R-Series Roller Mill

----Raymond Mill - the originator of Pendulum Grinding Mill

Max feeding size: 15-40mm
Capacity: 0.3-20t/h
Fineness: 0.18-0.038mm

In terms of traditional pendulum roller mill, the R-series grinding mill has been upgraded in many aspects. All of the technical parameters takes the leading role in China mill industry. The R-series grinding mill ranges from 2R to 6R, including 2R2713, 3R3220, 4R3216, 4R3218, 4R3220, 5R4121, 5R4125, 6R5127. This mill is widely used to grind any non-metal minerals with Moh's hardness below 7 and moisture below 6%, such as limestone, calcite, activated carbon, talc, dolomite, titanium dioxide, quartz, bauxite, marble, feldspar, fluorite, gypsum, barite, ilmenite, phosphorite, clay, graphite, kaolin, diabase, gangue, wollastonite, quick lime, silicon carbide, bentonite, manganese. The fineness can be adjusted from 0.18mm(80 mesh) to 0.038mm(400 mesh).

Tel: +86-0773-3568321

I. Introduction:

Raymond mill, or R series grinding mill, pendulum mill, originated by Raymond brothers around 1880s. Raymond mill was introduced in China around 1950s, Guangxi Guilin was one of the grinding mill production base.

After the practicing and innovating of more than 100 years, the structure of R mill is becoming better day by day. As a professional grinding mill manufacturer, Guilin Hongcheng applied latest technology to upgrade Raymond mill and made a better performance for it.

HCM introduces our original new Pendulum Roller Mill. With larger grinding surface, HCM Raymond Mills increase the production capacity and reduce per capita energy consumption.

HCM Vertical Mill is designed to dry, pulverize, classify and collect various types of minerals, concrete, cement, coal, limestone, calcite, active carbon, quartz stone, marble, feldspar, barite, gypsum, titanium iron ore, phosphate rock, coal gangue, zircon sand, kaolin and other chemicals with feed sizes ranging from 15-40 mm, and output fineness upto 97% 80-400 mesh.

HCM Raymond Mill is suited for dry and wet grinding process, for different Mohs scale of hardness, for wide Mesh range of material sizes from granular to fine, with TPH efficient performance, stable operation, low energy, long lifetime and short downtime.
Pendulum Roller Mill has some advantage features including overlay welding roller assembly, automatic lubrication system, pendulum swing grinding and other patented technologies.

Working Principle:
Raw material is firstly broken by jaw crusher into required particle size, which are carried by bucket elevator up to the storage hopper. The vibration feeder then conveys the crushed materials at a fixed rate into the grinding chamber of the main unit for pulverizing.
The three rollers hung upon the spider-arm are running around the shaft. With the centrifugal force, the four rotational rollers will go around the ring tightly. The raw materials is put up between the rollers and rings by the blade to make the raw materials into powder. The grinded materials is blown up to the classifier, through which the powder is separated by the airflow.

Coarse particles fall back down to the mill for regrinding.

The needed particles will go into the collector where products will be removed through the discharge opening. The purified air flows to the air blower through the pipe above big cyclone collector. Air flue is circular type. Air stream in all pipelines is negative pressure except for that in the air blower and grinding chamber, which improved the working condition in the workshop.

Wind volume in air flue increases as the moisture in material changes into vapour leaking in from the flange conjunctions and feed opening. Added air volume is transporting through the air blower and after-wind pipe, to simple collector. The end powder enters the collector with air stream and discharged from discharge valve.

Application Range:

R-series Grinding Mill is widely used to grind any non-metallic minerals with Mohs hardness below 7 and moisture below 6%, such as limestone, calcite, activated carbon, talc, dolomite, titanium dioxide, quartz, bauxite, marble, feldspar, barite, fluorite, gypsum, ilmenite, phosphorite, clay, graphite, kaolin, diabase, gangue, wollastonite, quick lime, silicon carbide， bentonite, manganese.

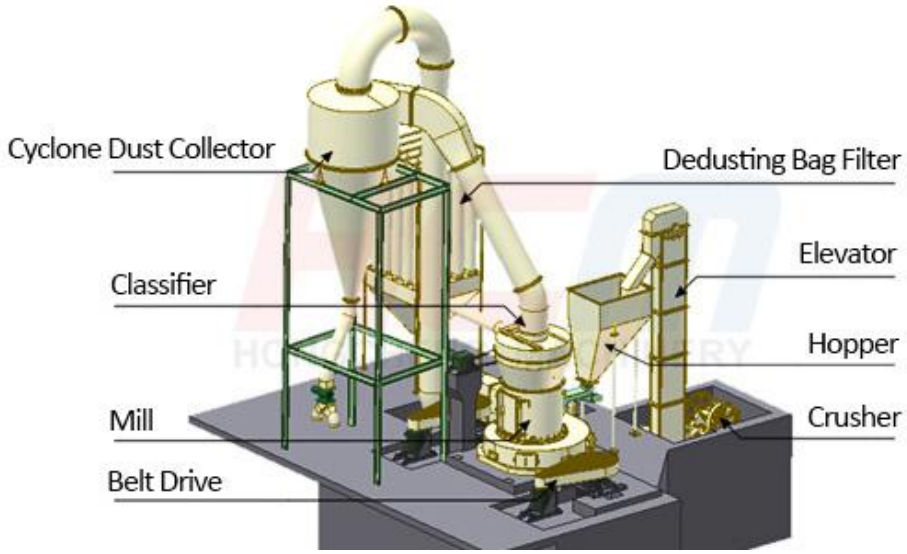
The fineness can be adjusted from 0.18mm(80 mesh) to 0.038mm(400 mesh), whose range is much wider than that of traditional raymond mill.

II. Mill Structure:

R-Series Roller Mill consists of main mill, electromagnetic-vibrating feeder, constraint turbine classifier, pipes, high pressure blower, cyclone separator, hopper, electronic control system, collecting system, jaw crusher, pan elevator, base, central shaft support, ring, spider-arm, roller assembly, shaft, lifter support, lifter support base etc.

The main mill consists pedestal, return air box, shovel, roller, ring, housing and motor. The ring and roller are made from wear-resistant material, whose surface is also given wear-resistant treatment. For the driving system, there are reducer and double-motor system for option. The classifying system uses the turbine classifier.

Various feeding and conveying system can be done separately according to different material. The close system with cyclone plus pulse-jet collector and the open system with only pulse-jet collector are available for collecting system. As to the control system, you can select auto control or remote control.



III. Main technical data:

Model	Roller Amount	Ring Diameter (mm)	Max Feeding size (mm)	Fineness (mm)	Capacity (t/h)	Total Power (kw)	Weight (t)	Overall Dimension (mm)
2R2713	2	780	≤15	0.18-0.038	0.3-0.3	46	5.5	5490x3875x5530
3R3220	3	970	≤25	0.18-0.038	1-5.5	85/92	14	7676x4931x8345
4R3216	3-4	970	≤25	0.18-0.038	1-5.5	85/92	14.2	7676x4931x8345
4R3218/4R3220	3-4	970	≤25	0.18-0.038	1-5.5	85/92	14.5	7676*4931*8345
5R4121/5R4123	3-5	1270	≤30	0.18-0.038	2-10	165/180	28	11025x7300x11095
6R5127	6	1720	≤40	0.18-0.038	5-20	264/314	28.5	11025x7300x11095

Note: The capacity data is for limestone.

IV. Performance advantages:

1. The grinding mill is in stereo-chemical structure, consume small floor space. The equipment has strong systematic because it can organize an independent and complete production system of raw material crushing, transporting, grinding to production collecting, storing and packing.

2. Driving system (double gearing, single gearing and reducer) and classify system (classifier and analyzer) can be configured according to the material or customer requirement, in order to ensure best operation condition.

3. Depending on the material to configure the pipe and blower system, in order to reduce wind resistance and pipe abrasion, ensuring high capacity.

4. Applied high quality thicken steel to produce important parts, applied high performance wear-resistant material to produce wear-resistant parts. The equipment has high wear-resisting property and reliable operation.

5. Centralized controlled electric system realized unmanned operation and easy maintenance.

6. Pulse exhaust system can be applied to deal with remain air. Filtering efficiency can reach 99.9%.