

Advantages of Super Rotary Dryer

■ No bound issue

The sludge is very sticky, and has a special adhesive-phase reaction during the drying process (water content around 60%). During this short period, sludge is easily caking, with hard surface, yet still mud state inside. There is a special disintegrating and mixing device inside super dryer, which rotates with high speed during drying process, and breaks the adhesive phase sludge into small particles, thus increase the drying efficiency.

■ High thermal capacity coefficient and thermal efficiency

After disintegrator and rotation of dryer, the overall heat transfer coefficient is increased to 2~3 times of the normal rotary dryer ($Ua=200\sim600W/m^2K$) .

■ Controllable water content in products, wide application

Since the exhaust gas temperature change as evaporation varies, relevant control method is designed on the device in order to control and manage the water content in the products. Thus, the device can be applied to different types of material, such as floe and lumps.

■ Simple operation, easy maintenance

The device is with simple structure and few components need to be detected, thus maintenance is easy. Operation is through touch screen. Failure will be indicated in the screen.

■ Energy saving, high economic value added

When the material is disintegrated, the contact area of the material and hot air is increased, so that hot air can be fully utilized. Moreover, the exhaust hot air is reused, which greatly reduces energy consumption. The particle size of dried products is 1-5mm with high heat value, can be used as fuel after certain treatment.

Super Rotary Dryer With Disintegrator

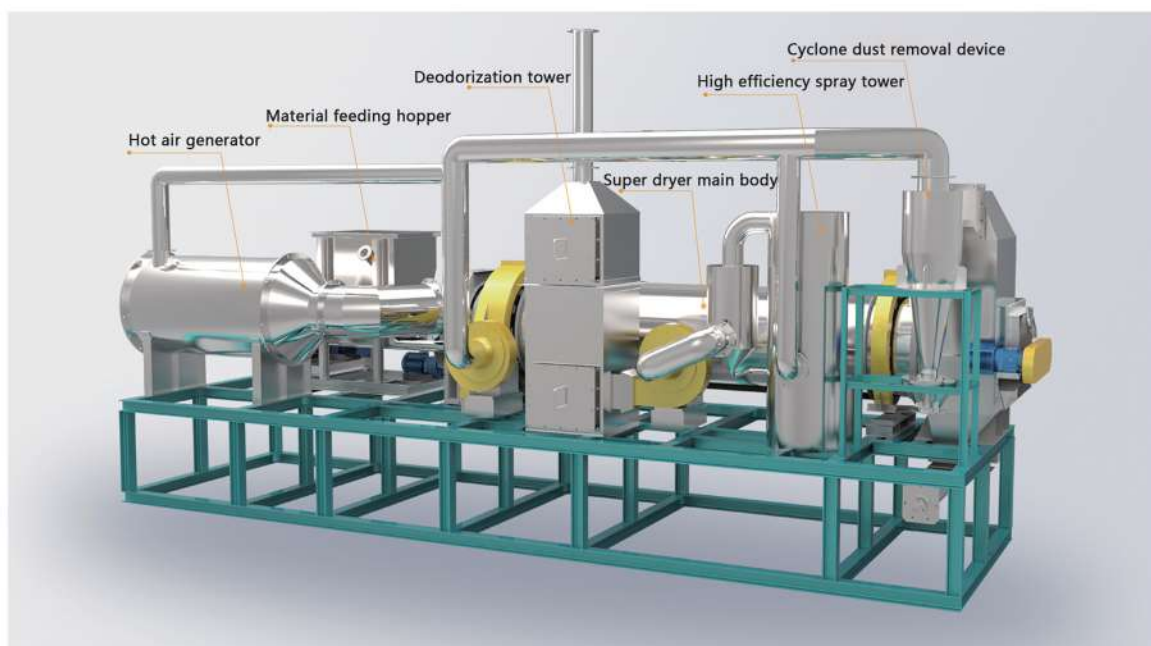
Brief Introduction

Super Rotary Dryer is a newly developed sludge recycling technology by Benenv. This device uses clean energy as heating & drying energy, and direct heating method, during which no dioxins and other toxic substances are produced. Compared with direct sludge incineration, super rotary dryer requires less energy with low carbon emissions, in line with national low-carbon environmental requirements.

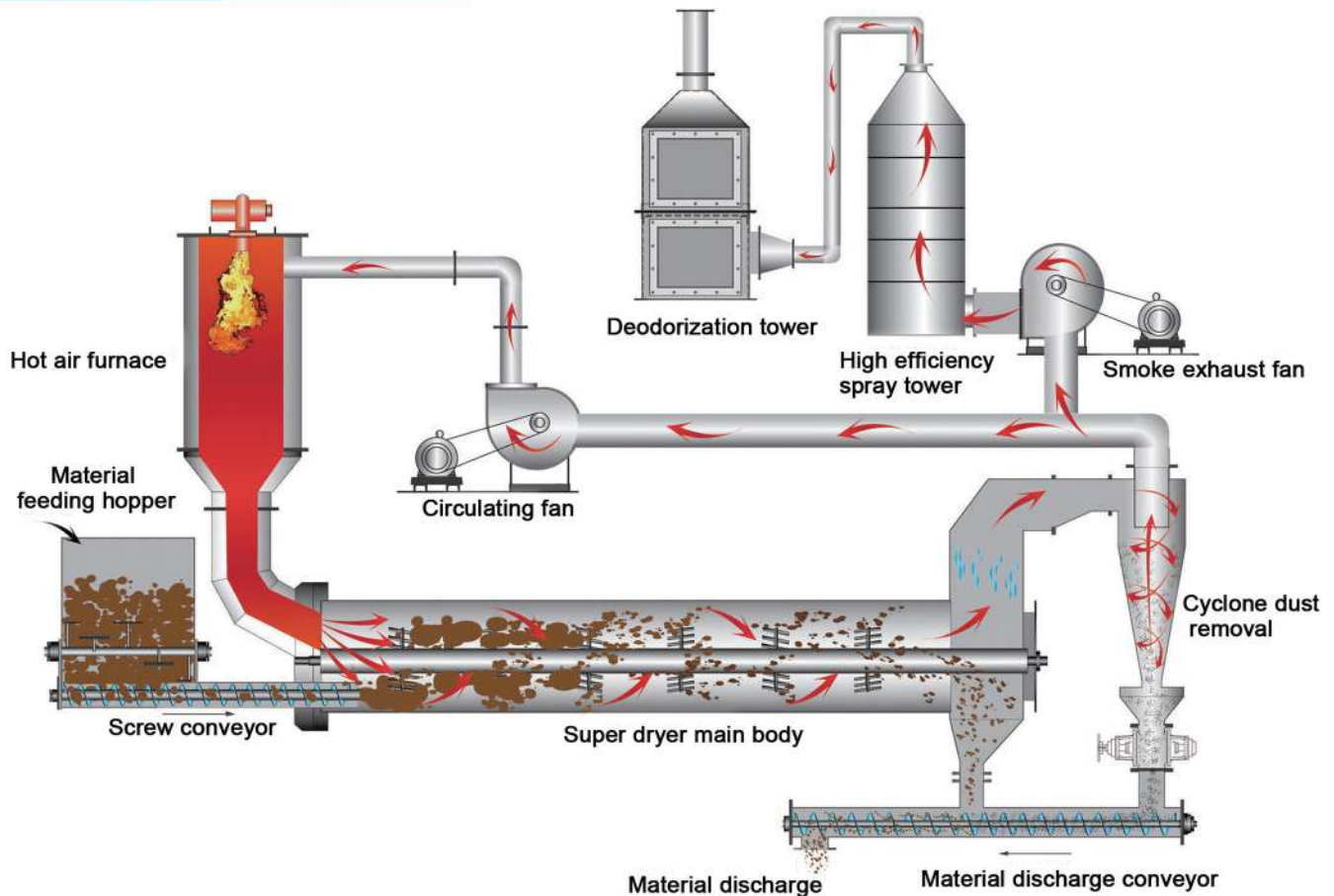
■ Unique Disintegrator, uniform granular powder

There is a unique disintegrating device inside the drying drum of super dryer. The disintegrating and mixing device can crush and disperse the adhesive substance and lumps, thus increasing hot air contact rate and ensuring dried products with uniform quality (particle size around 1-5mm).

Super Dryer Main Body(3D)

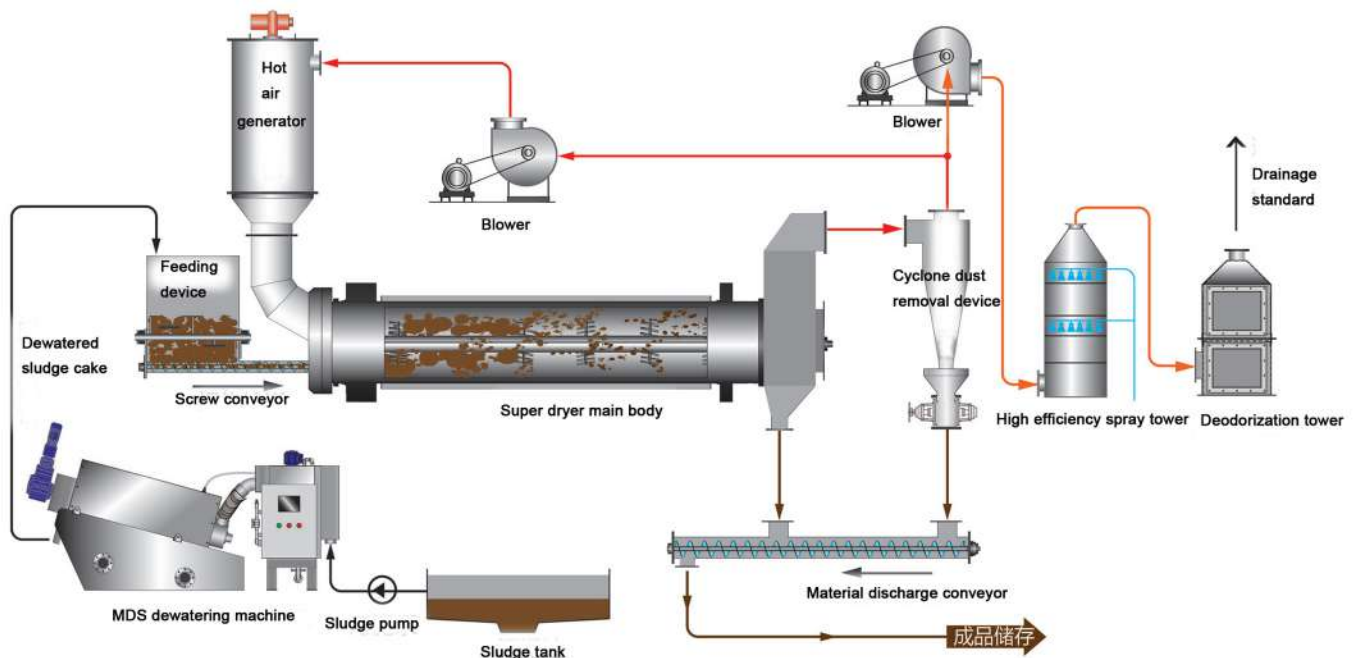


Drying Principle



After raw material is transported to feeding hopper by screw conveyor, mixing device inside the hopper initially disintegrates and mixes the material, which then will be transported by double-screw conveyor. During the process, the material will be further disintegrated and mixed before transported to dryer main body, which deeply disintegrates and mixes the material. Inside the dryer main body, during the movement of the lift, the material is moved circularly from the bottom to the top inside the dryer main body. When it drops from the top due to gravity, it is crushed into small particles by the disintegrating and mixing device with a high rotation speed. This process continues until the dried material is discharged outside the dryer. The exhaust gas is let off after treated by off-gas treatment system.

Drying Process Flow

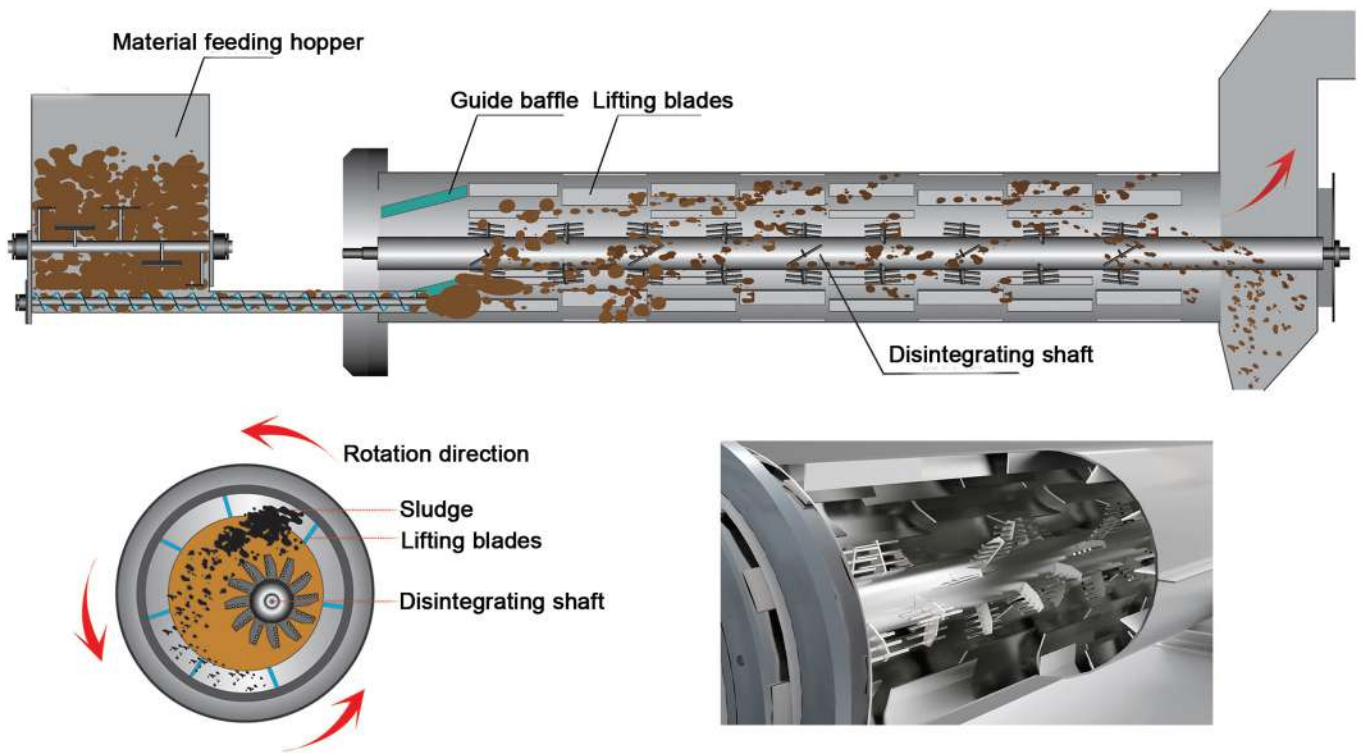


Similar Equipment Comparison

(Take 1 ton/h speed evaporation of water as an example)

Item	Belt dryer	Paddle dryer	Disc dryer	Indirect	Super rotary
Thermal	30%	30%~40%	30%~40%	40%	60%~70%
Power	70Kw/h	65 Kw/h	60 Kw/h	55 Kw/h	50 Kw/h
Exhaust	200m ³ /min	60m ³ /min	60m ³ /min	140m ³ /min	120m ³ /min
Water content	20%~30%	30%~40%	20%~30%	10%~20%	10%~15%
Heat transfer	Steam/hot air	Steam	Steam	Hot air	Hot air
Operating	High	Medium	High	High	Low
Investment	Medium	Medium	High	Medium	Medium

Dryer Structure

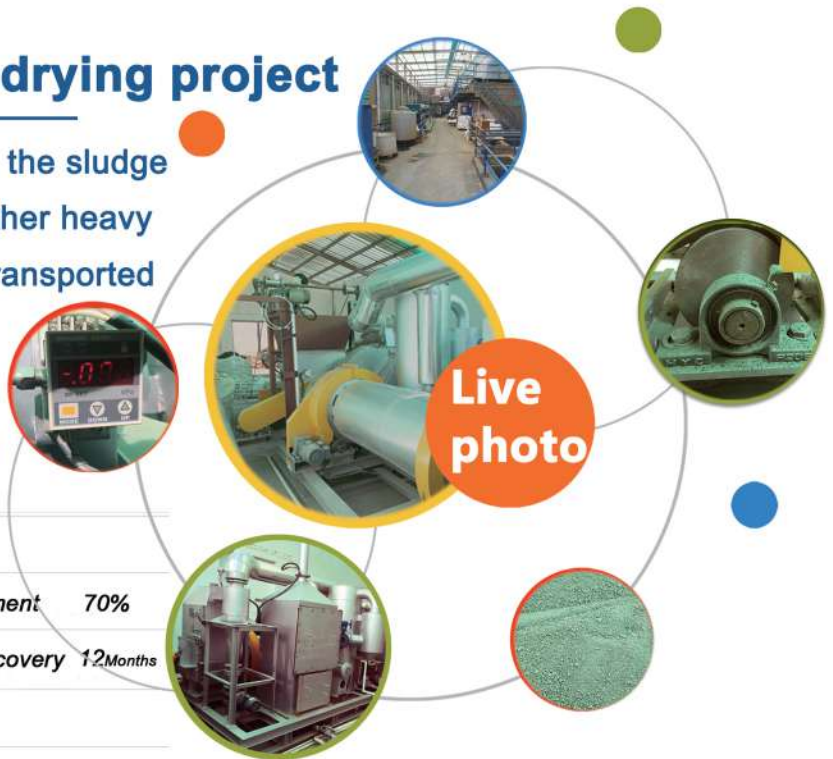


Standard Specifications

Model No.	BRD-150	BRD-300	BRD-500	BRD-1000	BRD-2000	BRD-2500	
Water vaporation (kg/h)	150	300	500	1000	2000	2500	
Energy consumption(kW)	11.5	18	26	52	102	137	
Machine weight (ton)	6.5	10	17	28	65	76.5	
General dimension	W(mm)	2,215	3,500	3,700	4,600	5,800	7,200
	L(mm)	7600	8000	8600	10500	12000	14500
	H(mm)	2,270	3,200	3,600	4,500	4,600	5,200

Electroplating sludge drying project

The project is located in Shanghai, the sludge type is electroplating sludge and other heavy metals, the cost is 2,500 ¥ / ton if transported to the waste disposal center, but after drying, the overall reduction of sludge is 70%, greatly reducing the cost of disposal.



Project Overview

Capacity	4Ton/D	Overall decrement	70%
Inlet content	75%	Period of costs recovery	12Months
Outlet content	20%		

Dyeing sludge drying project

The project is located in Shanghai, the sludge type is printing and dyeing sludge, the cost is 6,000 ¥ / ton if transported to the waste disposal center, but after drying, the overall reduction of sludge is 80%, greatly reducing the cost of disposal.



Project Overview

Capacity	5Ton/D	Overall decrement	80%
Inlet content	80%	Period of costs recovery	10Months
Outlet content	15%		