



# RAJ PHARMA TECHNOLOGY

Manufacturer of Pharmaceutical &  
Chemical Machinery & Equipments

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# MIXING, BLENDING & KNEADING TECHNIQUE

## HIGH SHEAR MIXER GRANULATOR (RMG)

A three-bladed impeller and a cylindrical or conical mixing bowl make up a high-shear granulator. a motor to power the blades, a discharge pot, an additional chopper, and a chopper. The hot colliquid can be circulated through the jacket or the mixing bowl jack can be used to either heat or cool the bowl's contents. There are five steps in the high-shear wet granulation process that use a high-shear granulator. These steps include

- The impeller, granulator, discharge chute, internal and external surfaces of the mixing bowl, mixing bowl cover, and SS 304/316L construction.
- Lid raising with numeric operation.
- Simple to disassemble, clean, and reassemble parts.
- Pre-tubed pneumatics
- Silicone and Teflon gaskets.
- 0.3RA surface polish on the interior and outside of the bowl.
- An alternative that complies with ATEX.
- Available in customised capacities. Holds 5 litres to 750 litres



## RIBBON MIXER BLENDER

Ribbons are a particular kind of powder blender, with their components positioned around a central shaft. The ribbon agitator that is a component of the design of the main medium of the container helicalbons, which are intended to move material both inwards and outwards on blenders, gives them their name. The remainder of the ribbon blender's construction is an AU-shaped horizontal trough. A collection of inner and outer helical blades make up the ribbon agitator in the blender.

- Mixing a lot of dry solids together.
- Powdered materials that are appropriate for wet phase mixing are dried.
- Combining different chemicals, medicines, and cosmetics.
- Ingredients for capsules blended by hand.
- Heavy-duty lubrications of dry pellets and granules.
- Applying liquid coatings to solid particles to create an appropriate mixture. Weight Range: 10 kg to 5000 kg



## OCTAGONAL BLENDER

Because of its form and capacity to contain larger numbers of particles, it is called "octagonal". The Octagonal Blender is a space- and power-efficient alternative to the double cone or even "V" adjuster. This machine is unique in that it balances large proportions of material in a very easy way, even when it operates at a moderate pace. It is equipped with an octagonal shell that is supported by both ends.

- 25 litres to 25,000 litres of capacity.
- A slow-speed mixer that gently blends in dry granules.
- Built-in space intended to be optional. No need for an external PTS.
- With amalgamation profile analysis available, the baffles are disappearing.
- Dust-free transfer valves that are pneumatically operated.
- Bins with an automatic cut-off level sensor.
- Shafts with automatic seals for pneumatic connections.
- CGMP design with CE certification for easy cleaning.
- Available capacities range from 50 L to 10,000 L (with the possibility of up to 20,000 L upon request).



## DOUBLE CONE BLENDER

One of the most frequent processes used in pharmacy is mixing. It is challenging to locate a pharmaceutical product that does not include mixing at any point throughout the production process. One piece of equipment that is frequently used for combining components is the double cone blender. Double cone blender versions are widely used in the pharmaceutical and cosmetics industries to combine granules of various sizes and forms with delicate, homogeneous dry powder particles. The Version's cone shape and stainless steel body allow for a uniform combination and more efficient automated ejection.

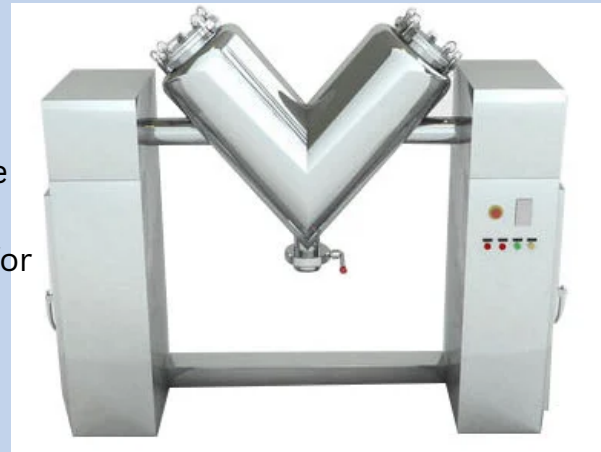
- Intimate dry blending of free-flowing solids is the most common application for the Double Cone Blender design.
- The proportion of the entire mixture and the bulk density of the solids being mixed in these units may differ.
- As the Double Cone rotates, the materials being blended are continuously combined together.
- Volume: 25 litres to 2500 litres.



## V SHAPE BLENDER

One of the most common pieces of equipment in this category, the V cone blender adjuster, also known as the twin shell adjuster, has two hollow cylindrical shells that are used at a 75- or 90-degree angle. The apparatus is mostly employed when exact mixing and lubrication of powder and granule formulation is required. The "V" shaped containers continuously split and recombine the components, resulting in the least amount of attrition. The majority of the industries that employ this technology include plastic, food, cosmetics, nutraceuticals, and pharmaceuticals. The V cone mixer's easy-to-clean design and optional intensifier bar for certain applications allow it to provide customers with a wear-resistant discharge, low maintenance requirements, and zero contamination.

- Rigid enclosed drive with motor and reduction gear box.
- The machine's rigid "A"-shaped construction rests the product container on two of its sides.
- Product container with manhole and butterfly valve for discharge.
- Volume range: 25 litres to 3000 litres.
- A safety reel is included for the product container's spinning section.



## MASS MIXER

The mass mixer is specifically made for powdered medications, food, herbs, agrochemicals, and other materials. It is intended to mix dry and wet materials equally. The mass mixer is made up of a tilting mechanism, mixing drum, gear box, stirrer, and rigidly constructed motor. To guarantee that no black particle enters the mixing drum, a specially developed self-adjusting sealing arrangement with a unique design is offered. The material being mixed can be monitored through an acrylic dust cover, which also controls dusting and contaminations. To facilitate the unloading of the material and the simple cleaning of the mixing drum, a tilting device is included.

- Available with a working capacity ranging from 500 to 1000 litres.
- Available in carbon steel, special alloy steels, and all grades of stainless steel. Surfaces made of stainless steel are polished to the appropriate level. Enamel paint is applied to all external non-stainless surfaces.
- An agitator with paddles for centre discharge.
- The blender is supported so that there is enough room for outflow.



# DRYING AND VACUUMIZE DRYING TECHNIQUE

## FLUID BED DRYER - FBD

In order to lower the moisture content of pharmaceutical powder and granules, the pharmaceutical industries frequently use fluidized bed dryers, also known as fluid bed dryers. The fluidization of the feed materials is the basis for how the machine operates. A continuous flow of "wet" powder, granular, or flakes material is carried over a perforated bed in a continuous fluid-bed system.

- Strong heat and mass transfer rates, which are the outcome of an excellent gas-particle constant, lead to high rates of moisture removal.
- High thermal efficiency is typically attained if the internal heat exchanger provides some of the thermal energy needed for drying.
- Lower one-time and continuous expenses.
- Easy to handle and stable; drying contact time is decreased. 5 kg to 1000 kg of capacity



## TRAY DRYER

Tray dryers are utilised in two industries: chemicals and medicines. Drying sticky materials, granular mass or crystallised materials, precipitates, and pastes are all excellent uses for tray dryers. Its capacity to dry vast volumes of items combined with its straightforward design has made agricultural drying practical. The process of dehydrating small produce pieces with tray drying involves subjecting them to hot, dry air or sunlight until they become sufficiently dry to be stored at room temperature with little risk of spoiling.

- 6 trays to 192 trays is the capacity.
- Fan & Motor: Depending on the type, doors come with gaskets that seal gaps, latch catches, and smoothly sliding hinges. Fitted inside the chamber, a well-balanced huge propeller-type fan (S) with an electric motor (S) drive and a suitable shaft and dual bearings.
- Heaters: Inside the chamber, 'U' shaped tubular heaters are installed to provide optimal heat transfer. Models with steam heating come with steam radiators that are finned in design.
- Control Panel: Contactor assembly and On/Off switch are part of the Control Panel box. The control box has functioning push buttons and a digital controller with neon lights.



## ROTOCONE VACUUM DRYER (RCVD)

The Roto Cone Vacuum Dryer is appropriate for drying materials that are harmful by nature or that readily oxidise at low temperatures. It works well in a hoover and at low temperatures. By recovering all of the solvent, it is incredibly economical. The roto cone vacuum dryer is a piece of equipment used to dry goods that have been harmed by high temperatures and materials with unique properties like volatile compounds, powerful irritants, easily oxidised materials, and toxic dust. Additionally, the machine is made to release a fully powdered, lump-free product.

- Drying time Minimises and removes the need for lumps to be dried again.
- An N2 pulse jet dust filter is included to improve product operating efficiency.
- A quick-open discharge valve that allows dry materials to be packed directly into drums or bags.
- Finest Appropriate for processing lump-prone crystalline or amorphous powders; CGMP construction with safety railing to prevent worker injuries.
- Gross capacity ranges from 100 to 5000 litres.



## VACUUM TRAY DRYER

In essence, the Vacuum Shelf drier is a tray drier that operates in vacuum. Its use of vacuum to push air and humidity out of the closed heat chamber enhanced drying pace significantly and saved energy because vacuum forced the chamber into a state of vacuum. The material's boiling point, which must be lowered for drying, and the closed loop design of the entire system prevent contamination. The evaporation that develops during the drying process is gathered in a receiver after being cooled by a linked condenser.

- Use a hoover to dry shelves on low-temperature systems that are highly hazardous. heat-sensitive and hygroscopic materials.
- For solvent recovery, a vacuumized closed system with a condenser and receiver is possible.
- Even at modest drying temperatures, the final moisture value is extremely low.
- Safety features include temperature control, overload prevention, safety pressure release, and vacuum relief valves.
- Steam, hot water, or heated therapeutic fluid are possible options for heating media.
- Holds up to 96 trays in capacity.



## AGITATED VACUUM TRAY DRYER

One effective way to get rid of volatile ingredients from plastics, ceramics, metals, specialised chemicals, and other items is through agitated vacuum drying. The liquid's boiling point is lower than in ambient settings because of the dryer's decreased internal pressure, allowing drying to occur at lower temperatures. The entire drying chamber is machined to ensure that the agitator blade comes into close contact with it, allowing for optimal material shuffling and the prevention of localised overheating. Easy cleaning of the entire chamber is ensured by the front opening door that is leak-proof.

- 5 to 5000 litres of chamber volume is its capacity.
- The material may be charged and discharged easily thanks to the top-loading and bottom-unloading capabilities.
- The dry material's fine dust is kept from flying into the vapour condenser by the cyclonic trap.
- The vapours are stopped from entering the vacuum pump by the condenser and the condensate collection tank.



## AGITATED NUTSCHE FILTER DRYER

The Agitated Nutsche Filter/Dryer (ANFD) technology is especially well-suited to satisfy the demanding needs of the fine chemicals and pharmaceutical industries for solids washing, separation, and drying under the most difficult process circumstances. Agitated filters and dryers, also known as combined filter-dryers, are made to operate both the filtering and the drying processes in the same vessel, removing any remaining liquid phase from the cake. High solid content liquids can be filtered using agitator filters. A permeable layer or filter media is used to mechanically separate the liquid under pressure or vacuum.

- The effectiveness of the filtration process is improved and the mechanical discharge of the solid is made possible by a unique height-adjustable agitator design.
- In a closed system, it is capable to efficiently separating solid materials from liquids under vacuum or pressure.
- 5 litre to 5000 litre capacity.
- The degree of filtering efficacy is improved and the mechanical discharge of the solid is made possible by a unique height-adjustable agitator design.



# MILLING, SIZE REDUCTION & GRADING TECHNIQUE

## CONE MILL

One of the most used milling techniques in the culinary, chemical, pharmaceutical, and related industries is cone milling. Usually, they are employed to reduce size and aid in the deagglomeration or lumping of powders and granules. Cone mills are typically used to reduce material to as small as  $180\mu\text{m}$  (80 mesh), and they generate less heat and dust than other milling methods. Tight particle size distributions (PSDs) are accomplished thanks to the slow and gentle grinding action and rapid discharge of appropriately sized particles.



## MULTI MILL

The Multi Mill is a self-contained, transportable device that can quickly chop, shred, combine, and granulate a variety of wet and dry materials without the need for additional accessories. The large range of models available, which vary in direct drive, belt drive, perforated screen size, and motor horsepower, determine the desired output of the product. Multi Mill is extensively utilised in the food and pharmaceutical industries, for research and development, in pharmacy schools for teaching, etc.



## VIBRO SHIFTER

A rotating vibrational sifting device called a Vibro Sifter is made to perform sorting, scaling, and scoring operations for any kind of application in the food, chemical, pharmaceutical, and cement sectors. Thus, this is all the equipment you need when grading, scalping, and separating are needed throughout processing. prescription drugs Vibro sifters are used to grade materials according to particle size and separate the mass composition of solids and liquids. This particular kind of pharmaceutical equipment is used to separate medicinal liquids or solids. A screen or mesh is positioned on the base plate of a vibro sifter machine.





# INTEGRATED GRANULATION TECHNIQUE, TABLET COATING & LIQUID DOSAGE PROCESS PLANT TECHNIQUE

## INTEGRATED WET GRANULATION LINE

To ensure that the product is completely contained during processing and safeguard both the environment and operators, Raj Pharma Technologies integrated granulation lines in accordance with the latest Good Manufacturing Practices criteria. Moreover, enhanced yields, automation, closed material transfer, and efficient cleaning techniques all contributed to higher output.

- Closed process technology for grading, mixing, and granulating drying.
- An integrated granulation line for solid doses available from 2 liter to 1200 litre working capacity.
- Grinding, mixing, and setting forth. Less cGMP space needed.
- A smaller number of transfer procedures
- A decrease in the cost and requirement for operations.
- A larger yield.
- Improved containment for substances with a high potency.
- Vacuum transfer technology is used for material transfer.
- PLC controllers with HMI touch screens are sophisticated.



## COATING PAN

For a range of sectors, including pharmaceuticals, confectionery, foods, and others, conventional coating machines are used to sugar coat tablets, pellets, pills, candies, and other items. Additionally, they be used to roll, cook, and toast edible nuts and seeds.



# ORAL LIQUID SYRUP MANUFACTURING PLANT

Raj Pharma Technologies has designed and is producing a fully automated Oral Liquid Syrup Manufacturing Plant that includes a stirring system, an inline homogenizer, a sugar melting vessel, a basket filter and transfer pump, a syrup manufacturing vessel, an interconnecting pipeline, transfer pumps, an integrated automatic control panel, and a working platform. There is a 500-5000 litre batch size capacity available.



## PREPARATION VESSELS STORAGE TANK

Preparation vessels, reactors, and storage tanks have all been designed and manufactured by Raj Pharma Technologies, which has streamlined a procedure to meet customer demands.

- cGMP compliance in design.
- Up to 25,000 litres of capacity with a vertical and horizontal design.
- Vacuum, pressure, or atmospheric operation.
- Simple, heating and cooling jacket.
- Internal surface mechanical or electropolishing.
- Integrated Sterilisation in Place (SIP) & Cleaning in Place (CIP) as option.
- Instrumentation celebration & validation methods



## INLINE HOMOGENIZER/ STIRRER/ COLLOID MILL

Raj Pharma Technologies has consolidated a process in response to customer demands by designing and producing several types of inline homogenizers, stirrers, and colloidal mills.



## PRESSURE & FILLING VESSELS

Sterile filling tubes are used to collect the filtered sterile solution, and pressure vessels are utilised to convey the product to the membrane filter under nitrogen pressure. In the product filling room, they serve as holding vessels. They are made of stainless steel Type 316 L.

- All contact parts (AISI 316) and non-contact parts (AISI 304), with cGMP design.
- There are capacities ranging from 50 to 200 litres.
- Both the inside and outside were electropolished.



## OINTMENT CREAM/ PASTE GEL/ MANUFACTURING GEL



Fully automatic semi-solid manufacturing plants, such as those offered by Raj Pharma Technologies, are perfect for the pharmaceutical and cosmetic industries. They can be used to produce ointments, creams, lotions, gels, tooth pastes, emulsions, and homogenise products. Models ranging in working capacity from 50 to 5000 litres are available. The fully and partially automated ointment, cream, toothpaste, gel, and shampoo production facility is comprised of:

- Water phase vessel that has been predetermined.
- Pipeline connections.
- Oil, wax, and petroleum jelly phase vessel that has been predetermined.
- Pumps for Transfer (Lobe, Bump, and Metering Pumps)
- Vessel for a vacuum homogenizer mixer



# FILTRATION TECHNIQUE

## AGITATED NUTSCHE FILTER DRYER (ANFD)

Agitated nutsche filter dryers, or ANFDs, are essential to the production of fine chemicals and pharmaceuticals. Although they are multifunctional pieces of specialised machinery with a broad range of industrial uses, their main function is the filtration of active pharmaceutical ingredients (APIs) after crystallisation. The equipment's minimal filtrate hold-up, fewer employees and no product handling by hand. The Agitator moves up, down, in a clockwise and anticlockwise direction. This guarantees that the cake is thoroughly cleaned and re-slurred. Hazardous and toxic materials can be treated. Preservation of product purity. Product blending is possible prior to discharge. Solvents can be used to thoroughly and affordably cleanse the product. PLC-based total automation is available.

- From 10 litre to 5000 litre capacity.
- The atmosphere of inert gas can be maintained.
- Vacuum or pressure filtering is feasible.
- Cake contamination is minimal.
- Solvent recovery is extremely good.



## CENTRIFUGE

A centrifuge is a device that spins a fluid at a very high speed inside a container to separate fluids of different densities from their solid form. This device uses centrifugal force to separate all the components contained in the fluid. Generally speaking, it functions by forming a denser particle and substance that has the ability to rotate and migrate towards the centre. Additionally, the less dense object can be shifted, shifting its location to the centre of the machines. AISI 304 non-contact component and AISI 316 contact part in sizes 24", 36", 48", and 60" according to the cGMP model.

- Capacity 10 kgs to 600kgs



## ZERO HOLDUP FILTER PRESS

High-value liquids can have clear filtering quality thanks to the Zero Hold Up filter press. Toxic, dangerous, and explosive liquids can be simply filtered thanks to the press's encapsulated solids and cake filter assist. A filtration device called a Sparkler Filter Press is used in the beverage, chemical, and pharmaceutical sectors to filter liquids. Pressure feeding is the basis for how a filter press operates. Because of its important characteristics, the Sparkler Filter Press is regarded as the most efficient filtration device.

- All contact parts are AISI 316 and non-contact components are AISI 304 in a cGMP design.
- Provides crystal filtration by filtering particles as small as one micron.
- Completes the filtration process without holding up unfiltered liquid.
- Electrical and motors that are flameproof are available



## LIQUID DOSAGE PROCESS PLANT TECHNIQUE

### LIQUID DOSAGE PROCESS PLANT TECHNIQUE

**Multiple Cartridge Filter Housing-** The housing that encloses filter cartridges, bags, or baskets is called a filter housing. There are various sizes and designs of filter housings available. The following variables affect filter housing design: Rate of Flow. Working Pressure.

**Bag Filter Housing-** Bag filter housings are utilised in many different applications where a high flow rate and high dirt holding capacity are required of the filter. They are especially helpful in situations when the fluid has a high suspended solid load and a high flow rate.

**Vent Filter Housing-** These filters, which are installed on top of the storage tank to shield the liquid from different microorganisms and other specific contaminants, are referred to as vent filters. Vent filters are made to order and are available with or without a jacket depending on the needs of the customer.

**Basket Filter-** A basket filter works well for low contamination or coarse filtration. The screen insert that resembles a basket gathers dirt, which is easily cleaned out. However, the filter element can be modified to fit the thinnest metallic chips as well: Magnets can be added to the screen basket filter if desired.





**Multiple Cartridge Filter**

**Bag Filter Housing**

**Vent Filter Housing**

**Magnetic Filter**

**Basket Filter**

**Module Filter**-The housing that encloses filter cartridges, bags, or baskets is called a filter housing. There are various sizes and designs of filter housings available. The following variables affect filter housing design: Rate of Flow. Utilising Pressure.

**Duplex Filter**- Large dirt and debris particles are removed from gasoline, oil, or water pipeline systems using a duplex strainer, also known as a twin basket strainer. Two distinct strainer basket housings make up the typical duplex strainer system.

**Membrane Filter Holder**- Device with membrane filtration. Filter Funnels Membrane Funnels. It is advised to use this filtration device, which has a fritted glass support, for regular filtration of caustic liquids and particle removal from LC solvents.

**Conical Filter**- Conical filters are used in waste streams to collect and filter all kinds of material. To eliminate both larger, 1/4"-sized particles and micron-sized ones, a range of mesh screens is offered. Cone filters have shown great performance in a variety of applications, including sump pumps and well pumping.

**Leaf Filter**- Leaf filters, also known as tank filters, are made up of flat filtering pieces called leaves that are held up by a shell. The leaves feature filtering surfaces on both of their faces and might be round, arc-sided, or rectangular in shape.



**Module Filter**



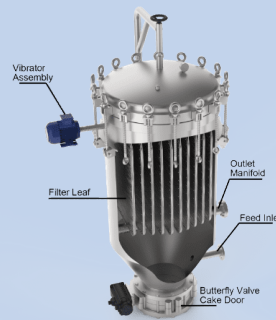
**Duplex Filter**



**Membrane Filter Holder**



**Conical Filter**



**Leaf Filter**



# ABOUT

We are manufacturer, supplier and exporter of process machines Cream/ Lotion/ Gel/ Cosmetic Manufacturing Plant, Liquid processing Plant and tools, which are mainly used in the pharmaceuticals, Cosmetics, Foods and consumer care Industries. Our focus is to create effective and smart innovations, and we are constantly providing cost-effective and better technology to Healthcare, Consumer care and Cosmetic and all other related Industries.

# VISION

We aspire to become the healthcare industry's most esteemed and invaluable company, recognized for our unwavering commitment to delivering quality and innovation. Our approach is characterized by passion, precision, and persistence – a trio that fuels our dedication to excellence.

Passionate about our work. Precise in what we do.  
Persistent about maintaining quality.

# MISSION

Our mission is to achieve growth through the continual implementation of quality methodologies and active employee engagement. We aim to craft surface finishing systems for the global product manufacturing industry that bring joy to both clients and employees

# VALUES

Our values are to guide our employees to serve our clients with five key elements given below.



## INTEGRITY

We work with integrity to serve our clients It is all about "The quality of being honest and having strong moral principles



## QUALITY

The quality we provide to our clients It simply means that the products meet and exceed all requirements, standards and specifications



## COMMITMENT

We have a highly committed and skilled team and we are dedicated to what we do



## INNOVATION

Our team works with innovation to improve the production, delivery techniques, equipment, and service capability.



## SUSTAINABILITY

We make sustainable products that minimize negative environmental impacts while conserving energy and natural resources

