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Axial Fan Heaters

Axial Fan Heaters are electric heaters that use a fan with blade sizes typically ranging from 2.36 inches to 4.72 inches. The fan moves air perpendicular to the motor, directing it through a heating element—usually a coil—that warms the air as it passes through. Common applications include space heating, dehumidification, and material curing. TUTCO Farnam specializes in 4.72-inch (120 mm) and 3.15-inch (80 mm) axial fan heaters, with a compact 2.36-inch (60 mm) model also available. These heaters function similarly to a PC fan, but with a coiled heating element integrated around the fan housing—providing efficient, directed heat in a compact design.

Axial Fan Heaters are available in a range of wattages and custom features within our different sizes. The table below shows the maximum wattage at 1200 Watts with a maximum inlet temperature of 158 degrees Fahrenheit (70 degrees Celsius). The maximum exhaust is 290 degrees Fahrenheit (143 degrees Celsius). The minimum airflow is 1 SCFM (standard cubic feet per minute.

Axial Fan Heaters (Series AF-20 available in the two main sizes) mount directly to square axial fans. The AF-20 heater housing uses the same mounting holes and functions as a guard for both the heater and fan. All Axial Fan Heaters are UL recognized components under UL file number E154979. Note: we offer heating coils to mount on fans or fans and heating coils together depending on your needs. We also offer the option to include a finger guard and bracket for mounting as needed. Learn more about how an Axial Fan Heater can be used in your medical, food service, or manufacturing environment by contacting our sales team at 828.684.3766 or you can email info@farnam-custom.com. At TUTCO Farnam, our engineers work with you to understand your needs, offer a cost-effective solution and if needed work on a custom approach for a perfect fit.

10 piece minimum order quantity.

Wattage and Voltage Options

2.4”- 15W-175W, 12V, 24V, 48V, 120V

3.1”- 50W-450W, 120V, 208V, 240V

4.7”- 50W-1000W, 120V, 208V, 240V

MAX WATT	MAX INLET	MAX EXHAUST	MIN SCFM	MAX SCFM
1200 W	158º F	290º F	1	105

Over-Temperature Control

X	1A	1B	1C	1D	1E	1F	1G	1H	1J
Thermostat not required	149ºF (65ºC)	158ºF (70ºC)	176ºF (80ºC)	185ºF (85ºC)	194ºF (90ºC)	212ºF (100ºC)	248ºF (120ºC)	266ºF (130ºC)	302ºF (150ºC)

Note: Optional thermostat is an auto-reset high limit safety device designed to protect against overheating. Not intended for temperature regulation. Note: Thermostat not approved for DC use.

Thermal Fuses

X	D	F	H	K	L	M	N	R
Fuse not required	199ºF (93ºC)	219ºF (104ºC)	243ºF (117ºC)	262ºF (128ºC)	306ºF (152ºC)	363ºF (184ºC)	377ºF (192ºC)	444ºF (229ºC)

Note: Fuse set-point must be a minimum of 25°C above thermostat set-point or routine temperature spike.

Applications

Film Processing Equipment

Designed for precision drying and curing, the AF Heater is ideal for photographic processing and thin-film applications in both industrial and laboratory environments. It delivers consistently high temperatures with tightly controlled airflow, ensuring uniform drying without damaging sensitive materials. Whether working with emulsions, coatings, or specialty films, the system supports repeatable, high-quality results essential for quality control and production reliability.

Laboratory & Medical Use

The AF Heater provides dependable thermal control for a variety of laboratory and medical applications. It can be used to warm samples, maintain stable temperatures for sensitive instruments, or assist in the controlled drying and curing of medical components. Its accuracy and consistency help ensure compliance with strict laboratory standards, making it suitable for research environments, diagnostic laboratories, and medical manufacturing processes.

Industrial Drying/Curing

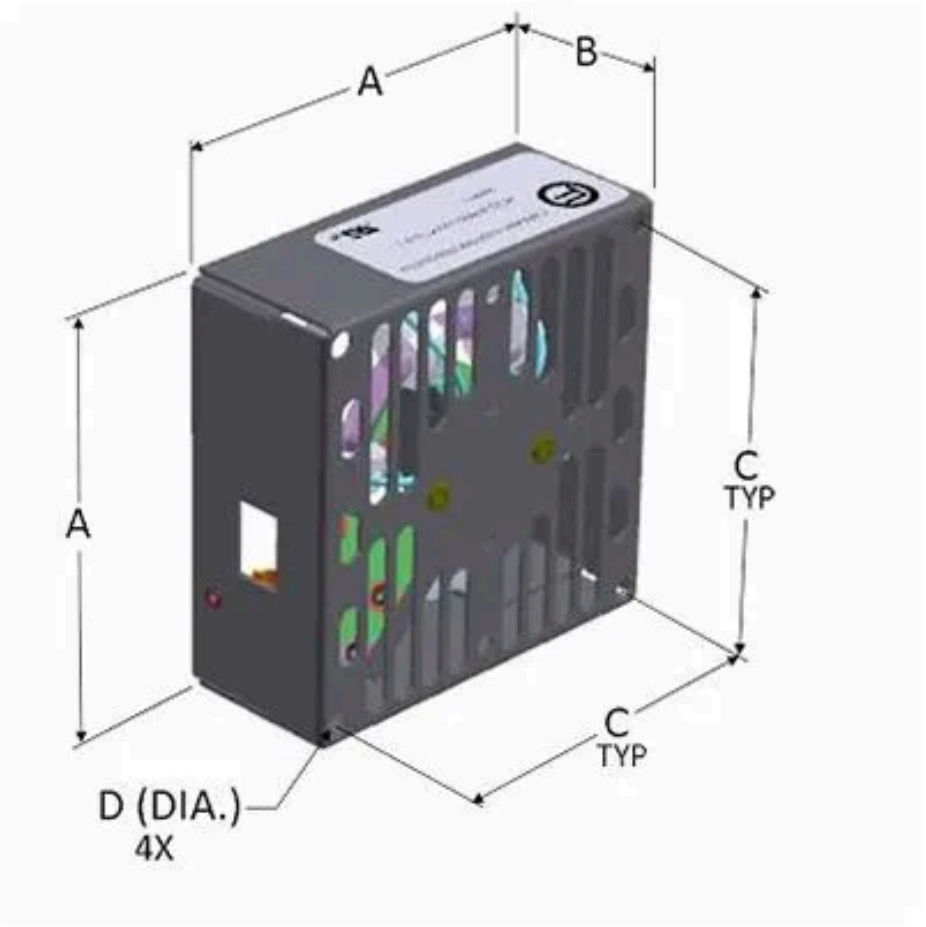
Perfect for small-scale industrial operations, the AF Heater supports targeted drying, dehumidification, and curing processes. It is well suited for applications involving coatings, adhesives, inks, and other treated surfaces that require controlled thermal exposure. By delivering uniform heat distribution and stable conditions, it helps improve product quality, reduce processing time, and increase operational efficiency.

Enclosure Heating

Engineered to maintain optimal internal temperatures, the AF Heater helps protect electronic and mechanical enclosures from cold-related issues such as condensation, frost buildup, and temperature fluctuations. This is especially valuable in facilities exposed to low ambient temperatures. By keeping components within their recommended operating range, the heater helps extend service life and prevent costly downtime.

Targeted Warming Tasks

For applications requiring precise, localized heating, the AF Heater provides controlled and consistent warmth. It is ideal for preheating assemblies prior to processing, maintaining reactant temperatures within reaction chambers, or gently warming densely packed or delicate items. The ability to apply heat exactly where it is needed improves process efficiency while minimizing the risk of overheating or material damage.



SIZE	A	B	C	D
2.4	2.34	1.25	1.97	.166
3.1	3.125	1.25	2.81	.166
4.7	4.68	1.25	4.125	.166

RESOURCES

Brochures and Manuals

Axial Fan Heater Data Sheet
2.4" Quickstart Guide
3.1" Quickstart Guide
4.7" Quickstart Guide

Drawings

2.4" Dimensions.PDF
2.4" Dimensions.DWG
3.1" Dimensions.PDF
3.1" Dimensions.DWG

4.7" Dimensions.PDF
4.7" Dimensions.DWG
2.4" 3D Model.PDF
2.4" 3D Model.STP
3.1" 3D Model.PDF
3.1" 3D Model.STP
4.7" 3D Model.PDH
4.7" 3D Model.STP

Videos

Axial Fan Heater Product Demo

Resources

Optional High Limit Safety

Optional Thermostat

- A high limit safety device designed to protect against overheating
- Do not use for temperature regulation
- Thermostat will automatically reset when thermostat has cooled to 25°C below opening temperature.
- Opening temperature should be approximately 25°C above transient temperature seen in normal operation
- Thermostat is not suitable for DC applications

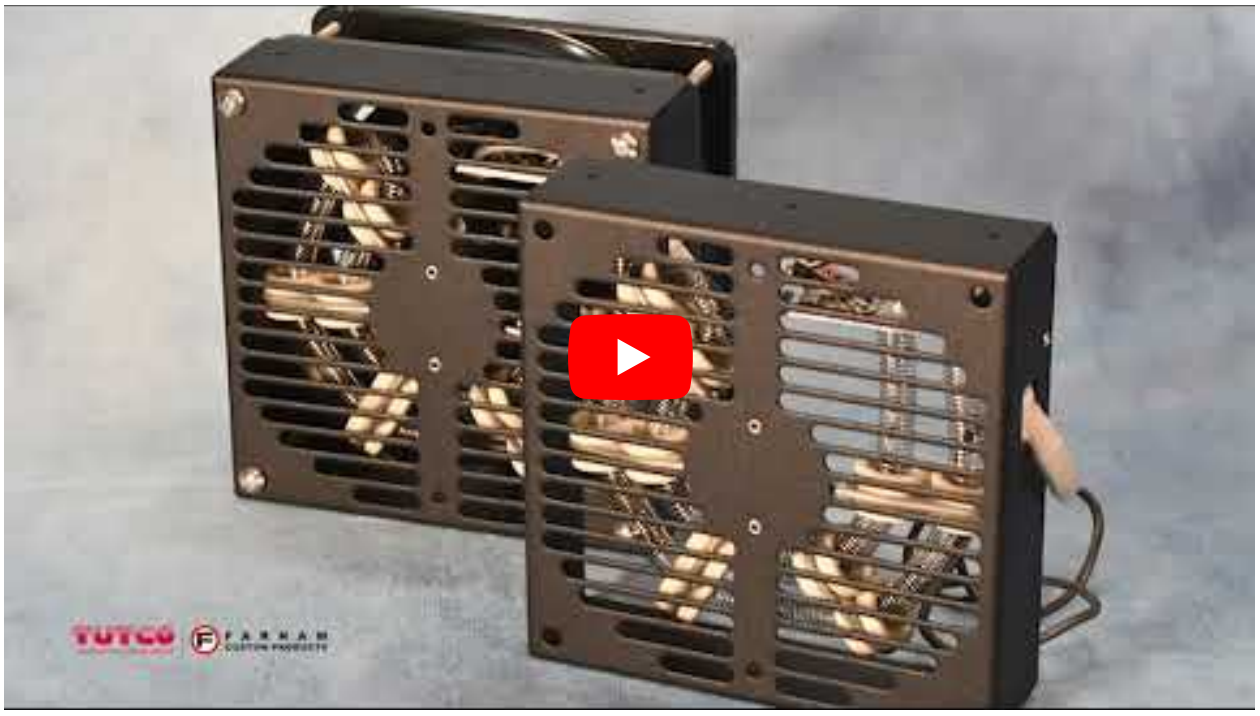
- Optional Thermal Cut-Out (TCO)
- A high limit safety device designed to protect against overheating
- If opening temperature is reached TCO will open the circuit and the heater remains inoperable (one shot)
- TCO opening temperature should be at least 25°C above thermostat opening temperature (if used) or 25°C above transient temperature seen in normal operation
- If using DC: Max 5A and 24V for UL approval

Accessories

Compact Fans

- Mounts directly to AF20-2.4
- High performance and moderate pressure build-up
- Contact TUTCO Farnam for more information

Hardware Kit (KIT AF24) Includes all the necessary hardware to attach the fan to your AF20-2.4



APPLICATIONS AND USES

Air Circulation – axial fan heaters are ideal where gentle air circulation is needed. Our fans help provide a temperature-controlled environment for patients and staff where another solution would be more costly or complex. Hospital rooms have used our fans for an extra bit of warmth while preventing stuffy rooms. Another benefit to using these fans is the infection prevention by maintaining negative air pressure. We offer air circulation solutions for more than just hospital rooms, contact us for your specific need and one of our engineers will be happy to work on a custom solution for you.

Warming Materials and Babies – our fans have been used to warm neo natal supplies in a hospitals NICU. They can also be used to warm a wide variety of objects depending on your needs. Babies with low birth weight, cannot maintain their body temperature very well and our heaters can be used in an incubator to keep the little ones warm and even prevent hypothermia. If you are an OEM for neonatal supplies and equipment, we would love to explore how our heating elements can fit into your production pipeline.

Warming Bread Dough – our axial fan heaters are useful in warming bread dough to rise it. If desired we can offer the fan along with the heating coil so your unit can be precisely heated and controlled. A typical bread riser incubator would be 3.7-cubic feet and the unit would have a maximum temperature of 99 degrees Fahrenheit (37 Celsius). But we can customize a solution for your exact specifications and even work with your team to ensure there is a smooth manufacturing process from our component to your finished product.

Pneumatic Tube System – when you need to move more than just data from location to location the pneumatic transfer system is the ideal solution. Pneumatic systems typically use our axial fan heaters in the banking and pharmacy sector but can be of benefit in many scenarios where the pressurized tubes are used.

Entrance Control Stands – are used in airports, public offices/buildings, metro and public transport and stadiums/sports facilities. Our axial fans ensure the units stay dry and at the ideal temperature even in harsh weather conditions. Ensuring your product is engineered with the right temperature and airflow protects sensitive screens, card readers, keypads and electrical components offering durability and longer service life.

PTAC or Packaged Terminal Air Conditioners – These heating and cooling units can use our axial fan heaters to assist the self-contained system with make-up air. PTAC's are typically seen in hotel rooms, motels and multifamily facilities like senior housing, condominiums, and apartment buildings. We love helping original equipment manufacturers of PTAC units in engineering solutions and especially in manufacturing components needed.

Drying Ink – if your manufacturing process requires ink or other fluid materials to be dried, our axial fans can be a low cost and reliable way to achieve this. We can ensure you are at the exact amount of airflow and

temperature to achieve your desired results. We can work with your engineering team to ensure even airflow and controlled temperature get your fluids cured or dried as needed.

3D Printers – if you manufacture 3d printers, you may need a silicone rubber heater to heat the printing base to a specific temperature. We offer solutions that maintain consistent and even heat so your units can offer the highest build quality with reduced warping on a wider range of materials. Heated beds also offer improved adhesion in the first layer. We also see a reduction in warped filaments when using a heated bed as well which saves time and costs to the consumer.

Signage Humidity Control – our axial fan heaters are used in directional signage and amber alert signs to maintain airflow and help the displays from fogging up.

- We offer freeze prevention in car wash kiosks as well as outdoor digital displays, outdoor kiosks, and virtually any electronic device that needs to be kept dry and from freezing in extreme temperatures.

Food Industry – Farnam Custom's heaters can be used in the food industry to sustain prepared food at a desired temperature with reduced impact on dehydration for a longer lasting freshness.

- Our axial fan heaters can be used in a fry dump station to keep french-fries at the desired temperature before selling or serving.

- They can also be used in vending machines for temperature control.

- Keeping nacho cheese melted so it's ready to serve in convenience stores or concession stands and gas stations.

- Also, we see them used in chocolate tempering equipment where our fans save time and help reduce product waste. We offer axial fan heaters for small units used by hobbyists and home candy makers to larger, higher volume units.

Manufacturing – our propeller axial fan heaters are employed in specialized systems, including control panels, and various OEM applications for temperature regulation and humidity control.

Emergency Services - currently being used in Buncombe County's 911 center to keep operators warm in a cooler environment. If you're operating a 911, air route traffic control center (ARTCC), area control center or transportation management center (TMC) and need to keep your equipment cold to protect it, consider our axial fan heaters to provide warmth specifically to your operators for their comfort. It helps increase focus and productivity in a fast paced, stressful environment.

Why work with TUTCO Farnam for your axial fan heater needs?

Our team of engineers are dedicated to collaborating with you to find the optimal solution, leveraging their expertise in addressing complex challenges and establishing an efficient production pipeline. Our heating coils are crafted from the highest-quality steel and are manufactured in-house, adhering to the strictest quality control standards. They can provide prototypes for testing and proof of concept. We provide cost-effective assemblies to ensure competitive pricing, placing a strong emphasis on listening to the needs of our valued customers.

TUTCO Farnam offers axial fan heating solutions both domestically to the United States and globally, with manufacturing capabilities strategically located in Tennessee, North Carolina, Mexico, and China. This provides TUTCO FARNAM with a competitive edge, enabling us to deliver high-quality products swiftly and at scale, whether you require a few units or hundreds of thousands.

Frequently Asked Questions

CAN I MOUNT THE AXIAL FAN HEATER DIRECTLY TO A FAN, AND DOES IT ACT AS A GUARD? —

Yes. The axial fan heaters (Series AF-20) mount directly to square axial fans, using the same mounting holes already present on the fan. The heater housing also functions as the fan guard.

WHAT ARE THE ALLOWABLE INLET AND EXHAUST AIR TEMPERATURES, AND MINIMUM AIRFLOW REQUIREMENTS FOR AXIAL FAN HEATERS?

For the axial fan heaters:
Maximum inlet air temperature is 158 °F (70 °C).
Maximum exhaust temperature is 290 °F (143 °C).
The minimum airflow is specified as 1 SCFM (standard cubic feet per minute).

WHAT KINDS OF APPLICATIONS ARE THESE AXIAL FAN HEATERS SUITABLE FOR?

Axial fan heaters are versatile and can be used across a wide range of applications that require controlled, localized heat and airflow. They're commonly found in industrial drying and curing systems for coatings, inks, and adhesives, as well as in laboratory and medical equipment where precise temperature maintenance is critical. These compact heaters are also ideal for enclosure heating, preventing condensation or freezing inside electrical cabinets and control panels. Beyond industrial uses, they're used in food processing, 3D printing, and signage systems—anywhere consistent, directed warmth is needed to keep operations running smoothly and reliably.

Part number: AF20