



# COAL SLIME ROTARY DRYER

**50<sup>+</sup> Years**  
*Of experience*



# ABOUT US

Kerone Engineering Solutions Ltd is a global leader in advanced industrial heating, drying, cooling & end to end process engineering solutions. With over five decades of proven expertise, we specialize in designing, manufacturing, and delivering highly customized, cutting-edge systems tailored to the evolving needs of industries worldwide.

Our commitment to engineering excellence, sustainability, digitalization, and technological innovation has positioned us as a trusted partner for businesses across multiple sectors. By integrating Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) technologies into our systems, Kerone ensures smarter automation, real-time monitoring, predictive maintenance, and data-driven process optimization—empowering our clients to achieve greater productivity, efficiency, and reliability.



**50+**

Years of Experience



**10,000+**

Satisfied Clients



**500+**

Employee



**100+**

Experts



**50+**

Global Presence



**50+ Years Manufacturing Excellence**



**Great Sale Support**



**Highly Customized Product**



**Adherence to Standards**



**Sound Infrastructure**



**Team of experts Delivering Quality**



**Timely Delivery**



**Cost Effective Solutions**



# INDUSTRIES WE SERVE

- ✓ Food Processing & Agro-Processing
- ✓ Chemicals & Petrochemicals
- ✓ Pharmaceuticals
- ✓ Textiles, Automotive & Aerospace
- ✓ Paper & Packaging
- ✓ Ceramics & Glass
- ✓ Rubber & Plastics
- ✓ Environmental & Waste Management
- ✓ Oil, Gas & Steel Industries



- ✓ Industry Expertise – Over 50 years of global engineering leadership.
- ✓ Custom Solutions – Tailored engineering that meets unique industrial requirements.
- ✓ Global Reach – Trusted by industries across continents with proven reliability.
- ✓ Digital & Smart Systems – AI/ML-powered automation, IoT-based monitoring, and predictive insights.
- ✓ Cutting-Edge Technology – Continuous innovation in heating, drying, and advanced processing.
- ✓ Energy Efficiency – AI-optimized designs for lower energy consumption and sustainability.

## QUALITY & COMPLIANCE

At Kerone, quality and compliance are non-negotiable. All our solutions are engineered in adherence to international standards and industry best practices, ensuring maximum safety, durability, reliability, and efficiency. With integrated digital technologies, we enable smarter quality control and compliance tracking across all operations.





## Coal Slime Rotary Dryers

A Coal Slime Rotary Dryer is a specialized industrial machine engineered to process coal slime — a high-moisture byproduct of coal production and processing that primarily consists of coal chunks, fines, and water. With moisture content typically exceeding 30%, coal slime is difficult to use directly in industrial applications. The rotary dryer addresses this by evaporating moisture using hot air or other heating methods, significantly reducing moisture content and enhancing the material's value for downstream use such as combustion or brick production.

The machine features a horizontal rotating cylindrical shell welded with various types of lifting plates at different angles from front to back. The drum is heated by hot air or gas flowing either in parallel or countercurrent direction, while the material tumbles and agitates as it moves through the drum. It is composed of key components including the dryer shell, riding ring, girth gear, transmission unit, and hood cover — all working together to ensure continuous, efficient drying of viscous and high-moisture slurry-type materials.

### Key Features

- **Anti-Wall-Sticking System**  
Internally designed disaggregation mechanisms, active rake-type wing plates, and cleaning devices automatically crush, clean, and distribute wet materials during drying, solving the common adhesion problem on drum inner walls.
- **High Heat Transfer Efficiency**  
The machine delivers a high volume heat transfer coefficient of 300–450 kcal/m<sup>3</sup>·°C·h — approximately twice that of ordinary rotary dryers — ensuring superior thermal performance at lower operating costs.

- **Stepless Speed Control**

The drum speed can be steplessly adjusted, allowing the machine to adapt to different feed materials and meet varying product moisture requirements by tuning both drum speed and inlet air temperature.

- **Multi-Section Lifting Plate Design**

Different drying sections — including a guiding section, cleaning section, shoveling section, and discharging section — are arranged along the drum axis, each with specific plate structures that control particle size and optimize heat exchange at every stage.

- **Robust Overload Resistance**

The equipment operates reliably with strong overload resistance, using a swivel-type trunnion structure to reduce wear and power consumption, and a dedicated stopper wheel to minimize horizontal thrust from inclined operation.

### Advantages

- **High Processing Capacity**

Handles large volumes of wet coal with low drying costs and minimal wear and tear during continuous operation.

- **Moisture Reduction to Under 12%**

Dried slime can reduce moisture in a single pass to less than 12%, making it directly usable as fuel.

- **Improved Calorific Value**

Reducing moisture enhances combustion efficiency and the overall energy value of the coal, reducing energy waste and environmental pollution.

- **Extended Residence Time**

A special delay discharging device prolongs material residence in the drum, improving the heat exchange time between materials and hot air for a better drying result.

## Applications

Industry	Description
Coal Mining	Drying raw coal slime, washed coal, tail coal, and middling coal to reduce moisture and improve fuel quality
Power Generation	Processing dried coal slime as direct combustion fuel in coal-fired boilers and power plants
Cement & Construction	Drying blast furnace slag, clay, limestone, and quartz stone for use in cement and building material production
Metallurgy	Drying metal and non-metal ore concentrates, magnetic separation tailings, and flotation residues
Chemical Industry	Processing non-thermal-sensitive chemical materials requiring moisture removal before further processing
Briquette Manufacturing	Preparing dried coal slime for compression into fuel briquettes for heating, cooking, or industrial use
Gasification Plants	Conditioning coal slime for gasification to produce syngas used as industrial feedstock for chemicals and fertilizers



## Technical Specifications

Parameter	Specification Range	Description
Drum Diameter	Φ1.2 m – Φ4.0 m	Determines processing capacity; larger diameter suits higher throughput operations
Drum Length	6 m – 40 m	Longer drums provide extended drying time and better moisture reduction
Drum Rotation Speed	3 – 8 rpm (steplessly adjustable)	Variable speed allows adaptation to different feed materials and moisture targets
Inlet Air Temperature	700°C – 900°C	High-temperature hot gas from the furnace drives rapid initial moisture evaporation
Final Moisture Content	< 12% – 15%	Target output moisture enabling direct use as fuel or for further processing
Processing Capacity	5 t/h – 100+ t/h	Scalable throughput depending on drum dimensions and system configuration
Drive Power	5.5 kW – 95 kW	Motor power scales with drum size and material load requirements



# THANK YOU

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