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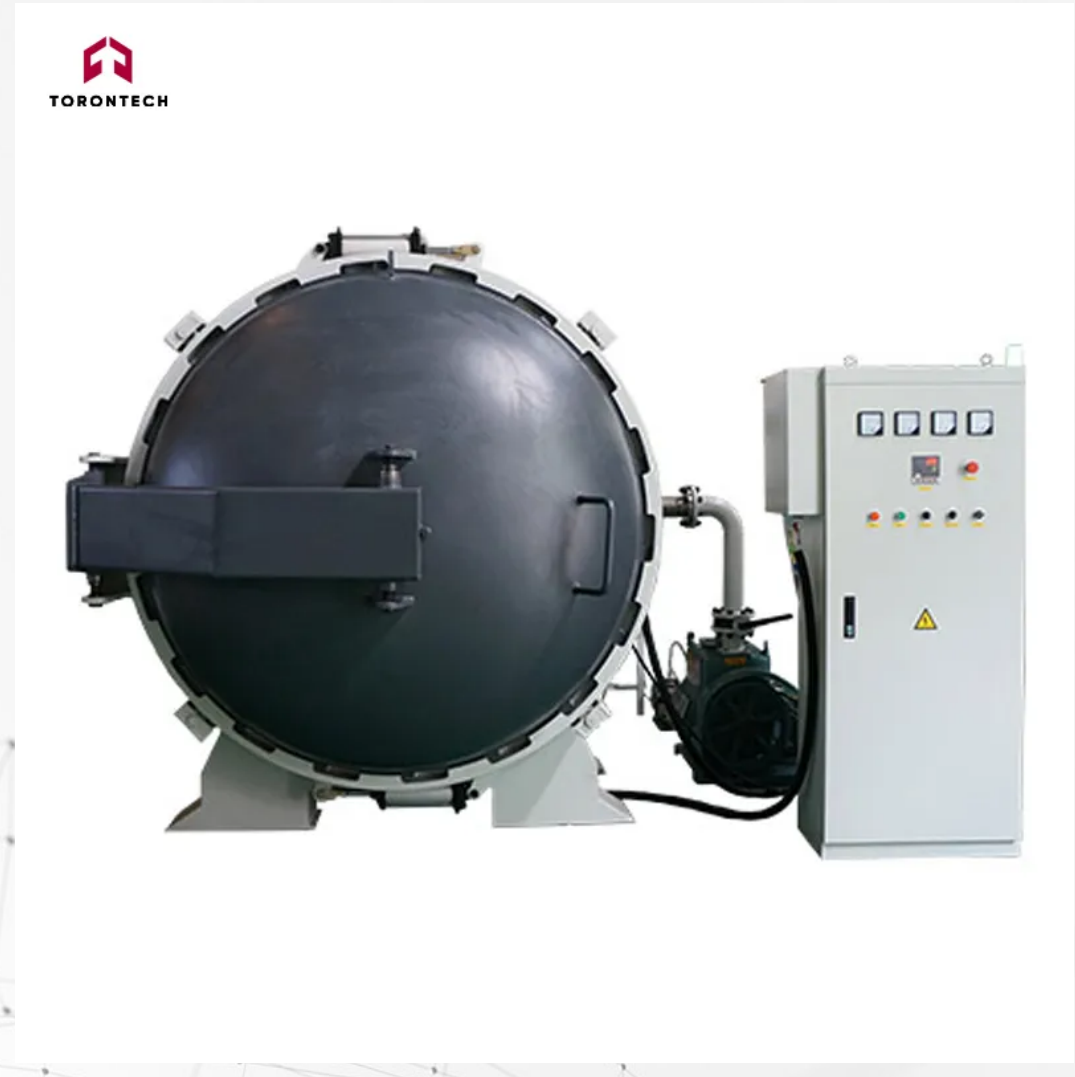

VACUUM ATMOSPHERE FURNACE – TT-VAF-288-1200

The TT-VAF-288-1200 is a high-performance box-type resistance furnace designed to deliver precise heat treatment up to 1200°C under vacuum or controlled atmosphere conditions. Featuring a spacious chamber of 600 × 800 × 600 mm, it provides an optimal environment for advanced material processing, including metals, ceramics, nanomaterials, and semiconductors. Its robust design makes it an excellent choice for universities, research institutes, manufacturing facilities, and private laboratories requiring reliable high-temperature performance.

Engineered with a continuous working temperature of 1100°C and powered by a 380V/7.5kW system, the furnace ensures consistent operation for demanding applications. High-quality HRE alloy resistance wire heating elements provide efficient, uniform heat distribution, while an N-type thermocouple maintains temperature precision within ±1°C. This combination of durability, accuracy, and versatility makes the TT-VAF-288-1200 an essential solution for industrial and research environments focused on advanced materials development.

APPLICATIONS

Vacuum Atmosphere Furnace – TT-VAF-288-1200

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- **Advanced Materials Research** – Provides precise, uniform high-temperature treatment under vacuum or controlled atmospheres, enabling sintering, annealing, and calcination of advanced ceramics, nanomaterials, and composite

structures.

- **Metallurgy & Powder Processing** – Supports vacuum sintering and densification of metal powders and specialty alloys. Ensures reduced oxidation and contamination, producing strong, uniform components for industrial and research use.

- **Semiconductor & Electronics Industry** – Facilitates oxidation, diffusion, and annealing of semiconductor substrates under controlled atmospheres. Delivers precise temperature management essential for microelectronics and optoelectronics manufacturing.

- **Nanotechnology & Functional Materials** – Enables thermal treatment of nanostructures and catalytic materials under vacuum or inert gas. Ensures purity, stability, and reproducibility in cutting-edge nanomaterials research.

- **Aerospace & Defense Engineering** – Provides reliable thermal processing of advanced alloys, ceramics, and composites used in high-stress aerospace and defense applications. Maintains structural integrity and performance under extreme conditions.

- **Energy & Battery Research** – Supports controlled-atmosphere treatment of solid-state electrolytes, cathode/anode materials, and next-generation energy storage systems. Enhances thermal stability and cycle performance of advanced battery technologies.

- **Chemical & Petrochemical Laboratories** – Suitable for catalyst activation, decomposition studies, and thermal reaction analysis under vacuum or protective gas environments. Ensures reproducible and contamination-free results.

- **Universities & Research Institutes** – Ideal for multidisciplinary studies in physics, chemistry, and materials science. Offers versatile programming, vacuum compatibility, and robust safety features for advanced laboratory research.

- **Industrial Quality Control & Certification** – Delivers consistent, traceable high-temperature performance in compliance with ISO, CE, SGS, and TÜV standards. Provides audit-ready results for regulated industries.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel with an electrostatically resistant, anti-corrosive surface.
- Durable metal tank design ensures a low exterior temperature.
- Side-opening furnace door with a flange-type seal and manual screw compression for easy operation.

Refractory Material

- Multi-layer insulation composed of lightweight alumina ceramic fiber and high-grade insulation boards. The design is asbestos-free, offering low heat loss and reduced energy consumption.

Heating System

- Equipped with high-quality HRE spiral resistance wire heating elements, securely embedded into the furnace lining. Delivers radiant heat throughout the chamber for energy-efficient, long-lasting performance.
- Three-sided heating (left, right, and bottom) ensures excellent temperature uniformity.
- A silicon carbide base plate protects the bottom heating elements, offering high mechanical strength, efficient thermal conductivity, and stable horizontal load support.

Temperature Control Panel

- PID temperature controller with SSR/SCR output for precise thermal regulation.

- Uses a standard N-type nickel-chromium-silicon thermocouple, with a temperature range of 0–1300°C and extended service life.

Program Controller

- Designed for complex thermal processing.
- User-friendly interface with flexible programming options.
- Supports up to 30 programmable segments in a single profile.
- Built-in over-temperature and system fault alarms with automatic safety shutdown.

Vacuum Atmosphere Function

- The furnace chamber includes adjustable inlet and outlet ports for introducing protective gases.
- Compatible with various vacuum pumps to achieve vacuum levels ranging from 500 Pa to 0.06 Pa. A digital vacuum gauge provides real-time vacuum readings.
- Optional gas control unit available, supporting 1 to 3 adjustable float flowmeters for precise gas flow management.

TECHNICAL SPECIFICATIONS

Model	**TT-VAF-3-1200**	**TT-VAF-6-1200**	**TT-VAF-8-1200**	**TT-VAF-12-1200**	**TT-VAF-18-1200**	**TT-VAF-30-1200**
Chamber Size □ W xD xH□ mm	150 x150x150	180x230x150	200x300x120	200 x300x200	250 x300x250	300 x500x200
Rated Temperature	1200℃					
Work Temperature	1100℃					

Voltage	220V/2.5KW (110V is also available)	220V/3KW (110V is also available)	220V/3KW (110V is also available)	220V/4KW (110V is also available)	220V/6KW (110V is also available)	220V/7.5KW (110V is also available)
Heating Element	HRE Alloy Resistance Wire					
Chamber Materials	Polycrystalline inorganic alumina ceramic fiber material made by wet vacuum filtration methord					
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 4 groups program curves with each program curve with 8 segments totally 32 segments for program heating, program heat preservation, program cooling					
Heating Rate	1-25℃/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					

Optional Accessories	1、Optional with Rotary Vacuum Pump 、Vacuum Degree Level ≤500pa、 2、Optional digital vacuum gauge 、1.0×105-1.0×10-1pa、 3、Optional with gas float meter 、Float flow rage 1-10L/min、

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