

HCM
HONGCHENG MACHINERY
QUALITY SHAPES FUTURE



HCM LIME DEEP PROCESSING

HCM LIME DEEP PROCESSING DIVISION

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Our Vision



Superior Quality Is The Foundation Of Survival

Premium Service Is The Source Of Development

To Make A Internationally Known Brand For China



Mission
Innovation, Serving The Society



Professionalism
Cohesiveness, Dedication, Gratitude, Integrity



Business Philosophy
Mutual Benefit it

Certificate of Honor

Currently, **HCM** has more than 70 patents and qualification certificates to its credit.



About Us

HCM (Guilin Hongcheng Mining Equipment Manufacture Co., Ltd) is a professional supplier of powder processing integrated solution. It is a leading enterprise of powder processing equipment in China. We specialize in providing designing, installations and commissioning service for powder processing production line. **HCM**, certificated by ISO9001:2008 international quality management system, is a Chinese high-tech enterprise with more than 30 patents to its credit and right to import and export. Underpinned by the producing and researching experiences of decades, **HCM** has emerged as a major powder processing equipment manufacturer and export base.

In 2018, in order to further explore the lime industry and the orientation of kiln deep processing, and continue to research and develop the lime industry, Mr. Rong, executive vice president of **HCM**, led the elite team to have in-depth technical exchange and discussion with Zhejiang Jiande brand new calcium enterprise. The two enterprises joined forces to establish a Technology Development division devoted to the development of lime deep processing industry, ushering a new chapter of grand development.

Over the years, **HCM** has been toiling in many industry, such as limestone, calcium carbonate, solid waste, environmental protection, metallurgy, chemical industry, building materials and so on. Through exploration and innovation, HCM series of grinding machines, lime deep processing production lines, wear-resistant products and services have been well received by customers, making contributions to the development of powder industry with no effort spared.

In the light of new economic development situation, **HCM** and the new calcium industry have joined forces to form the technology development division, which has paved the new way for exploring ash deep processing industry and making new contributions to the development of lime deep processing industry and ash kiln deep processing industry. In the future, HCM team will continue to commit to making an internationally known brand for China through striving for excellence, innovating in science and technology, and forging ahead proactively, so as to play a key role in the soaring of powder industry.



HCQ Series Calcium Hydroxide Slaking System

Calcium hydroxide, chemical formula $\text{Ca}(\text{OH})_2$, is an inorganic compound commonly known as slaked lime or hydrated lime. Industrial grade calcium hydroxide and coating grade calcium hydroxide (lime powder). Calcium hydroxide: molecular formula is $\text{Ca}(\text{OH})_2$, relative molecular weight is 74, melting point is 580°C , pH value is more than or equal to 12. It is a strong alkaline white fine powder slightly soluble in water while soluble in acid, glycerin, ammonium chloride. It releases a lot of heat in the acid. With relative density at 2.24, its clear water solution is a colorless and odorless alkaline transparent liquid, which is converted into calcium carbonate while gradually absorbing carbon dioxide in the air. Calcium hydroxide is primarily used in environmental protection sewage treatment, sludge conditioning, flue gas desulfurization, tanning and liming, building materials, paint making, non-ferrous metal smelting, feed addition, calcium base grease, dyes, refrigerants, etc.

Ash calcium powder is a kind of mixture composed of $\text{Ca}(\text{OH})_2$, CaO and a small amount of CaCO_3 . It has functions similarly as cement. Lime calcium powder is mainly used in putty powder, latex paint and other building coatings.

Industrial Calcium Hydroxide Production

With the power consumption for the production of calcium hydroxide standing 18-23kw / ton, HCQ slaking system stands out among its peers in terms of power efficiency. (subject to the difference of the effective calcium oxide content).

Quality Standard

HGT4120-2009 Industrial Calcium Hydroxide Standard

Standard for Coating Ash Calcium Powder-001-2016

Raw Material Selection

Metallurgical lime is not recommended for deep processing. Lime powder and other deep processing lime used must meet the deep processing standards to produce calcium hydroxide. It is advised that more than 90% effective calcium oxide be selected to produce calcium hydroxide. The higher the whiteness of the lime the better to produce ash calcium powder.

Features Of HCM Calcium Hydroxide System

Item	HCQ Slaker
Watering System	Smart water distribution system
Slag Discharging	Slag can be discharged after slaking to improve the purity of calcium hydroxide
Dedusting	Pulse filtering bag paired with water dedusting, the dedusting efficiency is higher.
Pre-slaking System	The pre-slaking system is made of wear-resistant alloy, enjoying longer service life.
Slaking System	Slaking at constant temperature, small floor area occupied, sufficient time, sufficient slaking
Automation	PLC full automatic control, enhanced quality control ability
Hot Water Slaking	Speedy hot water slaking accelerates slaking and

Item	HC specialized machine for calcium hydroxide powder
Capacity	Capacity can reach as high as 30 t/h per unit.
Power Consumption	1. Smaller dimension required; 2. Low energy consumption per ton.
Particle Size Distribution	The fineness is adjustable from 80 mesh to 600 mesh, and the particle size distribution is uniform.
Slag Discharging	Accurate slag discharging to clients specific requirement.
Floor Space	Smaller floor space per unit.
Reliability	Small vibration, low noise, stable operation and reliable
Environment -friendliness	Airtight system, dust-free working environment.

Comparison Between HC Calcium Hydroxide Equipment And Its Peers

Item	HCQ Slaker	Peers
Control System	Various configuration options: 1. Manual control; 2. Automatic control 3. Manual + automatic dual control mode Smart water distribution system	Single configuration.
Dedusting	Pulse bag filter & water dedusting double dedusting system. The dedust efficiency can be $\leq 5\text{mg}/\text{m}^3$, which is more environmental-friendly.	Pulse bag dedusting $\geq 100\text{mg}/\text{m}^3$
Pre-slaking System	1. The pre slaking blade is made of detachable alloy wear-resistant lining, which is durable and easy to replace. 2. The optimized single shaft is adopted to agitate the material evenly in the same measure of the double shaft, and the single shaft is less likely to get broken as double shaft. 3. There is no need for manual cleaning in the event of Power failure or abnormal shutdown, workshop is more clean while the machine can be restarted at anytime.	1. The wear of blade needs manual welding, the maintenance work is heavy. 2. Double shaft is more likely to be broken. Manual cleaning is required to restart the machine in the event of power failure or abnormal shutdown during
Slaking System	It is capable of pre-slaking, slaking at constantly high temperature, occupying a small area, has 10% larger volume than that of its peers, enjoying an 50% longer effective length than of peers, which results in more sufficient slaking.	1. Short in length 2. Small volume
Homogenizer	1. Increase the degree of pulverization of calcium hydroxide. 2. Reduce the temperature of finished products.	No homogenizer
Speedy Hot Water Slaking	The system water temperature is heated to about 80°C in 5 minutes by taking the vantage of the slaker heat, which speeds up slaking and pulverizing rate	Standard slaker
Level Of Slaking	Standing 35-40 meters in length, the process takes 100 minutes, which results in more thorough slaking	Standing 12-18 meters in length, the process takes 40 minutes, which results in insufficient slaking

The Difference Between Ordinary Calcium Hydroxide And Ash Calcium Powder

Item	Calcium Hydroxide	Ash Calcium Powder
Content	Calcium hydroxide $\geq 90\%$	Calcium magnesium $\geq 90\%$
Moisture	$\leq 1\%$	$\geq 2\%$
Whiteness	White powder	Over 90
Fineness	200-325 mesh	≥ 325 mesh

Ash Calcium Powder is a kind of calcium hydroxide used in construction, which can not be replaced by ordinary calcium hydroxide due to different functionality and content whereas ash calcium powder can replace ordinary calcium hydroxide in some scenario.



Calcium Hydroxide Production Line

Belt Feeder

Stepless speed regulating motor, which saves the need of VFD for speed adjustment

Pre-slaker

Tasked with stirring and conveying, Pre-slaker is comprised of horizontal single shaft plus wear-resistant blade. The blade employs removable alloy wear-resistant bush, which is durable and wear-free. The blades are arranged in a spiral formation around the main axis, whose special structure leads to thorough agitation and calcium oxide and water being chemically reacted.

Pulverizer

Similar to pre-slaker in terms of structure and features, the pulverizer employs three-stage spiral and its effective working volume is about 4-8 times of that of the pre-slaker. The lime is more thoroughly slaked with the combined use of the pulverizer and the pre-slaker. Materials that are not completely slaked in the pre-slaker is fully agitated in the pulverizer to accelerate the slaking. It is characterized by slaking at constant temperature, small floor area, long effective length and thorough slaking.

Homogenizer

Homogenizer functions as an extension of pulverizer. Connected with the three-stage slaker, homogenizer and plays the role of slaking, aging and cooling. It can effectively tackle the issue of improper water amount and plays a special role in cooling the Calcium Hydroxide before it enters the classifier. Based on the temperature of the lime and its fluidity of the pulverizing process, the homogenizer is cooling the material by fully releasing the steam, which makes the processing more smooth and the water amount more proper.

Water Spray Dedusting Device

Pulse bag filter dedusting combined with water spray dedusting to ensure that the dust emission is up to the standard. Making full use of the waste heat to heat the digestion water to about 80 °C to promote lime digestion.

Cylinder Sieve

It separates the burnt lime particles.

Pulse Dust Collector

It eliminates the excess steam generated by elevator, cylinder sieve and semi-finished product silo

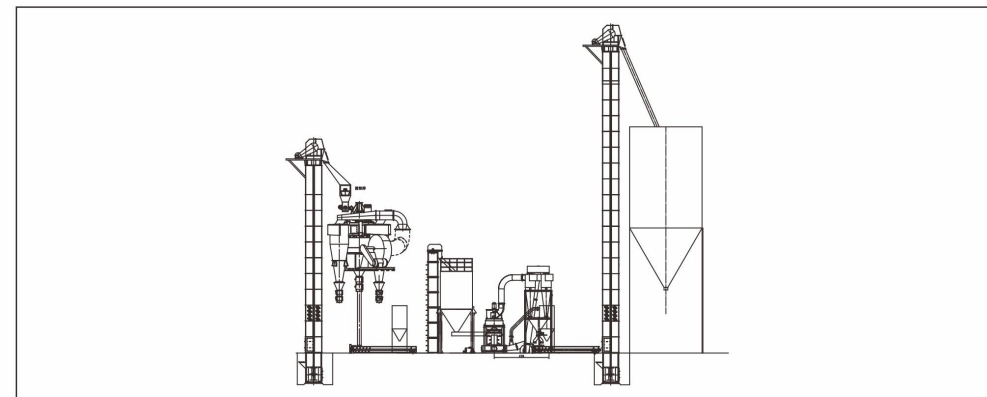
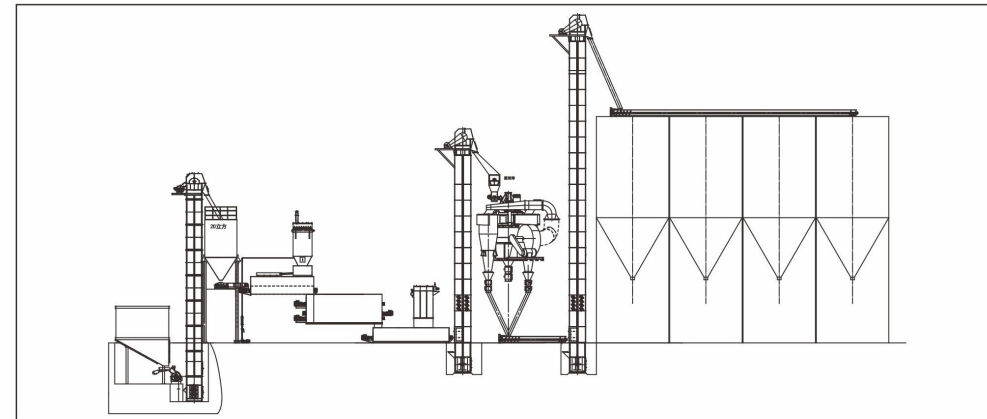
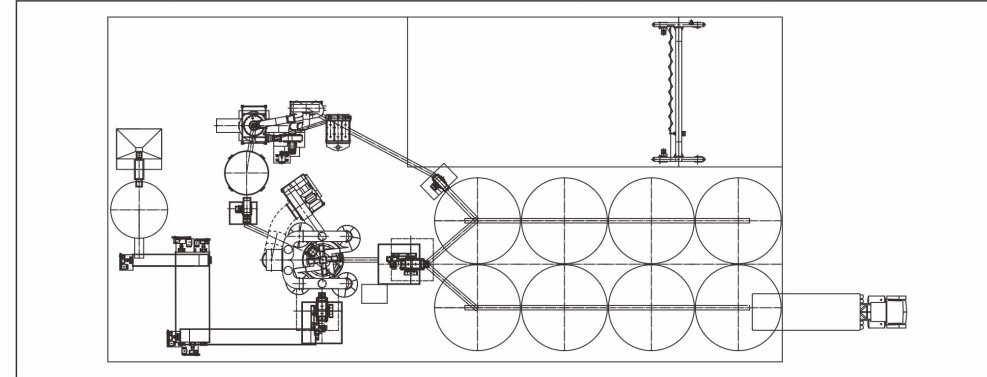
Control System

Mechanical automatic control, PLC automatic control and online smart monitoring

HC Series Calcium Hydroxide / Calcium Oxide Mill And For HCLM Slag Fine Grinding Vertical Mill

HC series calcium hydroxide / calcium oxide mill and HCLM fine grinding slag vertical mill for are super large calcium hydroxide production equipment are independently developed by HCM with a number of patented technologies to its credit, which are highly energy-efficient. With output as high as 30 tons / hour, they can live up to national industrial standard, meeting the increasingly expanding industrial production demand, filling the void of large-scale calcium hydroxide production equipment in China. Characterized by vertical structure, small floor area, low maintenance cost, low noise and environment-friendly, its performance is markedly improved in terms of output or unit energy consumption, which leads the industry. Features: 1. It shares the functionality and performance of powder separator. 2. It is a combination of powder selection, grinding mill, which can replace the traditional ball mill. It is a multi-purpose machine of energy consumption and low investment.

Calcium Hydroxide Production Line Layout Drawing



Calcium Oxide Deep Processing

Lime is used in steel, pesticide, medicine, desiccant, food tanning and alcohol dehydration. Calcium oxide is widely used. The equipment for processing calcium oxide mainly includes: ball mill, ultrafine mill, Raymond mill, vertical mill, impact mill, etc. The characteristics varies from model to model. The equipment is selected according to the main products and market.



Ball Mill

Characterized by high output, low loss and simple operation, the ball mill also comes with disadvantages such as excessive noise, taking up larger space, higher cost. Generally, it is not environment-friendly and is suitable of producing powder below 200 mesh. The production process also reduces the calcium oxide content.



HCH Ultrafine Roller Mill

It lives up to the general requirements of ultra-fine grinding. Features: small single unit output. It is suitable for general deep processing powder between 800 and 1200 mesh.

HC Calcium Hydroxide / Calcium Oxide Specialized Pendulum Mill

The most traditional mill suitable for producing coarse powder, it is one of the most cost-effective equipment.

High reliability (New Technology): Equipped with star rack and pendulum swing roller device, the model is characterized by advanced and reasonable structure, small vibration, low noise, smooth mechanical operation and dependable performance. Through application in market, it's excellent social and economic benefits have been proven.

Environment-friendliness: With Pulse dust collector equipped at the residual air outlet, its dust collection efficiency reaches 99.9%. All positive pressure parts of the main machine are sealed, which basically results in the dust-free workshop.

It is highly energy-efficient and enjoys higher processing capacity and efficiency in same grinding period compared to peers. At the same total power as the R-type grinding mill, it is output is increased by more than 40% year on year while the unit power consumption cost is saved by more than 30%. It is a veritable high-efficient grinding mill.



HCLM Slag Mill (alternative to ball mill)

HCLM slag grinding machine is a large grinding equipment characterized by stable performance, low maintenance cost, high output and low noise. It is capable of producing powder ranging from 100 mesh to 800 mesh, which requires relatively large investment and is suitable for financially strong enterprises.

The wear-resistant parts of HCLM slag grinding mill mainly encompasses grinding roller, grinding table, classifier, grinding lining, chute, pipeline and other parts. Different wear-resistant materials and processes can be used to make wear-resistant parts according to the functionality of the parts and the different working conditions. Low alloy steel surface composite high CrMoV wear-resistant alloy is used for the grinding tire and table, which can enhance the wear-resistance, impact resistance and comprehensive wear-resistant ability, the reuse rate, as well as efficiency while lowering the cost.



Small Investment: It integrates crushing, drying, grinding, grading and conveying. with simple process, streamlined system, compact layout, small floor area required, only 50% of the ball mill, the production line can be set up in the open air, which requires lower construction cost and smaller investment.

Easy Maintenance: The grinding roller can be pulled out of the mill by hydraulic device while the maintenance space for replacing the roller tire & liner is large; The roller tire can be flipped over and used to prolong the service life; Special material is used for grinding roller and grinding table liner, which is wear-resistant and durable.

High Reliability: Limit device is employed for grinding roller to avoid the violent vibration caused by direct contact with grinding table. The new sealing device of grinding roller is adopted, which is reliable and saves the need of sealing fan while the oxygen content in the grinding chamber is reduced, which makes the mill highly explosion-proof.

Environment-friendliness: Characterized by low vibration, low noise, integral sealing, full negative pressure operation, dustspillover-free, HCLM slag grinding mill epitomizes the highly energy effective new technology and is highly competitive in the market

High Level Automation: PLC automatic control system, remote control, simple operation, easy maintenance, low labor cost.

High Efficiency: High grinding efficiency, low energy consumption, 40% - 50% lower energy consumption compared with ball mill; large production capacity per unit.

Quality Of Finished Products: Short residence time of materials in the mill, consistent quality of finished products; uniform particle shape, narrow particle size distribution, good fluidity, little iron content, easy removal of mechanical wear iron, high whiteness and purity of white or transparent materials produced.

For the supporting equipment shall be selected according specific situation for production of calcium hydroxide. Conveyor, elevator and feeder shall be sealed airtight to prevent a large amount of natural wind from entering and altering the content of calcium oxide. Before each shutdown, the remaining products shall be cleaned to prevent the absorption of water by calcium oxide to be converted into calcium hydroxide, adversely affecting the quality of calcium hydroxide.

Performance Comparison Between Various Equipment And Ash Calcium Mill

Ash Calcium Mill	Separator	HC Series Pendulum Mill	HCLM Slag Mill
Crushing, dispersing and classifying	Classifying No crushing and dispersing	Crushing, grinding, classifying	Crushing, grinding, classifying
Regulated slag discharging	More waste generated by slag discharging	Regulated slag discharging	Regulated slag discharging
Wide particle size distribution with high fine powder content	Narrow particle size distribution	Narrow particle size distribution	Narrow particle size distribution
High calcium hydroxide content low calcium oxide content	A variety of foreign matters	High calcium hydroxide content insignificant calcium oxide content	Calcium hydroxide & calcium oxide

Normal mills also come with separator, with which impurities such as calcium oxide, coal cinder and stone that are slaked are also ground into finished products while some thoroughly slaked finished products are inadvertently discharged at the same time. The yield of high quality finished product is low. Ash calcium mill is the best option when the requirement for the quality is high. The most outstanding feature of ash calcium production by ash calcium mill: it can use thoroughly slaked calcium hydroxide with high moisture to produce ash calcium powder.



Features of HC Calcium Hydroxide / Calcium Oxide specialized slag Mill

- 01** High output, up to 30t / h per unit
- 02** 1. Small installation dimension of single unit
2. Low energy consumption 18kw / h / t
- 03** Powder made by HC calcium hydroxide specialized grinding mill is adjustable from 80 mesh to 500 mesh. The particle size distribution is uniform
Powder made by HCLM slag grinding machine is adjustable from 100 mesh to 800 mesh. The particle size distribution is uniform
- 04** Accurate adjustment according to customer's specific requirements
- 05** Small investment required
- 06** Smaller floor area required compared to peers
- 07** It is versatile and capable of producing calcium hydroxide, calcium oxide, slag, heavy calcium carbonate and so on.

Calcium Hydroxide For Coating

Ash calcium powder should be fine enough with high humidity

Ash calcium powder is a pure natural cementitious material same as cement in terms of functionality. What matters most for cementitious materials is fineness and specific surface area. Normal equipment is not capable of producing ash calcium powder with enough fine powder content. Ash calcium used for coating must be fine and sticky, which can not be handled by normal separator.

HC Calcium Hydroxide / Calcium Oxide Specialized Superfine Vertical Grinding Mill

As the demand for ultrafine powder on the rise, and the capacity of traditional ultrafine powder processing equipment has been unable to keep up with the requirements of large-scale production. Drawing on the technology of Germany, Japan and Taiwan, HCM HC calcium hydroxide / calcium oxide specialized ultra-fine vertical grinding mill is a large-scale vertical grinding equipment developed independently by HCM, which is in line with the development of China's non-metallic mineral industry. Capable of producing powder ranging from 325-2500 mesh, it has made breakthrough in ultra-fine powder production capacity, emerging as an ideal ultra-fine powder equipment for chemical production.

The wear-resistant parts of HC calcium hydroxide / calcium oxide specialized ultrafine vertical grinding mill mainly encompasses grinding roller, grinding table, classifier, grinding lining, chute, pipeline and other parts. Different wear-resistant materials and processes can be used to make wear-resistant parts according to the functionality of the parts and the different working conditions. Low alloy steel surface composite high CrMoV wear-resistant alloy is used for the grinding tire and table, which can enhance the wear-resistance, impact resistance and comprehensive wear-resistant ability, the reuse rate, as well as efficiency while lowering the cost.



High Grinding And Classifying Efficiency:

The mill employs the material bed grinding theory, making material reside in the mill for a shorter time, which leads to easy detection of the particle size distribution and composition of the product, less repeated grinding, lower iron content, high whiteness and purity of the finished product; The finished product is uniformly shaped and enjoys narrow particle size distribution, good fluidity, and strong adaptability; Insignificant amount of grinding aid can be added during the grinding process to significantly improve the added value of the product without adversely affecting the quality of the finished product.

Environment-friendliness:

The whole system enjoys small vibration and low noise; The whole system is sealed, operated under full negative pressure without dust spillover, which basically results in dust free workshop; Vertical grinding technology and equipment is a new energy-effective technology vigorously advocated by China, which greatly enhances the customer's competitiveness in the market.

Small Investment:

It has integrated crushing, drying, grinding, grading and conveying, with simple process, streamlined system, compact layout, small floor area required, only 50% of the ball mill, the production line can be set up in the open air, which requires lower construction cost and smaller investment.

Product Quality Is Stable And Excellent:

Grinding curve of roller tire and liner plate for superfine powder grinding is specially designed, which makes material to easily form the layer and leads to high grinding efficiency and high yield of one-time grinding; With the output as high as up to 40t / h, its production capacity per unit is large, which is equivalent to more than 5 sets of superfine powder grinding combined while low-voltage power can be used; Single and multi classifier is alternatively used to adjust the fineness of the finished products within the regulated range without the need of secondary classifier. In the production of products with the same fineness level, it consumes 30% - 50% less power than that of ordinary mills.

Easy Maintenance And Low Operation Cost:

The grinding roller can be pulled out of the machine by hydraulic device, which makes the replacement of roller tire liner easier and the maintenance space of the mill larger; The grinding roller tire can be flipped over for use, which prolongs the service life of wear-resistant materials; The mill can be started without material inside, which makes starting the machine easier; The grinding roller and the grinding plate liner are made of special material, which reduces the wear-tear and prolongs service life.

High Reliability:

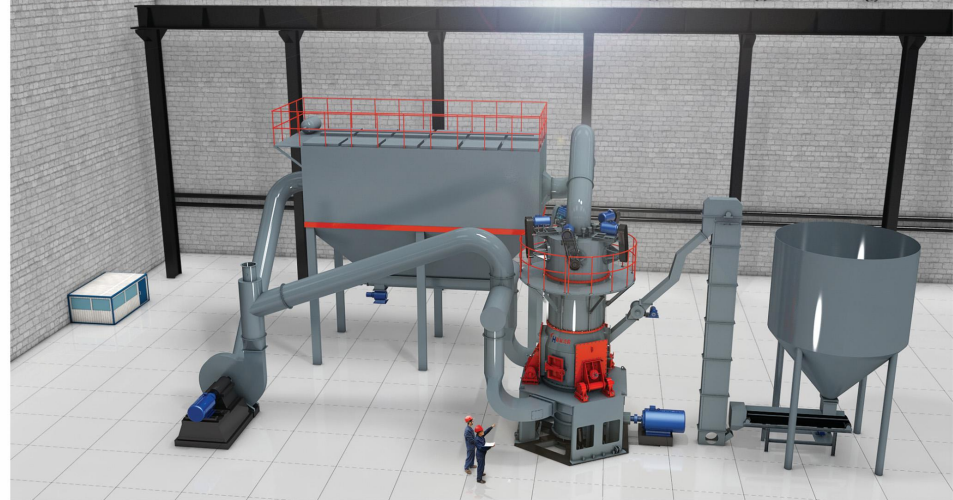
Limit device is employed for grinding roller to avoid the violent vibration caused by direct contact with grinding table. The new sealing device of grinding roller is adopted, which is reliable and saves the need of sealing fan while the oxygen content in the grinding chamber is reduced, which makes the mill highly explosion-proof.

High Level Automation:

PLC automatic control system, remote control, simple operation, easy maintenance, low labor cost.

The Composition Of Complete Production Line

HC calcium hydroxide / calcium oxide specialized ultrafine vertical mill is mainly composed of main mill, feeder, classifier, blower, pipeline, storage hopper, electric control system, collection system, etc.

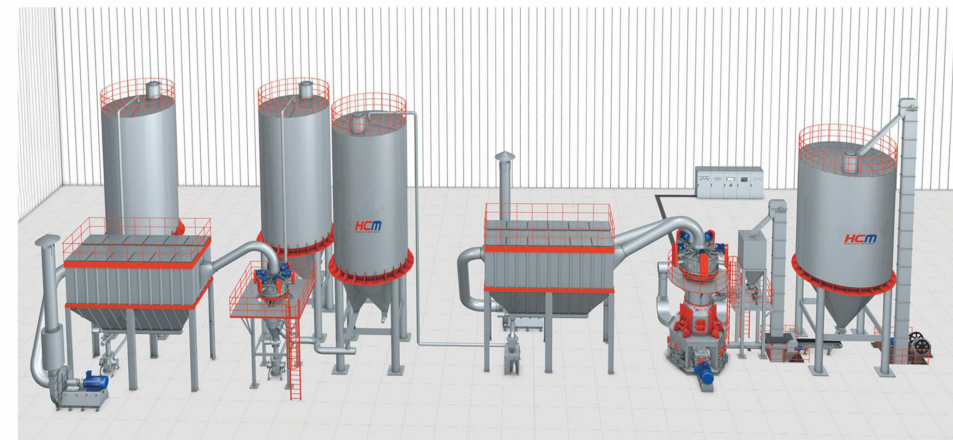


Secondary Classifying System

The secondary classifying system consists of superfine classifier, air blower, dust collector, silo, screw conveyor, pipeline and other equipment, with superfine classifier being its core equipment. HC calcium hydroxide / calcium oxide specialized superfine vertical grinding mill is equipped with a secondary classifying system, which enjoys high classifying efficiency and can effectively separate coarse powder and fine powder. The maximum classifying fineness can reach 3 micron, while a variety of products can be produced.

Features Of Secondary Classifying System

High classifying Efficiency: The classifier and air blower are VFD controlled. Stable finished product of different fineness can be obtained quickly with high classification efficiency by adjusting the rotating speed of the classifier and fan impeller. Classifier: Single and multi classifier can be alternatively to adjust the fineness of finished product. Wide range of fineness of finished products: fine particles of materials ground by vertical mill can be separated, and the range of fineness is from 325 mesh to 2500 mesh. It is capable of producing products of different fineness while it can produce products of the same fineness quickly and consistently.



Operation Procedure of Calcium Heydroxide HCZ Grinding Mill

Starting The Mill

Elevator for finished product silo - screw conveyor for finished product - residual air pulse bottom valve spiral - cyclone finished product star-shaped valve - slag discharge screw conveyor - classifier - separator - residual air pulse fan - pulse controller - air blower - main mill - feeding screw conveyor

Shutdown

Feeding screw conveyor- main mill - air blower- disperser - residual air pulse fan - pulse controller - classifier - slag discharge screw conveyor - cyclone finished product star-shaped valve - residual air pulse valve screw conveyor - finished product screw conveyor- elevator for finished product silo

Note:

(1) For part of the slag is crushed by the impact and friction between the grinding roller, grinding ring, so the vibration of the mill is substantial while the noise evenly large. If abnormal sound is heard or the current of the main mill suddenly rises and persists, the machine should be stopped immediately for inspection.

(2) The feeding particle size shall be uniform while the feeding speed shall be proper. too slow The output will be low when the feeding is too slow while the pipeline will be clogged when the feeding is fast, resulting in failure of the machine even potential accidents. The frequency of feeding can be adjusted according to the rise and fall of the motor current of the main mill or the air flow pressure in the pipeline. Generally speaking, it is more accurate and reliable to adjust the feeding according to the air pressure change in the pipeline, which can give full play to the mill' performance without blocking the air pipe and causing accidents.

(3) The materials entering into the main machine for grinding shall be in the form of powder.

(4) The classifier motor is VFD controlled and its control knob is adjusted to get different classifier speed. The user should select the corresponding classifier speed according to the desired particle size. The higher the classifier speed, the finer the particle size.

(5) Bearings shall be inspected on a regular basis. Should the temperature ever exceeds 400 ℃ or abnormal noise is heard, the mill be stopped for inspection.

(6) The newly installed unit shall be tested tentatively for the correctness and reliability of the installation. The empty unit shall not run for more than two minutes. The mill should be stopped to check for flexibility of rotating parts, overheating, loosened bolts, violent vibration. Materials can be loaded in the mill for test running for 4-8 hours after commissioning to mainly check for loosened fasteners, which could potentially cause damage to the mill. The inspection mainly covers the main mill, including the main mill anchor bolt, return air box bolt, housing bolt, shovel base, lower shovel base, star rack, grinding roller assembly, etc. The operation can start if there were no problem.



Separator Production Procedure

Starting The Mill

Elevator for finished product silo - finished product screw conveyor - residual air pulse bottom valve screw conveyor - classifier - air blower - residual air pulse air blower - pulse controller - cylinder sieve - elevator - slaking system

Showdown

Slaking system - elevator - cylinder sieve - residual air pulse air blower - classifier - air blower - residual air pulse bottom valve screw conveyor - finished product screw conveyor- elevator for finished product silo - pulse controller

Operation and maintenance of equipment

Daily maintenance of the separator is required in order to ensure the long-term, efficient and safe operation of the separator. The operating procedures and maintenance and repair system shall be constituted in line with the actual situation of the factory.

(1) Lubricant should be filled to the bearings of blower and bearing of separator on a regular basis to ensure that all lubricating points are fully lubricated. Bearing of powder separator shall be filled oil for at least 2 times on each shift (8 hours) while the oil volume filled shall not be less than 250g each shift.

(2) The temperature of each bearing shall not exceed 60 ° C.

(3) Always pay attention to the balance of the powder separator. The machine shall be immediately stopped for inspection if violent abnormal vibration is felt,

(4) Ensure that the flap valve of each hammer acts sensitively and has good air locking effect. Adjust the air volume of the residual air pulse fan according to the water content of the calcium hydroxide to prevent the water vapor from freezing and the calcium hydroxide powder from clogging the rotor, pipeline, etc.

(5) It is best advised to adjust the fineness of calcium hydroxide by changing the main shaft speed instead of adjusting fan damper

Precautions:

(1) Operation management should be strengthened.

(2) The efficiency of the separator is high while circulation load is small. It is recommended to set the circulation load rate at 85-120%.

(3) The system should be well sealed off. Special attention should be paid to the outlets of fine powder and coarse powder, where the air lock device must be equipped.

(4) The fineness is generally adjusted by the rotor speed. It is advised against adjusting fineness using air volume.



Ash Calcium Powder Production Procedure

Starting the mill

Bucket elevator for slag discharging silo - slag discharging screw conveyor - outlet valve and return pipe valve of ash calcium mill - slag discharging motor - ash calcium mill - feeding screw conveyor

Set the upper and lower current limits of the automatic feeding controller of the ash calcium mill according to the specified power of the motor of the ash calcium mill. The data in the table below is for reference only. Please adjust it according to the local raw materials.

Motor(Kw)	Upper Limit Current (A)	Lower Limit Current (A)
30	60	50
37	74	64

Shutdown

Feeding screw conveyor - ash calcium mill - slag discharging motor - slag discharging screw conveyor- bucket elevator for slag discharging silo - outlet valve and return air pipe valve of ash calcium mill.

Note:

1. After the bearing is placed at the bearing seat, loosen four $\Phi 16$ screws on both sides of the bearing seat fixed on the body.
2. Fasten the upper cover of the bearing seat with four $\Phi 16$ screws, rotate the shaft by hand to make the main shaft rotate easily and freely, and then hit the bearing cover with a hammer to adjust it properly.
3. Fasten two screws on one side of the bearing seat 4 fixed on the body tightly. Make sure it can rotate easily and freely.
4. Finally, loosen 4 screws on the bearing cover and 8 screws in total on both sides. The bearing is easily overheated provided the V-belt is too tight for the small clearance of the new bearing.
5. The current shall not exceed 30A-40A when the mill runs without material inside. After the rotation is stopped, the motor pulley will automatically rotate without obvious vibration.
6. Grease the bearing after normal use for one year. Open the oil cup for the first time, fill out the lower cup and the upper cover of the oil cup, squeeze, and then fill out the upper cover and squeeze again. After the third cup is full, just cover it, no need to squeeze. In the next month, squeeze down one circle of thread. Generally, it consumes two cups of oil a year.
7. Do not grease the new mill for half a year.

HLF Series Fine Powder Separator

HLF series fine powder separator is the latest product independently developed by HCM drawing on the most advanced powder separator technology in the world. Aviation aerodynamics analysis method, suspension dispersion separation technology, horizontal eddy current classification technology, the rotor classifier cyclone separation collection technology, the coarse powder secondary separation technology and the bypass dust removal separation technology are employed by the separator, which makes its classification efficiency extremely high, fine powder purity high, the energy efficiency remarkable, and mill system capacity markedly improved. The powder fineness can be easily adjusted from 200~1000 mesh.

The model is suitable for the production units of cement, desulfurized calcium based powder, advanced earth, titanium ore, slag micro powder, lime deep processing, calcium hydroxide, calcium oxide carbonate and fly ash separation production units.

Adoptive improvements have been made on the separator to cater to the nature of light specific gravity and high viscosity of calcium hydroxide. It has emerged as the equipment with the lowest cost and diversified models in the calcium hydroxide industry.



Technical Features

- 01** Suspension dispersion and separation technology: materials enter the powder classification area after being and separated in the separation chamber, which is efficient.
- 02** Internal circular collection technology: highly efficient and low resistant separator with multi-channel distribution placed around the main body of the classifier, which effectively streamlines the process, lowering the working load of dust collector, reducing the one-time investment and installation dimension required.
- 03** Secondary air separation technology for coarse powder: the secondary air separation device of coarse powder is installed at the lower part of the coarse powder hopper of the powder separator, which is tasked with separating the fine powder adhered to the coarse powder entering into the hopper, further improving the powder separation efficiency.
- 04** Highly efficient & wear-resistant: The efficiency of powder selection can reach more than 90%. All wearing parts are made of wear-resistant materials and have received wear-proof treatment, which is durable and lowers the maintenance cost. The rotor is equipped with eddy current adjusting device, which effectively reduces the wear and tear.
- 05** Horizontal eddy current classification technology: The air flow enters the powder feeding area horizontally through rotor blade, forming a stable and uniform rotating eddy current air flow while creating a strong force field with stable internal and external pressure difference generated between the horizontal eddy current powder selection area and the rotating rotor, which is capable of classifying the material in an accurate manner.

Calcium Hydroxide Slaking System Operation Procedure

Starting The Mill

1. Elevator for slag discharging- pulse dust collector - plug valve on the top of the reserve silo - screw conveyor on the top of the reserve silo - cylinder sieve - bucket elevator - pulse dust collector - homogenizer 2 - homogenizer 1 - pulverizer 3 - pulverizer 2 - pulverizer 1 - pulse dust collector - pre-slaker - belt feeder - water pump

Shutdown (reversed order)

1. Water pump - belt feeder - (step by step every 5 minutes) pre-slaker - pulverizer 1 - pulverizer 2 - pulverizer 3 - homogenizer 1 - homogenizer 2 - pulse dust collector - bucket elevator - cylinder sieve - screw conveyor at the top of the reserve silo - pulse dust collector - elevator for slag discharging

After stopping the screw conveyor on the top of the silo, open all the gate valves of the reserve silo and keep the pulse dust collector on the top of the silo running all the time. Keep the pulse dust collector running as long as there are materials in the reserve silo, whose main purpose is to remove the excess moisture in the reserve silo. The pulse dust collector for screw conveyor connecting homogenizer can be turned off.

Note:

1. Check if the motor pulley belt and lubricating oil of gearbox are in right condition before starting.
2. Feeding, starting from 30-50% of the designed capacity. Inject water after the material is fed for 1-2 minutes, Start injecting water in a low to high order, namely from 20% to approximately 48%. Set the proper water proportion according to the lime condition.
3. Slaked material fully filling out the screw conveyor axis is a indication of feeding material reaching maximum limit.
4. Normally, the no-load current of the slaker is almost the same as the load current. The whole system shall be inspected when the load current is 20% to 30% greater than that of the no-load current.
5. It is best advised to follow the principle of stopping water preceding stopping feeding material. Gradually lower the amount of the water injected half an hour before the shutdown. Make sure the material left in the slaker is less than half that of the normal production after shutdown.



Supporting Equipments



Environment-friendly Crusher



Belt Feeder



Specialized Pulse Dust Collector



Automatic Packing Machine



Cylinder Sieve



Electric Disc Valve



Specialized Unloading Valve



Alloy Ultra-fine Ash Calcium Mill



Screw Conveyor



Plate Chain Elevator



Unloading Device

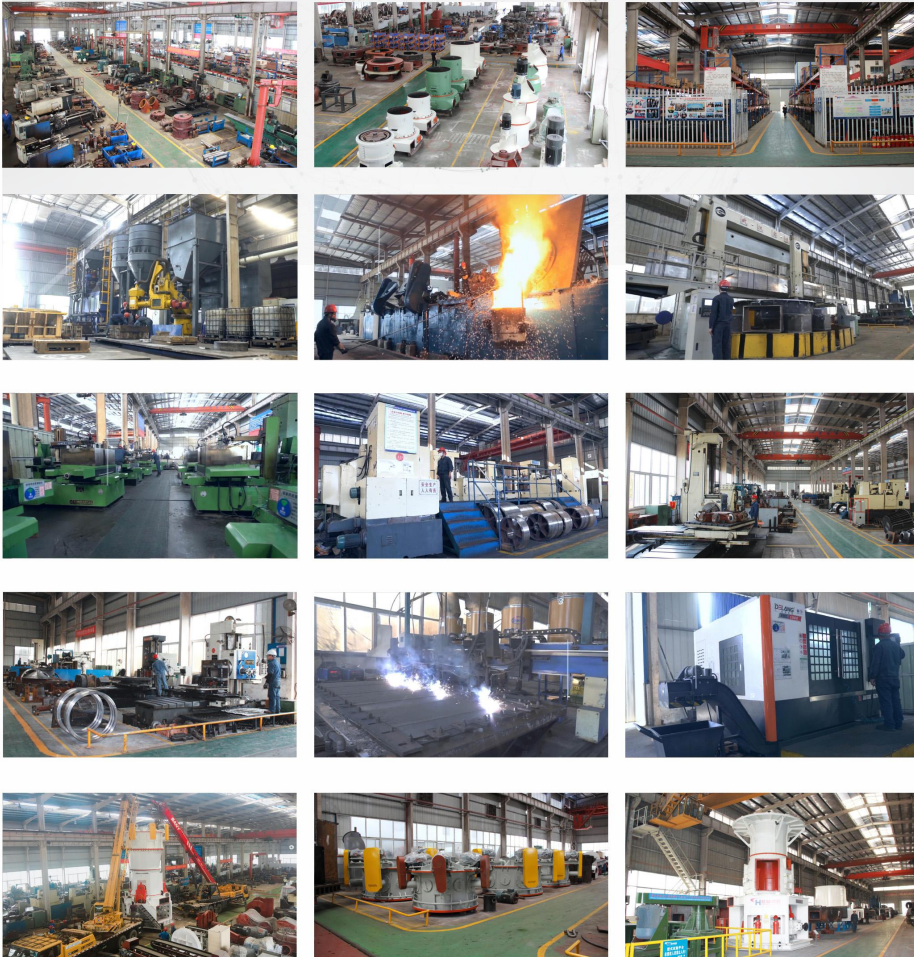


Automatic Feeding Controller

HCM WORKSHOPS

Sharp tools make good work

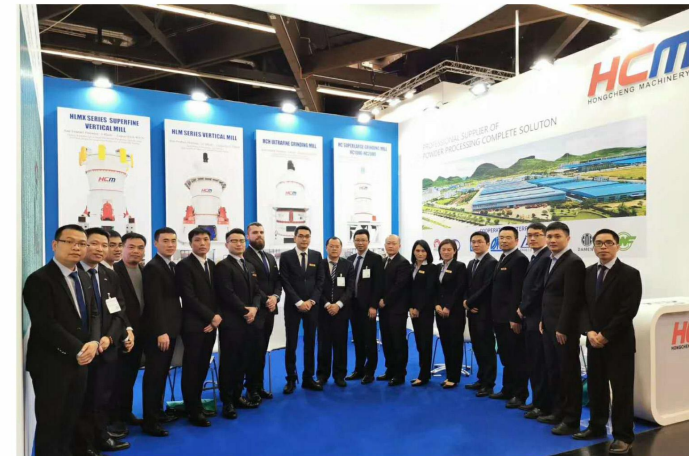
After years of development and dedicated operation, **HCM** has possessed advanced equipment fleet of the mill manufacturing industry. **HCM** has introduced large-scale CNC vertical lathe, CNC cutting machine, CNC shearing machine, large-scale boring and milling machine and other advanced equipment, which lay the solid foundation for the quality of products.



HCM SERVICE

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Pre-sale

Help customers to select the suitable equipment; guide the planning and site selection of production workshop; send engineers to the customer site for process and project design free of charge;



During Sale

Sound quality management system and strict inspection before delivery. Free logistics information provided and delivery arranged in strict order;



After-sales

Free guidance on equipment foundation laying; free guidance on after-sales installation and commissioning; free maintenance training service; professional after-sales team to response to customer needs 24/7.



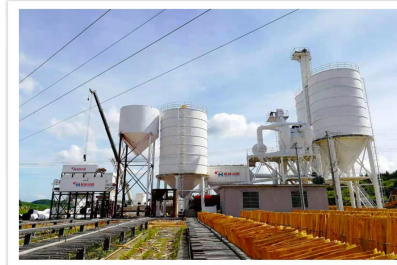
Parts Supply

Sufficient spare parts reserve to meet the customer's needs in a timely manner.

Customer Sites



Customer Sites



INTERNATIONAL CO-OPERATION

The grinding equipment manufactured by **HCM** has been widely and successfully used globally. With its reliable performance and quality, professional technical support, premium service guarantee, **HCM** grinding mills have benefited more and more customers and also are held in high regards among its peers. **HCM** has not only been leading in the Chinese domestic market, but also has emerged as one of the largest export companies in the industry.

QUALITY SHAPES FUTURE

