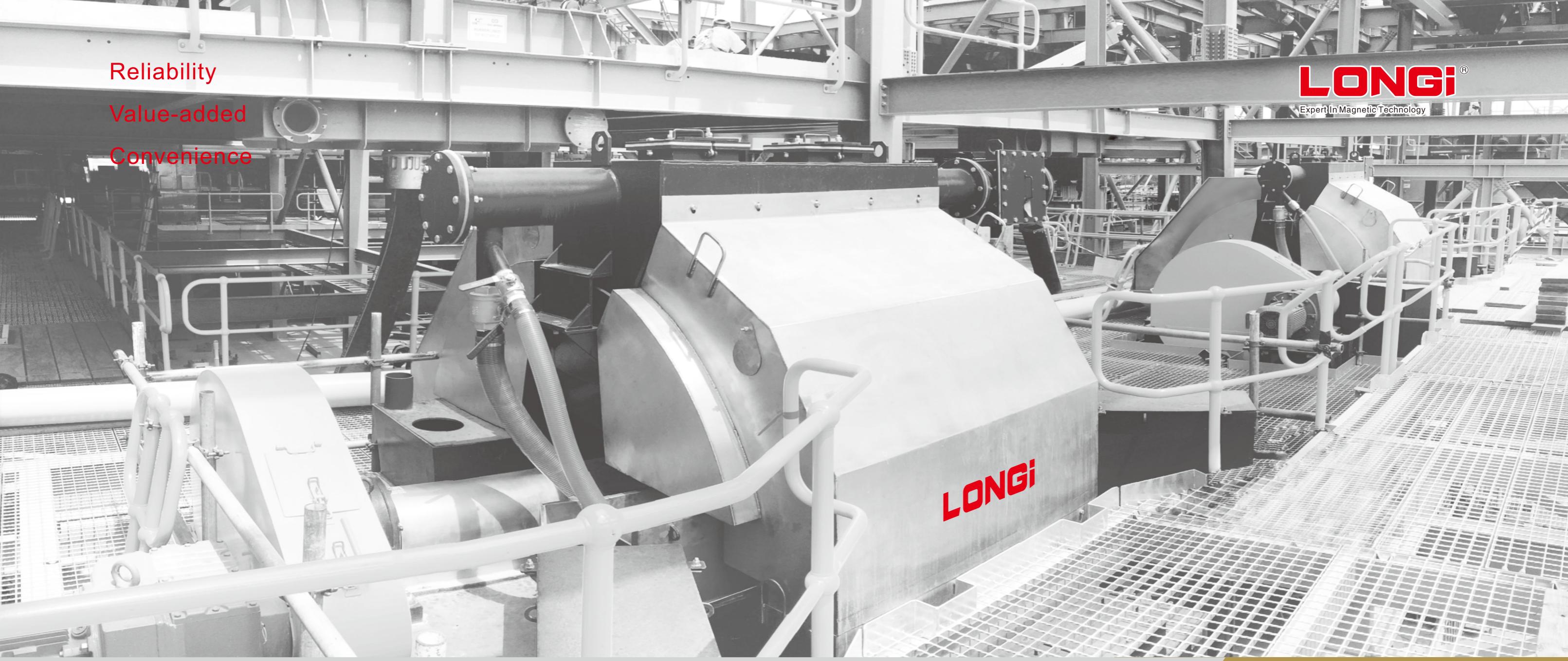


Reliability

Value-added

Convenience

LONGi[®]
Expert In Magnetic Technology



LONGi[®]

Expert In Magnetic Technology

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CRITICAL MINERALS PRODUCT BROCHURE



LONGi MAGNET CO.,LTD.
LONGi MAGNET AUSTRALIA PTY LTD



Reliability

Reliable products,
loyal partner



Value-added

Optimize products,
transfer value to clients.



Convenience

Tailored design and service,
transfer convenience.



Our Vision

The most competitive supplier of industrial magnetic equipment around the world.

Brief Introduction

- LONGi Magnet Co., Ltd, established in 1993, is a leading manufacturer of industrial magnetic equipment all over the world. We offer an extensive range of products, including WHIMS (Wet High Intensity Magnetic Separator), MIMS(Medium High Intensity Magnetic Separator),LIMS (Low Intensity Magnetic Separator),AMFS(Automatic Magnetic Flotation Separator), Dry Cobbing(dry drum separator),WBMS(Wet Belt Magnetic Separator), Ore Sorting Equipment, Tramp Magnet(Magnetic Separator), Metal Detector, Lifting Magnet, Eddy Current Separator, etc. LONGi is well-positioned to meet diverse magnetic solution requirements.
- As an innovator, LONGi holds over 500 national and international patents for its products and designs. The company operates a provincial-level research center and laboratory in collaboration with the Institute of Electrical Engineering at China's Academy of Sciences. LONGi is well-equipped to engage different scale of projects, and each year, it delivers thousands of solutions worldwide. Consistently, LONGi's annual sales have ranked No. 1 in this line in China. LONGi is also the first in the industry to be recognized with the designation of "China Well-Known Trademark".
- Guided by the motto "Reliability, Value-added, Convenience," LONGi is dedicated to providing innovative and beneficial solutions tailored to meet the needs of its clients in the field of magnetic technology.



1000+

Nearly 1000 experiments completed each year

70+

Products are distributed in more than 70 countries around the world

Key Overseas Projects

Sino Iron Project-CITIC Pacific Mining (Australia)
FMG Hematite Recycling Project(Australia)
CGP1,CGP2,CGP3,TRP Projects-Talison Lithium(Australia)
Mt Marion Lithium Project- Mineral Resources(Australia)
Wodgina Lithium Projects-Mineral Resources(Australia)
Mt Cattlin Lithium Project-Galaxy Lithium (Australia)
Mt Holland Lithium Project-Covalent Lithium(Australia)
P1000 Lithium Project-Pilbara Minerals(Australia)
Goulamina Lithium project-Ganfeng Lithium(Mali)
Utah Steel Magnetic Flotation Project (America)
Imerys (Canada)
Far East Crocodile River Project -MCC (South Africa)
New Steel Union OCSA(South Africa)
Huayou Cobalt Project(Congo)
Molybdenum TFM Mine (Congo)
China Railway Resources-Huagang Mining(Congo)
Magnetite Project- CAP (Chile)
Hematite Project-Sinosteel(Bolivia)
Meta Magnetic Separation and Grading Project(Turkey)
The Lion Group(Malaysia)
JSW Project(India)



Global Collaborative Labs

Australia ALS
Australia BV
Australia Nagrom
South Africa Chrome One Research Laboratory
Canada SGS
Germany SGA
Brazil Catron Universally Lab
Russia UMMC Lab

One Stop Solutions



Sustainable Solution



Material Experiment



Equipment Manufacturing



Installation and commissioning



EPC-M



Technical Training



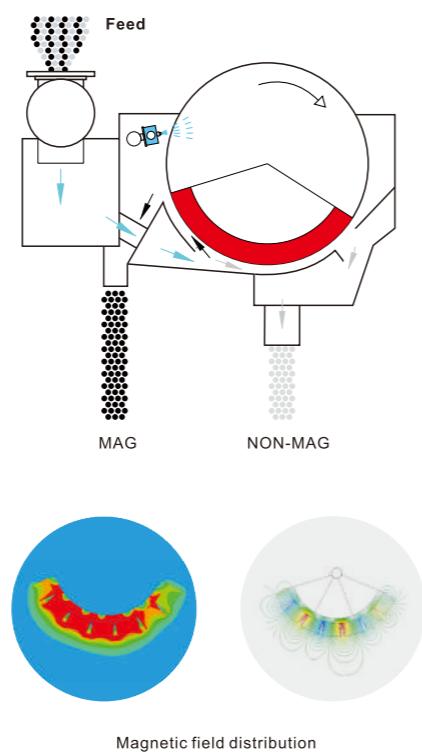
Remote Service



CTN WET Drum Separator (LIMS / MIMS)

Application

- Remove high magnetic impurities in the feed.
- Protect WHIMS from magnetite blockage.
- Long slurry path keeps high magnetite recovery.
- High remanence magnet with less than 1% loss in magnetism over 10 years.
- Induction roll specially designed to discharge mags.



Technical Parameters

| Model | Dia. (mm) | Width (mm) | Rotation Speed (r/min) | Handling Capacity (t/h) | Slurry (m³/h) | Overall Dimension (mm) | Drum Motor (Kw) | Weight (Kg) |
|-----------|--------------|---------------|------------------------------|-------------------------------|------------------|---------------------------|-----------------------|----------------|
| CTN-1018 | 1050 | 1800 | 21 | 45-65 | 100-200 | 3115×2000×1565 | 5.5 | 3800 |
| CTN -1024 | 1050 | 2400 | 21 | 55-75 | 130-260 | 3715×2000×1565 | 5.5 | 4600 |
| CTN -1030 | 1050 | 3000 | 21 | 70-100 | 170-330 | 4315×2000×1565 | 7.5 | 5500 |
| CTN -1218 | 1200 | 1800 | 18 | 55-75 | 130-260 | 3150×2300×1940 | 5.5 | 4600 |
| CTN -1224 | 1200 | 2400 | 18 | 65-95 | 160-320 | 3750×2300×1940 | 7.5 | 5800 |
| CTN -1230 | 1200 | 3000 | 18 | 85-130 | 200-400 | 4350×2300×1940 | 11 | 7500 |
| CTN -1236 | 1200 | 3600 | 18 | 100-155 | 240-480 | 5235×2300×1940 | 15 | 8800 |
| CTN -1240 | 1200 | 4000 | 18 | 110-170 | 260-540 | 5635×2300×1940 | 18.5 | 9000 |
| CTN -1245 | 1200 | 4500 | 18 | 130-195 | 300-600 | 6135×2300×1940 | 18.5 | 10000 |
| CTN -1540 | 1500 | 4000 | 15 | 145-200 | 330-620 | 5960×2600×2420 | 22 | 12000 |
| CTN -1545 | 1500 | 4500 | 15 | 160-230 | 380-700 | 6465×2600×2420 | 30 | 13500 |
| CTN -1550 | 1500 | 5000 | 15 | 180-260 | 420-750 | 6965×2600×2420 | 30 | 15000 |
| CTN -1560 | 1500 | 6000 | 15 | 210-320 | 500-900 | 7965×2600×2420 | 45 | 17500 |

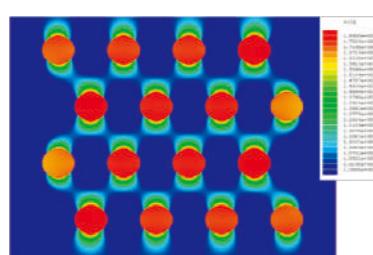


LGS Wet High Intensity Magnetic Separator (WHIMS)

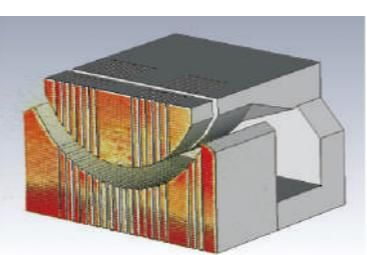
Application

Purification of non-ferrous minerals, including Spodumene, Lepidolite, Quartz, Feldspar, Kaolin, Zirconite, Nepheline, Fluorite, Sillimanite, etc.

Recovery of weakly ferrous minerals, including Hematite, Martite, Ilmenite, Vanadium-titanium magnetite, Manganese, Wolframite, Tantalum-niobium, etc.



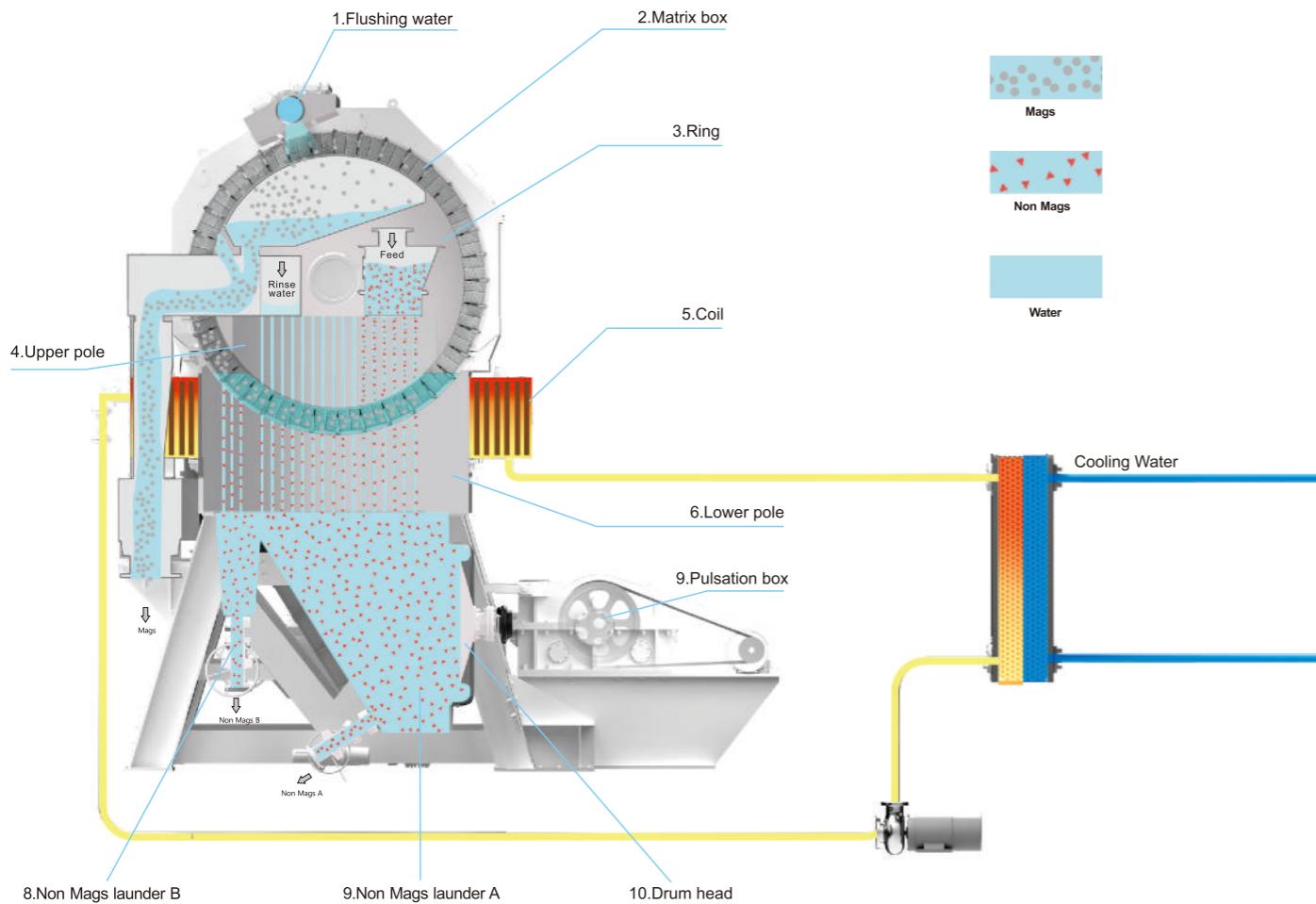
Magnetic Field Induced By High Permeability Matrix



3D Simulation of Magnetic Field

Features

- **Advanced design:** Design through tens of thousands of tests and continuous improvements over decades. Extensive experience in the industry and most advanced solution.
- **Tailored Design:** Especially magnetic field design and matrix design for the certain application.
- **Reliability:** Mature products ensure stable and consistent performance.
- **Durability and Safety:** H-class insulation coil, free from cleaning.
- **Global Support:** Experienced local service team with strong and continuous support.
- **Advanced FEA Methods:** Sophisticated FEA to simulate magnetic fields, eliminating faults and improving performance.
- **Auto Controls:** Full auto control for slurry level, oil level, oil temperature, etc.
- **Enhanced Magnetic Strength:** Back ground magnetic field up to 1.8T, induced magnetic strength up to 2.8T.
- **Energy-Efficient Cooling:** Patented coil cooling technology, energy saving up to 40%.



Operating Principle

- During beneficiation, the coil (5) is energized, and the ring (3) rotates clockwise. The slurry is fed to WHIMS through the feed box. The slurry flows through the ring along the gap on the upper pole (4). In the ring (3), the matrix box (2) composed of high-permeability stainless steel rods is magnetized in the background magnetic field, and the matrix surface forms a very high gradient magnetic field. The magnetic particles in the slurry are attracted to the surface of the matrix and are brought to the top of the non-magnetic field area. The magnetic material is flushed into the mag. launder by flushing water (1), and the non-magnetic particles flow into the bottom of WHIMS along the gap of the lower pole (6) and then be discharged.
- The drum head (10) reciprocates left and right under the driving of the pulsation box (9). The drum head (10) pushes the slurry up and down. When the pulsation box is running, the pulsating washing force can keep the particles in a loose state, thereby it effectively reduces the entrainment of non-magnetic particles, and significantly improves the purity of the magnetic particles. Meanwhile it benefits for preventing the blockage of the matrix box.

Technical Parameters

Choosing the best model is generally based on the slurry volume. However, the density of the mineral, magnetic properties, slurry density and other qualities of the material can greatly affect the capacity and beneficiation effectiveness.

| Item Model | LGS-1000 | LGS-1250 | LGS-1500 | LGS-1750 | LGS-2000 | LGS-2250 | LGS-2500 | LGS-3000 | LGS-3500 | LGS-4000 | LGS-4500 | LGS-5000 |
|---|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Capacity(Slurry) (m³/h) | 12~20 | 20~50 | 50~100 | 75~150 | 100~200 | 150~270 | 200~400 | 350~650 | 430~850 | 600~1200 | 800~1600 | 1000~2000 |
| Excitation Power (kw) | 17 | 22 | 28 | 37 | 45 | 52 | 58 | 74 | 95 | 120 | 140 | 180 |
| Ring Power (kw) | 1.1 | 1.5 | 3.0 | 4.0 | 5.5 | 7.5 | 11 | 18.5 | 22 | 30 | 22×2 | 30×2 |
| Pulsating Power (kw) | 2.2 | 3.0 | 3.0 | 4.0 | 7.5 | 7.5 | 11 | 18.5 | 22 | 30 | 45 | 55 |
| Particle Size (mm) | -3.5 mm | | | | | | | | | | | |
| Ring Speed r/min | 3 (2 ~ 3.5 Adjustable) | | | | | | | | | | | |
| Feeding Density % | 10 ~ 40 | | | | | | | | | | | |
| Pulsating Stroke mm | 16 (12 ~ 30 Adjustable) | | | | | | | | | | | |
| Pulsating Frequency r/min | 0 ~ 300 (Adjustable) | | | | | | | | | | | |
| Flushing Water Pressure (Mpa) | ≥0.2 | | | | | | | | | | | |
| Flushing Water Consumption (m³/h) | 5~10 | 10~20 | 20~30 | 30~50 | 50~80 | 70~110 | 100~150 | 150~250 | 220~350 | 300~480 | 400~600 | 500~800 |
| Heaviest Part (t) | ≤5 | ≤8 | ≤10 | ≤12 | ≤20 | ≤25 | ≤25 | ≤35 | ≤35 | ≤35 | ≤35 | ≤35 |
| Outline Dimension L×W×H (mm) | 3650×2500 ×2450 | 4050×2950 ×3100 | 4100×3600 ×3500 | 4250×3900 ×3900 | 4600×4900 ×4500 | 5100×5100 ×5400 | 5700×5300 ×5700 | 6900×6600 ×7100 | 7200×6900 ×7500 | 8100×7300 ×8100 | 8600×7600 ×9500 | 9300×8200 ×9900 |

Note:

- Data above for 1.0T magnetic intensity . Contact us for the data 1.3T,1.5T and 1.8T, etc.
- 1Gs(Gauss)=1Oe(Oersted)=80A/m(Ampere/meter)= 1×10^{-4} (Tesla).
- The above specifications are for reference only, LONGI Magnet Co, reserves the right to revise them according to any special application or reason without advance notification.



LJTC Series Ultra Fine Magnetic Purifier

Applications

The product is primarily used for removing iron powder and purifying non-ferrous minerals such as feldspar, quartz, kaolin, alunite, spodumene, nepheline, fluorite, and sillimanite.

Product profile

The LJTC Series Ultra Fine Magnetic Purifier is an advanced magnetic separator specifically designed for the non-ferrous mineral industry. It is widely utilized to purify high-quality fine non-ferrous minerals. This equipment boasts a highly efficient purification process and is eco-friendly, reducing the consumption of water, power, and other resources.

The development of the LJTC Series of Magnetic Purifiers has taken many years of intensive research and development by LONGi. By analyzing the effects on more than ten types of non-ferrous minerals and conducting thousands of tests under various conditions, LONGi has accumulated a wealth of experience in processing non-ferrous minerals.

Features

- **Long Processing Area**
Ensures sufficient contact between the mineral and magnetic matrix for optimal separation.
- **Power Saving**
Utilizes permanent magnetic technology and highly coercive NdFeB material, resulting in very low power consumption and operational costs.
- **High Magnetic Intensity**
Achieves a maximum magnetic intensity of up to 3T, generating a stronger magnetic field to absorb ferrous particles more effectively.
- **Counter Current Processing Flow**
The counter current structure maintains a stable slurry flow rate within the processing area.
- **Fully-Closed Matrix Box**
The fully-closed and specially configured matrix prevents jamming issues efficiently.
- **High Yield Ability**
Ensures that only ferrous minerals are discharged in the tailings, reducing loss and minimizing tailing piles.
- **Fully Automatic Control System**
Features an easy-to-operate, intelligent control system for user convenience.

Technical Parameters

| Type | Slurry Density (%) | Operation Power (kw) | Slurry Capacity (m³/h) | Weight of Main Body (t) | Outline Dimensions (L x W x H mm) |
|------------------|-----------------------|-------------------------|---------------------------|----------------------------|--------------------------------------|
| Permanent Magnet | 15-25 | 1.6 | 20-40 | 11.8 | 4300×2600×3200 |



LJDC Wet Belt Magnetic Separator (WBMS)

Application

The LJDC wet belt magnetic separator is a permanent magnetic separator utilizing high-quality NdFeB magnetic elements, achieving a surface intensity of up to 1.3T. This ensures efficient and effective removal of ferrous minerals mixed with non-ferrous minerals. The LJDC series features a belt structure where minerals are agitated and separated multiple times from input to output, purifying the minerals by removing ferrous components.

This machine integrates hydraulics, magnetics, and mechanics to create a high magnetic intensity and strong gradient processing area. It is suitable for various non-ferrous mineral industries.

Features

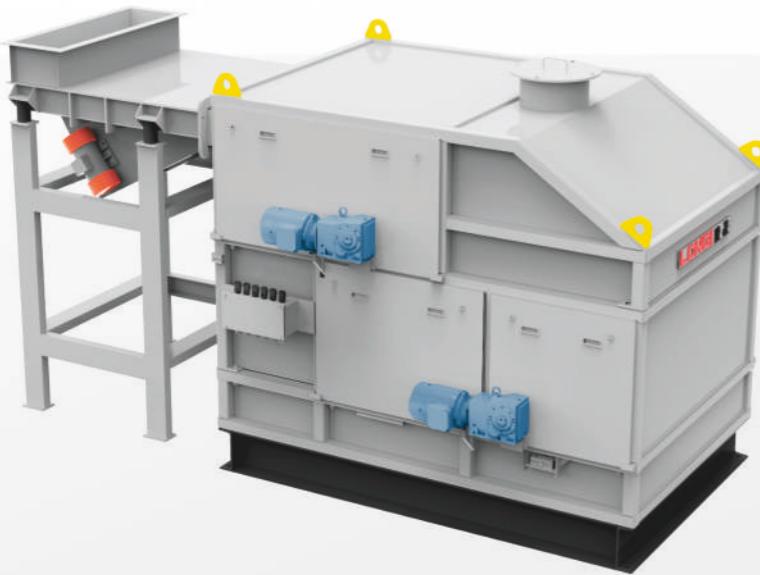
- Iron removal for coarse dense media sinks in spodumene processing
- Iron removal for other non-ferrous mineral, such as mica powder, quartz, feldspar, nepheline, fluorite, sillimanite, spodumene and kaolin.
- Beneficiation of weakly magnetic minerals such as manganese, pyrrhotite, sinter ore, ilmenite, hematite, limonite, siderite, chromite, wolframite, tantalum-niobium ores, red niobium and such.

Technical Parameters

| Model | Magnetic System Width (mm) | Magnetic System Length (mm) | Magnetic Intensity (Gs) | Handling Capacity (t/h) | Outline Dimensions (mm) | Drive Power (kw) | Weight (t) |
|-----------|----------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|------------------|------------|
| LJDC-0820 | 800 | 2000 | 13000 | 7-10 | 3445×1470×1900 | 1.5 | 2.1 |
| LJDC-1220 | 1200 | 2000 | | 10-15 | 3945×1500×1900 | 2.2 | 2.6 |
| LJDC-1225 | | 2500 | | | 3945×1900×1900 | | 2.8 |
| LJDC-1620 | 1600 | 2000 | | 14-20 | 3945×2310×1900 | | 3.1 |
| LJDC-1625 | | 2500 | | | 3945×2450×1900 | | 3.6 |
| LJDC-2020 | 2000 | 2000 | | 18-25 | 3945×2650×1900 | 3 | 4.2 |
| LJDC-2025 | | 2500 | | | 3945×2870×1900 | | 4.6 |
| LJDC-2520 | 2500 | 2000 | | 22-32 | 3945×3270×1900 | 4 | 5 |
| LJDC-2525 | | 2500 | | | 4445×2900×1900 | | 5.6 |
| LJDC-3020 | 3000 | 2500 | | 27-38 | 4445×3270×1900 | | 6.1 |
| LJDC-3025 | | 2500 | | | | | 6.7 |

Applicable working conditions

- Pressure of flushing water : 0.2-0.4 MPa
- Particle Size: Nominal below 30mm
- Slurry density : 10%-30%



RCY-DG Series Multi-Layers High Intensity Magnetic Separator

Application

This magnetic separator is specially used for the beneficiation of weakly ferrous minerals or the purification of non-ferrous minerals, such as feldspar, quartzite, andalusite, chalk, magnesite, cyanite, bauxite, etc.

The multi-layered high intensity magnetic separator consists of driving rollers, magnetic rollers and a transfer belt. The ferrous particles are attracted by the magnetic roll while transferring to the magnetic field, then the non-ferrous material is discharged by gravity. This machine can be used as a primary, a secondary or even a finisher separator.

In order to improve the purity effect, the equipment integrates magnetic force, gravity, controllable feeding system and other factors, specializing in the processing of fine particles.

Features

- Continuously and automatically separate paramagnetic minerals and fine ferrous minerals.
- Advancements in high remanence ensure that the high coercivity magnetic material experiences less than a 1% magnetism loss every 10 years.
- The working magnetic intensity reaches to 12000Gs.
- Multi-layers of rollers are available.
- Suitable to particle size 0.03~3mm.

LJH Trunnion Magnet

Application

This machine is suitable for the mill production system of non-magnetic and weakly magnetic minerals, automatically recovers broken steel balls, reduces the wear of the equipment in the next process, and improves the production capacity of the whole system.

Features

- The surface of the equipment is made of stainless steel, which is anti-corrosion and anti-rust.
- Adopting permanent magnetic material as the magnetic source, which makes magnetic field stable and is energy-saving and eco-friendly.
- Adopting intelligent control system, the equipment spacing can be adjusted electrically, which greatly simplifies the need for on-site tools, and the iron discharging structure is equipped with a mobile device to realize self-movement.
- The magnetic system is adjustable, and the magnetic field can be adjusted at any time according to the characteristics of the materials on site.
- The 195° wrap angle of the magnetic system ensures enough time for the broken steel balls to be discharged after being separated from the material.
- Induction lifting bar produces a high intensity magnetic field that easily captures the steel balls.



LDHG Dry Powder Magnetic Separator (DPMS)

Application

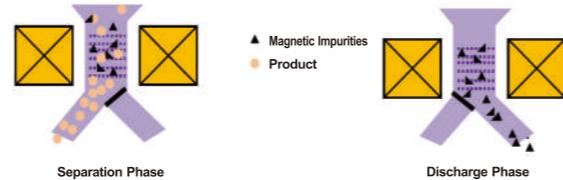
The LDHG Series Dry Powder Magnetic Separator by LONGi is an advanced, fully automatic system designed for ultrafine powder applications. Combining electromagnetic vibration technology with high-gradient magnetic separation, it ensures precise impurity removal. Built on LONGi's expertise in magnetic separation, this system has been optimized for the unique characteristics of powder materials, offering improved performance, reliability, and automation for modern powder processing.

The LDHG is engineered for dry magnetic purification of various fine and ultrafine powder materials (0 to 1 µm) containing magnetic impurities below 50 ppm.

This series is specifically designed for dry environments where wet separation is not feasible.

Key Applications

- Lithium carbonate, hydroxide monohydrate, iron phosphate (LFP), cobalt oxide (LCO), manganese oxide (LMO), titanate (LTO)
- Battery precursor materials
- Ternary lithium compounds (e.g., NCM/NCA)
- Graphite (natural and synthetic)
- High-purity silica
- Boehmite (AlOOH)



Features

- **Excellent Oil-Cooled Heat Dissipation**
The oil-immersion circulation structure ensures efficient cooling, maintaining low coil temperatures for stable, reliable performance and a service life over 10 years with no maintenance required.
- **Fully-Automated Intelligent Control**
Operates 24/7 with minimal human intervention, featuring simplified operation, reduced maintenance, and remote monitoring to lower operational costs.
- **Professional Magnetic Circuit Design**
An innovative demagnetization mechanism resolves issues with trapped magnetic impurities, ensuring stable separation and consistent product quality.

- **Visualized Controls**
User-friendly interface allows workers to operate and maintain the system with minimal training.
- **Unique Discharge Mechanism**
Prevents leakage of ferrous materials and particles, with a hermetic discharge design suitable for pressurized environments.
- **Diverse Applicable Materials**
Supports various materials with flexible magnetic matrix options, including corrugated plates, diamond mesh, and steel bars.



Technical Parameters

STANDARD SIZE

| Model | Magnetic Intensity (Gs) | Feed Chamber Diameter (mm) | Excitation Power (Kw) | Processing Capacity (t/h) |
|-----------|-------------------------|----------------------------|-----------------------|---------------------------|
| LDHG-160 | | 160 | 6.8 | 0.2-0.5 |
| LDHG-200 | | 200 | 7.5 | 0.5-1.0 |
| LDHG-250 | 16000 | 250 | 12.5 | 0.8-1.6 |
| LDHG-300 | | 300 | 15.2 | 1.0-2.2 |
| LDHG-160Q | | 160 | 15.0 | 0.2-0.5 |
| LDHG-200Q | 19000 | 200 | 17.0 | 0.5-1.0 |
| LDHG-250Q | | 250 | 20.0 | 0.8-1.6 |
| LDHG-300Q | | 300 | 23.5 | 1.0-2.2 |

LARGE SIZE

| Model | Magnetic Intensity (Gs) | Feed Chamber Diameter (mm) | Excitation Power (Kw) | Processing Capacity (t/h) |
|-----------|-------------------------|----------------------------|-----------------------|---------------------------|
| LDHG-350 | | 350 | 16.5 | 2.0-5.0 |
| LDHG-500 | 16000 | 500 | 18.0 | 4.8-12.5 |
| LDHG-750 | | 750 | 22.0 | 12.0-22.0 |
| LDHG-350Q | | 350 | 25.0 | 2.0-5.0 |
| LDHG-500Q | 19000 | 500 | 27.5 | 4.8-12.5 |
| LDHG-750Q | | 750 | 32.0 | 12.0-22.0 |

Applicable Operating Conditions

Particle size ≤ 120 mesh, slurry concentration ≤ 30% and magnetic impurity content ≤ 1%

※ The above technical parameters are for preliminary sizing only.



LWHG Wet Slurry Magnetic Separator (WSMS)

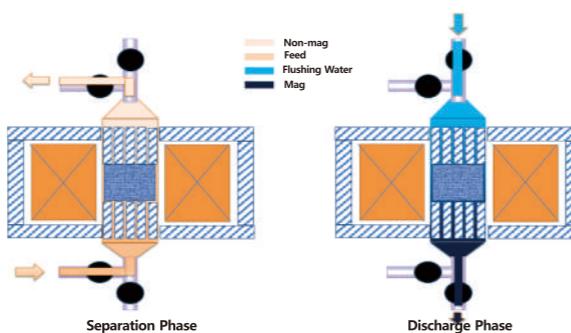
Application

The LWHG Series Wet Slurry Magnetic Separator, developed by LONGi, is a fully automatic system designed for high-purity wet slurry applications involving ultra-fine particles.

Combining the best features of LONGi's ultra-fine purifiers, high-gradient magnetic filters, demagnetizers, and magnetic flotation separators, it offers over 30% higher impurity removal efficiency compared to conventional systems.

Key Applications

- Lithium carbonate, hydroxide monohydrate, cobalt oxide (LCO), manganese oxide (LMO)
- Battery precursors and ternary lithium compounds
- High-purity quartz
- Boehmite



Features

- **Excellent Oil-Cooled Heat Dissipation**
The oil-immersion circulation structure ensures efficient cooling, maintaining low coil temperatures for stable, reliable performance and a service life over 10 years with no maintenance required.
- **Enhanced Mechanical Design**
Extended magnetic field zone increases capture probability, ensuring purity in wet purification, even for fine, low-content magnetic materials.
- **Diverse Applicable Materials**
Supports a range of matrices tailored to material properties.

- **Professional Magnetic Circuit Design**
Closed-circuit design offers high-intensity, high-gradient fields inside, shielding the area to ensure safety.
- **Fully-Automated Intelligent Control System**
Supports 24/7 operation with minimal maintenance, Ethernet-based communication for remote monitoring, reducing on-site personnel.

Technical Parameters

STANDARD SIZE

| Model | Magnetic Intensity (Gs) | Feed Chamber Diameter (mm) | Excitation Power (Kw) | Processing Capacity (t/h) |
|-----------|-------------------------|----------------------------|-----------------------|---------------------------|
| LWHG-160 | | 160 | 7.5 | 1-2 |
| LWHG-230 | | 230 | 10.5 | 3-6 |
| LWHG-300 | 18000 | 300 | 15.2 | 8-15 |
| LWHG-400 | | 400 | 18.0 | 15-30 |
| LWHG-160Q | | 160 | 16.5 | 1-2 |
| LWHG-230Q | | 230 | 20.0 | 3-6 |
| LWHG-300Q | 20000 | 300 | 30.5 | 8-15 |
| LWHG-400Q | | 400 | 35.0 | 15-30 |

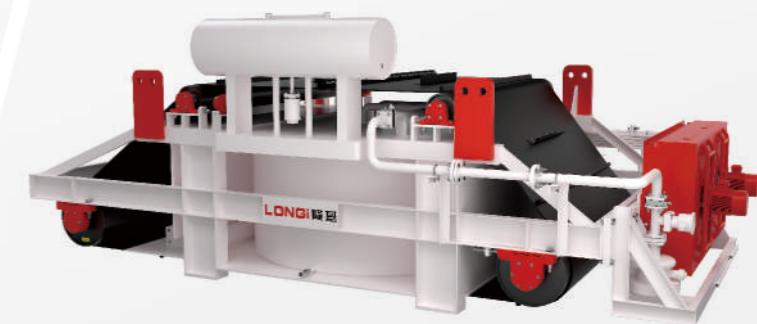
LARGE SIZE

| Model | Magnetic Intensity (Gs) | Feed Chamber Diameter (mm) | Excitation Power (Kw) | Processing Capacity (t/h) |
|-----------|-------------------------|----------------------------|-----------------------|---------------------------|
| LWHG-500 | | 500 | 26.0 | 20-40 |
| LWHG-750 | 18000 | 750 | 38.0 | 40-80 |
| LWHG-500Q | | 500 | 40.0 | 20-40 |
| LWHG-750Q | 20000 | 750 | 52.0 | 40-80 |

Applicable Operating Conditions

Particle size ≤ 1mm, magnetic impurity content ≤ 1% and moisture content ≤ 3%

※ The above technical parameters are for preliminary sizing only.



RCDG Positive and Negative Electrode Powder Separator (PNEPS)

Application

The RCDG Positive and Negative Electrode Powder Separator is specifically designed to address the characteristic differences between the positive and negative electrode powders in lithium batteries.

This powerful magnetic separator efficiently separates mixed electrode materials, enabling the classification and collection of positive and negative powders.

Technical Parameters

| Model | Magnetic Intensity (Gs) | Excitation Power (kw) | Total Drive Power (kw) | Processing Capacity (kg/h) | Outline Dimension (L X W X H mm) |
|-------------|-------------------------|-----------------------|------------------------|----------------------------|----------------------------------|
| RCDG-60-I | | ≤5.2 | ≤3 | 120-330 | 2556×1138×1643 |
| RCDG-60-II | 1000-18000 | ≤7 | ≤4 | 250-650 | 3366×1138×1643 |
| RCDG-60-III | | ≤8.5 | ≤5.5 | 400-1000 | 4167×1138×1643 |

※ The above technical parameters are for preliminary sizing only.

Features

- **Professional Magnetic Circuit Design**
The closed-loop magnetic circuit design allows the generation of a high-gradient magnetic field with low power consumption.
- **Wide Material Applicability**
The magnetic field strength is adjustable between 1,000 to 18,000 GS, and the pole tip gap in the working area is configurable, providing excellent adaptability to various materials.
- **Unique Separation Method**
The design minimizes contamination and material carryover, ensuring high separation purity.
- **High automation**
It can work continuously and stably, with minimal maintenance required for its components.

Oil-cooled Electromagnetic Separator

Application

Suitable for industries such as coal handling, power stations, chemicals, mining, and construction. It can withstand heavy dust and corrosive environments.

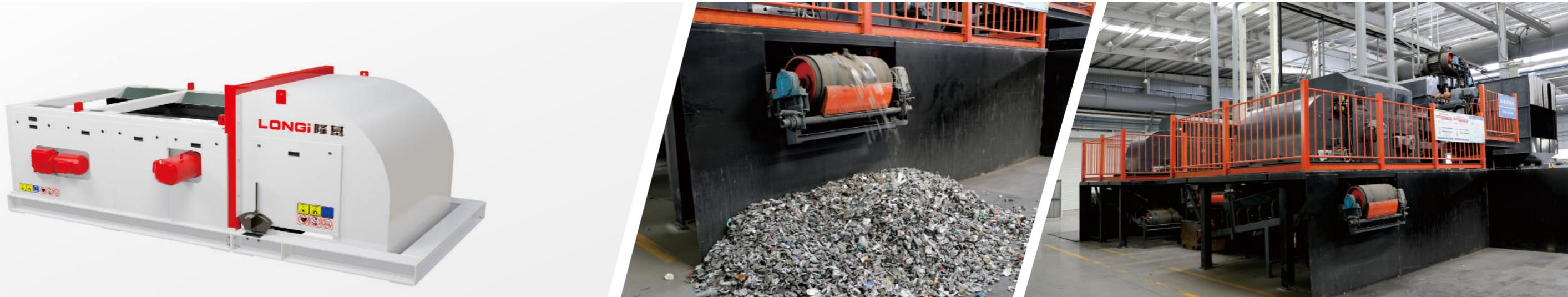
Technical Parameters

| Model | Applicable Belt Width mm | Cooling Style | Rated Suspension Height mT | Magnetic Intensity at RSH kW | Excitation Power kw | Outline Dimension (mm) | | | | Weight kg |
|---------|-----------------------------|---------------|-------------------------------|---------------------------------|------------------------|------------------------|------|-----|------|--------------|
| | | | | | | A | B | C | D | |
| RCDE-6 | 650 | Oil Cooling | 200 | 70 | — | 926 | 900 | 370 | 870 | 720 |
| RCDE-8 | 800 | Oil Cooling | 250 | 70 | — | 1133 | 1050 | 460 | 960 | 1290 |
| RCDE-10 | 1000 | Oil Cooling | 300 | 70 | — | 1333 | 1250 | 520 | 1020 | 2130 |
| RCDE-12 | 1200 | Oil Cooling | 350 | 70 | 0.55 | 1640 | 1850 | 740 | 1160 | 2850 |
| RCDE-14 | 1400 | Oil Cooling | 400 | 70 | 0.55 | 1660 | 1860 | 830 | 1170 | 3200 |
| RCDE-16 | 1600 | Oil Cooling | 450 | 70 | 0.55 | 1700 | 1860 | 920 | 1280 | 4380 |
| RCDF-6 | 650 | Oil Cooling | 200 | 70 | — | 2300 | 926 | 370 | 870 | 1300 |
| RCDF-8 | 800 | Oil Cooling | 250 | 70 | — | 2500 | 1133 | 460 | 960 | 1900 |
| RCDF-10 | 1000 | Oil Cooling | 300 | 70 | — | 2800 | 1333 | 520 | 1020 | 2800 |
| RCDF-12 | 1200 | Oil Cooling | 350 | 70 | 0.55 | 3250 | 2030 | 790 | 1210 | 4120 |
| RCDF-14 | 1400 | Oil Cooling | 400 | 70 | 0.55 | 3280 | 2240 | 840 | 1220 | 4860 |
| RCDF-16 | 1600 | Oil Cooling | 450 | 70 | 0.55 | 3600 | 2430 | 930 | 1390 | 6400 |

※ The above technical parameters are for preliminary sizing only.

Features

- High-quality cooling oil and an optimized oil circuit design ensure minimal temperature rise.
- Compact structure, lightweight, low noise, easy operation, and simple maintenance.



LECS Eddy Current Separator

Application

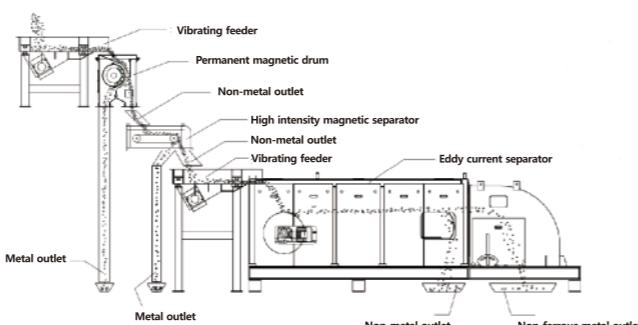
The LECS series Eddy Current Separator is specifically designed to handle complex material compositions. It effectively separates non-ferrous metals from other materials, achieving precise classification and sorting. Through years of dedicated R&D and practical application, LONGi has continuously optimized the equipment for improved safety, material adaptability, and separation efficiency. The separator accommodates a wide range of material sizes from 3 to 300 mm, achieving a separation efficiency exceeding 97%.

It is widely used in industries such as lithium battery recycling, vehicle dismantling, circuit board crushing, plastic purification, and glass purification for the recovery of copper and aluminum from bulk or sheet materials. Particularly in the lithium battery recycling sector, this separator achieves an exceptional separation efficiency of over 99%.

Working Principle

The Eddy Current Separator operates based on the principle that electrically conductive materials generate eddy currents when exposed to a high-frequency alternating magnetic field.

During operation, the magnetic drum generates a high-frequency alternating magnetic field on its surface. When metal particles enter the strong magnetic field, eddy currents are induced within the metal. These eddy currents generate an opposing magnetic field, creating a repulsive force between the metal and the magnetic drum. Simultaneously, propelled by its forward inertia, the metal particles are ejected, effectively separating the metal from non-conductive materials.



Features

Simple Installation and Operation

Easily integrates with both new and existing production lines, enabling automated non-ferrous metal sorting.

Flexible Operation during Commissioning

Quickly adapts to the material characteristics on-site, achieving optimal sorting performance.

Mature Product Line

Multiple models available to meet various processing capacity requirements.

Professional Solutions

Expert technical services and a complete set of equipment for supporting non-ferrous metal sorting systems.

Technical Parameters

| Model | Belt Drive (kw) | Magnetic Drum Drive (kw) | Max Belt Speed (m/s) | Processing Capacity (t/h) | Outline Dimension (L X W X H mm) |
|----------|-----------------|--------------------------|----------------------|---------------------------|----------------------------------|
| LECS-65 | 1.5 | 4 | 3 | 2-6 | 4440×1880×1510 |
| LECS-100 | 2.2 | 4 | 3 | 3-9 | 4440×2180×1510 |
| LECS-125 | 2.2 | 5.5 | 3 | 4-11 | 4440×2500×1510 |
| LECS-150 | 4.0 | 7.5 | 3 | 4.8-15 | 4440×2790×1510 |
| LECS-200 | 5.5 | 7.5 | 3 | 6-20 | 4440×3300×1510 |

※ The above technical parameters are for preliminary sizing only.



● Pipe Filter



● Semi-automatic Magnetic Filter



● Grate Magnet



● Auto Grate Magnet

Rare Earth Products

Rare Earth Rod

Rare earth rod is crafted using NdFeB permanent magnet material, designed for optimal magnetic circuit performance. The internal structure combines permanent magnets and ferromagnetic materials to generate a high-gradient, strong magnetic field on the rod's surface. As material flows over the rod, non-magnetic materials pass through freely. Magnetic impurities within the material are captured by the rod's strong magnetic field, achieving efficient separation. To accommodate varying magnetic separation requirements, these rods are available in three magnetic field strengths: 6000 GS, 8000 GS, and 12000 GS.

The rods can form single-layer or multi-layer grates, which are installed within material flow pipelines to effectively screen and separate the material. The grates are classified based on the iron discharge method: Manual discharge type and Automatic discharge type. Both grate types can be custom-engineered to meet specific client needs.

Grate Magnet

The Grate Magnet is typically installed at the initial stage of the magnetic separation process, providing protection for downstream precision separation equipment. Alternatively, it can be directly used in applications with moderate separation requirements.

These grates offer excellent material adaptability, efficiently processing both dry powders and wet slurry.

Applications





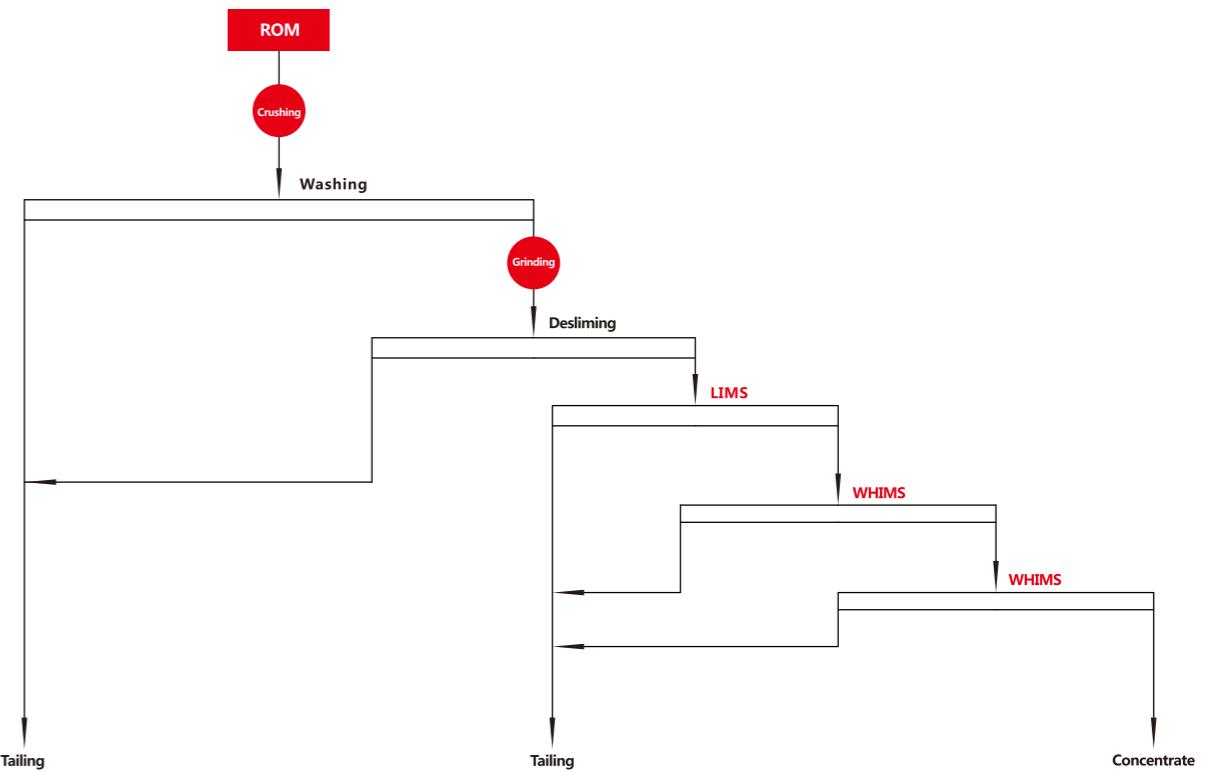
Silica Sand Purification

Example

The LGS series WHIMS have been widely used in silica sand processing plants in Guangdong, Anhui, Hunan, Hubei, Hebei, Shandong, etc. in China, as well as in Chile, South America, Europe and other regions overseas, with stable and reliable operation and playing a decisive role in the production of high-quality fine sand process.

The Industrial Application of the LGS Series

| Customer | Equipment | Quantity | Fe ₂ O ₃ % in Feed | Fe ₂ O ₃ % in Concentrate |
|---------------------------------|-------------|----------|--|---|
| Anhui Fengyang Dushi Mining | LIMS, WHIMS | 4 | 0.013 | 0.0073 |
| Anhui Feiqiang Yulin Mining | LIMS, WHIMS | 3 | 0.023 | 0.0097 |
| Anhui Area | LIMS, WHIMS | 66 | 0.014 | 0.008 |
| Guangdong Heyuan Jingxin Mining | LIMS, WHIMS | 2 | 0.024 | 0.0076 |
| Guangdong Fangyuan Mining | LIMS, WHIMS | 2 | 0.08 | 0.0079 |
| Guangdong HeyuanArea | LIMS, WHIMS | 26 | 0.026 | 0.008 |
| Hunan Cisheng Quartz | LIMS, WHIMS | 2 | 0.22 | 0.058 |
| Jiangxi Wubao Quartz | LIMS, WHIMS | 2 | 0.026 | 0.0077 |
| Hebei Lishi Mining | LIMS, WHIMS | 3 | 0.054 | 0.023 |





Feldspar Purification

Example

This process is for fine-grained ore recovery and tailings re-selection. It increases the economic efficiency of the processing plant and reduces the discharge of tailings. The fine-grained ore recovery makes the water recycling system faster. Tailings recovery can reach 70%.

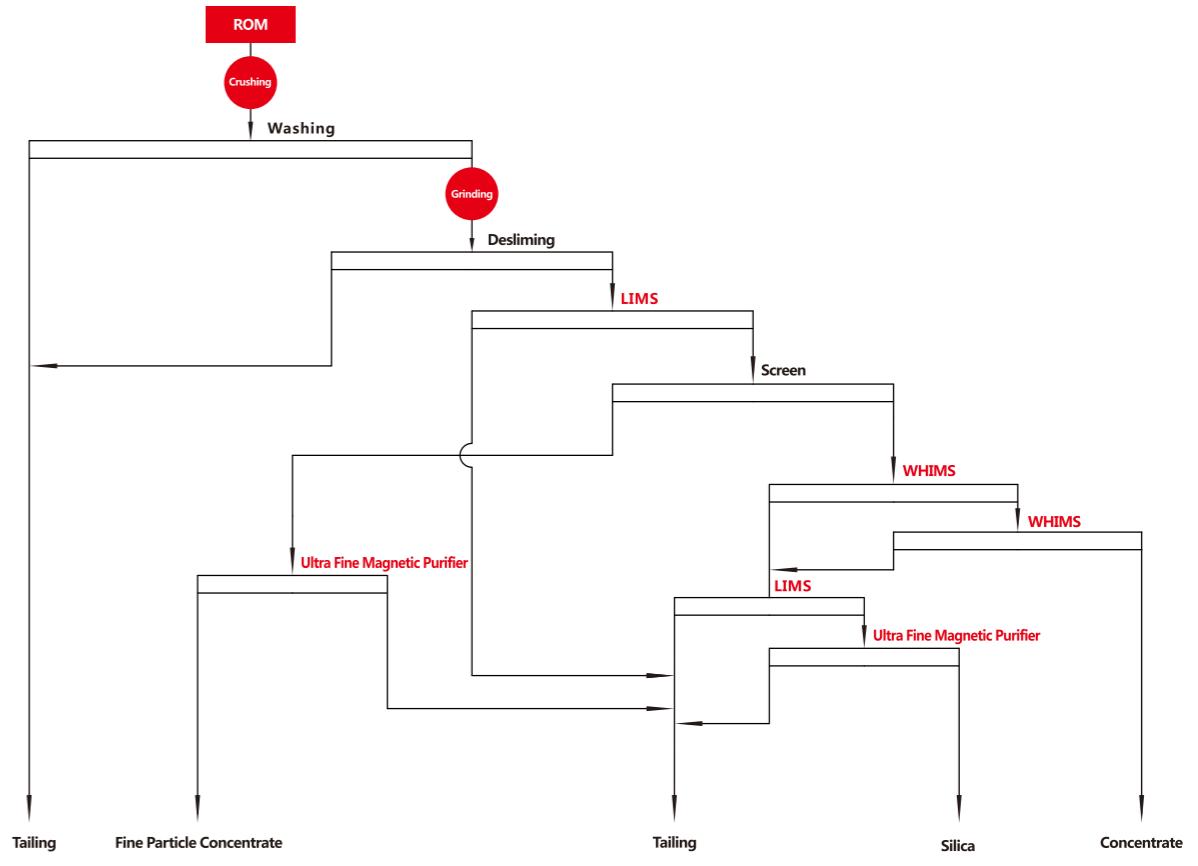
Burning Whiteness Experiments

The picture on the right will show a comparison of feldspar products after different types of processing.

The first row: From left to right, these samples are feldspar concentrates processed by LIMS, WHIMS, and Ultra fine Magnetic Purifier.

The second row: Fine particles recovery. Fine particles generally contain more iron impurities, which have a great impact on the quality of non-ferrous metal products. We therefore recommend the use of ultra-fine magnetic purifier to process these fine particles. The results shown in second row from left to right are the products processed with LIMS and ultra-fine magnetic purifier respectively.

The third row: Feldspar tailings recovery. This process is conducive to increasing profits and reducing tailings discharge. From left to right are the products processed by LIMS, WHIMS and ultra-fine magnetic purifier.

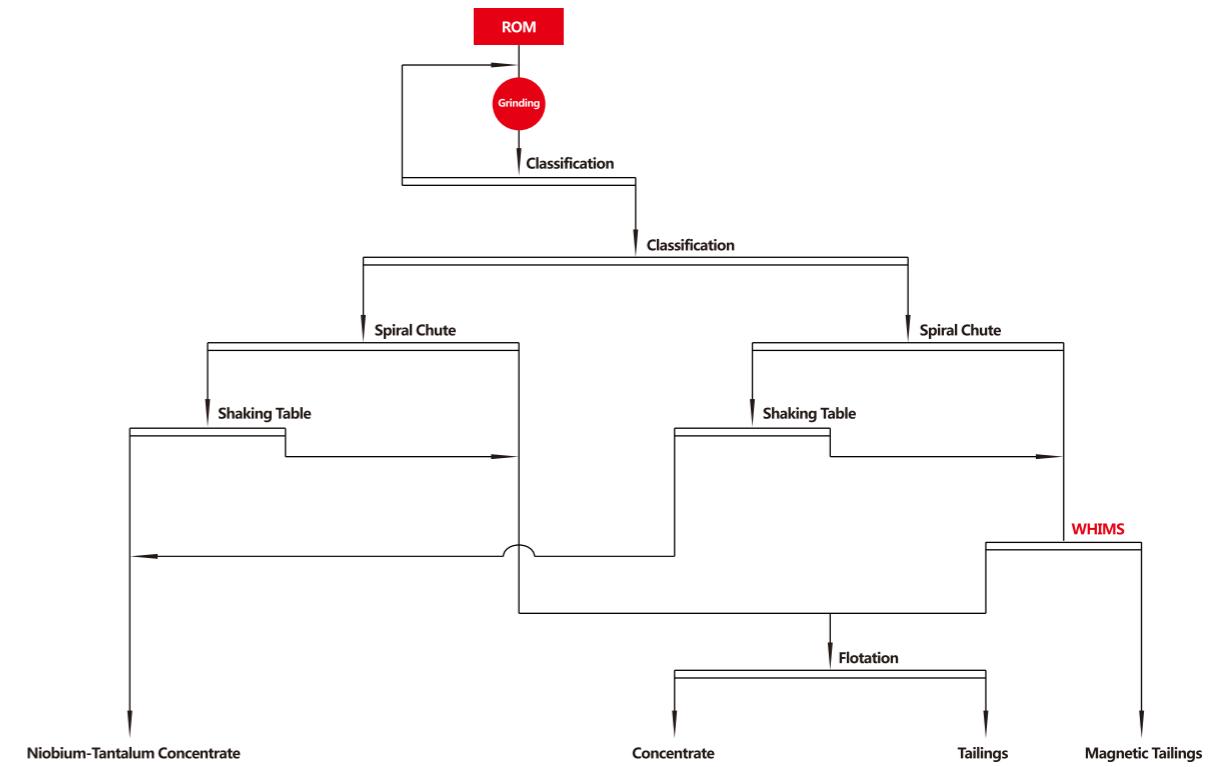




Spodumene Purification

Example

The LGS series WHIMS have been widely used in Spodumene and Lepidolite mines across Australia, China like Yunnan and Jiangxi province, and other regions. They play a crucial role in producing high-purity products by effective separation.





LPPC(XRF) Intelligent X-Ray Fluorescence Ore Sorter

Applications

Mining: Pre-concentration of non-ferrous metal ores, precious metal ores, and rare ores.

Environmental Protection: Used for non-ferrous metal recovery and separation of different metal grades.

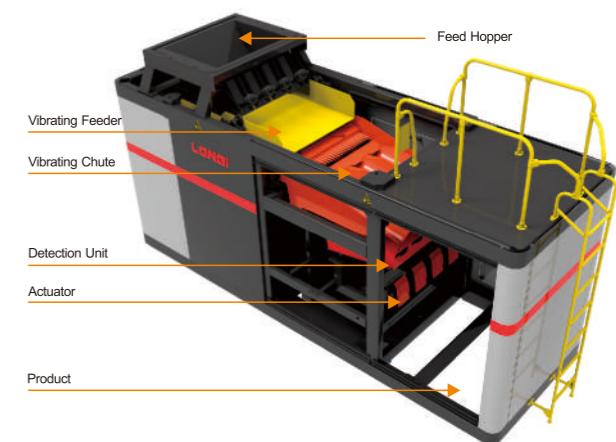
Features

- **High Precision Recognition**
Can detect and identify the concentration of useful elements in the ore, customizing sorting parameters according to user needs, improving economic efficiency.
- **Large Sorting Range:** Sorting can handle particles up to 300 mm, removing waste during the coarse crushing process and reducing the probability of waste entering the milling operation.
- **Fast Recognition Speed:** Compared to similar XRF products on the market, the LPPC sorter can collect spectra online, recognizing 40 ore spectra per second.

- **Centralized Control:** Multiple machines can be controlled from a single console, managing up to 4 sorters, making on-site operations easier.
- **Modular Design:** The modular design does not require on-site assembly, allowing the equipment to be installed as a complete unit.
- **Safety & Reliability:** High radiation protection levels ensure that radiation is close to the background level of air, posing no occupational health hazards to operators.

Product profile

- **Scope of Application:** New plant construction, existing plant upgrades, and re-processing of low-grade ores.
- **Applicable Stage:** Installed after primary crushing and before grinding mills to increase feed grade of ores.
- **Particle Size Range:** +40 mm to -300 mm



Technical Parameters

| Model | LPPC1-150 | LPPC1-150Pro | LPPC4-150 | LPPC4-150Pro | LPPC4-300 | LPPC4-300Pro |
|---|---------------|------------------|----------------|------------------|----------------|------------------|
| Sensor | Standard | High Performance | Standard | High Performance | Standard | High Performance |
| Chute Number | 1 | | 4 | | 4 | |
| Particle Size (mm) | +40-150 | | +40-150 | | +120-300 | |
| Processing Capacity (t/h) | 2-5 | | 20-30 | | 60-90 | |
| Sensor (Kw) | <1.5 | | <5.5 | | <12 | |
| Weight (kg) | 840 | | 4900 | | 14160 | |
| Outline Dimension (mm) (LxWxH) | 3001x904x1835 | | 5425x1786x2869 | | 7477x2768x3860 | |
| Control Console (kg) | / | | 110 | | 110 | |



LPNC(XRT) Series Intelligent X-Ray Fluorescence Ore Sorter

Applications

Mining: Pre-concentration of non-ferrous metal ores, precious metal ores, and rare ores.

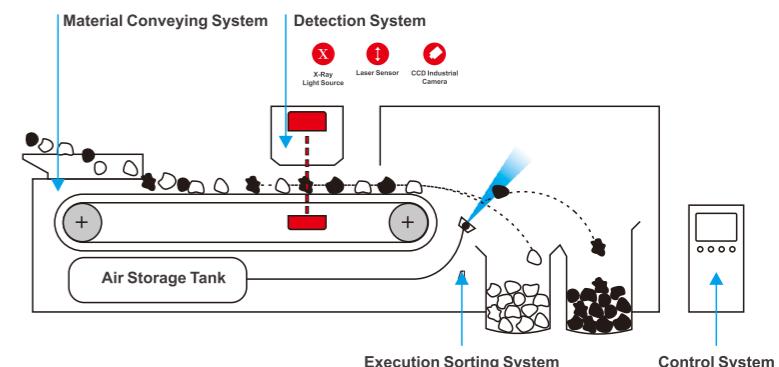
Environmental Protection: Used in non-ferrous metal recovery industry.

Features

- **Multidimensional Analysis:** X-ray imaging, CCD cameras, and laser-based image detection provide comprehensive material information for the intelligent control system.
- **New Intelligent Algorithm:** Uses an intelligent segmentation algorithm with a lightweight network model to precisely separate materials with higher density, improving processing capacity per unit belt width.
- **Dry Sorting Saves Water:** Low energy consumption, with sorting energy usage of 0.5 kW/t, and dry sorting that conserves water resources.
- **Intelligent Imaging Technology:** Uses big data image synthesis algorithms to model the material's physical form from multiple dimensions.
- **Real-time Prediction and Correction:** Compares and analyzes material characteristics to predict material properties and dynamically correct the algorithm model.
- **Safety & Reliability:** High radiation protection ensures that radiation levels are close to background air levels, posing no health hazards to operators.

Product profile

- **Scope of Application:** New plant construction, existing plant upgrades, and re-processing of low-grade ores.
- **Applicable Stage:** Installed after intermediate and fine crushing, before grinding mills, for pre-concentration and waste rejection of ores with appropriate particle size.
- **Particle Size Range:** +8 mm to -60 mm



Technical Parameters

| Model | LPNC06-60Y | LPNC12-60Y | LPNC16-60Y | LPNC22-60Y |
|-----------------------------------|----------------|-----------------|-----------------|-----------------|
| Effective Belt Width (mm) | 520 | 1000 | 1400 | 2000 |
| Particle Size (mm) | +8-60 | +8-60 | +8-60 | +8-60 |
| Processing Capacity (t/h) | 20-40 | 40-80 | 60-100 | 80-160 |
| Power (Kw) | <9.2 | <25.0 | <32.0 | <38.0 |
| Weight (Kg) | 3900 | 10742 | 13016 | 15787 |
| Outline Dimension (mm) (LxWxH) | 7066x1569x2370 | 11644x2252x2528 | 12378x2709x2743 | 12378x3309x2743 |
| Control Console (kg) | 270 | 270 | 270 | 270 |

Note: The feed ratio $d_{max} : d_{min}$ should be $\leq 3:1$.
Processing capacity listed above is for reference only, as different ores have varying densities and particle compositions.

Applications



◆ XINJIANG Copper Mine(coarse size)

This copper mine, part of the Shandong Zhaojin Mining Group, is located in Xinjiang's Tianshan Mountains. The Group employs 190 staff, with over 700 construction workers and 60+ technicians. The beneficiation plant processes 3,000 tons of ore daily, recovering copper from ore with a grade of 1% to 1.5%. The ore is mainly sandstone, with some rubble mixed in.

In 2018, the Group introduced 3 "LPPC4-150" separators for pre-concentration, removing coarse ore (+50-150mm). This process reduced tailings management costs, extended the storage facility's lifespan, and brought economic and social benefits.

| Particle Size mm | Product | Yield % | Grade % | Recovery Rate % |
|---------------------|-------------|---------|---------|-----------------|
| +50-150 (LPPC) | Concentrate | 67.50 | 1.584 | 98.00 |
| | Tailings | 32.50 | 0.068 | 2.00 |
| | Feed | 100.00 | 1.091 | 100.00 |

◆ XINJIANG Copper-Zinc Polymetallic Mine(Full Particle Size)

This copper-zinc polymetallic mine, operated by Zhongse Dike Mineral Resources Exploration Co., Ltd., is located in Hami Prefecture, Xinjiang. The company focuses on copper and copper-zinc resource development, with two beneficiation lines processing 3,000 tons of ore daily, or 600,000 tons annually. Due to resource depletion, the

company introduced 2 "LPPC4-150" separators and 1 "LPNC22-60Y" separator from 2019 to 2021 for pre-treating low-grade ores (15-180mm). This pre-concentration process has increased available resources and enhanced economic and social benefits.

| Product | Yield % | Grade % | | Recovery Rate % | | Upgrading Ratio | |
|-------------|---------|---------|-------|-----------------|--------|-----------------|------|
| | | Cu | Zn | Cu | Zn | Cu | Zn |
| Concentrate | 18.78 | 0.637 | 0.965 | 70.37 | 70.79 | | |
| Tailings | 81.22 | 0.062 | 0.092 | 29.63 | 29.21 | 3.75 | 3.77 |
| Feed | 100.00 | 0.170 | 0.256 | 100.00 | 100.00 | | |

◆ Metal Research Institute in ZHENGZHOU-Metal Recovery

In November 2023, a project focused on recycling waste metals, primarily tire and door/window aluminum. The process involved basic crushing and grading, followed by impurity removal using the LPNC Separator (H Series).

The material was then sorted by product type with the LPPC Separator (Pro Series), achieving a recovery rate of over 92%. The process, after successful testing, proved effective for various metal recycling enterprises, optimizing product structures, increasing industrial value, and boosting enterprise benefits.



◆ JILIN Iron Ore Mine-Iron Ore Purification

This iron mine, part of Tonghua Iron and Steel Group, is located in Baishan District, Jilin Province. The mine mainly extracts hematite, magnetite, siderite, and mixed ores, with a daily processing capacity of 1,000 tons. The company currently employs 120 staff.

In 2021, the company introduced the LPNC22-80Y Separator to treat +10-50mm ore with silicon content exceeding 12%. The separator reduced silicon levels to below 5%, improving ore quality and significantly boosting the enterprise's economic benefits.



| Product | Weight (kg) | Yield (%) | Remark |
|----------------------|------------------------|-----------|--------|
| Concentrate Sampling | Concentrate | 503.97 | 98.32 |
| | Concentrate Impurities | 8.61 | 1.68 |
| | Total | 512.58 | 100.00 |
| Tailings Sampling | Mineral Intergrowth | 188.89 | 33.95 |
| | Waste Rock | 367.49 | 66.05 |
| | Total | 556.38 | 100.00 |
| Feed | Feed | 417.94 | 92.37 |
| | Dilution Rock | 34.52 | 7.63 |
| | Total | 452.46 | 100.00 |

◆ Copper Mine in Inner MONGOLIA

This copper mine, part of China Nonferrous Metals Group in Chifeng City, Inner Mongolia, processes 1,600 tons of copper ore daily.

In 2019, the company introduced the LPNC12-80Y Separator for +15-60mm ore, effectively removing waste rock, reducing beneficiation costs, and significantly improving economic benefits.



| Particle Size (mm) | Product | Yield (%) | Grade (%) | Recovery Rate (%) |
|--------------------|-------------|-----------|-----------|-------------------|
| +15-60 (LPNC) | Concentrate | 68.70 | 1.487 | 97.81 |
| | Tailings | 31.30 | 0.073 | 2.19 |
| | Feed | 100.00 | 1.044 | 100.00 |

◆ YUNNAN Mine-Low-grade Oxidized Lead-Zinc

This project, part of a local government initiative for solid waste utilization, recovered valuable minerals from waste and processed the remaining materials into sand and gravel.

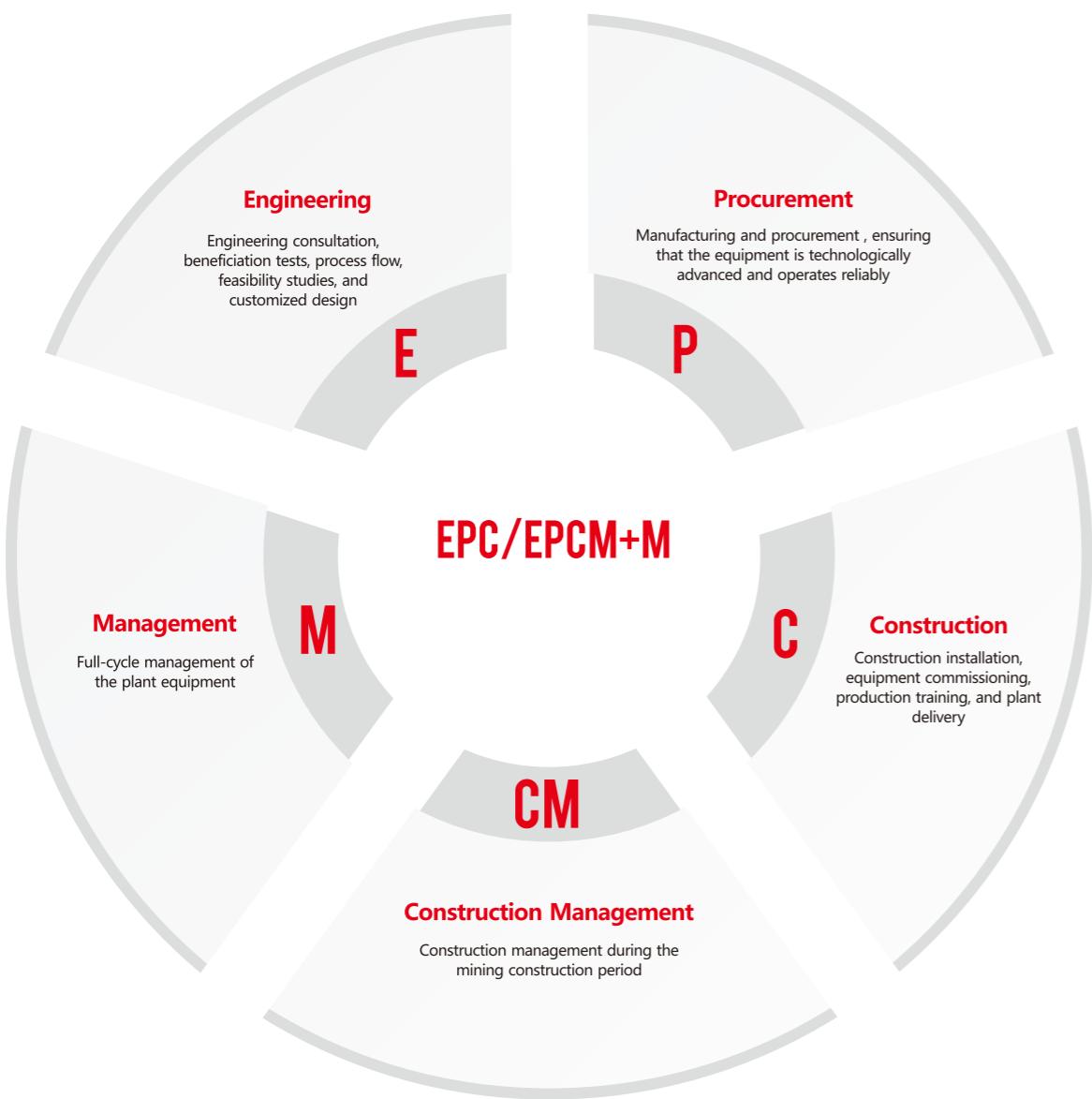
Completed in October 2023, the project incorporated ore sorting into the sand-making process, diversifying products and optimizing industrial structure. The LPPC + LPNC sorting process enabled simultaneous separation of +50-150mm and +10-50mm minerals, increasing high-grade mineral yield, reducing powdery waste, and enhancing material value and enterprise benefits.



| Particle Size (mm) | Product | Yield (%) | Grade (%) | Pb | Zn | Pb | Zn |
|------------------------|-------------|-----------|-----------|-------|--------|--------|----|
| +10-150 (LPPC+LPNC) | Concentrate | 32.40 | 2.52 | 15.32 | 78.51 | 79.93 | |
| | Tailings | 67.60 | 0.34 | 1.85 | 21.49 | 20.07 | |
| | Feed | 100.00 | 1.04 | 6.21 | 100.00 | 100.00 | |

EPC/EPCM+M

LONGi has established a provincial-level magnetic separation and physical sorting engineering research center, with 9 cooperative laboratories across 6 countries. It partners with top universities like Lanzhou University and Northeastern University to create advanced R&D teams. The company offers comprehensive beneficiation solutions of EPCM, ensuring optimal performance and maximum customer benefit.



Services

LONGi is dedicated to delivering exceptional quality and service, which we consider the foundation of our company, with technology and production being the driving forces behind our success.

Local-Based Service with Warehouse in Perth

We offer a customer-centric approach that focuses on continuous improvement and proactive engagement.

Our commitment includes:

- Customised Client Service Files tailored to your specific needs.
- Proactive Customer Engagement: We maintain regular contact through phone follow-ups and in-person site visits to ensure ongoing satisfaction.
- Customer Return Site Visits to ensure quality and meet your evolving needs.



Prompt Response
Within 24 Hours