



ANALYSIS INSTRUMENTS

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HOT AIR OVEN (GMP MODEL)

- A hot air oven is a laboratory instrument that uses dry heat to sterilize laboratory equipment and other materials.
- That equipment cannot be wet or material that will not melt, catch fire, or change form when exposed to high temperatures are sterilized by using the dry heat sterilization method.
- Hot air oven also known as forced air circulating oven.
- Some examples of material which can not be sterilized by employing a hot air oven such as surgical dressings, rubber items, or plastic material.
- We can sterilize Glassware (like petri dishes, flasks, pipettes, and test tubes), Powder (like starch, zinc oxide, and sulfadiazine), Materials that contain oils, Metal equipment (like scalpels, scissors, and blades) by using hot air oven.
- To destroy microorganisms and bacterial spores, a hot air oven provides extremely high temperatures over several hours.
- The widely used temperature-time relationship in hot air ovens to destroy microorganisms are 170 degrees Celsius for 30 minutes, 160 degrees Celsius for 60 minutes, and 150 degrees Celsius for 150 minutes.
- Most of the medical industries use hot air ovens to sterilize laboratory instruments and material due to its simple standard operating procedure and low price. It also provides quick-drying processes.
- The process of dry heat sterilization using a hot air oven Originally developed by Louis Pasteur.
- The temperature range of a hot air oven is 50 to 300 ° C. It can be controlled by using a temperature regulator.
- The forced air circulation provided by the oven ensures the temperature uniformity throughout the oven.
- In a hot air oven first, the surface of the material is sterilized then the temperature slowly enters the center of the item.

Hot air oven Parts and Functions

External cabinet: The External cabinet is made of stainless sheets. It covers the inner chamber.

Glass wool insulation: The space between the inner chamber and external cabinet is filled with Glass wool. It provides insulation to the hot air oven.

Inner chamber: The inner chamber of the hot air oven is made of Stainless steel.

Tubular air heaters: They help to generate heat within the inner chamber. Two Tubular air heaters are located on both sides of the inner chamber.

Motor-driven blower: It helps in uniformly circulating the air within the chamber.

Temperature sensor: It measures the temperature within the hot air oven and displays it on the controller screen.

Tray slots: The inner wall of the chamber contains several tray slots that hold the trays.

PID temperature controller: It maintains the accurate temperature during the entire cycle. It also controls the temperature and also displays the temperature values.





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Load indicator: it indicates the hot air oven is overloaded.

Mains on/off switch: It helps to turn on/ turn off the hot air oven.

Safety thermostat: It is also known as an over-temperature protection device. It keeps your oven and specimen safe in case of controller malfunction.

Technical Specification

Construction: Outer made of stainless steel and Inner Body made of stainless steel.

Insulation: Special type ceramic Insulation between body for Insulation.

Temp Range: 5°C Above Ambient To 300°C

Accuracy: $\pm 1^\circ\text{C}$.

Temp Controlled by: PID Dual display to view set & current temp.

Safety: Special type thermocouple fuses to protect overheating.

Heater: heating elements fitted on the two sides of the oven.

Temp. Controller: Temperature Controlled By Electronic Digital Temperature Controller Cum Indicator.

Motor: A forced air circulating system with fan for better uniformity of temperature .Temperature controlled by electronics digital temperature controller

Working Size

Inner working size of Oven Chamber size in inches	Capacity In Liter	No of shelves
14"x14"x14"	44	2
18"x18"x18"	90	2
18"x18"x24"	120	3
24"x24"x24"	220	3
24"x24"x36"	330	4

Optional Accessories:

1.	Electronic digital timer range 0 to 999 minutes
2.	RS485 interface with software for PC connection)
3.	Data logging with Pen drive arrangement

