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## BALL MILL & ROD MILL



探宝

Founded in 1977

**KUNMING CIBA DIGGINGS MACHINERY CO.,LTD**

厂区效果图  
Effect drawing of plant area



Kunming Ciba Diggings Machinery Co., Ltd., founded in 1977, is attached to Yunnan Noah's Ark Group. It is a high-tech company with business covering industrial process design, product research and development (R&D) and manufacturing. Over the past 40 years, the company has been investing in product innovation and R&D, and obtained more than 40 patents on technologies. Furthermore, it has brought in and learned internationally advanced technologies in screening and conveying to keep relevant to the time.

Since the company registered its trademark named "Caibao" 40 years ago, it has gotten considerable experience during serving its customers, including a good knowledge of ore dressing, aggregate crushing and conveying of food and beverage. Based on the experience, the investment in R&D and the professional technical group, Ciba machinery is competent to offer comprehensive services such as industrial process design, complete equipment supply and trainings for installation, adjustment and maintenance.

The company has more than 200 employees, including over 30 researchers and designers, 6 senior engineers, 10 professional engineers, 15 assistant engineers and 2 talents leading regional-level high-tech enterprises. In addition, Ciba Machinery enjoys a provincial-level technological center in Yunnan province, which consists of divisions of industrial process design, product R&D and technology development; the 3 divisions form a vital technological innovation system. Meanwhile, we have carried

out in-depth cooperation and technical exchanges with reputable companies from United States and Italy to bring in advanced technologies and ideas.

With constant technological R&D and international communications, our company's technologies reached international level, and our products are widely recognized and complimented in international market. Today, our products are exported to more than 20 countries and regions such as South America, North America, Australia, Indonesia, Malaysia, Thailand, Myanmar, Vietnam, Laos, India, and Africa.

In the year 2003, our company took the lead in passing the ISO9001 quality management system certification among other domestic counterparts. In addition, it was honored with "a high-tech company", "certificate of company-level technological center in Yunnan Province", "a growing small and medium-sized company in Yunnan" and "a pilot company for S&T innovation in Kunming". The GK screener developed and produced by our company was honored with one of the industrialized demonstration programmes. The "Caibao" branded vibrating screen and ball mill are honored with well-known trademark in Yunnan, and its flotation machines and crushers with Famous Trademark in Kunming.

Over the past 40 years, in the spirit of "fraternity and gratitude", our company, based on technological research, scientific and standardized production, operation and management, and superior after-sales service, has been working jointly with domestic and overseas customers to seek common growth and brilliant future.



云南省认定  
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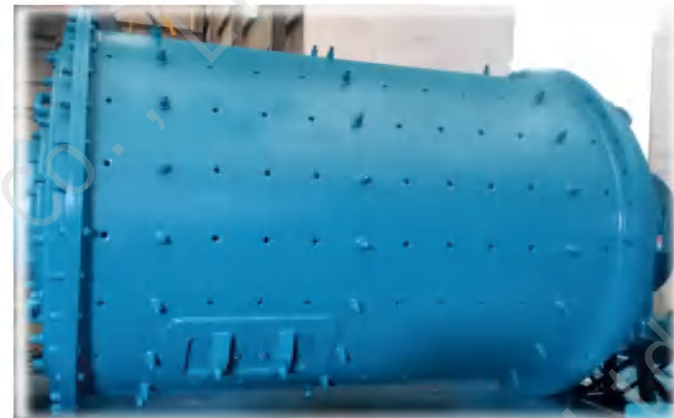


## Ball Mill & Rod Mill

Ball mill and rod mill are essential equipment for ores' further size reduction after crushing operation, which are applicable to comminution of dry or wet ores and other grindable materials in ferrous and non-ferrous metal processing plants, cement plants, refractory plants, fertilizer plants, and smelteries.

The ball mill and rod mill designed and manufactured by our company are multi-patented.

The properly designed feed opening allows greater volume of feed.



The cylindrical section is made by welding rolled high-strength steel plates, the welding seams are subject to a fully nondestructive testing, and the flanges at both ends are machined.

Caps of feed and discharge ends are made of materials with high toughness, strength and hardness, which are precisely machined to permit a highly precise assembly.

High-quality liners and efficient grinding: The liners of high-manganese steel feature enough impact toughness, and the surface of the liners becomes cold hardened and more wear resistant when the liners are impacted.





- A** Both rubber liners and magnetic liners are on offer to cater customers in different conditions.
- B** The driving bearing is double row spherical roller bearing and equipped with a temperature sensor.
- C** Cast alloy gears of large modulus are adopted to ensure stable transmission, low noise and long service life.
- D** There is an oil atomizer regularly spraying certain amount of oil onto the working surface of the gear for lubrication.



A medium- and large-size mill is equipped with a low-speed transmission mechanism to allow the cylinder a rotational speed of 0.1r/min for barring, maintenance and charge loosening.

A large size mill is equipped with a hydraulic jack (a lifting device) to lift the rotary part for maintenance without an expensive bridge crane.

#### Safety shield

All rotary parts (the cylinder excluded), the coupling between the motor and reducer, the coupling between the gear reducer and pinion shaft, the large gear and the pinion included, are equipped with shields to prevent body touch. The shield of the large gear consists of several parts ; each part is made by welding steel plates and jointing flange for easy assembly and dis-assembly, and sealed in advance with a felt ring.



## Main technical parameters of wet-grinding grate-discharge ball mill

| Model    | Cylinder Diameter (mm) | Cylinder Length (mm) | Mill Volume (m³) | Rotational speed (r/min) | Ball charge (t) | output (t/d) | Range of discharge size (mm) | Main motor power (kw) | Main motor type    | Weight (t) |
|----------|------------------------|----------------------|------------------|--------------------------|-----------------|--------------|------------------------------|-----------------------|--------------------|------------|
| MQ-12×24 | 1200                   | 2400                 | 2.2              | 31                       | 4.8             | 7.5~50       | 0.074~0.3                    | 45                    | async motor        | 14.5       |
| MQ-15×15 | 1500                   | 1500                 | 2.2              | 28.2                     | 4~5             | 67~84        | 0.074~0.3                    | 55                    | async motor        | 15.5       |
| MQ-15×30 | 1500                   | 3000                 | 4.5              | 28.5                     | 5~9             | 74~147       | 0.074~0.3                    | 90                    | async motor        | 23.5       |
| MQ-15×36 | 1500                   | 3600                 | 5.1              | 28.5                     | 8~11            | 92~180       | 0.074~0.3                    | 90                    | async motor        | 25.2       |
| MQ-15×39 | 1500                   | 3900                 | 5.7              | 28.5                     | 8.5~12          | 89~183       | 0.074~0.3                    | 110                   | async motor        | 26.5       |
| MQ-21×22 | 2100                   | 2200                 | 6.7              | 25                       | 6~12            | 84~240       | 0.074~0.3                    | 160                   | async motor        | 40         |
| MQ-21×30 | 2100                   | 3000                 | 9.2              | 22.3                     | 11~18           | 154~336      | 0.074~0.3                    | 220                   | async motor        | 44.1       |
| MQ-21×36 | 2100                   | 3600                 | 11               | 22.3                     | 13~20           | 156~360      | 0.074~0.3                    | 220                   | async motor        | 47.5       |
| MQ-21×39 | 2100                   | 3900                 | 13               | 22.3                     | 14~22           | 168~387      | 0.074~0.3                    | 250                   | async motor        | 48.5       |
| MQ-21×45 | 2100                   | 4500                 | 13.5             | 22.4                     | 23~29           | 230~480      | 0.074~0.3                    | 280                   | async motor        | 49.5       |
| MQ-24×30 | 2400                   | 3000                 | 13               | 24                       | 10~25           | 210~444      | 0.074~0.3                    | 250                   | async motor        | 46.5       |
| MQ-24×36 | 2400                   | 3600                 | 15               | 21.4                     | 15~30           | 264~528      | 0.074~0.3                    | 315                   | async motor        | 52.9       |
| MQ-24×39 | 2400                   | 3900                 | 16               | 21.4                     | 16~33           | 288~600      | 0.074~0.3                    | 315                   | async motor        | 54.2       |
| MQ-24×45 | 2400                   | 4500                 | 18               | 21.3                     | 28~38           | 312~808      | 0.074~0.3                    | 400                   | Sync motor         | 65         |
| MQ-27×27 | 2700                   | 2700                 | 13.1             | 21.3                     | 20~28           | 264~497      | 0.074~0.3                    | 315                   | async motor        | 66         |
| MQ-27×36 | 2700                   | 3600                 | 18.4             | 21.3                     | 30~38           | 312~672      | 0.074~0.3                    | 400                   | async (Sync) motor | 76         |
| MQ-27×39 | 2700                   | 3900                 | 20               | 19.5                     | 30~38           | 348~728      | 0.074~0.3                    | 450                   | async (Sync) motor | 78         |
| MQ-27×40 | 2700                   | 4000                 | 20               | 20                       | 30~38           | 384~788      | 0.074~0.3                    | 450                   | Sync motor         | 78.3       |
| MQ-27×45 | 2700                   | 4500                 | 23               | 19.5                     | 38~42           | 412~840      | 0.074~0.3                    | 500                   | async (Sync) motor | 83         |
| MQ-32×45 | 3200                   | 4500                 | 32.8             | 18.75                    | 55~65           | 576~1176     | 0.074~0.3                    | 800                   | Sync motor         | 128        |
| MQ-32×54 | 3200                   | 5400                 | 39.4             | 18.75                    | 65~75           | 696~1416     | 0.074~0.3                    | 1000                  | Sync motor         | 139        |
| MQ-32×60 | 3200                   | 6000                 | 43.8             | 18.3                     | 70~80           | 800~1646     | 0.074~0.3                    | 1250                  | Sync motor         | 171        |
| MQ-36×45 | 3600                   | 4500                 | 40.6             | 17.3                     | 78~88           | 696~1464     | 0.074~0.3                    | 1250                  | Sync motor         | 157        |
| MQ-36×54 | 3600                   | 5400                 | 41               | 17.3                     | 84~105          | 850~1848     | 0.074~0.3                    | 1400                  | Sync motor         | 181        |
| MQ-36×60 | 3600                   | 6000                 | 54.4             | 17.3                     | 100~117         | 912~1968     | 0.074~0.3                    | 1600                  | Sync motor         | 195        |

## Main technical parameters of wet-grinding overflow-discharge ball mill

| Model     | Cylinder Diameter (mm) | Cylinder Length (mm) | Mill Volume (m³) | Rotational speed (r/min) | Ball charge (t) | output (t/d) | Range of discharge size (mm) | Main motor power (kw) | Main motor type    | Weight (t) |
|-----------|------------------------|----------------------|------------------|--------------------------|-----------------|--------------|------------------------------|-----------------------|--------------------|------------|
| MQY-12×24 | 1200                   | 2400                 | 2.2              | 31.5                     | 2.7~4.4         | 7.5~50       | 0.074~0.3                    | 45                    | async motor        | 13.6       |
| MQY-12×30 | 1200                   | 3000                 | 2.75             | 31.5                     | 3~5             | 41~86        | 0.074~0.3                    | 45                    | async motor        | 14.4       |
| MQY-15×30 | 1500                   | 3000                 | 4.5              | 28.5                     | 5~9             | 67~144       | 0.074~0.3                    | 90                    | async motor        | 22.5       |
| MQY-15×36 | 1500                   | 3600                 | 5.1              | 28.5                     | 8~11            | 72~168       | 0.074~0.3                    | 90                    | async motor        | 24.2       |
| MQY-15×39 | 1500                   | 3900                 | 5.7              | 28.5                     | 8.5~12          | 89~183       | 0.074~0.3                    | 110                   | async motor        | 25.6       |
| MQY-21×30 | 2100                   | 3000                 | 9.2              | 22.3                     | 11~18           | 140~302      | 0.074~0.3                    | 220                   | async motor        | 42.5       |
| MQY-21×36 | 2100                   | 3600                 | 11               | 22.3                     | 13~20           | 144~307      | 0.074~0.3                    | 220                   | async motor        | 45         |
| MQY-21×39 | 2100                   | 3900                 | 13               | 22.3                     | 14~22           | 156~360      | 0.074~0.3                    | 250                   | async motor        | 46.5       |
| MQY-21×45 | 2100                   | 4500                 | 13.5             | 22.4                     | 21~26           | 168~384      | 0.074~0.3                    | 280                   | async motor        | 47.2       |
| MQY-24×30 | 2400                   | 3000                 | 13               | 24                       | 10~25           | 210~444      | 0.074~0.3                    | 250                   | async motor        | 46.5       |
| MQY-24×36 | 2400                   | 3600                 | 15               | 21.4                     | 15~30           | 240~480      | 0.074~0.3                    | 315                   | async motor        | 53.5       |
| MQY-24×39 | 2400                   | 3900                 | 16               | 21.4                     | 16~33           | 264~552      | 0.074~0.3                    | 315                   | async motor        | 56.5       |
| MQY-24×45 | 2400                   | 4500                 | 18               | 21.3                     | 25~34           | 280~600      | 0.074~0.3                    | 400                   | Sync motor         | 66         |
| MQY-27×36 | 2700                   | 3600                 | 18.4             | 21.3                     | 30~38           | 280~600      | 0.074~0.3                    | 400                   | async (Sync) motor | 73         |
| MQY-27×39 | 2700                   | 3900                 | 20               | 19.5                     | 30~38           | 295~636      | 0.074~0.3                    | 450                   | async motor        | 74.3       |
| MQY-27×40 | 2700                   | 4000                 | 20               | 20                       | 30~38           | 384~768      | 0.074~0.3                    | 450                   | Sync motor         | 75         |
| MQY-27×45 | 2700                   | 4500                 | 23               | 19.5                     | 38~45           | 360~792      | 0.074~0.3                    | 500                   | async (Sync) motor | 81         |
| MQY-27×60 | 2700                   | 6000                 | 32               | 20                       | 51~61           | 576~1200     | 0.074~0.3                    | 630                   | Sync motor         | 88         |
| MQY-32×45 | 3200                   | 4500                 | 32.8             | 18.75                    | 51~61           | 518~1056     | 0.074~0.3                    | 800                   | Sync motor         | 125        |
| MQY-32×54 | 3200                   | 5400                 | 39.2             | 18.6                     | 63~73           | 624~1267     | 0.074~0.3                    | 1000                  | Sync motor         | 150        |
| MQY-32×60 | 3200                   | 6000                 | 43.8             | 18.3                     | 70~80           | 800~1646     | 0.074~0.3                    | 1000                  | Sync motor         | 165        |
| MQY-36×45 | 3600                   | 4500                 | 40.6             | 17.3                     | 66~76           | 584~1344     | 0.074~0.3                    | 1250                  | Sync motor         | 155        |
| MQY-36×54 | 3600                   | 5400                 | 48.9             | 17.3                     | 80~100          | 720~1680     | 0.074~0.3                    | 1250                  | Sync motor         | 165        |
| MQY-36×60 | 3600                   | 6000                 | 54               | 17.3                     | 90~102          | 792~1776     | 0.074~0.3                    | 1600                  | Sync motor         | 185        |

## Main technical parameters of wet-grinding overflow-discharge rod mill

| Model    | Cylinder Diameter (mm) | Cylinder Length (mm) | Mill Volume (m³) | Rotational speed (r/min) | Ball charge (t) | output (t/d) | Range of discharge size (mm) | Main motor power (kw) | Main motor type | Weight (t) |
|----------|------------------------|----------------------|------------------|--------------------------|-----------------|--------------|------------------------------|-----------------------|-----------------|------------|
| MB-21×30 | 2100                   | 3000                 | 9                | 20                       | 15~20           | 139~302      | 0.074~0.3                    | 185                   | async motor     | 37.5       |
| MB-24×30 | 2400                   | 3000                 | 12               | 19                       | 18~28           | 180~384      | 0.074~0.3                    | 250                   | async motor     | 48.5       |
| MB-24×36 | 2400                   | 3600                 | 14.2             | 19                       | 22~34           | 216~480      | 0.074~0.3                    | 280                   | async motor     | 51         |
| MB-27×36 | 2700                   | 3600                 | 18.4             | 18                       | 35~47           | 270~600      | 0.074~0.3                    | 400                   | Sync motor      | 71         |
| MB-32×45 | 3200                   | 4500                 | 32.8             | 16                       | 37~50           | 500~1000     | 0.074~0.3                    | 630                   | Sync motor      | 110        |
| MB-36×45 | 3600                   | 4500                 | 40.8             | 15                       | 82~110          | 790~1700     | 0.074~0.3                    | 1250                  | Sync motor      | 160        |

Note 1: The cylinder diameter refers to the internal diameter of the cylindrical section, and the cylinder length refers to the effective length of the cylindrical section.

Note 2: The weight provided in the table excludes ball mass.

Note 3: The output in the table is estimated in the case of medium-hard feed with size ≤25mm.

※1 • The grinding capacity and size provided in the tables are merely for reference, rather than for a tacit promise of the equipment supplier. As rocks or ores vary widely, results in actual crushing may be different from parameters in the table. Please contact our technical center for further support.

2 • Our company also designs and manufactures center-periphery discharge mills. Please contact with our technical center for further information

## Sales network in the map



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