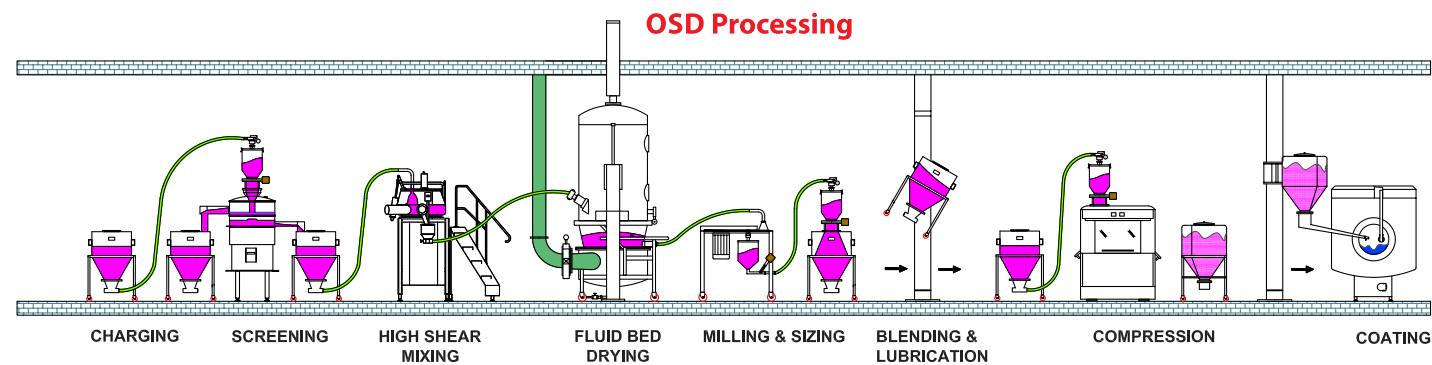




**Entire range of OSD granulation and Auto coating equipment covering range of:**

- R & D scale from 0.1 kg to 5 kg
- Pilot scale from 5 kg to 15 kg
- Production scale 30 kg to 500 kg
  
- **Rapid Mixer Granulator**
- **Vibro Sifter**
- **Fluid Bed Dryer, Processor and Coater**
- **Rotocone Vacuum Dryer**
- **Wet and Dry Mills**
- **Bin Blender, Double Cone Blender & Octagonal Blender**
- **Paste Preparation Vessel**
- **Auto Tablet Coating System**
- **Vacuum Transfer System**
- **Roll Compactor**
  
- **Turnkey Solutions for Ointment / Oral Liquid Preparation & Filling is also available.**

## FLUID BED DRYER / PROCESSOR / COATER



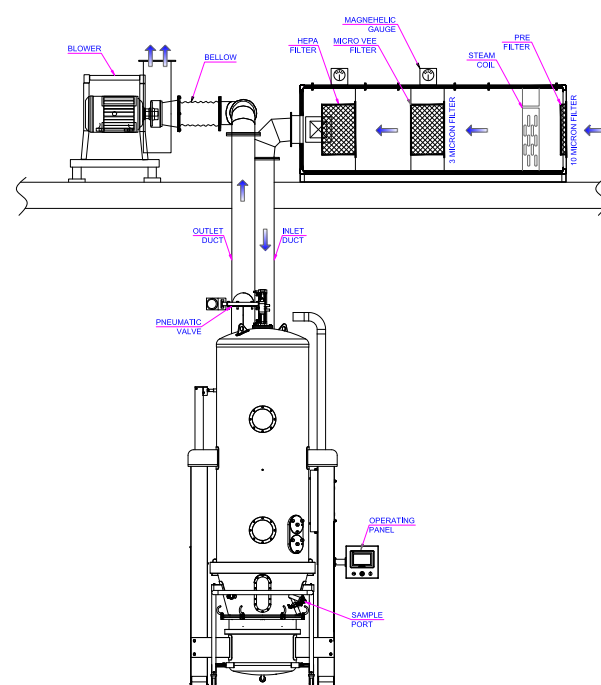
Fluid Bed Dryer is one of the most important equipment in wet granulation process of tablet manufacturing. FBD serves the most critical part of this sequential manufacturing process which is uniform and quick drying of granules achieved from homogeneous wet mixing of various ingredients.

The equipment works on a principle of fluidization of feed material. A processed hot air passes with high velocity through the bed of wet granular material and fluidize it. This results into very uniform and quick drying of entire mass.

#### Whole system of Fluid Bed Dryer consists of:

- Main Body with Product Container
- Air Handling Unit (AHU)
- Exhaust Blower
- Operating & Control Panel

#### GA of FBP



Product Container



Filter Bag Unit



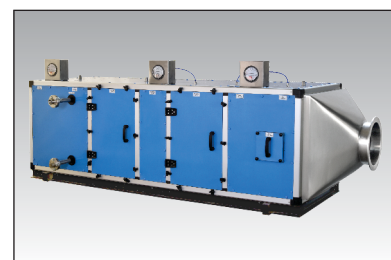
Sampling Port



Pneumatic Bag Lifting



Pneumatic Damper



AHU

#### Salient Features:

- In compliance with cGMP guidelines
- Modular design makes it easy in operation and maintenance
- All product contact parts are made of SS 316
- Precise temperature control for inlet air, product bed & exhaust air within  $\pm 2^{\circ}\text{C}$
- Double skin AHU with  $10\mu$  pre filter,  $5\mu$  microvee and provision for HEPA Filter
- Quick openable dutch sieve & Conidur Distribution Plate in product container reduces changeover time
- Inbuilt online sampling device in product container
- On/Off type pneumatic inlet & outlet dampers
- An explosion safety flap of adequate capacity at the top of dryer
- Food grade silicon inflatable gaskets at bottom and top of the container and at bag sealing ensures leak proof operation
- Pneumatic finger bag shaking system
- Pneumatic finger bag lifting and lowering

#### Optional Features:

- PLC based operations with color HMI
- Chilling Coil in AHU
- Actuator positioner type inlet and outlet dampers
- HEPA filter at inlet AHU with DOP port
- Differential pressure gauge for EU-7 & HEPA filter in AHU
- Suction charging port to transfer material from RMG to FBD
- Sound relaxation silencer to reduce noise at exhaust
- Spraying system with spray nozzles and peristaltic pump (FBP design)\*
- Product container with Wurster column design and spraying system (FBC design)\*
- Wet or Dry Scrubber • Compliance as per 21CFR PART11
- ACVFD at exhaust blower motor
- Flameproof (FLP) Blower Motor • Air velocity sensor • CIP system

#### Technical Specifications:

| MODEL                               | FBD/P/C-30       | FBD/P/C-60 | FBD/P/C-120 | FBD/P/C-150 | FBD/P/C-200 | FBD/P/C-250 | FBD/P/C-300 | FBD/P/C-400 | FBD/P/C-500 | FBD/P/C-600 |
|-------------------------------------|------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Gross Cap in (Ltrs.)                | 90               | 170        | 290         | 350         | 475         | 575         | 675         | 900         | 1110        | 1330        |
| Working Cap in (Ltrs.)              | 60               | 120        | 240         | 300         | 400         | 500         | 600         | 800         | 1000        | 1200        |
| Working Cap in (Kg)                 | 12-30            | 24-60      | 46-120      | 60-150      | 80-200      | 100-250     | 120-300     | 160-400     | 200-500     | 240-600     |
| Blower HP                           | 7.5              | 12.5       | 25          | 25          | 30          | 30          | 40          | 50          | 50          | 60          |
| Blower CFM                          | 750              | 1100       | 1900        | 2000        | 2588        | 2700        | 3235        | 3824        | 4412        | 5500        |
| Steam Pres. (Kg/cm sq.)             | 3.5              |            |             |             |             |             |             |             |             |             |
| Steam Cons (Kg/Hr.)                 | 90               | 130        | 150         | 186         | 216         | 244         | 344         | 400         | 460         | 550         |
| Electric Heater (kW)                | 20               | 36         | 52          | NA          | NA          | NA          | NA          | NA          | NA          | NA          |
| Atomizing Air Pres. **              | 2-4 Bar @ 35 CFM |            |             |             |             |             |             |             |             |             |
| No. of Spray Nozzle **              | 1                | 1          | 3           | 3           | 5           | 5           | 6           | 6           | 7           | 7           |
| Comp. Air Pres.                     | 7 Bar            |            |             |             |             |             |             |             |             |             |
| Drying Temp. ( $^{\circ}\text{C}$ ) | 30-80            |            |             |             |             |             |             |             |             |             |

\*\* applicable for FBP/FBC models

\* There are no. of design changes and added features needs to be considered when FBP or FBC is selected.

Note: Standard ducting inlet - 3 mtr. & 1 bend, standard ducting outlet - 3 mtr. & 2 bends, motor HP will change if equipped with HEPA or Scrubber & ducting length above 3 mtr. Any kind of ducting & elbows will be in customer's scope.