



Innovation Empowers Sample Preparation,
Intelligence Achieves Simplicity



AM100S Vibratory Ball Mill



蚂蚁源科学仪器（北京）有限公司
ANTS SCIENTIFIC INSTRUMENTS (BEIJING) CO., LTD.

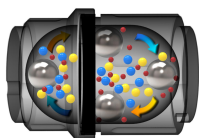
AM100SVibratory Ball Mill

The Vibratory Ball Mill is a versatile instrument developed specifically for laboratory analysis of small quantities of samples that can be ground and homogenized quickly and efficiently under high frequency vibration. Under the right grinding environment, some samples can reach the submicron level.

The Vibratory Ball Mill can be used for both dry and wet grinding, as well as frozen grinding at low temperatures, and comes with two types of grinding kits: grinding jars and adapters. The automatic center positioning and safety locking mechanism provide a comfortable operating experience for the lab technician. The high throughput adapters are ideal for cell disruption and DNA/RNA extraction of biological samples. The grinding jars are available in a variety of materials for multi-industry applications. Agate, zirconium oxide, tungsten carbide are ideal for soil samples that require protection against heavy metal contamination, while tungsten carbide and stainless steel can also be used for hard sample preparation.



Working Principle



The AM100S Vibratory Ball Mill's grinding jar vibrates horizontally in the radial direction in a circular arc, and the grinding balls inside impact the sample under the effect of inertia, so that the continuous reciprocating motion makes the sample reach a desired particle size. In addition, the movement of the grinding jar and the grinding ball movement superposition, so that the sample more fully mixed, when the jar into a few more small grinding ball, ball to ball collision and friction between the sample to make the sample more effective crushing.

Performance Advantages

- ◎ Compact and lightweight, can be taken to the field as a portable device for sampling.
- ◎ Dry, wet or frozen grinding is possible.
- ◎ Wide range of grinding jars and adapters with multiple pore sizes available.
- ◎ Grinding jar can be installed up to 2×80ml grinding jar, adapter can be installed 6×100ml adapter.
- ◎ High-throughput adapters for rapid cell disruption of a wide range of biological samples such as DNA/RNA extraction.
- ◎ Sealed to prevent cross contamination between samples.
- ◎ Horizontal vibration principle, two grinding platforms work at the same time, short sample preparation time.
- ◎ Digital display of parameter settings ensures reproducible results.
- ◎ Multiple sets of experimental parameters can be stored, making the grinding process more standardized and efficient.
- ◎ Automatic center positioning and safety locking device can ensure that the grinding kit in place quickly, efficiently and safely.
- ◎ The instrument is equipped with an electromagnetic safety system to ensure the safety of the operator.



Application



Agriculture



Food



Medicine



Biology



Mineral



Petrification



Environment



Material

Technical Information

Technical parameter	AM100S Vibratory Ball Mill
Feed material	hard, medium-hard, soft, brittle, elastic, fibrous
Material feed size*	≤15mm
Final fineness	5um(depending on the nature of the sample and the grinding environment)
display screen	LCD touch
Grinding time setting	1s~99h59min59s, continuously adjustable
Interval time setting	1s~99h59min59s
Vibrational frequency	1HZ~35HZ(60rpm~2100rpm)

Optional Guide



The variety of grinding jars and adapters determines the diversity of product applications and deeper attention from customers. Antsco Instruments has a very complete range of grinding kits, and in addition, we can accept customized orders from customers.

Volume of grinding jar: 5ml, 10ml, 15ml, 25ml, 35ml, 50ml, 80ml.



Material of grinding jar:

- ① Stainless steel, hard steel: suitable for routine sample pulverization;
- ② zirconium oxide, agate: for the requirements of anti-heavy metal contamination samples crushed;
- ③ tungsten carbide: crushing of hard samples, such as ores;
- ④ polytetrafluoroethylene: liquid nitrogen cryogenic freezing under the pulverization.

(Note: the above is a general recommendation)

Technical Information

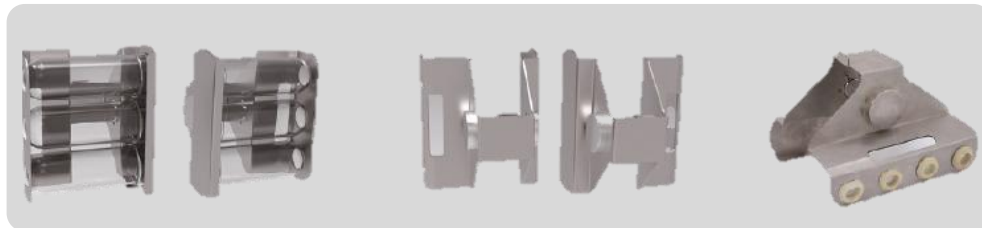
Technical parameter	AM100S Vibratory Ball Mill
Grinding jar sizes	80ml、50ml、35ml、25ml、15ml、10ml、5ml
Material of grinding jar	hardened steel, stainless steel, tungsten carbide, agate, zirconium oxide, PTFE,
Adapters	100ml×3、50ml×4、30ml×4、15ml×2、5ml×4、5ml×6、5ml×12、2ml×10、2ml×24、2ml×48、1.2ml×96
Material of Adapter	PTFE, stainless steel, AL, PP
Grinding ball diameter	0.1~30mm
can opener	For 5ml-80ml grinding jars
No. of grinding stations	2
Self-centering clamping device	Yes
Storable SOPs	10
Storable cycle programs	1-20
W x H x D	384mm×267mm×461mm
Net weight	30kg
Electrical parameters	220V 240W

Advantages Of The Screw-Top Grinding Jars



- ① Simple operation, threaded tightening;
- ② Good airtightness, dustproof and eliminating cross contamination;
- ③ Can be wet grinding and low temperature grinding;
- ④ stainless steel shell protection to ensure the service life of the grinding jar (agate, zirconium oxide, tungsten carbide).

A dapter



Liquid Nitrogen Freezer

The adapters with multiple wells can be more convenient to meet the needs of customers, from less sample types to more sample types, from less sample volume to more sample volume.

Stainless steel adapters: 100mlx3 wells, 50mlx4 wells, 50mlx3 wells, 15mlx2 wells, 5mlx4 wells

Aluminum adapters: 100mlx3 wells, 50mlx3 wells, 30mlx4 wells, 10mlx4 wells, 5mlx6 wells.

PTFE adapters: 5mlx6 wells, 5mlx8 wells, 5mlx12 wells, 2mlx10 wells, 2mlx24 wells, 2mlx48 wells

PP adapters: 1.2mlx96 wells

B all ratio reference

Grinding jar nominal volume	Sample amount (ml)	Max. feed size (mm)	Recommended ball charge (pieces)						
			Φ5mm	Φ7mm	Φ10mm	Φ12mm	Φ15mm	Φ20mm	Φ25mm
1.5/20	0.2-0.5	1	1-2	-	-	-	-	-	-
5	0.5-2.0	2	-	1-2	-	-	-	-	-
10	2.0-4.0	4	-	-	1-2	1-2	-	-	-
25	4.0-10.0	6	-	-	5-6	2-4	1-2	-	-
35	6.0-15.0	6	-	-	6-9	4-6	1-2	1	-
50	8.0-20.0	10	-	-	12-14	6-8	3-4	1	1
80	15.0-45.0	15	-	-	15-18	8-10	4-5	1	1

Application Examples



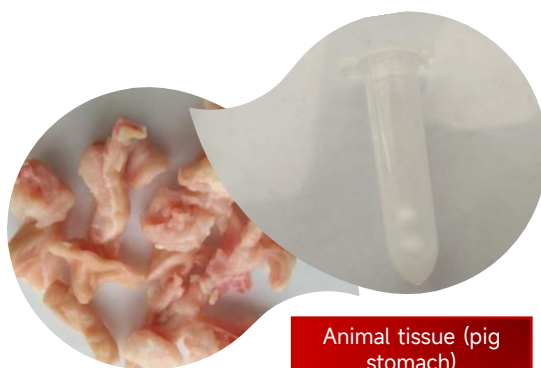
Food (wheat)



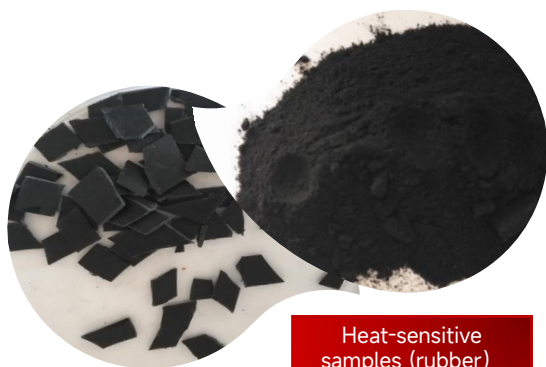
Biological (hair)



Freeze grinding
(polypropylene)



Animal tissue (pig
stomach)



Heat-sensitive
samples (rubber)

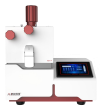


Pharmaceuticals (Niu
Huang Xie Tu Pills)

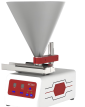


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Milling Series

 AM100S Vibratory Ball Mill	 AM200S Mortar Grinder	 AM300 Cutting Mill	 AM300S Cutting Mill	 AM350 Beater Mill	 AM360 Turbo Mill	 AM400S Planetary Ball Mill
 AM410 Planetary Ball Mill	 AM420 Planetary Ball Mill	 AM500S High Speed Rotary Mill	 AM600S Knife Mill	 AM700 Jaw Crusher	 AM710 Extrusion Crusher	 AM750S Bench Jaw Crusher
 AM800 Disc Mill	 AM800CC Disc Mill	 AM810 Disc Mill	 AM900 Vibratory Disc Mill	 AM950 Vibratory Disc Mill		

Assisting Series

 AF100S 3D Vibratory Sieve Shaker	 AF150 Horizontal Sieve Shaker	 AF200S Sample Automatic Divider	 AF300 Vibratory Feeder
 AF400 Rotating Tube Divider	 AF450 Rotating Sample Divider	 AF500 3D Sample Mixer	 AF510 3D Sample Mixer

Intelligent Series

 AISP1678 / AISP1700 Intelligence Soil Preparation System	
 ADVVM1001 / ADVVM1001CS Vacuum Microwave Drying Series	

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