



**ENGINEERING  
SERVICES**

# VTD solutions

**vacuum tray  
dryers**



## **Design Features**

Up to 16 shelves and 96 trays as standard  
Integral barrier isolator option  
Hollow pad type baffled heating shelves  
Heating system with PLC control option

## **Operational Benefits**

Innovative shelf design provides effective heat transfer  
Low power consumption  
Manifold design inhibits product contamination  
Excellent solvent recovery

## Our VTD Technology

S2 Engineering design and manufacture Vacuum Tray Dryers (VTD's) that are easy to use and consume less power than other traditional types of Dryers. We supply VTD's from laboratory to production scale and can meet sterile process requirements for drying highly toxic or sensitive products.

We can customise our VTD's where needed and have both circular and rectangular drying systems along with a vacuum pump system to fulfil all types of operational requirements.

Our products are typically manufactured from stainless steel but where required, the contact and vapour parts can be finished with high corrosion resistant materials including Teflon plastic coating, StanCoat and Alloy C22. We can also supply a full Barrier Isolator system with half suit technology for total operator safety and comfort when processing hazardous substances.

## S2 VTD Technical Data

- **Capacity:** Typically up to 16 shelves, 96 Trays @12 Litres air/tray.
- **Construction:** cGMP & cGAMP
- **Operating Pressure:** Full Vacuum
- **Heating Temperature:** Up to 150 Deg C (300 Deg F)
- **Standard Configuration:** Rectangular Hollow pad type baffled heating shelves with manifold connectors located outside the dryer chamber, plus validation ports and nitrogen purge nozzles
- **Material of Construction:** 316L Stainless Steel is the default supply standard. Optional materials include SS 316 Ti, SS 904L, Duplex, Titanium and Alloy C22.



## S2 VTD Supply Options

S2's VTD range can be customised to suit specific client application requirements, including;

- Circular or rectangular dryer designs
- Full instrumentation pack for control room operation
- Integral Barrier Isolator fully enclosed system with 1/2 suit operator technology
- Heatable dryer door or double door design
- Inclined bottom with integrated collecting pipe and discharge nozzle
- Carrier gas lance for the optimal distribution of the carrier gas via all shelves
- Wall installation brackets
- Solvent recovery system with condenser and receiver
- Standalone Thermal Control Unit (TCU) to manage and supply the thermal heating and cooling fluid for the heating jacket (where plant services are not available)
- Standalone Hot Water Washing Systems - CIP, SIP, WIP
- CE and PED compliance (for European shipments)

## Client Value-Adding Benefits

### Design Feature

1. cGMP & cGAMP equipment design and construction
2. Highly efficient drying with innovative shelving system
3. Optional PLC control based automation
4. All shelf to manifold connectors are located outside the dryer chamber
5. Optional integrated Barrier Isolator system for a total safe operator environment

### Customer Benefit

- Thorough equipment cleaning; clean/steam/wash in place (CIP/SIP/WIP)
- Gentle, efficient drying is ideal for sensitive powders/products
- Full operational versatility results in sustainable and repeatable product quality
- Provides safe and reliable operation with lower maintenance costs
- Turnkey solution from single source supplier facilitates the smooth operation of all technologies in synergy which results in improved productivity & efficiency.



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