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1. Scope

This Standard Operating Procedure (SOP) applies to the staff and students using the Endecotts® Octagon 200 Test Sieve Shaker in the laboratories of the Pharmacy Department, University of Malta.

2. Objective

To describe the procedure for installation, operation and maintenance of the Endecotts® Octagon 200 Test Sieve Shaker.

3. Definitions

3.1. Amplitude Controller (e): Controls the amplitude of vibration, ranging from minimum to maximum. The maximum vibration is dependent upon the number of sieves and the sample weight.

3.2. Blanking Plug (i): Removed to provide an orifice that acts as a spillage outlet drain when wet sieving applications are performed.

3.3. Cyclic Interval Timer (g): Two knobs that enable the vibratory action to be automatically switched on or off intermittently at preset intervals. The left hand knob controls the ON time whilst the right hand knob controls the OFF time.

3.4. Fuse (f): Protects the electrical components of the equipment.

3.5. Intermittent / Continuous Switch (h): To select between intermittent and continuous vibration. The red light on the cyclic interval timer is illuminated when the intermittent option is selected.

3.6. Mains Indicator Lamp (c): Lights up to indicate that the device is switched on.

3.7. Mains Inlet (a): The area situated at the rear end from which the equipment is connected to its electrical supply.

3.8. Mains Switch (b): Situated at the rear end and is used to switch the equipment on [I] or off [0].
3.9. **Octagon 200® Sieve Shaker**: An equipment that allows the stacking of 8 full height (50mm) sieves or 16 half height (25mm) sieves that are shaken accordingly to allow separation of their contents.

3.10. **Process Timer (d)**: Controls the overall time of the sieving operation. The operation time may range from 0-60 minutes and for times less than 15 minutes, the knob is to be first turned to 15 minutes and then back to the required time.

4. **Responsibility**

4.1. The members of the Department of Pharmacy (staff and students) are responsible for following this SOP.

4.2. The designated Laboratory Officer or Laboratory Assistant is responsible for ensuring that this SOP is followed.

5. **Procedure**

5.1. **Diagram of the Endecotts® Octagon 200 Test Sieve Shaker**

![Diagram of the Endecotts® Octagon 200 Test Sieve Shaker](image-url)
5.2. **Installation**

5.2.1. Place the sieve shaker on a level surface.
5.2.2. Screw each hexagonal rod into the location casting.
5.2.3. Tighten the locknuts using the washers provided.
5.2.4. Place the two clamp blocks on the hexagonal rods.
5.2.5. Lightly tighten the hand wheels.
5.2.6. Place the receiver on the centre of the location casting in its appropriate recess.
5.2.7. Stack the required sieves on top of the receiver.
5.2.8. Place the sieve lid followed by the clamp plate on top of the sieves allowing the two hexagonal rods to pass through the two designated holes.
5.2.9. Loosen the hand wheels on both clamp blocks and position them accordingly so that the hook on each toggle clip on the clamp plate engages with the hook on each clamp block.
5.2.10. Adjust the position of each clamp block ensuring that the bottom edge of the nylon bush in the clamp plate lies between the two red lines on the hexagonal rods.
5.2.11. Tighten both clamp blocks firmly.
5.2.12. Position the hand levers on both toggle clips in a horizontal position.
5.2.13. Loosen and adjust the clamp block/s accordingly if further adjustments are necessary.
5.2.14. Push down the hand levers on both toggle clips simultaneously.
5.2.15. Check that the sieves are properly clamped.
5.2.16. Connect wire to mains entry and to the mains supply.

5.3. **Operation**

5.3.1. Place the sample in the uppermost sieve.
5.3.2. Fit on the sieve lid and clamp plate.
5.3.3. Push down hand levers simultaneously to clamp the sieves appropriately.
5.3.4. Position the mains switch to the ‘I’ position.
5.3.5. Adjust the amplitude controller knob to select the desired amplitude of vibration.
5.3.6. Adjust the intermittent / continuous switch to select between intermittent or continuous vibration modes.
5.3.7. Adjust the process timer knob to select the desired time for the sieving operation if continuous vibration mode was previously selected.

5.3.8. Adjust the cyclic interval timer knobs respectively to automatically switch on and off the vibrating action if intermittent vibration mode was previously selected.

5.3.9. Open the clamp plate when the vibrating action is complete ensuring that the sieve shaker is no longer active if previously programmed in the intermittent vibration mode.

5.4. Maintenance

5.4.1. Replace fuse if mains indicator lamp fails to light up on switching on the equipment.

5.4.2. Wipe external surfaces with a damp cloth and a mild cleaning detergent.
5.5. Flow Charts

5.5.1. Installation

Start

Place sieve shaker on level surface

Screw each hexagonal rod into location casting

Tighten locknuts using the washers provided

Place the 2 clamp blocks on the hexagonal rods

Lightly tighten hand wheels

Place receiver on centre of location casting in its appropriate recess

Stack the required sieves on top of the receiver

Place sieve lid followed by clamp plate on top of sieves allowing the hexagonal rods to pass through the two designated holes

Loosen hand wheels on both clamp blocks and position them so that hooks of toggle clips engage with hooks on clamp blocks.
1. Nylon bush in clamp plate lies between the 2 red lines on both rods

   - Yes: Tighten both clamp blocks firmly
   - No: Adjust accordingly

2. Position hand levers on both toggle clips in a horizontal position

   - Yes: Further adjustments necessary
   - No: Connect wire to mains entry and to mains supply

3. Further adjustments necessary

   - Yes: Loosen and adjust clamp block/s accordingly
   - No: Push down both hand levers simultaneously

4. Check that the sieves are properly clamped

5. Connect wire to mains entry and to mains supply

End
5.5.2. Operation

1. Start
2. Place sample in uppermost sieve
3. Fit on sieve lid and clamp plate
4. Push down hand levers simultaneously to clamp sieves
5. Position mains switch to ‘1’ position
6. Adjust amplitude controller knob to select desired amplitude of vibration
7. Adjust intermittent / continuous switch to select between intermittent or continuous vibration modes
8. Continuous vibration mode
   - Yes
   - Adjust process timer knob to select desired time for sieving operation
   - Open clamp plate when vibrating action is complete
   - End

9. No
   - Adjust cyclic interval timer knobs respectively to switch on and off vibrating action for intermittent vibration mode
   - Open clamp plate when sieve shaker is no longer active
   - End
5.5.3. Maintenance

Start

Indicator lamp lights up on switching on

Yes

Wipe external surfaces with damp cloth and mild cleaning detergent

End

No

Replace fuse
6. Precautions

6.1. Place the sieve shaker on a level surface to ensure symmetrical distribution of the sample over the sieve mesh.

6.2. Select a surface that is rigid and robust, where the vibrations produced will not have a negative effect on the other equipment in the vicinity.

6.3. Ensure that both clamp blocks and hand levers are sufficiently tightened so that both sieves and receiver are securely clamped during operation since damage may occur if the shaker is allowed to operate with a loose clamping plate.

6.4. Ensure that excessive pressure in the equipment is avoided as this may damage the sieves and receiver.

6.5. Remove sieves only when shaker is switched off.

6.6. Do not unscrew clamping hand wheels or side handle levers while shaker is vibrating.

7. References

Endecotts Limited. Octagon 200 Variable Amplitude Test Sieve Shaker Assembly and Operating Instructions. London: Endecotts Ltd.


8. Appendices

N/A

9. Revision History

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<thead>
<tr>
<th>Version Number</th>
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