



INDUSTRIAL FURNACE - TT-IF-100-1200A

The Industrial Furnace – TT-IF-100-1200A is a manual-door furnace engineered to operate at temperatures up to 1200°C, making it highly reliable for heat treatment processes such as quenching, tempering, normalizing, and annealing of metal materials. It is also suitable for the sintering of non-metallic ceramic components. With a chamber size of 450 × 500 × 600 mm and a total capacity of 100 liters, this furnace is designed for small-batch production as well as pilot-scale testing in laboratories and industrial facilities.

Operating at a continuous working temperature of 1100°C, the TT-IF-100-1200A runs on a 380V power supply and uses high-quality HRE heating elements for durability and consistent heating performance. Its temperature precision is maintained within $\pm 1^\circ\text{C}$, monitored by an N-type thermocouple that meets international standards, ensuring accurate and dependable results across a wide range of thermal applications.

APPLICATIONS

Industrial Furnace – TT-IF-100-1200A

Industrial Furnace – TT-IF-100-1200A

Industrial Furnace – TT-IF-100-1200A

- **Metallurgical Heat Treatment** – Designed for quenching, tempering, normalizing, and annealing of steel and alloy components. Ensures uniform heating and precise temperature control for reliable metallurgical performance.

- **Ceramic Sintering** – Supports the high-temperature processing of advanced non-metallic ceramics. Provides stable thermal conditions for producing dense, durable, and high-strength ceramic components.
- **Aerospace Materials Engineering** – Enables the thermal processing and validation of high-performance alloys, ceramics, and composites used in aerospace structures. Ensures material stability and mechanical integrity under extreme conditions.
- **Automotive & Heavy Machinery** – Ideal for large-scale heat treatment of engine components, gears, and industrial parts. Delivers consistent results required for strength, wear resistance, and extended service life.
- **Energy & Power Systems** – Facilitates the development of advanced energy materials, including components for turbines, power generation systems, and solid-state battery technologies. Ensures reproducibility and high-temperature stability.
- **Universities & Research Institutes** – A valuable tool for academic and industrial R&D in materials science, metallurgy, and ceramics. Offers flexible programming and safety features suited for experimental studies.
- **Industrial Quality Control & Certification** – Provides high-temperature validation for product testing, compliance verification, and certification. Supports industries requiring adherence to ISO, CE, SGS, and TÜV standards.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with an electrostatically resistant, corrosion-protected surface.
- Its sturdy metal frame ensures structural integrity while maintaining a low exterior temperature.
- The furnace features a side-opening door with a fixed left hinge for convenient operation.

Refractory Lining

- The furnace uses a multi-layer insulation system with a double layer of lightweight refractory bricks. This design provides a robust structure, efficient thermal retention, and low energy consumption—free of asbestos.

Heating System

- High-grade HRE spiral resistance wire elements are mounted on ceramic support tubes, delivering efficient, radiant heat throughout the chamber for extended performance.
- Heating is distributed on three sides—left, right, and bottom—to ensure consistent temperature uniformity.
- A silicon carbide base plate shields the bottom heating element, offering strong mechanical durability, excellent thermal conductivity, and stable horizontal load support.

Temperature Control Panel

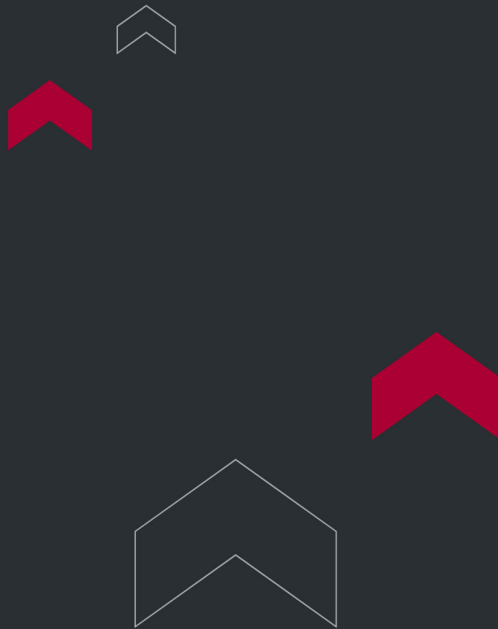
- PID control with SCR output delivers precise temperature management.
- Equipped with an international-standard N-type nickel-chromium-silicon thermocouple, supporting a temperature range of 0–1300°C and ensuring long-term reliability.
- Safety power cutoff activates automatically when the furnace door is opened.

Program Controller

- Advanced controller supports a wide range of process requirements.
- User-friendly interface allows flexible, intuitive programming.
- Stores up to 30 programmable segments for a single heating curve.
- Built-in over-temperature and fault alarms with automatic safety shutoff.
- Optional features include manual air intake and automated clamshell exhaust.
- An optional rapid cooling unit enables controlled air cooling of the chamber to below 400°C.

Model	TT-IF-45-1200	TT-IF-64-1200	TT-IF-80-1200	TT-IF-96-1200	TT-IF-100-1200	TT-IF-150-1200	TT-IF-200-1200
Chamber Size □ W xD xH□ mm	300 x500x300	400 x400x400	400x500x400	400x600x400	400 x530x460	450 x530x590	500 x530x720
Rated Temperature	1200℃						
Work Temperature	1100℃						
Voltage	380V/12KW	380V/15KW	380V/16KW	380V/18KW	380V/18KW	380V/24KW	380V/27KW
Heating Element	HRE Alloy Resistance Wire						
Chamber Materials	Polycrystalline inorganic alumina ceramic fiber material prepared made by wet vacuum filtration						
Temp control Accracy	±1℃						
Thermcouple	N Type Thermcouple						
Temperature Controller	Intelligent microcomputer PID temperature control instrument, SCR/SSR control, PID parameter self-tuning function .Programmable 30 segments for program heating, program heat preservation, program cooling						
Heating Rate	1-15℃/min can be adjustable						
Furnace Structure	Furnace temperature control integrated structure						

Equipment Protection	Modular control with sound and light alarm signal sending out for over temperature and thermocouple broken 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 with CNC machine tool processing, then it will have the process of welding, grinding, polishing, phosphating, pickling, surface electrostatic spraying plastic powder
Quality Certificate	ISO9001 CE SGS TUV
Standard Device	1□ Furnace Main Body : 1 set 2□ Temperature Controller : 1 pc 3□ Power Line : 3 meters 4□ Thermcouple : 1 pc 5□ Operation manual □ 1 pc 6 Crucible Tong □ 1 pc 7□ High Temperature Gloves : 1 pair



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

