

TUTCO Heaters Help Prevent Wet Stacking in Generators

TUTCO Heating Solutions Group works with generator manufacturers to solve a potential problem in **diesel standby generators** called **wet stacking**. This occurs when generators run under light load for extended periods of time. The unburned fuel can accumulate in the exhaust system—reducing performance, increasing maintenance needs, and shortening engine life. A solution to this is to dissipate the load onto a resistor, which is exactly what a heater is. One manufacturer turned to TUTCO in search of a more reliable heater to use minimizing wet stacking. They had been using an exposed coil ceramic resistor wrapped with an open-coil heating element, but in job sites where dirt and debris are present, it was not as effective as it could be and occasional failures were happening.

TUTCO engineers presented two upgraded heater solutions to replace the outdated ceramic resistor. The first option was a **Finned Strip Heater**, designed as a direct drop-in replacement. These heaters featured protected heating elements that not only improved durability but also extended the lifespan of the components—an essential upgrade for demanding diesel generator environments. The second option involved **Silicone Rubber Heaters** mounted to angle brackets, a modular approach that allows customers to scale wattage depending on the specific load requirements. Both options provide a significant improvement in reliability, environmental protection, and ease of maintenance.

When it comes to diesel generator applications, TUTCO heaters offer both durability and flexibility. Our heaters are engineered to perform in harsh environments where heavy vibration, dust, and airborne debris are present. Available in customizable configurations, each heater can be tailored to meet precise load requirements, ensuring maximum efficiency and performance. In addition, with multiple production locations, TUTCO's can offer the benefit of redundant manufacturing capabilities to guarantee consistent supply and shorter lead times.

A Closer Look at TUTCO Heater Options

To help the generator manufacturer overcome wet stacking issues and reduce component failures in the field, TUTCO recommended two robust and highly effective heater designs—both engineered for durability and long-term performance in harsh environments.



Finned Strip Heaters

TUTCO's finned strip heaters were selected as a direct drop-in replacement for the original exposed coil resistors. These heaters are specifically designed for excellent heat transfer in both forced-air and natural convection applications, making them ideal for simulating minimum load in diesel generators. Each heater features stainless steel fins that increase the surface area for efficient heat distribution, helping ensure consistent thermal output across the system. They're available in a wide range of sizes, wattages, and voltages, allowing for easy integration into both existing and new load bank designs. Originally used in duct heaters, shrink tunnels, and drying ovens, these strip heaters are now proving their value in generator enclosures—offering better performance and significantly greater reliability than the ceramic elements they replaced.



Engineering service and support is a big part of what we do. Offered on an application by application basis. With over 2,000 unique heating element designs, chances are we have done something similar to your project.



Silicone Rubber Heaters on Angle Brackets

For more modular flexibility, the customer also tested TUTCO Farnam's UL-listed silicone rubber heaters, which were mounted to custom-fabricated angle brackets. This allowed for easy wattage scaling based on application needs. These highly customizable, industrial-grade heaters use etched foil elements to maintain uniform surface temperatures and deliver exceptional heat transfer. Their flexible silicone construction is ideal for irregular shapes and curved surfaces—perfect for generator cabinets and enclosures. Designed to withstand vibration, shock, and harsh conditions, these heaters resist mechanical wear over time. Silicone is naturally durable and chemically resistant, making it an excellent choice for tough industrial applications. Whether the system is subjected to constant movement or long idle periods, TUTCO's silicone rubber heaters deliver consistent and dependable heat—cycle after cycle.

Let's Talk About Your Wet Stacking Challenge

Wet stacking doesn't just affect performance—it shortens equipment life, increases maintenance costs, and creates avoidable emissions issues. The use of electric heaters to create a load is a proven solution to prevent wet stacking in diesel generators, especially in low-load or standby conditions. TUTCO custom-engineered heaters are designed to meet the unique demands of your application, improving combustion efficiency, reducing unburned fuel, and ensuring your generators run clean and reliable every time they start. Whether you're designing new systems or upgrading existing ones, we'll help you integrate smart thermal solutions that protect your investment and keep your equipment performing at its best.

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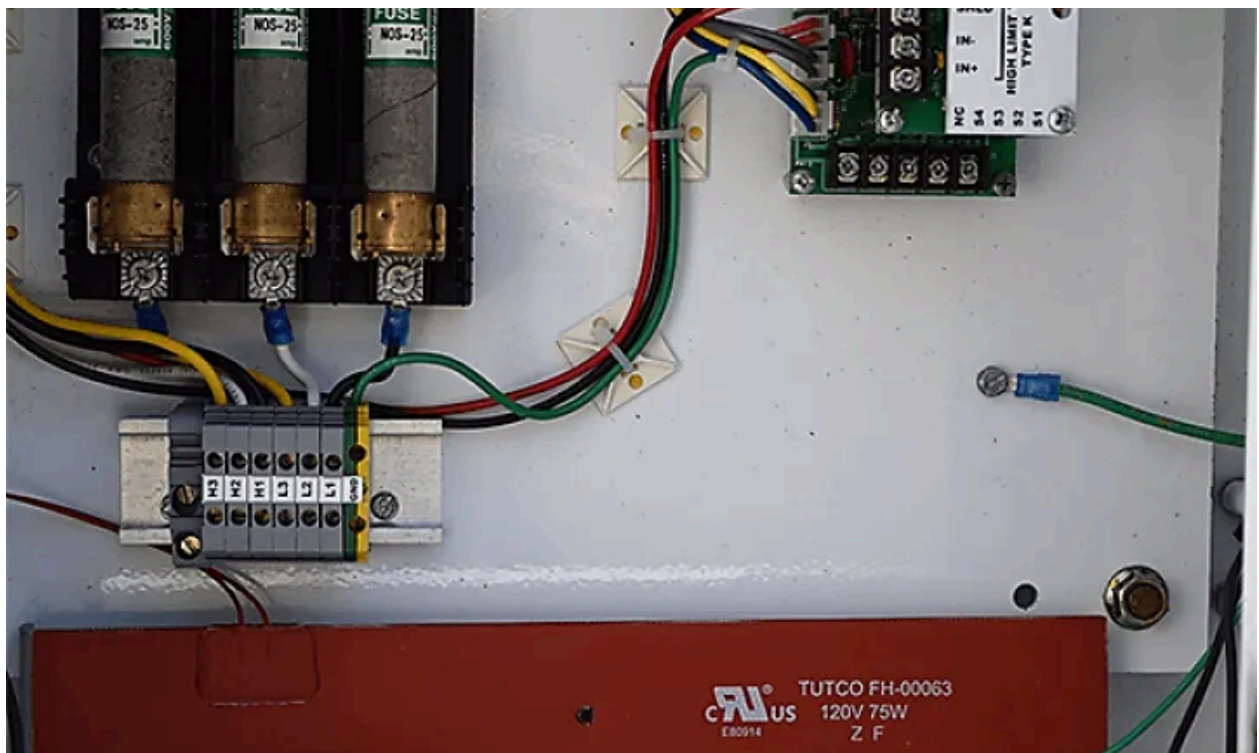
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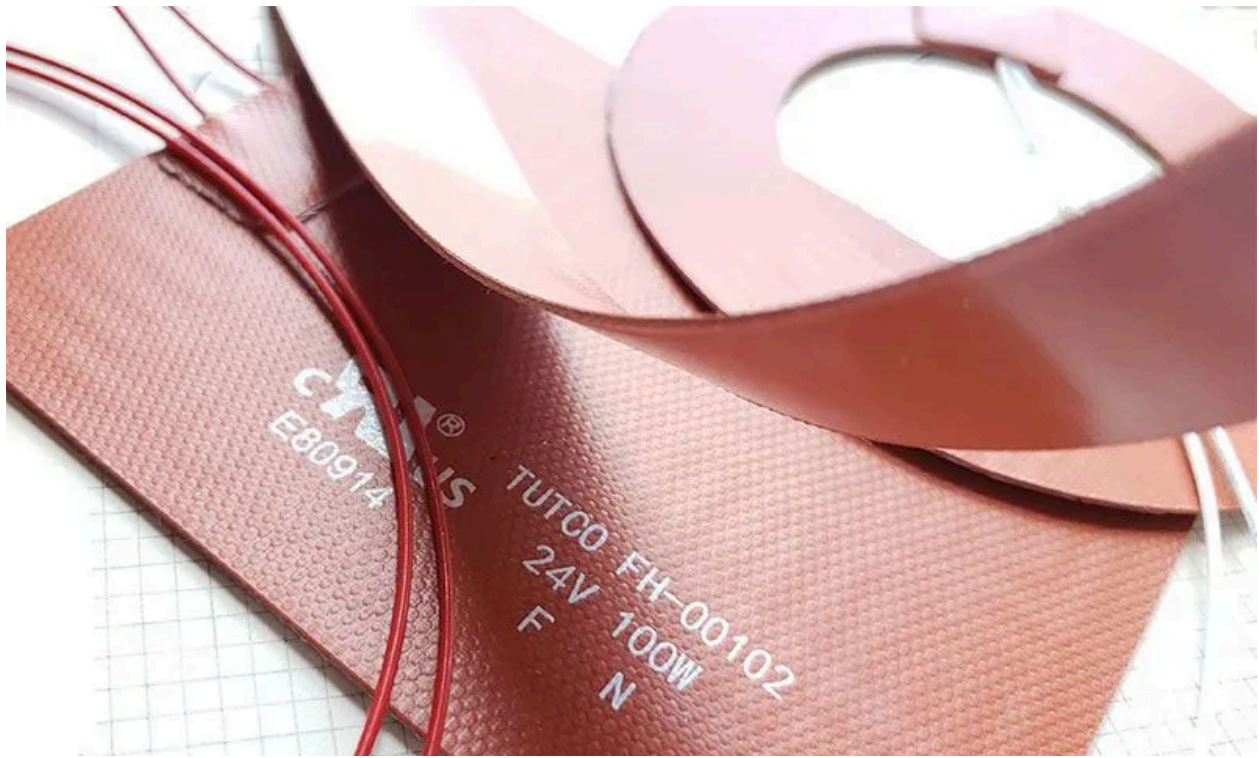
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