



INDUSTRIAL FURNACE - TT-IF-64-1200A

The TT-IF-64-1200A is a 1200°C manual-door industrial furnace engineered for precision heat treatment applications, including quenching, tempering, normalizing, and annealing of metal materials. It is also well-suited for sintering non-metallic ceramic components, making it a versatile solution for laboratories, research institutes, and small-scale industrial production.

This model features a 64-liter chamber capacity, providing ample space for diverse applications while maintaining efficiency. It supports a continuous operating temperature of 1100°C and can achieve a maximum temperature of 1200°C, ensuring consistent performance under demanding thermal processes.

Powered by a 380V supply, the TT-IF-64-1200A utilizes high-quality HRE heating elements that deliver reliable, uniform heating and long service life. Temperature measurement and control are supported by an N-type thermocouple, with a precision level of $\pm 1^{\circ}\text{C}$, ensuring accurate, repeatable results across applications.

APPLICATIONS

- **Metal Heat Treatment** - Designed for quenching, tempering, normalizing, and annealing of ferrous and non-ferrous metals, ensuring precise thermal control and repeatable results for research and production.
- **Ceramic Sintering** - Suitable for sintering non-metallic ceramic components with stable temperature performance, delivering structural integrity and material consistency.
- **Small-Batch Production** - Ideal for pilot-scale and limited production runs, supporting reliable thermal processing in industrial environments.

- **Materials Research** - Supports advanced studies in metallurgy, ceramics, and high-temperature material behavior, making it suitable for laboratories and research institutes.
- **Aerospace & Automotive Applications** - Ensures accurate heat treatment of alloys and engineered materials, meeting strict performance standards in aerospace and automotive industries.
- **Industrial Quality Control** - Enables repeatable high-temperature testing for product validation, compliance, and certification in regulated manufacturing environments.
- **Educational Laboratories** - Provides safe and versatile operation for academic institutions conducting training, demonstrations, and applied research in material science and engineering.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel, the furnace shell features an electrostatically resistant, corrosion-protected surface.
- Its reinforced metal frame ensures structural durability while maintaining a low external surface temperature.
- The side-opening door, fixed on a left hinge, allows for easy and safe operation.

Refractory

- Designed with a multi-layer insulation system, the furnace uses double-layer lightweight refractory bricks.
- The bricks are tightly stacked and fitted for high structural strength—free from asbestos, with minimal heat loss and low energy consumption.

Heating System

- High-grade HRE spiral resistance wires are wound on ceramic support tubes, delivering efficient, radiant heating for extended operational life.
- Heating is distributed across three sides—left, right, and bottom—for uniform temperature distribution.
- A silicon carbide base plate shields the bottom heating element, offering excellent thermal conductivity, mechanical strength, and stable horizontal load support.

Temperature Control Panel

- PID control paired with SCR ensures accurate temperature management.
- Equipped with an international-standard N-type nickel-chromium-silicon thermocouple, supporting a range of 0–1300°C for long-lasting performance.
- A built-in safety switch automatically shuts off power when the door is opened.

Program Controller

- Advanced controller supports complex heat treatment processes.
- Intuitive interface allows for flexible, user-friendly programming.
- Stores up to 30 programmable segments for a single thermal cycle.
- Built-in over-temperature and fault alarms provide automatic safety protection.
- Optional features include manual air intake and automatic clamshell exhaust.
- A rapid cooling unit can be added to accelerate temperature drop below 400°C inside the chamber.

TECHNICAL SPECIFICATIONS

Model	Chamber size□ mm□	Volume	Rated Temperature	Working temperature	Voltage	Power	Heating Element	Temp control Accracy
TT-IF-45-1200	300×500×300	45L	1200°C	1100°C	380V	12KW	HRE	±1°C

TT-IF-64-1200	400×400×400	64L	1200℃	1100℃	380V	15KW	HRE	±1℃
TT-IF-80-1200	400×500×400	80L	1200℃	1100℃	380V	15KW	HRE	±1℃
TT-IF-96-1200	400×600×400	96L	1200℃	1100℃	380V	18KW	HRE	±1℃
TT-IF-100-1200	400×530×460	100L	1200℃	1100℃	380V	18KW	HRE	±1℃
TT-IF-150-1200	450×530×590	150L	1200℃	1100℃	380V	24KW	HRE	±1℃
TT-IF-200-1200	500×530×720	200L	1200℃	1100℃	380V	27KW	HRE	±1℃
TT-IF-300-1200	550×700×780	300L	1200℃	1100℃	380V	45KW	HRE	±1℃
TT-IF-450-1200	600×750×1000	450L	1200℃	1100℃	380V	50KW	HRE	±1℃
TT-IF-660-1200	600×1100×1000	660L	1200℃	1100℃	380V	60KW	HRE	±1℃
TT-IF-1000-1200	800×1000×1250	1000L	1200℃	1100℃	380V	80KW	HRE	±1℃
TT-IF-1500-1200	900×1200×1400	1500L	1200℃	1100℃	380V	95KW	HRE	±1℃



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