20 kg
Max. Number of fractions	7 full height (450 mm or 18")
Amplitude	0 - 2 mm digital setting in 10 steps
Speed	3,000 min^{-1} at 50 Hz
Time display	digital, 0:10-99:50 min
Interval operation	yes (one mode)
Suitable for dry sieving	yes
Suitable for wet sieving	yes
Serial interface	-
Sieve diameter	250 / 300 / 315 / 400 / 450 mm or 12" / 18"
Clamping device	quick-release clamping system (included)
Model	Floor Standing
Max. height of sieve stack	up to 830 mm
Protection code	IP 54
Electrical supply	different voltages available
Power connection	1 – Phase
$\text{\O} \times \text{H}$	606 mm \times 240 mm (without clamping unit)
Net weight	~130 kg
Standards	CE

Noise characteristic values:

Example 1:

Emission value related to workplace $L_{pAeq} = 63 \text{ dB (A)}$

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 1.5 mm)

Example 2:

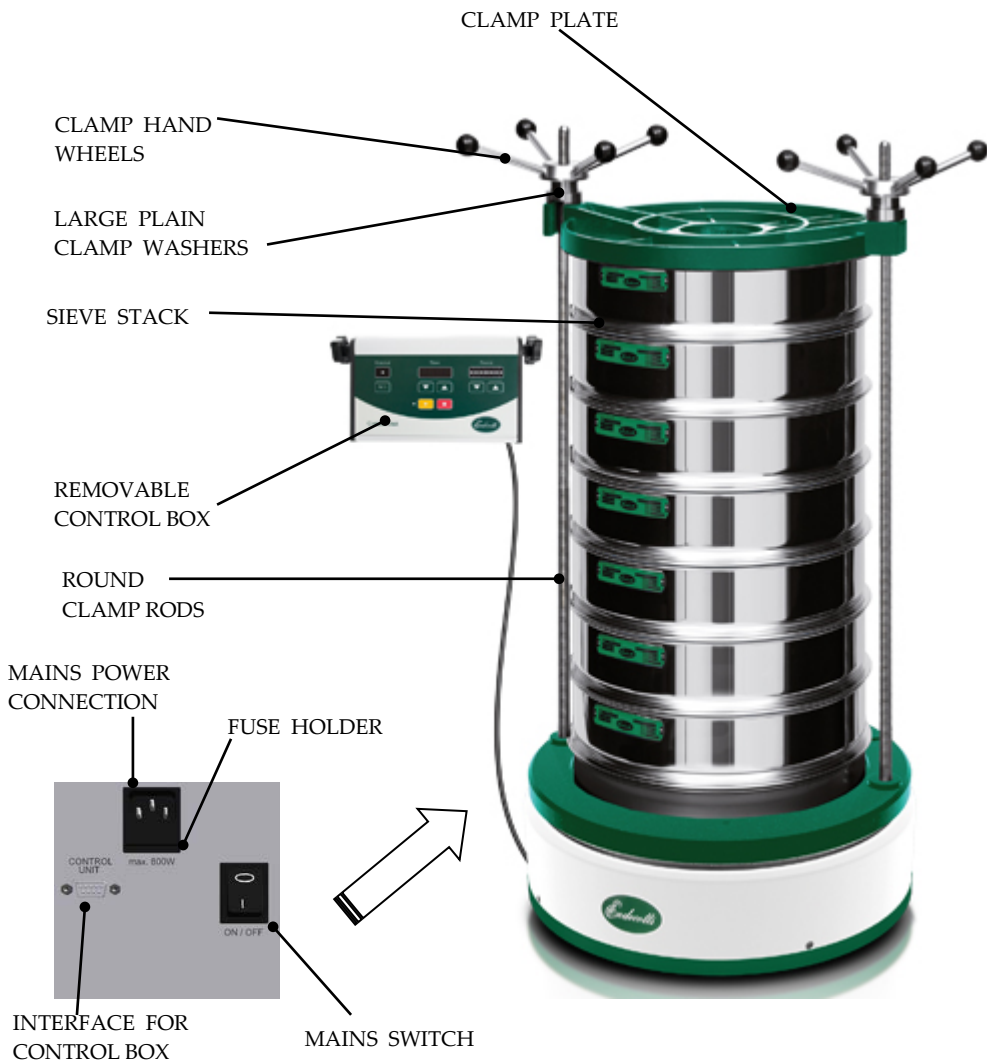
Emission value related to workplace $L_{pAeq} = 67 \text{ dB (A)}$

(Operating conditions: Material to be sieved = quartz sand, grain size < 1mm, 5 sieves Amplitude = 3 mm)

Controls and functions

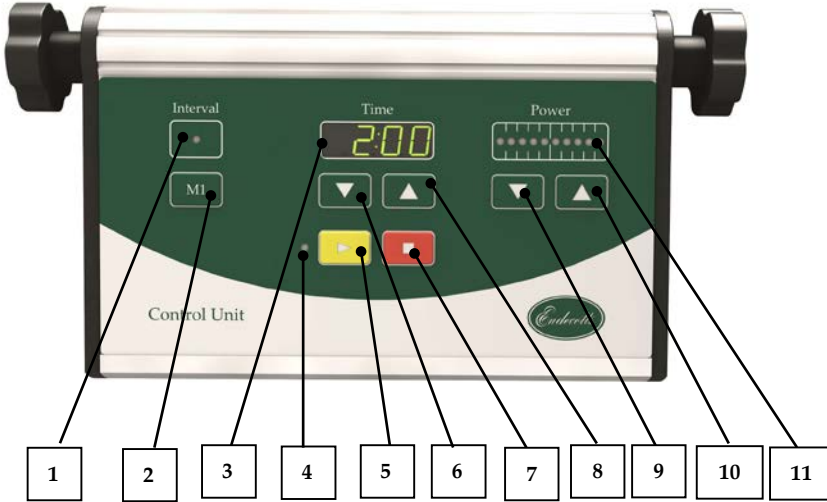
The sieve shaker should be placed on a level surface to ensure symmetrical distribution of the sample over the sieve mesh. The surface should be rigid and robust where vibration will not cause problems.

Operators should be familiar with and fully understand the controls and indicators before operating this machine. This should be done in conjunction with the diagram below and control panel description.



Control Box

- Connected to the machine by a 2 m serial line
- Could be mounted on the wall or placed on a table next to the machine



1	LED light to indicate interval operation ON.
2	Interval mode button M1 switches interval operation ON/OFF, upper LED lights up; 10 seconds on, 2 seconds off
3	Display shows the preselected sieving time, 00:10 – 99:50 min.
4	LED light to indicate START button “>” ON
5	Start the machine by pressing the START button “>”.
6 & 8	“v” and “^” button reduces/increases the sieving time, 00:10 – 99:50 min.
7	Stop the machine by pressing the STOP button “□”.
9 & 10	“v” and “^” button reduces/increases the amplitude, in 10 steps
11	10 LED’s for the Power bar indicating amplitude setting in 10 steps

Setting Up

Electrical connections

- * The voltage and frequency for the **Titan 450** is given on the rating label.
- * Ensure that the values agree with the existing power supply.
- * Connect the **Titan 450** to the power supply using the connection cable provided.
- * When connecting the power cable to the mains external fusing is necessary according to the regulations of the installation location



Do not connect to any other supply other than stated on the rating label, otherwise electrical and mechanical components can be damaged.

Ambient temperature: 5°C to 40°C



If the ambient temperature is exceeded or drops below the specified value the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, with linear reduction down to 50% relative humidity at 40°C.



At high atmospheric humidity the electrical and mechanical components may become damaged and the performance data can change to an unknown degree.

Transport protection



Warning!

Serious personal injury

- THE APPLIANCE IS VERY HEAVY AND CAN THEREFORE CAUSE SERIOUS PERSONAL INJURIES.
- NEVER LIFT ABOVE HEAD HEIGHT.

Unscrew the screws on either side of the machine



NOTICE

The transport lock can also be used as carrying aid



You can also use the transport lock for lifting the device with a crane.

NOTICE

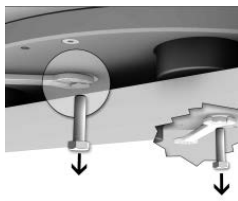
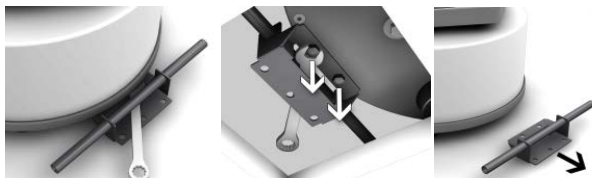
The housing can be damaged if the lifting straps are too short.

- Use 4 sufficiently long lifting straps.
- Observe the minimum distance between the device and the lifting gear.

IMPORTANT



If the machine is operated with **the transit bolts**, or is transported without transit bolts, mechanical components may become damaged.



The **transit bolts** are fixed to the underneath of the device. Use a 13 mm wrench to attach and remove the four screws.

Place the **Titan 450** on a stable floor, since otherwise unpleasant vibrations will be transmitted. Being placed on a level surface ensures symmetrical distribution of the sample over the sieves, during operation.

- Unscrew the two hexagon screws (transit bolts) on the bottom of the sieve shaker with an open ended spanner until the sieve plate is movable.
- Keep hexagon screws (transit bolts) for possible transport at a later date.

IMPORTANT



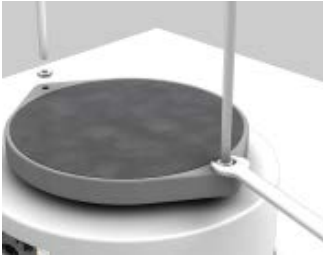
If the machine is operated with the transit bolts, or is transported without transit bolts, mechanical components may become damaged.

Reusing transit bolts

- Dismount the clamping unit.
- Screw the hexagon screws (transit bolts) into the two holes on the bottom of the sieve shaker and tighten with open ended spanner until the sieve plate is no longer movable.

Mount sieve clamping unit

Fit one M30 nut onto each clamp rod selected for use, then screw the pair of clamp rods into the location plate and tighten the locknuts.



Operating Instructions

1. Place the receiver centrally on the location plate in the appropriate recess.
2. Stack the required test sieves on top of the receiver (min. 1x receiver + 2x sieves + 1x lid).
3. Put the sample in the top sieve and fit the lid

In order to guarantee exact results under fast sieving conditions, the quantity of material to be sieved should be adapted to the sieve diameter and the nominal mesh size.

More detailed information is displayed in our "TEST SIEVING MANUAL".

4. Clamping Assembly

Align the clamp plate with the clamp rods. Slide the clamp plate down squarely onto the lid at the top of the sieve stack.

Screw the clamp hand wheels down evenly until the sieve stack is properly clamped.



Damage may occur if the shaker is allowed to operate with a loose clamping plate.

5. Set time and amplitude.
6. Press START

Wet sieving

The Wet Sieving Adaptor Kit is supplied as an optional extra for 450 mm or 18" diameter sieves and should be ordered separately.

The Wet Sieving Adaptor Kit consists of the following items:

- 1 off Special Wet Sieving Clamp Plate.
- 1 Set off O-ring Seals (One required for each sieve in the stack.)
- 1 off Special Wet Sieving Receiver with a spout (Specify for 450 mm or 18" diameter sieves)

The O-ring seals are fitted on to the outside of the bottom rim of each sieve, which means the sieves are stacked onto each other and they form a seal.

The bottom sieve is placed on the special receiver with a spout.

A nylon hose tail must be fitted and must have a suitable length of hose fitted to drain into a convenient drainage point.

Fit a suitable length of hose to the spout to drain into a convenient drainage point.

The clamp plate is usually supplied with the rose reversed to avoid damage. Undo and reverse, so that the rose head is on the inside. Remove the lid from the sieve stack and replace the standard clamp plate with the wet sieving clamp plate. Fit a suitable length of hose to the inlet of the rose on the clamp plate and connect to the fluid supply with flow regulation.



Never operate your **Sieve shaker** directly in water.

Danger through current surge.



During wet sieving always operate your **Sieve shaker** connected to a mains socket protected by an FI protective (safety) switch.



The water quantity added should always be dosed in such a way that the sieve surface is only just wetted.



CERTIFICATE OF CE-CONFORMITY
ANALYTICAL SIEVE SHAKER
Titan 450

Certificate of CE-Conformity according to:

EC Mechanical Engineering Directive 2006/42/EC

Applied harmonized standards, in particular:
EN ISO 12100 Security of machines

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Limits and methods of measurement

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Endecotts Ltd

London, June 2015





General Information

Use of Sieves

Wherever solid materials are handled or processed, test sieves find application. In laboratory or plant these simple precision instruments are invaluable.

Test sieves are used, for example, by chemists and pharmacists, physicists and geologists, chemical and civil engineers, mining and metallurgical engineers.

The uses to which test sieves are put are as many and varied as the types of people who use them. Most solid raw materials and finished product specifications contain a clause which stipulates the range of the size spread or the maximum or minimum size in terms of some standard sieve series

Some typical applications are as follows: the sizing of chemical and pharmaceutical crystals and powders; the grading of coal and ores; determining the efficiency of a crusher; grinder or industrial screening unit; cement testing; classifying silt, soil, sand, gravel and other materials encountered in civil engineering work; checking the state of a fluidised catalyst in an oil refinery.

Test Sieves Available from Endecotts

Laboratory Test Sieves

All test sieves manufactured to a National or International Specification are supplied with a Certificate of Compliance, and are individually serial numbered giving full traceability.

Calibrated Test Sieves

Test sieves inspected and calibrated in accordance of ISO 3310 (BS:410). Each sieve is supplied with a Calibration Certificate recording the number of apertures and wire diameters measured, the average aperture size and standard deviation separately for the warp and weft directions. The type of weave will also be stated.

Re-Examination Service

Used sieves are examined and inspected in accordance with the appropriate specification. Complying sieves are issued with a Compliance, Inspection or Calibration Certificate, as requested by the customer.



Evaluation Software: SieveWare

General Information

SieveWare, the software for particle size analyses, exceeds manual evaluation in many aspects, due to the fact that the software is able to automatically control the necessary measurement and weighing procedures - from the registration of the weight of the sieve up to the evaluation of the data.



Advantages

- Automatic registration, evaluation and administration of measurement data
- Logical, self-explanatory interface
- Measurement protocol in accordance with different standards
- Complex transformation into charts and tables
- Data link to different measurement instruments
- Automatic detection and configuration of common analytical scales
- Comprehensive data export
- Comprehensive help texts and detailed manual

Specifications

Application evaluation of sieve analysis

Function

1. Parameter entry

All available parameters (such as sieve stack configuration, dead weight of the sieve, sieve shaker settings) as well as the characteristics, which may have to be calculated, can be entered.

2. Sieve analysis

The program accepts automatic and manual data entries from both scale and sieve system. The Octagon 200CL can be automatically controlled with SieveWare via RS232 communication. After the sieve analysis is completed, the loaded sieves are reweighed. By determining the weight difference, the program automatically detects the mass proportions and assigns them accordingly to the corresponding fractions.

3. Evaluation

SieveWare calculates all common particle distributions as well as the characteristic values of the particle size, thus making it possible to present the results in standard presentation forms, such as tables and charts. Cumulative throughput or residual values, distribution density and histograms can be included in the standard particle size distributions.

4. Data export

All measured data can be printed, saved and exported as tables and charts.

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WHEN PARTICLE SIZE MATTERS