



TORONTECH



INDUSTRIAL FURNACE - TT-IF-X-1200

The TT-IF-X-1200 is a high-temperature industrial furnace designed for precision heat treatment applications, featuring an automatic door system for safe and efficient operation. With a maximum operating temperature of 1200°C and a continuous working temperature of 1100°C, it is well-suited for processes such as quenching, tempering, normalizing, and annealing of metal components. Beyond metallurgical use, this furnace is also effective for the sintering of non-metallic ceramic materials, making it a versatile solution across research, testing, and industrial environments.

Equipped with a 500 × 600 × 500 mm chamber, the TT-IF-X-1200 offers ample capacity for small-scale production and laboratory testing. It utilizes alloy resistance wire (HRE) heating elements combined with an N-type thermocouple, ensuring precise temperature accuracy of $\pm 1^{\circ}\text{C}$. Operating at 380V, the furnace combines durability, reliability, and consistent performance to meet the rigorous demands of both laboratory research and industrial production workflows.

APPLICATIONS

Industrial Furnace – TT-IF-X-1200

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- **Metallurgical Heat Treatment** – Supports quenching, tempering, normalizing, and annealing of steel, alloys, and other metal components with uniform thermal performance and precise control.
- **Ceramic Sintering** – Suitable for sintering and densification of non-metallic ceramic materials, ensuring stable structural integrity and consistent material properties.

- **Research & Laboratory Testing** – Provides reliable, repeatable results for academic and industrial R&D, ideal for small-scale production runs and experimental studies.
- **Tooling & Machining Industries** – Delivers accurate heat treatment for high-speed steels, cutting tools, dies, and molds to enhance strength, durability, and wear resistance.
- **Construction Material Processing** – Supports the thermal treatment of metal-based construction materials, improving hardness, stability, and structural performance.
- **Quality Control & Certification** – Enables precise and repeatable high-temperature testing for product validation, compliance verification, and certification under ISO, CE, SGS, and TÜV standards.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel, featuring an electrostatically resistant and corrosion-resistant surface.
- Its durable metal frame structure helps maintain a low external temperature.
- The electro-hydraulic lifting door includes a built-in limit switch.
- Users can choose between a push-button or foot-pedal operated automatic door opener.

Refractory

- The furnace includes a multi-layer insulation system with double-layer lightweight refractory brick lining for enhanced structural integrity.

- It's free of asbestos, offers strong thermal resistance, and ensures minimal heat loss with reduced energy consumption.

Heating System

- Equipped with high-quality metal or ceramic heating elements, the system delivers efficient, radiation-based heating throughout the chamber.
- Heating is applied on three sides—left, right, and bottom—for consistent temperature distribution.
- A silicon carbide base plate shields the bottom heating elements, offering excellent mechanical strength and thermal conductivity while supporting horizontal loading.

Temperature Control Panel

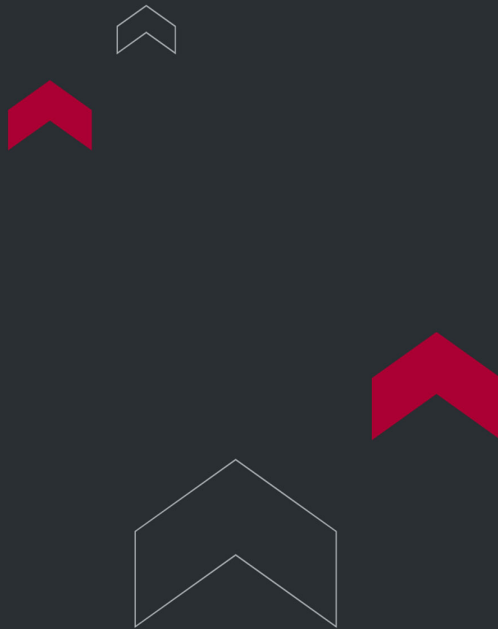
- The system uses PID and SCR control modes for precise temperature regulation.
- An international-standard thermocouple extends service life.
- For added safety, the door is fitted with a power-cut switch that activates when opened.
- The temperature controller is located on the right side of the furnace, with an optional external control cabinet available.

Program Controller

- Features advanced controls to meet complex thermal processing requirements.
- User-friendly interface with flexible programming options.
- Supports up to 30 programmable segments per temperature curve.
- Built-in alarms for over-temperature and system faults, along with automatic safety shutdown.
- Optional features include manual air intake and an automatic lift-type exhaust system.
- A rapid cooling system is also available for quick cooling when chamber temperatures fall below 400°C.

TECHNICAL SPECIFICATIONS

Model	Chamber size□ mm□	Chamber volume	Max temp.	Working temp.	Voltage	Power	Heating element	Temp Precision
TT-IF-100-1200P	400×530×460	100L	1200℃	1100℃	380V	15KW	HRE	±1℃
TT-IF-150-1200P	450×530×590	150L	1200℃	1100℃	380V	24KW	HRE	±1℃
TT-IF-200-1200P	500×530×720	200L	1200℃	1100℃	380V	27KW	HRE	±1℃
TT-IF-300-1200P	550×700×780	300L	1200℃	1100℃	380V	45KW	HRE	±1℃
TT-IF-660-1200P	600×1100×1000	660L	1200℃	1100℃	380V	60KW	HRE	±1℃
TT-IF-1000-1200P	800×1000×1250	1000L	1200℃	1100℃	380V	80KW	HRE	±1℃
TT-IF-96-1400P	400×600×400	96L	1400℃	1300℃	380V	21KW	SIC	±1℃
TT-IF-150-1400P	450×530×590	150L	1400℃	1300℃	380V	25KW	SIC	±1℃
TT-IF-200-1400P	500×530×720	200L	1400℃	1300℃	380V	28KW	SIC	±1℃
TT-IF-288-1400P	600×800×600	288L	1400℃	1300℃	380V	30KW	SIC	±1℃
TT-IF-640-1400P	800×1000×800	640L	1400℃	1300℃	380V	50KW	SIC	±1℃
TT-IF-1200-1400P	1000×1200×1000	1200L	1400℃	1300℃	380V	100KW	SIC	±1℃
TT-IF-96-1700P	400×600×400	96L	1700℃	1600℃	380V	25KW	MoSi2	±1℃
TT-IF-150-1700P	450×530×590	150L	1700℃	1600℃	380V	30KW	MoSi2	±1℃
TT-IF-200-1700P	500×530×720	200L	1700℃	1600℃	380V	40KW	MoSi2	±1℃
TT-IF-288-1700P	600×800×600	288L	1700℃	1600℃	380V	50KW	MoSi2	±1℃
TT-IF-640-1700P	800×1000×800	640L	1700℃	1600℃	380V	80KW	MoSi2	±1℃
TT-IF-1200-1700P	1000×1200×1000	1200L	1700℃	1600℃	380V	150KW	MoSi2	±1℃



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