

**POWTEQ®**



**Micro Ball Mill GT300**

## ◇ Micro Ball Mill GT300

The Micro ball mill GT300 is designed for modern laboratory applications. It can process small amount and large batch sample, for example: plants, animal tissue and small quantity samples in dry ,wet or cryogenic condition. It can mix and homogenize powders and suspensions in only a few seconds. It is also perfectly suitable for the disruption of biological cells as well as for DNA/RNA and protein extraction.



GT300

### ○ Sample type

hard, soft, elastic and fibrous samples

### ○ Typical sample

plant root, stem, leaf, grain, seed; human and animal tissue, viscera, bone, hair; mineral, soil, glass, ceramic, rubber, plastic, solid waste, electronic waste, paper, textile, chemical, medicine, food.



### ○ Application Examples

Before grinding	After grinding	Parameter	
		Sample	leaf
		Grinding balls	5mm ,stainless steel
		Reaction vials	2ml
		Sample Characteristic	soft,brittle
		Remarks	sample size and ball size
		Time	1min
		Sample	little mouse tail
		Grinding balls	7mm, stainless steel
		Reaction vials	2ml
		Sample Characteristic	hard,tough
		Remarks	sample size
		Time	3-5min

## ○ Grinding, mixing and cell disruption

The Micro ball mill GT300 is designed for modern laboratory applications. It can process 2 pcs and large batch samples simultaneously in 30 seconds, the sample volume from 0.2ml to 50ml. It meets the requirements of high throughput grinding extremely.

## ○ Working principle

The Micro Ball Mill can grind 2\*96 samples quickly and efficiently only with 1-3min. The grinding jars of the GT300 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.



## ○ Features and advantages

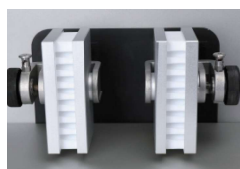
- Suitable for dry, wet and freezing grinding.
- Extremely short processing time.
- Designed for high sample throughput, up to 192 sample preparations.
- It can mix and homogenize samples efficiently.
- Wide range of grinding jars and accessories for extensive applications.
- Pre-setting of all working parameters digitally, the result is repeatable.
- The transparent window on the upper lid allows the user to check the grinding situation at any time.
- The upper lid has a safety lock device, when the upper lid is opened in the grinding process, the motor will stop running to ensure the user personal safety.
- Program setting can control the operation time, interim grinding and program storage etc.

## ○ Easy operation and high safety performance

Due to an integrated motor brake the machine can only be started when the lid is closed. The unique "Easy Clamp" system allows the simple and safe clamping of all grinding jars up to 50ml. The grinding chamber, easy clamp system as well as the swinging arm is made from high precision stainless steel to meet strict food and pharmaceutical requirements. The application of new brushless motor makes the maintenance of GT300 very convenient.

## ◇ Wide kinds of accessories

The clamping device of GT300 can not only clamp two standard deep hole plates, but also applies to anything that has the same size, including with less or more hole deep hole plate, etc.



- Adapters for reaction vials;
- Avoid the cross contamination between samples; achieve the high-throughput;
- The adapters can be placed into the liquid nitrogen directly



- Many kinds of materials grinding jar, the maximum volume up to 50ml;
- Suitable for processing the soil, mineral, plant, dental materials and so on.



- Special use for detection of pesticide residue samples, 50ml reaction vials;
- Adapters can process 8pcs sample simultaneously;
- Meet the QuEChERS requirement.



- POWTEQ specially designed cast stainless steel clamping device is comfortable, strong and durable. A mobile positioning catch is equipped inside the clamping device, which greatly improves the service life of grinding parts and the clamping device.

## ○ Control panel

- Advanced touch screen design, easy to control the instrument program and set the grinding parameters.
- Grinding time setting from 1s-99min/59s, digital and adjustable.
- Setting of vibrational frequency is 180-1800rpm, digital and adjustable.

## ○ Cryo kit for cooling the grinding jars or adapter with liquid nitrogen

Insulation heat preservation box, the clamping device for jar, eyes protector. For heat sensitive materials such as plastics and rubber, it is recommended to pre-freeze the samples and grinding jars with liquid nitrogen. Those jars either made from teflon or stainless steel are suitable for cryogenic grinding applications.

## ○ Bead dispensers

Be suitable for 96 hole deep well plate, and with 3mm and 5mm sizes for choice.



### ○ Various of reaction vials for freezing grinding

Plastic, PC, PTFE and stainless steel reaction vials, with stainless steel, zirconium oxide and tungsten carbide balls, which can be used to treat small volume samples in cryogenic milling.



### ○ Adapter for disruption of biological cells reaction vials

○ With its high throughput, the GT300 efficiently and safely disrupts multiple samples simultaneously such as spores, microorganisms, plant and animal tissue or soil, etc.

○ Put the samples along with extracting solution, metal and ceramic balls into the disposable reaction vials. After 2 minutes, more than 95% of the cells can be disrupted efficiently.

○ It is most suitable for some sample preparation like PCR, PAGE and Probe, which cross contamination between samples are strictly forbidden.

○ 5, 10, 24 holes adapter to match with the 1.5 / 2.0ml reaction vial, and 6 holes adapter with 5ml reaction vials, 96 holes adapter with 1.2ml deep hole plates are available for choice.

### ○ Recommended feeding quantity

Recommended quantity of grinding balls						
Grinding jar 's volume	Max feed size	2mm	3mm	20mm	25mm	30mm
2.00ml	1mm	3-4pcs	2-3pcs			
25.00ml	6mm	When the volume of grinding jars are relatively large, please choose the arger diameter grinding balls		1pcs	1pcs	
50.00ml	8mm			1pcs	1pcs	1pcs

### ○ Fast clamping jars



- Dry grinding
- Wet grinding
- Ultra-fine grinding
- Mechanical alloy grinding
- Freezing grinding

### ○ Technical data

Feed size	< 10mm
Final fineness	< 5 μm
Speed	180-1800rpm
Sample volume	0.2-20ml
Time setting	00: 01~99: 59(min/s)
Rated power	150W
Power supply	220V, 50/60Hz
Instrument size(W*D*H)	370*505*335mm
Package size(W*D*H)	700*500*560mm
Net weight	34kg