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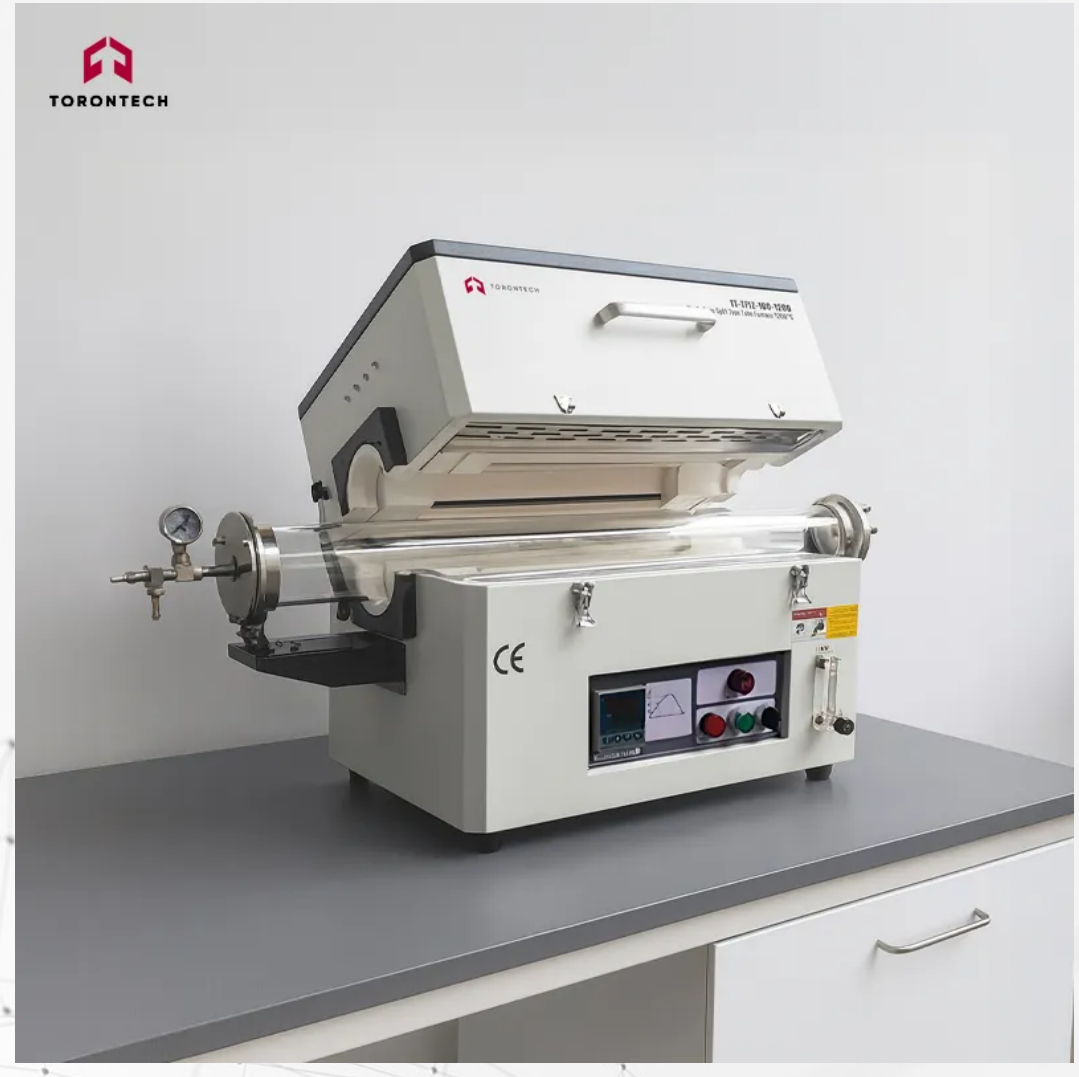

SINGLE ZONE SPLIT TYPE TUBE FURNACE 1200°C - TT-TF1Z-100-1200

Single Zone Split Type Tube Furnace 1200°C - TT-TF1Z-100-1200 is designed for high-temperature heat treatment and sintering of metals, ceramics, nanomaterials, semiconductors, powder metallurgy, and other advanced materials. It is widely used in universities, research institutions, manufacturing facilities, as well as the petrochemical and aerospace sectors.

APPLICATIONS

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- **Advanced Ceramic Materials** – Enables precise sintering and densification of ceramic samples under controlled atmosphere or vacuum conditions. Ensures excellent structural integrity, thermal stability, and durability for both research and industrial applications.

- **Nanomaterials Research** – Provides uniform high-temperature processing for nanostructures, thin films, and composite materials. Supports innovation in energy storage, catalysis, and electronics through precise atmosphere-controlled treatment.

- **Semiconductor & Electronics Development** – Facilitates annealing, diffusion, oxidation, and thermal treatment of semiconductor wafers and substrates. Delivers highly stable and accurate temperature control essential for microelectronics and optoelectronic device fabrication.

- **Powder Metallurgy** – Supports controlled sintering of metallic and alloy powders into dense, uniform components. Ideal for advanced manufacturing, metallurgical studies, and alloy development under vacuum or protective gas environments.

- **Petrochemical & Chemical Laboratories** – Suitable for catalyst activation, thermal decomposition, and reaction studies requiring high-temperature stability and atmosphere control. Delivers accurate and reproducible results for chemical R&D.

- **Aerospace Materials Engineering** – Enables thermal treatment and evaluation of high-performance alloys, ceramics, and composites used in aerospace applications. Ensures material stability, oxidation resistance, and strength under extreme thermal conditions.

- **Energy & Battery Research** – Provides precise heat treatment of solid electrolytes, cathode/anode materials, and hydrogen storage compounds. Enhances consistency and performance in lithium-ion and next-generation energy storage systems.

- **Universities & Research Institutes** – Widely applied in academic laboratories for studies in materials science, chemistry, physics, and engineering. Combines user-friendly programming, flexible atmosphere control, and advanced safety features for reliable educational and research use.

- **Industrial Quality Control & Certification** – Delivers high-precision thermal processing for product validation, compliance testing, and certification under ISO, CE, SGS, and TÜV standards. Ensures reproducibility and regulatory

acceptance for industrial applications.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel, the shell features an electrostatic-resistant coating that protects against corrosion.
- The robust double-layer metal frame is integrated with an insulated fan design to maintain a low external surface temperature.
- Designed for horizontal operation with a top-opening structure for easy access and user-friendly handling.

Refractory Insulation

- Built with a multi-layer insulation system consisting of lightweight alumina ceramic fiber and premium insulating boards.
- Free of asbestos, the design minimizes heat loss and reduces energy usage.

Heating System

- Equipped with high-grade HRE spiral resistance wire elements, securely embedded along the furnace walls.
- Heating is achieved through efficient radiant heat, delivering energy savings and extended durability.
- The coiled resistance wire forms a ring structure, ensuring even heat distribution throughout the chamber.

Temperature Control Panel

- Features PID and SSR control for highly accurate temperature regulation.
- Uses a standard N-type nickel-chromium-silicon thermocouple with a wide measurement range (0–1300°C) and long operational life.

- Includes a safety switch that cuts power when the furnace door is opened.

Program Controller

- Advanced controller designed for complex thermal processes.
- User-friendly interface with flexible programming options.
- Supports up to 30 programmable segments per thermal curve.
- Equipped with over-temperature and fault detection alarms for automatic protection.

Vacuum and Atmosphere Capability

- Comes with a 304 stainless steel sealing flange for vacuum or atmosphere control within the tube.
- Includes a high-purity quartz glass working tube, with optional metal or corundum tubes available to suit various applications.

TECHNICAL SPECIFICATIONS

Model	TT-TF1Z-25-1200	TT-TF1Z-40-1200	TT-TF1Z-60-1200	TT-TF1Z-80-1200	TT-TF1Z-100-1200	TT-TF1Z-120-1200
Tube size	Φ25 x 600mm	Φ40 x 1000mm	Φ60 x 1000mm	Φ80 x 1000mm	Φ100 x 1000mm	Φ120 x 1000mm
Max temperature	1200℃					
Working temperature	1100℃					
Heating size	200mm	440mm				
Voltage	220V/1.8KW (110V is also available)	220V/1.8KW (110V is also available)	220V/2.6KW (110V is also available)	220V/4KW (110V is also available)	220V/4KW (110V is also available)	220V/5KW (110V is also available)

Heating element	HRE alloy resistance wire
Furnace material	Polycrystalline inorganic alumina ceramic fiber material prepared by wet vacuum filtration
Furnace tube material	Quartz tube
Temperature control accuracy	±1℃
Thermocouple	N type thermocouple
Temperature control instrument	Intelligent microcomputer PID temperature control instrument, SCR/SSR control, PID parameter self-tuning function; programmable 4 groups of 8 program segments, program heating, program heat preservation, program cooling
Heating rate	1-25℃/min free adjustment
Furnace structure	Furnace temperature control integrated structure, furnace opening and closing; double-layer shell, air circulation and heat insulation
Sealing performance	Both ends of the furnace tube are equipped with stainless steel metal flanges, matched with high-temperature PTFE gaskets, which can work under vacuum with a vacuum degree of ≤5pa (rotary vane vacuum pump)
atmosphere performance	There are air inlets and outlets at both ends of the flange. The pressure gauge is installed on the metal flange. The precision needle valve can adjust the air intake and output, and can be fed with protective gases such as nitrogen, argon, and hydrogen
equipment protection	Modular control, sound and light alarm signal will be sent out for over temperature and broken coupler 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
shell	High-quality cold-rolled steel plate CNC machine tool blanking processing, after welding, grinding, polishing, phosphating, pickling, surface electrostatic spraying plastic powder
Quality Certification	ISO9001 CE SGS TUV
Optional accessories	1. Optional rotary vane vacuum pump (vacuum degree ≤ 5pa) 2. Optional digital vacuum gauge (1.0×105-1.0×10-1pa) 3. Optional float flowmeter (range 60-600ml/min) 4. Optional with quartz boat

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