

ROTARY VACUUM PADDLE DRYER :

Rotary Vacuum Paddle Dryers is utilized in varied industries to extract and obtain dry powder either from solutions or wet cake. Operational efficiency is high and the costs incurred are low with this dryer when compared to other dryers in the market. The mechanism, involves a closed system wherein hot water, steam, or hot fluid is used as a heating medium within the jacket, in the hollow paddle as well as in the hollow shaft. This paddle dryer includes vacuum pump, condenser, receiver and dust collection. Wet feed receives good heat transfer with the constant agitation triggering heated rotating paddles and minimum clearance between scrapers and heated walls. This process gives rise to the evaporation of moisture or solvent, which makes the wet material dry to the essential level. Vacuum is used to remove the vapors that are formed already. Further, the dust problems are eradicated with the absence of large air flows, which also results in low energy consumption. These vacuum paddle dryer (RVPD) are highly appreciated in the market.



Rotary Vacuum Paddle Dryers (RVPD) is a cylindrical jacketed vessel with a central agitator having specially designed blades. The blades of this Rotary Vacuum Paddle Dryer (RVPD) are so designed that they sweep the entire internal surface and at the same time turn the material so that all the particles are come in contact with the heated surface.

GMP construction – Cylindrical, horizontal vessel with flat welded rear cover and a hinged flat front door opening up over the entire vessel diameter. With the door open the internals of the machine are fully accessible for cleaning and inspection purposes All surfaces in contact with the product such as the vessel, rear cover, front door, agitator and vapor filter are heated, providing very efficient heat exchange. To provide for good heat exchange and discharge characteristics the cylindrical vessel, the rear cover, the front door and the agitator are machined to assure the smallest possible tolerances between agitator and vessel walls. The agitator is installed at the rear of the dryer, supported on one side of the vessel only.

The agitator is designed to meet the requirements of this particular dryer type to assure good and even mixing action throughout the dryer volume, also in reverse operation. The agitator provides very good emptying characteristics, and at the same time reduces friction onto the product to a minimum to prevent local overheating as well as to prevent directional thrust or local product compression. A double mechanical seal is installed on the rear cover, well accessible for cleaning and maintenance purposes. A spacer in between the seal and the agitator drive permits removal of the seal without disassembling the drive. Dry or wet running mechanical seals may be installed. The central agitator shaft is supported on the one end bearings housed in bearing housing in such a way that the alignment remains always intact. This central agitator is driven by means of a Motor & Gear box through the bull Gear. The horizontal shell is jacketed to heat the shell with steam / hot water or any other thermal fluid. Limpet coil is provided instead of jacket if the heating media is fluid.

SALIENT FEATURES :

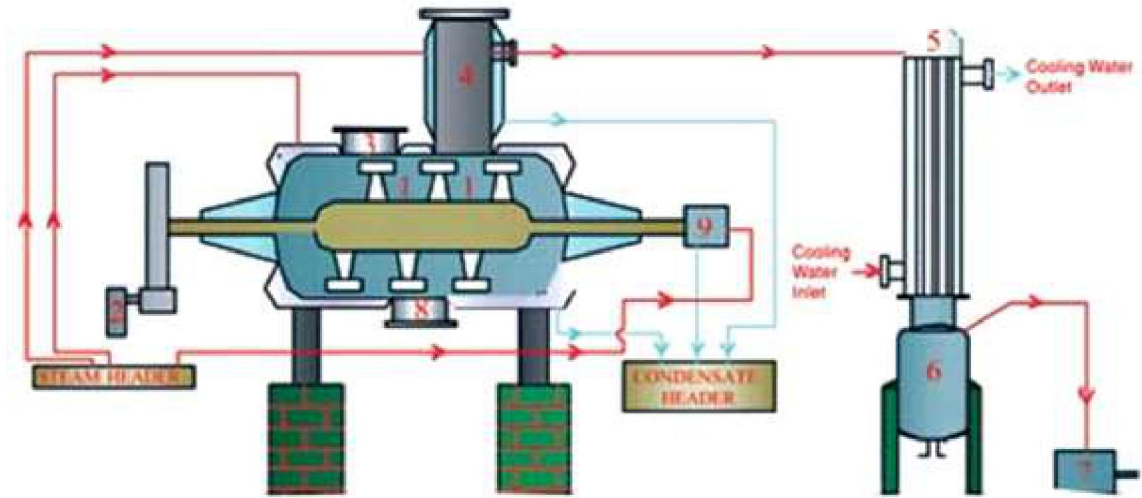
- Drying optimization is a process that is carried out by means of external and internal heating.
- The large heat transfer area available on the wide paddles and hollow shaft enable and equip maximum heat transfer efficiency to the product.
- External heating is generated through jacket or limpet coils, while internal heating through a hollow shaft, along with a set of hollow paddles. These hollow paddles are equipped with scrapers that have very low gap from wall in order to maximize heat transfer. Scrapers move material to all parts of the dryer and additionally help in discharging the material.
- There is a hollow rotating agitator shaft that imparts heat to the product and scrapes the shell wall tumbles. This facilitates for maximum heat transfer and discharge product whenever required.
- Mechanical seals at Shell ends/Stuffing Box.
- The vessel is well designed to take temperature stresses in the process of vacuum drying. Thereby, there is low power consumption with the use of helical bevel gear box.
- Special floating bearing design to combat temperature stresses. So as to remove the condensate formed by steam heating in the hollow shaft, special rotary joints are also designed to introduce heating media in the hollow shaft.
- Product Filter is very efficiently used to arrest valuable product carried away with the vapors in a filter bag. The arrested product particles are thrown back into the dryer by reverse flow of pulsating air. Generally, the product filters are heated to avoid condensations of vapours in the filter bag.
- User friendly discharge valve design provides vacuum tight closing when the material is processed. The quick opening facility lever facilities filling of bags when material discharge and packed.
- Breaker bars are incorporated in the RVPD to break the lumps when the product forms lumps at some stage in drying process.
- Insulation with Cladding will provide on heating jacket/Limpet coil



SALIENT FEATURES (RVPD) :

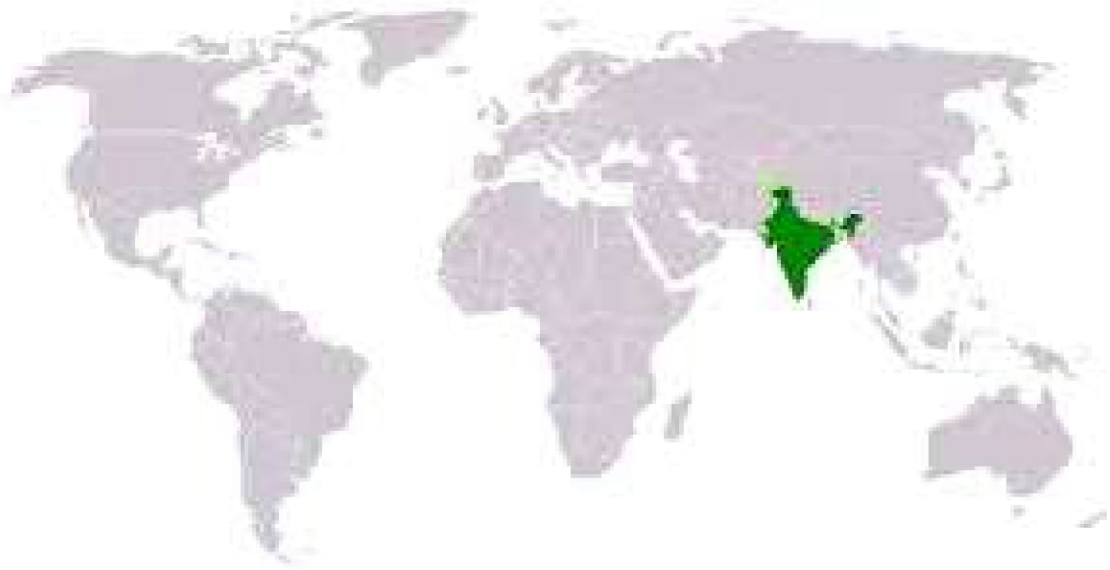
- Very suitable for drying materials which are heat sensitive, as low temperature for drying can be maintained by high vacuum
- Lowest energy consumption compared to any other batch type dryer due to higher differential temperatures.
- Higher Thermal Efficiency.
- Almost 100% recovery of solvents.
- Heating Temp.: From 30°C to 300°C.
- Evaporation Rate : 4.12 Kg/ Hr Sq. Meter of Heating surface area of water at heating temperature of 100°C.
- Limpet coil could be provided instead of jacket if the heating media is fluid.
- Breaker bars of approximately same length as dryer shell can be provided if lump formation is expected during drying.

FLOW CHART OF ROTARY VACUUM DRYER :



TECHNICAL DATA :

Model	Total Volume (LTS)	Working Volume (LTS)	Heating Surface Area (SQ. MTS)	Power Required for Agitator Motor (HP)	Approx. Size of Dryer (Dia x Length)
RV-RVPD500	500	250	3.2	7.5	700 x 1400
RV-RVPD1000	1000	500	6	10	900 x 1700
RV-RVD1500	1500	750	7.7	10	1000 x 2000
RV-RVPD2000	2000	1000	8.7	15	1100 x 2100
RV-RVPD2500	2500	1250	10	20	1200 x 2250
RV-RVPD3000	3000	1500	11.6	20	1260 x 2400
RV-RVPD4000	4000	2000	16.7	30	1200 x 3600
RV-RVPD6000	6000	3000	17.7	40	1600 x 3000
RV-RVPD8000	8000	4000	23.5	50	1600 x 4000
RV-RVPD10000	10000	5000	27.3	60	1700 x 4400



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**RAVI INDUSTRIES
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OFFICE : UNIT-B-17 & 19, ADKE COMPOUND, LBS MARG, VIKHROLI (WEST), MUMBAI -400083
Call Us :- 91-9833297671 / 9819030056 WhatsApp :- 91-983329761
eMail Us :- raviinternational01@gmail.com / info@ravipharma.in
Website :- <https://www.ravipharma.in> / <https://ravipharma.online>

FACTORY : A9/B-23 &24, PADMINI COMPOUND, KALHER PIPE LINE ROAD, PURNA, BHIWANDI-406125