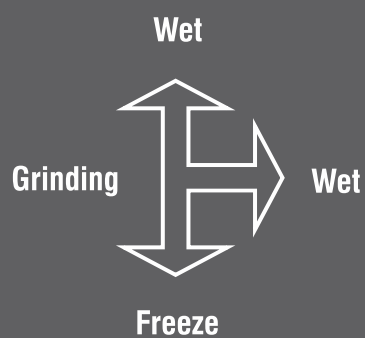


BALL MILL MM 1100



Size Reduction
Mixing
Homogenization
Cell Disruption
DNA / RNA /
Protein Extraction

Applications

The Ball Mill MM 1100 is designed for modern laboratory applications, specially for Dry, Wet and Cryogenic grinding & can process small amount and large batch sample.

MM 1100 Ball Mill Grinds, Mixes, Homogenizes any kind powders and Suspensions (Hard Soft, Brittle, Elastic & Fibrous Samples types in nature) in only a few seconds and grinds to submicron Sizes.

MM 1100 Ball Mill pulverizes two samples from 0.2 to 50 ml simultaneously in just 30 sec. and meets the requirements of high throughput grinding.

Also perfectly suitable for the disruption of biological cells as well as for DNA/RNA and protein extraction.

MM 1100 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 etc.



Working Principle

The MM 1100 Ball Mill can grind 2*96 samples quickly and efficiently only with 1-3min. The grinding jars of the MM 1000 perform horizontal oscillation in high frequency. The inertia of the grinding balls causes them to impact with high energy on the sample material and grind it. The movement of the grinding jars and balls result in the intensive grinding and mixing of the samples.

Control Panel

- Advanced Touchscreen Display with easy to control the instrument programs
- The running state could be observed easily
- Digitally adjustable Grinding Time : 1 Sec to 99 min. 59 Sec
- Digitally adjustable vibrational Frequency 3-30 Hz (180 to 1800 RPM)



Features and advantages

- Advanced Touchscreen design with easy to control the instrument programs and digitally adjustable grinding parameters
- Suitable for Dry, Wet and Cryogenic grinding.
- Applications covers Size reduction, Mixing, Homogenization, Cryogenic Grinding, Cell disruption, DNA/RNA/Protein Extraction with extremely short processing time.
- Designed for high sample throughput, up to 192 sample preparations.
- Wide range of grinding jars and accessories for extensive applications from 1.5 to 50 ml
- Cryo Kit for cooling the grinding jars or adapter with Liquid Nitrogen
- Adapters for Disruption of Biological Cells reaction vials (5, 4, 10, 24 hole to match 1.5/2ml 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 & SS with grinding balls of SS, Zirconium oxide, Tungsten carbide to treat small volumes in Cryogenic milling
- 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 operation time, interim grinding and program storage etc.
- Storage of 9 SOP's









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. Stainless Steel, Zirconium oxide, Tungsten carbide, Agate, PTFE
- Sizes of Grinding Jars – 1.5 ml / 2 ml / 5 ml / 10ml / 25ml / 35ml / 50ml
- **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..

Recommendation of Grinding Jars

Grinding Jars		MM 1100	Recommendation of the size & quantities of Grinding Balls									
Rated Volume	Sample Quantity	Sample Feeding Size	2 mm	3 mm	5 mm	7 mm	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm
2 ml	0.2 - 0.5 ml	1 mm	3-4	2-3	1-2	-	-	-	-	-	-	-
5 ml	0.5 - 2.0 ml	2 mm	4-5	3-4	2-3	1-2	-	-	-	-	-	-
10 ml	2.0 - 4.0 ml	4 mm	-	-	5-7	2-3	1-2	1-2	-	-	-	-
25 ml	4.0 - 10.0 ml	6 mm	-	-	-	-	5-6	2-3	1	1	1	1
35 ml	6.0 - 15.0 ml	6 mm	-	-	-	-	-	2-3	1	1	1	1
50 ml	8.0 - 20.0 ml	8 mm	-	-	-	-	-	2-3	1	1	1	1

Application Examples

Before Grinding	After Grinding	Parameters	
		Sample	Leaf
		Grinding Balls	5mm Stainless Steel
		Reaction Vial	2ml
		Sample Characteristic	Soft Brittle
		Time	1 Min
		Remarks	Sample Size & Ball Size
		Sample	Little Mouse Tail
		Grinding Balls	7 mm Stainless Steel
		Reaction Vial	2ml
		Sample Characteristic	Hard, Tough
		Time	3-5 Min.
		Remarks	Sample Size
		Sample	Hair
		Grinding Balls	12mm Stainless Steel
		Reaction Vial	10ml Stainless Steel
		Sample Characteristic	Elastic, Fibrous
		Time	6 Min.
		Remarks	Sample Size & Ball Size

Technical Data

Parameter	MM 1100
	
Application	Size Reduction, Mixing, Homogenizing, Cell Disruption, DNA/RNA/Protein Extraction
Feed Material	Soft, Hard, Brittle, Elastic, Fibrous
Grinding Modes	Dry / Wet / Cryogenic Drying
Cell Disruption with Reaction	5 / 6 / 10 / 12 / 24 / 48 x 1.5 / 2.0ml 96 X 0.2 / 1.2ml 6 / 12 X 5ml 96 Microplate Bead Dispenser (3mm / 5mm)
Feed Size	< 10mm
Final Fineness	<5 μm
No. of Grinding Station	2
Vibrational Frequency (Speed)	Digital; 3-30 Hz (180-1800 min ⁻¹)
Sample Volume	0.2 to 20 ml
Grinding Jars	Specially Designed with 'Easy Clamp' system for simple safe clamping
Grinding Jar Sizes	1.5ml / 2ml / 5ml / 10ml / 25ml / 35ml / 50ml
Setting of Grinding Time	00:01 - 99:59 (Min/Sec); Digital
Storable SOPs	9
Rated Power	200 W
Power Supply	220 / 240V, 50/60Hz
Instrument Size (W*D*H)	366*502*335mm
Package Size (W*D*H)	460*380*660mm
Net Weight	34Kg

ORDER INFORMATION

DESCRIPTION



Ball Mill MM 1100

(Please order grinding jars and balls separately)



Grinding Jars

(Screw Threads Twisting Design)

Stainless Steel

1.5ml, 2ml, 5ml, 10ml, 25ml, 35ml, 50ml
Grinding Jar, Stainless Steel

Agate

10ml Grinding Jar, Agate

Zirconium Oxide

50ml, 10ml, 25ml, 35ml Grinding Jar, Zirconium Oxide

Tungsten Carbide

10ml, 25ml Grinding Jar, Tungsten Carbide

PTFE

25ml, 35ml Grinding Jar, Sintered Aluminium Oxide



Accessories

Jar wrench, for all materials of grinding jars
Gasket for 25ml, 35ml, 50ml grinding jar of stainless steel. MOQ: 10 pcs
Gasket for 25ml, 35ml grinding jar of Zirconia. MOQ: 10 pcs



Accessories for Cold Grinding

Cryo Kit for cooling the grinding jars with liquid nitrogen



Accessories for Cell Disruption

PTFE Adapter for 5, 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 23, 32, 12, 48 plastic reaction vials 1.5 ml / 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

ORDER INFORMATION

DESCRIPTION



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 (3mm / 5mm)
Reaction vials 2.0ml, 5.0ml 100 pcs/kit, plastic
Reaction vials 5.0ml SS / PC for hard sample
Reaction vials, 50ml (20pcs), plastic



Grinding Balls (Stainless Steel)

Stainless Steel 1mm, 2mm, 3mm, 5mm, 7mm, 10mm, 12mm,
15mm (500g)
Stainless Steel 20mm, 25mm, 30mm (1 Pc)



Grinding Balls (Tungsten Carbide)

Tungsten Carbide 5mm, 7mm, 10mm, 12mm,
15mm, 20mm, 25mm, 30mm, 40mm. (1Pc)



Grinding Balls (Agate)

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



Grinding Balls (Zirconium Oxide)

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



Grinding Balls (Sintered Aluminium Oxide)

Sintered Aluminium Oxide 1mm, 2mm, 3mm, 5mm, 7mm, 10mm (500 g)

MM 1100 (Micro) Ball Mill



OTHER BALL MILLS



**Planetary Ball Mill
BM 1100+**

**Cryo Mill
CM 1100**



**Planetary Ball Mill
BM 1400+**

OTHER PRODUCTS



**Vibratory Sieve Shaker
VS 1100 (Touchscreen)**



**Mortar Grinder
HG 1100 (Touchscreen)**



**Air Jet Sieve Shaker
JS 1100 (Touchscreen)**

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