



INDUSTRIAL FURNACE - TT-IF-160-1200

The TT-IF-160-1200 Industrial Furnace is engineered for reliable high-temperature heat treatment, with a maximum operating temperature of 1200°C and continuous working capability up to 1100°C. Equipped with a manual door and a robust chamber measuring 350 × 400 × 350 mm, it is ideal for processes such as quenching, tempering, normalizing, and annealing of metal components.

The furnace also supports the sintering of non-metallic ceramic materials, making it highly versatile for research laboratories, pilot testing, and small-scale production environments. Featuring durable HRE alloy resistance wire heating elements, an N-type thermocouple, and precise $\pm 1^{\circ}\text{C}$ temperature control, the TT-IF-160-1200 ensures uniform performance, energy efficiency, and dependable results under demanding industrial conditions.

APPLICATIONS

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- **Metallurgical Heat Treatment** – Supports quenching, tempering, normalizing, and annealing of metal components with uniform heating up to 1200°C, ensuring high mechanical performance and structural integrity.

- **Ceramic & Advanced Materials Processing** – Enables reliable sintering and densification of non-metallic ceramics, composites, and refractory materials, delivering strength and stability for both research and industrial applications.
- **Research & Pilot Production** – Provides versatile, programmable thermal processing for laboratories and small-scale industrial production. Suitable for advanced R&D, prototype testing, and material validation studies.
- **Powder Metallurgy & Alloy Development** – Facilitates controlled high-temperature treatment of metal powders and advanced alloys. Ensures density, precision, and repeatability critical for innovative material design.
- **Chemical & Petrochemical Testing** – Capable of thermal decomposition, reaction studies, and catalyst activation under controlled conditions. Delivers accurate, reproducible results for chemical laboratories and industrial R&D.
- **Aerospace & Automotive Materials Engineering** – Performs stress-relief, stability testing, and high-temperature validation of advanced alloys and composites used in aerospace and automotive applications.
- **Quality Assurance & Certification Laboratories** – Provides precise $\pm 1^{\circ}\text{C}$ temperature accuracy with PID-SCR control, over-temperature protection, and compliance with ISO9001, CE, SGS, and TÜV standards for certified testing environments.
- **Academic & Research Institutions** – Ideal for advanced studies in physics, chemistry, materials science, and engineering. Offers multi-segment programming, strong safety protection, and dependable performance for academic laboratories.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with an electrostatically resistant, anti-corrosion finish.
- It features a durable metal frame structure with low external surface temperature.
- The side-opening door is hinged on the left for smooth, convenient operation.

Refractory

- The furnace includes a multi-layer thermal insulation system with a double-layer lining of lightweight refractory bricks.
- This structure is built for strength and tightly stacked and joined.
- It is free of asbestos, minimizes heat loss, and supports low energy consumption.

Heating System

- High-quality HRE spiral resistance wire heating elements are wound on ceramic support tubes, providing efficient, radiant heat distribution within the chamber for extended service life.
- Heating elements are installed on three sides—left, right, and bottom—ensuring even temperature distribution.
- A silicon carbide base plate shields the bottom heating elements. It offers strong mechanical support, effective heat transfer, and stable horizontal load-bearing capability.

Temperature Control Panel

- Precise temperature regulation through PID control with SCR (silicon-controlled rectifier) technology.
- Equipped with an N-type nickel-chromium-silicon thermocouple, conforming to international standards, with a temperature range of 0–1300°C and long operational life.
- Built-in safety switch cuts power when the furnace door is opened.

Program Controller

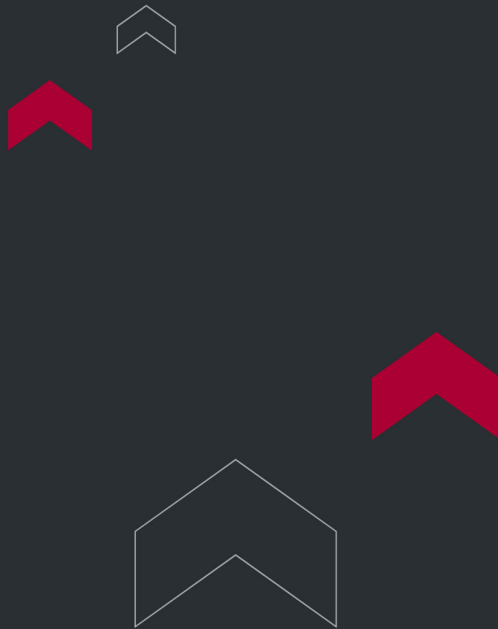
- Advanced controller supports complex process requirements.
- Simple, intuitive interface allows flexible programming.
- Up to 30 programmable segments per curve.

- Includes over-temperature and error alarms with automatic safety shutdown.
- Optional features include manual air intake and automated exhaust via clamshell mechanism.
- Rapid cooling unit (optional) available for chamber cooling below 400°C.

TECHNICAL SPECIFICATIONS

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°C/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



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