MAX. TEMP: 1500°F / 815°C	MAX. INLET PRESSURE: 25 psi / 1.7 bar
MAX POWER: 6 kW	VOLTAGE: 120V, 240V. 480V

GET A QUOTE DETERMINE YOUR HEATER

Serpentine VI Heaters

Max temperature up to 1500°F / 815°C
Modular and Durable Design – Stainless steel construction with field-replaceable Serpentine coil for easy maintenance and long service life
Energy Efficient and Safe – Triple-pass design minimizes heat loss, reduces energy consumption, and maintains a cooler outer shell for operator safety
CE RoHS

Applications: Ideal for automotive, aerospace, plastics, electronics, food processing, medical, printing, and general industrial OEM systems

High-Performance Modular Air Heating for OEM and Industrial Applications

The TUTCO SureHeat **Serpentine VI Triple Pass Heater** is engineered to deliver **precise, efficient, and reliable air heating** in demanding industrial environments where space, performance, and consistency are critical. Capable of reaching exhaust **temperatures up to 1,500°F (815°C)** and designed to withstand **pressures up to 25 psi / 1.7 bar**, the Serpentine VI is an excellent choice for applications that require rapid, uniform, and repeatable high-temperature air delivery within confined footprints. Its triple-pass coil design ensures maximum heat transfer efficiency by allowing the process air to pass over the heating element multiple times, improving thermal performance while reducing wasted energy. This design enables faster ramp-up times, tighter temperature stability, and greater process control, ensuring high-quality results across industrial heating applications.

Constructed with a durable stainless steel housing, the Serpentine VI offers longevity and reliability even in harsh production environments. Its compact and modular design makes it easy to install, maintain, and integrate into existing systems, while field-replaceable heating elements reduce downtime and simplify service. Suitable for both **OEM equipment integration and standalone use**, the Serpentine VI provides unmatched versatility, supporting applications such as drying, curing, forming, sealing, and thermal testing across industries including aerospace,

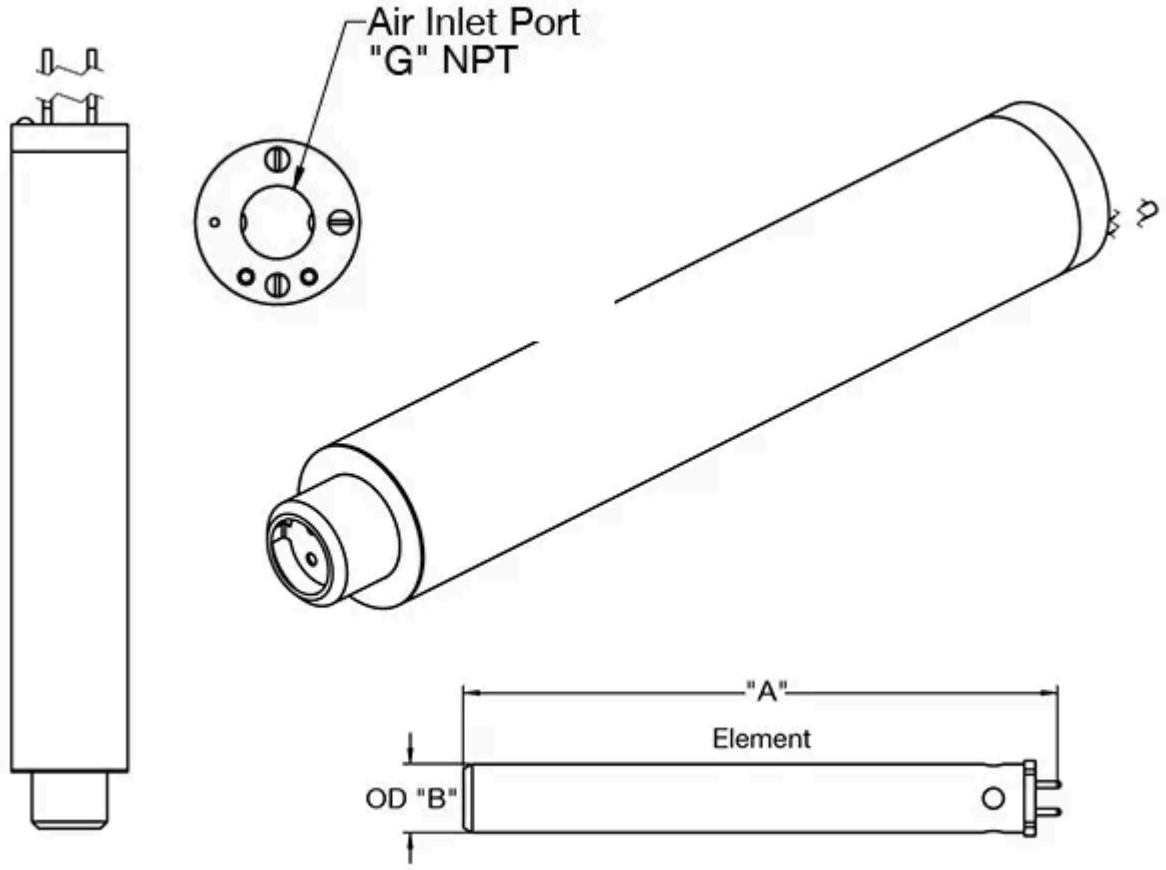
automotive, electronics, medical, plastics, and general manufacturing. With a balance of performance, durability, and efficiency, the Serpentine VI stands out as a trusted solution for industrial process heating.

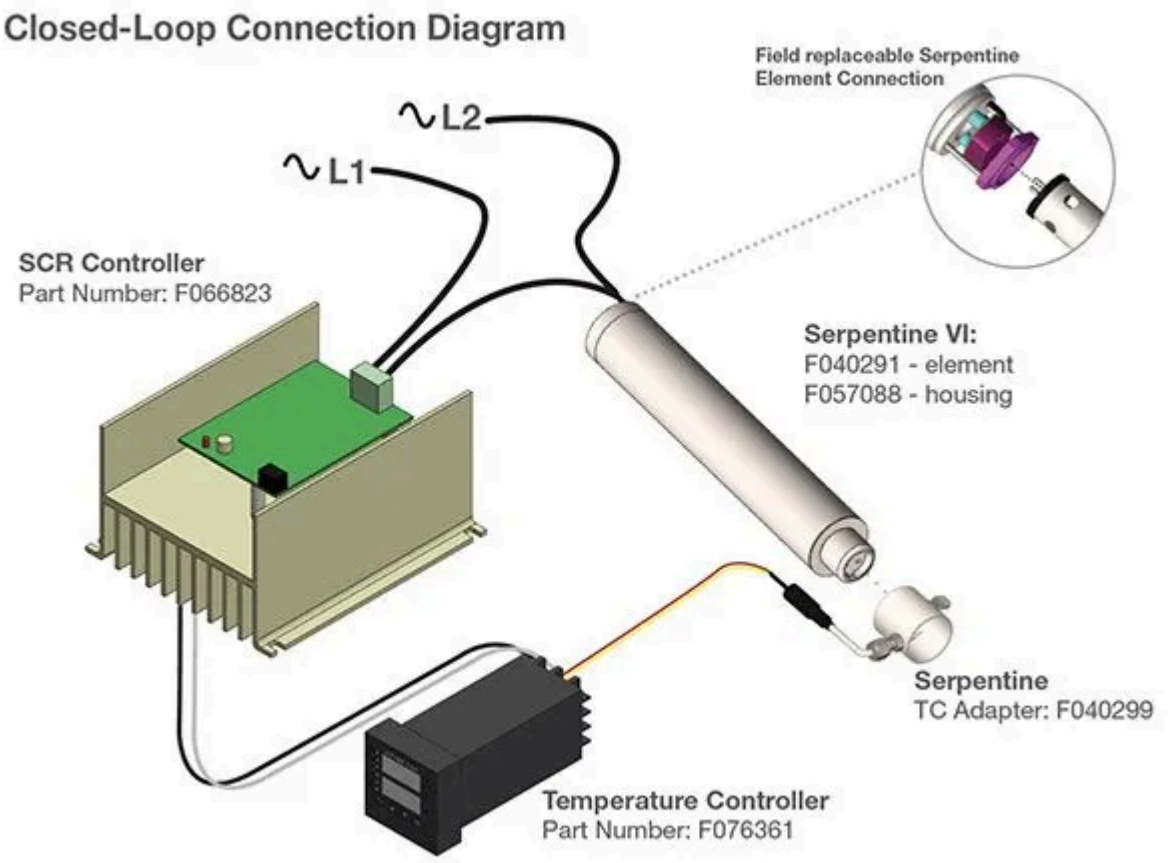
Discover which Serpentine VI heater is ideal for your application

Use the table below to determine the optimal Serpentine VI heater for your application, or contact TUTCO SureHeat to discuss specific process requirements and receive expert support.

Product List

Serpentine VI Element Length "A"	10.88” (276mm)
Serpentine VI Element Diameter "B"	1.25” (32mm)
Serpentine VI Housing Length "C"	12.9" (327mm)
Serpentine VI Housing Length "D"	11.9" (302mm)
Serpentine VI Housing Diameter "E"	2.1" (54mm)
Serpentine VI Housing Diameter "F"	1.4" (35mm)
Serpentine VI Housing Inlet Diameter "G"	3/4" NPT





Features & Benefits

- **High-Temperature Capability** – Reaches exhaust temperatures up to 1,500°F (815°C), supporting demanding industrial processes.
- **High-Pressure Tolerance** – Rated for 25 PSI maximum inlet pressure, suitable for compressed air systems.
- **Triple-Pass Modular Design** – Field-replaceable Serpentine coil housed in a triple-pass stainless steel housing for efficient heat transfer and easy maintenance.
- **Safe and Efficient Operation** – Outer shell remains cooler thanks to triple-pass airflow design, reducing radiant heat loss and providing safe operation.
- **Compact & Flexible Integration** – Easily fits into OEM systems, production lines, or standalone setups without sacrificing performance.
- **Durable Construction** – Made from 304 stainless steel, resistant to corrosion and built for long-term industrial use.
- **Controller Compatibility** – Works with digital temperature controllers using Type K thermocouples for precise, closed-loop temperature control.

Specifications

- **Maximum Exhaust:** Temperature Up to 1,500°F (815°C) - (2-stage model)
- **Maximum Inlet Pressure:** 25 PSI
- **Inner Tube Diameter:** 1.25" (32 mm)
- **Outer Housing Diameter:** 2.1" (54 mm)
- **Housing Material:** 304 Stainless Steel

- **Mounting Style:** Clamp
- **Power Options:** 5.0 kW, 6.0 kW, 8.0 kW
- **Voltage Options:** 240V Single Phase
- **Control Compatibility:** Digital temperature controllers with Type K thermocouples

Real World Results

- **Improved Process Efficiency** – Rapid and precise heat-up reduces cycle times, allowing manufacturers to increase throughput and improve overall productivity without sacrificing quality.
- **Consistent Product Quality** – The triple-pass design provides uniform heating across the air stream, minimizing defects in curing, drying, forming, and sealing processes. This precision helps ensure every product meets exacting standards.
- **Energy Savings** – Efficient heat transfer and reduced radiant heat loss in the triple-pass design lower energy consumption, helping facilities reduce operational costs and meet sustainability goals.
- **Durable & Low Maintenance** – Constructed from 304 stainless steel with a replaceable Serpentine coil, the heater is built for long-term reliability while reducing downtime and maintenance costs.
- **Enhanced Safety** – The triple-pass airflow cools the outer shell, reducing radiant heat exposure, while controlled airflow and precise temperature monitoring protect operators and surrounding equipment.

- **Flexible Application** – Suitable for OEM machinery, production lines, or standalone systems, the Serpentine II provides high-temperature, high-precision heating for a wide range of industries, including automotive, aerospace, plastics, electronics, food processing, medical, and more.

Notes

- Temperatures are measured by 3/16" "K" T/C sensor Part #F039272 mounted inside TC holder #040299
- TC Holder mounted on exit of #F057088 Housing Assembly Use of other sensor types and mounting locations can result in heater damage
- Minimum airflow for accurate control is 60 SCFH
- Maximum air temperature is 1500°F (815°C) *6kW, 2-stage only (F061429)
- Operating above this curve voids the product warranty

Applications

- **Automotive & Transportation** – Adhesive activation, panel bonding, welding, heat forming, component testing, and simulation. Ensures strong, durable bonds and consistent heat for quality manufacturing processes.
- **Aerospace & Defense** – Composite curing, thermal simulations, component testing, and de-icing systems. Provides reliable, precise heating for critical aerospace applications.
- **Plastic Processing & Packaging** – Plastic welding, shrink fitting, forming, bending, sealing, and heat shrinking. Supports high-quality, repeatable results in manufacturing and packaging.
- **Electronics & Semiconductor** – Solder reflow, wafer processing, quick drying, component sealing, and curing adhesives. Maintains uniform heat for sensitive, high-precision processes.
- **Food & Beverage** – Drying, sterilization, baking, coating, and shrink-wrapping. Enhances production efficiency while ensuring consistent product quality.
- **Medical & Pharmaceutical** – Sterilization, packaging, laboratory testing, and other precision heating applications. Supports strict hygiene and process requirements.
- **Printing & Converting** – Ink drying, laminating, coating, embossing, and shrink wrapping. Improves process speed and consistency across production lines.
- **General Industrial & OEM Machinery** – Hot air knives, drying tunnels, small-scale curing, and integration into custom OEM systems. Provides versatile solutions for diverse industrial processes.

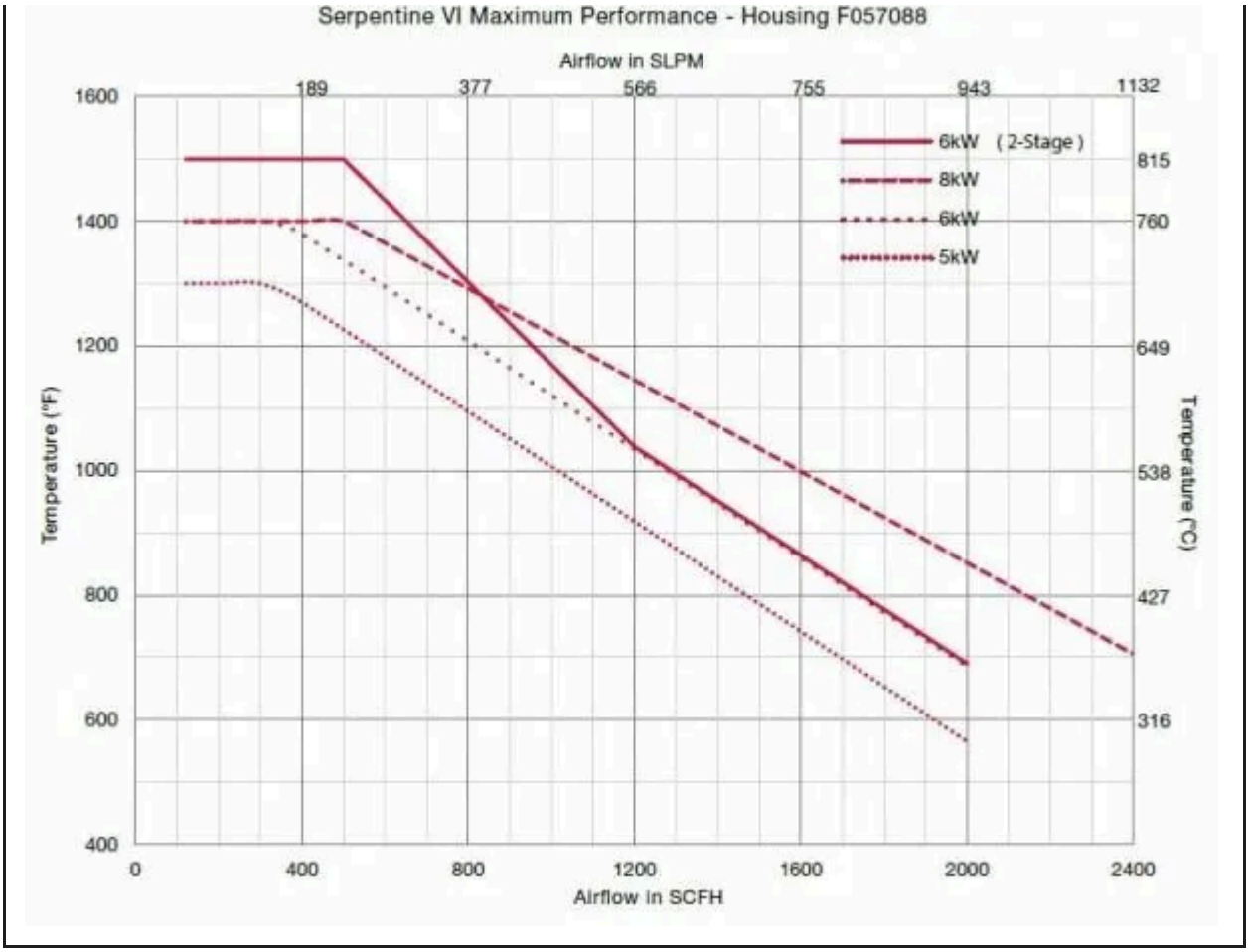
Resources

MANUALS
Quickstart Guide
Operating Manual

BROCHURES
Serpentine Data Sheet

VIDEOS
Air Heaters
Triple Pass Heaters

PERFORMANCE CURVES



Why choose TUTCO SureHeat

Industry Expertise: With decades of experience in industrial heating solutions, TUTCO SureHeat is a trusted name in the industry.
Reliable Performance: Our heaters are designed for consistent, repeatable results, ensuring quality and efficiency in your processes.
Comprehensive Support: We offer technical support, custom solutions, and integration assistance to meet your specific needs.
Global Reach: Our products are used worldwide, providing proven solutions in various industries.

The TUTCO SureHeat Serpentine VI Heater stands out in the market for its rapid, precise, and repeatable heating. It delivers improved product quality, higher throughput, and greater energy efficiency in every application.Whether you're integrating it into OEM equipment or using it in standalone applications, this heater offers the performance and versatility needed to meet your heating requirements.

Frequently Asked Questions

HOW DO THE SERPENTINE II AND SERPENTINE VI HEATERS DIFFER? —

Serpentine II: Designed for standard industrial and OEM applications, offering uniform, high-precision heating with field-replaceable coils.
Serpentine VI: Offers the same triple-pass efficiency and precision as the Serp II but in a more compact, modular design, perfect for installations with limited space or tight integration requirements. Both feature triple-pass airflow for faster ramp-up, tighter temperature stability, and reduced energy loss.

WHICH INDUSTRIES AND APPLICATIONS ARE BEST SUITED FOR THE SERPENTINE VI? —

The heater is widely used in aerospace, automotive, electronics, plastics, medical, food processing, and general manufacturing. Common applications include adhesive activation, composite curing, solder reflow, heat forming, sealing, drying, and thermal testing, providing uniform, high-temperature airflow for precise industrial processes.

HOW DOES THE TRIPLE-PASS DESIGN ENHANCE HEATER PERFORMANCE? —

The triple-pass coil design allows the air to pass over the heating element multiple times, maximizing heat transfer efficiency. This results in faster ramp-up times, tighter temperature stability, improved process control, and reduced energy waste. The design also keeps the outer shell cooler for safer operation.

WHAT ARE THE MAXIMUM TEMPERATURE AND PRESSURE CAPABILITIES OF THE SERPENTINE VI? —

The Serpentine VI delivers exhaust temperatures up to 1,500°F (815°C) and can withstand inlet pressures up to 25 PSI / 1.7 bar. These ratings make it ideal for high-precision industrial processes that require consistent, repeatable high-temperature airflow in confined spaces.

Part numbers: F040292, F040291, F061429, F056548