Professional
Powder Equipment
Manufacturer

TENCAN

Product Brochure

Powder Equipment
Milling Technology
Powder Materials

LARGE GRINDING EQUIPMENT

Cell grinder - turbine grinder

WRMJ

Industrial turbine cell grinder for wet ultrafine grinding. High-speed alloy discs ensure efficient cell disruption in biotech.

https://www.planetaryballmills.com/products/grinding-series/large-grinding-equipment/cell-grinder-turbine-grinder.html

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Product Overview

Industrial turbine cell grinder for wet ultrafine grinding. High-speed alloy discs ensure efficient cell disruption in biotech.

Product Introduction

Cell mill-turbine grinder is an industrial-grade equipment specially designed for wet ultra-fine grinding. It adopts a multi-stage alloy turbine disc structure and combines gravity and fluidization technology. The kinetic energy of high-speed rotation drives the grinding media to mix with the materials, forming a vortex motion to achieve efficient shearing, squeezing and collision between particles. Its core design optimizes energy efficiency and grinding effect, and is suitable for ultra-fine processing of non-metallic mineral powders, new energy materials (such as lithium iron phosphate) and other fields. The discharge fineness can be accurately controlled to 0.5-5μm, and the particle size distribution is narrow, meeting the needs of continuous production.

This equipment is mainly used in the following fields:

1. **Non-metallic mineral powder processing** : Wet ultra-fine grinding of mica, talc, graphite, calcium carbonate and other materials to increase product added value 1 10
2. **New energy materials** : Nanoscale dispersion and homogenization of batteries and electronic materials such as lithium iron phosphate, titanium dioxide, and magnetic ferrite 1 9
3. **Chemicals and Pigments** : Efficient grinding of zinc oxide, aluminum hydroxide, pigments, etc. to ensure particle size uniformity and dispersion stability 1 8
4. **Environmental protection and industrial waste treatment** : Refined reuse of industrial by-products such as fly ash and coal-water slurry.

Wet ultra-fine grinding of non-metallic mineral powders such as mica, talc, graphite, rare earth,

lithium iron phosphate, zinc oxide, aluminum oxide, aluminum hydroxide, magnesium hydroxide, brucite, bentonite, kaolin, sulfur, calcium carbonate, coal water slurry, barite, fly ash, titanium dioxide, ferrite, magnetic ferrite, pigments.

Technical parameters

Device model	Equipment power	2 m m Fineness	Solid content%	Pulp output/ton/ H	Power consumptionKW/T/ H	Wear/yuan/T
WRMJ200	30KW	D60-D98	50-70	0.05-0.2	38-155	1.1-5.1
WRMJ500	75KW	D60-D98	50-70	1-1.5	35-105	2.2-6.6
WRMJ1000	11OKW	D60-D98	50-70	1.5-2.5	36-115	1.6-5.5
WRMJ1500	160KW	D60-D98	50-70	1.8-3	37-124	1.7-4.9

Working Principle

- **Turbine drive and fluidization** : The high-speed rotation of the turbine disk drives the grinding media (such as ceramic beads or alloy balls) to mix with the slurry, forming a vortex motion, which generates strong shearing and extrusion forces between the media and material particles.
- **Gravity synergistic grinding** : The material flows from top to bottom and is refined step by step through the multi-stage turbine disc. The force of gravity enhances the frequency of collisions between particles and improves grinding uniformity.
- **Dynamic separation and discharging** : After grinding, the material is discharged through a dynamic screen or gap separation system to ensure stable fineness of the finished product and avoid over-grinding.
- **Temperature control protection mechanism** : Built-in cooling system and temperature sensing device to prevent material denaturation due to high temperature during the grinding process and ensure the activity of heat-sensitive materials.

Product Features

Cell mill - turbine grinder integrates gravity and fluidization technology. It has a multi-stage alloy turbine disc structure, which saves cooling devices and reduces the shearing effect of the medium and slurry on the turbine disc and lining. It occupies a small area and is installed vertically. It feeds from the bottom and discharges from the top. It has fast installation and maintenance, high efficiency, low energy consumption, and no three waste emissions. Products of different specifications can be obtained by adjusting the feed, and the feed fineness is required to be 45 μm-200 μm.

Technical features:

Efficient grinding capacity : The multi-stage turbine disk structure combined with fluidization technology realizes all-round contact between materials and media, with high grinding efficiency and low energy consumption.

Fine and precise control : By adjusting the feeding parameters, the discharge fineness can be flexibly controlled within the range of 0.5-5μm to meet different process requirements.

Fully automated production : Supports continuous operation, short process path, convenient start-up with load, and reduces manual intervention.

Environmentally friendly and energy-saving design : No three wastes are emitted, and the cooling system is highly integrated, reducing the need for additional cooling devices and reducing operating costs.

Compact and durable : Vertical installation occupies a small area. The alloy turbine disc and lining resist shear wear and extend the life of the equipment.

Accessories & Customization

Accessories
Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

Customization
For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.