

INDUSTRIAL FURNACE - TT-IF-150-1400



The TT-IF-150-1400 is a 1400°C industrial furnace with an automatic door, designed for advanced heat treatment applications such as quenching, tempering, normalizing, and annealing of metal components. In addition to metallurgical processes, it is also highly suitable for the sintering of non-metallic ceramic materials, making it a versatile solution for diverse industrial and research applications.

With a chamber size of 450 × 530 × 590 mm, this furnace provides a working capacity of 150 liters, supporting both small-scale production runs and laboratory testing. It offers a continuous operating temperature of 1300°C and a maximum temperature of 1400°C, powered by silicon carbide (SiC) heating rods for stable and efficient performance. Equipped with an S-type thermocouple and delivering a precision of $\pm 1^{\circ}\text{C}$, the TT-IF-150-1400 ensures accurate and consistent temperature control. Operating on 380V, it combines durability, reliability, and efficiency to meet the demanding requirements of industrial environments and research facilities alike.

APPLICATIONS

Industrial Furnace – TT-IF-150-1400

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- **Metallurgical Heat Treatment** – Designed for precise quenching, tempering, normalizing, and annealing of metal components. Ensures uniform temperature control and consistent results for steels, alloys, and specialized metals.
- **Ceramic Sintering** – Suitable for high-temperature sintering of non-metallic ceramic materials. Delivers reliable structural integrity and thermal stability for advanced ceramics research and production.

- **Materials Science & Engineering** – Provides accurate and reproducible conditions for developing and testing advanced materials. Widely used in laboratories for metallurgical studies and ceramic material innovations.
- **Small-Scale Production & Pilot Testing** – Ideal for short production runs and pre-production testing of new materials or components, offering the flexibility needed for R&D environments.
- **Industrial Quality Control** – Supports thermal testing for product validation and compliance, ensuring components meet required strength and durability standards.
- **Academic & Research Institutions** – A versatile furnace for universities and research facilities conducting advanced studies in physics, chemistry, materials science, and engineering.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel, the shell features an electrostatically resistant, corrosion-resistant surface.
- The robust metal frame ensures structural integrity and maintains a low external temperature.
- Equipped with an electro-hydraulic lifting door and a limit switch for safety.
- The furnace door can be opened using either a button or foot pedal, based on user preference.

Refractory

- Designed with multi-layer thermal insulation and double-layer lightweight refractory brick lining for enhanced durability.
- The structure is tightly stacked and interlocked, free of asbestos, offering low heat loss and reduced energy consumption.

Heating System

- Uses premium metal or ceramic heating elements that provide efficient, radiant heat within the furnace chamber.
- Three-sided heating (left, right, and bottom) ensures excellent temperature uniformity.
- A silicon carbide bottom plate protects the lower heating elements, offering strong mechanical support, high thermal conductivity, and reliable load-bearing performance.

Temperature Control Panel

- Features PID and SCR control for precise temperature management.
- Equipped with a durable, international-standard thermocouple.
- Includes a safety switch that cuts power when the furnace door is opened.
- The control panel is located on the right side of the furnace, with an optional standalone control cabinet available.

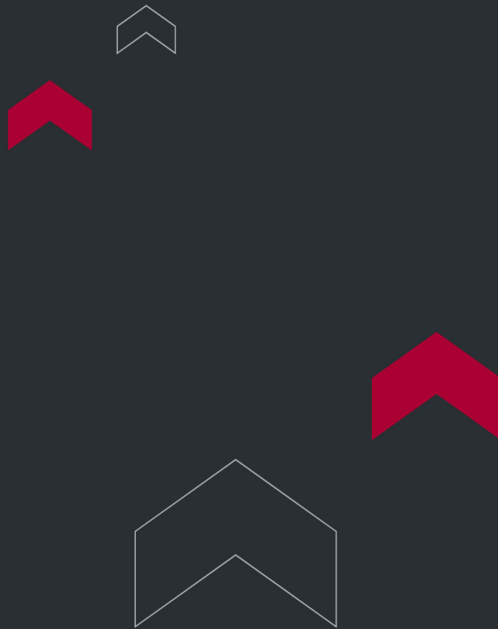
Program Controller

- Supports advanced processing needs with a user-friendly interface.
- Easily programmable with up to 30 segments per heating curve.
- Includes over-temperature and fault alarms with built-in safety protections.
- Optional features include manual air intake and automated exhaust venting.
- A rapid cooling system is available to reduce furnace temperature quickly from 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°C	1100°C	380V	15KW	HRE	±1°C
TT-IF-150-1200P	450×530×590	150L	1200°C	1100°C	380V	24KW	HRE	±1°C
TT-IF-200-1200P	500×530×720	200L	1200°C	1100°C	380V	27KW	HRE	±1°C

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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