

**Order information—— Planetary Ball Mill**

Item No.	Weight(Kg)	Item No.	Weight(Kg)
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Planetary Ball Mill BM40/BM6Pro ( Please order grinding jars and balls separately )

24.886.0001	206.00	BM40,220V, 50Hz ,with 4 grinding stations, speed ratio:1:-2.2
24.879.0001	114.00	BM6Pro, 220 V, 50Hz, with 1 grinding station, speed ratio:1 : -2

**Grinding jars**

Stainless steel			Zirconium oxide		
01.864.0001	0.70	50ml	01.864.0012	1.05	50ml
01.864.0002	1.45	125ml	01.864.0013	3.30	125ml
01.864.0003	3.20	250ml	01.864.0014	4.60	250ml
01.864.0004	3.90	500ml	01.864.0015	6.50	500ml
Agate			Tungsten carbide		
01.864.0005	0.70	50ml	01.864.0016	1.85	50ml
01.864.0006	1.20	80ml	01.864.0017	2.30	80ml
01.864.0007	2.60	125ml	01.864.0018	2.70	125ml
01.864.0008	3.50	250ml	01.864.0019	5.10	250ml
01.864.0009	3.40	500ml			
Sintered alumium oxide			Silicon nitride		
01.864.0020	0.85	50ml	01.864.0024	1.70	125ml
01.864.0021	1.80	125ml	01.864.0025	3.40	250ml
01.864.0022	3.70	250ml	01.864.0026	4.70	500ml
01.864.0023	5.50	500ml			

**Pressure and temperature measuring system(PTM)**

( incl.measuring sensor,receiver,battery, software,cable and grinding jar for BM40 and BM6 Pro )

01.864.0027	4.00	BM PTM,grinding jar stainless steel, 250ml
01.864.0028	5.00	BM PTM,grinding jar stainless steel, 500ml

**Accessories**

02.864.0035	1.00	safety closure device for jars stainless steel 500ml	02.864.0041	1.60	aeration lid for jars ,250ml zirconium oxide
02.864.0036	1.00	safety closure device for jars stainless steel 250ml	02.864.0042	1.60	aeration lid for jars ,500ml stainless steel
02.864.0037	0.80	safety closure device for jars stainless steel 125ml	02.864.0043	1.60	aeration lid for jars ,500ml zirconium oxide
02.864.0038	0.80	safety closure device for jars stainless steel 80ml	02.864.0044	0.01	O-ring for grinding jars,125ml
02.864.0039	0.80	aeration lid for jars ,250ml stainless steel	02.864.0045	0.01	O-ring for grinding jars, hardened steel, stainless steel, tungsten carbide, 250ml 10pcs/kit
02.864.0040	1.60	aeration lid for jars ,250ml tungsten carbide	02.864.0046	0.01	O-ring for grinding jars agate and sintered aluminum oxide, zirconium oxide, 250ml 10pcs/kit
02.864.0047	0.01	O-ring for grinding jars, stainless steel,500ml 10pcs/kit			
02.864.0048	0.01	O-ring for grinding jars agate and sintered aluminum oxide, zirconium oxide 500ml 10pcs/kit			

Grinding balls please see the accessories for GT200;We also can supply Zirconium Oxide grinding jars and balls after treatment with different stabilizer,such as magnesium oxide,cerium oxide and yttrium oxide etc.

**Mortar Grinder MG100/MG200**

Mortar Grinder MG series are used to grind, homogenize and mix a wide range of samples with dry/wet or cryogenic condition, which can grind hard, soft, brittle and pasty samples. They have extraordinary performance on the processing capacity, as well as easy and safe to operating.

**Applications**

Mortar Grinders are suitable for grinding hard, soft, brittle and pasty samples.

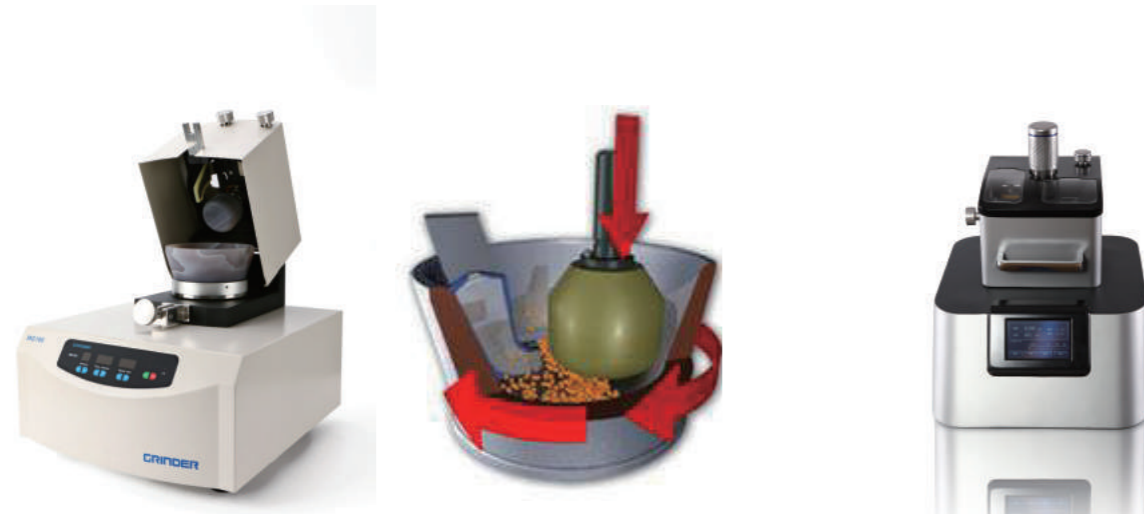
**Typical application :** Soils ,chemical products,medicinal herbs ,yeast cell ,cocoa ,food ,grain ,oil ,fruit,salt ,slag,silicate ,glass ,ceramic and cement clinker

**Application Examples**

Before grinding	After grinding	Parameter	
		Sample	rice
		Configuration	mortar &pestle stainless steel
		Sample Characteristic	mid-hard
		Attention	feed size is below 8mm,
		Time	10min
		Sample	pill
		Configuration	mortar &pestle stainless steel
		Sample Characteristic	brittle
		Attention	feed size is below 8mm,dry sample
		Time	3min
		Sample	soil
		Configuration	mortar &pestle of agate
		Sample Characteristic	soft,powder
		Attention	remove the hard materials,like stone, metal, feed size is below 8mm
		Time	5min
		Sample	glass
		Configuration	mortar &pestle stainless steel
		Sample Characteristic	hard/brittle
		Attention	feed size is below 8mm
		Time	10min

## ● Working Principle

The sample enters the grinding area between the pestle and mortar via hopper and is crushed by pressure and friction. The function of the scraper is to feed the material into the area between the mortar and pestle. This forced feed ensures that the whole sample is continuously subjected to the grinding and is also intensively mixed.



### Mortar Grinder—sample preparation, mixing and homogenizing

The mortar grinder MG series occupy an important post on sample preparation in laboratory. The gap between mortar and pestle, mill's pressure and the angle of scraper are all adjustable. This mill is suitable for the fine grinding of any dry samples, as well as for suspensions with different consistencies. It is perfectly suitable for the homogenization of mortar and pestle.



## ● Features and advantages

### Easy to clean

Easy exchange of mortar and pestle without tools after grinding and it's easy to clean the mill.



### Easy and safe to operate

The machine case and lid are made of hard alloy. It is easy to operate and ergonomically designed. The grinder is equipped with magnetic switch to judge whether the lid is closed or not, and the grinder only starts when lid is closed. The mechanical device parameter can be set and adjusted quickly and easily.

### With high sensitivity touch control panel display



Digital time and speed setting, the grinding results are representative.

○ Grinding set of MG100/MG200---Meet different applications due to a wide selection of grinding mortar and the pestle

Recommendation-mortar and pestle(with seven kinds of grinding materials for choice )

Grinding set materials	Hardness	Abrasion resistance	Sample type	Dry grinding	Wet grinding	Cryogenic grinding
Stainless steel	48-52HRC	good	Medium-hard,brittle	YES	YES	YES
Hardened steel	60HRC	good	Medium-hard,brittle	YES	NO	NO
Tungsten carbide	1180-1280HV30	Very good	Medium-hard, fibrous	YES	YES	YES
agate	6.5-7.0Mohs	good	Medium-hard,soft	YES	YES	NO
Sinter aluminium oxide	1750HV	Normal	Medium-hard,soft	YES	YES	NO
Hard porcelain	--	Normal	Medium-hard,soft	YES	YES	NO
Zirconium oxide	1200HV	good	Medium-hard,soft	YES	YES	NO

In order to get a better grinding results, we recommend that the material of mortar and pestle must be the same.

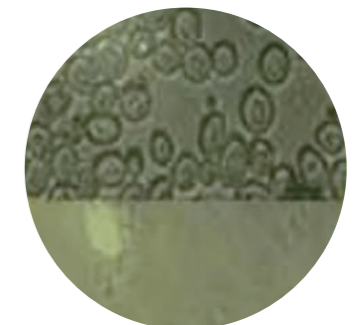


● Features and advantages

- A variety of scraper materials are available (polyurethane, PTFE, beech wood) to meet all application requirements
- Suitable for dry,wet&cryogenic grinding
- Pretreatment for some rough samples
- Adding samples through the filling opening during the operation



Sample : yeast cells  
 Property : hard,elastic  
 batch quantity : 100g  
 Feed size : <5µm  
 Subsequent analysis : DNA extraction  
 Grinding time : 10 min  
 Grinding material : mortar and pestle of stainless steel  
 Grinding condition : Adding the Liquid Nitrogen during the grinding  
 Final fineness : <5µm , homogenized powder



## Mortar Grinder MG200

The Mortar Grinder MG100 and MG200 with same application field, working principle, operating method and grinding set materials. Comparing with MG100, MG200 has made great innovations in appearance design, display screen and locking device.



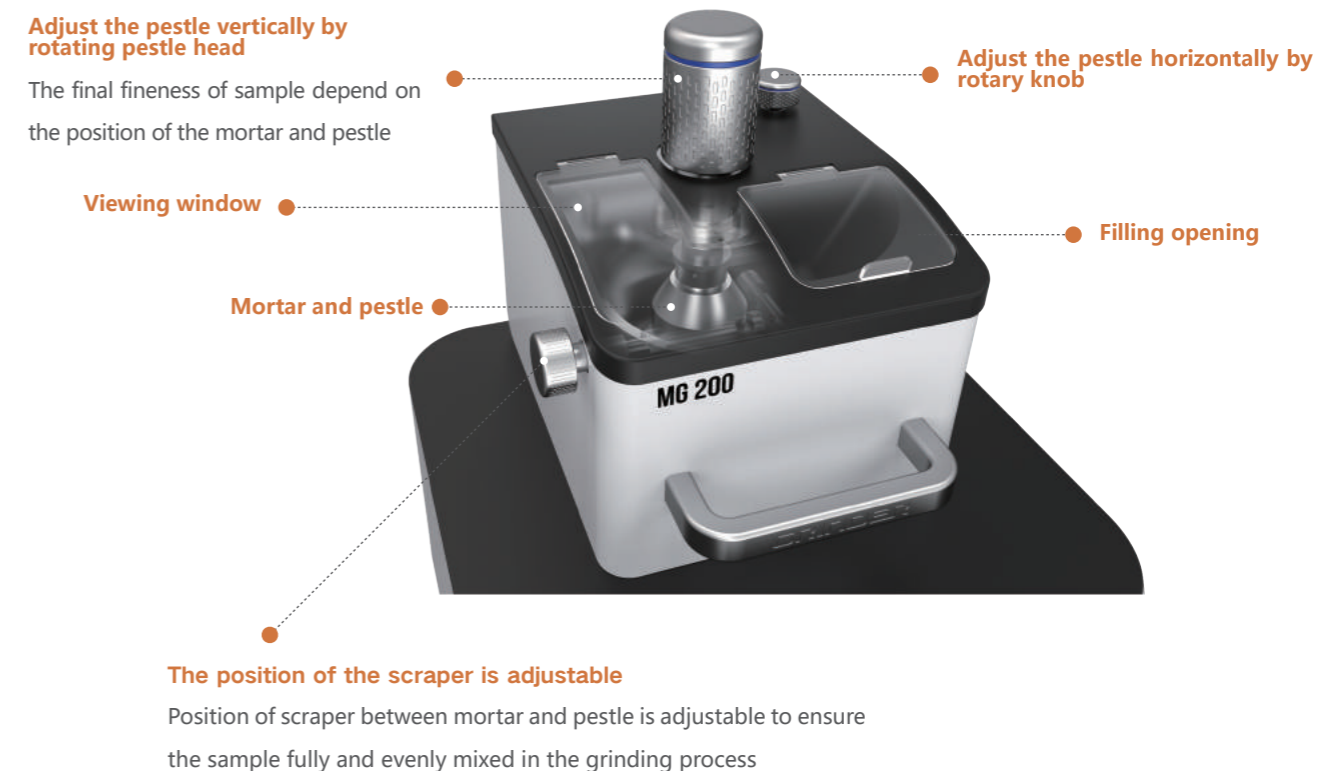
### Progressiveness

- 5 inch LED display and touch control panel with high sensitivity
- Energy input diagnosis can guarantee safe and reasonable operation



### Skills to achieve the best grinding effect

- Before preparing the paste samples, firstly you can put the mortar and sample (eg cocoa) into the drying oven and heat to 40°C.
- In the preparation of chemicals and pharmaceuticals, please add grinding aid to prevent caking phenomenon.
- It's difficult to process some samples such as yeast cells. You'd better freeze the sample with liquid nitrogen to make them more brittle and easy to mill.



### Technical Data

	MG100	MG200
Feed size	<10mm , depending on the sample property	
Final fineness	<5μm(depending on the sample property)	
Speed	50-130rpm , speed is adjustable	
Batch quantity	10-200ml	
Time setting	00 : 01~99 : 59 ( h/min )	
Setting pestle pressure/position	Vertical by adjusting knob + scale	Horizontal by adjusting knob + visual/acoustic control
Setting scraper pressure/position	By adjusting knob	Horizontal by adjusting knob + visual/acoustic control
Display	Digital tube display	LED 5 inch control panel
Lock device	External helix-screw device	Internal helix-screw device
Appearance design	Normal	German Red Dot Design Awards medalist's masterpiece
Rated power/Power supply	200W/220V,50Hz	
Instrument size ( W*D*H )	400*456*502mm	400*480*500mm
Package size ( W*D*H )	590*590*630mm	600*600*610mm
Net weight	34kg	43kg

**Order Information — Mortar Grinder**

Item No.	Weight(Kg)		
Mortar Grinder MG100/MG200 ( Please order mortar and pestle separately)			
24.861.0001	34.00	MG100	220 V, 50 Hz
24.875.0001	43.00	MG200	220V, 50 Hz
<b>Mortar and Pestle</b>			
01.861.0001	4.00	Mortar	hardened steel
01.861.0002	1.50	Pestle	hardened steel
01.861.0003	4.15	Mortar	stainless steel
01.861.0004	1.50	Pestle	stainless steel
01.861.0005	7.60	Mortar	tungsten carbide
01.861.0006	2.30	Pestle	tungsten carbide
01.861.0007	1.50	Mortar	agate
01.861.0008	0.60	Pestle	agate
01.861.0009	1.80	Mortar	sintered aluminum oxide
01.861.0010	0.80	Pestle	sintered aluminum oxide
01.861.0011	4.00	Mortar	zirconium oxide
01.861.0012	1.10	Pestle	zirconium oxide
<b>Scraper</b>			
01.861.0015	0.02	Scraper	beech wood
01.861.0016	0.02	Scraper	PU
01.861.0017	0.02	Scraper	PTFE, for frozen grinding



**● Micro Ball Mill GT200**

**● Applications**

**Sample type :** hard, soft, elastic and fibrous samples.

**Typical application :** 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.

**Special application area recommendation :** nucleic acid extraction of plant tissue, disruption of biological cells as well as for DNA/RNA extraction

**Application Examples**

Before grinding	After grinding	Parameter	
		Sample	leaf
		Grinding balls	5mm ,stainless steel
		Reaction vials	2ml
		Sample Characteristic	soft,brittle
		Attention	sample size and ball size
		Time	1min
		Sample	little mouse tail
		Grinding balls	7mm, stainless steel
		Reaction vials	2ml
		Sample Characteristic	hard,tough
		Attention	sample size
		Time	3-5min
		Sample	core
		Grinding balls	25mm,stainless steel
		Reaction vials	50ml,stainless steel
		Sample Characteristic	hard,brittle
		Attention	sample feeding volume
		Time	3min