LONGi®
Experts in Magnetic Technology

Reliability Value-added Convenience

LJWH Series

SUPERCONDUCTING MAGNETIC SEPARATOR FOR NON-METALLIC MINERALS

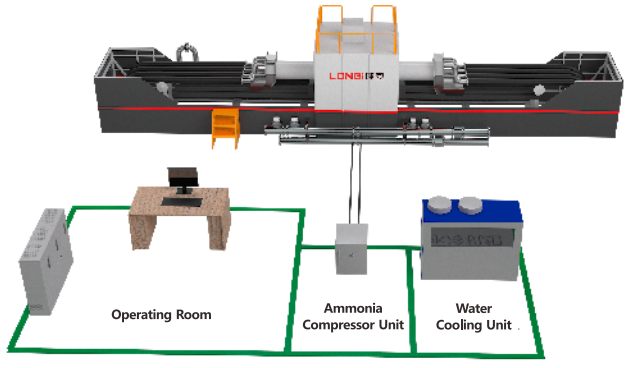
Product Overview

Superconducting magnetic separation is an innovative physical magnetic separation method developed by applying superconducting technology to the magnetic separation field. It is suitable for impurity removal and purification of non-metallic minerals, such as kaolin, bauxite, red mud, lepidolite and other minerals.

Equipment Principle

Superconducting wires made of Nb-Ti alloy and other superconducting materials are wound into special coils and placed in a well-sealed low-temperature dewar. By adopting liquid helium immersion cooling or conduction cooling, the operating temperature of the superconducting coil is maintained at approximately -268.8°C.

At this temperature, the superconducting coil has zero electrical resistance and enters the superconducting state. It can carry a large current without generating heat, thereby producing a high background magnetic field of over 2T. The GM refrigerator (rated power: 7.5 kW) only needs to keep the superconducting magnet in such a low-temperature condition. Compared with conventional resistive magnets, it saves more than 90% of power consumption, thoroughly solving the high energy consumption problem of conventional magnetic separation operations.



LONGi®
Experts in Magnetic Technology

Reliability Value-added Convenience

Technical Features

- **Magnetic Field Intensity**
  The high magnetic field can reach above 5T, 3 to 5 times that of conventional magnetic separators.

- **Operating Cost**
  Excitation power consumption<15kW/h. Compared with traditional magnetic separators, the energy saving rate exceeds 90%.

- **High Degree of Automation**
  Equipped with PLC automatic control and equipment condition monitoring functions to ensure long-term and reliable operation, realizing unattended operation.

- **High Separation Precision**
  It can capture fine weakly magnetic particles smaller than 30 μm that cannot be recovered by conventional magnetic separators. It improves the enrichment ratio of magnetic materials, reduces chemical reagent consumption and tailings discharge, and enhances resource utilization efficiency.

- **Low Maintenance Cost**
  The maintenance cycle of helium refrigerant is 10,000 hours; the service/maintenance cycle of helium compressors and water cooling units is 25,000 hours.

Equipment Parameters

LJWH-4-600S1	6/102	Customization available on request.
Magnet Type	Horizontal	--
Background Magnetic Field Strength (T)	0-6	Yes
Coil Cooling Method	Liquid Helium Immersion Cooling	Yes. Conduction cooling is available as an option.
Rated Excitation Power (kW/h)	15	–
Magnet Inner Diameter (mm)	102	Yes
Separation Chamber Caliber (mm)	Φ88	Yes
Rated Power of Reciprocating Motor (kW/h)	0.55	–
Type of High-gradient Medium	Steel Wool, Steel Mesh	Yes
Feed Particle Size Range (mm)	<0.075	–
Slurry Processing Capacity (m^3/h)	≥0.2	Yes
Overall Dimensions: L×W×H	4400x1100x2200	–

LONGi MAGNET CO., LTD.
LONGi SUPERCONDUCTING (WUXI) INTELLIGENT TECHNOLOGY CO., LTD.

Address: No. 999, Dongsheng Road, Anzhen Sub-district, Xishan District, Wuxi
CityTel: 15841397655 **E-mail:** longi_superconducting@ljmagnet.com
Website: www.jmagnet.com