



ROTARY TUBE FURNACE 1400°C -TT- RTF-40-1400

The Rotary Tube Furnace 1400°C – TT-RTF-40-1400 is engineered for advanced material processing, featuring an integrated heating system, automatic rotation, and a tiltable furnace body. The tube rotates 360° with adjustable speed to deliver uniform temperature distribution, while the tilting mechanism (up to 15°) allows easy material loading and unloading, making it highly efficient for laboratory and industrial applications.

This model (TT-RTF-40-1400) is equipped with a $\Phi 60 \times 1000$ alumina tube and a 300 mm heating zone. It supports continuous operation at 1100 °C and reaches a maximum temperature of 1200 °C. Powered by 220 V/3 kW (with a 110 V option available), the furnace utilizes high-performance silicon carbide (SiC) rod heaters and an S-type thermocouple for accurate temperature control and durability, ensuring reliable performance for high-temperature research and production needs.

APPLICATIONS

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- **Advanced Ceramic Materials** – Enables sintering, crystallization, and thermal treatment of advanced ceramics at high temperatures. Ensures structural integrity, uniform density, and thermal resistance for industrial and research applications.

- **Nanomaterials Research** – Provides precise thermal processing for nanostructures and composite materials. Supports R&D in functional nanomaterials used in electronics, catalysis, and next-generation energy storage.
- **Semiconductor Materials** – Facilitates controlled annealing, diffusion, and oxidation of semiconductor substrates. Ensures uniform temperature distribution critical for microelectronics and optoelectronic development.
- **Powder Metallurgy** – Supports sintering and densification of metal powders into strong, uniform components. Ideal for producing advanced alloys and complex geometries under controlled atmospheres.
- **Chemical & Petrochemical Laboratories** – Suitable for catalyst activation, thermal decomposition, and reaction mechanism studies up to 1400°C. Delivers accurate and repeatable results for chemical and process engineering research.
- **Aerospace Materials Engineering** – Enables processing of advanced alloys, composites, and ceramics used in aerospace applications. Validates material stability and strength under high-temperature stress conditions.
- **Energy & Battery Research** – Provides controlled heat treatment for solid-state electrolytes, cathode/anode materials, and other energy storage components. Ensures thermal stability and consistency for battery innovation.
- **Universities & Research Institutes** – Designed for high-level research in physics, chemistry, materials science, and engineering. Offers flexible programming, reliable performance, and advanced safety features for academic laboratories.
- **Industrial Quality Control & Certification** – Delivers high-precision thermal testing for material validation, compliance, and certification. Meets ISO, CE, SGS, and TÜV standards required in regulated industries.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with a corrosion-resistant, electrostatic surface finish. A durable, double-layer metal frame is integrated with a heat-insulating fan structure, helping maintain a low external surface temperature.
- Designed for horizontal operation with a top-opening configuration, the furnace is user-friendly and easy to access.

Refractory Material

- The insulation system features a multi-layer design made of lightweight alumina ceramic fiber and premium-grade insulation board. It is asbestos-free, ensures minimal heat loss, and supports low energy usage.

Heating System

- Equipped with high-grade silicon carbide (SiC) spiral resistance wire heating elements, securely embedded along the inner walls of the chamber. These elements provide radiant heating, offering energy efficiency, reliable performance, and extended service life.
- Circular arrangement of resistance wires promotes uniform temperature distribution throughout the chamber.

Temperature Control Panel

- Features advanced controllers suitable for complex thermal processes.
- Supports 30 programmable segments for automatic, curve-based temperature control.
- Includes over-temperature and error alarms for automatic safety shutoff.

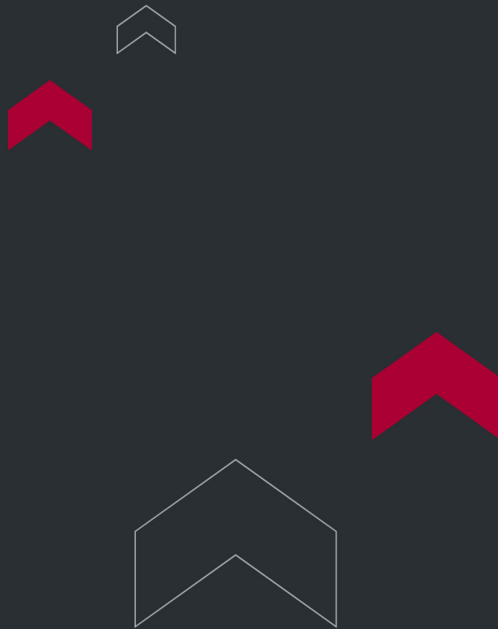
Rotary System

- The furnace tube is rotated by a gear-driven electric motor, allowing full 360° rotation at speeds between 12-20 RPM to ensure even heating.

- The furnace body tilts via electric drive with an adjustable angle for smoother material transfer.
- Sealed with 304 stainless steel flanges to support vacuum or controlled atmosphere environments.
- Comes standard with a high-purity quartz tube; metal or alumina ceramic tubes are also available to meet different processing needs.

TECHNICAL SPECIFICATIONS

Model	Heating zone	Tube size (mm)	Max temp	Working temp	Voltage	Power	Heating element	Accuracy
TT-RTF-40-1200	440	Φ40×1200	1200°C	1100°C	220V (110V is also available)	2KW	HRE	±1°C
TT-RTF-60-1200	440	Φ60×1200	1200°C	1100°C	220V (110V is also available)	3KW	HRE	±1°C
TT-RTF-80-1200	440	Φ80×1200	1200°C	1100°C	220V (110V is also available)	4KW	HRE	±1°C
TT-RTF-100-1200	440	Φ100×1200	1200°C	1100°C	220V (110V is also available)	4KW	HRE	±1°C
TT-RTF-120-1200	600	Φ120×1200	1200°C	1100°C	220V (110V is also available)	7KW	HRE	±1°C
TT-RTF-150-1200	600	Φ150×1200	1200°C	1100°C	380V	8KW	HRE	±1°C
TT-RTF-60-1400	300	Φ60×1000	1400°C	1350°C	220V (110V is also available)	3KW	SIC	±1°C
TT-RTF-80-1400	300	Φ80×1000	1400°C	1350°C	220V (110V is also available)	4KW	SIC	±1°C
TT-RTF-60-1700	300	Φ60×1000	1700°C	1600°C	220V (110V is also available)	4KW	MoSi2	±1°C
TT-RTF-80-1700	300	Φ80×1000	1700°C	1600°C	220V (110V is also available)	5KW	MoSi2	±1°C



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