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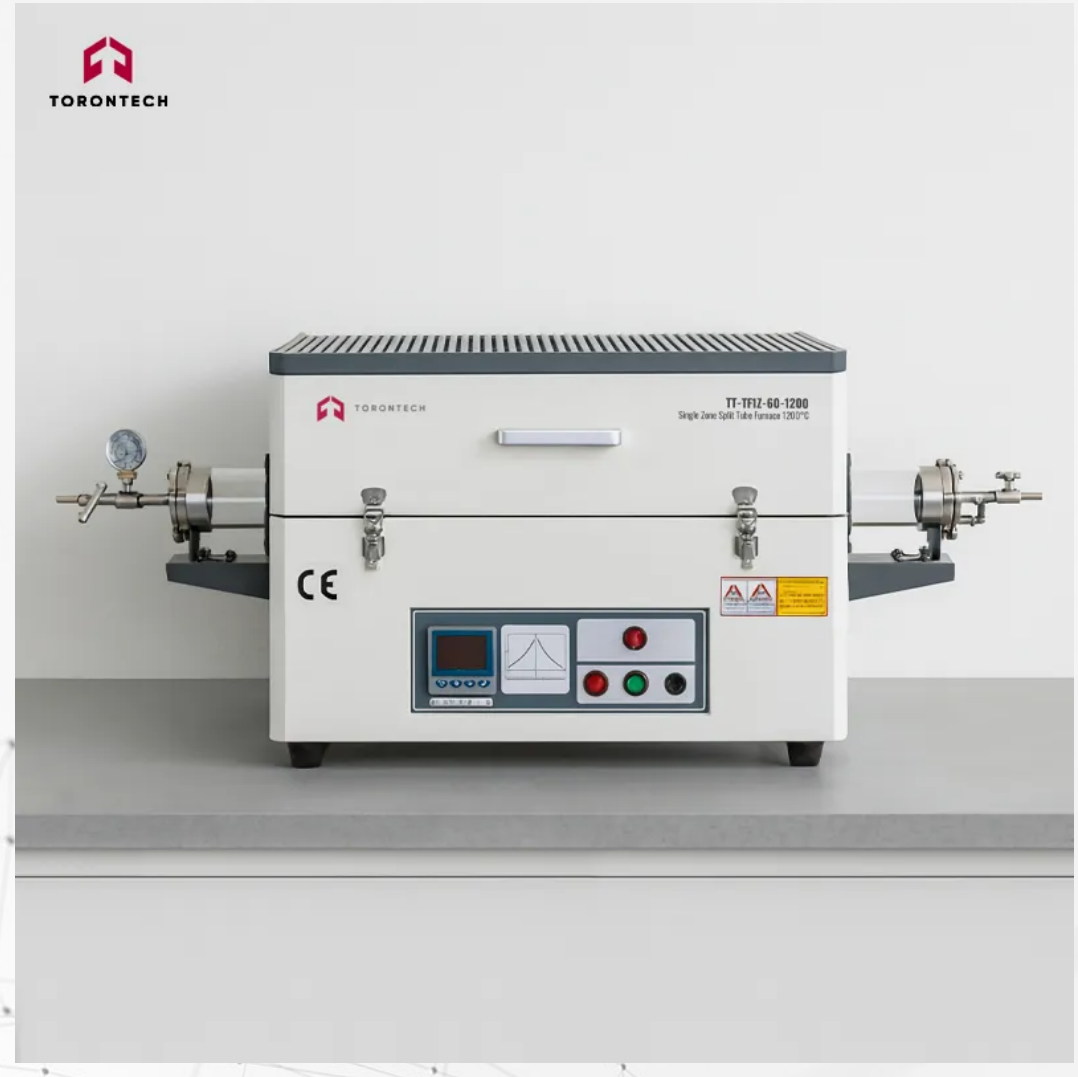

SINGLE ZONE SPLIT TUBE FURNACE 1200°C - TT-TF1Z-60-1200

Single Zone Split Tube Furnace 1200°C - TT-TF1Z-60-1200 is designed for sintering and high-temperature heat treatment of metals, ceramics, nanomaterials, semiconductors, powder metallurgy, and other advanced materials. It is widely used in universities, research centers, industrial facilities, as well as in the petrochemical, aerospace, and related sectors.

APPLICATIONS

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- **Advanced Ceramics & Glass Research** – Enables precise sintering, annealing, and thermal processing of technical ceramics and glass materials. Supports the development of components with enhanced thermal stability, mechanical strength, and structural reliability.

- **Nanomaterials & Composite Studies** – Provides controlled heat treatment for nanostructures, thin films, and advanced composites. Ensures uniform processing conditions essential for high-performance materials in energy, electronics, and catalysis.

- **Semiconductor & Electronics Industry** – Facilitates diffusion, oxidation, and annealing processes for semiconductor wafers and substrates. Delivers consistent thermal profiles required for reliable microelectronic and optoelectronic device fabrication.

- **Powder Metallurgy & Alloy Development** – Supports sintering and densification of metal powders and specialty alloys. Ensures homogeneous material properties, making it suitable for metallurgical research and advanced manufacturing.

- **Chemical & Petrochemical Laboratories** – Provides accurate high-temperature processing for catalyst activation, decomposition studies, and atmosphere-controlled reactions. Improves reproducibility in chemical research and industrial testing.

- **Aerospace Materials Engineering** – Enables the thermal treatment of aerospace alloys, composites, and coatings. Ensures durability, oxidation resistance, and mechanical stability under extreme service conditions.

- **Energy & Battery Research** – Delivers uniform high-temperature sintering for solid-state electrolytes, electrodes, and fuel cell materials. Enhances electrochemical performance and long-term stability in next-generation batteries.

- **Universities & Research Institutes** – Widely applied in materials science, physics, chemistry, and engineering research. Offers a flexible, programmable system with strong safety features, making it suitable for educational and institutional environments.

- **Industrial Testing & Quality Control** – Provides reproducible high-temperature performance for certification and compliance testing. Supports industries requiring ISO9001, CE, SGS, and TÜV standard conformity.

FEATURES

Furnace Shell

- Constructed from Q235 low-carbon steel, the furnace shell features a corrosion-resistant, electrostatically coated surface.
- A solid, double-layer metal frame is integrated with a heat-insulating fan structure, maintaining a low external surface temperature.
- Designed for horizontal operation with a top-opening structure, the unit is user-friendly and easy to handle.

Refractory Material

- The furnace uses a multi-layer insulation system composed of lightweight alumina ceramic fiber and premium insulation board.
- Free of asbestos, this design minimizes heat loss and energy consumption.

Heating System

- High-performance HRE spiral resistance wires are securely embedded on the inner surface and heat the chamber via free radiation, offering excellent energy efficiency and durability.
- Ring-type resistance wire heating ensures uniform temperature distribution inside the furnace.

Temperature Control Panel

- Features PID and SSR control for accurate temperature regulation.
- Equipped with a high-grade N-type nickel-chromium-silicon thermocouple with a temperature range of 0–1300°C and extended service life.
- A built-in door switch automatically cuts power when the furnace door is opened, enhancing safety.

Program Controller

- Advanced control system supports complex heat treatment processes.
- Offers intuitive operation and flexible programming with up to 30 segments per program curve.
- Includes over-temperature and fault alarms with automatic safety shutdown.

Vacuum Atmosphere Function

- Features a 304 stainless steel sealing flange for achieving a vacuum or controlled atmosphere within the furnace tube.
- Comes standard with a high-purity quartz glass tube; metal or corundum tubes are also 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/2.6KW (110V is also available)	220V/2.6KW (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 30 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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