ACE INDUSTRIES (INDIA) PVT. LTD.

CUSTOMISED EQUIPMENTS FOR YOUR DRYING & BLENDING SOLUTIONS

SPARKLER FILTER

RCVD

FBD

LAB MODEL OF FBD

VTD

OCTAGONAL BLENDER

CENTRIFUGE EXCELLENCE 35 years 1980 - 2015

NUTSCHE FILTER (VACCUM & PRESSURE OPERATION)

SS 316 Nutsche Filter

Tefzal coated Nutsche

Lab Type
Vacuum Nutsche

Nutsches are available in lab type through pilot plant and production scale, in volumes ranging from **10 ltrs to 5000 ltrs.**

Nutsches are operated through Vacuum and pressure.

SALIENT FEATURES:

- 316 Stainless Steel fabrication or other alloys including Hastelloy C-276/C-22 optionally available.
- **For aqueous regia production nutsche filter available with halar or tefzal coating.**
- All Nutsche filters are as per ASME standard codes for full vacuum and pressures
- High purity design, various pharmaceutical grade finishes including electro-polishing, mirror, matt and dull finish.
- Optional jacketing for heating / cooling or electric heaters.
- Easy clamping of filter media
- Optional coatings including Teflon.
- Safety pressure relief valves or nitrogen purging nipple.
- Valves for pressurization, vacuum, venting, slurry addition, draining etc.
- Pressure / vacuum gauges optional.
- Sight glasses and sampling ports.
- Other instrumentation such as thermometers temperature transmitters, level, extra at actuals.
- Wide variety of filter pore sizes and types, 1 micron to 200 micron pore sizes, stainless steel, Hastelloy, polypropylene, special membrane and other filter materials available.
- Easy perforated plate arrangement.
- Body flange model available for easy cleaning and change over material.
- Castor wheels available for easy mobility.

SPARKLER FILTER

Aim Industries manufactures a wide range of Process equipments for the Pharmaceutical and Chemical Industry. Aim Industries introduces Sparkler Filter in its product lineup of filtration units.

WORKING:

The liquid is directed with the help of pumps through the centre channel of the cartridge from the bottom of the body. Suspended particles get retained on the filter medium resting on the filter plates and the clear filtrate emerges from the side holes of the plates inside the tank and flows out from the bottom outlet. The filter tank does not come into contact with the liquids and hence remains clean. The cake filtrates and solids remain completely inside the fully closed filter plate cartridge.

Complete recovery of the filtrate is possible by passing of air or an inert gas through the bottom inlet to dry the cakes and get a clean empty tank.

SALIENT FEATURES:

- Maintenance can be easily carried out just by lifting the dome i.e., without lifting the cartridge.
- Quick and easy removal of filter plate cartridge for cleaning of cake.
- Filtrate is obtained without scavenging agents.
- Liquid does not remain between the tank or the cartridge.
- Possibility of high working pressure.
- Uniform distribution of cake and filtrate.

TECHNICAL SPECIFICATIONS:

Model	AIM-08		AIM-14			AIM-18				AIM-24		
Plate Diameter	8"		14"			18"				24"		
No. of Plates	6	8	8	10	12	10	12	15	24	15	18	24
Filtering Area (m^2)	0.217	0.279	0.819	1.001	1.183	1.65	1.95	2.40	3.75	4.192	5.035	6.625
Cake holding Capacity Ltrs.	4.9	6.3	24.75	30.25	37.75	55	65	80	125	144	171	225
Flow Rate/hr	600	800	1500	1700	1900	4000	4600	5500	8200	7000	8500	12500
Pump size and Power	½"	1HP	1"	2HP		1½"	3 HP			2"	5HP	

Note: Dimensions and specifications are subject to change without prior notice

FLUID BED DRYER

A Fluid Bed Dryer is designed for fast and uniform drying of powders, crystals and medium sized pellets. The Fluid Bed Dryer finds application in Pharmaceuticals, Bulk Drugs, Dyes & Chemicals, Phyto-Chemicals, Catalysts, Food Products & Starch derivatives, Pesticides etc.

Racking System

Fresh air is drawn in by means of a fan. The air is then passed through a filter and heated to produce warm air by use of electric heaters. If the product contains a solvent or inflammable substances, the dryer must be operated using steam and provided with a flame-proof motor.

The heated air passes through the product container which has diffuser plates and a sieve. Due to the stream of air, the wet product gets fluidised. The material gets surrounded by the hot air and gets dried due to heat transfer. Moist air passes through a filter bag and an exhaust duct.
The Fluid Bed Dryer is not suitable for drying of liquids or pastes.

ADVANTAGES:

In a Fluid Bed Dryer, the temperature is distributed uniformly throughout the product and the heat rate is very high. High production rates are achieved because of reduced drying time.

As the product is in close contact with the drying air at a low temperature and for a short duration, the physical and chemical properties of the product are not affected generally and hence the dryer can be effectively used in the case of heat-sensitive products. As the product is continuously moving during the drying process, there is minimal lump formation or case hardening.

TECHNICAL SPECIFICATIONS:

Model	AIM-15	AIM-30	AIM-60	AIM-120	AIM-200	AIM-250	AIM-300	AIM-500
Container Vol. (Ltrs.)	18	100	200	380	650	800	980	1700
Batch Capacity in Kg	5-8	30-40	60-75	120-150	200-225	250-280	300-300	500-500
Drying Temp. in C	50-80	50-80	50-80	50-80	50-80	50-80	50-80	50-80
Motor H.P.	3	5	10	15	20	25	30	60
Heating load KW	9	18	36	54	Electrical heating not recommended			
Approx. Steam Consumption kg/hr	15	25	50	100	160	200	250	430

Note: Dimensions and specifications are subject to change without prior notice

MASS MIXER

The Mixer consists of mixing drum complete in itself. It contains a mixing drum body, mixing paddle and sealing arrangement. The drum rests on rigid M.S. fabricated body carrying motor, gear box, starter and tilting arrangement. The drive of mixing paddle is through suitable oil filled worm gear unit which in turn gets drive through V belts from a suitable T.E.F.C. motor. The blades of the paddle are so arranged that thorough mixing is obtained. All parts which are in direct contact with the material to be mixed are of S.S. or neutral material. The main paddle runs in journals and supported by thrust bearings of ample size to carry rigid and thrust load. The whole drum of the mixer makes for ease of cleaning. The rotor is so designed that it can be removed by removing the main shaft without much problem.

CAPACITY : UPTO 10,000 LTRS

ADDITIONAL FEATURES:

- Plastic Dust Cover provided to see the process all the times.
- Safety : If motor covers open it will trop off automatically.
- Tilting Device is provided to ease the unloading of the material
- Specially designed self-adjusting sealing arrangement
- Provision is made for lubricating all moving parts

RIBBON BLENDER

STANDARD 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 nozzles 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.
- Stainless steel surfaces are polished to desired standards. All exterior non-stainless surfaces are painted with enamel paint.
- Squirrel Cage, Three Phase Induction Motors suitable for 415 Volts, 50 Hz.

Inside view of Ribbon blender

- Worm reduction gearbox, helical reduction gearbox.
- Single Speed Drive.
- Blender is mounted on supports providing adequate discharge clearance.

AIR TRAY DRYER

An Air Tray Dryer is used for the best drying results in conventional process. It consists of a double-walled cabinet with one or two doors. The gap between two walls is filled with light resin-bounded fibreglass wool insulation material to avoid heat loss. The doors are provided with gaskets to avoid air leakages from the front side of the door. Stainless steel trays are placed inside the chamber. cGMP model dryers are designed to dry specific products.

ATD's are used where the moisture / solvent or wet powder has a high flash point.

Capacity: Lab model to suit 10kg powder - 6, 12, 24, 48, 96 and 192 trays.
Standard, GMP & cGMP models available with SS 304/SS, 316/MS internals and externals.

Construction: External: 2mm thick; internal: 2mm thick.

Surface Finish: External: polished to 180 grit matt finish; internal: buffed to 220 grit mirror finish.

Inlet & Outlet: Pharmaceutical and industrial tray dryers have a 5-micron pre filter at the inlet and a manually adjustable damper at the exhaust.

Doors: Doors are provided at the front and/or rear side of the dryer. The door lips are lined with silicon rubber gaskets to prevent air leakages. Suitable locking arrangement is provided for the doors.

Air Circulation: This is done by specially designed re-circulation blowers inside the dryer. Blower capacity, static and design depend on the size / model of dryer.

Heating: Dryers are supplied with either steam / electric / thermic fluid / hot water heating system. Suitable heating coils / calorifiers are provided.

Temperature Control: This is done by an electronic digital temperature controller fitted to the control panel. The temperature control in the dryer is fully automatic.

Trays: These are available in SS 304/316. All trays are fully dry-pressed and have curved corners. Trays are buffed to a mirror finish. They are also available in aluminium / polypropelene / FRP / MS galvanised according to client requirements.

Trolley: A trolley is provided in the dryers to accommodate trays. Trolley tracks are used to load and unload the trays into the dryer.

Electronic Panel: An automatic control panel is fitted on the side of the dryer. It consists of starters, contactors, safety relays, circuit breakers, indicating lamps, push buttons, timers, controllers etc.

TECHNICAL SPECIFICATIONS:

Capacity	12	24	48	96	192
Tray size	16" x 32" x 11/4" in SS 304/316 quality				
Motor H.P.	0.5	0.5	1	1HP x 2 Nos.	2HP x 2 Nos.
No. of Trolleys	Nil	Nil / 1	1	2	2
Heating load KW 100°C	3	6	9	18	36
200°C	6	9	15	24	42
300°C	9	12	21	30	48

Note: Dimensions and specifications are subject to change without prior notice

OCTAGONAL BLENDER

Inside View of Blender showing Baffles arrangement

SPECIAL FEATURES OF OCTAGONAL BLENDER:

- The Octagonal Blender is suitable for dry mixing of products in granule form.
- Easy for loading and unloading of material.
- Easy for cleaning.
- All contact parts of the Octagonal Blender are made out of SS 304 / SS 316 or SS 316 L quality material, as per customer's requirements.
- The octagonal shape and slow speed of rotating gives sufficient continuous movement to the granules, resulting in good quality.
- Simple design of Octagonal Blender requires minimum maintenance.
- General structure and safety guards made out of mild steel and coloured in Standard Model and made out of SS 304 and polished to a matt OR mirror finish in GMP Model.
- Actuated butterfly valve for easy opening of outlet discharge.
- Limit switch for safety purpose.
- Bigger size batch at low power consumption.

TECHNICAL SPECIFICATIONS:

MODEL	VOLUME IN LITRES	DISCHARGE BUTTERFLY VALVE	GEAR BOX	MOTOR	DIMENSION L X W X H
ACE 35	50	4"	17	0.5 HP	995 X 790 X 1077
ACE 70	100	4"	22	1 HP	1150 X 1160 X 1575
ACE 140	200	6"	22	1 HP	1560 X 984 X 1517
ACE 210	300	6"	3"	1.5 HP	1625 X 119 X 1641
ACE 350	500	6"	3"	1.5 HP	1850 X 1304 X 1842
ACE 525	750	8"	3 ½"	2 HP	2000 X 1453 X 1986
ACE 700	1000	8"	4"	3 HP	2230 X 1520 X 2060
ACE 875	1250	10"	4"	3 HP	2380 X 1595 X 2122
ACE-1050	1500	10"	5"	5 HP	2480 X 1643 X 2172
ACE 1400	2000	10"	5"	5 HP	2700 X 1760 X 2290
ACE 1750	2500	12"	6"	7.5 HP	2800 X 2010 X 2537
ACE 2100	3000	12"	7"	10 HP	3000 X 2142 X 2671
ACE 2450	3500	12"	7"	10 HP	3100 X 2289 X 2860
ACE 2800	4000	12"	8"	12.5 HP	3150X 2289X 2819
ACE 3500	5000	12"	8"	15 HP	2450 X 2436 X 2968
ACE 7000	10000	16"	12"	30 HP	4430 X 2912 X 3438

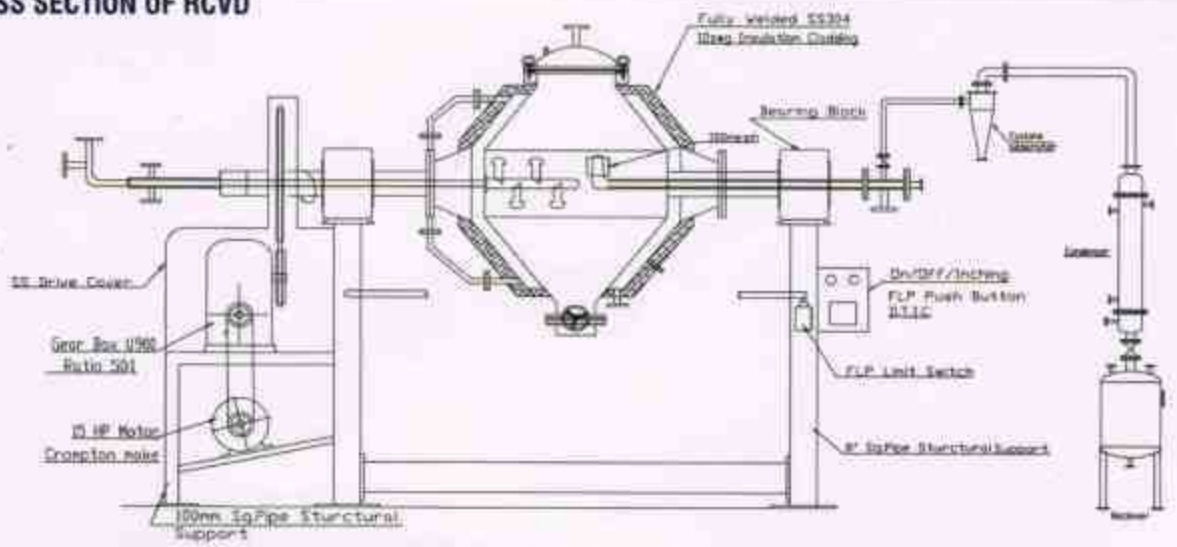
Note: Dimensions and specifications are subject to change without prior notice

ROTOCONE VACUUM DRYER

TECHNICAL SPECIFICATIONS:

MODEL	ACE 15	ACE 100	ACE 200	ACE 300	ACE 500	ACE 750	ACE 1000	ACE 1500	ACE 2000	ACE 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^2	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^2	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	• 225	• 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: 200° C, Testing: Vacuum side Full vacuum upto 750 mm of Hg & Steam/Hot water jacket side 5 Kgs/cm^2 pressure test.										
OVER ALL DIMENSIONS (Approximately) :										
Length in mm (with Cyclone)	850	1600	1850	2050	2250	2700	3000	3250	3600	3969
Length in mm (with Cyclone, Condenser & Receiver)	1100	2000	2250	2500	2750	3200	3600	4000	4500	4200
Width in mm (with Safety Guards)	550	1200	1300	1450	1600	1800	2100	2350	2600	3000
Height in mm	750	1600	1775	1900	2000	2350	2600	2850	3000	3685
Weight in Kg (Aprox)	400	800	900	1000	1200	1600	2000	2500	3200	3800

CROSS SECTION OF RCVD



ROTOCONE VACUUM DRYER

Roto Cone Vacumm 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 with improved technology integrates during operation under vacuum. 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.

ADVANTAGES:

Reduces drying time • Eliminates need for re-drying of lumps • Handling and exposure of final product is avoided • Gives uniform size dry product • System can process crystalline or amorphous powders which are prone to lumps • Easy to clean internal surface ensures purity of product • Optimum and continuous vacuum maintenance during process • Uniform material shuffling over the heated contact surface of the cone.

SALIENT FEATURES/ MOC (in GMP Model):

- Inner shell/Cone and contact parts in SS 316.
- Steam/HW water Jacket in SS 304.
- Insulation with jacket in SS 304.
- Cyclone separator in SS 316.
- Condenser (shell & tube) and Receiver in SS304
- Butterfly valve (SS316) at discharge port with dummy and hand wheel.
- Stand and Structure in SS 304/MS with SS304 cladding. Drive unit enclosed with SS304 Covers
- Dry Mechanical Seal for vacuum side.
- Dry Mechanical Seal for Waterside.
- FLP Motor & FLP Control panel enclosed in SS304 panel
- Digital Temperature Indicators (FLP) at Hot Water inlet and outlet.
- Digital Temperature Indicator (FLP) and Dial Vacuum Gauge in vapor line.
- Digital Temperature Controller (FLP) with Pneumatic Valve at Hot water inlet.
- Provision for Nitrogen purging/Vacuum release with interlocking to isolation valve
- Temperature and Vacuum Gauges (Dial Type) on Cone.
- Safety Guard/railing telescopic type with limit switch (FLP) with interlocking.
- Drain plug and safety valve on HW/Steam Jacket.
- Pulse jet type dust filter is provided in side the cone.
- Positioning wheel /inching button for cone
- **DRIVE**: Gear Box & Motor Direct Coupled and Gear Box to Cone Drive shaft Bull Gear-Pinion Gear Drive.
- Extended shaft (drive side) so that drive unit can be kept in service zone (if required).
- Vacuum loading system of wet material into the Cone.
- **FINISH** : Internal 320 grit mirror polish and outer 180 grit mat finish.

OPTIONALS:

- VFD for Drive Motor with RPM indicator.
- Condenser and Receiver in SS316 instead of SS304.
- Lump breakers with FLP motor, Mechanical seals and electrical slipring joint.
- Auto Bin loading mechanism with timer control and Bins.
- Vacuum pump with FLP motor.
- Hot water system (steam heated) with tank and circulation pump.

MULTI MILL

SALIENT FEATURES:

- M.O.C : SS 304 / 316 / 316L.
- Suitable for dry granulation / pulverising / shredding and chopping of materials.
- Easy mobility with the help of castor wheels.
- Beaters: 8 to 12 nos with knife / impact edge and 2 scrapper blades.
- Rotor speed : 750 / 1500 / 2100 / 3000 rpm approx.

OPTIONS:

- Flame proof motor with push button switch.
- Direct driven (VFD control)
- Single drive - mechanical seal
- Gmp model.

MODEL AVAILABLE : 0.5 HP, 1 HP, 3 HP & 5 HP.

SPARES FOR MULTI MILL

CHOPPER BLADE

MESH

COLLECTION HOPPER

VIBRO SHIFTER

SALIENT FEATURES:

- M.O.C : SS 304 / 316 / 316L.
- Ideal for gradation and separation of dry powder / granules and semi-solids / liquids.
- Modular design of decks with easily fitted clamps.
- Mesh:S.S.316 moulded lead-free sieves

OPTIONS:

- Flame proof motor with FLP push button switch.
- Magnetic arrangement for tray for heavy particles
- Extra deck available
- Adjustable vibration amplitude
- GMP Models

MODEL AVAILABLE :12", 20", 24", 30", 36", 48" and 60".

SPARES FOR VIBRO SHIFTER

CLAMP

MESH

VACUUM TRAY DRYER

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 shelf placed 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 nozzle and is connected to an inlet and outlet header through these nozzles. A hot medium reaches the shelf through the inlet header and flows through the shelves in a uniformly 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 the shelf through the outlet header.

VTD's are used where the moisture / solvent or wet powder has a low flash point

The inlet and outlet headers are designed in such a way that the flow of the heating medium is equally distributed into each of the shelves. The dryer chamber is constructed from heavy-duty plates to prevent the plates from buckling during th vacuum operation. Additional limpet coils are provided in order to further stiffen the body and to pass on the hot medium. The chamber is provided with a heavy door and adequate locking arrangement.

The dryer chamber is connected to a shell & tube by means of a vapour column to a Heat Exchanger. This in turn is connected to a condensate receiver. Vacuum is applied to the condensate receiver. Vapour evolved during the drying process collects in the receiver after it is cooled in the heat exchanger.

The vapour to be cooled is passed through the tube side of the Heat Exchanger, while cooling water is passed through the shell side. A cooling coil in the condensate receiver cools any vapours entering the receiver before it goes into the vacuum pump. The condensate receiver is connected to a vacuum trap to make sure that any uncooled vapours from the receiver get trapped thus minimising the vapour content entering the vacuum pump.

TECHNICAL SPECIFICATIONS:

Capacity	12	24	48	96
Tray size	800 x 400 x 50mm in SS 304/316 quality			
No. of shelves	6+1	8+1	16+1	16+1
Tray / shelves	2	3	3	6
Chamber thickness	6	6	6	8
Condenser (Sq.m)	1.1	2	3	5
Receiver (Ltrs.)	50	80	100	150

Note: Dimensions and specifications are subject to change without prior notice

They all trust ACE PROCESS EQUIPMENT
Shouldn't you too?

Manufactured and Marketed by:

ACE INDUSTRIES (INDIA) PVT. LTD.

ASSOC. CO's: MAK INDUSTRIES, AIM INDUSTRIES AND ACE CHLORIDE

E-mail : ace_centrifuges@yahoo.co.in
Website: www.acecentrifuges.com
www.acecentrifuges.co.in

Adm. Office : 113, Alpine Indl. Estate, Marol Military Rd., Andheri (E), Mumbai - 400 059, India
Tel.:022 - 42258000 (30 Lines) / 66919449 / 29201763. Fax: 022-29204939

Plant 1 : **AIM INDUSTRIES & MAK INDUSTRIES**
10-12 & 14, Alpine Indl. Estate, Marol Military Rd., Andheri (E), Mumbai - 400 059, India
Mobile: 98211 42442, 93222 17611

Plant 2 : **ACE INDUSTRIES**
J-718/2, GIDC, 40 Sheds Area, Vapi, District Bulsar, Gujarat.
Mob: 09377001430

Plant 3 : **ACE CHLORIDES**
7505, G.I.D.C., Karmatur, Chokdi, Ankleshwar, Dist. Bharuch, Gujarat.
Telefax: 02646 - 226728 Mobile: 093280 42487

Plant 4 : **ACE INDUSTRIES (INDIA) PVT. LTD.**
Plot No.504, Village Kondhale, Taluka Wada, Dist.: Palghar, Maharashtra - 421 312.