Cutting Mill

GM-C200

Features

- Powerful size reduction.
- The speed between 500-3000rpm,continuously adjustable.
- Final fineness depends on bottom sieve.
- Apply to the temperature sensitivity samples due to the quickly and less heat milling.
- Easy, fast and thorough cleaning of the grinding chamber.
- Motor safety switches and electronic security system, to guarantee the motor brake off when the door opened.
- Wide range of collection system to meet various requirement.
- Big screen touch panel.

Description

It is an ideal machine for the sample pretreatment of heavy metal-free RoHS and WEEE test. It is usually used for batch or continuous processing of solid samples. Long fibers and large volume samples can be processed directly without pre-crushing.

Application fields

Electronics, environment, cement, agriculture, etc.

Typical sample

Rubber, plastics, garbage, circuit board, wood, paperboard, paper, spice, straw, leather, rubber, raw material, bone, animal feed, cable, plastic, electric wastes, non-metallic waste, grain, lignite, peat.

Application Examples

Sample: straw

Rotor: standard rotor stainless steel
Sample characteristic: soft
Remarks: feed size less than 90 mm, dry
Time: 1-3min

Before grinding

After grinding

Sample: dog chew bones

Rotor: standard rotor stainless steel
Sample characteristic: brittle, medium-hard
Remarks: feed size less than 90 mm
Time: 3-5min

Before grinding

After grinding

Sample: circuit board

Rotor: 24-disc rotor stainless steel
Sample characteristic: tough, hard
Remarks: feed size less than 90 mm
Time: 3-5min

Before grinding

After grinding

Specification

Model	GM-C200
Feed Size	<60*80mm
Final Fineness	0.1-20mm
Speed	500-3000rpm
Sieves	0.20/0.5/1.00/2.00/4.00/6.00/8.00/10.00/20.00mm
Rotor	6-disc rotor, standard rotor
Collector	0.5L, 1L, 2L, 5L, 30L
Rated Power	3.0kW
Electricity	380V, 50/60Hz
External Dimension	640*825*1510mm
Package Dimension	1000*1000*1450mm

High Throughput Tissue Mill

GM-G50

Features

- Vertical up and down grinding design;
- Suitable for dry, wet and cryogenic grinding;
- Low-speed crushing function ensures effective sample yield, especially for genome preparation;
- 5" LED touch screen, easy to control the program and set the parameters;
- Program control and parameter storage function, enable to set intermittent, stop and total running time;
- New-type brushless motor, convenient for maintenance;
- Suitable for centrifuge and cryogenic vials of 2ml/5ml/50ml.
- The samples are totally separated with each other to avoid cross contamination.

Typical samples

- Plant roots, stems, leaves, flowers, fruits, seeds and animal tissues; Specially for the extraction of nucleic acid, protein and other components in plant tissues, yeast, animal cells, bacterial cells, etc.

Description

It's a mill specially designed for rapid and high throughput pre-treatment of biological samples. By using different adapters, up to 96 samples can be quickly processed simultaneously by ordinary centrifuge or cryogenic vials. Different kinds of biological samples (plant and animal tissues/organs, bacteria,yeasts, fungi, spores, paleontological specimens, etc.) can be crushed by using of proper reagents, from which original DNA, RNA and protein can be easily extracted and purified.

Application

Molecular mark assisted breeding, genomics, systems biology and nucleic acid extraction from plant tissues in molecular evolution, transgenic research and other biochemical research.

Specification

Model	GM-G50
Time Setting	00:01-99:59(min/s)
Frequency	15-30Hz, oscillation 900-1800 times/min
Clamp Movement	32mm
Running Mode	Vertical

Ultra Centrifugal Mill

GM-G200

Advantages

- The final fineness is less than 40μm.
- Touch control panel, convenient and easy to operate.
- Low noise, reliable operation, easy cleaning.
- Rich accessories for option enable various application.
- Different fineness can be realized by selection of ring sieves with different aperture size.
- The speed is adjustable from 6000-18000rpm.
- Rotor-ring sieve two stage grinding system ensures reliable grinding result.
- The rotor diameter is 98.5mm and peripheral speed is up to 94.2 m/s, ensuring efficient grinding.

Specification

Model	GM-G200
Feed Size	<10mm
Final Fineness	< 40μm
Speed	6000-18000rpm
Peripheral Speed	31.4~94.2m/s
Rotor Diameter	98.5mm
Ring Sieve	0.08, 0.12, 0.20, 0.25, 0.50, 0.75, 1.00, 2.00mm
Collecting Pan Volume	900ml (The volume of the sample collected is no more than 300ml)
Rated Power	760W
Electricity	220V, 50/60Hz
External Dimension	400*506*495mm
Package Dimension	620*620*770mm
Net Weight	38kg

Description

It is applicable to a wide range of samples. Based on its efficient grinding technology and rich accessories, it adopts a two-steps grinding method of rotating knife-ring sieve system, which can perform dry and wet grinding of soft, hard, brittle and fibrous samples in a very short time.

Sample type

Soft, elastic, fibrous, water-bearing, oily, fatty, dry sample.

Application fields

Agriculture, environment, soil, electronics, RoHS testing, coal, chemistry, plastics, medicine, feed, grain, dry plants.etc.

Application Examples

Sample: plastics

Rotor: 12 teeth rotor, stainless steel
Sample characteristic: tough
Remarks: the sample need to be frozen before grinding
Time: the sample can be collected immediately after feeding

Before grinding

After grinding

Sample: corn

Rotor: 12 teeth rotor, stainless steel
Sample characteristic: hard
Remarks: feed size must be less than 8mm
Time: the sample can be collected immediately after feeding

Before grinding

After grinding

Features

Diversified application, efficient sample preparation

Ecological environment protection: plants (root, stem and leaf, etc,) sample preparation, C.H.N determination;

Coal, coatings sample preparation; ash content, thermal measurement;

Identify the nitrogen composition and protein composition of feed and food;

Secondary fuel, rubbish, plastic, electronic elements, the determination of harmful substances.

Grinding art for special samples

Plastic and rubber samples will become brittle and easy to grind in liquid nitrogen condition.

The distance ring sieve and automatic vibratory feeder can be used for grinding heat-sensitive samples such as paint, resin.

The rotor and ring sieve with wear-resisting coatings can be used for grinding rigid and corrosive materials such as fertilizers, chemicals.

Automatic feed device and large sample receiver

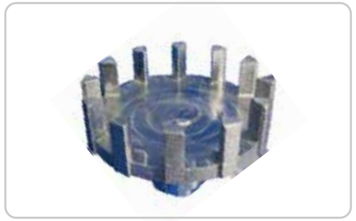
It can be equipped with an automatic feed device, which can guarantee highly homogeneous grinding results and avoid the risk of sample feed overload.

The ground samples are collected in a collecting pan, which is convenient for collection without sample loss and prevents cross contamination of samples.

Diversified accessories

Rotor

The rotor has three options: 24 teeth, 12 teeth, and 6 teeth. The 24 teeth is for the crushing of fine sample, while the 12 teeth for general sample and the 6 teeth for coarse massive sample.



Ring sieves

Final fineness depends on the different aperture ring sieve. We also provide the reinforcing screen to enhance the stability of the ring sieve.

We offer a special ring sieve with shear function. For most materials, about 80% of the samples can reach the fineness of less than the half aperture size of the sieve used.

Rotor & Ring sieves

The material of all the rotors and the ring sieves not only has stainless steel but also the heavy-metal-free for choice to meet different laboratory requirements.

The rotor and the ring sieve are chosen according to the properties of the samples, the required final fineness and subsequent analysis.

Planetary Ball Mill

GM-G300

Features

- Suitable for dry, wet and freezing grinding.
- Extremely short processing time.
- Designed for high sample throughput, up to 192 sample preparations.
- Wide range of grinding jars and accessories for extensive applications.
- Pre-setting of all working parameters digitally, the result is repeatable.
- The transparent lid allows the user to check the grinding situation at any time.
- The upper lid has a safety lock device. When the upper lid is opened during the grinding process, the motor will stop running to ensure the user personal safety.
- Program setting can control the operation time, interim grinding and program storage etc.

Description

The Micro Ball Mill is designed for modern laboratory applications. It can process small and large batches of samples, such as plants, animal tissues and small samples in dry, wet or cryogenic conditions.
It can mix and homogenize powders and suspensions in only a few seconds.
It is also perfectly suitable for the disruption of biological cells as well as for DNA/RNA and protein extraction.

Applications

Sample type

hard, soft, elastic and fibrous samples

Typical sample

plant root, stem, leaf, grain, seed; human and animal tissue, viscera, bone, hair; mineral, soil, glass, ceramic, rubber, plastic, solid waste, electronic waste,paper, textile, chemical, medicine, food.

Application Examples

Sample: Soil

Grinding Ball: 10mm stainless steel grinding ball
Grinding Jar: Reaction vials, 50 ml, PP
Sample Characteristic: Hard
Remarks: Sample volume should not exceed 35ml
Time: 4 minutes

Before grinding

After grinding

Sample: Plastic

Grinding Ball: 20mm stainless steel grinding ball
Grinding Jar: 50ml stainless steel grinding jar
Sample Characteristic: Dry
Remarks: Sample must be pre-processed to <3mm, quantity should not exceed 20g
Time: 1 minute, repeat 4-5 times

Before grinding

After grinding

Advantages

Easy operation and high safety performance

Due to the integration of motor brakes, the machine can only be started when the lid is closed.

The "Easy Clamp" system allows the simple and safe clamping of grinding jars up to 50ml.

The grinding chamber, easy clamp system as well as the swinging arm is made from high precision stainless steel to meet strict food and pharmaceutical requirements.

The application of new brushless motor makes maintenance very convenient.

Grinding, mixing and cell disruption

It can process 2pcs. and large batch samples simultaneously in 30 seconds, with sample volume ranging from 0.2ml to 50ml.

It meets the requirements of high throughput grinding extremely.

Specification

Model	GM-G300
Feed Size	<10mm
Final Fineness	<5μm
Speed	180-1800rpm
Sample Volume	0.2-20ml
Time Setting	00:01~99:59(min/s)
Rated Power	150W
Electricity	220V, 50/60Hz
External Dimension (W*D*H)	370*505*335mm
Package Dimension (W*D*H)	700*500*560mm
Net Weight	34kg

Knife Mill

GM-H100

Features

- The sample volume up to 700ml.
- Autoclavable container for choice.
- Grinding container in various material.
- Simple operation and quick start.
- Strong motor power 1.1kW, speed adjustable.
- Coarse grinding and fine grinding can be realized in one step.
- Three modes optional: interval mode, reverse mode and press-and-play mode.

Description

The knife mill is used to process the soft, medium-hard, brittle and fibrous sample. It is special for high water, oil or fat content sample.

Advantages

Grinding container autoclavable plastic:
High temperature and high pressure sterilization containers, meet strict hygiene standards of food and drugs. Suitable for soft, oily, water, fat and fibrous sample.

Grinding container stainless steel:
Applied for granules, shell, grain sample. Suitable for medium-hard, brittle, tough sample.

Gravity lid:
for grinding small amount of samples with oil ,fat,less water content.

Gravity lid with overflow channels:
for grinding some fresh vegetables and fruits with a high water content.

Knife of titanium alloy:
for grinding without heavy-metal contamination.

Knife -2 blades, stainless steel:
serrated blade, for tough frozen meat.

Application

Sample type:
Soft, elastic, fibrous, water-bearing, oily, fatty, dry sample

Application Examples

Sample: Cabbage

Configuration: 5000 rpm
Sample Characteristic: Water-containing
Remarks: Use overflow channel gravity cover
Time: 15 seconds

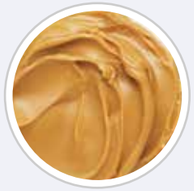

Before grinding


After grinding

Sample: Peanut kernels

Configuration: 5000 rpm
Sample Characteristic: Oil-containing
Remarks: Use gravity cover
Time: 15 seconds


Before grinding


After grinding

Specification

Model	GM-H100
Feed Size	<40mm
Final Fineness	<300μm
Speed	2000-10000rpm
Time Setting	0:01-9:59(min/s)
Batch Quantity	150-700ml
Interval Mode	Yes
Knives	Stainless steel, titanium alloy
Number of Blades	2
Rated Power	1.1kW
Electricity	220V, 50/60Hz
External Dimension	260*343*454mm
Package Dimension	480*550*720mm

Cryo Grinder

GM-L200

Description

It is applied to samples with strong toughness and thermal sensitivity that are difficult to be ground and crushed at room temperature, such as rubber, plastic, food, mineral, animal and plant tissue analysis, drug, biochemical DNA detection, cell disruption and other fields.

Features

- Electromagnetic vibration impact guarantees fast grinding speed, high precision, good uniformity and repeatability.
- The liquid nitrogen automatic filing system automatically supplement the liquid nitrogen consumed in the process of sample freezing and grinding to ensure the stability and safety.
- Industrial touch screen control panel, impact frequency, pre-cooling time, impact grinding time, cycle grinding times can be set, easy to operate and reliable.
- Streamlined and ergonomic design, simple and convenient operation.
- Safety design: The instrument cannot be started when the instrument cover is open; the instrument can only be started after the instrument cover is closed and locked.
- When the liquid nitrogen level is lower than the set value, the liquid sensor will alarm and automatically replenish the liquid nitrogen; and the instrument stops running to protect the electromagnetic coil from damage.

Typical sample

- Polymers, rubber, textile materials, grain particles, hair, nails, skin, bones, muscle tissue, etc.

Specification

Model	GM-L200
Single Grinding Time	2min
The Shortest Pre-Cooling Time	4.5min
Batch Capacity	0.1~100g
Pre-Cooling Chamber	400ml
Grinding Chamber	200ml
Grinding Jars	4 groups (4x3=12pieces) jars of 3ml/4 jars of 20ml /one jar of 100ml/one jar of 200ml
Liquid Nitrogen Filling System	Manual/automatic optional
Impact Frequency	5-15Hz
Rated Power	1.9kW
Electricity	220V, 50/60Hz
External Dimension	510*440*450mm
Package Dimension	870*720*750mm

Mortar Grinder

GM-M200

Advantages

- Suitable for dry, wet & cryogenic grinding.
- Pretreatment for some rough samples.
- Adding samples through the filling opening during the operation.
- A variety of scraper materials are available (polyurethane, PTFE, beech wood) to meet all application requirements.

Description

It is used to grind, homogenize and mix a wide range of samples with dry/wet or cryogenic condition , which can grind hard , soft, brittle and pasty samples. Its processing capability is excellent , and the operation is simple and safe.

Applications

Sample type hard, soft, brittle and pasty samples.

Typical sample

Soils, chemical products, medicinal herbs, yeast cell, cocoa, food, grain, oil, fruit, salt, slag, silicate, glass, ceramic and cement clinker

Application Examples

Sample: rice

Configuration: mortar &pestle stainless steel
Sample Characteristic: mid-hard
Remarks: feed size is below 8mm
Time: 10min


Before grinding


After grinding

Sample: pill

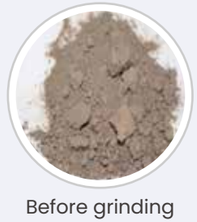
Configuration: mortar &pestle stainless steel
Sample Characteristic: brittle
Remarks: feed size is below 8mm,dry sample
Time: 3min


Before grinding


After grinding

Sample: soil

Configuration: mortar &pestle of agate
Sample Characteristic: soft, powder
Remarks: remove the hard materials,feed size is below 8mm
Time: 5min


Before grinding


After grinding

Features

Easy and safe to operate

The machine case and lid are made of hard alloy.

It is easy to operate and ergonomically designed.

The grinder is equipped with magnetic switch to judge whether the lid is closed or not, and the grinder only starts when lid is closed.

LED will light up when the observation window opened for easy observation of sample grinding process.

Skills to achieve the best grinding effect

Before preparing the paste samples, firstly you can put the mortar and sample (eg cocoa) into the drying oven and heat to 40℃.
In the preparation of chemicals and pharmaceuticals, please add grinding aid to prevent caking phenomenon.

Easy to clean

Easy exchange of mortar and pestle without tools after grinding and it's easy to clean the mill.

Specification

Model	GM-M200
Feed Size	<10mm
Final Fineness	<5μm (depending on the sample property)
Speed	50-130rpm
Time Setting	00:01~99:59(hr/min)
Batch Quantity	10-200ml
Rated Power	200W
Display	5-inch LED control panel
Electricity	220V, 50/60Hz
External Dimension	400*480*500mm
Package Dimension	620*620*770mm
Net Weight	41kg

Jaw Crusher

JC-G6

Technical Advantages

- High throughput, high degree of size reduction.
- Zero point adjustment to compensate the wear.
- Breaking jaws made of 5 different materials.
- Anti- splash design hopper.
- Easy-to-clean crushing chamber.
- Excellent performance and high final fineness (d90 <0.5 mm).

Description

The Jaw Crusher is specially designed for solid sample preparation in the laboratory. It features a compact design, easy operation and high final sample fineness. The space-saving, dust-proof instrument is ideally suited to crush small amounts of sample with large feed sizes gently and without loss.

Specification

Model	JC-G6
Feed Size	<40mm
Final Fineness	<0.5mm
Speed	500-1000rpm
Collector Capacity	3L
Jaw Plate Width	59.5mm
Gap Setting	0~11mm
Zero Point Adjustment	Yes
Rated Power	1.1kW
Electricity	220V, 50/60 Hz
External Dimension (W*D*H)	450*630*490mm
Package Dimension (W*D*H)	870*720*750mm
Net Weight	93kg

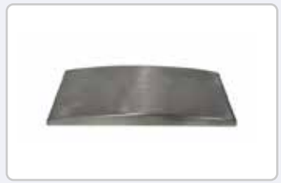
Features

Jaw plates in different materials

For different applications, we can provide jaw plates in different materials. Please select the correct jaw plate material according to the requirement of sample crushing.

Manganese steel

Manganese steel is suitable for processing hard and medium-hard samples. The structure of this kind material will become denser after being squeezed, so it will gradually harden in use (cold hardening).



Stainless steel

Stainless steel can avoid rust. This material is recommended when dealing with low hardness samples.

Tungsten carbide

The tungsten carbide material is abrasion resistant. Even for samples with Mohs hardness of 7-8, the tungsten carbide jaw plate can be used for a long time.

Zirconium oxide

Zirconium oxide jaw plate are specially used to deal with ceramic materials that contain no heavy metals, such as the crushing of dental, optical glass and other medical ceramics. In addition, the material will not bring color pollution to the crushed samples.

Steel of heavy- metal-free

Steel of heavy- metal-free can avoid scraping against the samples to cause heavy metal contamination. Jaw plate with this material is the ideal choice for applications that no heavy metal contamination allowed.

Planetary Ball Mill

PBM-G40 PBM-G6P PBM-G20

Advantages

- Automatic direction reversal to avoid agglomerations.
- Powerful and quick grinding down to nano fineness.
- Suitable for long-term and continuous operation.
- Reproducible results due to program grinding parameters.
- Grinding chamber automatic ventilation system for cooling the grinding jar.
- With 4 grinding platforms can process 2,4 samples simultaneously (PBM-G40).
- 6 kinds of grinding jars in material ,the volume various from 12ml-500ml.

Description

Planetary Ball Mills are suitable for grinding (wet/dry) and mixing a wide range of soft, hard, brittle and fibrous samples. In addition to classical mixing and particle size reduction processes, the mills can also meet the technical requirements of colloid grinding.

Grinding jar

- Capacity and material are marked on the grinding jars ,which is easy to distinguish from others.
- Wide kinds of materials to meet different treatment requirements.
- The O-ring guarantees dust -prevention, pressure tight.
- It is easy to open the jars by the gap, which exist between the grinding jar and lid.
- Grinding jars of agate, sintered aluminum oxide, zirconium oxide and tungsten carbide are coated with stainless steel jacket.

Applications

Sample type soft, hard, brittle, fibrous

Application field

engineering/electronics, building materials, agriculture, medicine, chemical/synthetic materials, geology/metallurgy, environment/resource recovery, glass/ceramics.

Typical samples

Plant material, cement clinker, concrete, compost, coatings and paint, charcoal, hair, catalyst,chemicals, metal, carbon fiber, paper, fiber products, cellulose, seeds, clay minerals, coke, coal.glass, waste electronic products, mineral, ore, limestone, gypsum, quartz, kaoin, bones, metal oxide, iron ore, ceramics, polymers, bentonite/bentonite, pigment, and so on.

Application Examples

Sample: glass

Grinding balls: 10mm and 3mm Zirconium Oxide grinding balls
Sample characteristic: hard
Grinding time: 30min
Remarks: grinding jars should be placed symmetrically

Before grinding

After grinding

Sample: granite

Grinding balls: 10mm stainless steel grinding balls
Sample characteristic: hard
Grinding time: 15min
Remarks: the grinding jars should be placed symmetrically

Before grinding

After grinding

Sample: pearl powder

Grinding balls: 3mm Zirconium Oxide grinding balls
Sample characteristic: brittle
Grinding time: 6h
Remarks: adding the liquid , balls and samples properly

Before grinding

After grinding

Features

Customizable speed ratio

The planetary ball mils have 1,2 and 4 grinding stations as option, The parameter can be set according to the sample property freely.

Wide kinds and high quality grinding materials are available for choice.

Grinding balls of different quantities and sizes can be combined flexibly to meet personalized special crushing and grinding requirements.

We can customize the speed ratio from 1:1 to 1:-3.5 as customer requirements.

Control panel

The LED display shows the parameters digitally, and the running state can be observed easily.

Equipped with convenient parameter settings and ergonomic one-button operation.

Jar-opening tools

The user-friendly design makes the jar opening work more easy and safe.

Comfortable operation and easy cleaning

Intelligent safety lock ensures safe operation of the instrument.

Ergonomic design integrates comfort and safety in operation.

The humanized program design can set the grinding time, and can operate without the need of personnel monitoring.

The high-efficiency, maintenance-free drive ensures that the machine can maintain a constant speed during long-term continuous operation or maximum overload. During the grinding process, the built-in high-power fan can automatically provide effective cooling for the motor.

Multi-safety design of grinding jars

For colloid grinding, the grinding jars are equipped with safe closure device for gas-tight and dust-proof to ensure safe operating.

Safety closure device can be sealed in colloid grinding (wet grinding) to ensure the over pressure gas not easily escape.

Aeration lid for gas importing, exporting as well as for safety protection.

The safe closure devices can guarantee the high-level gas tightness inside grinding jars so as to ensure that the grinding result is not affected.

Pressure and temperature measuring system PTM (Optional)

During the operation of planetary ball mill, the process and reactions (such as temperature, pressure change, etc.) take place in the grinding jars could be monitored and recorded by the PTM to achieve better grinding and analysis results.

Specification

Model	PBM-G40	PBM-G6P	PBM-G20
Feed Size	<10mm	<10mm	<10mm
Final Fineness	<0.1μm (up to nanometer for colloidal grinding)	<0.1μm (up to nanometer for colloidal grinding)	<0.1μm (up to nanometer for colloidal grinding)
Speed	30-400rpm	100-650rpm	50-650rpm
Speed Ratio	1:-2.2	1:-2	1:-2
Time Setting	0-99min(cycle times 01-99)	0-99min(cycle times 01-99)	0-99min(cycle times 01-99)
Effective Sun Wheel Diameter	360mm	260mm	290mm
Grinding Pot Capacity	12/50/80/125/250/500ml	12/50/80/125/250/500ml	12/50/80/125ml
Number of Grinding Stations	2, 4	1	2
Rated Power	1.5KW	750W	750W
Electricity	220V, 50/60Hz	220V, 50/60Hz	220V, 50/60Hz
External Dimension	784*598*577mm	685*510*506mm	685*510*506mm
Package Dimension	900*1020*890mm	860*960*780mm	860*960*780mm
Net Weight	190kg	125kg	145kg