



INDUSTRIAL FURNACE - TT-IF-588-1200P

The TT-IF-588-1200P is a 1200°C automatic-door industrial furnace engineered for a wide range of heat treatment applications, including quenching, tempering, normalizing, and annealing of metal materials. It is equally suitable for sintering non-metallic ceramic components, making it a versatile solution for both research and production environments. With its automatic door system, the furnace ensures safe, efficient operation and is particularly well-suited for small-scale production, pilot testing, and laboratory use.

This model offers a spacious 588-liter chamber capacity and is designed to operate at a continuous working temperature of 1100°C, with a maximum temperature of 1200°C. Powered by a 380V system, it utilizes high-quality HRE alloy resistance wire heating elements for consistent thermal performance. An N-type thermocouple provides precise measurement with a temperature accuracy of $\pm 1^{\circ}\text{C}$, ensuring reliable and repeatable processing results across various industrial and research applications.

APPLICATIONS

Industrial Furnace – TT-IF-588-1200P

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- **Metal Heat Treatment** – Designed for precise high-temperature processing, the furnace supports quenching, tempering, normalizing, and annealing of metal components. These processes improve hardness, durability, and microstructural stability, making it well-suited for industrial material conditioning.

- **Ceramic Sintering** – Provides stable thermal conditions for sintering non-metallic ceramics and ceramic composites. Ensures consistent densification and uniformity in laboratory research and production of advanced ceramic materials.
- **Research and Development** – Ideal for universities, research institutes, and industrial laboratories, this furnace offers controlled environments for experimental studies on material transformation, thermal performance, and microstructural behavior.
- **Pilot-Scale and Small-Batch Production** – With its 588L chamber capacity and automatic-door system, the furnace is highly efficient for pilot-scale testing and small-batch production, bridging the gap between lab research and industrial manufacturing.
- **Specialized Industrial Applications** – Suitable for industries requiring precise thermal processing of alloys, non-metallic components, and specialty materials in aerospace, automotive, mining, and advanced manufacturing sectors.
- **Enhanced Safety and Efficiency** – The automatic electro-hydraulic lift door improves operator safety and workflow efficiency, making it an excellent choice for facilities handling frequent or heavy-duty furnace operations.

FEATURES

Furnace Shell

- The shell is constructed from Q235 low-carbon steel with an electrostatically resistant, corrosion-resistant surface.
- Its durable metal frame minimizes external surface temperature for enhanced safety.
- Features an electro-hydraulic lift door with an integrated limit switch.
- Users can choose between button- or foot-operated automatic door controls.

Refractory

- Built with a multi-layer insulation system and double-layer lightweight refractory brick lining for structural integrity.
- The design is asbestos-free, ensuring low heat loss and improved energy efficiency.

Heating System

- Equipped with high-grade metal or ceramic heating elements that provide uniform radiant heat inside the chamber.
- Three-sided heating—left, right, and bottom—ensures consistent temperature distribution.
- A silicon carbide bottom plate shields the base elements, offering strong mechanical support, excellent thermal conductivity, and stable horizontal load handling.

Temperature Control Panel

- Uses PID and SCR control for accurate, stable temperature management.
- Fitted with a long-life, international-standard thermocouple.
- A safety switch disconnects power when the door is opened.
- The controller is positioned on the right side of the unit; an external control cabinet is also available as an option.

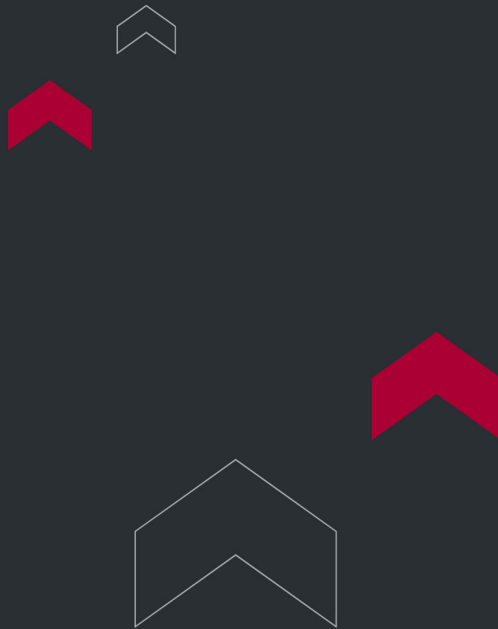
Program Controller

- Supports advanced processing needs with an intuitive interface.
- Allows flexible operation with up to 30 programmable segments per curve.
- Includes over-temperature and system fault alarms with automatic shutdown features.
- Optional upgrades include manual air intake, automated exhaust, and a rapid cooling system capable of reducing chamber temperature from 400°C swiftly.

TECHNICAL SPECIFICATIONS

Model	Chamber size□ mm□	Chamber volume	Max temp.	Working temp.	Voltage	Power	Heating element	Temp Precision
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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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