



ROTARY TILT TUBE FURNACE 1200°C -TT- RTF-40-1200

Rotary Tilt Tube Furnace 1200°C -TT-RTF-40-1200 reaches temperatures up to 1200°C and features an integrated heating system, automatic rotation, and a tilt-adjustable design. The furnace tube rotates a full 360° with adjustable speed, ensuring even temperature distribution. The furnace body tilts up to 15°, allowing for convenient material loading and unloading.

APPLICATIONS

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- **Advanced Ceramic Materials** – Enables uniform sintering and densification of ceramics under controlled thermal conditions. The rotation and tilt functions ensure even heat distribution, excellent density, and improved mechanical strength for both industrial and academic research.
- **Nanomaterials Research** – Provides precise, consistent heat treatment for nanoparticles, thin films, and advanced composites. The 360° rotation promotes homogeneous particle exposure, making it suitable for catalyst development, coatings, and energy storage nanomaterials.

- **Semiconductor Materials** – Supports annealing, diffusion, and oxidation of semiconductor powders and wafers at elevated temperatures. The tilt-adjustable body and rotational system enhance uniformity, ensuring repeatable results in microelectronics and optoelectronics R&D.
- **Powder Metallurgy** – Ideal for sintering and reduction of metallic powders into dense, uniform components. The rotary motion enhances mixing and densification, while tilt-assisted unloading simplifies batch processing in both laboratory and pilot-scale production.
- **Petrochemical & Chemical Laboratories** – Suitable for catalyst activation, pyrolysis, decomposition, and thermal reaction studies. Controlled atmosphere and rotary operation improve reproducibility and efficiency in chemical R&D environments.
- **Aerospace Materials Engineering** – Facilitates testing and processing of advanced alloys, ceramics, and composites used in aerospace applications. The rotary-tilt design ensures uniform heating and flexible handling of high-performance materials under demanding thermal conditions.
- **Energy & Battery Research** – Provides optimized processing of cathode/anode powders, solid-state electrolytes, and next-generation energy storage materials. The 360° rotation ensures consistent heating and uniform material properties critical for energy research.
- **Universities & Research Institutes** – Widely used for teaching, academic projects, and advanced materials research. The programmable control system, multi-segment heating profiles, and built-in safety protections make it a versatile and reliable tool for laboratories.
- **Industrial Quality Control & Certification** – Supports product validation, thermal stability assessment, and compliance verification. Delivers precision and consistency, meeting ISO, CE, SGS, and TÜV standards for regulated

industries.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with an electrostatic coating that resists corrosion. A durable, double-layer metal frame is integrated with a heat-insulating fan structure to help maintain a low external surface temperature.
- Designed for horizontal operation, the furnace features a top-opening structure for ease of use.

Refractory Material

- The insulation system includes multiple layers, combining lightweight alumina ceramic fiber with a high-quality insulation board backing. It is asbestos-free, provides minimal heat loss, and supports reduced energy consumption.

Heating System

- The furnace uses high-quality HRE spiral resistance wire elements, securely embedded along the inner surface. This design delivers efficient radiant heating throughout the chamber while supporting long-term use.
- The resistance wire forms a ring configuration, ensuring even temperature distribution.

Temperature Control Panel

- Equipped with advanced controllers that support complex processing needs.
- Features 30 programmable segments for fully automatic, curve-based temperature control.
- Includes over-temperature and fault alarms with automatic safety shutdown.

Rotary System

- The furnace tube rotates 360° using an electric gear-drive mechanism, with an adjustable speed range of 12-20 rpm for uniform heating.
- The furnace body can be tilted electrically, with an adjustable angle to simplify material loading and unloading.
- A 304 stainless steel sealing flange supports vacuum or controlled atmosphere conditions within the tube.
- High-quality quartz tubes are included; metal or alumina ceramic tubes are also available for different applications.

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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