

MUFFLE FURNACE (VERTICAL) TT-MF-36- 1400



Muffle Furnace (Vertical) TT-MF-36-1400 is designed for high-temperature heat treatment processes such as sintering advanced materials, including metals, ceramics, nanomaterials, and semiconductors.

APPLICATIONS

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- **Advanced Ceramic Materials** - Enables precise high-temperature sintering and densification of ceramics, ensuring superior mechanical strength, structural stability, and thermal resistance. Suitable for both industrial-scale processing and academic research.
- **Nanomaterials Research** - Provides uniform, controlled heating for nanostructures and composite materials. Supports R&D in functional nanomaterials applied to electronics, catalysis, photonics, and next-generation energy systems.
- **Semiconductor Materials** - Facilitates thermal oxidation, diffusion, and annealing processes for semiconductor substrates. Ensures exceptional temperature precision, critical for the development of microelectronics and optoelectronic devices.

- **Powder Metallurgy** - Supports the sintering of metallic powders into dense, durable components. Widely used in manufacturing advanced alloys, complex geometries, and structural parts for industrial and research applications.
- **Petrochemical & Chemical Laboratories** - Suitable for catalyst activation, thermal decomposition, and material stability testing at elevated temperatures. Delivers reliable, reproducible results essential for chemical and petrochemical R&D.
- **Aerospace Materials Engineering** - Enables high-temperature testing of advanced composites, ceramic matrices, and aerospace-grade alloys. Ensures validation of thermal resistance and mechanical performance under extreme operating conditions.
- **Energy & Battery Research** - Provides controlled thermal treatment for solid electrolytes, electrode materials, and lithium-ion battery components. Enhances performance and stability in energy storage and renewable energy applications.
- **Universities & Research Institutes** - Designed for multidisciplinary studies in physics, chemistry, materials science, and engineering. Offers versatile programming functions, robust safety systems, and high reliability for academic laboratories.
- **Industrial Quality Control & Certification** - Delivers high-precision thermal testing for product validation, compliance verification, and certification processes. Conforms to international standards including ISO, CE, SGS, and TÜV.

FEATURES

Furnace Shell

1. The shell is constructed from Q235 low-carbon steel with an electrostatically coated surface for corrosion resistance.
2. Its robust double-layer metal frame helps maintain a low external surface temperature.
3. The side-opening door swings to the right, allowing for easy operation.

Refractory Material

1. The furnace features a multi-layer insulation system made from lightweight alumina ceramic fiber and high-quality insulation board.
2. It is asbestos-free, minimizes heat loss, and enhances energy efficiency.

Heating System

1. High-quality silicon carbide (SiC) heating elements are securely installed on both sides of the chamber, providing efficient, energy-saving performance through radiant heat.
2. Dual-sided heating ensures uniform temperature distribution.
3. A silicon carbide bottom plate protects the lower heating elements, offering high mechanical strength, excellent thermal conductivity, and stable horizontal load support.

Temperature Control Panel

1. Utilizes PID and SSR control for precise temperature regulation.
2. Equipped with an internationally standardized S-type platinum-rhodium thermocouple, measuring up to 1600°C with long-term durability.
3. A safety switch automatically cuts power when the door is opened.

Program Controller

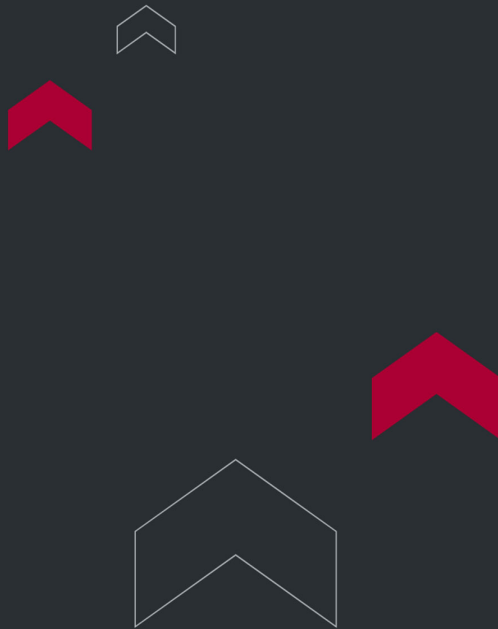
1. Advanced controller supports complex thermal processing needs
2. User-friendly interface with flexible programming
3. Allows up to 30 programmable segments per curve

4. Over-temperature and fault alarms ensure automatic safety protection

TECHNICAL SPECIFICATIONS

Model	TT-MF-1.7-1400	TT-MF-3-1400	TT-MF-8-1400	TT-MF-12-1400	TT-MF-18-1400	TT-MF-36-1400	TT-MF-45-1400
Chamber size □ W xD xH□ mm	120 x120x120	150 x150x150	200x200x200	200x300x200	250 x300x250	300x400x300	300 x500x300
Outer size□ W xD xH□ mm	460 x500x720	490x530x750	575x610x825	590 x680x835	610 x700x860	650x770x900	975 x930x1200
Max temperature	1400℃						
Working temperature	1350℃						
Voltage	220V/2.5KW (110V is also available)	220V/3KW (110V is also available)	220V/5KW (110V is also available)	220V/5KW (110V is also available)	220V/6KW (110V is also available)	380V/12KW	380V/14KW
Heating element	silicon carbide rod (SIC)						
Chamber material	Polycrystalline inorganic alumina ceramic fiber material prepared by wet vacuum filtration						
Temp.Precision	±1℃						
Termocouple	S Type termocouple						
Temperature controller	Intelligent microcomputer PID temperature control instrument, SSR control, PID parameter self-tuning function; programmable 30 program segments, program temperature rise, program heat preservation, program cooling						
Heating rate	1-30℃/min free adjustment						

Furnace structure	Furnace temperature control integrated structure
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
Quality certificate	ISO9001 CE SGS TUV
Optional	1. Optional exhaust chimney for evacuation of volatile substances 2. Optional corundum crucible, furnace floor, shed board and other kiln furniture 3. Optional material recorder for online recording of temperature curves



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