
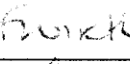

	UNIVERSITY OF MALTA FACULTY OF MEDICINE & SURGERY PHARMACY DEPARTMENT	SOP Ref. No. SOP/PD/302_01
	STANDARD OPERATING PROCEDURE	
	MEMMERT® UNIVERSAL OVEN	


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1. Scope

This Standard Operating Procedure (SOP) applies to the staff and students using and/or maintaining the Memmert® Universal Oven in the laboratories of the Pharmacy Department, University of Malta.

2. Objective

To give an account of the procedure for the installation, operation and maintenance of the Memmert® Universal Oven.

3. Definitions

3.1 Air slide: Fresh air supply control. Levels range from 0 to 6, zero giving free internal convection circulation whilst six giving maximum entry of fresh air. Ideally this should be set at intermediate positions to permit selection of the appropriate mixing ratio since a large proportion of fresh air may not always allow the selected setpoint temperature to be reached.

3.2 Main switch: On and Off or Timer Operation.

3.3 Signal lamps:

3.3.1 Green: Ready for operation

3.3.2 Red: Over temperature protection or fault

3.3.3 Orange: Heating


3.4 Set point button: Push-button to allow the temperature knob to operate.

3.5 LCD display: Digitally displays setpoint and the actual indication of the thermostat.

3.6 Screw lock: Locks temperature set point to prevent undesirable change in setting.

3.7 Knob (black): Temperature knob used to select the desired temperature setpoint.

3.8 Knob (red): Over-temperature protection adjustment knob to prevent overheating.

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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 are responsible for ensuring that this SOP is followed.


5. Procedure

5.1 Installation

- 5.1.1 Accurately position oven horizontally, using a spirit level if necessary.
- 5.1.2 Allow at least a distance of 15cm between the back of the oven and the wall.
- 5.1.3 Allow a distance of not less than 20cm between the ceiling and the oven.
- 5.1.4 Adjust oven door if required.

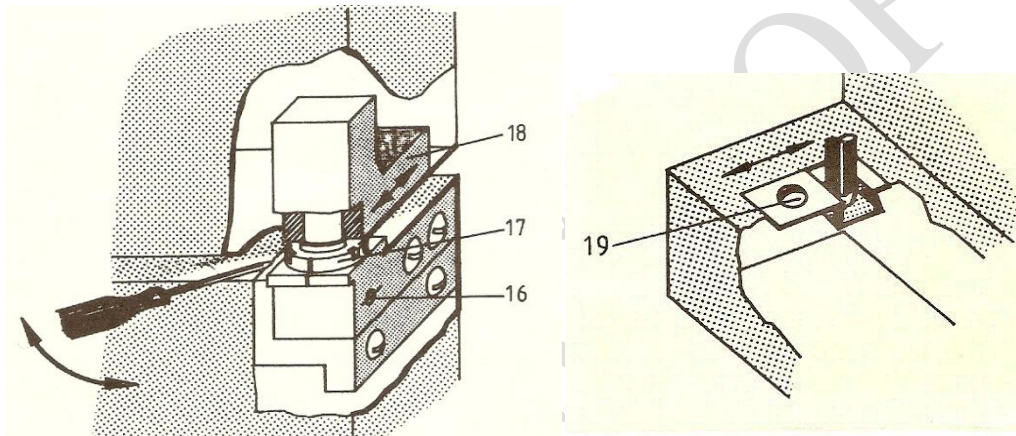
5.2 Operation

- 5.2.1 Set the main switch on.
- 5.2.2 Depress the set point button continuously. Subsequently manipulate the temperature knob to the desired temperature. At this stage, the digital temperature indication switches to set-point selection and this is indicated by a blinking point in the display.
- 5.2.3 Move the temperature knob quickly to adjust set-point in large steps.
- 5.2.4 Move the temperature knob slowly to adjust set-point in single steps.
- 5.2.5 Lock the scale with the screw lock to prevent unintentional changes.
- 5.2.6 Set the adjustable overheat controller, with the red knob, above the selected working temperature by an appropriate amount (eg. by 5°C).
- 5.2.7 Wait until a steady temperature is reached, i.e. when the desired temperature is available on the LCD display for a period of at least 15 minutes, to insert items into the oven using the different shelving options available.
- 5.2.8 Move the red knob down until the oven does not operate when handling heat sensitive loads to protect them against over-temperature. Perform this set-point reduction very slowly, step by step by one digit slightly above the actual steady temperature.


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5.3 Maintenance

- 5.3.1** Lubricate the moving parts on the door (hinges and door lock) with a thin silicone grease once a year. Lubricate 4 times a year if oven is continuously being used.
- 5.3.2** Adjust the door at the hinges and/or the locking plate area to ensure that the door closes properly.
- 5.3.3** Diagram of Door Hinge (Left) and Locking Plate (Right)

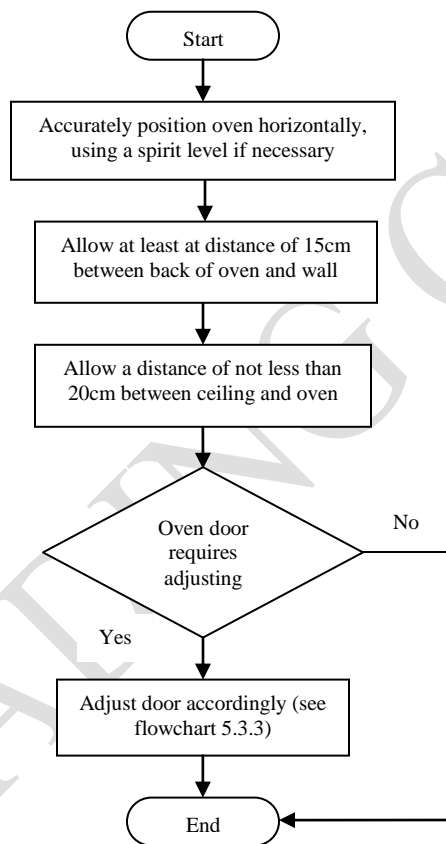



- 5.3.3.1** Adjust door hinges by releasing screw 16 and then, by means of a screwdriver, turn part 17 in the direction of the arrow displayed. Also, adjust the upper part of the door hinge (part 18) in the direction of the arrow by releasing the 2 screws present at the top and bottom of the door.
- 5.3.3.2** Adjust locking plate in the direction of the arrow by releasing screw 19.

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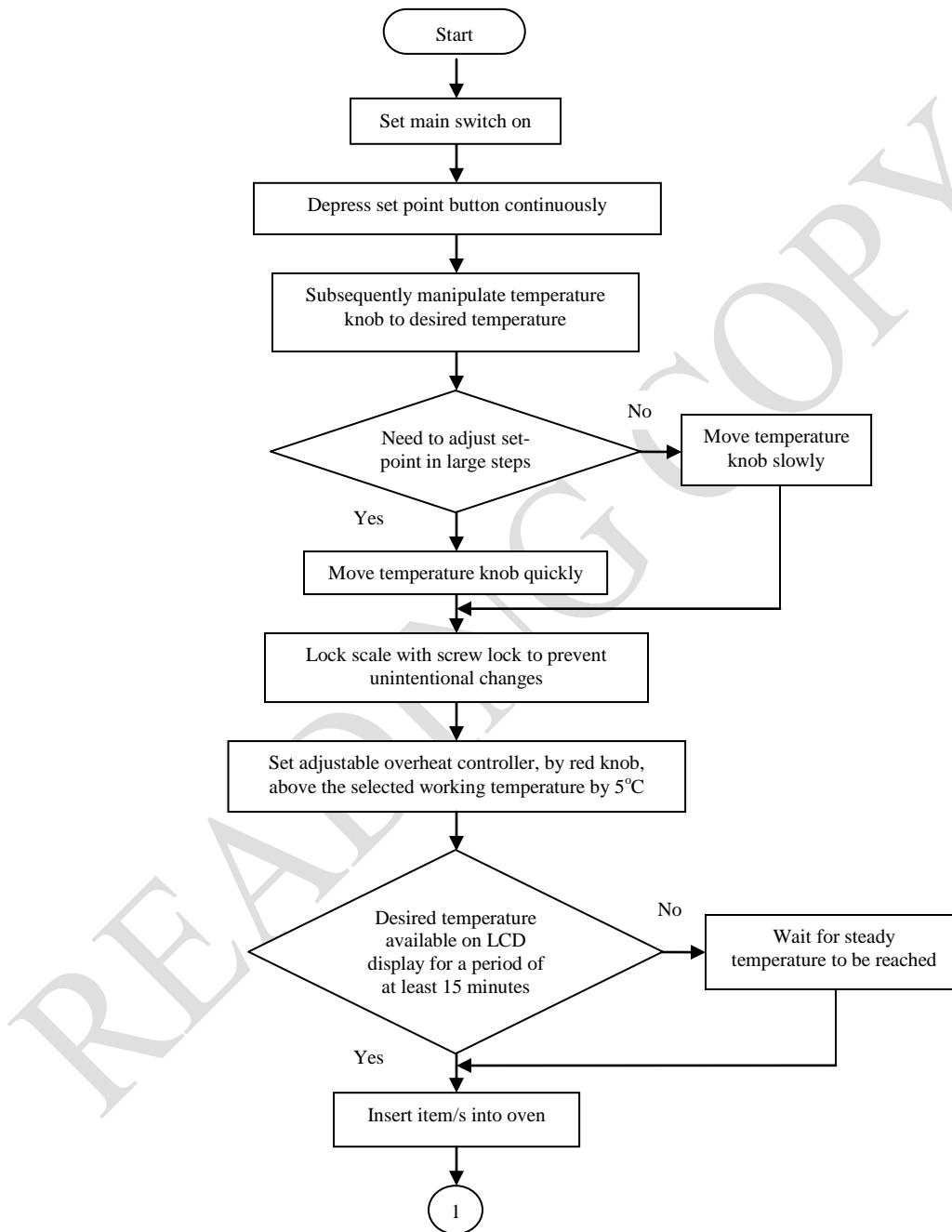
5.4 Flow Charts


5.4.1 Installation

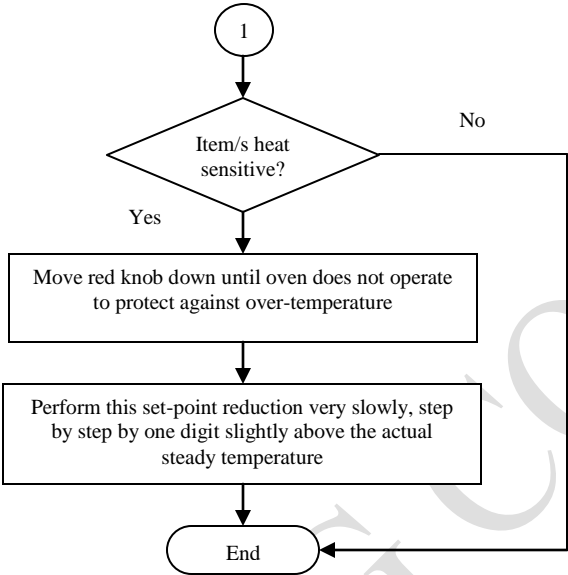


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5.4.2 Operation



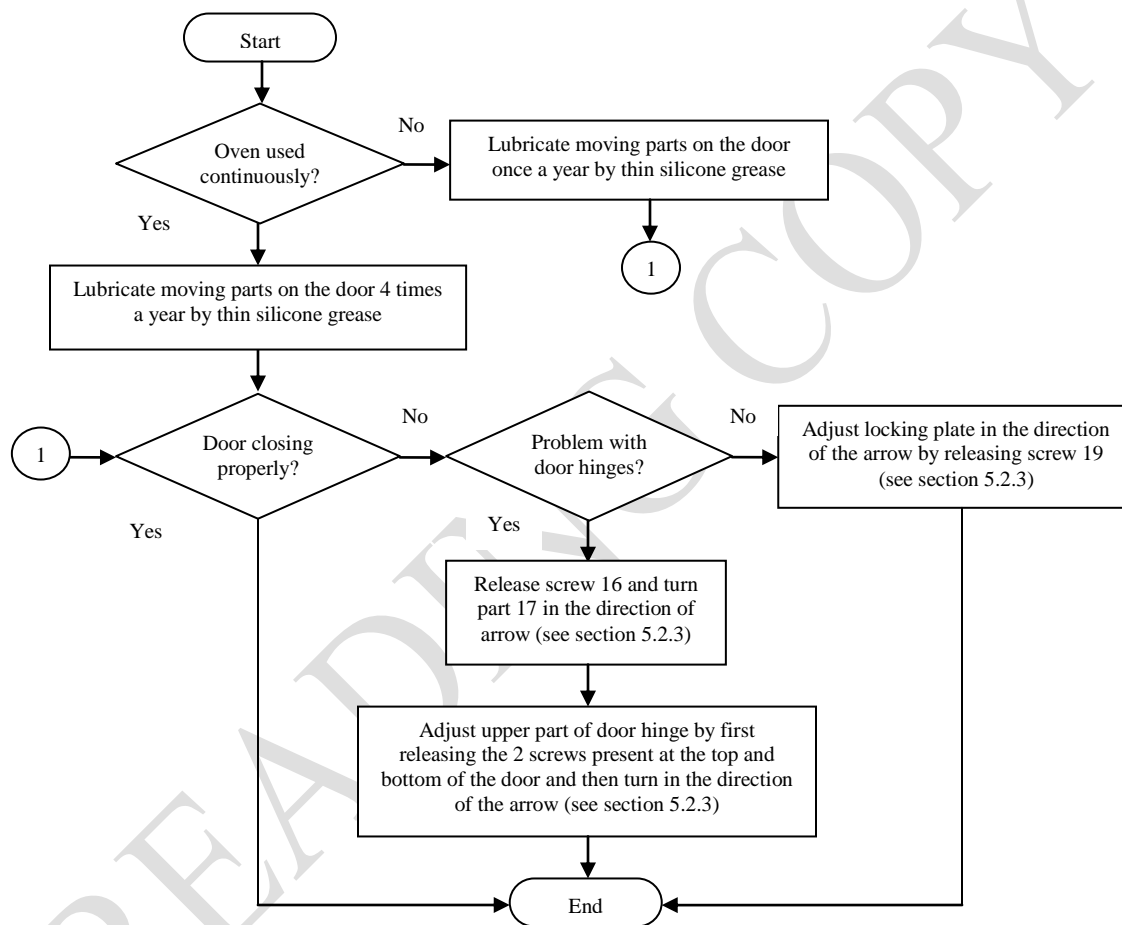
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5.4.3 Maintenance



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6. Precautions


- 6.1** Be aware of the physical and chemical properties of the load (eg. Ignition Temperature) to prevent considerable damages to load, oven and its surroundings.
- 6.2** For heat sensitive and valuable items:
- 6.2.1** Oven is to be continually observed and monitored by an operator.
- 6.2.2** Oven is to be fitted with over temperature protection to DIN Class 2 (adjustable temperature limiter) or Class 3.1 (adjustable temperature monitor).
- 6.3** Position the instrument horizontally to ensure that optimum control and thermal conditions are maintained.
- 6.4** Take special care when working at high temperatures. Outside case temperature may be high.
- 6.5** Do not use the oven for drying or heating items giving off vapours which are inflammable when mixed with air.
- 6.6** Do not pack load tightly to ensure free air circulation.
- 6.7** Do not place anything on the bottom, against the sides or underneath the top of the working space (heating ribs).
- 6.8** Use a drip tray for wet loads.
- 6.9** Close the flap of the oven completely or else the oven may take a very long time to reach the selected temperature.

7. References

Memmert GmbH+Co. KG. *Operating Instructions for Electronically Controlled Ovens UE/BE/ULE 400-800*. Germany: Memmert GmbH+Co. KG; 1990.

8. Appendices

N/A

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9. Revision History

Version Number	Amendments/ Reasons for change
01	Initial Release

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