



TORONTECH



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

Rotary Tilting Tube Furnace 1200°C -TT-RTF-40-1200 features an integrated heating system, an automatic rotation mechanism, and a tilting furnace body. The tube rotates 360° with adjustable speed to ensure even temperature distribution. The furnace body tilts up to 15°, allowing for easy material loading and unloading.

APPLICATIONS

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- **Advanced Ceramic Materials** – Supports sintering and thermal treatment of ceramics with uniform heating and enhanced densification. The rotary-tilt design ensures even temperature distribution, improving structural integrity and mechanical strength.
- **Nanomaterials Research** – Provides precise and consistent processing of nanoparticles, nanocomposites, and coatings. The 360° rotation ensures homogeneous exposure, making it suitable for catalyst development, thin films, and energy storage research.
- **Semiconductor Materials** – Facilitates annealing, oxidation, and diffusion processes for semiconductor powders and substrates. The tilting function simplifies material handling, while rotation promotes thermal uniformity essential in microelectronics R&D.

- **Powder Metallurgy** – Ideal for sintering, reduction, and densification of metallic powders. Rotary motion ensures even heating and mixing, while tilt-assisted unloading streamlines laboratory and pilot-scale production.
- **Petrochemical & Chemical Laboratories** – Enables catalyst activation, pyrolysis, and thermal decomposition under controlled atmospheres. The furnace's rotation improves reproducibility and reaction efficiency in chemical R&D.
- **Aerospace Materials Engineering** – Suitable for high-performance alloys, ceramics, and composites used in aerospace. Rotary-tilt operation ensures material stability, strength validation, and consistent thermal exposure under demanding conditions.
- **Energy & Battery Research** – Optimized for cathode/anode powder preparation, solid-state electrolytes, and next-generation energy storage materials. Rotation guarantees uniform thermal treatment, critical for advanced battery development.
- **Universities & Research Institutes** – Provides reliable performance for academic research and teaching in physics, chemistry, and materials science. The programmable control system with multi-segment heating profiles enhances experimental flexibility.
- **Industrial Quality Control & Certification** – Delivers consistent and precise high-temperature testing for product validation and compliance. Meets international standards such as ISO, CE, SGS, and TÜV for regulated industries.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel, featuring an electrostatic-resistant and corrosion-resistant surface. A solid double-layer metal frame is combined with a heat-insulating fan structure, keeping the external surface temperature low. Designed for horizontal use, the furnace includes a top-opening structure for easy operation.

Refractory Material

- The multi-layer insulation system includes lightweight alumina ceramic fiber and a high-grade insulation board backing. It is asbestos-free and designed to minimize heat loss and reduce energy consumption.

Heating System

- The furnace uses durable HRE spiral resistance wire elements embedded securely along the inner chamber surface, delivering efficient thermal radiation and extended service life.
- Circular resistance wire heating ensures even temperature distribution throughout the chamber.

Temperature Control Panel

- Features an advanced controller suitable for complex thermal processes.
- Supports up to 30 programmable segments for automatic temperature curve control.
- Includes over-temperature protection, fault alarms, and automatic safety functions.

Rotary System

- The tube is driven by a gear-based electric motor that allows full 360° rotation at a speed of 12–20 rpm, promoting uniform heating of materials inside.
- The furnace body is tilt-adjustable via electric control, enabling smoother loading and unloading of materials.
- Equipped with a 304 stainless steel sealing flange for vacuum or controlled atmosphere operation.
- Compatible with high-quality quartz tubes, as well as metal or alumina ceramic tubes, to accommodate various application 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℃	1100℃	220V (110V is also available)	2KW	HRE	±1℃
TT-RTF-60-1200	440	Φ60×1200	1200℃	1100℃	220V (110V is also available)	3KW	HRE	±1℃
TT-RTF-80-1200	440	Φ80×1200	1200℃	1100℃	220V (110V is also available)	4KW	HRE	±1℃
TT-RTF-100-1200	440	Φ100×1200	1200℃	1100℃	220V (110V is also available)	4KW	HRE	±1℃
TT-RTF-120-1200	600	Φ120×1200	1200℃	1100℃	220V (110V is also available)	7KW	HRE	±1℃
TT-RTF-150-1200	600	Φ150×1200	1200℃	1100℃	380V	8KW	HRE	±1℃
TT-RTF-60-1400	300	Φ60×1000	1400℃	1350℃	220V (110V is also available)	3KW	SIC	±1℃
TT-RTF-80-1400	300	Φ80×1000	1400℃	1350℃	220V (110V is also available)	4KW	SIC	±1℃
TT-RTF-60-1700	300	Φ60×1000	1700℃	1600℃	220V (110V is also available)	4KW	MoSi2	±1℃
TT-RTF-80-1700	300	Φ80×1000	1700℃	1600℃	220V (110V is also available)	5KW	MoSi2	±1℃



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