



50⁺ Years
Of experience

COAL PALM SLAG ROTARY DRYER



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 Palm Slag Rotary Dryer

The Coal Palm Slag Rotary Dryer is a standard industrial drying machine primarily used for heat treatment and high-humidity material drying. It operates by using thermal energy — generated from burning coal — to evaporate moisture trapped within the material, effectively reducing its water content to usable levels. The machine is purpose-built to handle challenging biomass and industrial byproducts such as palm fiber, palm slag, coal slime, and other sticky or high-moisture residues that conventional dryers struggle to process efficiently. Its rotating drum design ensures continuous, uniform contact between hot air and the material, producing consistently dried output at scale.

Inside the drum, the inner wall is equipped with copy boards that scatter and lift the material, increasing the contact surface between it and the airflow, which improves the drying rate and promotes smooth advancement of the material through the cylinder. The system integrates seamlessly with ancillary equipment — including feeders, belt conveyors, hot blast stoves, dust collectors, and cyclone separators — forming a complete, automated drying production line. Its robust build and adaptable design make it a reliable choice for palm-based agro-industrial operations and coal processing facilities alike.

Key Features

- **Rotating Drum Design**
The drying machine uses a rotary metal drum set at an angle of about 3–5 degrees, rotating at a speed of 2–8 RPM, ensuring material is consistently tumbled and exposed to hot airflow.

- **Multi-Stage Drying Process**

The machine adopts a low-temperature four-stage drying process to ensure the quality of the dried material remains unchanged, reducing moisture content to below 13% without affecting the chemical composition.

- **Anti-Sticking Inner Mechanism**

Internally designed disaggregation mechanisms, active rake-type wing plates, cleaning devices, and crushing/disintegrating devices automatically crush, clean, and distribute wet materials — solving the wall-sticking problem common with sticky palm slag and coal slime.

- **Concurrent Hot Airflow System**

The dryer uses concurrent airflow for heating, with drying flue gas and wet material entering from the same side, making full use of high-temperature gas for strong evaporation intensity while maintaining efficiency at the outlet end.

Advantages

- **Low Fuel Cost**

Coal is relatively cheap and widely available as a primary fuel, making operating costs significantly lower compared to other energy sources.

- **High Processing Capacity**

Single machine capacity ranges from 0.4 to 103 t/h, making it well-suited for large-scale industrial production lines.

- **Superior Heat Efficiency**

It has a high volume heat transfer coefficient of 300–450 kcal/m³·°C·h, which is twice that of ordinary rotary dryers.

- **Environmentally Responsible**

Optimized lifting boards and heat conduction effectively eliminate material sticking on inner walls, while dust collection systems capture fine particles before gas discharge.

Applications

Industry	Description
Palm Oil Processing	Drying palm fiber, palm kernel slag, and empty fruit bunches (EFBs) for use as biomass fuel or animal feed
Coal & Mining	Reducing moisture content of raw coal, coal slime, and lignite to improve calorific value and combustion efficiency
Cement & Building Materials	Drying slag, clay, limestone, and fly ash used as raw materials or additives in cement production
Metallurgy & Smelting	Processing blast furnace slag and furnace slag for use in road construction, soil improvement, or concrete additives
Chemical Industry	Drying chemical powders, phosphates, and industrial by-products requiring precise moisture control
Fertilizer & Agriculture	Drying organic waste, cow dung, and biomass residues for organic fertilizer manufacturing
Environmental & Waste Management	Treating sludge, municipal waste, and industrial residues to reduce volume and enable safe disposal



Technical Specifications

Parameter	Specification Range	Description
Processing Capacity	0.4 – 103 t/h	Single-machine throughput for continuous production
Drum Inclination Angle	3° – 5°	Slight tilt enables gravity-assisted material flow through the cylinder
Drum Rotation Speed	2 – 8 RPM	Steplessly adjustable for different material types and moisture levels
Inlet Hot Air Temperature	300°C – 800°C	Varies by drying stage; high-temp zones handle bulk moisture removal
Initial Moisture Content	25% – 75%	Intake range for palm slag, coal slime, and similar high-humidity feeds
Heat Transfer Coefficient	300 – 450 kcal/m ³ ·°C·h	Double the efficiency of standard rotary dryers
Heat Source Options	Coal / Biomass / Gas / Diesel	Flexible fuel compatibility for diverse site requirements
Control System	PLC / Automatic	Monitors temperature, airflow, drum speed, and combustion state in real time



THANK YOU

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