



For more perfect sample preparation

—— Planetary Ball Mill BM40 / BM6Pro

Planetary Ball Mill BM 40 / BM6 Pro

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.



BM 40



BM 6PRO

❖ APPLICATIONS

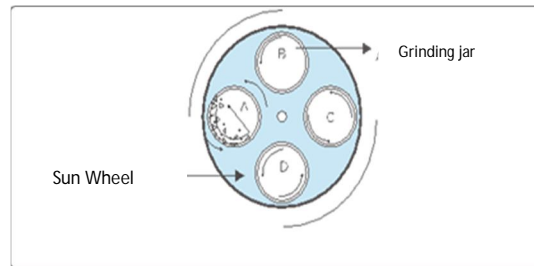
- **Application field** Engineering / electronics, building materials, agriculture, medicine, Chemical / synthetic materials, geology / metallurgy, environment / resource recovery, Glass / ceramics.
- **Sample type:** soft,hard,brittle ,fibrous
- **Applications:** plant material, cement clinker, concrete, compost, coatings and paint, charcoal, Hair, catalyst, chemicals, metal, carbon fibre, paper, fibre 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	Parameters	
		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 ratio 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 jars inner wall at the same time.



BM 40 and BM 6 Pro 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 Advantage

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 customise 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

V S 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 jars feature

- The jars 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 aluminium oxide, zirconium oxide and tungsten carbide are coated with stainless steel jacket.
- Easy and safe to operation



○ Filling recommendation of grinding jars

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

Technical Data

	BM 40	BM6 Pro
Feed Size	10 mm	
Final Fineness	< 0.1 μ m (up to nanometre for colloidal grinding)	
Speed	30 ~ 400rpm	100 ~ 650rpm
Speed Ratio	1:-2.2	1:-2.
Time	0-999min(recycle times 01-99)	
Sun wheel diameter	360 mm	260 mm
Display	LED 7 inch display touch Screen	
Rated Power	1.5 KW	750 W
Power Supply	220V,50Hz	
Instrument size	784*598*577mm	685*510*506mm
Package size	865*979*896mm	898*784*770 mm
Net Weight	170Kg	145 Kgs

Order information— Planetary Ball Mill

Item No.	Weight(Kg)		Item No.	Weight(Kg)	
Planetary Ball Mill BM40/BM6Pro (Please order grinding jars and balls separately)					
24.886.001	170.00		BM40,220V, 50Hz ,with 4 grinding stations, speed ratio :1:-2.2		
24.879.001	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	50 ml	01.864.0012	1.05	50 ml
01.864.0002	1.45	125 ml	01.864.0013	3.30	125 ml
01.864.0003	3.20	250 ml	01.864.0014	4.60	250 ml
01.864.0004	3.90	500 ml	01.864.0015	6.50	500 ml
Agate			Tungsten Carbide		
01.864.0005	0.70	50 ml	01.864.0016	1.85	50 ml
01.864.0006	1.20	80 ml	01.864.0017	2.30	80 ml
01.864.0007	2.60	125 ml	01.864.0018	2.70	125 ml
01.864.0008	3.50	250 ml	01.864.0019	5.10	250 ml
01.864.0009	3.40	500 ml	Silicon nitride		
Sintered Aluminium Oxide					
01.864.0020	0.85	50 ml	01.864.0024	1.70	125 ml
01.864.0021	1.80	125 ml	01.864.0025	3.40	250 ml
01.864.0022	3.70	250 ml	01.864.0026	4.70	500 ml
01.864.0023	5.50	500 ml			
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 250 ml	02.864.0042	1.60	aeration lid for jars ,500ml stainless steel
02.864.0037	0.80	safety closure device for jars stainless steel 125 ml	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 (big)
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 aluminium oxide, zirconium oxide 500ml 10pcs/kit			

V S E A P L

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.

V S EQUIPMENT AND AUTOMATIONS PVT LTD

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