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## FLUID BED PROCESSOR





#### **SALIENT FEATURES**

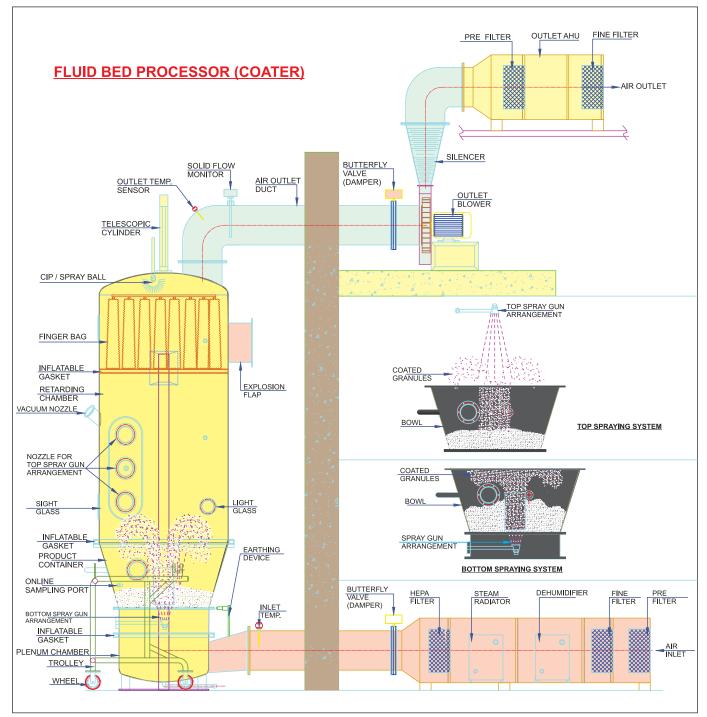
- □ Cartridge filter system for continuous process made of SS 316. Easily removable for cleaning purpose.
- All process parameters are interlocked, thus no possibility of batch failure
- Online sampling arrangement
- Unique spray gun for chokeless and uniform spray

#### **SPECIALIZATION**

- Top flexibility
- □ Simple to convert in just minutes
- □ Flexible thanks to modular design
- Drying, granulating and coating in a single device
- ▶ Fully automatic with scada plc control

ITEM		UNIT	SP-3	SP-5	SP-15	SP-30	SP-60	SP-120	SP-200	SP-300
	Top Spray	Kg/batch	3 - 6	5 - 12	10 - 30	20 - 80	40 - 150	80 - 250	200 -400	300 - 625
Productivity	Bottom Spray	Kg/batch	3 - 4.5	5 - 7.5	20 - 30	40 - 60	80 - 120	150 - 200	200 -300	300 - 450
	Tangent Spray	Kg/batch	1.2 - 4	4 - 6	10 - 20	20 - 40	50 - 80	100 - 160	160 - 220	240 - 320
	Top Spray	L	22	40	100	280	480	720	1000	1320
Volume of Container	Bottom Spray	L	11	20	50	140	210	310	450	640
	Tangent Spray	L	15	30	70	180	250	530	760	1050
Channa	Consumption	Kh/hr	40	70	99	210	300	420	530	650
Steam	Pressure	Мра				0.4	- 0.6			
Compressed		M3/min	0.5	0.5	0.6	0.8	1.1	1.3	1.5	1.7
Air		Мра				0.4	- 0.8			





#### ▶ Top Spray Granulator

#### **Features**

Dust free granules
Low bulk density
Porous structure
Excellent solubility



#### Bottom Spray Coater

#### **Features**

Control product movement

Short travel distance of solution

Low solution evaporation

Minimal agglomeration



#### ▶ Tangential Spray Pelletizer

#### Features

Produce even spherical particle
Increase bulk density
Powder layering
Wet granules spheronizing
Precise coating





## **FLUID BED DRYER**





#### **SALIENT FEATURES**

SP fluid Bed Dryers are manufactured in Modular construction mainly consisting of Main Processing (drying) unit and separate inlet air preparation unit and separate exhaust air unit giving flexible and alternative installation options to the customers as per requirements.

#### Suitability

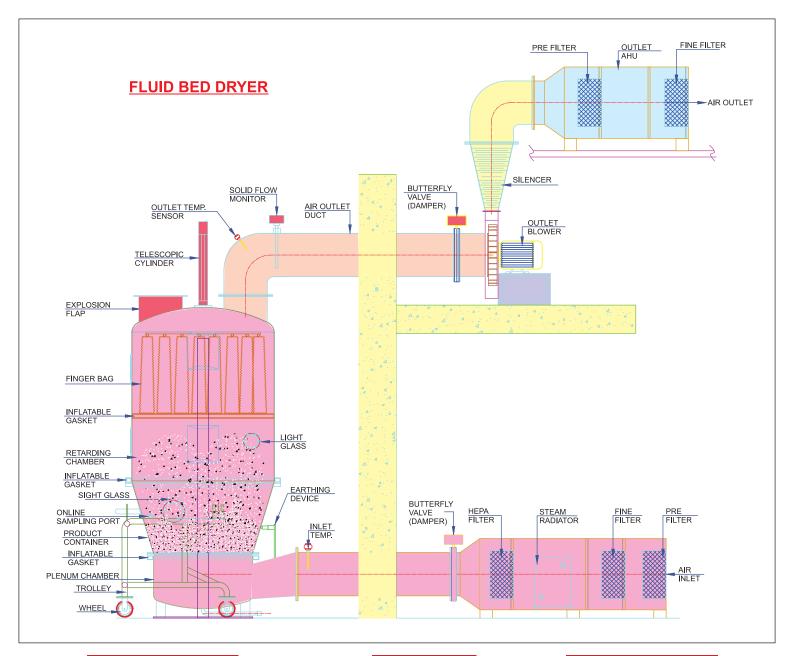
The fluid bed dryers are most suitable for drying granules, crystalline, coarse or similar material in pharmaceuticals, fine chemicals, dyes, foodstuff and allied industries.

#### **Operation**

The wet material is loaded into the product container which is provided with air distributor plate and dutch weave mesh. Fresh air after filteration through coarse and 5 micron filters is heated by means of heater (steam or electrical). This hot air then passes through the product container, creating turbulence in the product and hence the product moves up and down in the product is dried fast without appreciable heat loss. Filter bag prevents particles escaping from the dryer.

Model	SP - 5	SP - 15	SP - 30	SP - 60	SP - 120	SP - 200	SP - 250	SP - 300	SP - 500
Containor Vo (I tre	45	45	400	200	440	(50	000	000	4700
Container Vo. (Ltrs.)	15	45	100	200	440	650	800	980	1700
Batch Capacity in Kg.	5 - 6	15 - 20	30 - 40	60 - 75	120 - 150	200 - 225	250 - 280	300 - 300	500 - 500
Drying Temp. in 0c	50 - 80	50 - 80	50 - 80	50 - 80	50 - 80	50 - 80	50 - 80	50 - 80	50 - 80
Motor H.P.	2	3	5	10	15	20	25	30	60
Heating load KW.	6	9	24	36	54				
Ppprox. Steam Consumption Kg/Hr	15	15	25	50	100	160	200	250	430









finger bags



Solid Flow Monitor



Inflatable - gaskets







## RAPID MIXER GRANULATOR





#### **SALIENT FEATURES**

- Ensure the round and strong granules of high density
- ▶ Meets cGMP requirements
- Dry and wet granulation in one step
- A conscious energy saver
- Perfect leak proof operation
- PLC interfaced binder feeding, WIP, Auto Powder Loading
- Detachable impeller & chopper ensure 100% cleaning
- Minimum possible gap between bottom surface and impeller ensure no deposition at bottom surface
- Environmental friendly
- Heat/Temperature sensitive products can be handled easily

- ■VFD controls for blades
- Totally leak proof seal for both impeller & chopper by compresses air purging interfaced with PLC
- Intelligent process control and interlock through by PLC & colour touch screen HMI with SCADA facility
- Automated dischage interlocked & interfaced with PLC

Model	SP - 5	SP - 15	SP - 25	SP - 50	SP - 100	SP - 150	SP - 250	SP - 400	SP - 600	SP - 1000	SP - 1200
Gross Volume (Liters)	7.5	20	33	65	130	150	250	400	600	1000	1200
Working Volume (Liters)	5	15	15	50	80	120	200	320	480	800	960
Impeller Motor HP	3 - 5	3 - 5	5 - 7.5	5 - 7.5	7.5 - 10.0	10.0 - 15.0	20.0 - 30.0	30.0 - 40.0	40.0 - 50.0	60.0 - 75.0	75.0 - 100.0
Impeller Blade RPM	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150	75 - 150
Chopper Motor HP	0.25 - 0.5	0.5 - 0.75	1 - 1.5	1.5 - 2.0	2.0 - 3.0	3.0 - 3.0	5.0 - 5.0	5.0 - 7.5	7.5 - 10.0	12.5 - 15.0	15.0 - 20.0
Chopper Motor RPM	1400 - 2800	1400 - 2800	1400 - 2800	1400 - 2800	1500 - 3000	1500 - 3000	1500 - 3000	1500 - 3000	1500 - 3000	1500 - 3000	1500 - 3000



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## Dry Heat Sterilization

#### **Special Features:**

- Sadhi Pharma dry heat sterilizers are made for sterilization of empty vials, ampoules and bottles, which can withstand a temperature upto 290°C.
- □ Class 100 hepa filter can be fitted inside and outside. The temperature variation inside the chamber will not be more than 5°C (Hottest Point & Coldest point).
- Special arrangement of baffles is made for the uniform distribution of air inside the chamber.
- The trolley design is such that the loaded trolley can be pulled out easily at 65°C due to specially designed wheels.



- Pneumatically operated 100 % sealed dampers.
- Specially manufactured Silicon door gasket to ensure zero leakage during the operation.
- Black particle generation is totally eradicated with the appropriate design of the heater bank, which is externally removable for maintenance saving time and energy.
- ▶ PLC based control panel.
- Total unit is made as per schedule "M" & WHO.
- More than 400 units working satisfactorily.

#### It is available in capacities of -

Lab Model - 1, 2, 3 & 4 cu. Ft. lab model Production Model - 3 cu.mtr, 5 cu.mtr



## AIR TRAY DRYER

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#### **FEATURES**

- All stainless steel
  304/316/316L cGMP
  construction for
  pharmaceutical
  applications or external
  mild steel with stainless
  steel interiors with
  rounded corners or full
  mild steel construction
- Blowers fans are axial flow type with variable pitch blades to adjust air flow to suit product being dried
- Electric/steam/thermic fluid heating
- Tunnel type dryers where in trolleys are placed one behind the other and double door loading
- Flame proofing construction with explosion flaps, non-sparkling metal combinations, earthing chain etc.



Model	SP - 6	SP - 12	SP - 24	SP - 48	SP - 96	SP - 192
Capacity	6	12	24	48	96	192
Motor HP	0.5	0.5	0.5	1	1	1
No of Motors	1	1	2	1	2	4
No of Trolleys	NIL	NIL	NIL	1	2	4
Heating Load (KW)	1.5	3	6	9.0	18	36





#### **FEATURES**

A vacuum Tray dryer works under vacuum conditions on the conduction principle. Inside the dryer are several shelves having trays on which the products are placed. The top most shelf is a dummy self place there to ensure proper heating and to prevent the dried powder from escaping into the solvent extraction system.

The shelves are constructed hollow with baffles cum stiffeners placed in between shelves. Every shelf has an inlet and outlet nozzel and is connected to an inlet and outlet header through these nozzels. A hot medium reaches the shelf through the inlet header and flows through the shelves in a unformly zig-zag pattern ensuring faster heat transfer to the surface. This in turn heats up the trays on the shelves. The hot medium flows out from shelf through the outlet header.



Model	SP	SP	SP	SP	SP	SP		
Capacity	3	6	12	24	48	96		
Tray Size	800 X 400 X 50mm in SS 304 / 316 Quality							
No of Shelves	3+1	6+1	6+1	8+1	16+1	16+1		
Tray / Shelves	1	1	2	3	3	6		
Chamber Thickness	8	8	8	8	8	8		
Condenser (Sq.m)	0.5	1	1.5	2	3	5		
Receivers (Litrs)	10	25	50	80	100	150		



## **ROTOCONE VACCUM DRYER**





#### **FEATURES**

Rotocone Vaccum Dryer is suitable for drying of materials which cannot resist high temperature, materials which are easily oxidized, volatile materials which should be retrieved, materials that are strong irritants and poisonous in nature. The Roto Cone Dryer facilitates enhanced drying efficiency, low temperature operation and economy of process by total solvent recovery. It helps cGMP base working by achieving

optimum dust control, while offering advantages of efficient charging and discharging of materials. the drying unit equipped with lump breakers initially breaks large lumps and subsequently powders them (in a single cone). The rotary action of the dryer together with mechanical action of the breakers cuts down drying time and gives a lump-free product.

## Technical Data

Model	SP 15	SP 100	SP 200	SP 300	SP 500	SP 750	SP 1000	SP 1500	SP 2000	SP 3000
Total Volume in Ltrs	15	100	200	300	500	750	1000	1500	2000	3000
Working Volume in Ltrs	9	60	120	180	300	450	600	900	1200	1900
Capacity in Kg (Max)	5	30	75	100	175	250	350	500	700	1050
RPM	6	6	6	6	6	6	6	6	6	8
Heat Transfer area in m <sup>2</sup>	0.5	3.5	4.2	5	6	7	8	9.5	11	13.3
Cyclone Separator in Ltrs	1	5	7	10	15	20	25	30	40	100
Condenser in m <sup>2</sup>	0.1	0.5	0.75	1	1.5	2	2.5	3	4	8
Receiver in Ltrs	3	20	40	50	75	100	150	200	250	300
Charging Ht in mm	700	1350	1500	1650	1800	2000	2300	2500	2650	3685
Discharging Ht in mm	300	600	650	650	700	650	750	750	750	850
Charging Size in mm	•150	•250	• 300	• 300	•350	• 400	• 400	• 450	• 500	• 500
Discharging Size in mm	• 75	• 125	• 150	• 150	• 175	• 200	• 200	• 220	• 250	• 300
Gear Box	2"	2.5"	3"	3"	4"	4"	5"	6"	7"	8"
Main Drive Motor	0.5 HP	2 HP	3 HP	3 HP	5 HP	5 HP	7.5 HP	7.5 HP	10 HP	12.5 HP
Lump Breaker Motor	-	-	-	0.25 HP	0.25 HP	0.5 HP	0.5 HP	0.5 HP	1 HP	1 HP

Design Temp: 200C, Testing: Vacuum side Full Vacuum upto 750 mm of Hg & Steam / Hot water jacket side 5 Kgs / cm²pressure test.





## **OCTAGONAL BLENDER**



#### **Salient Features**

- Octagonal Blender is supplied with a bin charging system or can be designed for vacuum charging.
- pharmaceutical industry where in gentle blending of dry granules of powders is to be done. It is a slow speed blender and has a removable baffle mounted through a rectangular openable lid, other important feature of this machine is ease of cleaning in place.
- The bin charging system can also be incorporated in it which is a dust free closed system for charging and discharging of powders or granules.
- The bin charging system can also be incorporated in it which is a dust free closed system for charging and discharging of powders or granules.
- Capacity available 5 L to 10000 L (higher capacity on demand upto 10000 L)

Model	Volume in Litres	Discharge Butterfly Valve	Gear Box	Motor	Dimension L x W x H
SP - 70	100	4"	2"	1 HP	1150 x 1160 x 1575
SP - 140	200	6"	2"	1 HP	1560 x 984 x 1517
SP - 210	300	6"	3"	1.5 HP	1625 x 1190 x 1641
SP - 350	500	6"	3"	1.5 HP	1850 x 1304 x 1842
SP - 525	750	8"	<b>3</b> 1/2"	2 HP	2000 x 1453 x 1986
SP - 700	1000	8"	4"	3 HP	2230 × 1520 × 2060
SP - 875	1250	10"	4"	3 HP	2380 x 1595 x 2122
SP - 1050	1500	10"	5"	5 HP	2480 x 1643 x 2172
SP - 1400	2000	10"	5"	5 HP	2700 x 1760 x 2290
SP - 1750	2500	12"	6"	7.5 HP	2800 x 2010 x 2537
SP - 2100	3000	12"	7"	10 HP	3000 × 2142 × 2671
SP - 2450	3500	12"	7"	10 HP	3100 x 2289 x 2860
SP - 2800	4000	12"	8"	12.5 HP	3150 x 2350 x 2890
SP - 3500	5000	12"	8"	15 HP	3450 x 2436 x 2968



## RIBBON BLENDER



#### **FEATURES:**

- Available in working capacity of 5 liters 10,000 liters.
- Available in all grades of stainless steel, carbon steel and special alloy steels.
- Ribbon agitator for center discharge.
- Designed for atmospheric operation.
- Top cover with nozzle for material charging.
- Centrally located flush bottom discharge valve.
- Jacket available for heating & cooling purpose.
- Stuffing boxes with easily disassembled housings. PTFE gland packing provided.



Model	Gross Cap in Liters	Working Cap in Liters	Dimension in mm L x W x H	RPM	НР
SP -1	150	100	1600 x 800 x 1250	15 / 30	3 / 5
SP - 2	500	325	1800 x 800 x 1300	15 / 30	5 / 5
SP -3	1000	650	2500 x 1000 x 1500	15 / 30	7.5 / 10
SP - 4	2000	1300	3500 x 1200 x 1750	15 / 30	10 / 15
SP -5	3000	2000	4000 x 1500 x 2000	15 / 30	20 / 25
SP - 6	4000	2600	4500 x 1800 x 2000	15 / 30	25 / 30
SP -7	5000	3250	4950 x 1800 x 2000	15 / 30	30 / 40
SP - 8	7500	5000	5450 x 2000 x 2000	15 / 30	40 / 50
SP -9	10000	6500	6000 x 2000 x 2000	15 / 30	60 / 75



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#### **Features**

- A suitable fencing around the cage with an entry point for the bin on detachable trolley.
- Limit switch on entry door to prevent the accidental operation of the cage.
- Flexibility of accepting variable bin size providing wide range of batch volumes.
- cGMP construction with cladded polished S. S. sheets.



#### **CAPACITY OFFERED**

■ 5 Kgs. to 1000 Kgs.





#### **Features**

It is an equipment operated hydraulically or mechanically for lifting and tipping FBD bowl loaded with dried granules. contents of the bowl is transfer smoothly to a granulating equipment and through it to a BIN or an IPC container.

F.B.D. BOWL CAPACITY	LIFTING DEVICE	ROTATING MECHANISM
60 kgs	1 HP.	1 HP.
100 kgs	1 HP.	1 HP.
150 kgs	1.5 HP.	1 HP.
200 kgs	2.0 HP.	2 HP.
250 kgs	2.0 HP.	2 HP.
300 kgs	2.0 HP.	2 HP.
350 kgs	2.0 HP.	2 HP.
400 kgs	3.0 HP.	2 HP.





## Autoclave >



#### **Salient Feature**

- For Sterilization of glass wares / containers, vessels, linen rubber articles etc.
- All size in rectangular and cylindrical shapes.
- Single / Double and hinged / Sliding doors with high temperature resistant silicon gaskets.
- □Conventional / Dimpled jacket.
- ■Complete 316 or economy model with only contact parts in ss 316.
- ■Standard Cycles and HP/ HV Cycles.
- Manual / Fully automatic / P.L.C. based control System covering all parameters including printouts of F values.
- Conforming to various international specifications.
- □Options like electric steam generator, Vacuum pump, Carriage, Trolleys etc.
- ▶ Provision of rubber bung drying / processing system.

## Sparkler Filter





- Maintenance can be easily carried out just by lifting the dome i.e. without lifting the cartridge.
- Quick and easy remove of filter plate cartridge for cleaning of cake.
- Filtrate is obtained without scavenging agents.



Model	SP	- 08		SP - 14			SP	- 18			SP - 24	
Plate Diameter	8	n	14"			18"				24"		
No. of Plates	6	8	8	10	12	10	15	18	24	15	18	24
Filtering Area (m2)	0.217	0.279	0.819	1.001	1.183	1.65	2.40	2.85	3.75	4.192	5.035	6.625
Cake Holding Capacity Ltrs.	4.9	6.3	24.75	30.25	37.75	55	80	95	125	144	171	225
Flow Rate / hr	600	800	1500	1700	1900	4000	5500	6400	8200	7000	8500	12500
Pump Size and Power	1/2"	1 HP	1"	2 HP		1 1/2"	3 HP			2"	5 HP	





#### **COATING PAN**

Sadhi Pharma cGMP Model coating pan system

#### Salient Feature

Facility of angular adjustment of coating pan facilitate the perfect angle for coating different product.

#### **Available Size**

**12**" 24" 30" 36" 48" 60" 72"



## Starch Paste Kettle

#### **Features**

- All contact part made of SS 316 as per GMP standard.
- Hemispherical design for proper mixing paste.
- Jacket provided with steam/thermic/fluid heating arrangement.
- Driven via motor and gear box assembly mounted on top.
- Tilting arrangement for kettle is provided for discharge for starch paste.
- Anchor type impeller design for proper mixing of paste.
- Safe earthing system



## Vibro Shifter



#### **FEATURE**

MOC:-SS316L/SS316/S S304

#### **OPTIONS**

- Flam proof motor with FLP push button swith.
- Magnetic arrangement for tray of iron particles.
- Extra deck
  Available
- GMP Model



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## Multi Mill

#### **SALIENT FEATURE**

- MOC:-SS316L/SS316/SS304
- Suitable for dry granulation/pulvlizeing /shredding and chopping of materials.

#### **Model Available**

□ 1HP/3HP/5HP/7.5HP





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