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Technical resources

## **Low temperature planetary grinding machine**

Model: XMQ

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

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# Low temperature planetary grinding machine

Model: XMQ

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

## Technical specifications

### Technical specifications

|                            |                            |
|----------------------------|----------------------------|
| Number of grinding jars    | 4 pieces                   |
| Grinding jar specification | 50ml~4L                    |
| Speed control              | Variable frequency control |

These specifications describe the series. Confirm the selected model, power supply and configuration before ordering.



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.



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<br>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            |

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|---------------|-------------|------------------|-----------------------------------|------------------------------------------|-------------|---------------------------------------|-------------------------|----------------|
| 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                                           |

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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.

## Contact

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Before operation, review the selected model's instructions and the material requirements.