



50⁺ Years
Of experience

TRAY DRYER



ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

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.





Tray Dryer

A tray dryer is a batch-type drying equipment widely used in pharmaceutical, chemical, food processing, and agricultural industries for removing moisture from wet materials. The machine consists of a rectangular insulated chamber containing multiple trays or shelves arranged in a tier system, where wet materials are spread evenly for uniform drying. Hot air is circulated through the chamber using fans and heaters, typically flowing horizontally across the trays to facilitate moisture evaporation. The dried product is collected once the desired moisture content is achieved, making it ideal for drying powders, granules, crystals, slices, and other solid materials that require gentle, controlled drying conditions.

The key advantages of tray dryers include their versatility in handling various materials, ease of operation and maintenance, and cost-effectiveness for small to medium-scale production. Modern tray dryers feature temperature controllers, timers, and adjustable air circulation systems that allow precise control over drying parameters, ensuring product quality and consistency. The modular tray design enables easy loading and unloading while preventing cross-contamination between batches. However, tray dryers have limitations such as longer drying times compared to continuous dryers, higher labor requirements for loading and unloading, and non-uniform drying in some cases if air distribution is not optimized. Despite these drawbacks, tray dryers remain popular due to their simplicity, flexibility, and suitability for heat-sensitive materials requiring controlled drying environments.

Key Features

- **Multi-Tray Configuration**
Equipped with multiple removable trays arranged in tiers, allowing simultaneous drying of large batches with efficient space utilization.
- **Temperature Control**
Integrated with precise temperature controllers and indicators to maintain optimal drying conditions and prevent material degradation.
- **Insulated Chamber**
Double-walled construction with high-quality insulation minimizes heat loss and improves energy efficiency during operation.
- **Hot Air Circulation System**
Features powerful fans and heating elements that ensure uniform hot air distribution across all trays for consistent drying results.

Advantages

- **Cost-Effective Operation**
Low initial investment and minimal operating costs make it economical for small to medium-scale production.
- **Versatile Material Handling**
Can dry a wide range of materials including powders, granules, crystals, pastes, slices, and heat-sensitive products.
- **Precise Control**
Adjustable temperature, airflow, and timing parameters enable customized drying conditions for different products.
- **Batch Flexibility**
Allows processing of different materials in separate batches without cross-contamination risks.
- **Easy Maintenance**
Simple design with accessible components makes cleaning, servicing, and troubleshooting straightforward.

Applications

Application	Description
Fruits, vegetables, spices, nuts, herbs	Dehydrating food items to extend shelf life and preserve flavor
Dyes, pigments, catalysts, fine chemicals	Eliminating moisture from chemical compounds for stability
Seeds, grains, tea leaves, medicinal plants	Reducing moisture content to prevent spoilage during storage
Clay products, tiles, ceramic goods	Pre-firing drying to prevent cracking and defects
Face masks, talcum powder, herbal formulations	Moisture removal from powdered cosmetic ingredients
Plastic pellets, resin beads, polymer granules	Pre-drying materials before molding or extrusion



Technical Specifications

Parameter	Specification Range	Description
Tray Size	450 x 600 mm to 1000 x 1200 mm	Standard dimensions of individual drying trays
Number of Trays	12 to 96 trays	Quantity of trays based on chamber capacity
Temperature Range	50°C to 150°C	Operating temperature for drying process
Temperature Accuracy	±2°C to ±5°C	Precision of temperature control system
Drying Capacity	25 kg to 500 kg per batch	Material handling capacity per drying cycle
Air Circulation	Horizontal / Vertical	Direction of hot air flow through chamber
Power Consumption	6 kW to 72 kW	Electrical power requirement for operation
Loading Density	5 to 15 kg/m ²	Material load per tray surface area
Heat Input	10,000 to 150,000 kcal/hr	Thermal energy supplied to the system
Door Type	Single / Double door	Access configuration for loading/unloading



THANK YOU

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