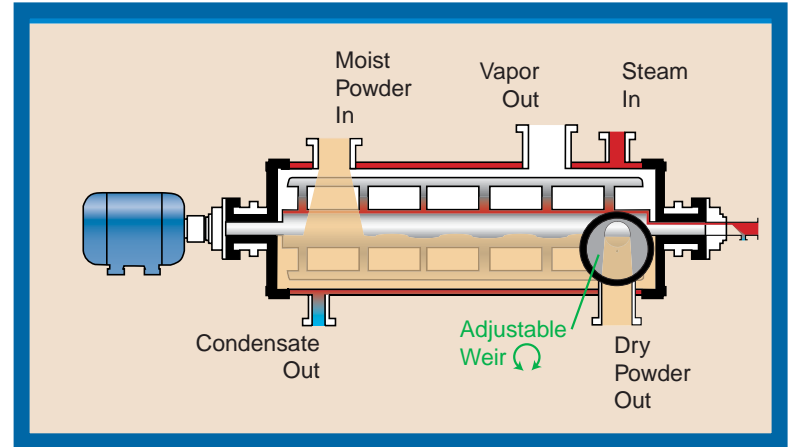


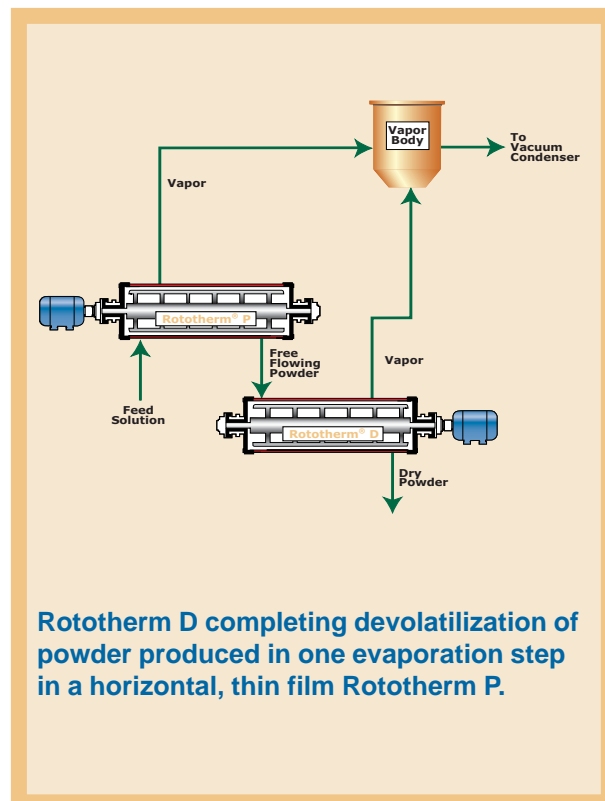
## Continuous Vacuum Dryer Rototherm<sup>®</sup> D

The Artisan Rototherm D is a jacketed, horizontal, mechanically-agitated dryer designed to continuously remove moisture or solvents from powders and bulk solids under vacuum especially in applications where long residence times, up to several hours, are required.

Moist powder or bulk solids are fed into the Rototherm D at one end. The horizontal shell and the specially designed rotor are heated by steam or hot oil. The powder or bulk solids are agitated at low speed by the helical mixing bars which move the solids continuously to the discharge end of the dryer in a plug flow. Operating under vacuum minimizes the drying temperature and avoids thermal degradation of heat sensitive materials. An adjustable weir at the discharge end controls the level and quantity of solids in the dryer between 25% and 75% full. You control the residence time in the dryer by adjusting this weir or the feed rate.



The dry powder or bulk solids discharge over the weir and are collected either batch wise in a sealed vessel or continuously after passing through a proprietary vacuum lock vessel.



### Features and Benefits of the Rototherm D

- Low temperature
- Low shear
- Drying time adjustable from 20 mins to several hours
- Continuous process
- High heat transfer area/volume ratio

### Applications include:

- Drying heat sensitive powders and bulk solids
- Drying shear sensitive powders and bulk solids
- Diffusion controlled drying applications
- Further dewatering readily dried sludges and presscakes
- Solid state polymerization/polycondensation
- Sublimation of powders

Over 500 Rototherms evaporate and dry a wide range of chemical, polymer, pharmaceutical, food and related products. The Rototherm family includes:

### Thin Film Technologies

Rototherm E - Artisan's well-known and highly regarded horizontal, thin film evaporator designed to provide solutions to a wide range of difficult separations involving heat sensitive, foaming, fouling or viscous materials.



ProTherm - A portable, cart-mounted, continuous evaporation system containing a lightweight version of the Rototherm E designed to provide an alternative to large, rotary evaporators for solvent recovery and purification of heat sensitive materials in laboratories and pilot plants.

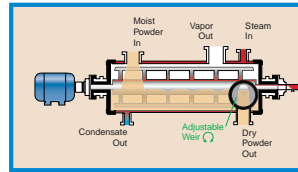
Rototherm P - A modified version of Artisan's Rototherm E designed to evaporate many non-sticky materials continuously to a free flowing powder in a single step.



Rototherm R - A version of Artisan's Rototherm E designed with multiple feed points, multiple temperature zones and simultaneous evaporation to provide maximum flexibility for carrying out complex, continuous reactions.

### Bulk Solids Technologies

Rototherm D - A jacketed, horizontal, mechanically-agitated dryer which continuously removes moisture or solvents from powders and bulk solids under vacuum, especially in applications requiring long residence times.



*Thin Film Rototherm heat transfer areas* range from 1/4 to 200 sq. ft. with single unit evaporation rates from several to 15,000 pounds of solvent/hour. Standard sizes include 1, 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 100, 120, 150, 175 and 200 sq. ft.

*Bulk solids Rototherm heat transfer areas* range from 2 to 1000 sq. ft. with single unit evaporation rates from 20 to 12,000 pounds of solvent/hour.

*Custom sizes* are available for both thin film and bulk solid versions. Use steam or hot oil as the heating medium. Materials include stainless steel (300 series and Duplex), carbon steel, nickel, Inconel®, Monel®, Hastelloy® and titanium.

### Experience/Pilot Testing/ Rentals

Because each application is unique, Artisan selects the optimal design based on extensive experience and process-specific data from our pilot facility. Artisan also has pilot plant scale rental equipment available when the application or customer preference requires testing at the customer's site.

- problem definition ❖ technology selection ❖ process design and optimization
- bench scale testing ❖ in house or at site pilot scale testing
- equipment design and specification ❖ complete system manufacture
- start-up assistance ❖ operator training ❖ after sales support

**For further information call our sales team at:**

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Since 1934 Artisan experts have led the way, providing integrated solutions to the most challenging separation problems. We combine an innovative approach with an unparalleled depth of knowledge to develop cost effective, practical solutions. Designed and built to exacting standards, our powerful technologies have enabled us to succeed where our competitors have failed. That is why the Artisan name is synonymous with unrivaled product quality and level of service.

