



50⁺ Years
Of experience

PADDLE STIRRING DRUM 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.





Powered by AI/ML & IoT

Paddle Stirring Drum Rotary Dryer

The Paddle Stirring Drum Rotary Dryer is a heavy-duty industrial drying machine designed to handle wet, sticky, and paste-like materials that conventional dryers struggle to process. It combines a rotating cylindrical drum with internal paddle or blade assemblies that continuously agitate, lift, and tumble the material as it travels through the heated chamber. This dual-action mechanism — rotation plus mechanical stirring — ensures uniform heat distribution and prevents material from clumping or adhering to the drum walls, making it highly effective for thermally sensitive or cohesive substances.

Built for continuous, large-scale operations, this machine is engineered with robust structural components capable of withstanding harsh industrial environments. Heat can be supplied through direct hot air, steam, or indirect heating systems, depending on the material's sensitivity. The paddles are strategically angled to simultaneously stir the product and advance it forward toward the discharge outlet, allowing for precise control over residence time and final moisture content. Its sealed design minimizes dust emission and heat loss, making it both energy-efficient and environmentally compliant.

Key Features

- **Dual-Action Mechanism**
Combines drum rotation with internal paddle stirring for superior mixing and drying uniformity — no dead zones.
- **Flexible Heating Modes**
Supports direct (hot gas) and indirect (steam/thermal oil) heating, adaptable to heat-sensitive or combustible materials.

- **Adjustable Paddle Angle**
Paddle pitch can be customized to control material flow speed and residence time inside the drum.
- **Sealed & Dust-Tight Design**
Enclosed construction reduces dust emissions, odor leakage, and heat loss — meeting environmental standards.
- **High Thermal Efficiency**
Intimate contact between paddles, material, and heated surface maximizes heat transfer with lower energy consumption.
- **Heavy-Duty Construction**
Built with wear-resistant alloy steel, suitable for abrasive, corrosive, or high-temperature materials.

Advantages

- **Superior Moisture Removal**
Paddle stirring ensures every particle gets direct exposure to heat, achieving consistently low final moisture levels — even in dense or sticky materials that trap water internally.
- **Handles Difficult Materials**
Specifically engineered for wet, sticky, paste-like, and lumpy materials that jam or clog conventional rotary or belt dryers — making it the go-to solution for sludge, cake-form solids, and viscous feeds.
- **Gentle on Product Integrity**
Despite aggressive moisture removal, the paddle motion is smooth and controlled — minimizing particle breakage, preserving granule size, and protecting active ingredients in pharmaceutical or food-grade materials.
- **Compatible with Waste Heat Recovery**
The exhaust hot air stream can be captured and recycled back into the system through heat exchangers — further reducing energy consumption and improving sustainability metrics.

Applications

Industry	Description
Chemical	Drying of fertilizers, pigments, salts, and chemical intermediates
Food Processing	Dehydration of distillers' grains, soybean residue, starch, and food waste
Pharmaceutical	Gentle drying of active compounds and granules requiring precise temperature control
Mining & Minerals	Drying of mineral concentrates, clay, kaolin, and metal ores
Waste Management	Sludge drying from municipal and industrial wastewater treatment plants
Agriculture	Drying of organic compost, animal feed, and biomass materials
Paper & Pulp	Moisture removal from paper sludge and cellulose-based residues
Plastics & Rubber	Pre-drying of polymer pellets, rubber crumbs, and synthetic materials



Technical Specifications

Parameter	Specification Range	Description
Drum Diameter	0.6 m – 3.5 m	Determines throughput capacity; larger diameter = higher volume
Drum Length	4 m – 30 m	Controls residence time; longer drum = extended drying
Drum Rotation Speed	3 – 15 RPM	Adjustable speed controls material tumbling intensity
Inlet Temperature	150°C – 800°C	Hot gas/air inlet temperature depending on material type
Outlet Temperature	60°C – 120°C	Exit temperature of dried material
Evaporation Capacity	50 – 20,000 kg/hr	Amount of moisture removed per hour
Final Moisture Content	0.5% – 15%	Target residual moisture after drying
Drive Power	5.5 kW – 250 kW	Motor power varies with drum size and material load
Thermal Efficiency	60% – 85%	Higher than standard rotary dryers due to paddle contact



THANK YOU

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