Fast Flexible Efficient

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Laboratory Mill

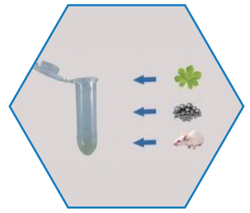
Provide Best Solution For Sample Preparation

Contents

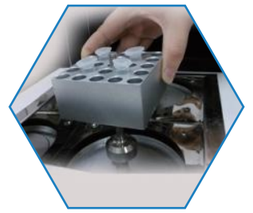
Operation Procedure

Sample processing can be easily completed in just 4 steps

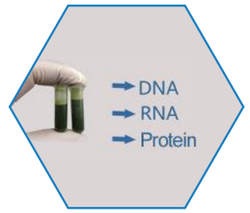
01. Place the sample and grinding beads into a centrifuge tube or jar



02. Place centrifuge tube or jar into adapter



03.Install the adapter into grinder,set working parameters and start



04. When finished, take out the sample tube for 1min, and add reagents to do nuclear acid extraction and purification

Abrasive Sample

Brain, heart, lungs, stomach, liver, thymus, kidney, intestine, lymph nodes, muscles, bones, etc

Animal Tissue

All kinds of food, tablets, etc

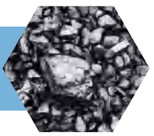
Food Drug

Plant Tissue

Roots, stems, leaves, flowers, fruits, seeds, etc

Volatile Sample

Coal, oil shale, wax products, etc



Yeast, E. coli, etc

Fungi Bacteria

ABS, PE, PS, fabric, resin, etc

Plastic Polymer

Knife Mill

Introduction

Welso knife mill with different high-speed accessories (Stainless Steel, PC, PP) is a special grinding and homogenization instrument that can process a great variety of sample materials to analytical grade within seconds. This mill is widely used in agriculture, biology, food, medicine, and pharmaceutical fields.

Features

- Both plastic and stainless steel grinding jars are available.
- 20 SOPs can be stored.
- Safe protection lock to ensure safety.
- Grinding tools are autoclavable.
- Simple and quick procedure to avoid cross-contamination.

Accessories

Samples

- Medicine: tablets, herb
- Biology: animal tissues, plant leaves and germs
- Agriculture: plant seeds, grains, feeds
- Food: fruits, vegetables, quick-frozen food, candies, dried and candied fruits, meat, fish

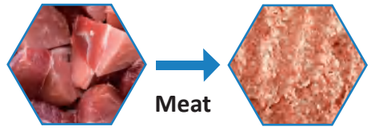
For other sample application, please check our website or contact us .

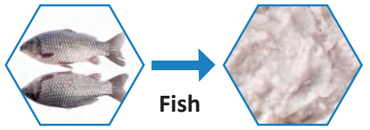
Knife Mill

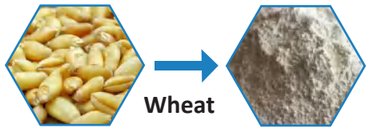
Specifications

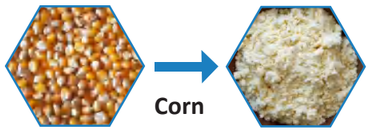
Model	WKM800
Sample	Dry, soft, plastic, fbrous, and medium-hard samples and high moisture, high oil content andhigh fat content samples
Sample Volume	Up to 700mL
Speed	100-15000r/min
Accessories	Stainless Steel, PP,PC
Dry Grinding	Yes
Wet Grinding	Yes
Interval Opeartion	Yes
Interval Time	Adjustable
Storable SOPs	20
Power	1100W
Dimension	310*370*330mm

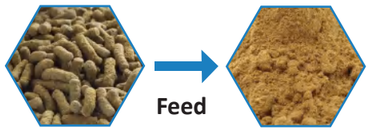
Grinding Performance











Planetary Ball Mill

Introduction

Welso planetary ball mill is widely used in agriculture, biology, chemistry, construction, engineering, environment, geology, pharmaceutical, and other industries. Its planetary ball design with high centrifugal forces greatly improves grinding efficiency.

Four grinding jars can feed with different samples which can meet various requirements and save experiment time.

Features

- Application of wide range of materials
- Suitable for long time trails
- Both dry and wet grinding modes
- Maximum sample volume 12000mL
- Low noise running
- Final sample finess less than 100nm
- Easy and user-friendly operation

Samples

- Medicine: tablets, herb
- Chemistry: chemical products
- Biology: bones, hair
- Environment:soil, plant,seeds
- Food: coffee beans,tobacco
- Geology: clay minerals, limestone,concrete, coal, metals
- Industry: paper,glass, fibres,ceramics,quartz, wood, paints

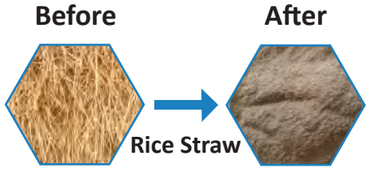
Grinding Jar & Ball

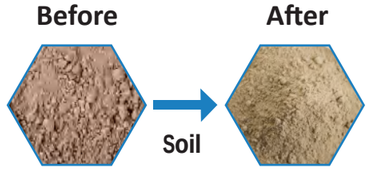
Planetary Ball Mill

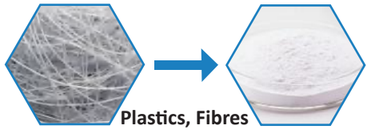
Specifications

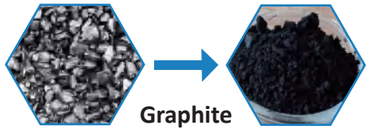
Model	WPBM-200	WPBM-400	WPBM-500
Feed Size	Soil<10mm, Others≤3mm	<10mm	<10mm
Final Fineness	<100nm		
Jar Volume	50mL/jar		
Batch Quantity	4x100mL	4x1500mL	4x3000mL
Sunwheel Speed	50-400r/min		
Jar Speed	100-800r/min		
Speed Ratio	1 :-2		
Interval Time	00:01:00-99:59:59		
Pause Time	00:01:00-99:59:59		
Light In Grinding Chamber	/	/	Yes
Ball Volume	50-100mL	100mL-1500mL	100mL-3000mL
Grinding Ball Diameter	3/5/10/15/20mm		
Grinding Ball Material	Stainless steel(304/316), Tungsten Carbide, Agate,PU, PTFE, PP, PA, Zirconium Oxide,Corundum		
Grinding Ball Weight	100-400g	200-1000g	200-1000g
Grinding Modes	Dry/Wet		
Cooling Function	Optional		
Gross Weight	29kg	92kg	150kg
Dimension	530*300*340mm	720*480*500mm	720*480*500mm

Grinding Performance









Mortar Grinder

Introduction

Welso WMG 500 mortar grinder substituting traditional hand mortar grinders is the ideal instrument for laboratory grinding. It mixes and homogenizes powders and other samples with high viscosity such as pastes and cream.

Features

- Suitable for dry, wet and cryogenic grinding
- Sample filling during operation via plexiglass window.
- No need to use tool to change mortar bowl and pestle.
- 3 different materials of scrapers to choose (PE, PTFE, Beech Wood) for various grinding tasks.
- Reliable and Reproducible results can be achieved by adjustment of the pestle pressure.
- Easy to clean by removing mortar bowl and pestle.
- Store up to 10 programmings and choose different programming for different samples.

Application

- Plant Tissue: root, stem, leaf, flower, fruit, seeds, etc.
- Animal Tissue: brain, heart, lungs, stomach, liver, thymus, kidneys, intestinal lymph nodes, muscles, bones, etc.
- Fungi & Bacteria: yeast, E. coli, etc.
- Food and Medicine: tablets, beans, herbs, etc.
- Mining & Geology: coal, oil shale, wax, etc.
- Industry: plastics, textile, resin, etc.

Mortar Grinder

Specifications

Model	WMG500
Sample Type	Hard, Medium-hard, Soft, Brittle, Fibrous, Abrasive, Temperature-sensitive Samples
Grinding Principle	Friction
Sample Size	8-10mm
Final Fineness	10 to 20μm
Speed	60-180rpm
Batch Sample Quantity	10mL-230mL
Time Setting	0-99mins or Continuous
Grinding Tool Material	Agate, Tungsten carbide, Stainless Steel, Hardened Steel,Zirconium Oxide
Scraper Pressure	Adjustable
Pestle Pressure	Adjustable
Powe Consumption	180W

For other sample application, please check our website or contact us .

High Throughput Tissue Grinder

Introduction

Welso high throughput tissue grinder is a special, fast, and efficient laboratory tissue grinder. It is specifically designed for both classic homogenization and cell disruption of plant and animal tissue by bead beating. It is well suited for extraction and purification of DNA, RNA, and protein from soil, plant tissue, bacteria, and yeast, Fungi etc. It can process up to 192 samples per run for different experiments' requirements.

Features

•Stability: good performance and better stability by vertical grinding than horizontal grinding with low noise less than 55dB.

•Efficiency: possible to proceed with 384 samples in 1 minute.

•No cross-contamination: All samples are sealed during grinding process by using disposable centrifuge tubes and beads which avoids cross-contamination.

•Easy Operation: Memory of 10 standard operating procedures, and user can set own SOPs by setting grinding time, frequency on user-friendly interface.

•Cryogenic grinding: for cryogenic grinding application, pre-cool grinding jar in liquid nitrogen for 1-2 mins, fix the jar quickly on the machine, and start grinding without cooling again.

•Reproducibility: Use the same sop for one tissue sample can get the same grinding fineness.

Application

•Plant Tissue: root, stem, leaf, flower, fruit, seeds, etc.

•Animal Tissue: brain, heart, lungs, stomach, liver, thymus, kidneys, intestinal lymph nodes, muscles, bones, etc.

•Fungi & Bacteria: yeast, E. coli, etc.

•Food and Medicine: beans, tablets, herbs, etc.

•Mining & Geology: coal, oil shale, wax, etc.

•Industry: plastics, textile, resin, etc.

High Throughput Tissue Grinder

Specifications

Model	WTL576	WTL1152
Applications	Size reduction, mixing, homogenization, cell disruption, cryogenic grinding, material dispersion	
Grinding Mode	Dry grinding, Wet grinding, Cryogenic grinding	
Adapter	3*192 well 2mL plates Customized vials: 90*5mL,72*10-15mL,30*50mL,20*100mL. Customized grinder jar sizes: 5mL, 15mL,50mL,100mL,300mL, 500mL.	6*96 well 2mL plates Customized vials: 48*5mL,48*7-15mL,9*50mL6*100mL. Customized grinder jar sizes: 5mL, 15mL,50mL,100mL,300mL, 500mL.
Display	LCD	
Sample Feed Size	Depend on adapter	
Final Fineness	Around 5μm	
Grinding Stations	＞12	
Vibration Frequency	0-50Hz/s	
Grinding Tool Material	Tungsten Carbide, Stainless Steel, Hardened Steel,Zirconium Oxide,Quartz Sand	
Beads Diameter	0.1-30mm	
Noise	<55db	
Dimension	580*470*690mm	
Weight	75kg	

For other sample application, please check our website or contact us .

Automatic Tissue Grinder

Introduction

Welso automatic tissue grinder is a special, fast, and efficient laboratory tissue grinder. It is specifically designed for both classic homogenization and cell disruption of plant and animal tissue by bead beating. It is well suited for extraction and purification of DNA, RNA, and protein from soil, plant tissue, bacteria, and yeast, Fungi etc. Its special 3D vibration makes grinding more efficient and faster.

Features

•**Stability:** good performance and better stability by vertical grinding than horizontal grinding with low noise less than 55dB.

•**Efficiency:** possible to proceed with 384 samples in 1 minute.

•**No cross-contamination:** All samples are sealed during grinding process by using disposable centrifuge tubes and beads which avoids cross-contamination.

•**Easy Operation:** memory of 10 standard operating procedures, and user can set own SOPs by setting grinding

•**Cryogenic grinding:** for cryogenic grinding application, pre-cool grinding jar in liquid nitrogen for 1-2 mins and fix the jar quickly on the machine and start grinding without cooling again.

•**Reproducibility:** use the same SOP for one tissue sample can get the same grinding fineness.

Application

•Plant Tissue: root, stem, leaf, flower, fruit, seeds, etc.

•Animal Tissue: brain, heart, lungs, stomach, liver, thymus, kidneys, intestinal lymph nodes, muscles, bones, etc.

•Fungi & Bacteria： yeast, E. coli, etc.

•Food and Medicine: tablets, beans, herbs, etc.

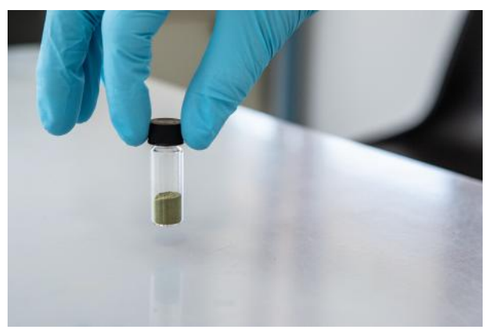
•Mining & Geology: coal, oil shale, wax, etc.

•Industry: plastics, textile, resin, etc.

Automatic Tissue Grinder

Specifications

Model	WTLA240	WTLA320	WTLA480	WTLA640	WTLA960
Applications	Size reduction, mixing, homogenization, cell disruption, cryogenic grinding, material dispersion				
Grinding Mode	Dry grinding, Wet grinding, Cryogenic grinding				
Sample Preparation	Grind 96 samples in 15 mins, including 12 well and 24 well cryogenic adapter				
Adapter	24*(0.2-0.5mL)/24*2mL /8*(5-15)mL /4*25mL /2*50mL	32*(0.2-0.5mL)/32*2mL /12*5mL /8*(7-15)mL /4*25mL /2*50mL	48*(0.2-0.5mL)/48*2mL /12*5mL /8*(7-15)mL /4*25mL /2*50mL	64*(0.2-0.5mL)/64*2mL /12*5mL/8*(7-15)mL /4*25mL/2*50mL	96*(0.2-0.5mL)/96*2mL /24*5mL/12*(7-15)mL /4*25mL /2*50mL
Display	Touch Screen LCD				
Memory	Store up to 10 programming, can set different modes according to different samples				
Sample Feed Size	Depend on adapter				
Final Fineness	Around 5μm				
Grinding Stations	2				
Vibration Frequency	0-70Hz/s				
Grinding Tool Material	Tungsten Carbide, Stainless Steel, Hardened Steel, Zirconium Oxide, Quartz Sand				
Beads Diameter	0.1-30mm				
Working Time	0-9999mins				
Noise	<55db				
Dimension	480*520*660mm				
Weight	60kg				



For other sample application, please check our website or contact us .

Cryo Mill

Introduction

Welso basic cryo mill is a high-speed and reliable system that can process samples of multiple tubes simultaneously. It is capable of grinding, pulverizing, mixing, and disruption a variety of samples, including soil, plant and animal tissues or organs, bacteria, yeast, fungi, spores, and paleontological specimens. This cryo mill features compact design with small footprint and delivers excellent performance. The grinding temperature is adjustable and prevent nuclear acid degradation while preserving protein activity.

Features

•Nucleic acid/protein extraction: Cryogenic grinding is an effective way to prevent nucleic acid degradation and maintain protein activity.

•Reduction of sample evaporation: Cryogenic grinding reduces sample evaporation and preserves sample composition.

•Analyzing Pharmaceutical Ingredients: Cryogenic grinding can prevent degradation of drug isomers due to pressure and heating.

•Grinding hard samples: cryogenic grinding greatly improves the efficiency of grinding samples such as hard plastics and resins.

•No damage to sample composition: The temperature for grinding can be adjusted to prevent nucleic acid degradation and preserve protein activity.

•High efficiency: Pre-cooling the polymeric adapter allows it to maintain a low temperature for over 30 minutes, enabling low-temperature grinding in the centrifuge tube.

•Good repeatability: Using the same program on a tissue sample yields consistent grinding results.

•Easy operation: Built-in program controller allows setting grinding time, rotor vibration frequency, and other parameters.

•Safety: Equipped with safety cover and lock, no need for liquid nitrogen operation to ensure safety.

•No cross-contamination: Closed grinding environment to avoid cross-contamination.

•Low noise: Noise less than 55dB during operation to avoid any interfere to other instruments.

Application

•Plant Tissue: root, stem, leaf, flower, fruit, seeds, etc.

•Animal Tissue: brain, heart, lungs, stomach, liver, thymus, kidneys, intestinal lymph nodes, muscles, bones, etc.

•Fungi & Bacteria： yeast, E. coli, etc.

•Food and Medicine: tablets, beans, herbs, etc.

•Mining & Geology: coal, oil shale, wax, etc.

•Industry: plastics, textile, resin, chemical polymers, etc.

Specifications

Model	WCM600
Time Setting	0-9999s
Frequency	0-70Hz
Power	375W
Movement Distance	32mm(Vertical)
Temperature	-30℃ to ambient
Capacity	2mL*24/5mL*12
Voltage	AC(220±22)V, <2.5A
Dimension	450*345*410mm
Weight	47kg