



Technical resources

vacuum tube furnace

Model: TC-12NT/14ST/16MT

<https://www.tencanballmills.com/en/products/sintering-series/vacuum-tube-furnace.html>

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Model: TC-12NT/14ST/16MT

Tianchuang vacuum tube furnace uses high-purity quartz or alumina tubes, operating from 300°C to 1600°C. Ideal for materials research, sintering, and heat treatment in labs and industries.

Technical specifications

Maximum temperature	1200°C
Working temperature	1100°C
Heating rate	0-20 °C/min

These specifications describe the series. Confirm the selected model, power supply and configuration before ordering.



Tianchuang vacuum tube furnace uses high-purity quartz tubes or high-purity alumina tubes as furnace tubes. The operating temperature range is 300°C to 1600°C. Customers can choose according to actual needs. This series of equipment has the characteristics of safety and reliability, simple operation, high temperature control accuracy, good heat preservation effect, high furnace temperature uniformity, and can be vacuumed through the atmosphere. It is widely used in colleges and universities, scientific research institutes, industrial and mining enterprises for high-temperature sintered metal material processing experiments, quality inspection and small batch production.

Technical parameters

Standard 1200 type:

model	Furnace tube diameter x heating zone length (mm)	Power (kW)	Maximum temperature (°C)	Working temperature (°C)	Thermocouple	Furnace tube material	heating element
TC-12NT-40/300	40x300	3	1200	1100	K type	quartz tube	Molybdenum resistance wire
TC-12NT-60/300	60x300	3					
TC-12NT-80/300	80x300	5					
TC-12NT-100/300	100x300	5					
TC-12NT-120/300	120x300	6					
TC-12NT-40/450	40x450	3					
TC-12NT-60/450	60x450	3					
TC-12NT-80/450	80x450	5					
TC-12NT-100/450	100x450	5					
TC-12NT-120/450	120x450	6					

Standard 1400 type:

model	Furnace tube diameter x heating zone length (mm)	Power (kW)	Maximum temperature (°C)	Working temperature (°C)	Thermocouple	Furnace tube material	heating element
TC-14ST-40/300	40x300	4	1400	1300	S type	corundum tube	Silicon carbide rod
TC-14ST-60/300	60x300	4					
TC-14ST-80/300	80x300	4					
TC-14ST-100/300	100x300	6					
TC-14ST-120/300	120x300	6					
TC-14ST-40/450	40x450	4					
TC-14ST-60/450	60x450	4					
TC-14ST-80/450	80x450	4					
TC-14ST-100/450	100x450	6					
TC-14ST-120/450	120x450	6					

Standard 1600 type:

model	Furnace tube diameter x heating zone length (mm)	Power (kW)	Maximum temperature (°C)	Working temperature (°C)	Thermocouple	Furnace tube material	heating element
TC-16MT-40/300	40x300	4	1600	1500	Type B	corundum tube	Silicon molybdenum rod
TC-16MT-60/300	60x300	4					
TC-16MT-80/300	80x300	4					
TC-16MT-100/300	100x300	6					
TC-16MT-120/300	120x300	6					
TC-16MT-40/450	40x450	5					
TC-16MT-60/450	60x450	5					
TC-16MT-80/450	80x450	5					
TC-16MT-100/450	100x450	7					
TC-16MT-120/450	120x450	7					

- Maximum temperature: 1200°C (HRE resistance wire heating), 1400°C (silicon carbon rod heating), 1600°C (silicon molybdenum rod heating)
- Intelligent 50-segment programmable automatic control.
- Furnace shell structure, double-layer air-cooling structure; Surface temperature below 50°C
- The furnace adopts high-quality alumina polycrystalline fiber inorganic material formed by vacuum adsorption using Japanese technology, which has excellent thermal insulation performance.
- 304 stainless steel double-layer sealing flange.
- Adjustable flange support structures at both ends extend the service life of the furnace tube.
- Over-temperature protection function, automatically cuts off power when the temperature exceeds the allowed set value.
- Safety protection: Automatically cut off power when the furnace body leaks electricity.
- Heating rate $\leq 20^{\circ}\text{C}/\text{min}$.
- Temperature control accuracy $\pm 1^{\circ}\text{C}$.
- Maximum vacuum degree-0.1MPa
- Molecular pump unit can be configured, and the vacuum degree can reach $7 \times 10^{-4}\text{Pa}$.

Standard accessories:

4 pipe plugs; 1 furnace pipe ; 1 vacuum pump.

1 set of vacuum sealing flange ; 1 vacuum pressure gauge.

Optional accessories:

◆Vacuum system (rotary vane mechanical pump, diffusion pump, molecular pump)

◆Atmosphere system (float flow meter, mass flow meter)

◆Quick release flange, 3-way flange

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Before operation, review the selected model's instructions and the material requirements.