

Trident Rotary Drum Dryer

The **Trident Rotary Drum Dryer** is an efficient drying system for high volume applications. The system design is based on a rotating drum with an internal disintegrator unit, and a heating element. The dryer achieves up to 90% dry matter in a single pass and significantly reduces the volume of the processed material.

The heavy duty dryer is designed for continuous drying and uses natural gas as heating source. Its thermal efficiency of 60-70% is among the highest in the industry. Compared to belt, paddle or disc dryers, the Rotary Drum Dryer requires very low energy inputs and maintenance.



Working Principle

The feedstock is received in the feed hopper where a mixing device disrupts the structure of the material. A double screw auger then sends the mixed material into the rotary drum, which is equipped with lifting flights to ensure effective movement of the solids. The drum's rotation and a high speed mixer, mounted on the internal disintegrator shaft, break up the material into smaller particles, increasing the surface area for better heat exposure. This process continues until the dried material is discharged as uniform particulates, approx. 1-5 mm in size. An off-gas system ensures the treatment of the exhaust gas before it is released.



Advantages

- The internal disintegrator helps prevent clumping and ensures a very uniform output product.
- High thermal capacity allows for an effective heat transfer, resulting in low operating costs.
- The ability to control the moisture content allows the operator to meet application specific output requirements.
- The system's simple working principle and HMI controls ensure ease of operation and simple maintenance procedures.
- Disintegrating the solids ensures that the heat is applied homogeneously and recycling hot exhaust air reduces the operating costs.

Applications

The Rotary Drum Dryer can be used for a variety of bulk solids such as biomass, biosolids, fertilizer, municipal waste, industrial sludges, food products and more.

Specifications

Model	Capacity	Power	Dimension W x L x H
TRD-500	0.5 TPH	26 KW	146" x 339" x 142"
TRD-1000	1 TPH	52 KW	182" x 414" x 178"
TRD-2500	2.5 TPH	137 KW	284" x 571" x 205"

The technical specifications are estimates. Confirm details with your Trident representative.



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