



**Harsiddh Engineering Co.**

## ***Sterilizing Tunnel for Ampoules & Vials***



Harsiddh Engineering Company, being leading name in the manufacture and export of pharmaceutical packaging machinery provides excellent decontamination and sterilization equipments. Our specially designed equipment is used in sterilization and depyrogenation of ampoules, bottles and vials.

The sterilizing tunnel machine comes as a complete unit with in-feed system, preheating and sterilizing zone, cooling and exit feed mechanism. As the bottles and vials move along the conveyor, they are sterilized. The equipment receives materials from up line washer and these are directed to the drying zone. At this zone, hot air vaporizes the washing moisture and preheats the bottles. They then move to the hot zone where they undergo sterilization and depyrogenation through heating. They are then subjected to cold air which cools them off before entering aseptic region. Our ampoule sterilizing tunnel machines have CE certification.

Our sterilization machines for vial uses advanced instrumentation and control topologies to effectively moderate heat, water, air and other materials. Temperature sensors regulate heating and cooling while pressure gauges regulate the system pressure. The conveyor belt speed is also carefully controlled. In addition the system has an advanced PLC control module that monitors and regulates all processes.

### **Feature:**

- Repetitive accuracy in reduction of endotoxin count.
- High productivity due to reduced idle time and optimization of operating time.
- Infinitely variable speed to achieve optimum production.
- Swift and convenient to use machine.
- Intelligent logic control systems for controlling temperatures in heating and cooling zones.
- Complete closed loop systems for heating zone and cooling zone.
- Important parameters are password protected.

- Graphics for displaying and editing various procted.
- Accurate data logging on to printer and recording onto strip chart recorder (optional).
- Auto shut down after batch completion
- Automated Self Sterilization of the cooling zone using Dry Heat
- Documentation available for qualification, validation
- Full PLC controlled and reliable depyrogenation process
- Double wall asbestos free ceramic wool insulated re circulatory module containing high temperature EU – 13 grade final HEPA filter with suck back mechanism suitable for 300 °C continuous repeated cycle.
- This zone provides uniform hot air over the glassware for the Purpose of de pyrogenation. In this zone the temperature raises as quickly as Possible by the help of heating element, without inducing cracking due to excessive thermal stress. The glassware remains in this zone at a required time period to meet The specified endotoxins reduction generally > 3 log scale.
- This section consist of unidirectional hot air flow unit with turbine blower assembly, High temperature HEPA filter (up to 350 °C) and heater bank assembly.
- Integrated temperature sensors are provided for monitoring & controlling purpose of Temperature inside the sterilizing zone. For this purpose one sensor is placed above The HEPA filter and the sensor is placed at the entry side of sterilizing zone. For Extra precaution one temperature sensor provided at Heater Assembly ( 375 °C) is placed for protection of Heaters.
- The entry and exit side of the sterilizing zone consists of manually adjustable profile Plates resulting in maximum temperature uniformity and ensure consistent result for Glassware with varying sizes.

#### Technical Parameters:

Tunnel Types	Sterilizing & Depyrogenation
Use for Sterilization	Glass Ampoules, Vials & Bottles
Total Zone	Pre Heating Zone, Sterilizing Zone, Cooling Zone
Conveyor Width	300mm, 450mm, 600mm, 750mm, 900mm & 1200mm
Output	Depends on belt size
Conveyor Height	900mm +/- 15mm
Working Direction	Left To Right
Power Consumption	Depend on tunnel model or size
Dimensions	Depend on tunnel model or size