



ASME "U" & "R" STAMP
AUTHORIZED MANUFACTURER



BEW Engineering Pvt. Ltd.

(A group company of Bifriends Engineering Works)

ROTOCONE VACUUM DRYERS

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This multipurpose drying unit is extremely useful for uniform and low temperature drying of heat sensitive chemicals, pharmaceutical formulations, fine chemicals etc. It has double conical vessel with rotating system and vacuum solvent recovery system. As the Dryer is rotating, there is no charring or retention of product, the result is that one can change the material to be dried without much a do. The Dryer rotates at a very low speed (5 to 15 rpm) and thus has very low wear and tear and requires very little maintenance. This machine is ideal for crystalline products, granules used in chemical, pharmaceutical and food industries.

Loss of material is effectively controlled by a specially designed pilot filter fitted on the vacuum side. The finish is up to 220 Grits. The capacity of the machine ranges from 20 liters to 10,000 liters.

The Energy Saver: This equipment is working under vacuum. Due to vacuum, the drying is enhanced resulting in fast drying, cutting the process time, which saves heat energy and electric energy.

Salient Features:

1. GMP models for final pharma products.
2. Totally sealed and protected from contamination.
3. Quick loading & unloading.
4. Fast drying.
5. Energy saving.
6. M.O.C.: M.S. grades / S.S. grades / Hastelloy.
7. Choppers can be provided.
8. CIP is very easy and efficient.

TECHNICAL DATA FOR RCVD

| Model No. | Total Volume (Lits) | Working Volume (Lits) | Overall Dimensions | | | Power (H.P.) |
|--------------|---------------------|-----------------------|--------------------|--------|--------|--------------|
| | | | L (mm) | W (mm) | H (mm) | |
| BEW-RCVD- 1 | 100 | 50 | 2600 | 1800 | 2200 | 2 |
| BEW-RCVD- 2 | 200 | 100 | 2800 | 2000 | 2400 | 2 |
| BEW-RCVD- 5 | 500 | 250 | 3400 | 2200 | 2600 | 3 |
| BEW-RCVD- 10 | 1000 | 500 | 4000 | 2400 | 3000 | 5 |
| BEW-RCVD- 20 | 2000 | 1000 | 4400 | 2500 | 3200 | 7.5 |
| BEW-RCVD- 30 | 3000 | 1500 | 4800 | 2600 | 3300 | 10 |
| BEW-RCVD- 40 | 4000 | 2000 | 4900 | 2800 | 3500 | 12.5 |
| BEW-RCVD- 50 | 5000 | 2500 | 5000 | 3000 | 3600 | 15 |
| BEW-RCVD- 60 | 6000 | 3000 | 5200 | 3200 | 3700 | 15 |
| BEW-RCVD- 60 | 8000 | 4000 | 5500 | 3500 | 4000 | 20 |

NOTE : Design & Dimensions of above are subject to change without notice.

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CANTILEVER ROTOcone VACUUM DRYER



This is an unique innovated vacuum dryer which is space saving compared to the conventional Rotocone Vacuum Dryer. This dryer has a single stand on one side only whereas conventional Rotocone Vacuum Dryer has two side stands on either side which occupies more space. This unit is very much useful for drying high sterile pharma and high toxic chemical products along with solvent recovery system under vacuum.

Salient Features:

1. Compact design to save the space.
2. Choppers can be employed.
3. Inbuilt mechanical seal.
4. Ideal for high purity sterile process and clean room setup.
5. Suitable for chemical, Pharmaceutical, and biotech industries.
6. Suitable for GMP standard and FDA license.
7. M.O.C. : M.S. Grades / S.S. Grades Hastelloy / Titanium etc.
8. Capacity - 20 Ltrs. to 2,500 Ltrs.
9. Suitable for integration with Isolator barrier system.

PILOT PLANT AVAILABLE FOR TRIAL

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ROTOCONE VACUUM FILTER DRYER

INTRODUCTION

BEW Rotocone Vacuum Filter Dryer is uniquely designed to Filter slurry under pressure or vacuum and to dry wet cake under vacuum only, for products which cannot be agitated either due to crystal breaking limitation or due to static charge generation limitation. It ensures clean and fast filtration. It is also possible to filter at a constant temperature, either low or high. Thorough washing of cake is done with controlled quantity of wash liquid, which can be recovered, reducing washing cycles and effluent discharge.

The closed operation ensures odourless and contamination free working conditions. Our unique design saves costly solvents, power, labor, floor space and time. It is well suited for Sterile applications. It provides economical and pollution free working environment.

BEW Rotocone Vacuum Filter Dryer does not require extensive foundation. It can be fitted on lugs or platform.

OPERATIONS

The operation of the unit is made quite simple and can be monitored by one person who is familiar with the filtration and drying process. Slurry is charged into RCVFD by gravity or with the help of slurry pump.

FILTRATION

During the slurry charging period, the filtrate will pass through filter cloth by gravity. The filtration process gets slowed down showing that the cake formation is complete. To enhance the filtration process, you can apply pressure from top or vacuum from bottom.

WASHING

Wash liquid is sprayed into the chamber on the filter bed, Slurry is formed by rotating the equipment which washes the cake significantly. You can do washing process till the desired result is achieved by reslurrying and rotating the Rotocone vacuum filter dryer.

DRYING

After final wash and filtration the heating medium is fed into the jacket and vacuum is applied to suck away the fumes of moisture. The choppers play significant role in enhancing the drying process in case of lump forming products. During drying process, choppers as well as RCVFD is rotating. The slow rotation of RCVFD alongwith high speed of choppers helps to enhance



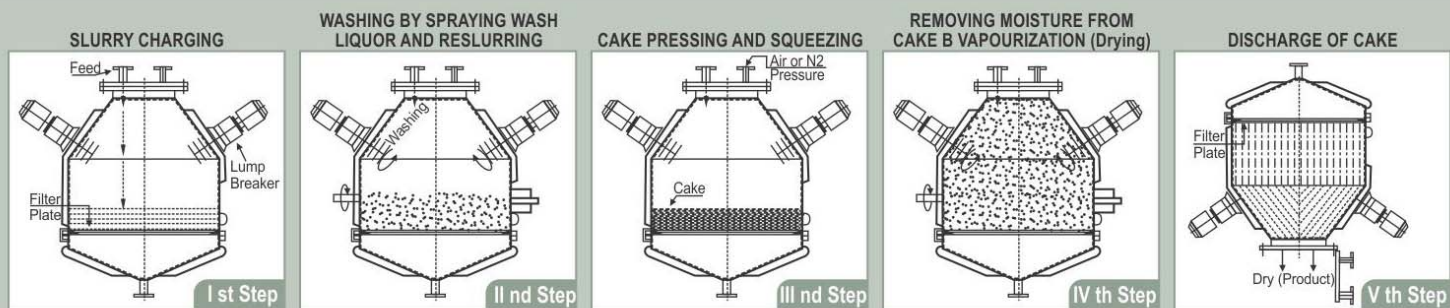
drying process further. A dust trap with filter bag is provided to restrict the out flow of powder. Air purging system is provided to clean the filter bag periodically.

PRODUCT DISCHARGE

The product is discharged completely through discharge port keeping the equipment in vertical inverted position such that the filter plate side is at the top. There is almost no product hold up.

SALIENT FEATURES

1. Single equipment for filtration and drying for cakes & powders. So space & labor is saved. Handling is reduced.
2. Totally sealed and protected from contamination.
3. Fast filtration and drying as vacuum is employed. So energy is saved.
4. Quick loading & unloading. So time is saved.
5. Provision of online sampling without breaking vacuum.
6. Compact design gives excellent appearance to equipment.
7. Designed and Manufactured to suit critical hygienic conditions of pharma and food industries. (Confirming to GMP standards)
8. The unit is completely air tight hence no pollution in environment.
9. Self emptying with minium product hold up.
10. Useful for full solvent recovery.
11. Dust free operation.



(Stationary R.C.V.F.D.) Feed Slurry is charged into R.C.V.F.D. preferably by gravity flow from Reactor installed above the R.C.V.F.D. or by slurry pump. Cake will form on filter bed.

If necessary, after first filtration, wash liquor can be sprayed on filter bed, and cake can be reslurried by manipulation of rotating R.C.V.F.D. movement, filtration can be then repeated. As many washing as necessary can be done till cake is free from all impurities and the quality is within acceptable limits.

Cake can be pressed applying Air or N2 pressure and some quantity of filtrate can be removed thereby. Final moisture content may be between 5% to 25% depending on the characteristic of solids in the slurry.

Drying : Filter unit can be provided with limpet coils or Jacket for heating of the vessel. In this process vacuum is applied on the top of the cyclonic Bag Filter, which will accelerate the drying process. The slow movement of R.C.V.F.D. along with high speed Chopper helps faster drying. Vapours will be generated inside R.C.V.F.D. which can be extracted and condensed by heat exchanger just above the receiver.

After Drying is over stop the R.C.V.F.D. in vertical inverted position by inching facility available on the Control Panel as shown in the Fig. (Keeping Filter media at top) Now open the hand hole flange and collect dry powder in the tray or container.



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