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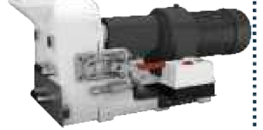
Vibrating Ball Mill IMB60


Mortar mill IMR60


Planetary Ball Mill IMP80


Jaw Mill IMJ60


Cutting Mill IMC80


Disc Mill IMD60


Jaw Mill IMJ80


Vibrating Separator IMS60


Sample Divider IMT60


Ultracentrifugal mill IMZ60


3D mixer IMTF20


Knife Mill IMK60

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Ball Mill series

Vibrating Ball Mill IMB60
Mortar mill IMR60
Planetary Ball Mill IMP80

Knife Mill series

Knife Mill IMK60
Ultracentrifugal mill IMZ60
Cutting Mill IMC80

Geology Mill series

Disc Mill IMD60
Jaw Mill IMJ80
Jaw Mill IMJ60

Supplementary instrument

3D mixer IMTF20
Vibrating Separator IMS60
Sample Divider IMT60

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★ Vibrating Ball Mill IMB60

The IMB60 vibrating ball mill takes only a few seconds to achieve the purpose of crushing, mixing and homogenizing the sample. In addition, this instrument is particularly suitable for biological cell wall breaking and DNA/RNA extraction. Moreover, the instrument can also perform cryogenic milling of heat-sensitive samples.

○ Product application

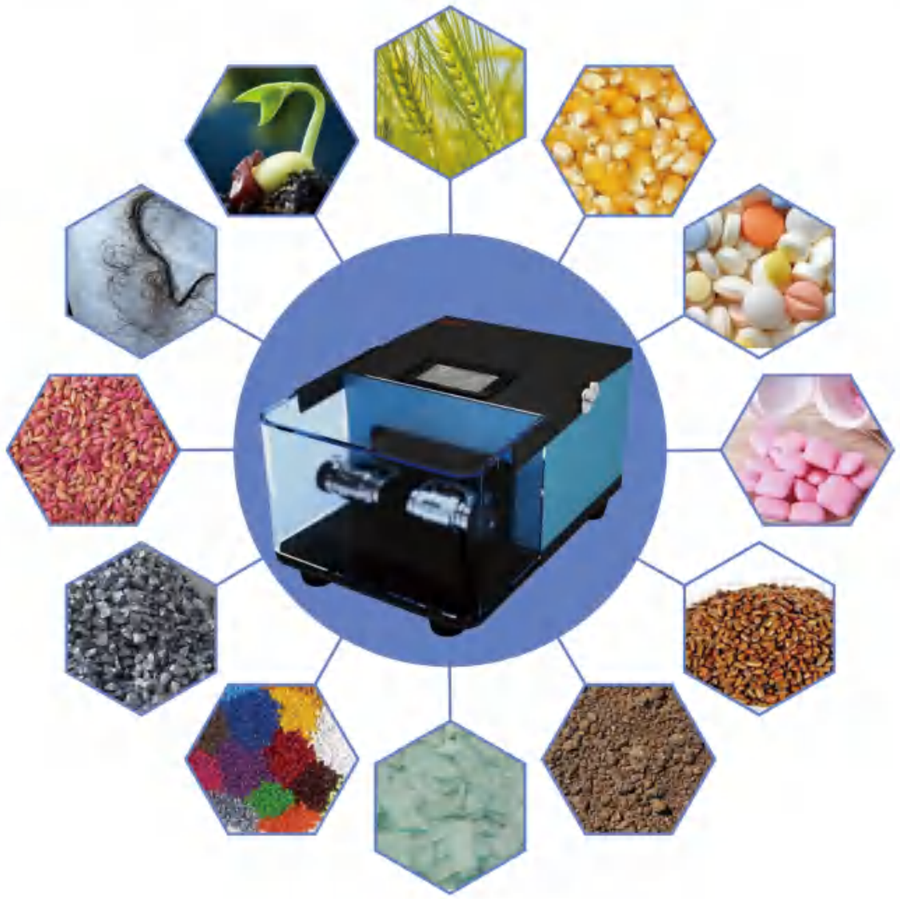
Crushing, mixing and pre-processing of nucleic acid extraction samples.

○ Sample type

Hard, soft, ductile, fibrous, colloidal.

○ Typical sample

Roots, stems, leaves, seeds, grains, feed of plants; Human and animal tissues, muscles, viscera, bones, hair, etc.; Ore, soil, glass, ceramic plastics, rubber, solid waste, e-waste; Tablets, capsules, Chinese medicine, food; Chemical powder mixing reaction and mechanical alloying, etc.



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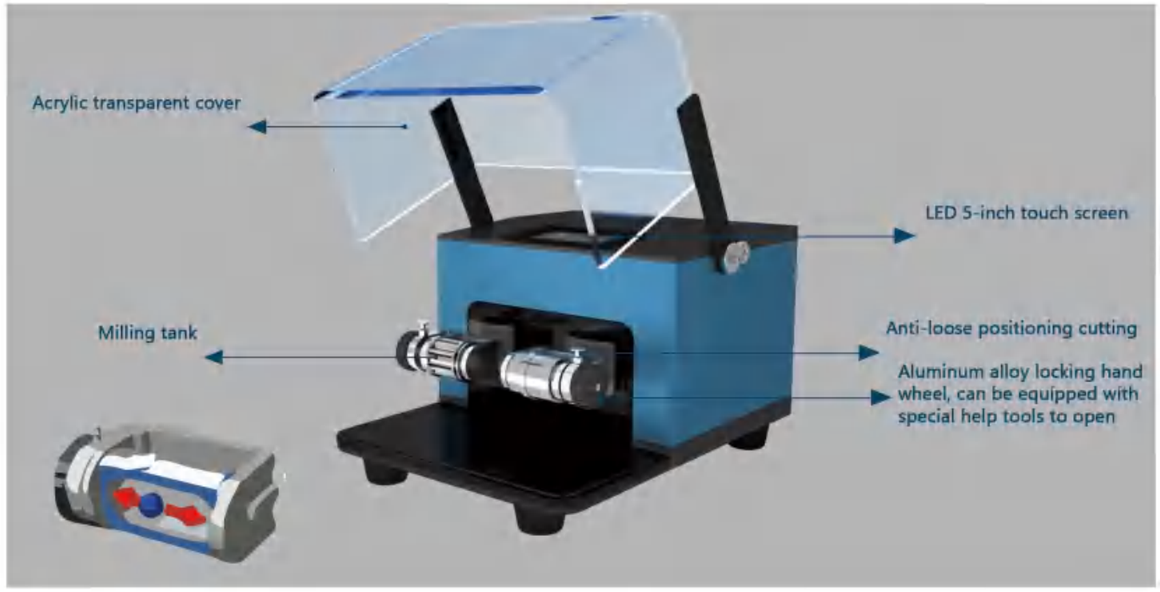
★ Vibrating Ball Mill IMB60

○ Working principle

The milling tank of vibrating ball mill is in the horizontal direction of high frequency reciprocating radial movement. The inertia of the milling ball drives them to impact the sample located on the inner surface of the arc with high energy, so as to achieve the effect of milling the sample. The motion of the milling tank is superimposed with the motion of the milling ball inside the tank to thoroughly mix the sample. Higher mixing results can be obtained by using multiple small diameter milling balls.



○ Feature:

- Can be used for dry milling, wet milling and frozen milling;
- Very short milling time, can achieve fine milling effect;
- High throughput design, up to 192 biological samples can be broken;
- Experimental parameters can be preset through the LED panel, and the milling results are highly repeatable;
- Top cover with safety interlocking device, high safety design to ensure the safety of experimental personnel;
- 5-inch LED control panel can set parameters such as operation time, intermittent time and milling speed;
- A variety of materials and specifications of milling tanks and related accessories can be selected, can be suitable for different experimental needs;
- The instrument adopts an integrated motor switch, which can be started only when the organic cover is closed.
- The cover cannot be opened during the operation of the instrument;
- Specially designed safety locking device of milling tank ensures the tightening safety of milling tank to the
- Advanced Easy Clamp system, can fast and efficient tightening milling kit;
- A variety of milling kits can be selected, and the effective volume of the milling tank is from 0.2 ml to 6*100 ml.

○ Various milling kits

The choice of milling kit has a crucial influence on the milling result. The type and number of samples determine the volume of the milling tank selected. In order not to interfere with the subsequent analysis results, the user should choose a neutral material that does not affect the analysis results.

The material density of the milling ball and the quality of the milling ball will have a great effect on the milling energy. The higher the density and mass,the higher the milling energy. milling tank and milling ball must be made of the same material.

○ Freezer Set

Insulation barrel, goggles, asbestos gloves, special fixture

Through liquid nitrogen frozen sample milling, it can have a good milling effect on \heat-sensitive samples and elastic materials, such as rubber or plastic, especially for protein, DNA, RNA extraction of tissue organisms.

Available 5, 10, 12, 24, 96-hole LPTFE adapters, mainly for 1.5, 2.0ml centrifuge tube multi-batch milling, up to 192 sample sites.
Mainly suitable for the extraction and milling of DNA\RNA in animal and plant tissues, all adapters can be frozen in liquid nitrogen to achieve better extraction results.

Milling tank, can provide stainless steel, oxide, tungsten carbide, agate and PTFE milling tank and other materials to meet different experimental analysis needs.
Capacity of 2.0, 5.0, 10, 15, 25, 35, 50ml and other volumes of milling tanks.
It also comes with 2.0 ML6-well and 5.0 ML4-well stainless steel tank adapters to meet the high throughput requirements of hard samples.

50 and 100ml adapters, 8*50ml, 6*100ml
The preparation of food QuECHERS agricultural residue samples requires rapid shock extraction of the samples after the addition of acetonitrile and salt packets. With the adapter of the 8*50ml centrifuge tube, 8 samples can be extracted at one time.
The 6*100ml centrifuge tube adapter can grind soil samples quickly and high-throughput, which can completely avoid cross-contamination of different batches of soil samples. This method and the adapter are the first inventions in China, and have been widely used in many soil laboratories in China.

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★ Vibrating Ball Mill IMB60

○ Sample case

Before milling / After milling

Sample	Hair
Grinding kit selection	2ml centrifugal tube, 7mm stainless steel ball, 24-hole adapter
Sample property	Toughness
Preconditioning	Need to pre-cut to 5mm, into the centrifugal tube
Grinding parameter	1800 rpm, 3 to 5 minutes

Before milling / After milling

Sample	Lamina
Grinding kit selection	2ml centrifugal tube, 7mm stainless steel ball, 24-hole adapter
Sample property	Fibroid
Preconditioning	Put into 2ml centrifuge tube
Grinding parameter	1800 rpm, 30 seconds

Before milling / After milling

Sample	Chinese pill
Grinding kit selection	8*50ml adapter, 7mm stainless steel balls
Sample property	Fibrous and sticky
Preconditioning	No preprocessing required
Grinding parameter	1800 rpm, 5 minutes

○ Specification

Injection size	<10 mm	Instrument size	370*500*350 mm
Rated power	200 W	Sample size	0.2 ~ 400 ml
Sample size	<5 microns	Package size	480*380*650 mm
Rated voltage	220 V, 50 HZ	Time setting	00:01~99:59 minutes/second
Rotational speed	180~1800rpm/min, up to 2000 rpm, continuously adjustable	Instrument weight	36 kg

★ Mortar mill IMR60

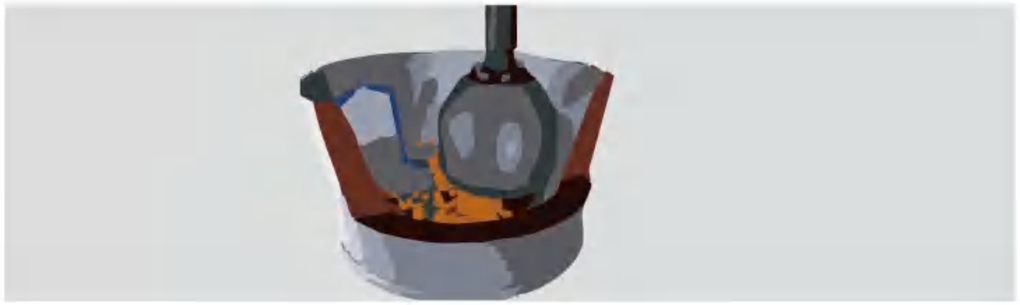
The mortar mill is a versatile, high-performance milling machine for high repeatability milling and homogenization. It can be used for dry milling, wet milling and freezing milling of a wide range of materials. Exceptional performance in terms of handling power, operating comfort and safety,effectively homogenizes a variety of samples in dry and wet conditions, and also grinds frozen yeast cells at low temperatures. The effective volume of the instrument is between 10-200 ml. During the milling process of the instrument, the milling sample or milling auxiliary materials (such as liquid) can be added from the skylight on the right. The pressure of the pestle and its position in the mortar have a very important effect on the milling result. The position of the pestle and shovel head can be adjusted.

○ Application field

Agriculture, biology, medicine, food, materials, environment, military, ceramics, metallurgy, etc.

○ Working principle

The mortar grinder realizes milling, mixing and milling sample preparation through the principle of extrusion and friction. The mortar itself is rotating, and its internal milling sample is pushed between the pestle and the mortar by a spatula head. This additional passive propulsion not only ensures that the sample can be repeatedly ground during the milling process, but also achieves full and uniform mixing of the sample.



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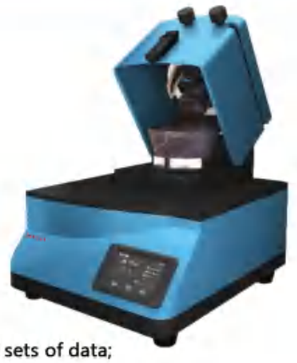
★ Mortar mill IMR60

○ Feature



- Suitable for dry milling, wet milling and frozen milling;
- Pretreatment is optional for rough samples; Simple operation, ergonomic design;
- Simple operation, ergonomic design;
- The sample volume can be increased through the feed window during milling;
- The mechanism of the instrument can be set up and adjusted easily and quickly;
- Pestle head and mortar are plug-and-pull positioning design, no tools can be quickly installed and removed;
- Led 5-inch display, touch man-machine interface, high sensitivity induction, can store 20 sets of data;
- When the milling process is over, the pestle and mortar can be easily removed for quick and easy cleaning;
- The instrument is equipped with a magnetic switch to determine whether the lid is closed, and can only be started when the magnetic switch is closed;
- A variety of scraping materials are available (polyurethane, teflon, beech) to meet all application tasks.

○ Various milling kits

When selecting the right material for the milling kit, the first thing to consider is the hardness value of the milling sample and the possible impact of the abrasion produced during the milling process on subsequent analysis or further treatment.
Standard shovel heads are made of corrosion-resistant polyurethane elastomer plastic. We also offer special models of shovel heads made of beech wood specifically for the pharmaceutical industry. The shovel heads made of PTFE(polytetrafluoroethylene) are particularly suitable for freezing milling. The IMR600 has a maximum effective volume of 200 ml.

Material	Advantage	Hardness	Abrasion resistance	Liquid nitrogen addition	Suitable sample
Chromium steel or stainless steel	Strong applicability, low cost	5.5~6Mohs	normal	No	Majority sample
Agate	High purity, no heavy metals	6.5~7Mohs	good	Yes	Soil, tablets, etc., do not contain heavy metal detection
Zirconia	No color contamination	7 Mohs	good	Yes	Materials, ceramics, etc
Corundum	High purity, high hardness	9 Mohs	normal	Yes	Cement, garbage, etc
Tungsten carbide	High hardness and purity	9~9.5 Mohs	excellent	No	Minerals, alloys, etc

★ Mortar mill IMR60

- Hard porcelain is suitable for the preparation of pharmaceutical and homeopathic pharmaceutical samples;
- Hard porcelain or corundum (Al2O3) soft to medium hard and paste samples;
- Agate, zirconia or tungsten carbide is suitable for hard, corrosion-prone materials for a long time, and requires no heavy metals Sample preparation;
- Chromium steel or stainless steel for not high requirements or rough processing, but also suitable for milling frozen yeast cells;

○ Application example

Food, grains, seeds, soil, tablets, ceramics, cement, coal, ore, quartz, glass, activated carbon, etc.

○ Sample property

Softness, hardness, brittle, colloidal.

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★ Mortar mill IMR60

○ Sample case

Before milling	After milling		
		Sample	Soil
		Grinding material selection	Agate bowl and mortar head, heavy metal testing later
		Sample property	Rigid
		Grinding capacity	150g
		Grinding parameter	100rpm,5min

Before milling	After milling		
		Sample	Mung bean
		Grinding material selection	Stainless steel mortar and mortar head, later for agricultural residue detection
		Sample property	Brittleness
		Grinding capacity	100g
		Grinding parameter	100rpm,3min

Before milling	After milling		
		Sample	Rock candy
		Grinding material selection	Tungsten carbide mortar and mortar head, composition analysis later
		Sample property	Brittleness and viscosity
		Grinding capacity	200g
		Grinding parameter	120rpm, 10 min, frozen grinding with liquid nitrogen

○ Specification

Injection size	≤12 mm	Grinding kit material	Stainless steel \ chrome \ agate \ oxide \ tungsten carbide
Sample size	≤5 microns (depending on sample properties)	Scraper adjustment	Through bevel gears
Rotational speed	30~150(RPM)	Arrowroot	Through bevel gears
Batch capacity	10~200 ml	Instrument size	450*500*560 mm
Time frame	00:01 ~ 99:59	Package size	600*650*660 mm
Pressure setting	Yes, through the ruler	Instrument weight	46 kg
Locking device	Mechanical + Electronic	Rated power	230 W
Display screen	Led5-inch touch screen	Rated voltage	220 V, 50 HZ

★Planetary Ball Mill IMP80

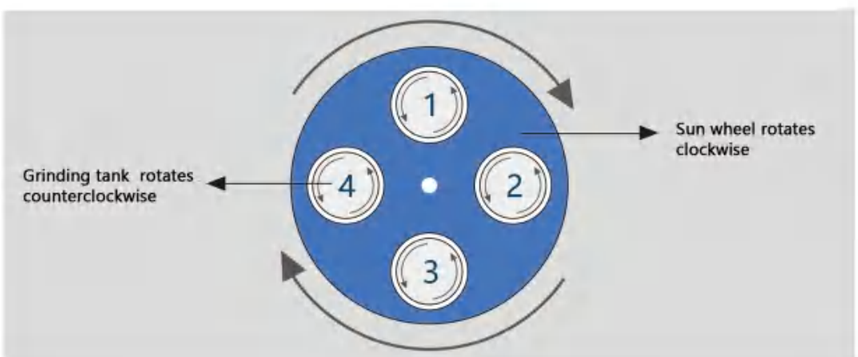
The planetary ball mill quickly grinds samples down to the nanoscale and ensures repeatability of the results. It is often used for difficult sample milling, from conventional sample processing to colloidal milling and mechanical alloys. The high centrifugal force of the planetary mill brings great crushing energy, so the milling time is very short.

○ Application field

Agriculture, biology, medicine, food, materials, environment, military, ceramics, metallurgy, etc.

○ Working principle

The milling tank of the planetary ball mill is located in the eccentric position of the sun wheel at the bottom. The milling tank rotates on its axis in the opposite direction of the sun wheel. The speed ratio of the sun wheel to the milling tank is 1:-2(1:-1,1:-2.5 or 1:-3). Coriolis force (rotation deflection force) is exerted on the ball moving with the can in the milling tank. Due to the different speeds of the milling ball and the milling tank, the sample and the tank wall produce strong friction and impact, and release a lot of kinetic energy. The interaction between these forces makes the milling degree of the planetary ball mill extremely high.



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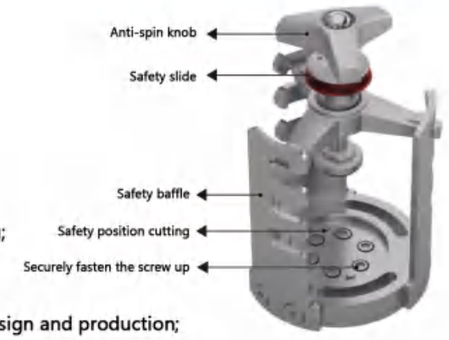
★Planetary Ball Mill IMP80

○ Feature

- Automatic reverse rotation to prevent sample agglomeration;
- Fast milling fineness down to sub-micron level;
- Can store 20 groups of milling methods, easy to call;
- Led7-inch display can clearly display parameter Settings;
- milling chamber automatic ventilation system for milling tank cooling;
- Repeatable milling results through energy and speed control;
- According to the customer's choice from 1:1 to 1: -3.5 customized design and production;
- 8 kinds of milling tank made of different materials, various specifications, volume 12ml -500ml;
- The diameter of the sun wheel is the largest, and the milling energy is the largest and the efficiency is the highest at the same time and speed.



IMP60

IMP80

○ Secure

- Comfortable fastening device, convenient and fast to lock the milling tank;
- When the milling tank is locked, the safety slide will automatically spring down, otherwise it will be regarded as an unlocked state, to ensure that the milling tank will not be loosened in the running state;
- Safety stop plate, with comfortable fastening device three-point fixing, strong stability;
- Safe positioning cutting, with the positioning hole at the bottom of the milling tank, to ensure that the milling tank does not slip during milling;
- Secure fastening screws, 6 screws firmly lock the base of the milling platform on the sun wheel, so that its rotation can reach more than 1200 revolutions.

★ Vibrating Ball Mill IMB60

The comfortable milling tank is specially designed for special experiments such as long milling, graphite, high mechanical load and high speed milling, mechanical alloys, etc.

- Milling tank volume from 12ml to 500ml;
- Hard steel, stainless steel, tungsten carbide, agate, sintered alumina, oxidation fault, silicon nitride, polytetrafluoroethylene;
- O-ring, sealed and dustproof;
- Flange on milling tank and cover;
- Safe non-sliding base with built-in anti-twist lock and conical bottom center positioning;
- There is a gap between the edge of the milling tank and the lid, which is easy to open;
- The optional safety sealing device can ensure the high air tightness of the milling tank, so that the milling tank can be safely operated inside and outside the glove box;
- Optional vent cover for sample inert gas protection in milling tank.

○ Application example

Polymers, ceramics, metal oxides, coal, ore, soil, electronic waste, paint paints, fiber products, graphene, quartz, glass, activated carbon, catalysts, etc.

○ Sample property

Softness, hardness, brittle, fibrous, colloidal.

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★ Vibrating Ball Mill IMB60

○ Sample case

Before milling / After milling

Sample	Hematite
Grinding ball selection	10mm tungsten carbide ball
Sample property	Rigid
Pellet ratio	250ml tungsten carbide tank, one-third of the ball material
Grinding parameter	300rpm, 15min forward

Before milling / After milling

Sample	Powdered pearl
Grinding ball selection	1mm oxidized wrong ball
Sample property	Brittleness
Pellet ratio	250ml cobalt oxide tank, anhydrous ethanol + 1/2 ball, 1/4 feed
Grinding parameter	400rpm, forward rotation 30min, intermittent 15min, cycle 30 times

Before milling / After milling

Sample	Glass residue
Grinding ball selection	10mm stainless steel ball
Sample property	Brittleness
Pellet ratio	500ml stainless steel tank, one third of the ball material
Grinding parameter	280rpm, 10 minutes forward

○ Specification

Injection size	≤12 mm	Display screen	LED 7 inch
Sample size	0.1 micron (colloidal grinding to nanometer level)	Rated power	1.5 kW
SaRotational speedmple size	30~400 rpm/min	Rated voltage	220 V, 50 HZ
Speed ratio	1:-2.2(can be customized on request)	Instrument size	800*600*600 mm
Time frame	000~999 minutes/time (cycle number 01~99 times)	Package size	900*1000*900 mm
Diameter of solar wheel	360 mm	Instrument weight	205 kpa

★ Knife Mill IMK60

The knife mill provides fast, reliable homogenization and crushing results for samples containing water and oil, so that any sample is representative of the typical sample. The cutting force generated by the high-speed rotation of the sharp blade of the instrument can be equipped with a guide bar to move the gravity cap up and down, so that the sample in a very short time of 10 seconds to obtain a very homogenized sample. The combination of powerful industrial motors, high safety standards and digital parameter design makes the knife grinder an essential milling device in food laboratories.

○ Application Fields

Food, agricultural and sideline products, grains, feed, fertilizer, medicine, etc.
Sample type: Soft, elastic, fibrous, water-containing, oily, fatty, dry sample
Typical sample: such as bread, fish, meat, feed, biscuits, vegetables, spices, cocoa powder, seafood, cereal bars, fruits, seeds, candy, preserves, etc

○ Working principle

The knife grinder has a two-blade cutter head, the cutter head is fixed in the center of the bottom of the milling cup, the cutter head maintains a certain height distance between the cutter heads, and starts to rotate under the motor drive of 1.1 kilowatts. The cutting effect of the sharp steel knife edge produces a reliable crushing and homogenizing effect. According to the direction of the rotation of the car, the reverse mode can be selected to use the knife back for coarse crushing of large samples. Then the sample was finely pulverized with a forward turning blade.

○ Feature

- ◆ Abrasive samples containing large amounts of water, lipid or fiber.
- ◆ Can withstand low temperatures, milling frozen samples.
- ◆ Intermittent mode, reverse mode, and point mode.
- ◆ The highest standards of safe operation and function
- ◆ The gravity cap can be manually moved up and down during milling to ensure better sample homogenization.

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★ Knife Mill IMK60

○ Various milling kits

We can provide you with different milling cups and knives of different materials for different applications.

High boron glass for trace element analysis, homogeneous samples must be free from contamination
PC or PP plastic cups are also used for trace element analysis. More cost-effective.
Stainless steel rotary knife is used to crush and grind most samples.
The serrated rotary knife is suitable for frozen foods, such as frozen meat or coarse fiber vegetables.
Titanium rotary knife is suitable for the determination of heavy metal elements.

1. 1L PC container, can be high temperature autoclave.
2. 1L PP container, cost-effective.
3. 1 litre stainless steel container, suitable for harder samples.
4. Guide bar, which can be held during the milling process to move the gravity. top cover up and down.
5. Two-blade stainless steel or titanium metal rotor, suitable for most samples.
6. Two-leaf serrated rotary knife, suitable for coarse fiber or frozen samples.
7. PP gravity cap, suitable for milling a small amount of samples, can be moved up and down with the guide bar to effectively compress the milling space, so that the sample homogenization effect is better.
8. PP with overflow canal gravity cover, suitable for fruit and vegetable samples with high juice content, milling process, when the water content in the milling cup gradually increased, the water will return to the bottom of the milling cup through the overflow canal.

○ Specification

Injection size	≤50 mm	Gland mode	The gravity top can be moved up and down manually during grinding
Sample size	≤300 microns	Rated power	1.1 kW
Rotational speed	2000~10000(RPM)	Rated voltage	220 V, 50 HZ
Sample throughput	300~700 ml	Instrument size	300*510*530 mm
Time frame	00:01onsaturday (UK time) ~ 09:59	Package size	466*550*630 mm
Number of blades	Two leaves	Instrument weight	26 kg

★ Ultracentrifugal mill IMZ60

The ultracentrifugal mill is an in-and-out rapid milling device that has long been the standard for solid sample pretreatment in the laboratory, with an ultra-powerful drive power system that greatly reduces sample crushing time. The compact and optimized overall design provides efficient and convenient crushing and can prepare more than 100 analytical samples per day. The efficient swivel and ring screen system ensures that the sample only stays in the milling chamber for a short time, thus generating less heat. Cleaning of milling tools is quick and easy, helping to avoid cross-contamination. With a new driving force system and higher energy efficiency through stronger torque, the frequency converter and three-phase AC motor provide more powerful sample handling capacity than other rotary grinders. Short periods of overload can also be quickly restored to balance to ensure efficient milling continues.

○ Application field

Chemical products, electronic products, fertilizers, Chinese medicinal materials, feed, grains, spices, bones, coal, plastics, plants, medical products, powder coatings, waste derived fuels, etc.

○ Working principle

The milling process in the ultracentrifugal mill is achieved by the cutting action between the high-speed rotating rotary knife and the fixed ring screen. The sample falls onto the rotating rotor through a hopper that prevents spatter. Due to the action of centrifugal acceleration, the sample moves towards the rotor. The rotor teeth located in the epitaxial of the rotor are wedges, which have a very high speed, and the impact between the two produces a crushing effect. The shearing action between the rotary knife and the ring screen produces the effect of fine milling. This two-stage crushing method makes the sample preparation process to achieve a gentle and rapid effect, the sample only stays in the crushing chamber for a short time, so the characteristics of the sample itself will not be changed by the sample preparation process, and the crushed sample filtered by the ring can be collected either in a ring collection tray, or through an additional cyclone or paper filter bag collection.

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★ Ultracentrifugal mill IMZ60

○ Feature

- Maximum revolution range, adjustable range: 6000-18000 RPM, up to 20000 RPM.
- Cutter diameter 98 mm, circular speed up to 31.4-94.2m /s.
- Fast and gentle two-stage milling (rotary knife/ring screen system).
- Optional automatic sampling system to collect up to 5L samples.
- It can be used for freezing milling (liquid nitrogen), and the milling chamber for heat-sensitive samples such as plastics.
- Can be extracted, and the sample collection is convenient and without loss.
- The final sample size is small, up to 40um.
- The motor room and the electronic components of the instrument have dustproof devices to prevent the sample powder from falling into the design.
- Parameter setting is convenient, and the 5-inch LED screen is displayed.
- Optional cyclone separator for increased sample flux and cooling.

○ Secure

- Electronic lock and mechanical lock double protect the safety of the operator.
- The motor is imported three-phase AC motor with low operating tone and high energy output, which can effectively reduce the frequency of overload protection function and greatly improve work efficiency and sample preparation comfort.
- The funnel with anti-splash design effectively prevents the phenomenon of feed clogging and can effectively reduce dryness.
- There is a double-layer wear-resistantdynamic seal protection between the milling bin and the motor to prevent dust from entering the motor.
- The maximum rotating speed of the rotary knife is 18000 RPM, forming a strong cyclone eddy, forming a fixed airflow loop from the feed port to the inside of the machine, ensuring the cooling of the milling sample.

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★ Ultracentrifugal mill IMZ60

○ Various milling kits

With a variety of accessories, and adjustable rotary speed, can adapt to various milling tasks. All milling kits are toolless and removable for easy cleaning and installation to avoid contamination.

Rotary knives: We have 6-tooth, 12-tooth and 24-tooth rotary knives. The more teeth are proportional to the fineness of the sample. In addition to stainless steel spinner, we also offer pure titanium spinner for metal element analysis applications.

Ring screen: Different fineness can be adjusted by adjusting the speed, but also by choosing a ring screen with different apertures. We can provide the smallest ring screen 0.08mm, of course, we also provide pure titanium ring screen for your choice.

Automatic sampler: Can be used for crushing large quantities of samples, the load display allows the operator to monitor the power load and adjust the feed rate for optimal results.

Cyclone: The milling sample is cooled by air flow and can be quickly removed from the milling chamber via a collection disc with an outlet. In addition, the system is almost self-cleaning when connected to a vacuum cleaner. It comes with 250 ml to 500 ml sample bottles; 3 liter and 5 liter collection containers are available for large samples.

○ Crushed special sample

Samples such as plastics and rubber are more easily crushed after being embrittlement with liquid nitrogen freezing Heat sensitive samples, such as paint, resin and other samples with spacing screen and cyclone separator is more suitable for sample screening and reduce the sample heat sensitive corrosion of the sample, can choose to plate corrosion resistant coating of the rotary knife and screen for milling, such as chemicals, acid fertilizer

○ Sample property

Soft, hard, brittle, fibrous.

○ Sample case

Before milling After milling

Sample name	Plastic particle
Grinding kit selection	12-tooth rotary knife, 0.2mm screen ring
Sample property	Heat sensitivity, toughness,
Preconditioning	The liquid nitrogen was frozen and then injected
Time	Turn off the machine when the sample is finished

Before milling After milling

Sample name	Soya bean
Grinding kit	12-tooth titanium rotary knife, 0.5mm titanium screen rin
Select sample	Brittle, oily
Property pretreatment	The sample can be injected at room temperature, and the liquid nitrogen freezing effect is better
Grinding parameter	After the sample is finished, turn off the machine

Before milling After milling

Sample name	Straw weigher
Grinding ball selection	12-tooth titanium rotary knife, 1.0mm titanium screen ring
Sample property	Heat fibroid, toughness,
Preconditioning	Pre-cut to 10mm
Grinding parameter	About 280rpm, 10min forward rotation

○ Specification

Injection size	≤12 mm	Receiving container	Standard grazing tray 900 ml can also be optional cyclone separator can choose 5 heart elevation ~5000 ml according to grazing container
Sample size	<40 microns	Rated voltage	220 V, 50 HZ
Rotational speed	6000~18000(RPM), up to 20000 RPM, continuously adjustable	Rated power	750 W
Cutter diameter	98 mm	Instrument size	380*480*490 mm
Knife circular line speed	31.4~91.2 m/s	Package size	600*600*650 mm
Optional sieve ring	0.00/0.12/0.20/0.25/ 0.50/0.75/1.00/2.00 mm	Instrument weight	35 kg

★ Cutting Mill IMC80

The cutting mill is perfect for handling conventional or unconventional samples, has the high torque force of the mass flywheel and is very safe and easy to operate. It is available in a variety of accessories, crushing efficiency, and is a must for heavy metal RoSH and WEEE inspection. In addition, dry materials can be crushed in batches or continuously, and long fibrous samples and large volume samples can be completed in one step without pre-crushing.

○ Application field

Agriculture and animal husbandry, Chinese medicinal materials, feed, environment, solid waste, garbage, electronic products, etc

○ Sample type

Hard brittleness, soft, toughness, fiber.

○ Typical sample

Electronic waste, medicine, foil, feed, seasoning, rubber, wood, cable, bone, plastic, leather, organic and inorganic waste, paper, cardboard, plants, waste derived from burning stamps Straw, coal, non-ferrous metals, etc.

○ Excellent performancesample

It has the high torque force of the mass flywheel and is very safe and easy to operate. The speed is adjustable from 300 to 3000 RPM, which can perfectly match the sample crushing with different crushing and temperature sensitivity. Therefore, a single machine can grind a wide variety of samples, including those with toughness and heat sensitivity. The overall optimization of the structure of the milling chamber and the opening mode of the two parts make the cleaning simple and thorough. The wide inlet design of the feed funnel allows continuous processing of a large number of samples to be easily completed. It can also be equipped with a cyclone separator suitable for handling fibrous or light weight samples.

○ Feature

- Strong crushing capacity and sample homogenization;
- With double cutting edges to bring more optimized crushing effect;
- Speed 500-3000 RPM adjustable, 3KW strong drive;
- The final sample size is controlled by the bottom screen, 0.10-20mm;
- A wide range of accessories including feed funnel, collection device, rotary knife and bottom screen;
- Fast braking and locking devices meet high safety standards, and electronic safety switches prevent the door from being activated when it is opened;
- The innovative opening method can completely open the milling chamber, and the instrument can be cleaned very clean, eliminating cross-contamination.

Sample example: Notoginseng

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★ Cutting Mill IMC80

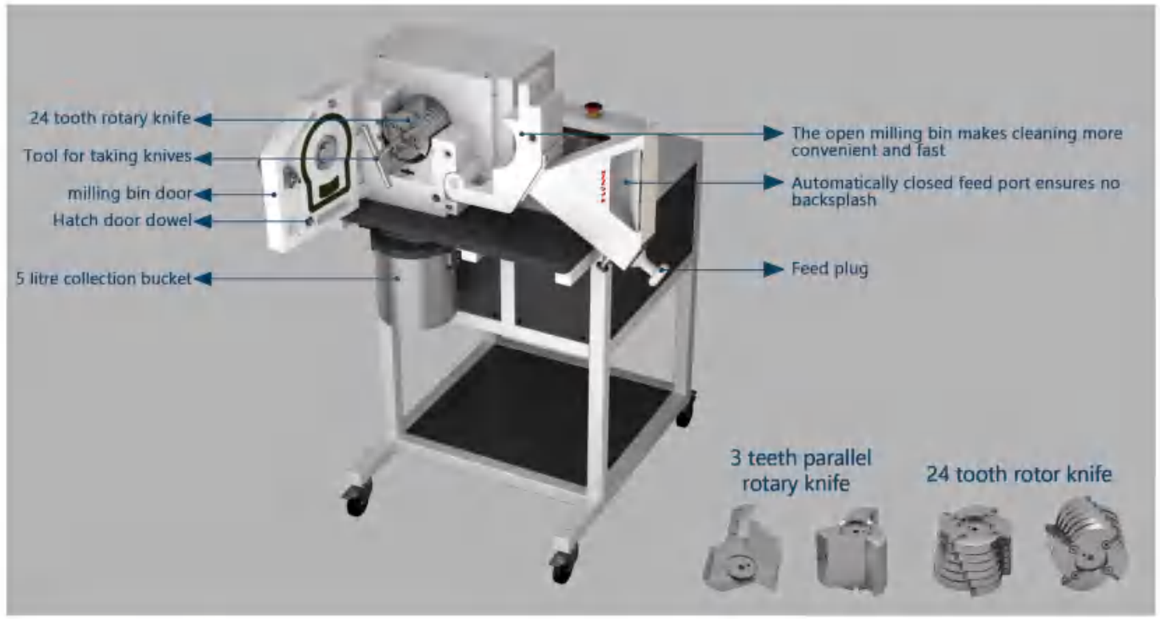
○ Various milling kits

Turning Tool

- The parallel rotary knife is assembled by 3 parallel blades, which is suitable for most samples that are easy to crush;
- The 6-blade rotary cutter is composed of 24 detachable hard metal blades, which are mainly used in the crushing of medium hard and brittle sample materials.

Cyclone Separator

- Efficient cooling of samples and cutting tools, so that samples quickly out of the milling chamber;
- It is recommended for small or low density samples and can be used with sample collection bottles of 0.5-30 liters.



○ Specification

Injection size	<80*80 mm	Receiving volume	0.51\2\530 litres optional
Sample size	0.1~20 mm	Rated power	3.0kW
Rotational speed	300~3000(RPM)	Rated voltage	380V,50 HZ
Sample throughput	5 litres or 120 kg/h	Package size	650*850*1560 mm
Optional screen size	0.2/0.5/1.0/2.0/4.0/6.0/8.0/10 mm	Instrument weight	190 kg
Optional swivel knife	3 teeth, 24 teeth	Package size	900*980*1500 mm

★ Jaw Mill IMJ80

Jaw mill is a floor-type jaw crusher, widely used in geological and mineral laboratories and even factories. The sample processing capacity of 300kg per hour enables him to have the production nature of jaw crusher, which can quickly and gently crush and pre-crush medium hard, hard, brittle and large samples. Available in a variety of accessories, crushing efficiency, jaw crusher with a solid construction design, simple operation and cleaning. To enable you to achieve a crushing process that meets different analytical requirements, there are special models for the semiconductor industry. The injection funnel and collection tank are lined with polymer material and the jaw plate is made of tungsten carbide.

○ Product field

Geological minerals, glass ceramics, building materials, environmental protection, gold, etc.

○ Typical sample

Polysilicon, rock, ore, quartz stone, glass, ceramics, chemical raw materials, building materials, construction waste, soil, non-ferrous alloys, melting inspection, school support.

○ Palatine

Manganese steel (investment casting) The structure of this material will be densified when subjected to extrusion load, so it will gradually harden and harden in use).

Tungsten carbide is the purest and most scratch-resistant material we offer. Even for samples with a Mohs hardness value of 7-8, it can maintain a long service life.

Zirconia is locally stabilized by yttrium elements, specifically for ceramic materials that do not contain heavy metal components, such as dental and other medical ceramics, optical glass crushing treatment. Another advantage of choosing this material is that there is no color change to the crushed sample due to scraping.

Heavy metal-free steel is the ideal choice for heavy metal-free crushing of less abrasive materials such as construction scraps, soil samples, road paving.

Industrial plastics This material has a high toughness, in the crushing process without any metal element pollution, to ensure the high purity of the sample.

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★ Jaw Mill IMJ80

○ Working principle

The crushed sample is passed into the milling chamber through a splash-proof hopper. The milling process is carried out in the wedge-shaped well space between the two milling jaw arms. One jaw arm is fixed and the other is driven by an eccentric axle. The crushed sample is crushed by the elliptical motion of the jaw arm and falls under the action of gravity. When the particle size of the sample is less than the opening distance at the lower end of the jaw plate, it falls into a pull-out receiver. The gap width of the jaw plate is continuously adjustable and displayed with a scale to ensure that you get the best crushing results corresponding to the gap width.

○ Feature

The feed funnel adopts anti-splash design, which can easily flip to one side, so that the operator can easily and quickly clean the milling chamber, and is equipped with an electronic proximity switch, so that the instrument will not be started when the funnel is opened, to ensure the safety of the operator.

The hand wheel with the scale can be used to adjust the zero point conveniently, adjust the gap of the jaw plate, and accurately control the particle size of the sample.

The instrument will produce a large amount of dust when crushing the sample, so we specially designed a dust removal device. Before the instrument is started, the dust inside the instrument will be discharged with negative pressure to achieve a clean and dust-free laboratory.

The instrument can provide a variety of material jaw plate for choice, to meet different experimental analysis requirements, in order to protect the jaw plate, the instrument has the function of automatic reversal after jamming.

○ Specification

Injection size	<100 mm	Zero correction	Yes
Sample size	<2 mm	Rated voltage	380 V, 50 Hz (three-phase AC)
Rotational speed	690 rpm	Rated power	2.2 kW
Receiving tank volume	5 liters	Instrument size	450*950*1100 mm
Jaw width	99 mm	Package size	800*1200*1400 mm
Jaw gap adjustment	0~30 mm, continuously adjustable	Instrument weight	350 kg

★Jaw Mill IMJ60

Jaw Mill IMJ60 and IMJ80 in the application field, the working principle is basically the same, both have the function of zero point to compensate for wear, different from IMJ800, IMJ600 is a desktop jaw crusher, small design, small occupation area, easy to operate, With a smaller sample size (d90<0.5m) and a more moderate non-destructive crushing effect, the instrument has a solid construction design, simple operation and cleaning, suitable for samples with a sample size of around 5KG.

○ Feature

Compact desktop design, does not take up laboratory space;
The final sample size is small (d90 < 500um);
Adjustable speed 500-1000 RPM;
Led5-inch touch screen displays the gap width and speed of the jaw plate;
The instrument has the function of zero correction, which can also ensure the repeatability of the results after a long time of use;
Disassemble and clean the crushed jaw plate without the aid of tools;
The instrument has a suction port, and the effect of no dust can be achieved by connecting the vacuum cleaner during the working process;
In order to protect the jaw plate, the instrument has an automatic reversal function after jamming.

The feed funnel adopts anti-splash design, which can easily flip to one side, so that the operator can easily and quickly clean the milling chamber, and is equipped with an electronic proximity switch, so that the instrument will not be started when the funnel is opened, to ensure the safety of the operator.

The instrument is equipped with a special jaw plate removal tool, which allows the jaw plate to be easily removed for thorough cleaning of the milling chamber.

The 3-liter sample collection tank is equipped with an electronic proximity switch, which stops the instrument immediately after pulling it out to maximize the risk of misoperation by the experimenter.

Turn the hand wheel can easily adjust the gap of the jaw plate, LED5-inch touch screen display, convenient and fast.

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★Jaw Mill IMJ60

○ Feature

Before milling	After milling		
		Sample name	Medicinal glass bottle
		Grinding kit	Stainless steel jaw plate, stainless steel scraping plate
		Select sample	Brittleness
		Property pretreatment	Direct injection without pretreatment
		Argument	600 RPM, 1 to 2 minutes

Before milling	After milling		
		Sample name	Soil
		Grinding kit	Oxidized jaw plate, patent scraping and grinding plate
		Select sample	Medium-hard
		Property pretreatment	Pretreat to 40 mm for injection
		Argument	800 RPM, 30 seconds

Before milling	After milling		
		Sample name	Automobile catalyst
		Grinding kit	Stainless steel jaw plate, stainless steel scraping plate
		Select sample	Fibrous, brittle
		Property pretreatment	Pretreat to 50 mm for injection
		Argument	550 rpm, 2 minutes

○ Specification

Injection size	<50 mm	Zero correction	Yes
Sample size	<0.5 mm	Rated voltage	220 V, 50 Hz (three-phase AC)
Rotational speed	500~1000 rpm	Rated power	1.1 kW
Receiving tank volume	3 liters	Instrument size	450*650*500 mm
Jaw plate width jaw	59.5mm	Package size	800*900*800 mm
Plate clearance adjustment	0~15 mm, continuously adjustable	Instrument weight	98 kg

★ Disc Mill IMD60

Disc grinder IMD60 is a floor type, continuous sampling and milling particle size can be less than 100 microns, its design is solid and durable, mostly used in laboratory and pilot workshops such as rough working environment, but also suitable for raw material online quality monitoring.

○ Product field

Geological minerals, glass ceramics, building materials, environmental protection, gold, etc.

○ Typical sample

Rock, ore, quartz stone, glass, ceramics, chemical raw materials, building materials, construction waste, soil, non-ferrous alloys, slag, resin.

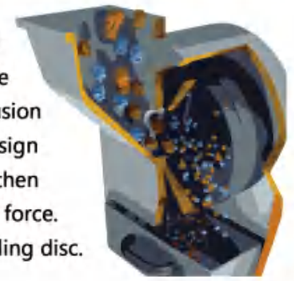
○ Feature

- Very short milling time, discharge particle size up to d90< 100 um;
- Injection size up to 20mm;
- Repeatability of results is achieved by precise adjustment of the disc clearance;
- A variety of milling discs are available, with a long service life;
- With vacuum cleaner interface, no dust is produced during milling;
- The special jaw crusher IMJ80 is connected with the IMD60 to achieve simultaneous completion of coarse milling and fine milling.

Sample example: Iron ore

★ Disc Mill IMD60

○ Working principle



The milling sample is passed through the feed funnel into a dust-proof milling chamber and then fed between two upright milling discs. One of the rotating disks rotates relative to the other fixed disk, constantly trapping the incoming sample, and the resulting extrusion pressure and friction bring about the desired crushing effect. The progressive rodent design of the milling disc allows the sample to be pre-pulverized in the middle of the disc and then transferred to the outer edge of the disc for further fine pulverization due to centrifugal force. The finished sample falls into the sample receiving container through the gap of the milling disc. The clearance of the milling disc is continuously adjustable.

○ Disk material

Manganese steel (precision casting) The structure of this material will be dense when subjected to extrusion load, and therefore will gradually harden in use (cold hardening).
Hard steel with chromium and iron as the main components of iron alloy, has excellent oxidation resistance, corrosion resistance.
Heavy metal-free steel is the ideal choice for heavy metal-free crushing of less abrasive materials such as construction scraps, soil samples, road paving
Tungsten carbide is the purest and most scratch-resistant material we offer. Even for samples with a Mohs hardness value of 7-8, it can maintain a long service life.
Zirconia is locally stabilized by yttrium elements, specifically for ceramic materials that do not contain heavy metal components, such as dental and other medical ceramics, optical glass crushing treatment. Another advantage of choosing this material is that there is no color change to the crushed sample due to scraping.

Hard steel

Tungsten carbide

Zirconia

○ Specification

Injection size	<20 mm	Rated power	1.5 kW
Sample size	<100 microns	Rated voltage	380 V, 50 Hz (three-phase AC)
Rotational speed	470 rpm	Instrument size	450*900*450 mm
Receiving tank volume	3 liters	Package size	650*1200*650 mm
Clearance adjustment width	0.1 to 7 mm	Instrument weight	140 kg

★Vibrating Separator IMS60

Vibrating Separator IMS60 is widely used in the research and development of raw materials, semi-finished products and final products, process quality control and quality inspection. Meeting all customer needs and expectations, the instrument is suitable for dry/wet screening. The vibrating screen adopts electromagnetic drive power, which can produce three-dimensional throwing motion effect, so that the sieve can uniformly distribute motion on the entire screen cross-section. Each screen is equipped with an independent amplitude setting, which ensures that the sample properties are matched, so that accurate analysis can be made even when the screening time is short.

○ Product application

All particle size samples are graded or analyzed

○ Typical sample

Solid, mobile, granular samples of sand, rock, clay, granite, coal, soil, various powders, grains, and seeds.

○ Working principle

The vibrating screen uses electromagnetic driving power, and throws the sample through the three-dimensional throwing motion generated by the driving force, so that the sieve can uniformly distribute the motion on the entire screening cross-section. Its intermittent vibration can improve the screening effect and ensure that the sieve hole is not blocked.

Comfortable fastening device

The comfortable fast fastening device is especially convenient and time-saving to operate. The fastening device can be moved up and down and pressed with only gentle pressing, and the customer can hover at any time without worrying about breaking his hand.

Standard fastening device

Highly cost-effective fastening method, lock nut easily slide the bottom end only need to be tightened, the operation becomes very simple.

Analysis screen

We provide different mesh sizes of imported and domestic analytical screens, and nylon screens to prevent heavy metal pollution.

Analysis screen fittings

Collecting disc, intermediate disc, intermediate ring and screen cover.

Wet screen fittings

Tightening top with nozzle, collection disc with discharge port, wet screen exhaust ring.

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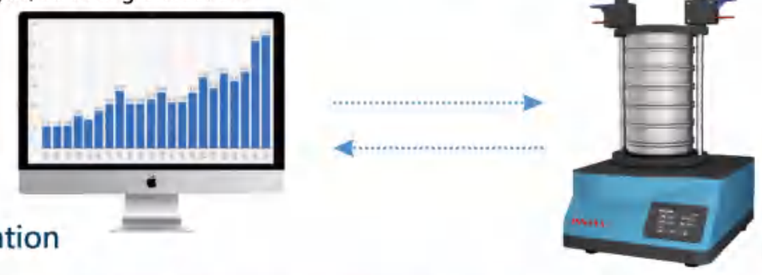
★Vibrating Separator IMS60

The IMS600 vibration screen meets all the requirements of modern laboratories, and all screening parameters such as amplitude, time, intermittent operation are digitally set, displayed and monitored. Its integrated interface and configured interface cable allow the model to be connected to a computer and controlled by specialized analysis software. The program controls the entire screening process as well as subsequent data analysis and recording, providing you with a simple, comfortable and error-free screening process.

○ Feature

- Intermittent mode can be set to ensure the screening rate of the sample;
- With dry screen and wet screen two functions;
- No maintenance, very quiet operation;
- Unique three-dimensional throwing operation, to ensure the high precision of screening;
- LED5 inch touch screen, intelligent control, easy operation;
- Digital setting, can get accurate and repeatable results;
- Reliable screening results, comfortable and convenient humanized design;
- Can be connected to the computer to use special screening software for operation control, data processing record and analysis, screening evaluation.



○ Specification

Size range of screening	20 microns to 25 mm	Storable parameter	20 groups
Amplitude range	0.2~3.0 mm	Maximum load	3.0 kg
Time frame	01 to 99 minutes	Rated power	400 W
Intermittent range	00~99 seconds	Rated voltage	220 V, 50 HZ
Drive screening mode	Electromagnetic drive	Instrument size	450*500*260 mm
Optional screen diameter	100\150\200\203 mm	Package size	400*650*650 mm
Screening number	Lv. 9	Instrument weight	46 kg

★ Sample Divider IMT60

The sample divider IMT60 is used to evenly divide a whole sample into 6, 8, 10 evenly small samples. Each sample has the same physical and chemical properties, and can represent the properties of the whole sample, and the sample separator is currently a more accurate sample separator on the market.be made even when the screening time is short.

○ Product application

Agriculture, biology, medicine, food, materials, environment, military, ceramics, metallurgy, etc.

○ Working principle

The samples to be processed enter from the injection funnel of the automatic sampler and fall into the conical rotating tube, which rotates at a uniform speed. The samples move towards the channel under the action of centrifugal force and are collected in containers outside each channel, and the physical properties of the samples in each container are the same.

- ◆ Reliable method, can be representative and repeatable sample
- ◆ Modular design, simple, no maintenance, easy to clean
- ◆ igital time setting
- ◆ Sample collection bottle easily and quickly disassemble fastening system
- ◆ Automatic injection through synchronous injection instrument
- ◆ Speed monitoring to maintain constant rotation, low noise operation

○ Specification

Injection size	≤12 mm	Rated power	40 W
Rotational speed	70-150 rpm	Rated voltage	220 V, 50 HZ
Time frame	00:01onsaturday (UK time) ~ 99:59	Instrument size	465*460*800 mm
Subsample quantity	6, 8, 10 samples to choose from	Package size	600*600*700 mm
Volume of sample bottle	10/25/50/100/250/500 ml	Instrument weight	38 kg

★ 3D mixer IMTF20

3D mixer blends several solid powders or liquids with different properties or uneven particle sizes. It is ideal for quality control and research and development by rotating the sample bottle in three dimensions to achieve uniform mixing.

○ Application field

Agriculture, biology, medicine, food, materials, environment, military, ceramics, metallurgy, chemicals, etc.

○ Working principle

The sample to be mixed is put into a closed container, and the sample bottle is quickly turned, inverted, vibrated and mixed in the three-axis space through three-dimensional O-shape rotation to achieve the purpose of homogenizing the sample.

○ Feature

- ◆ The method is reliable and can ensure that the sample properties of each point are the same after mixing
- ◆ Dust-free operation, low dryness, no environmental pollution
- ◆ Optional material of sample bottle is PP, PTFE, stainless steel, etc
- ◆ Sample volume 0.5L, 1L, 2L, other volumes can be customized
- ◆ Sample bottle with convenient and fast disassembly fastening system
- ◆ 5 inch LED touch screen control
- ◆ Intermittent and cycle mode can be set, which can run unattended for a long time
- ◆ Dry mixing, wet mixing, colloidal and liquid mixing mode

○ Specification

Rotational speed	20-120 rpm	Rated power	200 W
Time frame	00:01~99:59,	Rated voltage	220 V, 50 HZ
Parameter store	20 groups	Instrument size	500*650*380 mm
Intermittent and cyclic	Yes	Package size	800*900*800 mm
Sample bottle volume	0.5 L, 1 L, 2 L (5 L, 30 L, 50 L can be customized)	Instrument weight	38 kg