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# TENCAN

## Product Brochure



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PLANETARY BALL MILL SERIES

# Low temperature planetary grinding machine

## XMQ

Cooling system prevents heat damage during high-speed milling. Preserves sensitive materials. Ideal for precise powder processing.

<https://www.planetaryballmills.com/products/grinding-series/planetary-ball-mill/low-temperature-planetary-grinding-machine.html>



## Product Overview

Cooling system prevents heat damage during high-speed milling. Preserves sensitive materials. Ideal for precise powder processing.





## Product Introduction

The low-temperature planetary ball mill is a combination of a planetary ball mill and a refrigeration device. During the high-speed grinding process, most materials will heat up due to friction or exothermic reactions and other factors, which may lead to changes in the physical and chemical properties of the materials and produce negative grinding effects. Low-temperature planetary ball mill is mainly used in material grinding processes that require strict temperature control.



## Four-Jar Grinding

High grinding efficiency;  
can grind four samples  
at one time.

## Air Cooling Unit

Equivalent to equipping the planetary ball mill with a central air-cooling system, providing continuous cool air at around 5°C.



## Viewing Window

Clearly observe the operating  
status inside.

## Cooling Fan Vent

High-speed operation effectively  
enhances airflow and heat  
dissipation, ensuring stable  
machine operation.





### Cooling Unit

Equivalent to equipping the planetary ball mill with a central air-cooling system, providing continuous cool air at around 5°C.



### Four-Jar Grinding

Features a new pressing mechanism with an elegant design; stable speed, high efficiency, and finer particles.



### Safety Door

Protects the interior of the mill, and the viewing window clearly shows the operating status inside.



### Variable Frequency Control

The ideal speed can be selected according to experimental needs, with speed accuracy finer than 0.2 rpm.

Low temperature planetary ball mill is widely used in geology, minerals, metallurgy, electronics, building materials, ceramics, chemical industry, light industry, medicine, environmental protection and other departments. It is suitable for electronic ceramics, structural ceramics, magnetic materials, lithium cobalt oxide, lithium manganate, catalysts, phosphors, long afterglow luminescent powder, rare earth polishing powder, electronic glass powder, fuel cells, zinc oxide pressure Production field of sensitive resistors, piezoelectric ceramics, nanomaterials, disc ceramic capacitors, MLCC, thermistors (PTC, NTC), ZnO varistors,

dielectric ceramics, alumina ceramics, zirconia ceramics, phosphors, zinc oxide powders, cobalt oxide powders, Ni-Zn ferrite, Mn-Zn ferrite and other products.

## Technical parameters

### Basic configuration parameter table

serial number	model	shape	Grinding tank rotation speed (mm)	Inner diameter of grinding pot seat (mm)	Motor power	Grinding jar revolution diameter (mm)	Overall dimensions (mm)	Net weight(kg)
1	XQM-0.2	Miniature	0~1160	50	90W	F111	420×260×310	25
2	XQM-0.2S	Mini glove box	0~1160	50	90W	F111	Equipment: 390×220×270 Control box: 200×180×240	29
3	XQM-0.4A	semicircle style	0~870	80	250W	Φ140	530×300×360	34
4	XQM-6		0~670	134	0.75KW	F234	760×470×580	100
5	XQM-4A	semicircle style	0~670	134	0.75KW	F234	760×470×600	85
6	XQM-(8-12)		0~580	162	1.5KW	Φ275	900×600×640	168
7	XQM-(8-12)A	semicircle style	0~580	162	1.5KW	Φ275	880×560×642	150
8	XQM-16A	semicircle style	0~510	182	3KW	Φ320	950×600×710	205
9	XQM-20		0~430	222	4KW	F385	1200×790×930	392
10	XQM-40		0~390	250	5.5KW	Φ430	1400×880×1070	656
11	XQM-60		0~260(1:1.5)	275	7.5KW	Φ490	1600×1070×1250	950
12	XQM-100		0~240(1:1.5)	326	11KW	F578	1750×1140×1330	1300
13	XQM-200		0~215	460	22KW	Φ738	2670×1600×2804	2725

(Explanation: The low-temperature planetary ball mill is a planetary ball mill plus a low-temperature device. Vertical planetary ball mills, all-round planetary ball mills, and horizontal planetary ball mills can all be equipped with low-temperature devices. The parameters of low-temperature planetary ball mill take the parameters of vertical planetary ball mill as an example)

Transmission mode	gear transmission
working method	Two or four ball mill tanks work simultaneously
Maximum sample loading volume (material + grinding ball)	Two-thirds of the ball mill tank volume
Ball mill tank volume	Each can is 5L-50L, total volume is 20L-200L
Feed particle size	Soil material ≤10mm, other materials ≤3mm
Discharge particle size	The minimum can reach 0.1μm (different materials and grinding processes will vary)
Speed ratio (revolution:rotation)	See main parameters of planetary ball mill for details
Speed (rotation)	See main parameters of planetary ball mill for details
Speed regulation method	Brand inverter stepless speed regulation

## Working Principle

The low-temperature planetary ball mill is a combination of a planetary ball mill and a refrigeration device. During the high-speed grinding process, most materials will heat up due to friction or exothermic reactions and other factors, which may lead to changes in the physical and chemical properties of the materials and produce negative grinding effects. Low-temperature planetary ball mill is mainly used in material grinding processes that require strict temperature control.

## Product Features

The low-temperature planetary ball mill is a combination of a planetary ball mill and an air-cooling device. The air-cooling device applies the air-conditioning compression refrigeration principle. The cold air circulation quickly takes away the heat generated by grinding. According to the difference in ambient temperature, the temperature of the ball milling space can be controlled. 5 — 15 °C, mainly used for ultra-fine grinding of materials requiring low-temperature processes. The air cooling device has a simple structure, convenient operation, easy maintenance and low energy consumption.

## Accessories & Customization

## 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.