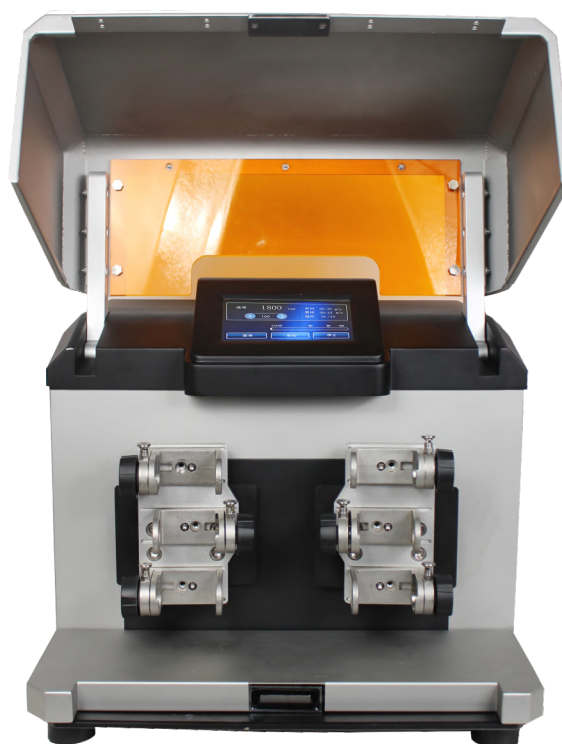



HIGH ENERGY BALL MILL

MM1600



Grinding  Wet
Cryogenic

Size Reduction

Homogenization
Cryogenic Grinding
Mechanical Alloying
Mechano Chemistry

The MM1600 high energy ball mill is a multi-functional bench-top ball mill specially designed for fast preparation of ultra-fine sample with high sample throughput capable of handling 6-384 samples simultaneously in modern laboratory applications, specially for Dry, Wet and Cryogenic grinding & can process multiple & small sample volumes.

MM1600 High Energy Ball Mill Grinds, Mixes, Homogenizes any kind powders and Suspensions (Hard / Soft, Brittle, Elastic & Fibrous Samples types in nature) in only few seconds and grinds down to nanometer Size.

MM1600 High Energy Ball Mill with built-in two grinding stations, pulverizes two/Multiple samples from 0.2 to 50 ml simultaneously in just few sec. and meets the requirements of high throughput grinding. Also perfectly suitable for biological samples as well and can handle 6-384 samples.

MM1600 High Energy Ball Mill can Grind / Homogenize samples viz. Plant root, Stem, Leaf, Grain Seed, Human & Animal Tissue, Bone, Hair, Mineral, Soil, Glass, Ceramic, Cereals, Rubber, Plastic, Solid waste, Electronic Waste, Paper, Textile, Chemical, Medicine, Food, Alloy, Coal, Tobacco, Timber, Wool etc.

APPLICATIONS

Preparation of Ultra-Fine Materials
Nucleic acid extraction sample pre-treatment

WORKING PRINCIPLE

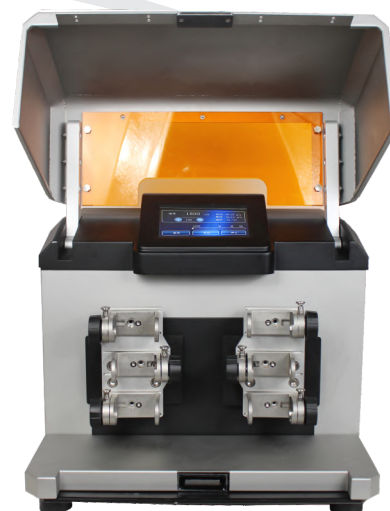
The samples are placed into the grinding jar, oscillates radially in the horizontal direction. The grinding balls hit the sample and the inner wall of the grinding jar intensively, under the action of high frequency oscillation, results effective pulverization and intensive mixing.

CONTROL PANEL

- Advanced 7" Colour Touchscreen Display with easy to control the instrument programs
- The running state could be observed easily
- Digitally adjustable Grinding Time : 0 to 99 hrs
- Digitally adjustable vibrational Frequency 1-35 Hz (60 to 2100RPM)

FEATURES AND ADVANTAGES

- Advanced 7" Colour Touchscreen display with easy to control the instrument programs and digitally adjustable grinding parameters
- Suitable for Dry, Wet and Cryogenic grinding.
- Final Fineness $\leq 100\text{nm}$
- Maximum vibrational frequency 35 Hz / (2100 RPM)
- Grinding Jar Volume : 1.5 / 2 / 5 / 10 / 25 / 35 / 50 / 80 / 125 ml
- Designed for high sample throughput, up to 384 samples simultaneously.
- The transparent window on the upper lid allows user to check the grinding status any time
- Safety Lock Device for the upper lid ensures the motor stops running when the upper lid is opened in the grinding process for user personal safety.
- Program setting can control the Speed, operation time, interim grinding, program storage & Cycle Times etc.
- Storage of 20 sets of SOPs
- Cycle Times 1-99 (Digitally programmed)





VARIOUS KINDS OF ACCESSORIES

- Cryo kit for cooling the grinding jars with liquid nitrogen
- Adapter for Reaction Vials
- Avoids cross contamination between the sample and achieves high throughput
- Adapters can be placed into liquid nitrogen directly
- Bead Dispenser suitable for 96- hole deep well plate with 3mm & 5mm sizes of choice
- Adapters for Disruption of Biological Cells reaction vials (5, 4, 10, 24 hole to match 1.5/2 ml reaction vials, 6 Holes for 5 ml reaction vials and 96 holes adapter with 1, 2 ml deep hole plates)
- Various reaction vials with construction of material viz. Plastic, PC, PTFE & Stainless Steel with grinding balls of SS, Zirconium oxide, Tungsten carbide to treat small volumes in Cryogenic milling
- Various grinding jars with construction of material viz. Hardened Steel, Stainless Steel, Zirconium oxide, Tungsten carbide, Agate, PTFE
- Sizes of Grinding Jars – 1.5 ml / 2 ml / 5 ml/ 10ml / 25ml / 35ml / 50ml/ 80 ml / 125 ml
- Various grinding balls with construction of material viz. Stainless Steel, Zirconium oxide, Tungsten carbide, Agate, PTFE
- Sizes of Grinding Balls – (mm) 0.5, 1, 2, 3, 5, 7, 10, 12, 15, 20, 25, 30, 40
- Clamping Device
- The clamping device can not only clamp two standard deep hole plates, but also applies to anything that has the same size, including less or more hole deep hole plate etc..

TECHNICAL SPECIFICATIONS

Applications	Size Reduction, Mixing, Homogenization, Cryogenic Grinding, Mechano chemistry, Mechanical Alloying,
Field Of Application	Agriculture, Biology, Chemistry / Plastics, Construction Materials, Engineering / Electronics, Environment / Recycling, Food, Geology / Metallurgy, Glass / Ceramics, Medicine / Pharmaceuticals
Feed Material	Hard, Medium-Hard, Soft, Brittle, Elastic, Fibrous
Principle Of Size Reduction	Impact, Friction
Material Feed Size	≤ 10 Mm
Final Fineness	5μm/100nm (Depends On The Property Of Sample)
No. Of Grinding Stations	6/2
Setting Of Vibrational Frequency	Digital, 1 - 35 Hz (60 - 2100 RPM)
Type Of Grinding	Dry / Wet / Cryogenic Grinding
Grinding Under Inert Gas	Yes
Nanometer Grinding	Yes
Material Of Grinding Jars	Hardened Steel, Stainless Steel, Tungsten Carbide, Zirconium Oxide, Agate, PTFE
Grinding Jar Sizes	1.5/2/5/10/25/35/50/80/125ml
Grinding Time	0-99 Hrs, Digital
Cycle Time	1-99
Storable SOPs	20 Sets
Rated Power	1.1KW
Power Connection	Single Phase
Standards	CE
Protection Code	IP 30

ORDER INFORMATION

	DESCRIPTION
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High Energy Ball Mill MM1600 (240V; 50Hz)
(Please order grinding jars and balls separately)



Grinding Jars (Screw Threads Twisting Design)

Hardened Steel / Stainless Steel

Agate

Zirconium Oxide

Tungsten Carbide

PTFE

1.5 ml Grinding Jar; Stainless Steel
2 ml Grinding Jar; Stainless Steel
5 ml Grinding Jar; Stainless Steel
10 ml Grinding Jar; Stainless Steel
25 ml Grinding Jar; Stainless Steel
35 ml Grinding Jar; Stainless Steel
50 ml Grinding Jar; Stainless Steel
80 ml Grinding Jar; Stainless Steel
125 ml Grinding Jar; Stainless Steel
10 ml Grinding Jar; Agate
25 ml Grinding Jar; Agate
35 ml Grinding Jar; Agate
50 ml Grinding Jar; Agate
80 ml Grinding Jar; Agate
10 ml Grinding Jar; Zirconium Oxide
25 ml Grinding Jar; Zirconium Oxide
35 ml Grinding Jar; Zirconium Oxide
50 ml Grinding Jar; Zirconium Oxide
80 ml Grinding Jar; Zirconium Oxide
125 ml Grinding Jar; Zirconium Oxide
35 ml Grinding Jar; Tungsten Carbide
50 ml Grinding Jar; Tungsten Carbide
80 ml Grinding Jar; Tungsten Carbide
125 ml Grinding Jar; Tungsten Carbide
25 ml Grinding Jar; PTFE
35 ml Grinding Jar; PTFE
50 ml Grinding Jar; PTFE
80 ml Grinding Jar; PTFE



ACCESSORIES

Jar wrench, for all materials of grinding jars

Gasket for 25ml grinding jar.MOQ:10 pcs

Gasket for 35ml grinding jar .MOQ:10pcs

Gasket for 50ml grinding jar.MOQ:10pcs

Gasket for 80ml grinding jar.MOQ:10pcs

Gasket for 125ml grinding jar.MOQ:10pcs

Accessories for Cold grinding

Cryo kit for cooling the grinding jars with liquid nitrogen

Accessories for cell disruption

PTFE adapter for 5 plastic reaction vials 1.5ml/2.0ml

PTFE adapter for 10 plastic reaction vials 1.5ml/2.0ml

PTFE adapter for 6 plastic reaction vials 5.0ml

PTFE adapter for 6 PC reaction vials 5.0ml

PTFE adapter for 24 plastic reaction vials 1.5ml/2.0ml

PTFE adapter for 32 plastic reaction vials 1.5ml/2.0ml

PTFE adapter for 12 plastic reaction vials 1.5ml/2.0ml

PTFE adapter for 48 plastic reaction vials 1.5ml/2.0ml

Al adapter for 96 plastic reaction vials 0.2- 1.2ml, 8 vials/plate *12

Al adapter for integrated 96 plastic reaction vials 0.2-1.2ml

Stainless steel adapter for 4 stainless steel reaction vials 5.0ml

PTFE adapter for 12 PC reaction vials 5.0ml

PTFE adapter, for 12 plastic reaction vials 5.0ml

Stainless steel adapter, a pair, each for 4*50ml plastic reaction vials

96 microplate bead dispenser, Ø3mm

96 microplate bead dispenser, Ø5mm

Reaction vials,2.0 ml,100pcs/kit, plastic

Reaction vials,5.0 ml,100pcs/kit, plastic

Reaction vials 5.0ml SS, for hard sample

Reaction vials 5.0ml PC,for hard sample

Reaction vials,50 ml, 20 pcs, plastic

Grinding balls (Stainless Steel)

Stainless steel 1mm Ø, (500g)

Stainless steel 2mm Ø, (500g)

Stainless steel 3mm Ø, (500g)

Stainless steel 5mm Ø, (500g)

Stainless steel 7mm Ø, (500g)

Stainless steel 10mm Ø, (500g)

Stainless steel 12mm Ø, (500g)

Stainless steel 15mm Ø, (500g)

Stainless steel 20mm Ø, (1 Pc)

Stainless steel 25mm Ø, (1 Pc)

Stainless steel 30mm Ø, (1 Pc)





Grinding balls (Tungsten Carbide)

Tungsten Carbide 5mm \varnothing , (1pc)
 Tungsten Carbide 7mm \varnothing , (1pc)
 Tungsten Carbide 12mm \varnothing , (1pc)
 Tungsten Carbide 10mm \varnothing , (1pc)
 Tungsten Carbide 15mm \varnothing , (1pc)
 Tungsten Carbide 20mm \varnothing , (1pc)
 Tungsten Carbide 25mm \varnothing , (1pc)
 Tungsten Carbide 30mm \varnothing , (1pc)
 Tungsten Carbide 40mm \varnothing , (1pc)



Grinding balls (Agate)

Agate 5mm \varnothing , (500g)
 Agate 10mm \varnothing , (500g)
 Agate 15mm \varnothing , (1 Pc)
 Agate 20mm \varnothing , (1 Pc)
 Agate 25mm \varnothing , (1 Pc)
 Agate 30mm \varnothing , (1 Pc)
 Agate 40mm \varnothing , (1 Pc)



Grinding balls (Zirconium Oxide)

Zirconium Oxide 0.5mm \varnothing , (500g)
 Zirconium Oxide 1mm \varnothing , (500g)
 Zirconium Oxide 2 mm \varnothing , (500g)
 Zirconium Oxide 3 mm \varnothing , (500g)
 Zirconium Oxide 5 mm \varnothing , (500g)
 Zirconium Oxide 7mm \varnothing , (500g)
 Zirconium Oxide 10mm \varnothing , (500g)
 Zirconium Oxide 15mm \varnothing , (1 Pc)
 Zirconium Oxide 20mm \varnothing , (1 Pc)
 Zirconium Oxide 25mm \varnothing , (1 Pc)
 Zirconium Oxide 30mm \varnothing , (1 Pc)
 Zirconium Oxide 40mm \varnothing , (1 Pc)

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