



TORONTECH



## ATMOSPHERE FURNACE TT-AF-20-1700

1700°C chamber atmosphere furnace features a flange-sealed body for reliable operation. During heat treatment, protective gases such as nitrogen, argon, or oxygen can be introduced for processing carbon, metal, and biomass materials. It is also suitable for sintering ternary lithium battery materials.

## APPLICATIONS

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- **Advanced Material Research & Synthesis:** Primary application for high-temperature treatment of advanced materials, including the crucial sintering of ternary lithium battery materials, specialty metals, carbon structures, and biomass.
- **Precision Atmosphere Control:** Utilizes a flange-sealed chamber to reliably process samples under inert (N<sub>2</sub>, Ar) or reactive (O<sub>2</sub>) protective gases, and can achieve a pre-evacuation vacuum of up to 20,000 Pa using the rotary vane pump.
- **Complex Thermal Processing:** Essential tool for sophisticated experiments requiring precise control, allowing for the programming of up to 30 temperature segments for complex, multi-stage heating curves.
- **High-Volume & Scalable Production:** The base design supports industrial needs, with component options and chamber capacities that are scalable up to 1000 L for factory-level production requirements.

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## FEATURES

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### Furnace Shell

- Constructed from Q235 low-carbon steel with an electrostatically resistant, anti-corrosion surface.
- Durable metal tank design ensures a low external surface temperature.
- Side-opening furnace door with flange-sealed structure and manual screw compression for easier operation.

### Refractory Material

- Multi-layer insulation made of lightweight alumina ceramic fiber and premium insulation boards.
- Asbestos-free design with low heat loss and reduced energy consumption.

### Heating System

- High-quality heating elements securely mounted on both sides of the furnace, providing free-radiation heating for high efficiency and long service life.
- Dual-side (left and right) heating elements ensure excellent temperature uniformity inside the chamber.

### Temperature Control Panel

- PID control with SSR mode for precise temperature regulation.
- Equipped with an international-standard thermocouple for extended durability.
- Chamber capacity options up to 1000L, suitable for factory production needs.

### Program Controller

- Advanced controller to meet complex process requirements.
- Simple, user-friendly operation with flexible programming.
- Supports up to 30 programmable segments for a single curve.
- Over-temperature and fault alarms with automatic safety protection.

## Vacuum Atmosphere Function

- Adjustable air inlet and outlet ports for protective gas introduction.
- High-performance rotary vane vacuum pump achieving a vacuum level of 20,000 Pa.
- Optional gas circuit control unit with 1-3 adjustable flow meters.

## TECHNICAL SPECIFICATIONS

| Product Model | Chamber Size □ mm□ | Volume | Max Temp | Work Temp | Voltage                       | Power | Heating Element | Controller Accuracy |
|---------------|--------------------|--------|----------|-----------|-------------------------------|-------|-----------------|---------------------|
| TT-AF-8-1200  | 200×300×120        | 8L     | 1200℃    | 1100℃     | 220V (110V is also available) | 3KW   | HRE             | ±1℃                 |
| TT-AF-12-1200 | 200×300×200        | 12L    | 1200℃    | 1100℃     | 220V (110V is also available) | 4KW   | HRE             | ±1℃                 |
| TT-AF-18-1200 | 250×300×250        | 18L    | 1200℃    | 1100℃     | 220V (110V is also available) | 6KW   | HRE             | ±1℃                 |
| TT-AF-30-1200 | 300×500×200        | 30L    | 1200℃    | 1100℃     | 380V                          | 7.5KW | HRE             | ±1℃                 |
| TT-AF-8-1400  | 200×200×200        | 8L     | 1400℃    | 1350℃     | 220V (110V is also available) | 5KW   | SIC             | ±1℃                 |
| TT-AF-12-1400 | 200×300×200        | 12L    | 1400℃    | 1350℃     | 220V (110V is also available) | 5KW   | SIC             | ±1℃                 |
| TT-AF-18-1400 | 250×300×250        | 18L    | 1400℃    | 1350℃     | 220V (110V is also available) | 6KW   | SIC             | ±1℃                 |
| TT-AF-36-1400 | 300×400×300        | 36L    | 1400℃    | 1350℃     | 380V                          | 12KW  | SIC             | ±1℃                 |
| TT-AF-45-1400 | 300×500×300        | 45L    | 1400℃    | 1350℃     | 380V                          | 14KW  | SIC             | ±1℃                 |
| TT-AF-8-1700  | 200×200×200        | 8L     | 1700℃    | 1600℃     | 220V (110V is also available) | 5KW   | MoSi2           | ±1℃                 |
| TT-AF-12-1700 | 200×300×200        | 12L    | 1700℃    | 1600℃     | 220V (110V is also available) | 6KW   | MoSi2           | ±1℃                 |
| TT-AF-20-1700 | 250×320×250        | 20L    | 1700℃    | 1600℃     | 380V                          | 7KW   | MoSi2           | ±1℃                 |
| TT-AF-36-1700 | 300×400×300        | 36L    | 1700℃    | 1600℃     | 380V                          | 13KW  | MoSi2           | ±1℃                 |



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