#### INTRODUCTION

## **Forced Convection Laboratory Oven**

Laboratory ovens are ovens for high-forced volume thermal convection applications. These ovens generally provide uniform temperatures throughout. Typical sizes are from one cubic foot (28 liters) to 32 cubic feet (906 liters) with temperatures that can reach 300°C (572°F).

# **Laboratory Incubators**

Laboratory incubators are devices that provide temperature-controlled environment to support growth of microbiological cultures. Typical forced and natural convection incubators are insulated boxes with an adjustable heater, going up to 60°C to 65°C (140°F to 149°F), though some can go slightly higher (generally to no more than 100°C). Refrigerated incubator is another type of incubator designed to maintain 20°C necessary to perform Biochemical Oxygen Demand (BOD) testing which involves involves incubating samples saturated with oxygen at 20°C usually for five days.

To ensure reliable performance of laboratory oven and incubator, proper maintenance should be done. Esco ensures that its service is on top of the line providing Standard Services from Calibration, and Preventive Maintenance of your Laboratory Ovens and Laboratory Incubators to meet your individual needs, and to maintain its excellent working condition.





www.escolifesciences.com



Services



# PREVENTIVE MAINTENANCE **SERVICES**

#### **Scheduled Maintenance**

No.	Description of Task to Perform	Maintenance to be carried out			
		Day	Month	Quarter	Year
1	Decontaminate the workzone	1			
2	Clean the exterior and interior surfaces, screen frame and temperature probe		√		
3	Inspect the equipment for any physical abnormalities or malfunction			√	
4	Clean up stainless steel surfuces with MEK			1	
5	Lubricate door's moving parts				√
6	Check tightness of hinge screws on door's moving parts				J
7	Readjustment of door				J
8	Calibration of temperature sensor				1
9	Cleaning of filter*				J

Note: \*Applicable for refrigerated incubator only

#### Clean Interior/Exterior of unit

Disinfect surfaces with laboratory cleaning agent monthly.



#### • Physical Inspection

- Check the equipment to ensure that it is functioning properly and replace parts if necessary.



-Lubricate the door's moving parts annually to ensure that the parts are moving smoothly.



- Check the tightness of door's screws on moving parts annually. Ensure that the hinge screws are tight.

## Calibration of Temperature Sensor

- The temperature of the unit can be calibrated to reference instruments.
- It is recommended to calibrate at least once a year.



#### TROUBLESHOOTING AND PARTS REPLACEMENT

Esco provides replacements for consumable elements as well as any components that might fail while the product is in service.

## IQ/OQ VALIDATION

Esco provides our customers instructions for Installation / Operation Qualification (IQ/OQ) protocol of our products. Esco also can perform these services directly on behalf of its customers or arrange them through independent approved local certifiers. The availability may vary from country to country and region to region. Also, Esco can train customer employees to perform IQ/OQ.

#### TRAINING AND WORKSHOPS

Esco offers training for users of Laboratory Incubator and Oven on the procedures in its User and Service Manuals.

## SERVICES TO OTHER BRANDS

Esco does not only provide services to its own product line but also for other brands. Esco assures that your Laboratory Incubator and Oven will be properly checked according to your needs.

