

Professional  
Powder Equipment  
Manufacturer

# TENCAN

## Product Brochure



Powder  
Equipment



Milling  
Technology



Powder  
Materials



**LARGE GRINDING EQUIPMENT**

## Cell grinder - collider grinder

**WRMJ**

High-speed impact wet mill for ultra-fine cell disruption. Ideal for bio-samples, pharma, and food processing. Efficient, reliable.

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



## Product Overview

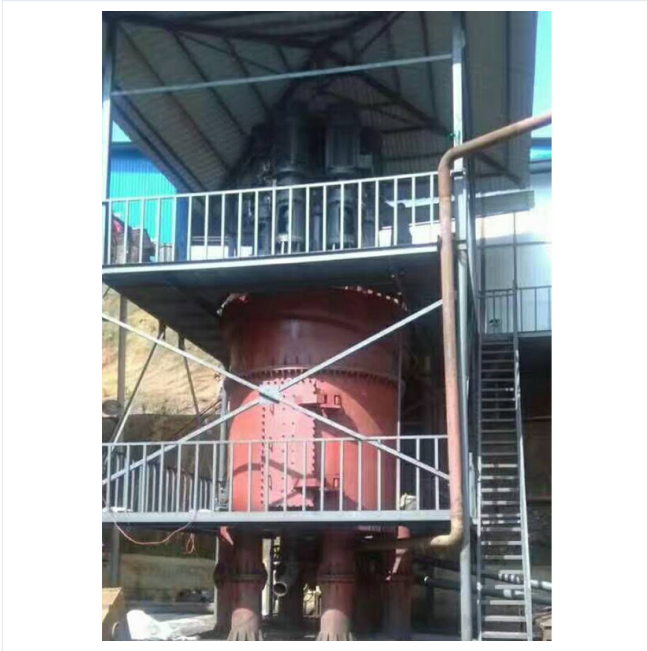
High-speed impact wet mill for ultra-fine cell disruption. Ideal for bio-samples, pharma, and food processing. Efficient, reliable.

### 细胞磨 对撞式研磨机

效率高, 能耗低

0.5-5 $\mu$ m  
细度可调控





## Product Introduction

Cell mill-collision grinder is a wet grinding equipment that achieves ultra-fine grinding of materials through high-speed collision energy. Its core design uses multiple groups of grinding media (such as ceramic beads or alloy balls) to move at high speed in a closed cavity. It uses the violent collision and shearing between the media and materials, combined with the laminar flow and turbulent flow effects of fluid mechanics, to achieve nanoscale crushing and dispersion of particles. This equipment is suitable for the continuous production of high-hardness, high-purity materials. It is especially good at processing fibers that are difficult to crush, brittle and heat-sensitive materials. The discharge fineness can reach 0.5-10 $\mu$ m, and the particle size distribution is uniform.





Wet ultra-fine grinding of silica, zircon sand, zirconium silicate, zirconium oxide, mica, talc, graphite, rare earth, lithium iron phosphate, aluminum oxide, aluminum hydroxide, magnesium hydroxide, brucite, bentonite, kaolin, sulfur, barite, quartz sand and other non-metallic mineral powders.

- **New energy materials** : Ultra-fine dispersion and homogenization of lithium battery electrode materials (such as graphene, silicon-carbon composite materials) and fuel cell catalysts.
- **Chemicals and Coatings** : Nano-level grinding of high-solid content pigments, dyes, and inks to improve the coloring power and stability of the products.
- **Medicine and Biotechnology** : Preparation of drug nanoparticles and liposomes to enhance drug solubility and targeting.
- **Mineral deep processing** : Ultra-fine crushing of non-metallic minerals such as quartz, mica, calcium carbonate, etc. to meet the needs of high value-added applications.
- **Environmental protection and renewable resources** : Refined processing of electronic waste and industrial solid waste to promote resource recycling.

## Technical parameters

Device model	Equipment power	2um fineness	Solid content%	Pulp output/ton/ H	Power consumptionKW/T/ H	Wear/yuan/T
WRMJ6000	90KW	D60-D90	50-70	1.5-3	16-35	1.2-2.5
WRMJ12000	180KW	D60-D90	50-70	2.5-5.8	15-25	1.1-2.2
WRMJ15000	220KW	D60-D90	50-70	4.5-6.5	24-34	1.3-2.4
WRMJ20000	264KW	D60-D90	50-70	5.5-8	23-33	1.3-2.4

## Working Principle

- **Power input and media acceleration** : The motor drives the rotor to rotate at high speed (line speed 15-30m/s), driving the grinding media to form a dense energy field.
- **Collision and crushing stage** : Materials and media collide in multiple directions during high-speed motion. The particles are repeatedly impacted and sheared through kinetic energy transfer, achieving step-by-step crushing.
- **Fluid Mechanics Synergy** : The alternating effect of laminar flow and turbulent flow in the cavity promotes uniform mixing of materials and extends the grinding path, improving crushing efficiency.
- **Dynamic separation and discharge** : The finished products are separated by centrifugal force or screen system, and the unqualified particles are returned to the grinding area for continued processing to ensure particle size consistency.

## Product Features

It integrates gravity and fluidization technology, has a two-stage wear-resistant polyurethane disc structure, is lined with wear-resistant ceramics, and has a water cooling device. The material does not come into contact with metal during the grinding process. It occupies a small area and is installed vertically. It has lower feeding and upper discharging. It can also use upper feeding, lower discharging, and upper feeding and upper discharging. It is quick to install and maintain, has high efficiency, low energy consumption, and no three waste emissions. Products of different specifications can be obtained by adjusting the feed. This grinding method is mainly aimed at materials with relatively high purity and impurity requirements, and the feed fineness is required to be 45um-1mm.

Fully automatic continuous production, high efficiency, low energy consumption, adjustable fineness of 0.5-10 $\mu$ m, narrow particle size distribution, easy start-up with load, short process path, non-metal processing can be done inside the equipment, and there is no contact with metal during the grinding process of the material. It is suitable for materials with high taste requirements.

## 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.