

Dual Laboratory Planetary Ball Mill



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Overview

The machine can both move vertically and horizontally. It solves the problem of output materials sinking to the bottom and sticking to the mill jar.



Appearance of Machine

Dual planetary ball mill is made by adopting thick steel plate welding processing technology, with advantages of high strength, impact resistance, deformation resistance, and stability.

Dual planetary movement

Centrifugal force increases exponentially, high energy and high efficiency, and some materials can be ground to nano scale.



Driving gear

The precise gears made of special materials guarantee its stability, safety, and lower noise when running at high speed.

Working Principle

KH series planetary ball mill working principle: There are two larger planetary rollers that make rotation movement installed on a base turntable which makes revolution movement. Another two smaller turntables are installed on each larger tank rollers respectively; there are two mill tanks on each smaller turntable. The machine has totally four ball tanks installed on the smaller turntables. When the base turntable rotates, the tank roller makes planetary movements. The balls and samples of material inside the tanks are ground and mixed under high speed movement.



Feature

- The mill pot makes two planetary movement, It enjoys high efficiency and small particle size under the high frequency percussion, linear collision force, friction force.
- Four different samples can be got at one time. It is convenient for the technologist to do the research and develop the new material.
- Feed Granularity of Materials: Soil material $\leq 10\text{mm}$, other materials $\leq 3\text{mm}$
- Wet or dry grinding method. Minimum Granularity of powder amounts to $0.06\ \mu\text{m}$
- Frequency controlled, you can set the speed as per experiment effect.
- Large turn disc revolution: 50-400rpm. Small turn disc revolution: 100-800rpm. Large planetary axis rotation: 100-800rpm. Mill pot rotation: 200-1600rpm.
- The planetary ball mill has timing power off, self-timing forward and inversion function. It can raise the efficiency by choosing one-way, alternately, continuously, time-setting operation.
- Motor power: 0.4L, 2L, 4L: 0.75KW, 220V, 50Hz; 16L, 20L: 5.5KW, 380V, 50Hz.
- Our planetary ball mill is functional which has low bary center, stable performance, compact structure, easy operation, reliable safety, low noise, and low wastage

Application Cases of Planetary Ball Mill



Before grinding



After grinding

Material : Active carbon
 Material weight : 50g
 Mill Jar & Balls : Corundum mill jars and zirconia balls
 Grinding method : Dry grinding
 Rotation speed : 560rpm
 Applied equipment : Planetary ball mill Model No.XQM-0.4A
 Total volume : $1000\text{ml} \times 4 = 4000\text{ml}$
 Grinding time : 2hours
 Granularity : $2\ \mu\text{m}$



Before grinding



After grinding

Material : Kaolin
 Material weight : 500g
 Mill Jar & Balls : PTFE
 Grinding method : Dry grinding
 Rotation speed : 450rpm
 Total volume : $1\text{L} \times 4 = 4\text{L}$
 Spent time : 1hour 20 minutes
 Feed size : 2mm
 Granularity of output : $100\ \mu\text{m}$



Before grinding



After grinding

Material : Green tea (dry)
 Material weight : 0.25kg
 Mill Jar & Balls : Stainless steel
 Grinding method : Dry grinding
 Applied equipment : Planetary ball mill Model No.XQM-2
 Total volume : $0.5\text{L} \times 4 = 2\text{L}$
 Spent time : 1hour

Application Technical parameter

Drive Mode	Gear drive and belt drive
Operation Mode	Two or four grinding jars working together
Max Load Volume (Material+Balls)	No more than 2/3 of mill jar volume
Feeding Size	Soil material≤10mm, other materials≤3mm
Output Granularity	Minimum up to 0.1um (different materials and grinding process will be different)
Optional Models of Speed Control	Frequency converter and automatic timing control
Materials of Jar	Stainless steel, agate, nylon, corundum, zirconia, etc.
Speed Regulation	Frequency Control

Technical Parameter Table



Main Parameters of Dual Planetary Ball Mill					
Model No	Total Timing(min)	Alternating Running Time(min)	Revolution Speed(rpm)	Rotation Speed(rpm)	Nosie≤db
KD-0.4	1-9999	1-999	70-560	140-1120	58db
KD-1	1-9999	1-999	70-560	140-1120	60db
KD-2	1-9999	1-999	70-560	140-1120	60db
KD-4	1-9999	1-999	70-560	140-1120	60db
KD-6	1-9999	1-999	70-560	140-1120	60db

Measurement of Dual Planetary Ball Mill				
Model No	Power Supply	Power(KW)	Net Weight(kg)	Dimension(mm)
KD-0.4	220V-60Hz	1.5	250	1150*800*760
KD-1	220V-60Hz	1.5	250	1150*800*760
KD-2	220V-60Hz	1.5	250	1150*800*760
KD-4	220V-60Hz	1.5	250	1150*800*760
KD-6	220V-60Hz	1.5	250	1150*800*760

Available size of Mill Jars for Dual Planetary Ball Mill				
Mode	Specification	Available size of Mill Jars	Quantity	Remarks
KD-0.4	0.4L	50-100mm	4pcs	Can be matched with 50mm vacuum mill jar
KD-1	1L	250mm	4pcs	Can be matched with 50-100mm vacuum mill jar
KD-2	2L	500mm	4pcs	Can be matched with 50-250mm vacuum mill jar
KD-4	4L	1L	4pcs	Can be matched with 50-500mm vacuum mill jar
KD-6	6L	1.5L	4pcs	Can be matched with 50mm vacuum mill jar

Accessory

We provide all kinds of mill pots in any matched size, which are made from following materials of agate, Alumina corundum ceramics, zirconia ceramics, silicon nitride ceramics, carborundum ceramics, stainless steel, high wear resistant steel, manganese steel, nylon, PU, cemented carbide, crystal glass, and etc.

Material	Volume of Mill Jar	Diameter of Mill Ball	
Stainless Steel	50ml,100ml,250ml,500ml,1L,1.5L,2L,2.5L,3L,4L	1-30mm	
Stainless Steel (for vacuum)	50ml,100ml,250ml,500ml,1L,1.5L,2L,3L,4L,5L	1-30mm	
Zirconia	50ml,100ml,250ml,500ml,1L,1.5L,2L,3L,4L	1-30mm	
Alumina	50ml,100ml,250ml,500ml,1L,1.5L,2L,3L	1-50mm	
Tungsten Carbide	50ml,100ml,250ml,500ml,1L,1.5L	3-10mm	
Agate	50ml,100ml,150ml,250ml,300ml,400ml,500ml,1L,1.5L,2L	6-35mm	
Nylon	50ml,100ml,250ml,500ml,1L,1.5L,2L,2.5L,3L,4L	\	
PU	50ml,100ml,250ml,500ml,1L,1.5L,2L,2.5L,3L,4L	\	
PTFE	50ml,100ml,250ml,500ml,1L,1.5L,2L,2.5L,3L,4L	\	