



DHARMA ENGINEERING

AN ISO 9001 CERTIFIED COMPANY

DHARMA

DRYER

ROTOCONE VACUUM DRYER

- This multipurpose drying unit is extremely useful for uniform and low temperature drying of heat sensitive chemicals, pharmaceutical formulations, fine chemicals etc....
- As the Dryer is rotating, there is no charring or retention of product, the result is that one can change the material to be dried
- The Dryer rotates at a very low speed (5 to 15 rpm) and thus has very low wear and tear and requires very little maintenance
- Loss of material is effectively controlled by a specially designed pilot filter fitted on the vacuum side
- This machine is ideal for crystalline products, granules used in chemical, pharmaceutical and food



cGMP Construction
with Shell & Tube
Type condenser
& Receiver



Lumps breakers
are provided to
prevent lumps
formation..



Mechanical seal
for effective
sealing on both the ends
i.e. Vacuum side & Utility Side



Nitrogen Pulse jet
for self cleaning of
vacuum line filter.

VACUUM TRAY DRYER

Vacuum Tray Dryer (VTD) is suitable for drying of thermal sensitive materials easily resolved, polymerized or deteriorated under higher temperature

SALIENT FEATURES

- Main processing chamber and door are made out of AISI 304 / AISI 316 Q materials to suit process requirements
- Shelves are made out of AISI 304 / AISI 316 Q materials as per customers' requirement
- View glass on door and receiver tank
- cGMP construction with all rounded corners.
- Condensor and receiver for solvent recovery.
- Digital Temp. indicator for Hot water and vacuum line.
- Digital vacuum indicator
- Validation port & nitrogen purging facility.

TECHNICAL SPECIFICATIONS:

| MODEL | DEVTD 6 | DEVTD 12 | DEVTD 24 | DEVTD 36 | DEVTD 48 |
|----------------------|-----------|-----------|-----------|------------|-------------|
| No. of Trays | 06 | 12 | 24 | 36 | 48 |
| Loading Capacity | 15-20 kgs | 30-40 kgs | 60-80 kgs | 90-120 kgs | 120-150 kgs |
| Shelf size | 850x850 | 850x850 | 1250x850 | 1250x850 | 1250x850 |
| No of shelves | 4 | 7 | 9 | 13 | 17 |
| Condenser Size | 0.5 M2 | 0.75 M2 | 1.5 M2 | 2.0 M2 | 3 M2 |
| Receiver capacity | 15 ltrs | 30 ltrs | 50 ltrs | 75 ltrs | 100 ltrs |
| Vacuum Pump capacity | 300 LPM | 300 LPM | 500 LPM | 750 LPM | 1000 LPM |

FLUID BED DRYER

- Fluid Bed Dryer is ideal for a wide range of sensitive and non heat sensitive products
- Uniform Drying conditions are achieved by getting fluidiation in product, by passing controlled velocity hot air.
- Particale fluidization provides high rate of heat exchange at higher thermal effeciacy and prevents overheating of individual particles. This gives more heating advantages over other methods of drying particular materials



- Widely used in Pharmaceuticals, API, Food & Dairy Products, Bio Chemicals & polymer industries.
- Product drying time depends on various factor like product properties, moisture content, drying temprature etc...
- cGmp construction with diffrent heating modes, 3 stage filtration with PLC based control Panel.

| MODEL | DEFBD 30 | DEFBD 60 | DEFBD 120 | DEFBD 200 | DEFBD 250 | DEFBD 300 |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Batch Capacity In kgs | 30 | 60 | 120 | 200 | 250 | 300 |
| container volume in Ltrs | 100 | 200 | 400 | 650 | 800 | 1000 |
| Blower Motor HP | 5HP | 10.0HP | 15.0HP | 20.0HP | 25.0HP | 30.0HP |
| Approx steam consumption in kgs Hr | 30-35 | 60-70 | 120-130 | 200-225 | 250-275 | 300-325 |
| Heating Load In Kcal | 18kw | 36kw | 60kw | — | — | — |
| Over All Dimention (approx) Lxwxh | 1100x1500 x2500mm | 1250x1600 x2750mm | 1300x1700 x3000mm | 1500x2000 x3500mm | 1550x2100 x3600mm | 2000x2700 x4000mm |

Note: Higher capacity & tailor made equipment available on request
We do not suggest electrical heating mode in 200kgs and above models

HOT AIR TRAY DRYER

Ideal dryer for drying most of the products.

cGMP / Semi GMP Construction with different combination for drying Chamber, trays and trolley

Different heating mode to suit customer requirement

Split design with PLC with based panel, available on demand



| MODEL | DETD 24 | DETD 48 | DETD 96 | DETD 144 | DETD 192 |
|---------------------------|-----------------|-----------------|-----------------|------------------|------------------|
| No. of Trays | 24 | 48 | 96 | 144 | 192 |
| Batch capacity in kgs | 60-70 | 120-140 | 240-280 | 360-400 | 480-550 |
| No. of Blower | 02 | 01 | 02 | 04 | 04 |
| Blower Motor HP | 0.5 HP | 1.0 HP | 1.0x2 HP | 1.5x2 HP | 1.5x2 HP |
| No. Of Trolley | Fixed Rack | 01 no | 02 nos | 04 nos | 04 nos |
| Heating Load In KW | 06KW | 12KW | 18KW | 24KW | 30KW |
| Approx. Steam Consumption | 20-05 Kgs / Hr | 40-50 Kgs / Hr | 80-90 Kgs / Hr | 125-130 Kgs / Hr | 175-200 Kgs / Hr |
| Over All Dimension | 1250x1100 x1500 | 1500x1100 x2000 | 3400x1100 x2000 | 3400x1950 x1600 | 3400x1950 x2000 |



DHARMA ENGINEERING

Mfgr's : Equipments and Machines for Pharmaceuticals, Chemicals, Cosmetics and Food Industries.

SPECIALIST IN : RCVD & FBD

Plot No 5133 GIDC
Ankleshwar-393002.
Dist. : Bharuch, Gujarat, India
Mobile : +91 94271 45962
Phone : +91 2646 225133
Fax : +91 2646 225134
E-mail : dharmaengineering@gmail.com
www.dharmaengg.com