



TORONTECH



ROTARY TUBE FURNACE 1200°C -TT- RTF-120-1200F



The Rotary Tube Furnace 1200°C - TT-RTF-120-1200F is engineered for advanced material processing, featuring an integrated heating system, automatic rotation, automated feeding and discharging, and a tilt-adjustable furnace body. The tube rotates 360° with adjustable speed to ensure consistent temperature distribution, while the feeding speed can be fine-tuned in real time for precise control.

With a tilt range of up to 15° and a material collection unit installed at the tube's outlet, this furnace supports continuous small-batch processing, making it highly efficient for research, development, and pilot-scale production. Equipped with a $\Phi 120 \times 1200$ quartz tube, a 440 mm heating zone, and powered by 220V/13 kW (110V optional), it operates reliably up to 1100°C continuous and 1200°C maximum, using high-quality HRE alloy resistance wire heating elements and an N-type thermocouple for accurate and stable temperature performance.

APPLICATIONS

Rotary Tube Furnace 1200°C -TT-RTF-120-1200F

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- **Advanced Ceramic Processing** – Supports high-temperature sintering and densification of ceramic powders with precise rotation and feeding control, ensuring excellent thermal uniformity and structural integrity.
- **Nanomaterials Research** – Provides uniform heating and continuous material handling, ideal for producing nanostructures, advanced composites, and functional coatings in R&D environments.

- **Semiconductor Materials** – Enables controlled thermal treatment such as annealing, oxidation, and diffusion of semiconductor substrates with accurate temperature regulation.
- **Powder Metallurgy** – Facilitates high-temperature sintering of metal powders into dense and uniform components, supporting both pilot-scale production and research applications.
- **Catalyst & Petrochemical Research** – Suitable for catalyst activation, thermal decomposition, and reaction mechanism studies under controlled atmosphere or vacuum conditions.
- **Aerospace & Advanced Alloys** – Supports processing and evaluation of high-performance alloys, composites, and ceramics used in aerospace applications, ensuring strength and thermal stability.
- **Energy & Battery Materials** – Provides reliable heat treatment for electrode and electrolyte materials in lithium-ion batteries, solid-state batteries, and next-generation energy storage systems.
- **Universities & Research Institutes** – Widely adopted for academic and institutional research in materials science, chemistry, and applied engineering, offering precise, repeatable, and safe operation.
- **Continuous Small-Batch Production** – Equipped with automated feeding and collection systems, the furnace is highly efficient for pilot testing, specialty material production, and scaled laboratory experiments.

FEATURES

Furnace Shell

- The shell is made from Q235 low-carbon steel, featuring an electrostatically resistant and corrosion-resistant surface.
- A solid double-layer metal frame is combined with a heat-insulating fan structure, keeping the exterior surface temperature low.
- Designed for horizontal operation with a top-opening structure, it allows for easy access and use.

Refractory Material

- The multi-layer insulation system consists of lightweight alumina ceramic fiber and high-quality insulation board.
- It is asbestos-free, minimizes heat loss, and supports low energy consumption.

Heating System

- High-performance HRE spiral resistance wire heating elements are securely embedded along the inner walls. These deliver radiant heat throughout the chamber, offering high efficiency and a long service life.
- Ring-style resistance wire heating ensures uniform temperature distribution inside the furnace.

Temperature Control Panel

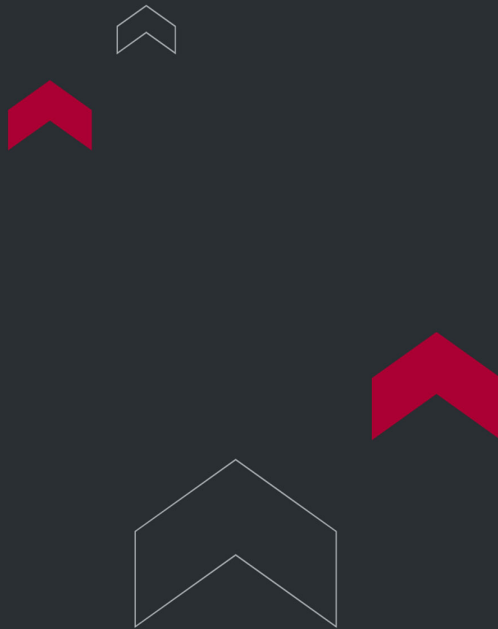
- Equipped with advanced controllers designed for complex thermal processes.
- Supports up to 30 programmable segments for automated temperature curve control.
- Includes over-temperature and fault alarms, along with automatic safety features.

Rotary and Automatic Feeding System

- The furnace tube uses a gear-driven electric motor to rotate 360°, with speed adjustable between 12-20 rpm to ensure even heating.
- The furnace body tilts via electric control, allowing for adjustable angles and smoother material flow during loading and unloading.
- An automatic screw feeder enables controlled feeding speed, while a collection unit at the tube's end supports continuous material processing.

Item	TT-RTF-60-1200PRO	TT-RTF-100-1200PRO	TT-RTF-150-1200PRO	TT-RTF-200-1200PRO
Tube Size	Φ60×1200mm	Φ100×1200mm	Φ150×1500mm	Φ200×1800mm
Heating Zone	440mm	440mm	600mm	800mm
Max Temperature	1200°C			
Work Tempearture	1100°C			
Heating Element	HRE high temperature alloy resistance wire			
Chamber Material	Polycrystalline inorganic alumina ceramic fiber material prepared by wet vacuum filtration			
Temperature accuracy	±1°C			
Thermocouple	N type thermocouple			
Temperature Controller	Intelligent microcomputer PID temperature control instrument, SSR voltage regulation control, PID parameter self-tuning function; programmable 32 program segments, program temperature rise, program heat preservation, program cooling			
Heating Rate	1-20°C/min freely adjustment			
Furnace Strcuture	Furnace temperature control integrated structure			
Protection	Modular control, sound and light alarm signal will be sent out for over temperature and broken coupler in the working process, and the protection action will be completed automatically			
Safety Protection	The equipment is equipped with a circuit breaker, which will automatically pop open in case of short circuit leakage, which can protect the safety of equipment and operators			
Furnace Shell	High-quality cold-rolled steel plate CNC machine tool blanking processing, after welding, grinding, polishing, phosphating, pickling, surface electrostatic spraying plastic powder			
Cerfificate	ISO9001 CE SGS TUV			

Standard Accessories	1□ Furnace Body 1 set 2□ Power cable 3 meter 3□ Thermocouple 1 pc 4□ Manual 1 pc 5□ Furnace Hook 1 pair 6□ High Temperature 1 pair
OEM	According to the output requirements of the actual material of the user, the customization of special specifications of the product can be realized



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com

