

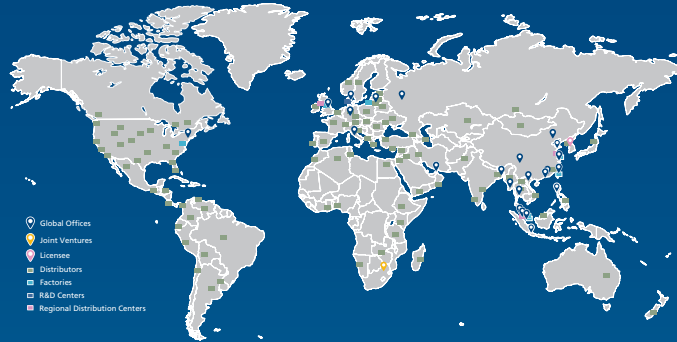
## INTRODUCTION

A CO<sub>2</sub> incubator is a device designed to copy the cells' natural environment by controlling physical parameters such as the temperature, humidity, CO<sub>2</sub> and O<sub>2</sub> levels for the optimum growth and development of cells. It is designed for high-quality incubation performance through the precise control of heating and gas injections combined with multiple contamination control and ergonomic features appropriate for safe incubation of many types of cells, tissues, and similar.

Given the precise measurement and control of temperature and CO<sub>2</sub> level, as well as the multiple contamination control methods of CO<sub>2</sub> incubator, the condition of this equipment may change if it's not properly maintained. Proper maintenance of the CO<sub>2</sub> Incubator increases its life expectancy, and this will ensure that the unit will provide optimum growth and development of cells. That is why maintaining every CO<sub>2</sub> Incubator in the laboratory is a must.

Esco ensures that its service is on top of the line providing Standard Services from Calibration, and Preventive Maintenance of your CO<sub>2</sub> Incubator to meet your individual needs, and to maintain its excellent working condition.

## ESCO LIFESCIENCES GROUP 42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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A collection of social media icons and app logos. The social media icons include Facebook (@EscoLifesciences), Twitter (@EscoLifesci), YouTube (@EscoLifesciences), LinkedIn (@Esco), and Instagram (@EscoLifesciences). Below these are logos for various apps: Esco Global, Esco Customer Service, Esco Lock Service, ESCONet, Dr. Einesco, Filtra Check Game, LIVES App (Your Quick Guide to Safety Cabinets), ULTF App (Personal ULTF Touch Screen Interface App), IRMAP, ESCO FH Fan Selector, Mrs Einesco Fertilization Obstacle Game, and Cattacktics!



Filtra Check App  
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## Esco CO<sub>2</sub> Incubator Services

[www.escolifesciences.com](http://www.escolifesciences.com)



**PREVENTIVE MAINTENANCE SERVICES**

**Scheduled Maintenance**

No.	Description of Task to Perform	Maintenance to be carried out			
		Daily	Weekly	Yearly	As Needed
1	Check CO <sub>2</sub> / N <sub>2</sub> gas tank level	✓			
2	Check water level in the humidity pan		✓		
3	Clean the interior and exterior of incubator		✓		
4	Calibration of O <sub>2</sub> sensor			✓	✓
5	General Inspection			✓	
6	Calibration of temperature sensor			✓	
7	Calibration of CO <sub>2</sub> sensor			✓	
8	Calibration of humidity sensor			✓	
9	ULPA filter replacement (170L/240L)			✓	
10	Inlet filters replacement			✓	
11	Outer door magnetic gasket replacement			✓	✓
12	Decontamination				✓
13	Change UV lamp (for units with UV lamp)				✓

**• General Inspection**

Check the following regularly – at least annually.

- Tightness of the glass door seal
- Functional check of the operating panel and device control
- Electrical safety check in accordance with the relevant regulations
- Check tightness of hinge screws on door's moving parts
- Check the latch of glass door if working properly and able to close tight



**• Calibration of temperature, CO<sub>2</sub>, O<sub>2</sub> and humidity**

- The temperature, CO<sub>2</sub>, O<sub>2</sub> and RH reading can be calibrated to reference instruments.
- It is recommended to calibrate at least once a year to ensure continuous and optimal performance of the CO<sub>2</sub> incubator.



**• ULPA Filter Replacement**

- The ULPA filter provides contaminant free air within the work area of the incubator.
- It is recommended to replace the ULPA filter once a year.



**• Inline Filters Replacement**

- Inlet filters are installed to remove any contaminant in the CO<sub>2</sub> or N<sub>2</sub> gas supply.
- Replace the inlet filters at least once a year or when the filter is dirty by visual inspection.



**• Outer Door Magnetic Gasket Replacement**

- The magnetic door gasket installed in the outer door of the incubator helps to keep a tight seal around the chamber opening.
- It is recommended to check the magnetic door gasket for signs of brittleness, corrosion, wearing, or any form of damage once a year.



**• Decontamination**

Decontaminate inner chamber of the incubator as needed.



**• UV Lamp Replacement (for units with UV lamp)**

- The UV lamp ensures that the circulating air and the water reservoir remains free of microorganisms and contaminants.
- It is advisable to replace the UV lamp every 1000 hours of running time (approximately around 4 years).



**• Maintenance/Service Log**

It is good practice (and in some cases regulatory requirement) to maintain a log of all maintenance work carried out on your incubator.

**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 CO<sub>2</sub> Incubator on the procedures in its User and Service Manuals.

**SERVICES TO OTHER BRANDS**

Esco does not only provide services to its product line but also for other brands. With a team of certified engineers, Esco assures that your equipment will be properly checked according to international standards.