



| **Mulini planetari BM 40/6 PRO**

POWTEQ Products

Please keep contact with POWTEQ if you have any further questions.



Mortar Grinder MG100



Mortar Grinder MG200



Planetary Ball Mill BM40



Planetary Ball Mill BM6Pro



Micro Ball Mill GT300



Twister TW100



Multi-functional Mill CM100M



Cutting Mill CM200



Ultra Centrifugal Mill FM200



Knife Mill HM100



Knife Mill HM300



Jaw Crusher JC5



Jaw Crusher JC6



Vibratory Disc Mill VM3



Disc Mill DP100



Vibratory Feeder VF200



Rotary Sample Divider RSD200



Vibratory Sieve Shaker SS2000



Smart Graphite Digester



3D Mixer M10

(The warranty period of the hosts is two years)

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POWTEQ®



For more perfect sample preparation

—— Planetary Ball Mill BM40 / BM6Pro

● Planetary Ball Mill BM40/BM6Pro

Planetary Ball Mills are suitable for grinding(dry\wet) and mixing some soft,hard,brittle and fibrous samples ,which are used wherever the highest degree of fineness as customer required,as well as the grinding result is reproducible. Apart from the classical mixing and size reduction processes,the mills also meet all the technical requirements for colloidal grinding.



BM40



BM6Pro

● Applications

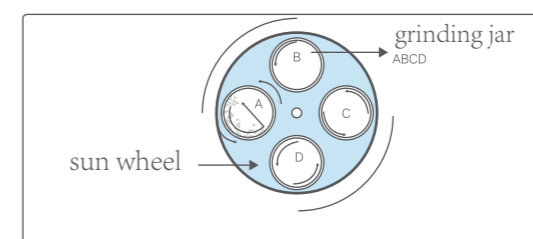
- **Application field:** engineering / electronics, building materials, agriculture, medicine, chemical/synthetic materials, geology/metallurgy,environment/resource recovery, glass/ceramics.
- **Sample type:** soft,hard,brittle ,fibrous
- **Applications:** plant material, cement clinker, concrete, compost, coatings and paint, charcoal, hair, catalyst, chemicals, metal, carbon fiber, paper, fiber products, cellulose, seeds, clay minerals, coke, coal, glass, waste electronic products, mineral, ore, limestone, gypsum, quartz, kaolin, bones, metal oxide, iron ore, ceramics, polymers, bentonite/bentonite, pigment, and so on.

Application Examples

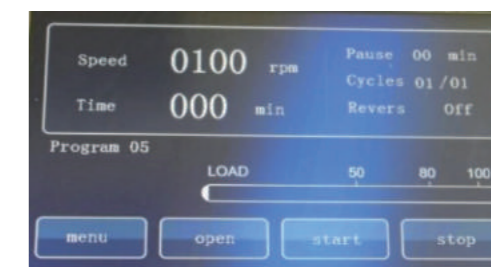
Before grinding	After grinding	Parameter	
		Sample	glass
		Grinding balls	10mm and 3mm Zirconium Oxide grinding balls
		Sample Characteristic	hard
		Attention	the grinding jars should be placed symmetrically
		Grinding time	30min
		Sample	granite
		Grinding balls	10mm stainless steel grinding balls
		Sample Characteristic	hard
		Attention	the grinding jars should be placed symmetrically
		Grinding time	15min

● Working Principle

When the planetary ball mill starts, the motor drives the common sun wheel to move, while the grinding jars, which are located on the sun wheel, turning around its own axis. The direction of the movement of the sun wheel is opposite to that of the grinding jars in the ration 1:-2.The grinding balls in the grinding jars are subjected to superimposed rotational movement, the so-called Coriolis forces. Under this interaction, the grinding balls release high dynamic energies. The samples are constantly impacted by the grinding balls, and rapid crushed by the friction of the grinding jar' s inner wall at the same time.



BM40 and BM6Pro with a comfortable parameter setting and ergonomic 1-button operation. The LED display shows the parameter digitally and the running state could be observed easily.



● Technical Advantages

Planetary Ball Mills are used wherever the highest degree of fineness and meet all the technical requirements for colloidal grinding and have the energy input necessary for mechanical alloying processes.

The planetary ball mills have 1,2 and 4 grinding stations as option. The parameter can be set according to the sample property freely. Wide kinds and high quality grinding materials are available for choice. Grinding balls of different quantities and sizes can be combined flexibly to meet personalized special crushing and grinding requirements.

When the planetary ball mill is in operation, extremely high impact energy are produced between the grinding balls and the grinding jars, so it can finish the grinding of the sample in a very short time.

The working principle of the planetary ball mill is based on the relative rotation of the sun wheel and the grinding jar. The speed ratio influences the input energy and results of grinding directly. We can customize the speed ratio from 1:1 to 1:-3.5 as customer requirements.

● Features and advantages

- Powerful and quick grinding down to nano fineness
- Suitable for long-term and continuous operation
- Reproducible results due to program grinding parameters
- Grinding chamber automatic ventilation system for cooling the grinding jar
- Grinding jars have 6 kinds of material ,the volume various from 12ml-500ml
- Automatic direction reversal to avoid agglomerations
- With 4 grinding platforms can process 2,4,8 samples simultaneously (BM40)
- Speed ratio is customizable

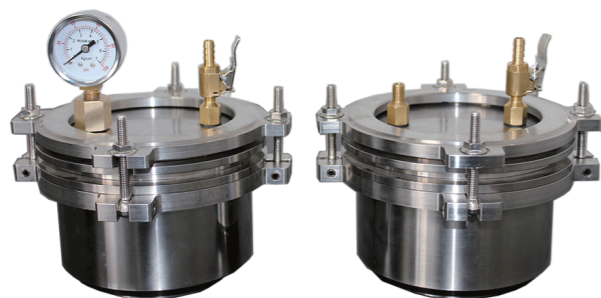
● Comfortable operation and easy cleaning

Efficient, maintenance-free drive is used for planetary ball mill, so as to guarantee the machine can maintain constant speed in continuous operation for a long time or under maximum overload. During the grinding, built-in high-power fans can automatically provide effective cooling for motors .

- The planetary ball mill is designed by ergonomics, which integrates comfort and safety in operation.
- The intelligent security lock ensures the safety of the instrument operating.
- The humanized program design can set the grinding time, and can operate without the need of personnel monitoring.

Multi-safety design of grinding jars

- For colloid grinding,the grinding jars are equipped with safe closure device for gas-tight and dust-proof to ensure safe operating.
- Safety closure device can be sealed in colloid grinding (wet grinding) to ensure the overpressure gas not easily escape.
- Aeration lids are mainly used for protecting the inert gases generated inside grinding jars.
- The safe closure devices can guarantee the high-level gas tightness inside grinding jars so as to ensure that the grinding result is not affected.



Pressure and temperature measuring system

During the operation of planetary ball mill, the process and reactions (such as temperature, pressure change, etc.) take place in the grinding jars could be monitored and recorded by the PTM to achieve better grinding and analysis results.



Jar-opening tools

POWTEQ has special designed jar-opening tools for the grinding jars of planetary ball mill series. The user-friendly design makes the jar opening work more easy and safe.



Grinding jar' s feature

- The jar' s capacity and material are marked on the grinding jars ,which is easy to distinguish from others.
- Wide kinds of materials to meet different treatment requirements
- The O-ring can guarantee the dust -prevention
- It' s easy to open the jars by the gap, which exist between the grinding jar and lid
- Grinding jars of agate, sintered aluminum oxide, zirconium oxide and tungsten carbide are coated with stainless steel jacket
- Easy and safe to operate



● Filling recommendation of grinding jars

Grinding jars	BM40/6Pro		The recommendation of the sizes and quantities of grinding balls			
	Rated volume	Sample quantity	Sample feeding size	10mm	20mm	30mm
50ml	5-20ml	< 3mm	10pcs	2pcs	—	—
80ml	10-35ml	< 4mm	25pcs	4pcs	—	—
125ml	15-50ml	< 4mm	30pcs	6pcs	—	—
250ml	25-120ml	< 6mm	60pcs	13pcs	6pcs	—
500ml	75-225ml	< 10mm	100pcs	22pcs	9pcs	5pcs

Technical Data

	BM40	BM6Pro
Feed Size	< 10mm	
Final fineness	< 0.1µm (up to nanometer for colloidal grinding)	
Speed	30 ~ 400rpm	100 ~ 650rpm
Speed ratio	1:-2.2	1:-2
Time	0-999min(recycle times 01-99)	
Effective sun wheel diameter	360mm	260mm
Display	LED 7 inch display	
Rated power	1.5KW	750W
Power supply	220V,50Hz	
Instrument Size (W*D*H)	784*598*577mm	685*510*506mm
Package Size (W*D*H)	865*979*896mm	898*784*770mm
Net Weight	170Kg	145Kg

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	170.00	BM40,220V, 50Hz ,with 4 grinding stations, speed ratio:1:-2.2
24.879.0001	145.00	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	70.011.0003	0.01	O-ring for grinding jars agate/ zirconium oxide 125ml (small)
02.864.0039	0.80	aeration lid for jars ,250ml stainless steel			
02.864.0040	1.60	aeration lid for jars ,250ml tungsten carbide	70.011.0004	0.01	O-ring for grinding jars agate/ zirconium oxide 125ml (big)
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 GT300,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.

