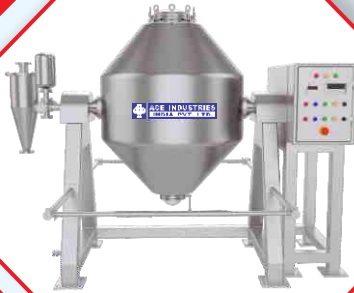




**ACE INDUSTRIES
(INDIA) PVT. LTD.**



**Customised Equipments For Your
Drying, Blending & Filtration Solutions**

ABOUT US

ACE INDUSTRIES (India) Pvt. Ltd. is an engineering company which specialises in the design, manufacture and supply of BASKET TYPE CENTRIFUGE for industries like Chemical, Pharma and API for their many applications. We have an impressive track record working in this field for over Four decades having supplied more than four thousand centrifuges (on turnkey basis all over the world) with exports to countries like Italy, Thailand, Nigeria, South Africa, Philippines, Malaysia, Bahrain, Iraq, Iran, Chile, Argentina & USA among others many countries.

Our manufacturing facilities are in Maharashtra and Gujarat. Mr. M. H. Makhani, The Promoter of ACE INDUSTRIES (India) Pvt. Ltd. is a ICT BCHEM ENGG. graduate who perfectly understands the buyers' requirement and can therefore manufacture equipments to suit their specific requirements. We have also successfully supplied and commissioned many chemical plants for conversion of sulphur to other useful chemicals.

Unit - I, Wada (Maharashtra)



Unit - II, Ankleshwar (Gujarat)



Unit - III, Vapi (Gujrat)



ACE PILOT-SCALE CENTRIFUGES

The brightness of centrifuge parameters can be easily determined with ACE pilot scale Centrifuge. We are proud to present this innovative solution for R & D , Pilot plants and kilo lab



LABORATORY CENTRIFUGE

RPM : 1400

G FORCE : 230

TABLE TOP CENTRIFUGE

BASKET SIZE : 8" (200MM) DIA X 6" (150MM) DEPTH

CAPACITY : 1.5 LTR CAKE (0.5 TO 1.5 LTR MAXIMUM BASKET AVAILABLE)

MOTOR : 1HP

FILTRATION AREA : 0.094 SQ MT.

Available with Halar, Teflon, PFA Coatings



FOUR POINT SUSPENSION CENTRIFUGE

RPM 2800

G FORCE : 870

SINGLE POINT CENTRIFUGE

CAPACITY : 7 LTR / 7 KG AND 15 LTR / 15 KG

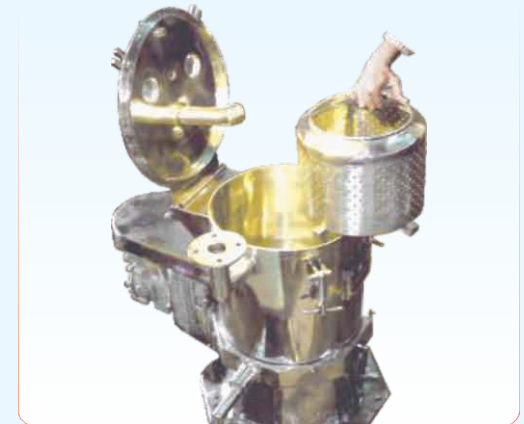
BASKET SIZE : 12" (300mm) dia. & 18" (450mm) dia.

MOUTH DIA. : 230 mm (10")/ 370mm (14.5")

MOTOR : 1 HP X 1440 RPM

BASKET SPEED: 1200 rpm

G-FORCE : 240 / 360 G



Suitable for ETP/STP: Range - 1m³ to 10m³

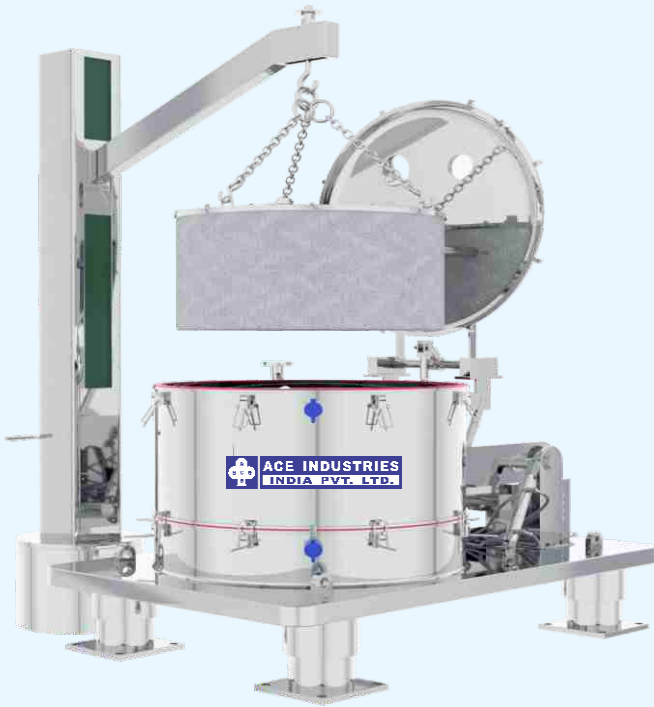
UNIVERSAL PILOT CENTRIFUGE

OUTSTANDING FEATURES:

1. Four-point machine.
2. cGMP model /CE marked Atex models available
3. Variable basket speed: Max 2000 rpm, G-Force: 666 (max).
4. Capacity: 7 lit. / 7 KG
5. Trolley-mounted. Can be used on any storey.
6. Filter Area: 0.235 sq. mt.
8. Most suitable for biotechnology products.

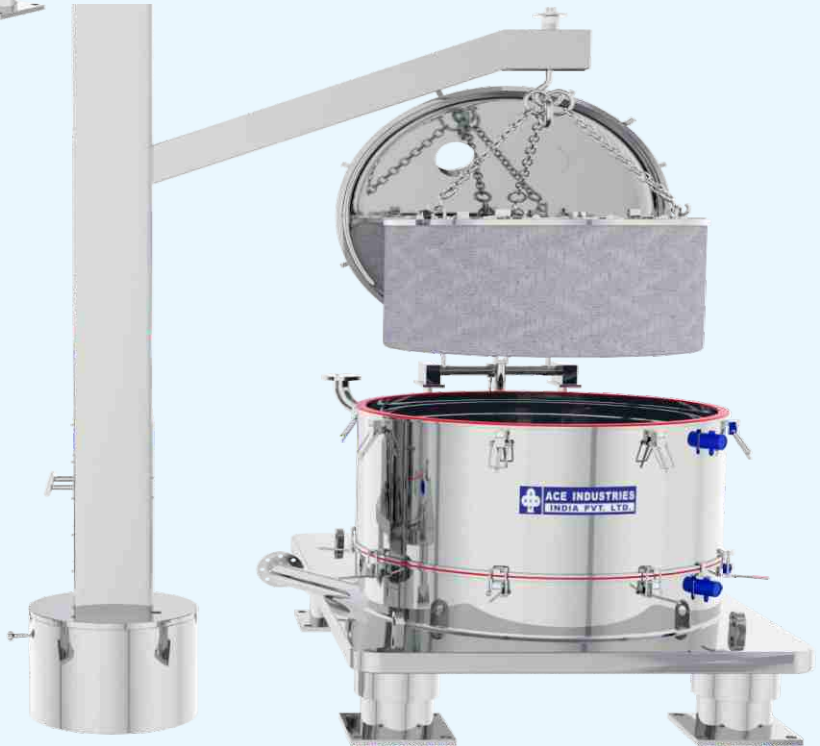


LIFTING BAG CENTRIFUGE



The latest trend in solid / liquid separation is to go in for greater ease in cake handling. Filter cloth is available in the different micron size. The fabric with poly- propylene, woven/non woven polyester, nylon, cotton etc. with strengthening strips and hook up arrangement are easily available. The ACE lifting bag system supports such filter bags. Quick and easy fixing arrangement helps in the centrifuging. The time factor for the various operations is studied and this is passed on to the user at the time of installation and commissioning. The filter bag setting is precisely done so that the entire assembly is as fool-proof as the simple top discharge centrifuge. Hence 100% solid liquid separation without loss of a single solid particle in filtrate is achieved by the instant cake lifting type centrifuge.

SCHEME TO INSTALL COMMON LIFTER FOR TWO MACHINE



TECHNICAL DATA

MODEL NO.	MOTOR H.P.	BASKET SIZE	G FORCE	RPM	MOUTH I.D.(MM)	BASKET CAPACITY		FILTER AREA SQ.MTR	Platform Length L (MM)	Platform Width W(MM)	Platform with Outlet W2 (MM)	HEAD ROOM	
						VOL (LT)	MAX WT(KG) BD 1					LID OPEN (MM)	DOME OPEN (MM)
75-5	5	30" X 13"	500	1100	550	75	75	0.71	1450	1150	1600	1850	1650
90-5	7.5	36" X 18"	512	1000	625	150	150	1.329	1650	1250	1800	2550	1950
120-5	15	48" X 20"	540	900	810	300	300	1.954	2100	1650	2250	3000	2500
120-5	15	48" X 24"	540	900	810	400	400	2.310	2100	1650	2250	3500	2800
150-5	20	60" X 24"	540	800	1010	600	600	2.911	2400	2000	2550	3800	3000
150-5	30	60" x 30"	540	800	1010	750	750	3.55	2500	2000	2550	4000	3200

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

SPECIAL FEATURES OF LIFTING BAG TYPE MACHINE

ADVANTAGES OF LIFTING BAG TYPE

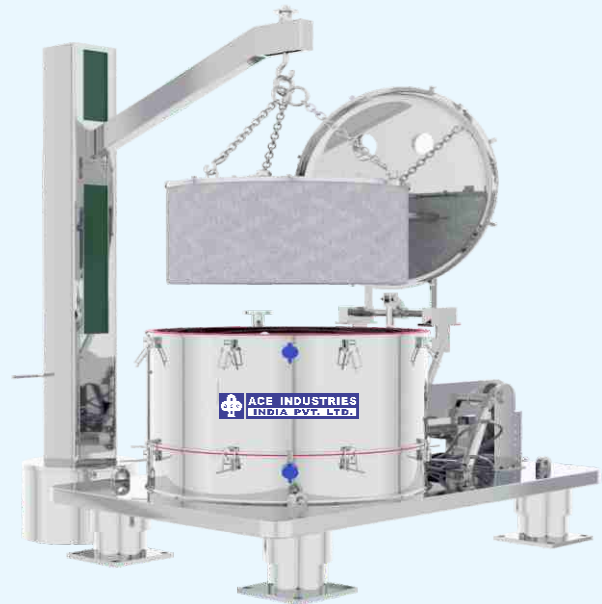
- The time required for cake removal is negligible.
- Production is increased two-fold.
- Manual contact with cake is avoided.
- Cake can be easily elevated to upper storeys without the use of lifts or trolleys.
- Cake spillage on the floor is nil.
- More volumetric charge per machine available.
- Easy cleaning of the basket in and out.
- Full opening of the lid helps maintenance.



INSIDE VIEW OF LIFTING BASKET

ADVANTAGES OF 4-POINT MOUNTING

- The vibration transmission is nil
- The machine can be used on upper storey.
- Good and clean house-keeping possible.
- No cost of R.C.C. foundation
- Can be shifted easily.
- Trolley mounting machines possible.
- No rusting and greasing headaches
- Maintenance of suspension negligible.
- Saving in floor area of the machine
- **cGMP in the true sense.**



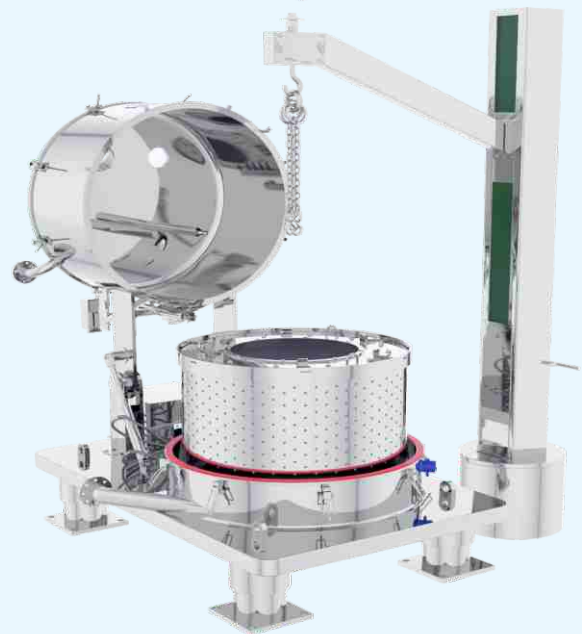
ADVANTAGES OF FULL BODY TOP OPENING

The central flange of the machine is very thick and wide. It is machined all over. The bottom flange is given a square groove to hold Teflon, PTFE, SILICON packing with required projection.

The top flange sits truly on the packing making the joint 100% leak proof. Sufficient LBD LOCK allows quick and easy opening and closing.

The body top is hinged to the base plate. The hydraulic cylinder opens and closes the top part of the body easily. The body top once opened, gives easy access to the entire basket in and out.

The entire body from the inside and even the access to the central drive assembly is also made available. The basket if required can be removed when body top opens fully. Maintenance of the shaft and bearing housing can be easily done in top body opening machines.

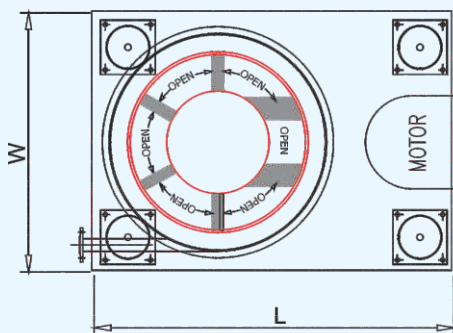


DOME OPEN LIFTING BAG TYPE MACHINE WITH LIFTER FOR EASY REMOVAL OF MATERIAL

MULTI POINT FULL BODY BOTTOM CAKE DISCHARGE



4-POINT SUSPENDED BOTTOM DISCHARGE CENTRIFUGE



TOP VIEW

TECHNICAL SPECIFICATIONS

MODEL NO.	MOTOR H.P.	BASKET SIZE	G FORCE	RPM	MOUTH I.D.(MM)	BASKET CAPACITY		FILTER AREA SQ.MTR	FLOOR AREA		HEAD ROOM (MM)
						VOL (LT)	WT(KG)BD 1		W (MM)	L(MM)	
60-6	5	24" X 13"	650	1400	425	45	45	0.623	1000	1650	1650
75-5	7.5	30" X 13"	500	1100	550	75	75	0.776	1250	2000	2000
90-5	10	36" X 18"	511	1000	625	150	150	1.329	1750	2500	2500
120-5	20	48" X 20"	540	900	850	300	300	1.899	2350	2850	2850
120-5	20	48" X 24"	540	900	850	350	350	2.31	2350	2850	2850
150-5	25	60" X 24"	540	800	1000	600	600	2.94	2750	3250	3250
150-5	30	60" X 30"	540	800	1010	750	750	3.55	2750	3250	3200

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

The Pharma and Fine Chemicals Manufacturing sectors have to face the challenge of impurities below PPM (parts per million) levels. A clean centrifuge is a must.

The simplicity of the Bottom Discharge arrangement is also taken care of. The multi-opening full body bottom cake discharges without sweepers, the hydraulic scrapper, the cake sensor, the zero speed interlock, the safety switches, the anti vibration tripper, the DIN pressure test for air-tight operation, nitrogen purging with oxygen analyser, the GMP version, are all a part of the ACE BOTTOM DISCHARGE CENTRIFUGE. The dimensions of the machine and the headroom for basket sizes of 24" dia. to 60" dia. are given below:



4-POINT SUSPENDED BOTTOM DISCHARGE CENTRIFUGE WITH DOME OPENING



Gerb Dampner

THE PROCESS

a) Feeding:

The slurry has to be charged through the feed pipe. The cake should develop uniformly inside the basket. The basket speed is almost half of the full speed. Care is taken with feed valve to control the flow rate of feed to ensure complete filtrate discharge. The collapsible filter cloth holding rings are provided to prevent cake carry over with liquid.

b) Cake Sensor:

The cake sensor gives the indication of cake filling up to the basket rim. The feed must be stopped if hooter sound of cake sensor is heard. The Feed Solenoid valve can be closed with PLC and cake sensor.

c) Washing & Spinning:

We provide special up and down moving efficient wash nozzles.

The cake should be washed free from impurities at a little higher speed than the feed speed. When wash discharge is free from impurities, the basket speed is raised to the maximum. The drying of cake is maximum due to maximum basket speed.

d) Dynamic Braking:

It is achieved by pressing of the STOP button of the control panel. The basket comes to a stand still within 200 seconds.

e) Scrapping:

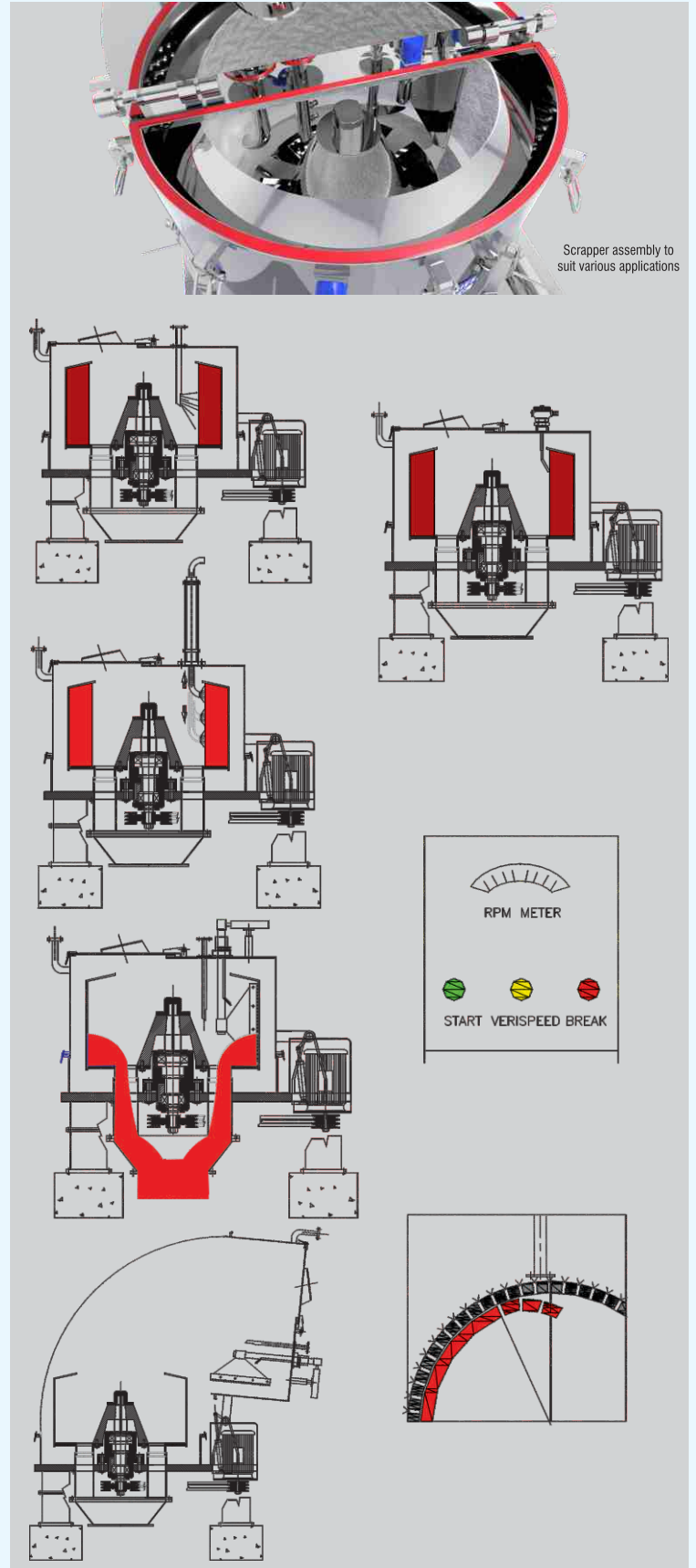
The basket is run at a minimum possible speed. The hydraulic power pack is switched on. The scrapper is rotated around the scrapper shaft. The cake is cut and discharged through full body discharge - opening provided below the body. Cake butterfly valve is bolted below the body to prevent liquid from entering cake holding tank due to malfunction. The scrapping takes about 30 minutes.

f) Heel Removal:

The gas pressure is applied on the jet nozzles provided outside the basket. The basket is run at a SLOW SPEED with scrapper in cut position. The jet pressure dislodges the last layer of cake.

g) Dome Opening:

The Scrapper is taken back to neutral position. The dynamic brake is applied to bring the basket to a stand still. The dome LBD locks are released. The dome is opened with HYDRAULIC Power pack lever. The cleaning of the body is easily done.



MANUAL TOP DISCHARGE CENTRIFUGE

Manual Top Discharge Machines are available with full body open lid, full lip mouth open lid and 3/4 lip mouth open lid. ACE offers dome opening machines in its entire range of basket sizes. The washing & feeding is designed to meet Product requirements. The Manual Top Discharge Machines are available from as small as 8" dia to as large as 60" dia.

We have made as large as 60" dia Basket Size of our STD Model 180-4 centrifuge machine giving cake load of 1000 lit/ 1200 kgs per batch.

Lid available in three options:

- 1) Full mouth open lid
- 2) D-type lid
- 3) Full body open lid

Salient Features:

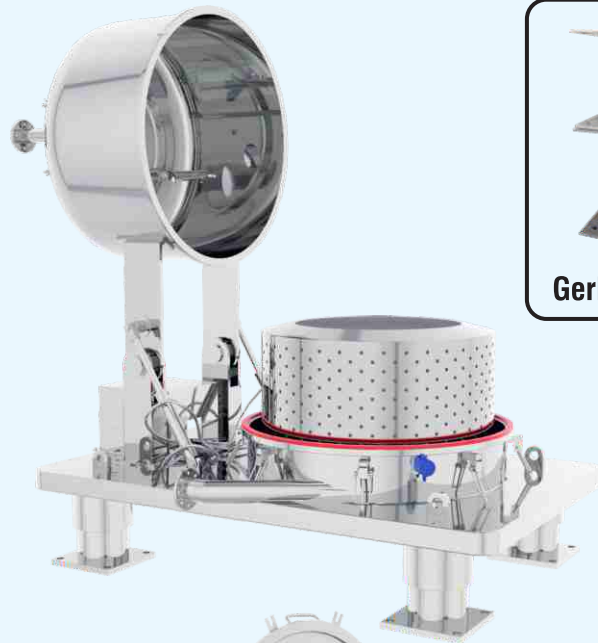
- No grouting required
- Machine can be easily taken from one place to another
- Recommended for clean housekeeping

Technical Specifications of models currently being manufactured:

Safety Features:

- Nitrogen blanketing System
- Vibration Tripper
- Zero speed Interlock
- FLP Lid and Dome Sensor

cGMP MTD Centrifuge Machine with Dome Open



MODEL NO	MOTOR HP	BASKET SIZE	G FORCE	RPM	MOUTH	BASKET CAPACITY		FILTER AREA	FLOOR AREA		HEAD ROOM
					ID (MM)	VOL(LT)	WT(KG) BD 1	SQ. MTR	L(MM)	W(MM)	(MM)
30-3	1	12"x10"	330	1400	250	6	6	0.24	900	600	1650
45-5	2	18"x10"	500	1400	325	20	20	0.35	1200	800	1700
50-5	2	20"x12"	540	1400	400	25	25	0.417	1200	800	1750
60-5	3	24"x13"	499	1220	425	44	44	0.6	1200	900	1550
75-5	5	30"x13"	507	1100	550	66	66	0.76	1250	1000	1830
90-5	7.5	36"x18"	503	1000	600	170	170	1.35	1650	1250	1950
120-5	15	48"x20"	540	900	800	300	300	1.8	2100	1500	2300
150-5	20	60"x24"	540	800	1000	600	600	2.82	2500	2000	2300 (D TYPE)

AUTOMATION OF CENTRIFUGES



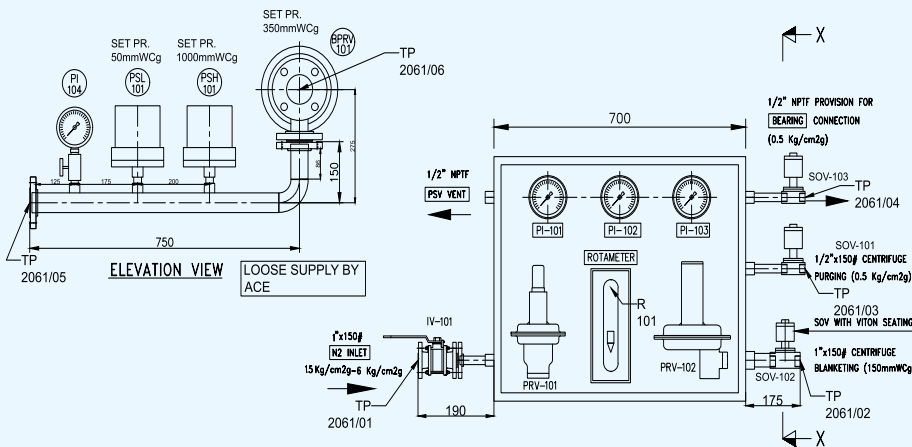
**FREE REPLACEMENT
GUARANTEE OF VFD
WITHIN 12 MONTHS
FROM DATE OF
COMMISSIONING**

ADVANTAGES OF USING V.F.D.

The use of V.F.D. (VARIABLE FREQUENCY DRIVE) in centrifuges is a great advancement. The V.F.D of a standard make is used preferably one that has an in-built BRAKING CHOPPER and RESISTOR. The centrifuge runs with high starting and braking torque. Although ACE clutch pulleys and hand brakes are sturdy enough to do the job, the V.F.D. does it electronically. The wear and tear of brake liners and clutch liners is negligible. It is worthwhile to invest in a V.F.D. The variable speed is welcome to save power. The V.F.D. gives smooth centrifuging operation. Also, the work of feeding and washing can be done at lower basket speeds and the centrifuge drying can be done at higher speeds, if the basket charge is properly balanced.

***CE and ATEX certified machines available on request.
ACE Has Supplied Several Such Systems With Great Success.**

CENTRIFUGE BLANKETING SYSTEM



In pharmaceutical industry three types of Interstation systems are widely used based on Application / criticality / suitability & commercial aspect.

- Manual Centrifuge Blanketing System
- Semi-Automated / Timer Based System
- Fully Automated / On-Line Oxygen monitoring system

There is an extensive range of Centrifuge types and sizes. The most common type is the top or bottom discharge filtration batch centrifuge. The types of industries using Industrial Centrifuges are similarly diverse. These include the chemical, pharmaceutical, petrochemical, and food industries. Ace make nitrogen blanketing system provid added safety ensuring inert operation of centrifuges. It has connectivity to the main panel for low and high level of nitrogen in the machine

Skid Mounted Ready To use Package : Centrifuge Blanketing system are skid mounted ready to use packages. Our customer has to connect Nitrogen at inlet & outlet of the system is to be connecting to centrifuges.

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.

Fresh air is drawn in by means of a blower. The suction of fresh air takes place from the AHU. The air is then heated to produce hot air by use of electric heaters/steam Radiator/Thermic fluid . 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 paste.

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	ACE- 5	ACE-30	ACE-60	ACE-120	ACE-150	ACE-200	ACE-250	ACE-300	ACE-500
Container Vol. (Ltrs.)	12	90	200	425	525	650	800	900	1700
Batch Capacity in Kg	3-5	30-40	60-75	120-130	150-160	200-225	250-280	300-325	500-550
Drying Temp. in C	50-80	50-80	50-80	50-80	50-80	50-80	50-80	50-80	50-80
Motor H.P.	2	7.5	10	20	20	25	30	30	60
Electrical Heating Load (If Required)	6	18	36	54	Electrical heating not recommended				
Approx. Steam Consumption kg/hr	-	143	195	259	300	337	422	550	757

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

AIR TRAY DRYER

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.

Std chamber size : to hold 6, 12, 24, 48, 96 and 192 trays. Lab model for 5 – 10 kgs available

Standard, CGMP models available with SS304/SS 316 internals and externals.

Construction: heavy duty with single body design making it C GMP complaint easy for cleaning and up keeping of the equipment.



TECHNICAL SPECIFICATIONS:

Capacity	12	24	48	96	192
Tray size	800mm X 400mm X 32mm in SS 304/316 quality				
Motor H.P.	0.5	0.5	1	1HP x 2 Nos.	1HP x 2 Nos.
No. of Trolleys	Nil	Nil / 1	1	2	4
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

RIBBON BLENDER

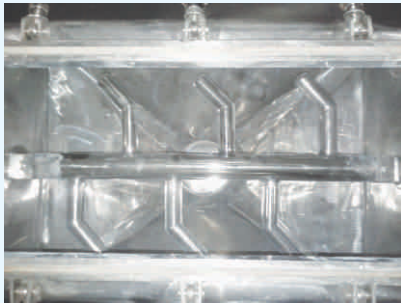
STANDARD FEATURES

- Available in working capacity of 5 liters -15,000 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 nozzies 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.
- Warm reduction gearbox, helical reduction gearbox.
- Single Speed Drive.
- Blender is mounted on supports providing adequate discharge clearance.



Ribbon blender

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:

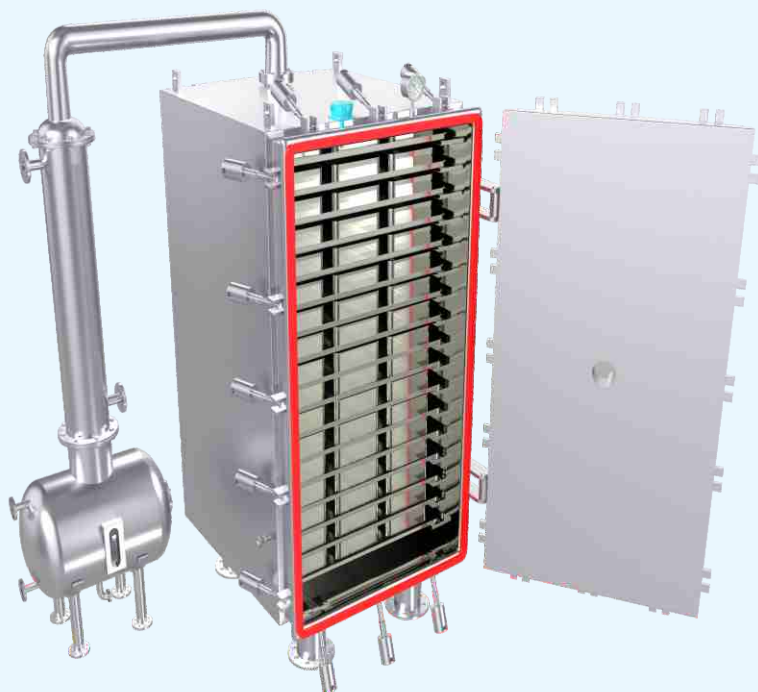
MODEL	VOLUME IN LITRES	DISCHARGE BUTTERFLY VALVE	GEAR BOX	MOTOR	DIMENSION L X W X H
ACE 35	50	4"	17	0.5 HP	995 X 790 X 1077
ACE 70	100	4"	22	1 HP	1150 X 1160 X 1575
ACE 140	200	6"	22	1 HP	1560 X 984 X 1517
ACE 210	300	6"	3"	1.5 HP	1625 X 119 X 1641
ACE 350	500	6"	3"	1.5 HP	1850 X 1304 X 1842
ACE 525	750	8"	3 1/2"	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

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



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

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.

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 the 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.

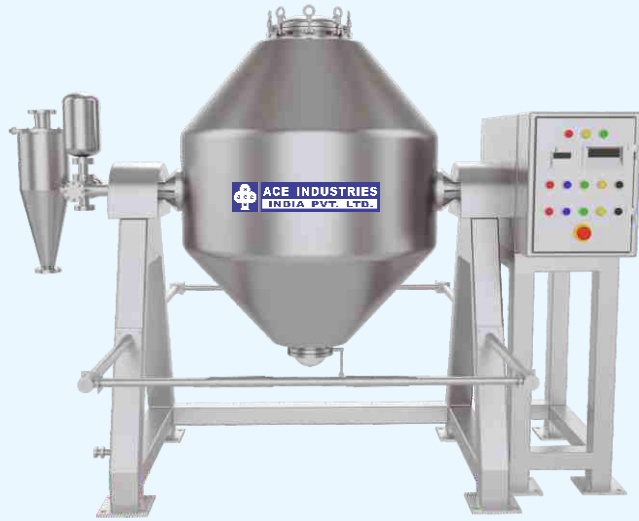
The vapour to be cooled is passed through the tube side of the Heat Exchanger, while cooling water is passed through the shell side. A cooling coil in the condensate receiver cools any vapours entering the receiver before it goes into the vacuum pump. The condensate receiver is connected to a vacuum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

TECHNICAL SPECIFICATIONS:

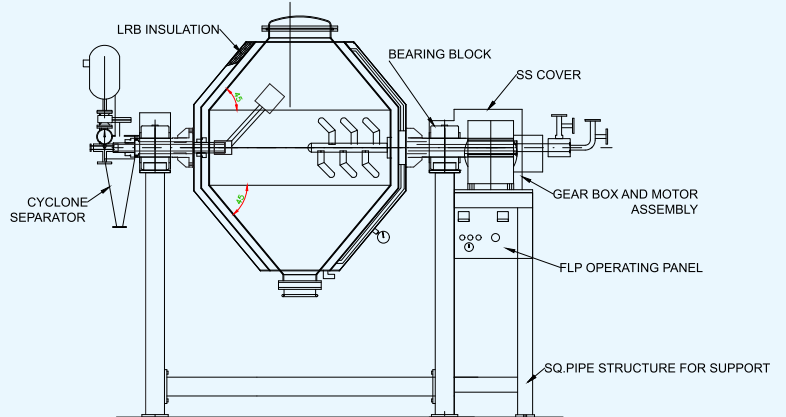
Capacity	6	12	24	48	60	96
Tray size	800mm X 400mm X 40mm in SS 304/316					
No. of shelves	6+1/3+1	6+1	8+1	16+1	15+1	16+1
Tray / shelves	1/2	2	3	3	4	6
Chamber thickness	6	6	6	6	6	8
Condenser (Sq.m)	0.5	1	2	4	4	6
Receiver (Ltrs.)	25	50	50	100	100	150

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

ROTOCONE VACUUM DRYER



CROSS SECTION OF RCVD



Roto Cone Vacuum 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.

TECHNICAL SPECIFICATIONS:

MODEL	ACE 15	ACE 100	ACE 200	ACE 300	ACE 500	ACE 750	ACE 1000	ACE 1500	ACE 2000	ACE 3000	ACE 4000
Total Volume in Ltrs	15	100	200	300	500	750	1000	1500	2000	3000	4000
Working Volume in Ltrs	9	60	120	180	300	450	600	900	1200	1900	2400
Capacity in Kg (max)	5	30	75	100	175	250	350	500	700	1050	1320
RPM	6	6	6	6	6	6	6	6	6	8	8
Heat transfer area in m ²	0.5	3.5	4.2	5	6	7	8	9.5	11	13.3	16.8
Cyclone Separator in Ltrs	1	5	7	10	15	20	25	30	40	100	100
Condenser in m ²	0.1	0.5	0.75	1	1.5	2	2.5	3	4	8	8
Receiver in Ltrs	3	20	40	50	75	100	150	200	250	300	400
Charging Ht in mm	700	1350	1500	1650	1800	2000	2300	2500	2650	3685	2910
Discharging Ht in mm	300	600	650	650	700	650	750	750	750	850	850
Charging Size in mm	• 150	• 250	• 300	• 300	• 350	• 400	• 400	• 450	• 500	• 500	550
Discharging Size in mm	• 75	• 125	• 150	• 150	• 175	• 200	• 200	• 225	• 250	• 300	350
Gear Box	2"	2.5"	3"	3"	4"	4"	5"	6"	7"	8"	9"
Main drive motor		2 HP	3 HP	3 HP	5 HP	5 HP	7.5 HP	7.5 HP	10 HP	12.5 HP	20 HP
Lump Breaker motor	--	--	--	0.5 HP	0.5 HP	1 HP	1 HP	1.5 HP	2 HP	3 HP	5 HP

Design Temp: 200° C, Testing: Vacuum side Full vacuum upto 750 mm of Hg & Steam/Hot water jacket side 5 Kgs/cm² pressure test.

OVER ALL DIMENSIONS (Approximately) :

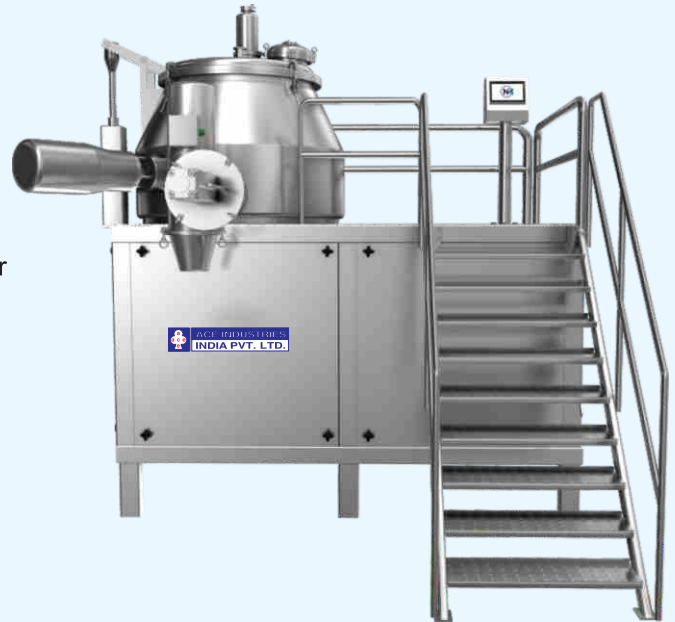
Length in mm (with Cyclone)	850	1600	1850	2050	2250	2700	3000	3250	3600	3969	4100
Length in mm (with Cyclone, Condenser & Receiver)	1100	2000	2250	2500	2750	3200	3600	4000	4500	4200	4500
Width in mm (with Safety Guards)	550	1200	1300	1450	1600	1800	2100	2350	2600	3000	4000
Height in mm	750	1600	1775	1900	2000	2350	2600	2850	3000	3685	3800

RAPID MIXER GRANULATOR

In the pharmaceutical industry, Rapid Mixer Granulator shows a vital role to mix the ingredients and make granules before compression. This machine is also known in Industries with various essential terms as High shear mixer granulation device, Hard Powder granulator, Wet Granulator, Pharma Stationer.

Salient Features:

- All Contact Parts SS 316 / 316L as per cGMP Standard.
- Unique design incorporating Impeller, Granulator, Online Co-mill, Side discharge valve & dryer.
- Ensures the round and even granules of high density..
- Dry and wet granulation in one step.
- Detachable impeller & chopper ensure 100% cleaning.
- Minimum possible gap between bottom surface and impeller ensures no deposition at bottom surface.
- Specially mounted torque sensor arrangement for critical parameters of granulation like end point determination & desired granule profile.
- Process control and interlock through by PLC with touch screen color HMI.
- Automated discharge interlocked & interfaced with PLC.
- Capacity : 5 Ltr. to 1200 Ltrs.



Optional Features:

- FLP Construction.
- Binder Addition System.
- Fully Automatic with SCADA & 21 CFR Part 11 Compliance.

Technical Specifications:

Model	ACE-25	ACE-50	ACE-100	ACE-150	ACE-300	ACE-400	ACE-600	ACE-750	ACE-900	ACE-1200
Gross Cap (Ltrs.)	25	50	100	150	300	400	600	750	900	1200
Working Cap. (Ltrs)	17	35	80	120	240	320	480	600	720	900
Main Motor (H.P.)	3/5	5/7.5	7.5/10	10/15	20/30	30/40	40/50	40/50	40/50	50/60
Chopper Motor (H.P.)	1/1.5	1/1.5	2/3	3/5	3/5	5/7.5	5/7.5	5/7.5	5/7.5	7.5/10

COATING PAN

Coating Pan is made after a careful study of needs of expert coaters such as Rotation Speed, Angle of Pan. volume and temperature. It is elliptical in shape, mounted at 300 angle. We also make available Coating Pan in other geometrical shape and mounting angles, as per the requirement. RPM of the pan is variable. Hot air blower thermostat of the pan delivers required quantity of air at selected temperature between 400C to 800C.

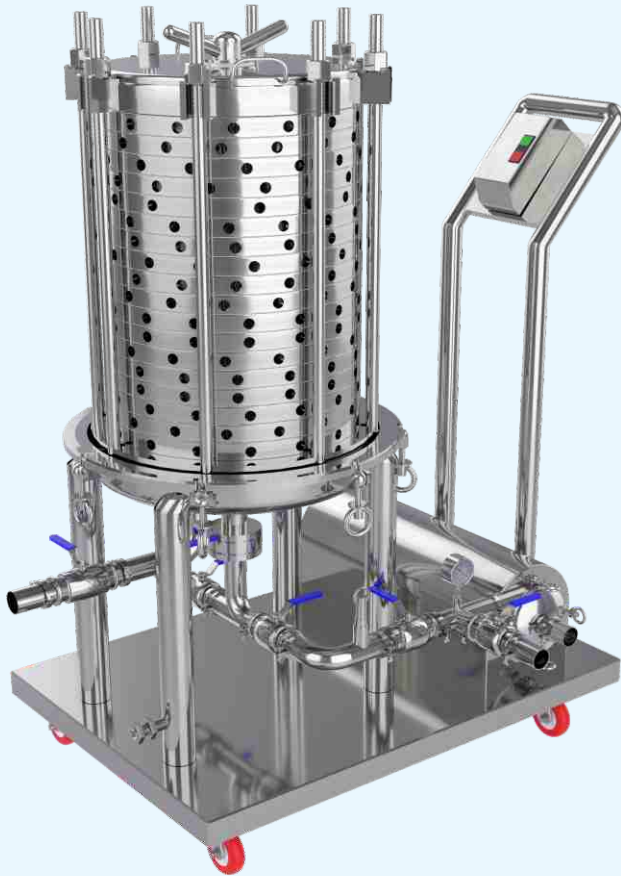
Salient Features:

- All Contact Parts SS 316 / 316L as per cGMP Standard.
- Conventional coating system for manual film coating and sugar coating.
- Machine is designed with fabricated structure fitted with SS enclosure which makes simple, cleanable outside covering and mounted on anti-vibration pad.
- Closed powerful pan drive with reduction gearbox and motor.
- Movable hot air blowing system with electric heater.
- Easy to replace polishing pan and other size coating pan.
- Spray Coating systems with peristaltic pump
- ACVFD for variable speed
- PLC with touch screen Colour HMI
- Available Pan Size : 12" to 72" Dia.



SPARKLER FILTER

ACE Industries (I) Pvt. Ltd. manufactures a wide range of Process equipments for the Pharmaceutical and Chemical Industry. ACE Industries (I) Pvt. Ltd. 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.
- Special pumps available to meet viscous and critical products to be filtered – achieved with help of gear pump / centrifuga pump / lobe pump.
- Uniform distribution of cake and filtrate.
- Back wash facility available to make the solids free for any impurities.
- Fabricated in SS 304 , SS 316L , 904 L , Hastelloy C-276/C-22
Based on compatibility Sparkler filters can also be coated in Halar, Tefzal, PFA, PVDF



TECHNICAL SPECIFICATIONS:

Model	ACE-08		ACE-14			ACE-18					ACE-24			ACE-33			
Plate Diameter	8"		14"			18"					24"			33"			
No. of Plates	6	8	8	10	12	10	12	15	18	24	15	18	24	15	18	24	33
Filtering Area (m ²)	0.217	0.279	0.819	1.001	1.183	1.65	1.95	2.40	2.88	3.75	4.192	5.035	6.625	8.948	10.78	14.37	19.68
Charcoal holding Capacity in Kg	1.2	1.5	5	5.5	6	8	9	10.5	12	15	15	18	24	24	28	40	55
Cake holding Capacity Ltr	4.9	6.3	24.75	30.25	37.75	55	65	80	90	125	144	171	225	252	290	386	518
Flow Rate/hr	600	800	1500	1700	1900	4000	4600	5500	5800	8200	7000	8500	12500	15000	18000	24000	30000
Pump size and Power	½" 1HP		1" 2HP			1½" 3 HP				1½" 5 HP	2" 5HP			1 1/2" 5 HP	2" 7.5 HP		2" 10 HP

Note : 1. Dimensions and specifications are subject to change without prior notice.
2. Higher Diameter available on request.

AGITATED NUTSCHE FILTER DRYER (ANFD)

The Agitated Nutsche Filter Dryer (ANFD) is a versatile, multi-functional equipment designed for filtration, washing, and drying of products in the pharmaceutical, chemical, and food industries. Manufactured in SS304/SS316/SS904L/HC Material, this unit combines filtration and drying processes within a single compact structure, significantly reducing processing time and handling of materials as large batch of solid are dried in one batch.

SAILENT FEATURES:

- **Filtration and Drying:** The ANFD allows seamless transition from filtration to drying, maintaining product quality while optimizing process efficiency.
- **Agitation System:** Equipped with an agitator that rotates and oscillates, ensuring uniform drying and facilitating efficient discharge of the final product.
- **Construction:** Built with durable, corrosion-resistant stainless steel, suitable for harsh industrial environments and easy to clean.
- **Heating and Vacuum:** Provides precise control over heating and vacuum levels for optimal drying, reducing residual moisture to desired levels.
- **Enhanced Safety and Compliance:** Designed with safety in mind, including sight glasses, pressure gauges, and interlock systems. Meets industry standards for safety and hygiene.

APPLICATIONS:

Ideal for applications that require solvent recovery, crystallization, product washing, and drying. Suitable for sensitive materials that demand gentle handling and minimal exposure to atmospheric conditions. The Agitated Nutsche Filter Dryer is engineered to deliver high performance, reliability, and operational flexibility, making it an essential component in modern production environments.



Sr. No.	Filter Area Sq.M	Motor HP	RPM	Working Volume Lits	Max.Cake Volume Lits	Gross Volume Lits	Discharge	Diameter	Length	Height.	Depth	Width
DETACHABLE - SYSTEMS												
1	0.02	0.5	30	5	3	7	600	150	300	1250	500	500
2	0.09	1	16	50	11	61	620	330	650	2200	1700	1200
3	0.16	1	16	80	35	87	650	450	500	2550	1800	1400
4	0.24	2	10	150	36	178	1000	550	650	3250	2000	1450
5	0.28	2	10	200	57	245	1100	600	750	3350	2300	1500
6	0.5	3	10	300	100	373	700	800	600	2700	2500	1600
7	0.78	5	11	500	157	650	800	1000	650	3500	2800	1900
8	0.95	5	11	750	332	893	1050	1100	800	4050	2950	2100
9	1.13	7.5	11	1000	396	1360	980	1200	1000	4020	3150	2200
10	1.76	10	11	1500	706	2192	965	1500	1000	4130	3350	2600
11	2	10	11	2000	804	2520	1000	1600	1000	4150	3550	2700
12	2.5	10	11	2500	1017	3508	1000	1800	1000	4400	3900	2900
13	3.1	12.5	12	3000	1256	4097	950	2000	1000	4600	4100	3100
14	4.1	12.5	12	4000	1660	5577	1400	2300	1000	5000	4400	3300
15	4.9	15	9.2	5000	2200	6715	1400	2500	1000	5120	4600	3600
16	6.1	20	8	6000	2770	8280	1400	2800	1000	4940	4770	4250
17	7.5	25	8	7000	3395	10900	1370	3100	1000	5370	5200	4100
18	8.04	25	8	8000	3617	11717	1400	3200	1000	5500	5300	4500
19	9.6	25	8	10000	4808	14385	1600	3500	1000	5800	5600	4600
MONOBLOCK - ARRANGEMENT												
											Depth	Width
1	2	10	11	2000	804	2520	760	1600	1000	3900	3100	2600
2	3.1	12.5	12	3000	1256	3343	600	2000	1000	4300	3500	3000
3	4.1	12.5	12	4000	1660	5577	820	2300	1000	4390	3800	3350
4	4.9	15	9.2	5000	2200	6715	600	2500	1000	4320	4100	3550
5	6.1	20	8	6000	2770	8280	600	2800	1000	4450	4200	3900
6	7.5	25	8	7000	3395	10900	500	3100	1000	4550	4600	4000
7	8.04	25	8	8000	3617	11717	785	3200	1000	4565	4800	4200
8	9.6	25	8	10000	4808	14385	650	3500	1000	4800	5000	4500
9	12.56	30	8	12000	6280	18909	900	4000	1000	4925	5400	5000

NUTSCHE FILTER (VACUUM & PRESSURE OPERATION)

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



SS 316 Nutsche Filter

SALIENT FEATURES:

- Manufactured in various moc's like SS 304 L / SS 316 L / 904 L / HASTALLOY C – 22 & 276.
- For corrosive filtration we offer nutsche with fluoro chemical coating like tefzal / halar / pfa / pvdf / pp / rubber lining.
- We manufacture Nutsche filters as per ASME standard codes for full vacuum and high pressures filtration. With required safety valves to adhere to the safety standards.
- Available with diameter to suit the user requirement also we have high grade finishes available up to electro polish (finish should mentioned below)
- Available with jacketing / limpet for heating/cooling or electric heaters.
- Easy clamping of filter media to meet Sop's for easy cleaning
- Provision for pressure indication for jacket and main filter available.
- Sight glasses and sampling ports.
- Wide variety of filter fabric with pore sizes 1 micron to 200 micron pore sizes
- David arm available for easy removal of collected solids or carbon
- Castor wheels available for easy mobility.

COLLOID MILL



A colloid mill is a machine that is used to reduce the particle size of a solid in suspension in a liquid, or to reduce the droplet size in emulsions. Colloid mills work on the rotor-stator principle: a rotor turns at high speeds (2000 - 18000 RPM). The resulting high levels of hydraulic shear applied to the process liquid disrupt structures in the fluid. Colloid mills are frequently used to increase the stability of suspensions and emulsions, but can also be used to reduce the particle size of solids in suspensions.

MODELS AVAILABLE - 1HP/3HP / 5 HP / 7.5 HP.
Available in FLP / NON FLP arrangement.
Jacketed Model for Product Cooling

CADD MILL



SALIENT FEATURES:

- Capacity : 500 Kg/hr
- Motor Power : 5HP & 7.5HP
- Material of construction : SS316L , SS304
- Rotor RPM : 4000 Rpm
- Particle reduction size 0.5 to 12mm
- cGMP Model
- Application : Wet & Dry Pharma, Chemical, Food, Cosmetic Milling

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. & 7.5 HP.**

VIBRO SIFTER



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 particles tray for heavy
- Extra deck available
- Adjustable vibration amplitude
- GMP Models

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

CO MILL



SALIENT FEATURES:

- Capacity : 10 To 1000 Kg/hr
- Material of construction : SS316L , SS304
- Rotor RPM : 2800 Rpm
- Particle reduction size 0.5 to 12mm
- cGMP Model
- Application : Grinding of Granules, Soft and sticky Product

**MODEL AVAILABLE : 0.5 HP, 1 HP, 3 HP
5 HP. & 7.5 HP, 10 HP.**

They all trust BRAND ACE You should too.



Manufactured and Marketed by:



**ACE INDUSTRIES
(INDIA) PVT. LTD.**

ASSOC. Co's: ACE INDUSTRIES & ACE CHLORIDE

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