

TUTCO SureHeat
HEATING SOLUTIONS GROUP

Electrification and Decarbonization

Electrification can handle the load on detergent application

One of our distributors brought us to a company that produced washing machine detergents and used molded plastic bottles with their products. Drying the bottles was a critical step before applying labels or printing on the plastic. The company was using direct fired natural gas burners for this process, which posed several health and safety risks for workers. Moreover, if the production line slowed or stopped, the bottles in front of the heaters could melt or even catch fire.

Our team assessed the process and found that the heaters were producing too much heat, resulting in excessive power usage. We determined the precise temperature needed for drying the bottles by measuring the ideal temperature at the closest possible distance to the bottle. To address their issues, we installed TUTCO SureHeat Jet Heaters at the same distance as the previous heaters. Their controllers could then set the temperature to a precise and efficient set point, ensuring that the drying process was safe and consistent.

Using the Jet Heaters, the controllers automatically shut down the heaters if the line slowed or stopped, which was not possible with gas. This feature makes the process far safer for the workers and also prevents potential damage to equipment. With our solution, the company was able to achieve an efficient and safer drying process for their plastic bottles, ensuring high-quality labels and print on their packaging.

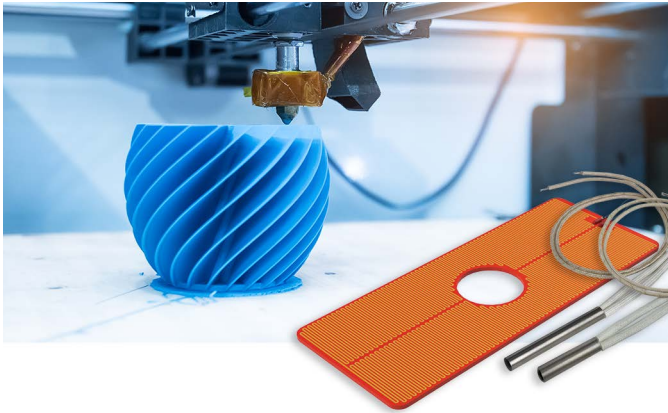
To learn more about energy transition, [click here.](#)



TUTCO Conductive

3D printing technology requires specific heaters and sensors

As 3D printing has evolved, a variety of technology and techniques have been used to improve the quality of printed objects. One such technology is the use of specific heaters and sensors within the printer that play a critical role in the success of the process.



TUTCO cartridge heaters, as small as 1/4" to 1/8" in diameter and 1" to 1 1/2" long, are used inside the 3D printer extrusion heads. These heaters are responsible for melting plastic material, which is then extruded in layers to create a 3D printed object. Different types of plastic require different temperatures, and these heaters can hold temperatures anywhere from 180°C for PLA plastic to 260°C for Pure PETG plastic.

In addition to cartridge heaters, a warm print bed is also necessary for some types of plastic material. Flat silicone rubber and Kapton heaters are used to create a warm print bed. A warm print bed helps prevent warping of the finished part and improves adhesion of the first printed layer to the bed itself, which reduces the severity of contraction of earlier printed layers and prevents part curling.

Thermocouple sensors are also being used in 3D printing to measure temperature. These sensors are available in a variety of configurations, including grounded or ungrounded junctions and different conductor materials such as type K and J. They also come with adaptors attached like threaded bushings or hex head bushings in stainless or brass. Leadwire lengths can vary as required and they are available with stainless steel braid or armor covering if necessary.

As 3D printing technology continues to advance, the use of specific heaters and sensors will become increasingly important to achieve the highest quality prints possible. TUTCO engineers will continue to develop leading edge solutions for this evolving application.

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TUTCO Conductive

Mass transit company gets on board with TUTCO

Public transportation vehicles often have small heaters under the seats for passenger comfort. One mass transit company, that was renovating their older passenger cars, came to TUTCO needing a small lightweight heater for this application. Many of the existing heaters, which had been in place for years, had failed and the company that originally built the cars was no longer in business. The heaters needed to fit within a very specific envelope and installation pattern while being as lightweight as possible. The application required very little heat which meant the watt density of the heater would be very low.

TUTCO HT Mica Band Heaters offer the most comprehensive range of customization available, including distributed wattage, holes, or cut outs based entirely on the application requirement. We developed an HT Mica Band Heater with



special mounting holes and terminal locations and orientations designed specifically for the application. They fit the existing space as required and provided the perfect amount of heat to take the chill off of passengers commuting to work on chilly mornings.

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TUTCO SureHeat

Temperature Controllers minimize overshoot

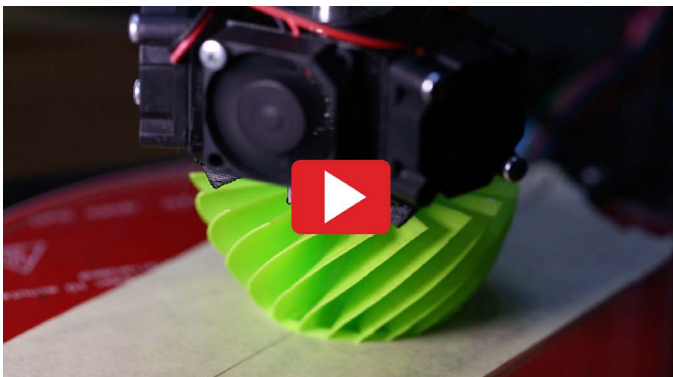


To ensure accurate temperature control, TUTCO SureHeat offers a digital temperature control with Type K thermocouple inputs. The control should be matched with the power control input, such as 4-20mA or 0-10VDC. A standard PID-type controller with a wide proportional band setting can help minimize temperature overshoot. However, when auto-tuning the PID parameters, it is important to ensure that the temperature specifications remain below the maximum heater limit. It is also recommended to monitor the heater temperature rise during the auto-tune cycle and turn off the power immediately if it rises above the heater specification. For those looking to connect this product to control the TUTCO SureHeat SCR model F066823, it is important to use digital temperature controls and ensure proper matching of input and output. With the right controls and parameters in place, this product can help improve temperature control and optimize heating efficiency.

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Feature Video

The advantage of TUTCO heaters in 3D printing



Whether you are printing with plastics, resins, or metal, heat is going to be used in your 3D printer. If the medium used or the 3D printer's heat bed is not heated, it will negatively impact the quality of the printing. Depending on the size of your printer, you may also require an air circulation heater. TUTCO provides the advantage of supplying the entire heating solution required by 3D printers. Whether it is a tabletop model or an industrial printer, we can help from prototypes to final production.

[WATCH THE VIDEO](#)

Product: F076361

- Compatible with: All TUTCO SureHeat Products using Thermocouples, Thermocouple Adapters, and SCRs

Specifications

- 1/16 DIN Sized Temperature Controller
- NEMA 4X Front Panel (IP65)
- Type K Thermocouple Inputs
- Input: 120/240VAC, 50/60Hz
- Output: 0-20mA
- Alarm Relay
- UL Recognized, CSA, CE

TUTCO SureHeat offers a range of industrial control solutions

Industrial heating control systems are critical for proper heater set-up and longer element life. Before turning the power on to any heater, it is essential to have the proper airflow through the heater. All control panels are built by UL508A approved facilities and CE approvals are available for all international electrical panels. TUTCO control panels are built for indoor applications and meet NEMA 12 standards. Custom solutions are available.

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