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Cool Touch™ 050 Inline Air Heater

Safe, Compact Heating for Low-to-Moderate Airflow Applications



The **Cool Touch™ 050** is a compact, high-performance inline air heater designed for applications requiring high outlet temperatures with a cool, safe-to-touch exterior. Its 1.0" (25.4 mm) diameter and advanced **triple-pass airflow design** route incoming air along the outer shell before reaching the heating element, significantly reducing surface temperature and simplifying operator protection and enclosure requirements.

Internally, the heater is engineered to store and stabilize thermal energy, allowing it to reach setpoint quickly and maintain steady output during cycling or variable airflow conditions. This ensures consistent, repeatable heating performance in processes where tight thermal control is critical. Supporting up to 7.5 SCFM, delivering exhaust **temperatures up to 1300°F (704°C)**, and offering wattages up to 500 W, the Cool Touch™ 050 fits demanding precision-heating tasks in a minimal footprint.



MAX WATT	MAX INLET	MAX EXHAUST	MIN SCFM	MAX SCFM	PSIG*
500 W	250° F	1300° F	1	10	120

Key Features & Benefits

Triple-Pass Safety Design

Air passes through three internal paths, cooling the exterior while maximizing internal heat storage.

Fast Temperature Stabilization

Output temperature quickly reaches setpoint and stays consistent – excellent for heat-cycling applications.

High Thermal Efficiency

Less heat lost to the environment; more delivered to your process.

Compact Stainless-Steel Build

Durable construction for long life in lab, OEM, and industrial environments.

Simple Integration

Horizontal or vertical mounting, stainless-steel fittings, and 20-gauge leads.

Process Monitoring Options

Thermocouples and conduit accessories available for closed-loop control.

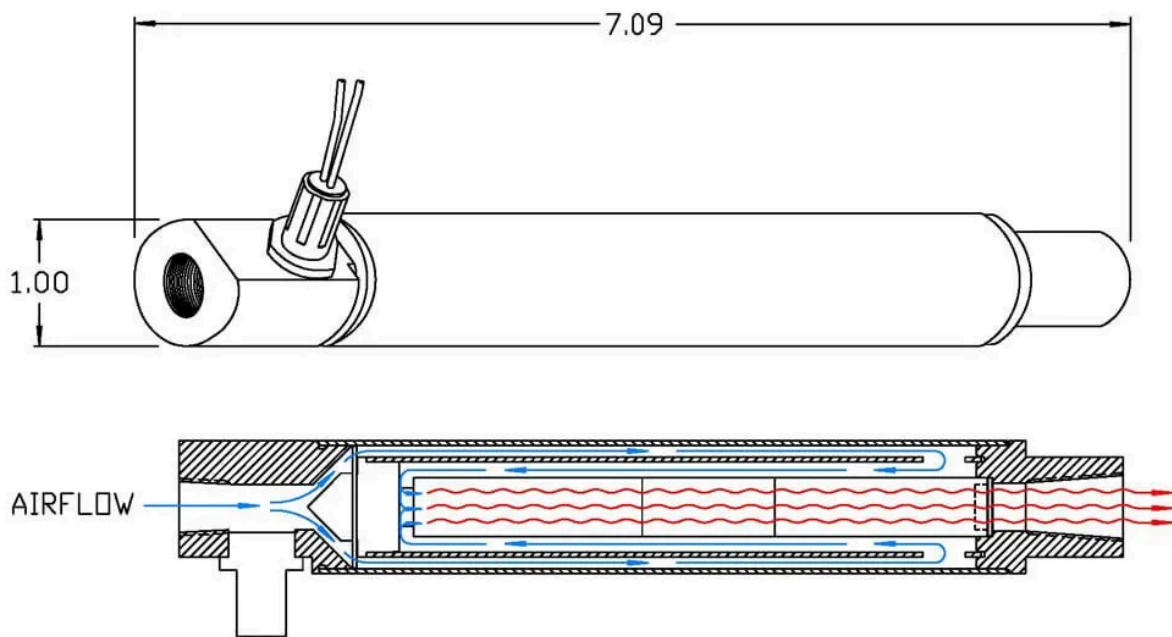
Specifications

Mounting	Horizontal / Vertical
Leads	20 AWG, 12" Long
Heater Body	Stainless Steel
Inlet Fittings	Stainless Steel
Exhaust Fittings	Stainless Steel

Wattage and Voltage Options

120V, single phase, 0.1kW-0.5kW

240V, single phase, 0.2kW-0.6kW



RESOURCES



Brochures and Manuals

Cool Touch 050 Brochure
Quickstart Guide



Drawings

Dimensional Drawing.pdf
3D STP 1/8"F-1/4"-TF2 (ID 13846)
3D STP 1/8"F-1/4"-TF2
3D STP 1/8"F-1/4"-X



Videos

Cool Touch Product Demo
Process Heaters

Ready to Build Your Solution?

Request a Quote or Contact our Applications Engineers to learn how a Cool Touch™ heater can improve your process consistency, energy efficiency, and thermal performance.

Applications

Cool Touch™ inline heaters are engineered for high-temperature performance in environments where operator proximity, compact equipment layouts, or exposed tooling require low external temperatures. Their insulated, triple-pass design enables precise, focused heat delivery while keeping the outer shell cool enough for safe handling and integration.

Staking and Heat Forming – Apply precise heat to small thermoplastic components for staking, forming, or assembly in production or R&D environments.

Curing Coatings and Adhesives – Deliver uniform heat to cure adhesives, coatings, and films with consistency, improving bonding and process reliability.

Adhesive Activation – Activate pressure-sensitive or heat-activated adhesives in small components, packaging, or electronics assembly.

Drying Processes – Efficiently dry materials, coatings, or parts with controlled airflow, reducing process times and improving product quality.

Heat Shrinking – Shrink tubing or wrap materials accurately around components without damaging surrounding areas. **Sterilization** – Provide high-temperature airflow for sterilizing laboratory instruments, packaging, or medical

components, particularly in small-scale or benchtop setups.

Adhesive activation – Improve bond performance by applying uniform heat to tapes, films, or structural adhesives.

Laboratory Research and Testing – Deliver precise thermal input for material studies, prototype testing, and experimental setups requiring controlled air heating.

OEM and Production Line Integration – Compact, reliable heating for assembly systems, automated stations, or modular equipment requiring localized, repeatable heating.

Prototype Development and Process Optimization – Ideal for engineers and researchers developing or refining thermal processes, allowing for fast iterations and adjustments.

Electronics Rework and Soldering Support – Focused airflow is suitable for de-soldering, reflow, or delicate thermal applications on small electronic components.

Material Conditioning and Preheating – Preheat components before bonding, forming, or processing, ensuring consistent quality and minimizing thermal shock.

The Cool Touch™ 050's combination of high exhaust temperatures, operator-safe external surfaces, and compact, triple-pass design makes it an exceptional choice for precision heating tasks across laboratory, industrial, and OEM environments. Its ability to deliver consistent, high-performance heat while minimizing external temperature and energy loss enables users to achieve safe, reliable, and repeatable results in applications where accuracy and efficiency are essential.

Advantages Over Conventional Heaters

The Cool Touch™ 050 provides several key advantages that set it apart from traditional small air heaters and hot air tools:

Lower Surface (Skin) Temperature – The triple-pass design uses inlet air to cool the outer housing, which reduces radiant heat and makes contact safer.

Improved Thermal Efficiency – Heat that might otherwise be lost is better retained through multiple air passes.

Better Process Control – High internal thermal storage enables rapid stabilization of outlet temperature and more consistent cycling, particularly in applications with frequent power changes.

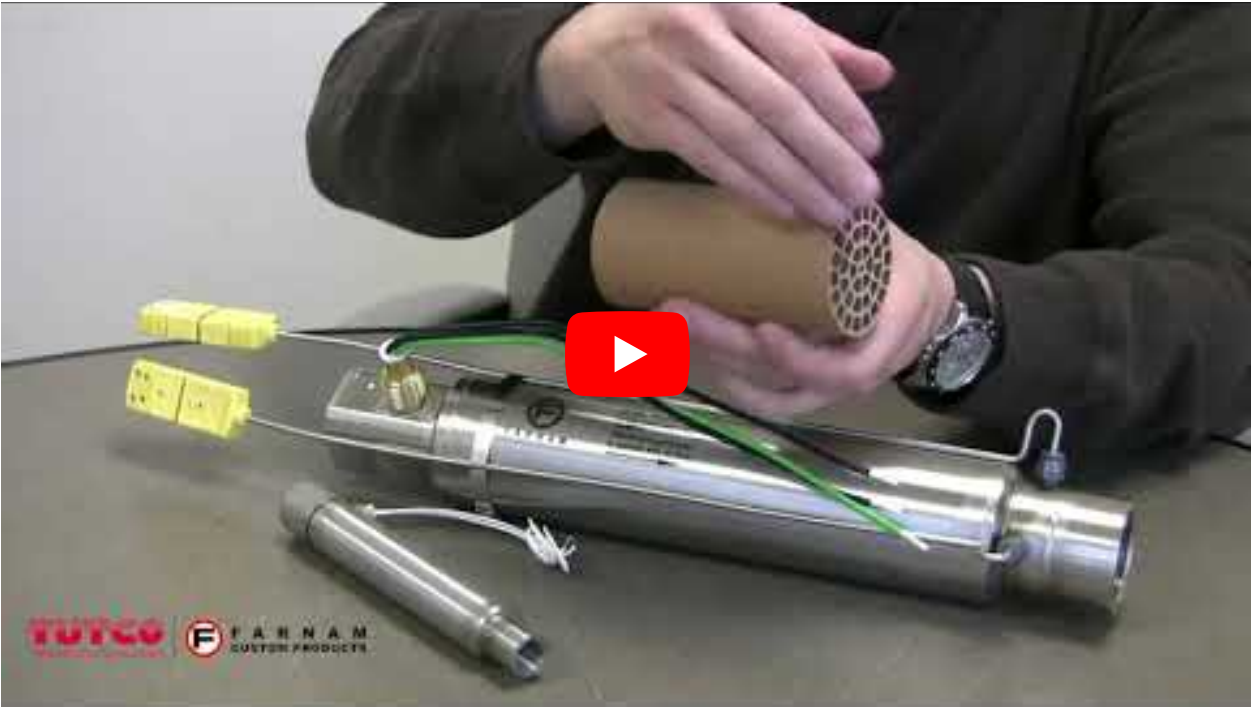
Durability & Serviceability – Field-replaceable elements (in some triple-pass heaters) help reduce downtime when maintenance is needed.

Energy Savings – Because the triple-pass setup maximizes heat transfer and minimizes losses, it can be more energy-efficient than simpler designs.

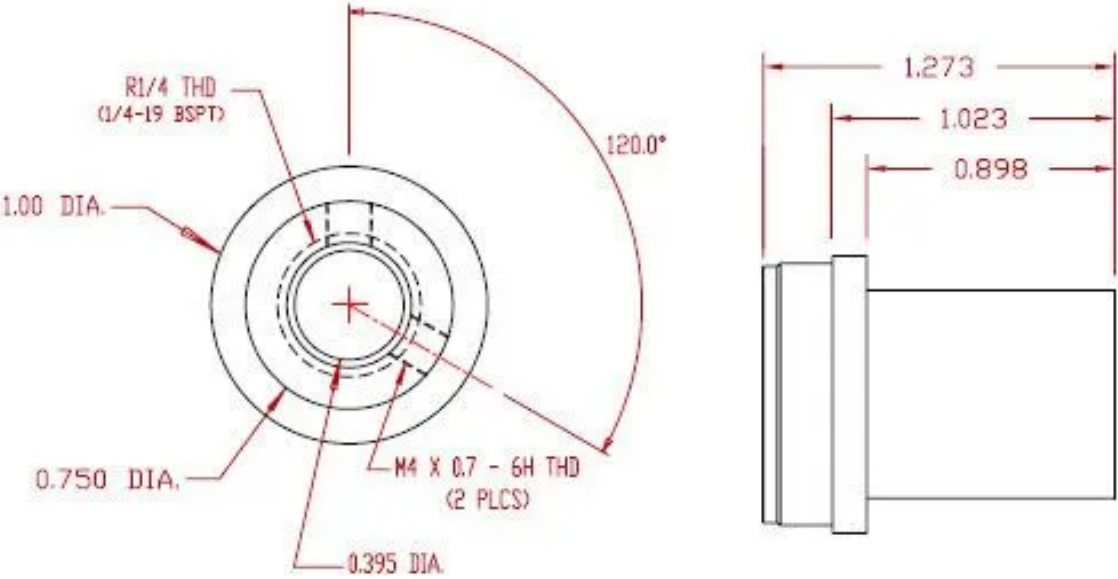
Why Choose TUTCO Farnam Cool Torch™ 050 Heaters?

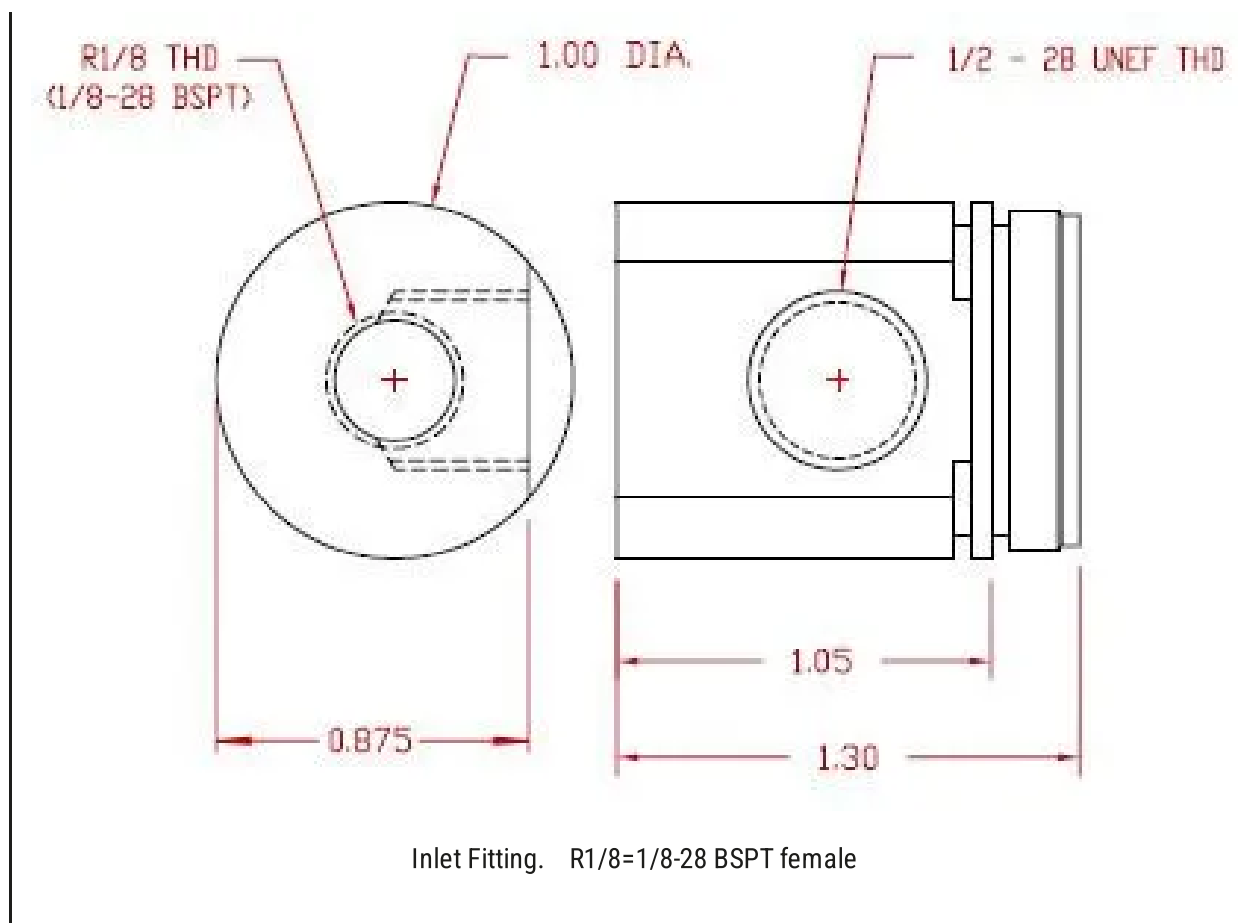
The Cool Touch™ series represents a smart balance between performance, safety, and process control. By combining powerful heating with an outer shell that stays comparatively cool, these heaters are ideal for environments where operator safety, compact design, and repeatable thermal cycles matter. Whether you're working

on benchtop R&D, integrated OEM automation, or full-scale industrial production, the Cool Touch™ heater line provides reliable, efficient heating with minimal compromise.



Additional Information

PRODUCT FITTINGS
 Technical drawing of an exhaust fitting. The left view is a cross-section showing concentric circles with the following dimensions and labels: an outer diameter of 1.00 DIA., an inner diameter of 0.750 DIA., a central hole of 0.395 DIA., and a 120.0° arc. The top left label indicates 'R1/4 THD (1/4-19 BSPT)'. The bottom right label indicates 'M4 X 0.7 - 6H THD (2 PLCS)'. The right view is a side profile showing three stacked sections with dimensions of 1.273, 1.023, and 0.898. Exhaust Fitting. R1/4=1/4-19 BSPT female



Frequently Asked Questions

HOW DOES THE TRIPLE-PASS DESIGN IMPROVE ENERGY EFFICIENCY? —

The airflow passes over internal components three times, maximizing heat transfer and reducing radiant and convective losses. More of the generated heat reaches the process, improving energy efficiency compared to traditional single-pass heaters.

CAN THE COOL TOUCH™ 050 BE USED IN OPERATOR-CLOSE OR HANDHELD SYSTEMS? —

Yes. The reduced external temperature makes it ideal for benchtop tools, manual workstations, handheld devices, and operator-adjacent automated systems.

HOW HOT DOES THE HEATER'S EXTERIOR SURFACE GET DURING OPERATION? —

Thanks to the triple-pass design, the exterior stays significantly cooler than a conventional single-pass heater operating at the same output temperature. While the surface may warm, it is substantially safer to touch and reduces the need for external shielding.

WHAT IS THE PRIMARY ADVANTAGE OF THE COOL TOUCH™ 050 COMPARED TO STANDARD INLINE AIR HEATERS? —

The Cool Touch™ 050 uses a triple-pass airflow design that pre-cools the outer shell, dramatically lowering surface temperature while maintaining high exhaust heat. This enhances operator safety and simplifies integration into compact equipment.

Part number: CT050