



TORONTECH

VERTICAL TUBE FURNACE 1400°C - TT- VTF-60-1400



TT-VTF-60-1400 is a single-zone vertical tube furnace designed for high-temperature heat treatment up to 1400°C. It is ideal for sintering and processing advanced materials, including metals, ceramics, nanomaterials, semiconductors, and powdered alloys. Common applications include research laboratories, universities, manufacturing facilities, petrochemical operations, and aerospace projects.

APPLICATIONS

Vertical Tube Furnace 1400°C – TT-VTF-60-1400

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- **Advanced Ceramic Materials** – Supports high-temperature sintering and densification of ceramic components. Ensures excellent thermal resistance, structural integrity, and mechanical strength, making it ideal for both academic research and industrial applications.
- **Nanomaterials Research** – Provides precise and uniform thermal processing for nanopowders, thin films, and composites. Facilitates the development of advanced nanostructures used in energy storage, catalysis, and next-generation electronics.
- **Semiconductor Materials** – Enables controlled thermal treatments such as annealing, diffusion, and oxidation of semiconductor wafers. Delivers precise temperature control essential for microelectronics and optoelectronics manufacturing.

- **Powder Metallurgy** – Suitable for the sintering of powdered alloys and metallic components into dense, uniform structures. Commonly applied in prototyping, aerospace alloy research, and high-performance industrial production.
- **Petrochemical & Chemical Research** – Ideal for catalyst activation, decomposition studies, and thermal reaction experiments under vacuum or controlled atmosphere. Provides consistent, reproducible outcomes for advanced chemical R&D.
- **Aerospace Materials Engineering** – Designed to process advanced alloys, composites, and ceramics under extreme conditions. Ensures validation of thermal stability and mechanical strength required for aerospace applications.
- **Energy & Battery Research** – Offers thermal treatment for solid-state electrolytes, cathode/anode materials, and other energy-related compounds. Ensures reliability, uniformity, and high-temperature stability in energy storage material development.
- **Universities & Research Institutes** – A versatile and reliable furnace for academic laboratories. Supports advanced studies in chemistry, physics, materials science, and engineering with robust safety systems and flexible programming.
- **Industrial Quality Control & Certification** – Provides precise high-temperature testing for product validation and compliance verification. Conforms with international quality standards such as ISO, CE, SGS, and TÜV for regulated industries.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with an electrostatic corrosion-resistant coating.
- Its solid double-layer metal frame, paired with a heat-insulated fan structure, helps maintain a low external surface temperature.
- Designed for vertical operation, the furnace features a side-opening lid for easy access and convenient handling.

Refractory Material

- The furnace includes a multi-layer insulation system made from lightweight alumina ceramic fiber and high-quality insulation board.
- It is asbestos-free and designed for minimal heat loss and low energy consumption.

Heating System

- Equipped with durable metal and ceramic heating elements that deliver radiant heat throughout the chamber, offering energy efficiency and extended lifespan.
- The ring or dual-sided heating layout ensures excellent temperature uniformity.
- Each temperature zone operates independently, providing precise and stable thermal conditions.

Temperature Control Panel

- PID control with SSR/SCR switching for accurate temperature management
- High-quality thermocouple built to last
- Includes a heating indicator and an over-temperature alarm buzzer

Program Controller

- Advanced controller supports complex thermal processes
- Intuitive interface for easy setup and flexible programming
- Stores up to 30 programmable segments
- Features built-in over-temperature and fault alarms with automatic safety functions

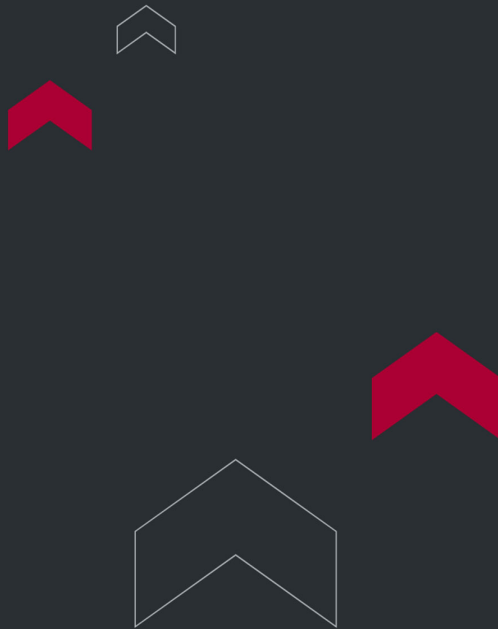
Vacuum and Atmosphere Capability

- Fitted with 304 stainless steel sealing flanges for vacuum or controlled atmosphere operation
- Compatible with alumina, metal, or quartz tubes to suit various processing environments

TECHNICAL SPECIFICATIONS

Item No	Heating Zone mm	Tube Size (mm)	Max Temperature	Work Temperature	Voltage	Power	Heating Element	Temperature Accuracy
TT-VTF-40-1200	300	Φ40×900	1200°C	1100°C	220V (110V is also available)	1.8KW	HRE	±1°C
TT-VTF-60-1200	300	Φ60×900	1200°C	1100°C	220V (110V is also available)	2.6KW	HRE	±1°C
TT-VTF-80-1200	300	Φ80×900	1200°C	1100°C	220V (110V is also available)	2.6KW	HRE	±1°C
TT-VTF-100-1200	300	Φ100×900	1200°C	1100°C	220V (110V is also available)	2.6KW	HRE	±1°C
TT-VTF-40-1400	300	Φ40×900	1400°C	1350°C	220V (110V is also available)	2KW	SIC	±1°C
TT-VTF-60-1400	300	Φ60×900	1400°C	1350°C	220V (110V is also available)	3KW	SIC	±1°C
TT-VTF-80-1400	300	Φ80×900	1400°C	1350°C	220V (110V is also available)	4KW	SIC	±1°C
TT-VTF-100-1400	300	Φ100×900	1400°C	1350°C	220V (110V is also available)	5KW	SIC	±1°C
TT-VTF-40-1700	300	Φ40×900	1700°C	1600°C	220V (110V is also available)	3KW	MoSi2	±1°C

TT-VTF-60-1700	300	Φ60×900	1700℃	1600℃	220V (110V is also available)	4KW	MoSi2	±1℃
TT-VTF-80-1700	300	Φ80×900	1700℃	1600℃	220V (110V is also available)	5KW	MoSi2	±1℃
TT-VTF-100-1700	300	Φ100×900	1700℃	1600℃	220V (110V is also available)	5KW	MoSi2	±1℃



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