

## HORIZONTAL RECTANGULAR HIGH PRESSURE AUTOCLAVE



### KEY FEATURES

#### Rectangular horizontal chamber design:

- Unlike cylindrical units, the internal chamber is rectangular (width × height × depth) which often allows better use of space, easier loading of trays/trolleys and higher capacity.
- The unit sits horizontally (front-loading, single door or double door), often on a heavy stand.

#### Construction and materials:

- Inner chamber, jacket and outer casing typically made of stainless steel (SS-304 or SS-316) for corrosion resistance and durability.
- Often triple-walled: inner chamber, steam jacket, outer shell, with insulation (glass wool/mineral wool) in between to reduce heat loss and external surface temperature.
- Heavy gauge welded joints, radial locking/ Vertical Sliding locking door, robust safety interlocks.

#### Steam generation / jacketed chamber:

- Steam jacket surrounds the chamber to ensure uniform sterilization, good heat transfer and short cycle times.
- Some models include built-in steam generator/boiler; others connect to external steam.

#### High pressure / High temperature capability:

- Working pressures typically in the range ~15–30 psi ( $\approx 1.0\text{--}2.0 \text{ kg/cm}^2$ ) and temperatures around 121 °C standard, upgradable to ~134 °C or more for faster cycles.
- Hydraulic/pressure testing to 2.5× working pressure or higher to ensure safety.



### Control & safety features:

- Pressure gauges, safety valves, vacuum breaker, water level indicators, automatic low water cut-off, door interlocks (cannot open under pressure) are standard.
- Digital PID controllers, timers, touch-screen HMI/PLC systems available for more advanced models — allows preset cycles, data logging, diagnostics.

### Internal Carriage:

- This is the mobile cart, usually made of stainless steel, that holds the items to be sterilized (trays, baskets, racks, etc.).
- It has shelves or multiple levels and is designed to fit precisely within the autoclave chamber.
- The cart is wheeled or rolled directly into the sterilizer chamber on internal tracks.

## SALIENT FEATURES FOR SLIDING DOOR AUTOCLAVE

- **Door Mechanism:** The sliding door is usually pneumatically or motor-driven and often features an automatic sealing ring (gasket) that inflates with air pressure for a secure seal during the sterilization cycle and retracts for opening. The sliding motion saves floor space compared to a hinged, swing-out door.
- **Safety Interlocks:** A crucial feature is the comprehensive safety interlock system, which ensures the door cannot be opened:
  - If the chamber is pressurized.
  - (For double-door models) If the opposite door is open (door inter-lock).
  - (For double-door models) On the non-sterile side after a successful cycle, until the sterile side door is closed.
  - Cycle start is prevented if the door is not properly closed and locked.
- **Operating Cycles:** They are often advanced, fully automatic, and PLC-controlled, capable of running various sterilization cycles, including:
  - **Pre-Vacuum/Pulsing Cycle:** Uses a vacuum pump to efficiently remove air from the chamber before steam injection, which is essential for sterilizing porous, wrapped, or hollow items.
  - **Gravity Displacement Cycle:** Relies on steam to displace the heavier air.
  - **Liquid Media Cycle:** Features controlled cooling and pressure release to prevent liquids from boiling over.
- **Test Programs:** Such as the Bowie-Dick test (steam penetration) and Vacuum Leak Test.

Model no	WORKING CHAMBER (WxHxD )	Volume	Load
PTE-HR 225 A	450 x 450 x 900mm	180 Ltrs	12 KW
PTE-HR 225 B	450 x 600 x 900mm	240 Ltrs	18 KW
PTE-HR 225 C	600 x 600 x 900mm	320 Ltrs	18 KW
PTE-HR 225 D	600 x 600 x 1200mm	430 Ltrs	18 KW
PTE-HR 225 E	900 x 900 x 1500 mm	1300 Ltrs	36 KW
PTE-HR 225 F	900 x 900 x 1800 mm	1500 Ltrs	36 KW

**Note :** All Customization is available as per Customer's requirements ( Size, Door, Capacity , Automation etc )