HLMX Superfine Grinding Mill

-----Top equipment of superfine powder large-scale producing. Breaking through the bottleneck of superfine powder processing capacity.

Max feeding size: 20mm

Capacity: 4-40t/h

Fineness: 325-2500 mesh

HLMX Superfine Vertical Mill is large-scale non-metal mineral superfine powder mill developed by Hongcheng based on HLM Vertical Mill and introduction of foreign advanced technology. Hongcheng HLMX Vertical Mill applied static and dynamic classifier, product fineness can be adjusted between 325 mesh to 2500 mesh (5μm-10μm), maximum capacity reach 20t/h. The equipment is widely applied in non-metal mineral superfine powder processing, such as limestone, calcite, marble, coarse whiting, kaolin, barite, bentonite, pyrauxite. It is a high efficiency and low cost powder processing equipment.

Introduction:

HLMX SUPERFINE GRINDING MILL

The traditional ultra-fine powder-processing equipment, due to its low production capacity, is unable to meet the requirements of large-scale production to satisfy the increasing great market demand. Combining several decades of powder mill R&D and production experience and by introducing advanced technology from Taiwan and Germany, Honecheng has designed and developed the HLMX Superfine Vertical Mill based on **HLM Vertical Mill**. It becomes the first choice for large-scale production of superfine powder by solving the issue of low production capacity of traditional superfine mill.

The HLMX Superfine Vertical Mill, with static and dynamic separator, can produce powder with a fineness ranging from 325mesh(40μm)to 2500 mesh(5μm). It can be widely used in chemical, metallurgy, non-metallic mining industries for grinding **limestone**, **calcite**, marble, calcium carbonate, kaolin, barite, **bentonite**, pyrophyllite etc. HLMX Superfine Vertical Mill is capable of providing high quality filers and additives used in the papermaking, segments, plastic, rubber, pigment, printing ink, PVC and so on.

The working principle of HLMX Series Roll Mill

The motor drives the reducer to rotate the millstone, the raw material is sent into the center of the millstone from the air lock rotary feeder. Under the effect of centrifugal force, the material moves to the edge of the millstone. Material than be ground by the force of the roller and smashed under extrusion, grinding and cutting. At the same time, air is blew up around the millstone and bring up the ground material. The air will blow the coarse material back to the millstone. The fine powder will be brought to the classifier, and then, the qualified fine powder will flow out the mill and be collected by dust collector, other coarse powder will be brought down to the millstone by the blade

of classifier and be ground again. The circulation like this is the overall process of grinding.

When moving together with the materials to the fridge of the grinding plate, due to its weight, the tramp iron cannot be raised by air flow but falls into the lower mill chamber and then is scraped into the slag outlet to be discharged by the scraping plate. This efficiently ensures the quality of finished powder product.

Rotor speed of the multi-rotor classifier is easy to adjust to achieve conforming powder products of various fineness.

The anatomy of HLMX vertical mill

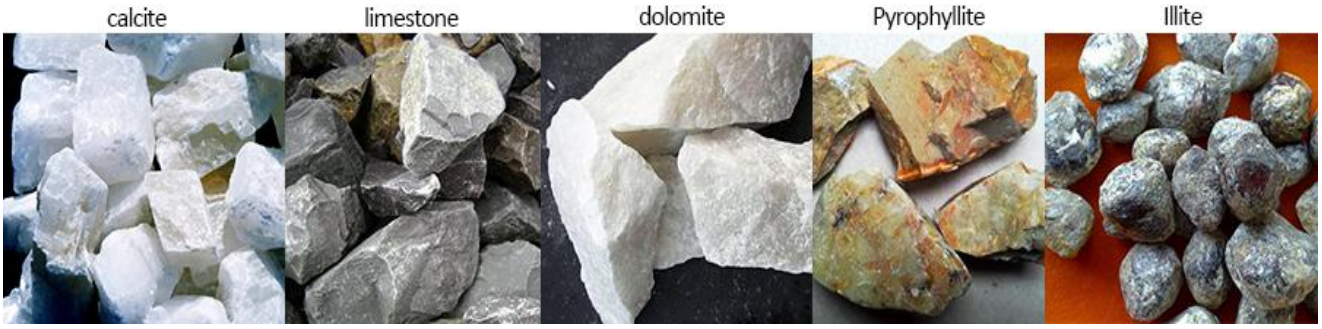
Grinding roller: Main component used for crushing and grinding materials. Together with the liner plate on the grinding plate, it can provide an effective grinding area.

Grinding Plate: Component fixed on the output shaft of the reduction gear and where the grinding roller grinds materials.

Classifier: A high efficient and energy saving powder separation device. Single rotor or multi-rotor is used to producing adjustable particle sizes due to the actual requirement.

Application Range

With scientific & reasonable design and abovementioned unique advantages, HLMX ultra-fine vertical mills are applied widely in metallurgical, chemical， and non-metallic industry, for grinding of various materials, such as limestone, gypsum, coal, barite, calcite etc. It is large-scale equipment breaking through the bottleneck of superfine powder processing capacity. It is your best choice for large-scale production of superfine powder.



Mill Structure:

HLMX Superfine Grinding Mill consist of main mill, feeder, classifier, blower, pipe system, storage

hopper, electronic control system and collecting system.

Secondary Classifying System

The secondary classifying system includes superfine classifier, fan, dust collector, hopper, screw conveyor and pipes. superfine classifier is the core equipment of the whole system. HLMX series superfine vertical mill is equipped with the secondary classifier system, which is capable of efficiently separating coarse powder from fine powder to obtain products of various fineness from 800 mesh to 2000 mesh.

Features of the secondary classifying system

High separating efficiency:

By frequency-conversion speed adjustment of classifier wheel and the fan, various fineness of stable and reliable end product can be obtained rapidly. The classifying efficiency is high.

Classifier:

A high efficient and energy saving powder separation device. Single rotor or multi-rotor is used to producing adjustable particle size due to the actual requirement.

Big range of product fineness:

The classifying system is capable of selecting fine particles from the materials. The fineness can range from 800 mesh to 2000 mesh. With the secondary classifying system, different particles size can be obtained and it is also rapid to achieve high production stability product of the same particle size.

Main technical data:

SPECIFICATION AND TECHNICAL PARAMETER FORM OF HLMX ULTRA-FINE

VERTICAL MILL (DESULFURATION LIMESTONE PLANTS)

Model	Grinding Table Diameter (mm)	Capacity (t/h)	Material Moisture	Fineness	Power (kw)
HLMX1000	1000	3-12	<5%	0.045mm-0.01mm 0.005mm (with secondary classifier)	110/132
HLMX1100	1100	4-14	<5%		185/200
HLMX1300	1300	5-16	<5%		250/280
HLMX1500	1500	7-18	<5%		355/400
HLMX1700	1700	8-20	<5%		450/500
HLMX1900	1900	10-25	<5%		560/630
HLMX2200	2200	15-35	<5%		710/800
HLMX2400	2400	20-40	<5%		1120/1250

Note: Raw Materials bond index<=13kWh/t.

Performance advantages:

1. Higher Pulverizing and Separating Efficiency:

(1) The grinding curves of the roller shell and liner plate are uniquely designed based on the superfine powder pulverization. The material bed can be formed easily so as to increase the grinding efficiency and the ratio of the finished powder product from the primary grinding.
(2) The largest output is 40t/h, which is equal to 5 ultra-fine mills, off-peak power can be used.
(3) Adopting the principle of muti-rotor classifier, the product fineness can be easily and efficiently adjusted among the selected fineness range. HLMX series superfine vertical mill saves energy by 30%-50% compared to a common type superfine mill when producing the powder of the same fineness.

2. Easy Maintenance and Lower Operation Cost:

(1) The roller can be pulled out by the hydraulic device, which is convenient for plate-replacement and bigger maintenance space.
(2) Left and right side of the roller cover can both be used for prolonging the working life.
(3) Without raw material on the grinding table, the mill can run, which erases the difficulty in starting.
(4) The roller and grinding table are made from special material for longer working life.

3. Lower Investment:

(1) Combination of crushing, drying, grinding and conveying, simple process flow, reasonable and compact layout, space-saving (50% less than ball mill), lower foundation cost and workshop cost in the field.

4. Stable and Good Powder Quality:

(1) The materials bed pulverization principle reduces the duration of the materials retention in the mill and the repeated grinding, which is easy for the powder fineness and components analysis. Moreover, there is less tramp iron in the end powder product, increasing the whiteness and purity of the end powder product.
(2) Regular powder shape, narrow size fineness, easy fluidity, extensive application.
(3) During the grinding, adding a small amount of additive that will not adversely affect the quality of finished powder product is capable of remarkable improving the added value of the finished powder product.

5. Reliability:

(1) The mechanical limit device for the roller is capable of being adjusted so as to ensure the safety clearance between the roller shell and the liner plate on the grinding plate. This effectively removes

the possibility of the materials feeding interruption thus fierce vibration and destructive impact and maintains the safe an economical operation of the mill.

(2)Newly-designed roller sealing component ensures the reliable sealing without sealing the fan, which can lower the oxygen content in the mill to prevent the possibility of explosion.

6. Environment-friendly:

(1) Lower vibration and noise

(2) Perfect sealing and negative pressure guarantees no air pollution in the workshop.

(3)Vertical mill is the better equipment to lower power consumption in the mill industry, which is also what the country advocate and a must to increase the enterprise competitiveness in China powder industry.

7. High Automatic Level:

(1) PLC automatic control system enables remote control and easy operation and maintenance, which lower the labor cost.