MOUNTAIN RIVER MACHINERY

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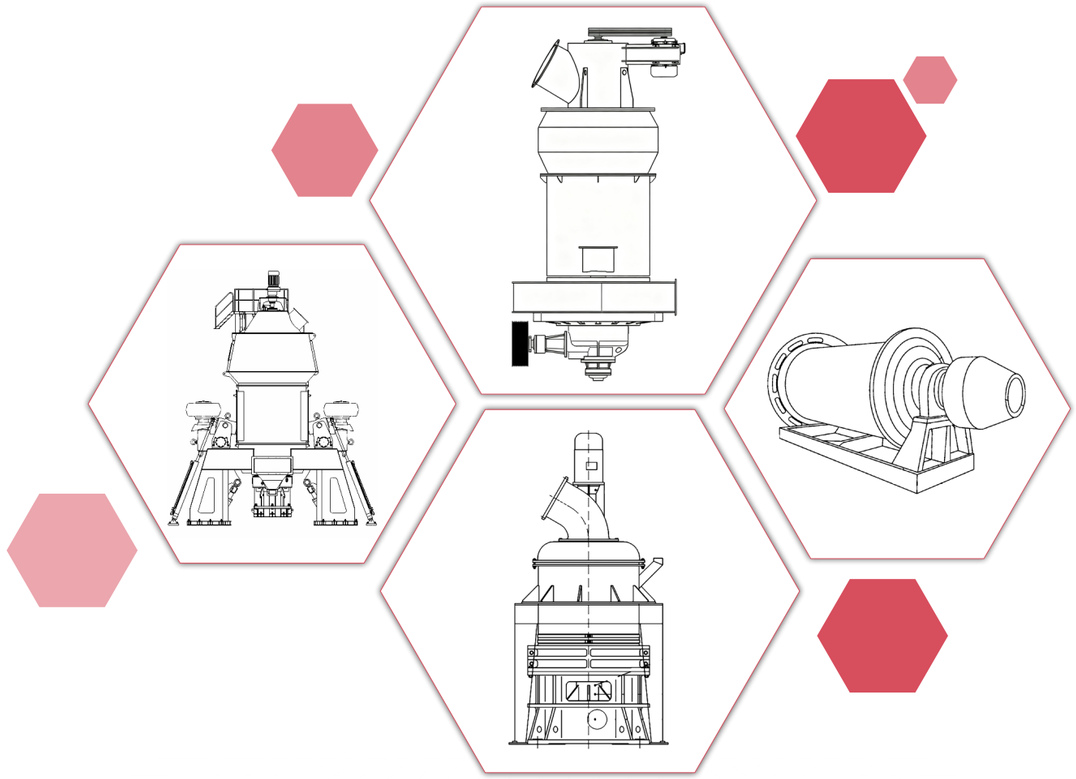
MOUNTAIN RIVER MACHINERY



# MR GRINDING MILL

SHANGHAI MOUNTAIN RIVER MACHINERY CO.,LTD

CRUSH THE STONES, CONSTRUCT THE WORLD

# PRODUCT CONTENT





# Company Profile

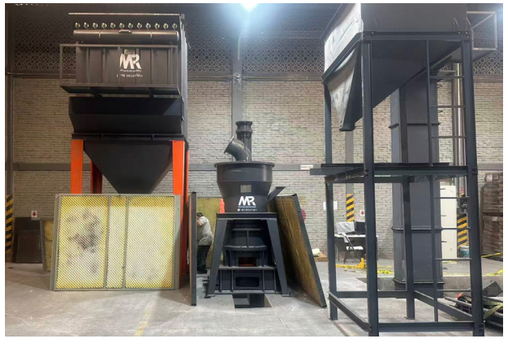
Shanghai Mountain River Machinery Co.,Ltd (MR) is a professional manufacturer of crushing equipment, grinding equipment, briquette equipment, other auxiliary equipment and all their spare parts. MR factory covers around 600,000 square meters, with function of material pre-processing, fabrication, assembling, quality control process, test process, finished products storage, spare parts storage, loading and delivery process.

In the past few decades, we have been focused on the design, research&development, manufacturing, sales, installation, and maintenance of mining equipments. Our main products are: jaw crusher, cone crusher, impact crusher, vertical shaft impact crusher, hammer crusher, vibrating feeder, vibrating screen, sand washer, belt conveyor, raymond mill, high pressure mill, high efficiency mill, ultrafine mill, ball mill, coal briquette machine, mining powder briquette machine, non-metal powder briquette machine, high pressure briquette machine, etc. These equipments are widely used in the industry of mining, construction materials, chemicals, metallurgies, transportation, hydraulic engineering and so on.

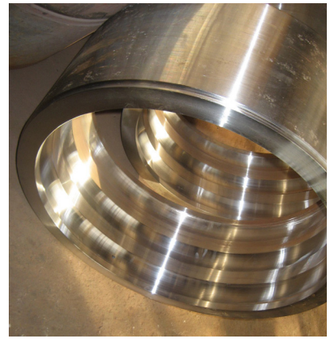
With certification of ISO9001:2000 and CE, our machines have been exported to more than 130 countries and regions in the world. With headquarter located in Shanghai China, 2 branch companies and 1 warehouse of spare parts abroad, we have been committed to provide our customers with the best quality and most cost-effective equipment.

MR China, your most loyal partner!

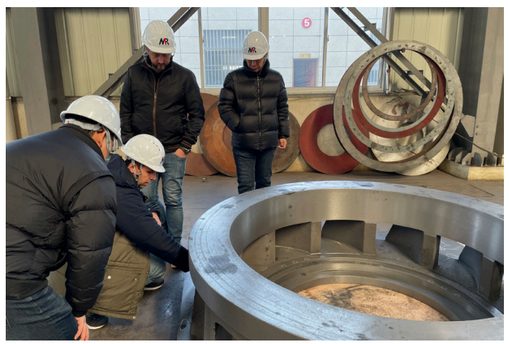
# MR Factory Photos







# MR Factory Photos



# MSF Ultrafine Mill

## Introduction

MSF series ultrafine mill is designed to produce fine powder and ultrafine powder. The original size of raw material to feed the ultrafine mill could be around 20mm, after ground, our customer can get fine powder and ultrafine powder until 3000 mesh, 5 microns.

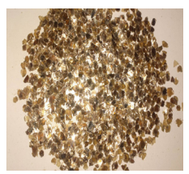


## Application

The MSF series ultrafine grinding mill is mainly used to grind more than 200 kinds of non-flammable and non-explosive brittle materials with Mohs hardness < 9. The most popular materials are dolomite, barite, limestone, gypsum, bentonite, calcium carbonate, coal, mica, talc, graphite, fluorite, calcite,kaolin, illite, pyrophyllite, sepiolite, potash feldspar, phosphate rock etc.








The final powder from the MSF series ultrafine mill is widely applied in paint, paper making, pigment, rubber, plastic, padding, cosmetic, chemical supplies and many other industrial fields.

| Material | Fineness (Mesh) | Application |
|---|---|---|
| Calcium Carbonate | 600 | coating, paper making toothpaste, healing drugs and daily chemical using, pvc making, etc. |
| | 800 | paint, coating, paper making toothpaste, healing drugs and daily chemical using, pvc making, etc. |
| | 1250 | paint, coating, paper making, toothpaste, healing drugs and daily chemical using, additive in chemical and plastic, additive in high quality paper and seal oil, etc. |
| | 1500 | paint, coating, paper making, toothpaste, healing drugs and daily chemical using, additive in chemical and plastic, additive in high quality paper and seal oil, etc. |
| Barite | 600 | paint, rubber packing, drilling mud, pvc making, plastic, etc. |
| | 800 | paint, rubber packing, drilling mud, plastic, etc. |
| | 1250 | paint, rubber packing, paper making, drilling mud, plastic, etc. |
| | 2500 | paint, rubber packing, paper making, drilling mud, plastic, etc. |
| Calcite | 600 | paper making, coating, printing ink, main ingredients of toothpaste, etc |
| | 800 | paper making, coating, printing ink, pvc additives, cable additives, etc |
| | 1250 | degradable plastic, paper making, paint, coating, printing ink, adhesive, etc |
| | 2500 | degradable plastic, coating, printing ink, adhesive, etc |
| Mica | 600 | pearl pigment, toothpaste, coating, paint, etc |
| | 800 | pearl pigment, mica paper coating, paint, etc |
| | 1250 | oil drilling mica pulp, pearl pigment, paper making, coating, paint, plastic, cosmetics, etc |
| | 2500 | oil drilling mica pulp, pearl pigment, paper making, coating, paint, plastic, cosmetics, aerial material, etc |

## Main structure

The main structure of MSF series ultrafine mill consists of main unit, classifier, pulse dust collector, motor, pipes and blower, etc. The auxiliary equipment include hammer crusher, elevator, feeder and control cabinet.

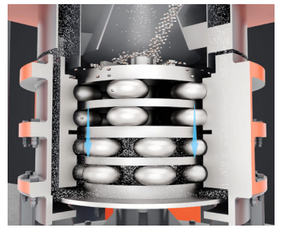
## Working Principle

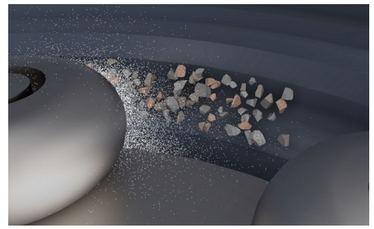
The raw material will be fed into the hammer crusher to be crushed. The bucket elevator will load the crushed material below 20mm and then feed it into the main mill through a hopper and a belt feeder.

The motor of the main mill drives the center shaft and disc rotor to rotate through the reducer. The roller pins on the edge of the grinding disc drive the grinding rollers to roll in the mill roller path. The material will fall on the distribution plate above the disc rotor, moving sideward under the action of centrifugal force, and then falling into the mill roller path for being crushed and ground between the ring and rollers. After being processed through roller paths, the material will become ultrafine powder. The high-pressure blower will inhale outside air into the mill body, then taking the ground material into the powder classifier.

The rotating impellers in the classifer will drive the coarse particles to fall back for repeated grinding,with the qualifed fine powder forced into the cyclone powder collector along with the air flow and discharged from the lower discharge valve as finished products, while the air flow with small amount of fne dust will be discharged out of the mill via the blower and muffler after being purified by the impulse dust collector.







## Technical Parameters

| Content | Model | | | | |
|---|---|---|---|---|---|
| | MSF600 | MSF800 | MSF1000 | MSF1250 | MSF1680 |
| Roller qty. (pieces) | 12 | 21 | 28 | 32 | 44 |
| Diameter of ring (mm) | Φ600 | Φ800 | Φ1000 | Φ1250 | Φ1680 |
| Main shaft speed (rpm) | 250-280 | 230-240 | 180-200 | 135-155 | 120-130 |
| Max. feeding size (mm) | 20 | 20 | 20 | 20 | 25 |
| Final size (mesh) | 325-2500 | 325-2500 | 325-2500 | 325-2000 | 325-2000 |
| Capacity (t/h) | 0.2-3 | 0.5-4.5 | 1-8.5 | 2.5-14 | 5-25 |
| Dimension (m) | 11.5*3.5*5.2 | 13*3*5.8 | 18*4.6*8.6 | 14*9*10.25 | 16*5*11 |
| Main mill (kW) | 45 | 75 | 132 | 200 | 315 |
| Classifier (kW) | 15 | 18.5 | 30 | 75 | 132 |
| Blower (kW) | 37 | 45 | 75 | 132 | 200-220 |
| Hammer crusher Motor (kW) | PC300*400 PC400*600 | PC400*600 | PC600*800 | PC600*800 | PC600*800 |
| | 11/18.5 | 18.5 | 45 | 45 | 45 |
| Bucket elevator Motor (kW) | TH200*8.2m TH200*6.04m | TH200*9.79m | TH300*11.05m | TH300*13.55m | TH300*16.31m |
| | 3 | 3 | 4 | 5.5 | 7.5 |
| Belt feeder Motor (kW) | 300*60 *1000mm | 300*60 *1800mm | 300*60 *1800mm | 400*80 *2000mm | 400*80 *2800mm |
| | 1.1 | 1.5 | 1.5 | 1.5 | 2.2 |
| Pulse dust collector | DMC96 | DMC120 | LDMC35-8 | LDMC64-9 | LDMC64-9 (2 sets) |
| | | DMC160 | | | |
| Discharge screw conveyor Motor (kW) | / | LS219-4.5 | LS245-6.2 | LS315-10.34 | LS315-10.34 (2 sets) |
| | | LS219-3 | | | |
| | / | 3/3 | 4 | 7.5 | 7.5*2 |
| Air compressor Motor (kW) | KSH150D | KSH240D | LGY5-8 | LG6.2/8 | LG10/8 |
| | 11 | 15 | 30 | 37 | 55 |

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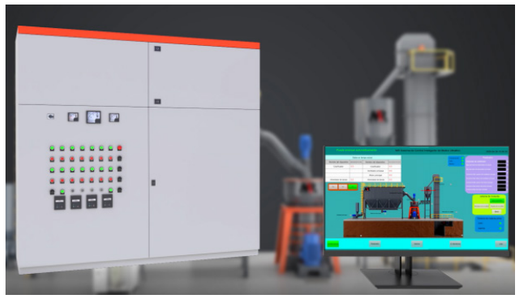
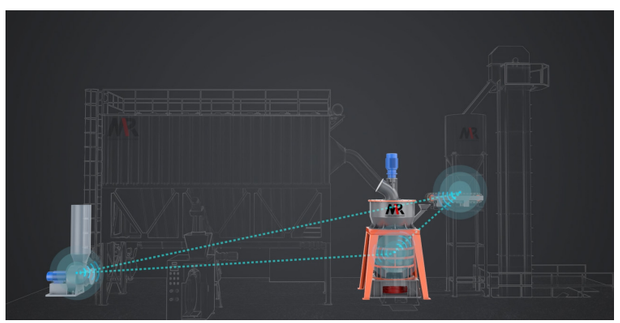
## Technical Advantages

### (1) High degree of automation:

1. It adopts computer integrated control and manual control dual modes.
One-button start, the computer automatically alarms and shuts down when a fault occurs.
2. Equipped with manual control button, be prepared for any eventuality.
3. Equipped with mobile phone APP system, so that you can also know the production status even when you are away from your grinding plant.

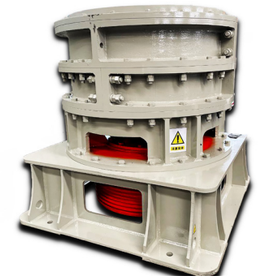



4.Automatically and evenly adjust the feeding amount of raw material according to the current of the main mill and fan to achieve the highest grinding efficiency.



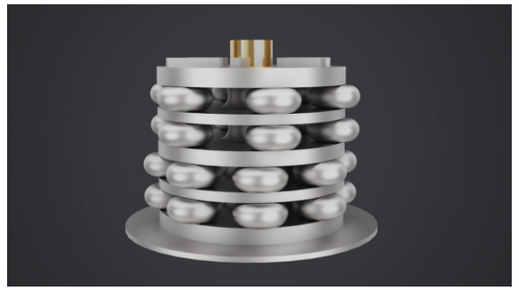
### (2) High efficiency and low consumption:

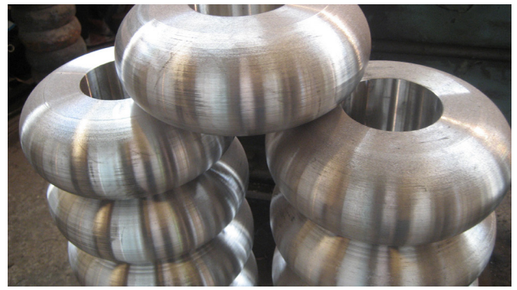
Under the condition of the same finished product fineness and motor power, the output is more than that of other mills and the energy consumption is 30% lower.



### (3) High durability of wearing parts:

Grinding roller and grinding ring are forged from special wear-resistant materials, which greatly improves their durability.





### (4) The product has a wide adjustable range:

By adjusting the speed of the cage classifier, powder between 150-3000 mesh can be produced.

## Customer Site







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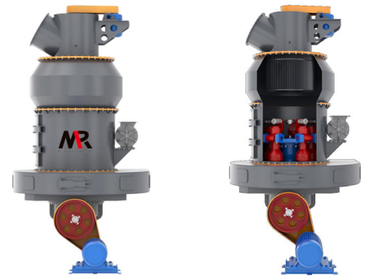
# MGW Intelligent Raymond Mill

## Introduction

MGW series high efficiency grinding mill is designed by our experts, according to collected advices from customers' long-term experiences. It takes the most advanced patent technology from Europe and it has a outstanding performance at a low cost.

## Application

MGW series high efficiency mill is mainly applied to the material processing of metallurgy, building materials, chemical industry, mining and other industries. It can grind limestone, calcite, marble, talcum, dolomite, bauxite, barite, petroleum coke, quartz, iron ore, phosphate rock, gypsum, graphite and other non-inflammable and non-explosive mineral materials with Moh's hardness below 9 and humidity lower than 6%.



## Main Structure

The complete plant of the grinding mill is composed of jaw crusher, bucket elevator, storage hopper, electromagnetic vibrating feeder, main mill, classifier, powder collector, bag filter, electric control cabinet, etc.

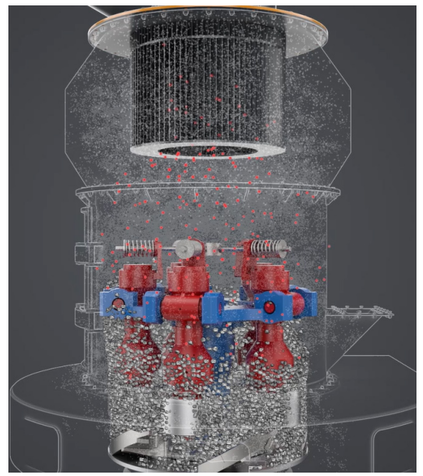
## Working Principle

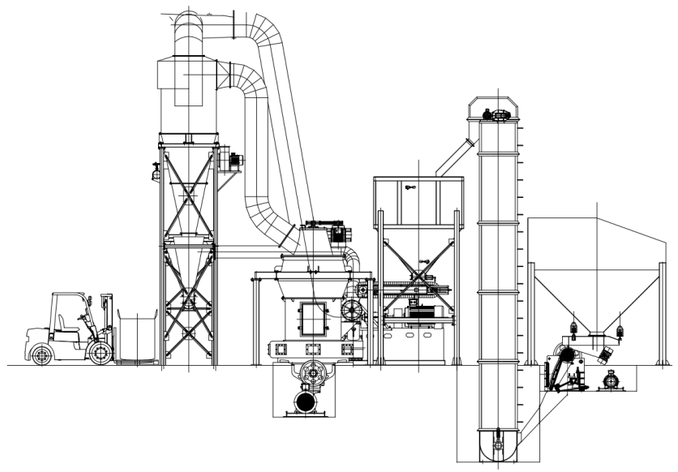
The raw material will be fed into the jaw crusher to be crushed to below 20mm. The bucket elevator will load the  crushed material below 20mm and then feed it into the main mill through a hopper and a vibrating feeder.

The main mill drives the center shaft to rotate through the reducer. The top of the center shaft connects with a grinding roller hanger. The rollers are installed under the roller hanger through the cross arm shaft and form a swinging pivot.

The grinding roller rotates around the center shaft of the main mill along the grinding ring. At the same time it also rotates itself under the action of the friction with the grinding mill. The shovel blades system is equipped in the bottom of the grinding roller hanger. The shovel blade and rollers can throw up the material and feed it into the space between the rollers and ring so that the material can be crushed and grinded.

The air flow from the bottom of the grinding ring will take small powder into the classifier. After the classification by the classifier, the coarse particles will fall down to be grinded again and the qualified powder will be fed into the powder collector together with the air flow. The it will be discharged from the pipes as finished products.

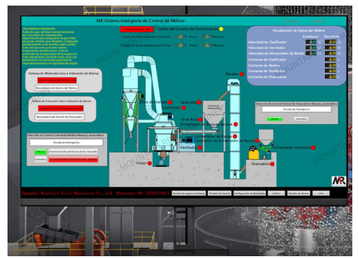




## Technical Advantages

### (1) High degree of automation:

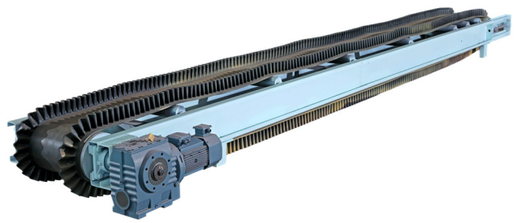
1. Computer control and manual control dual modes. One-button start makes operation easier. When a fault occurs, the computer automatically alarms and shuts down to reduce damage to the machines. The belt feeder, grinding mill, and main fan are interlocked and controlled. The speed can be automatically adjusted according to the amount of material in the mill to ensure the highest capacity. At the same time, it is equipped with a manual control mode for backup, which is convenient and simple.

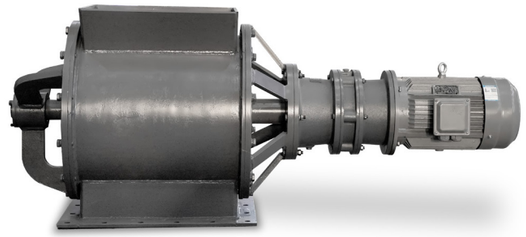


2. The belt feeder, grinding mill, and main fan are interlocked and controlled. The speed can be automatically adjusted according to the amount of material in the mill to ensure the highest capacity.

### (2) The belt feeder

The belt feeder is equipped with a permanent magnet roller and a frequency converter to feed materials quantitatively, effectively remove metal from the raw materials and protect the mill.



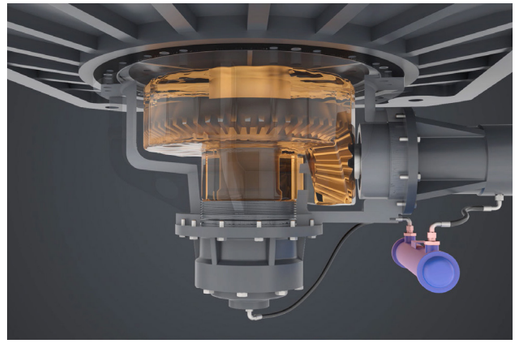


### (3) The air-locking feeder

The air-locking feeder prevents air leakage and ensures stable system air pressure.

### (4) Bevel gear transmission and internal oil pump

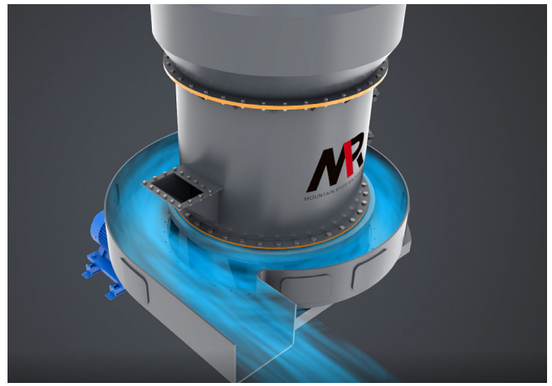
The main mill adopts bevel gear transmission and internal oil pump, and no additional oil pump or lubrication station is required. It is also equipped with a cooler. Installation, commissioning and maintenance are more convenient.

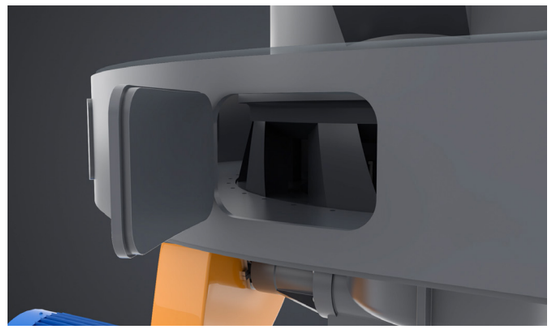


### (5) The curved air duct

The air inlet volute observation door adopts a double-layer door structure, with the inner door panel and the entire air duct on the same curved surface, which can effectively avoid resistance and reduce system energy consumption.

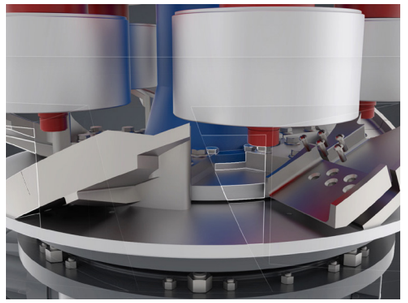
The curved air duct can effectively reduce wind resistance and air volume loss, thereby reducing the occurrence of blockage.





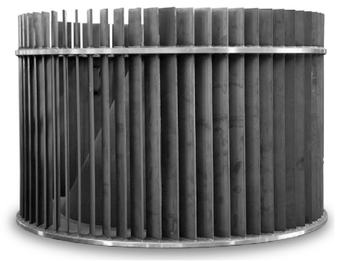
### (6) The curved knife

The curved knife enables the entire surface of the roller to grind the material. The combined knife has a wear-resistant carbide blade head. After wear, only the blade head needs to be replaced, saving the cost of accessories.



### (7) New cage classifier

New cage classifier makes the screening efficiency higher.

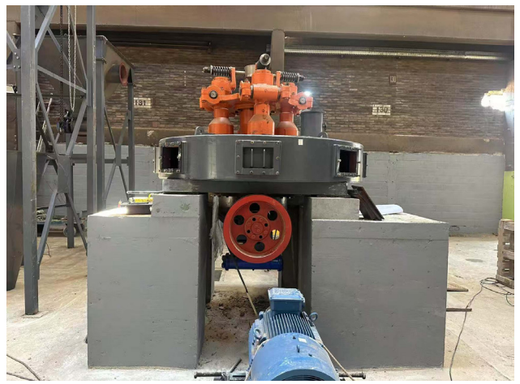


### (8) The pulse bag filter

The pulse bag filter collects excess air and powder to prevent powder from overflowing, making it clean and environmentally friendly.

## Technical Parameters

| Name & Model | MGW110 | MGW138 | MGW175 | MGW198 | MGW215 |
|---|---|---|---|---|---|
| Roller qty. (pieces) | 4 | 4 | 5 | 5 | 5 |
| Diameter*height of roller (mm) | Φ360*190 | Φ460*240 | Φ520*280 | Φ620*300 | Φ640*320 |
| Inner diameter* height of ring (mm) | Φ1100*190 | Φ1380*240 | Φ1750*280 | Φ1980*300 | Φ2150*320 |
| Main shaft speed (rpm) | 120 | 96 | 75 | 70 | 65 |
| Max. feeding size (mm) | <30 | <35 | <40 | <50 | <50 |
| Output size (mm) | 1.6-0.038 | 1.6-0.038 | 1.6-0.038 | 1.6-0.038 | 1.6-0.038 |
| Capacity (t/h) | 3.5-10 | 6.5-15 | 13-20 | 15-30 | 30-45 |
| Overall dimension (mm) | 8625*7933 *8642 | 9860*8340 *10227 | 13500*11500 *9500 | 15500*12000 *15000 | 14730*10860 *10341 |
| Main mill motor (kw) | 55 | 110 | 185 | 280 | 180 |
| Classifier motor (kw) | 11 | 18.5 | 37 | 55 | 90 |
| Blower motor (kw) | 55 | 110 | 200 | 280 | 315 |
| Bucket elevator motor (kw) | 3 | 3 | 4 | 11 | 11 |
| Belt feeder (mm) | 300*60*1800 | 500*60*2000 | 500*60*3000 | 500*60*6000 | 500*60*6000 |
| Belt feeder motor (kw) | 1.5 | 2.2 | 3 | 4 | 4 |

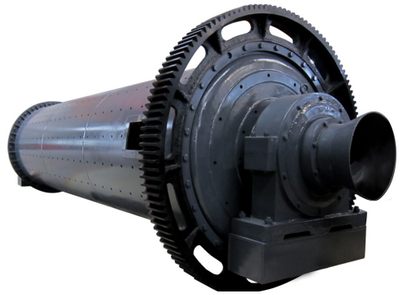


## Customer Site

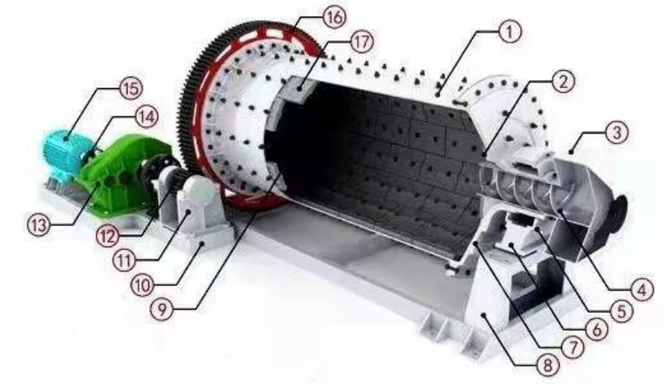
# MQ Ball Mill

## Introduction

MQ ball mill is an efficient machinery for powder making. It is mainly used to the beneficiation equipment, ceramics, chemical and cement industry etc.There are two types ball mills, the dry type and the wet type. In recent years, the bearing transmission energy saving ball mill is newly developed, which can save 25-30% energy.



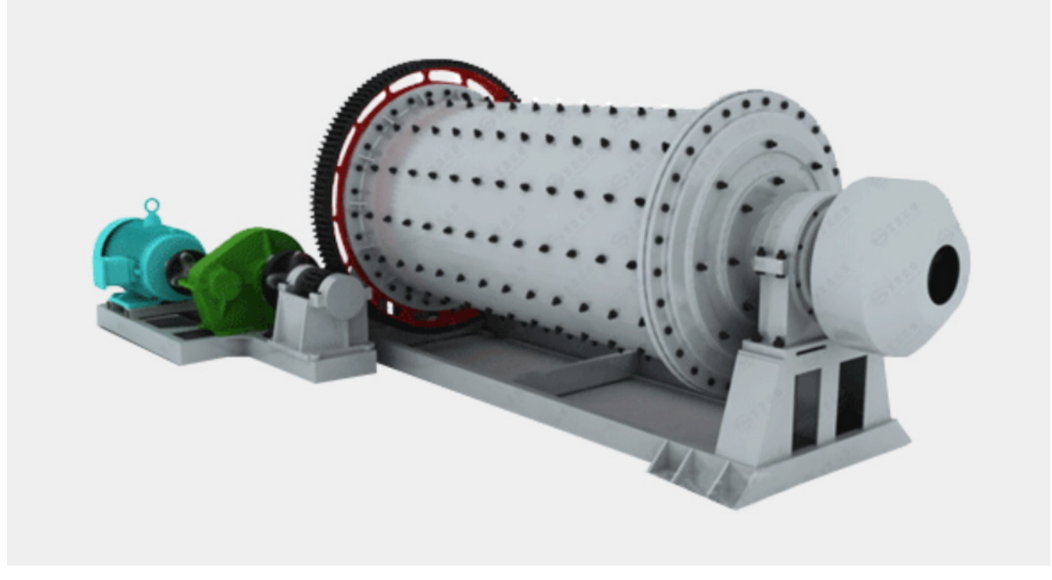
## Main Structure




1. Cylinder
2. Slate
3. Feeder
4. Feed screw
5. Bearing cap
6. Bearing seat
7. Roller
8. Bracket
9. Board
10. Drive seat
11. Bridge bearing seat
12. Small Gear
13. Reducer
14. Coupling
15. Motor
16. Big gear
17. Large liner

## Working Principle

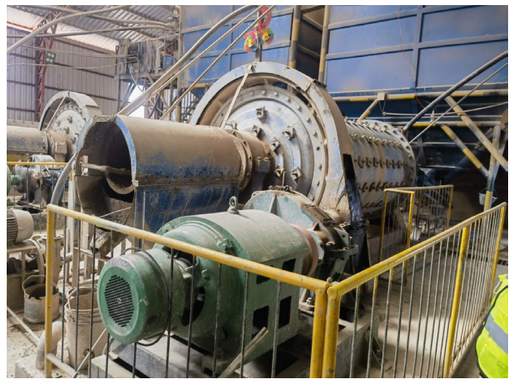
The main body of the ball mill is a revolving cylinder, both ends are equipped with end covers with hollow shafts, the hollow shafts are supported by the main bearings, and the whole mill rotates under the drive of the transmission device. Due to the action of inertial centrifugal force, the grinding body is attached to the lining surface of the inner wall of the mill and rotates together with it. After being brought to a certain height, it falls freely by gravity. The grinding body has a cyclic movement of rising and falling in the rotating mill, resulting in sliding and rolling, resulting in the grinding action between the grinding body, the lining plate and the material to be ground to make the material fine. In order to protect the cylinder from the direct impact of the ball and the sliding friction of the steel ball and the material, the inner wall of the cylinder is also equipped with a lining plate.

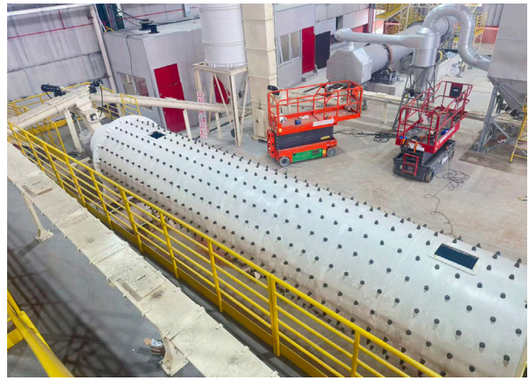


## Technical Parameters

| Model | Power (kW) | Thickness (mm) | Ball load (t) | Weight (t) |
|---|---|---|---|---|
| Φ900*1800 | 18.5 | 10 | 1.5 | 4.6 |
| Φ900*3000 | 22 | 10 | 2.7 | 5.6 |
| Φ1200*2400 | 30 | 12 | 3 | 12 |
| Φ1200*3000 | 37 | 12 | 3.5 | 12.8 |
| Φ1200*4500 | 55 | 12 | 5 | 13.8 |
| Φ1500*3000 | 75 | 16 | 7.5 | 15.6 |
| Φ1500*4500 | 110 | 16 | 7.5 | 21 |
| Φ1500*5700 | 130 | 16 | 12 | 25 |
| Φ1830*3000 | 130 | 18 | 11 | 28 |
| Φ1830*4500 | 155 | 18 | 15 | 32 |
| Φ1830*6400 | 210 | 18 | 21 | 34 |
| Φ1830*7000 | 245 | 18 | 23 | 36 |
| Φ2100*3000 | 210 | 20 | 19 | 43 |
| Φ2100*4500 | 245 | 20 | 24 | 46 |
| Φ2100*7000 | 280 | 20 | 26 | 50 |
| Φ2200*6500 | 380 | 22 | 35 | 52.8 |
| Φ2200*7000 | 380 | 22 | 35 | 54 |
| Φ2200*7500 | 380 | 22 | 35 | 56 |
| Φ2400*3000 | 245 | 24 | 27 | 60 |
| Φ2400*4500 | 320 | 24 | 30 | 65 |
| Φ2400*7000 | 475 | 24 | 54 | 71 |
| Φ2700*3600 | 400 | 25 | 39 | 83 |
| Φ2700*4000 | 400 | 25 | 40 | 85 |
| Φ2700*4500 | 430 | 25 | 48 | 89 |
| Φ2700*6000 | 630 | 25 | 53 | 93 |
| Φ3200*3600 | 560 | 30 | 52 | 120 |
| Φ3200*4500 | 800 | 30 | 65 | 125 |
| Φ3200*5400 | 800 | 30 | 81.6 | 130 |
| Φ3000*11000 | 1250 | 30 | 95-100 | 155 |
| Φ3600*4000 | 800 | 35 | 75 | 185 |

## Customer Site





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# LM Vertical Mill

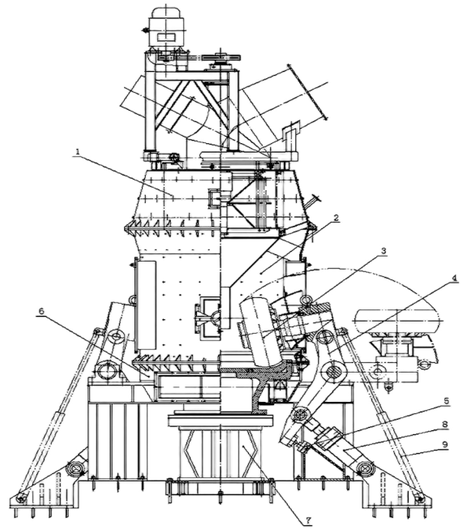
## Introduction

The LM series vertical mill integrates grinding, powder selection, and drying functions. It grinds material (0-15 mm) on a rotating grinding disc using pressure rollers, achieving a fineness of 325-2000 mesh. Its main technological advancements include effective contact between the rollers, the grinding disc, and the material, as well as the precision of the classification system. It is suitable for grinding ultrafine powders in industries such as metallurgy, power generation, chemicals, refractories, and, in particular, non-metallic minerals.

## Application

LM vertical mills can be used to produce materials that are ground and crushed, including: calcite, limestone, pyrophyllite, barite, fluorite, glaze, inclusions, wollastonite, kaolin, vermiculite, mica, feldspar, brucite, spores, potassium salt slag, garnet, quartz, ilmenite, magnesium oxide, magnesium hydroxide, dolomite, and other materials.

## Main Structure




1. Classifier
2. Intermediate housing
3. Grinding roller assembly
4. Transmission arm
5. Limiting device
6. Lower housing
7. Transmission device
8. Hydraulic system
9. Auxiliary oil cylinder

## Working Principle

The motor drives the grinding disc via a speed reducer. The material falls from the feed port to the center of the disc, while hot air enters the mill through the air inlet. Centrifugal force propels the material towards the edge of the disc. As it passes through the annular grooves of the disc, it is crushed by the rollers. The crushed material is lifted by the high-speed airflow from the air ring at the edge of the disc, allowing large particles to fall directly onto it for regrinding. As the material passes through the classifier in the airflow, the rotating rotor forces the coarse powder onto the disc for regrinding. The fine, qualified powder exits the mill along with the airflow and is collected in the dust collection device, becoming the final product. The wet material dries upon contact with the hot air, reaching the desired moisture content. The airflow is recycled, and during this process, a small amount of excess air, along with lighter impurities in the finished product, is collected by a branching vacuum cleaner in the system for low-quality processing, resulting in a highly scientific and advanced process.

## Technical Advantages

### (1) Low Operating Cost

This machine offers high grinding efficiency and low energy consumption, reducing consumption by 40% to 50% compared to other grinding equipment such as ball mills and Raymond mills. Furthermore, it features low wear, and the roller sleeves and linings are made of special materials for a long service life, minimizing metal contamination in the product and reducing operating costs. It can be equipped with an external circulation system to further reduce energy consumption and improve product accuracy.

### (2) Easy and Reliable Operation

Equipped with an automatic control system for remote operation, it is easy to operate. A device that prevents direct contact between the roller sleeves and the grinding disc lining avoids harmful vibrations.

### (3) Easy Maintenance

The roller sleeves and linings can be quickly replaced by tilting the maintenance cylinder arm.

### (4) Stable Product Quality

The material residence time in the mill is short, facilitating monitoring and control of particle size and chemical composition of the product. This machine is equipped with a high-precision sorter that sorts products from 325 to 2000 mesh, providing high sorting accuracy, precise cutting sizes, and consistent product quality.

## Customer Site






## Technical Parameters

LM Series Vertical Grinding Mill Specifications and Technical Parameters (Limestone, Heavy Calcium Carbonate)

| Model | Capacity (t/h) | Feeding size (mm) | Moisture in Raw Material (%) | Output Size | Final Product Moisture (%) | Motor (kW) |
|---|---|---|---|---|---|---|
| LM800 | 6-8 | 00-10 | <10 | 325 mesh > 97% | <1 | 110-132 |
| LM1100 | 8-12 | 00-10 | <10 | 325 mesh > 97% | <1 | 110-200 |
| LM1300 | 12-18 | 00-10 | <10 | 325 mesh > 97% | <1 | 220-315 |
| LM1500 | 16-25 | 0-20 | <10 | 325 mesh > 97% | <1 | 380 |
| LM1700 | 25-30 | 0-20 | <10 | 325 mesh > 97% | <1 | 450 |
| LM1900 | 28-40 | 0-20 | <10 | 325 mesh > 97% | <1 | 560 |
| LM2200 | 35-48 | 0-20 | <10 | 325 mesh > 97% | <1 | 710 |
| LM2400 | 40-50 | 0-20 | <10 | 325 mesh > 97% | <1 | 800 |

Note: The above data is for reference only and the specific parameters may vary depending on the properties of the material.

LM Series Vertical Grinding Mill Specifications and Technical Parameters (Heavy Calcium Carbonate, Talc, Gypsum, and Other Non-Mineral Ultrafine Powders)

| Model | Capacity (t/h) | Feeding size (mm) | Moisture in Raw Materia (%) | Output Size | Final Product Moisture (%) | Motor (kW) |
|---|---|---|---|---|---|---|
| LM800 | 2-4 | 00-10 | <10 | (0-10μm)99.99% | <1 | 132 |
| LM1100 | 4-10 | 00-10 | <10 | (0-10μm)99.99% | <1 | 200 |
| LM1300 | 8-15 | 00-10 | <10 | (0-10μm)99.99% | <1 | 315 |
| LM1500 | 10-25 | 0-20 | <10 | (0-10μm)99.99% | <1 | 380 |
| LM1700 | 15-30 | 0-20 | <10 | (0-10μm)99.99% | <1 | 450 |
| M1900X | 18-40 | 0-20 | <10 | (0-10μm)99.99% | <1 | 560 |
| LM2200 | 20-45 | 0-20 | <10 | (0-10μm)99.99% | <1 | 710 |
| LM2400 | 25-50 | 0-20 | <10 | (0-10μm)99.99% | <1 | 800 |

Note: The above data is for reference only and the specific parameters may vary depending on the properties of the material.