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1. Scope

This Standard Operating Procedure (SOP) applies to the staff and students making use of the Jouan® Laboratory Oven in the laboratories of the Pharmacy Department, University of Malta.

2. Objective

To describe the procedure for the operation, maintenance and troubleshooting of the Jouan® Laboratory Oven.

3. Definitions

3.1. **On/Off Green Indicator Lamp**: A switch that lights up when oven is switched on.

3.2. **Orange Indicator Lamp**: Provides an indicator signal during the heating process. It stays continually lit when the oven is heating and then begins to flash when the desired temperature is reached.

3.3. **Safety Thermostat Indicator Lamp (Red)**: Lights up whenever the oven temperature becomes higher than the set temperature.

3.4. **Telethermometer**: Indicates the actual temperature inside the oven.

3.5. **Temperature Setting Potentiometer**: The knob that allows the user to set the desired temperature for heating.

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 Control Panel

![Diagram of Control Panel]

(1) Temperature Setting Potentiometer
(2) Telethermometer
(3) On-Off Switch with Green Indicator Lamp
(4) Orange Indicator Lamp
(5) Safety Thermostat Indicator Lamp

5.2. Operation

5.2.1. Connect the power cable of the oven to the power outlet.
5.2.2. Ensure that the temperature setting potentiometer is set to a minimum.
5.2.3. Switch the On/Off key to the ‘ON’ position.
5.2.4. Adjust the temperature setting potentiometer to set the desired temperature.
5.2.5. Wait until the orange indicator lamp starts flashing continuously and the telethermometer is indicating the desired temperature, to insert items into the oven.
5.2.6. Close oven door and leave items inside for the desired period of time.
5.2.7. Remove the items from the oven, once the desired period of time has elapsed.
5.2.8. Set the temperature setting potentiometer to a minimum.
5.2.9. Switch the On/Off Key to the ‘OFF’ position.
5.3. Maintenance

5.3.1. Remove the support racks and wipe the heater with a dry cloth.
5.3.2. Sterilise racks and shelves if need arises.
5.3.3. Wipe the control panel with a moist cloth and a mild cleaning agent.

5.4. Troubleshooting

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible Cause/s</th>
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<tbody>
<tr>
<td>Green indicator lamp fails to light up</td>
<td>- Defective fuse/s</td>
</tr>
<tr>
<td>Orange indicator lamp fails to light up on</td>
<td>- Temperature inside oven is already</td>
</tr>
<tr>
<td>starting heating process</td>
<td>greater than the desired temperature</td>
</tr>
<tr>
<td></td>
<td>- Regulation circuit is faulty</td>
</tr>
<tr>
<td>Orange indicator lamp lit but no heating</td>
<td>- Heating resistors are cut off</td>
</tr>
</tbody>
</table>
5.5. Flow Charts

5.5.1. Operation

Start

Connect power cable of oven to power outlet

Temperature setting potentiometer set to a minimum

Yes

Switch ‘On/Off’ key to the ‘ON’ position

Adjust temperature setting potentiometer to desired temperature

No

Set to a minimum

Wait until desired temperature is indicated

Telethermometer indicates desired temperature

Yes

Insert items into oven

Close oven door and leave items inside for desired period of time

Remove items from the oven

Set temperature setting potentiometer to a minimum

Switch On/Off Key to the ‘OFF’ position

End
5.5.2. Maintenance

- Start
- Remove support racks and wipe heater with dry cloth
- Sterilise racks and shelves if need arises
- Wipe control panel with moist cloth and a mild cleaning agent
- End
6. Precautions

6.1. Ensure that the load and its container can withstand the set temperature.
6.2. Be aware of the physical and chemical properties of the load (e.g. Ignition Temperature) to prevent considerable damages to load, oven and its surroundings.
6.3. Do not use the oven for flammable solvents or any other flammable products since it is not explosion-proof.
6.4. Take special care when working at high temperatures since outside case temperature may be high.
6.5. Do not operate with the door open since this will not allow the oven to reach the desired temperature and results in overheating of the resistors.
6.6. Load uniformly and do not overstack to ensure optimum heating uniformity.
6.7. Do not load each shelf with more than 5kg since this can lead to permanent deformation of the shelf.

7. References


8. Appendices

N/A

9. Revision History

<table>
<thead>
<tr>
<th>Version Number</th>
<th>Amendments/ Reasons for change</th>
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<td>01</td>
<td>Initial Release</td>
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