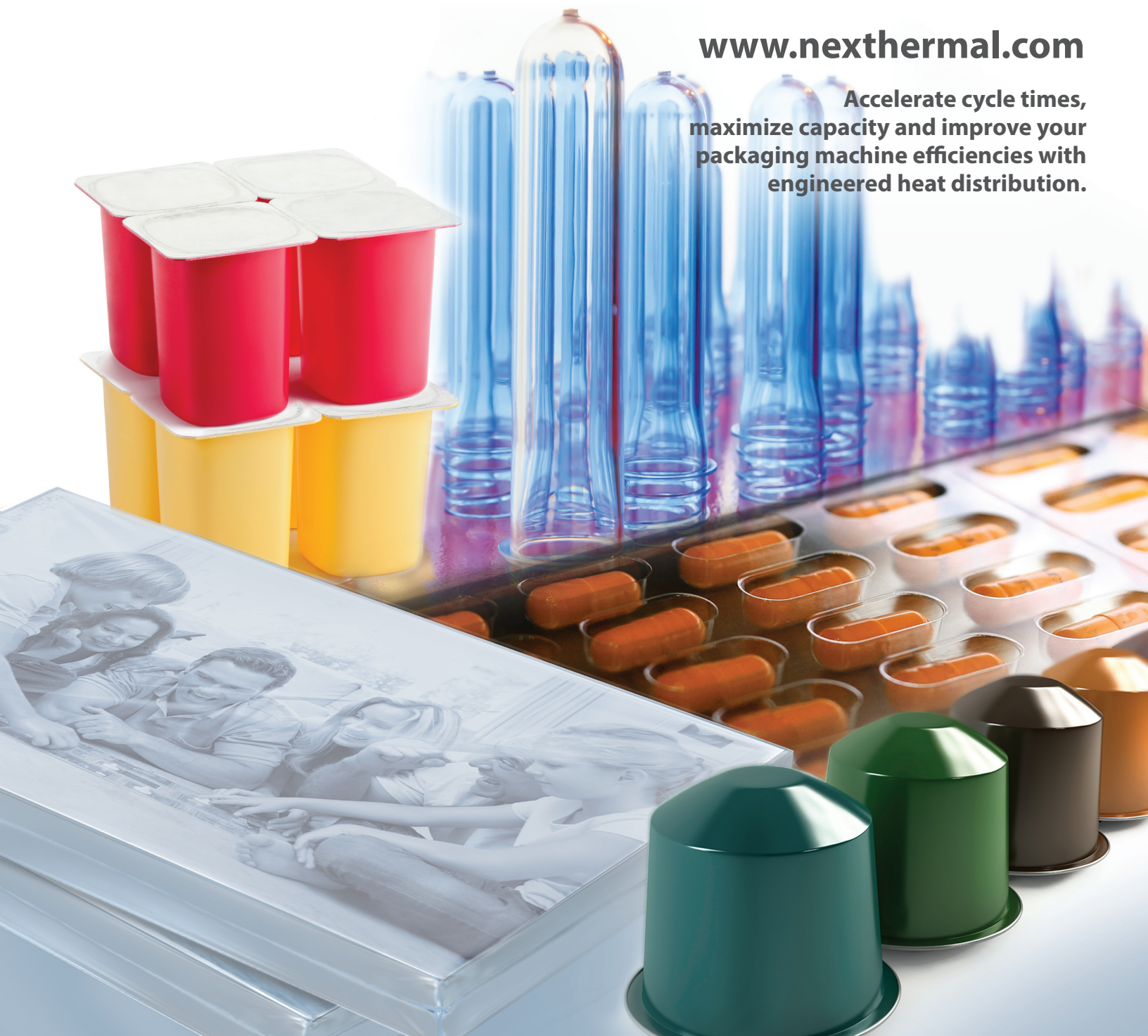




Industrial Heaters for Packaging Applications

www.nexthermal.com

**Accelerate cycle times,
maximize capacity and improve your
packaging machine efficiencies with
engineered heat distribution.**



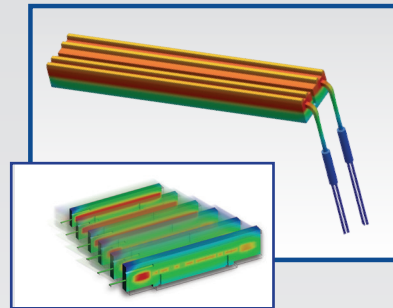
Optimize Your Packaging Process.



As a manufacturer that uses packaging machines, you know that keeping equipment running efficiently is critical to improving food production, increasing throughput, and reducing scrap.

Today's packaging materials are less forgiving of temperature variations, and throughput speed is dependent on fast heat recovery. You need solutions that address these challenges to stay competitive and profitable. Nexthermal Engineering Services can analyze key process areas and identify where problems exist. With our expertise in the packaging industry, we can help you turn a problem process into a profitable program. Many times the resolution is simply understanding the process issues and goals, and developing a heater design specific to your application. Sometimes thermal analysis is needed to pinpoint the problem. A heater designed to your application is often the most cost effective process improvement you can make, resulting in:

- Decreased cycle times and increased throughput
- Improved consistency and product quality
- Reduced maintenance costs and downtime
- Lower scrap rates
- An optimized existing system that can process a wider range of packaging materials



This heater profile is representative of an optimized Nexthermal packaging jaw.

Imagine what we can do when we combine experience and innovate together.

When heat is essential to your process, you need a high performance system that is specifically designed to support your core application goals. Let Nexthermal engineers tap into their extensive heat management and packaging expertise to design process specific assemblies that are engineered to achieve your production goals. Nexthermal can:

- Increase output with plug-n-play assemblies
- Improve efficiency and increase production
- Optimize thermal transfer
- Thermally and mechanically model performance and function prior to prototyping
- Extend capabilities of existing equipment
- Help you incorporate new engineering initiatives, such as hygienic design
- Ensure proper placement of heaters and sensors



Nexthermal's Proven Packaging Applications Expertise

Top Seal

Nexthermal engineers have worked with OEMs in the top seal market to determine the proper placement of the heater and sensor combination to optimize performance and efficiency. You can depend on Nexthermal to deliver heaters that match your application needs. The flexibility of these dimensional coil heater paths opens up the opportunity for packaging innovation.

Form, Fill and Seal

Packaging machine cycle times are greatly impacted by the heater's profile across the working surface of the jaw. The temperature tolerance requirements of today's packaging films need to be met to ensure the best sealing performance. Nexthermal's cartridge and coil heaters are utilized in packaging machines ranging from food and beverage to personal hygiene products. We have worked closely with form, fill and seal OEMs, film manufacturers and end users to develop standard and jaw-specific wattage distribution algorithms to optimize sealing performance and cycle times.

Portion Packaging

Nexthermal is experienced in building heaters that address the specific challenges of the portion packaging industry. We have developed many specific heating solutions to decrease downtime, increase sealing effectiveness, and improve throughput. We develop and manufacture profiled heaters for today's sensitive films. With Nexthermal, you can be confident you have a heater designed to optimize thermal performance and extend heater life.

Steam Shrink Sleeve Packaging

Offering a clean and pristine appearance that works well with non conventional shapes, steam application of plastic sleeve labels delivers a high-end appearance with a wide variety of flexible films. Nexthermal's innovative hygienically designed steam heater is ideal for steam packaging machines. With its low profile and space claim, it can be fully disassembled for cleaning to remove mineral deposits and debris from the heating channels, ensuring sanitary application and maximum flow.

Tamper proof

Safety and reliability are key factors when it comes to the production of medical, beverage, food, personal care products, and cosmetics packaging solutions. Nexthermal's coil heaters and mini coil heaters are relied upon by OEMs for the production of safe tamper proof packaging products.

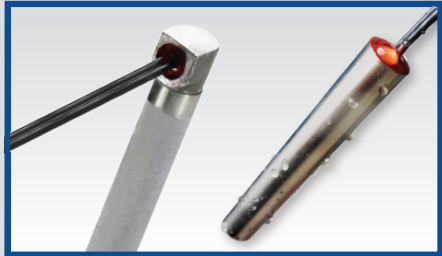
Thermoformed Packaging

Infinitely customizable, thermoformed packaging is economical and versatile in design. From simple packaging created with thin foil films to more complex, multi-featured designs utilizing thick plastic sheets, a regulated uniform thickness greatly depends on using the right heater with the correct thermal profile. Offering Elstein Ceramic Infrared Radiant Heaters combined with Nexthermal's engineered heating expertise, we ensure your thermoforming process operates at maximum capacity and product integrity.

Bottle Packaging

Nexthermal is an industry veteran in engineering coil heaters for plastic injection molding preforms, bottle caps and closures. Our coil heaters are specifically profiled to deliver optimized thermal transfer to help you increase throughput and decrease scrap.





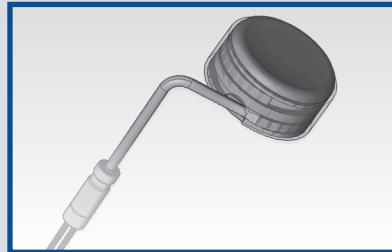
Swaged Cartridge Heaters

Improved Performance & Heater Life.

Nexthermal has developed specific

winding profiles for its cartridge heaters to improve thermal profiles in packaging and injection molding applications. Our cartridge heaters are machine wound and swaged (highly compacted), ensuring precise, durable heat. Nexthermal offers engineered packaging jaws with specific distributed wattage to compensate for heat loss and improve seal quality.

- Available with an optional Type J or K internal thermocouple
- Easy removal with optional Anti-Seize Coating
- Choose from High Watt Density and Medium Watt Density
- Moisture resistant heaters available for applications requiring wash downs or for high humidity environments
- Centerless grind tolerance of $\pm 0.0008''$ for applications where heat transfer is critical



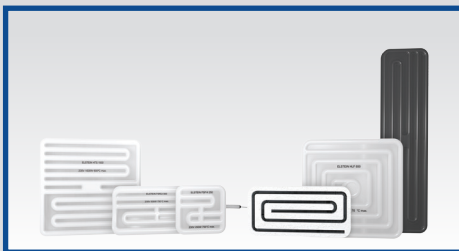
Round Formable Coil Heater

Easy to install. Proven performance.

Our profiled round coil heaters are the ideal choice for even your most challenging top sealing

applications. These formable coil heaters can be installed into two- and three-dimensional grooves for applications where space constraints are a challenge, converting a functional component into a heat source.

- Available in 3.0mm(.118"), 3.18mm(.125"), 3.2mm(.126"), and 4.0mm(.157") Round
- Thermocouple: Integrated type J or type K
- Maximum Voltage: 250VAC
- High Voltage Stability: 800 VAC
- Minimum Bending Radius: 6.35mm (.250")
- Moisture Resistant Transition Head



Elstein Ceramic Infrared Radiators –

For thermoforming and vacuum forming.

As the originator and innovation leader of ceramic Infrared radiant heater technology, Elstein created the industry standard that all others follow.

Offering long, dependable service life, Elstein heaters have a precision wound coil that delivers consistent heating performance from heater to heater. Whatever size, shape or voltage your application requires, Elstein has the Ceramic Infrared Radiant Heater you need.

Elstein's simple fastening system allows for easy mounting or replacement. For installation in panels, Elstein heaters are also available in color-change

ceramic glazes that turn color when hot, allowing you to quickly identify heaters that require replacing.

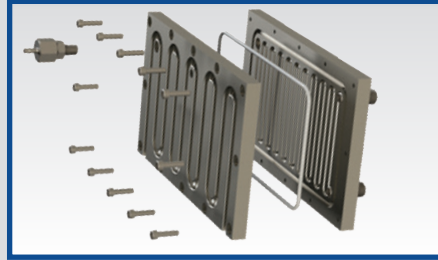
- Splash resistant (when hot)
- Ideal for clean rooms requiring class 100 or better
- Emits non-visible infrared radiation between 2 - 10 μm



Thermocouples *Dependable Internal & External Sensors.*

Our thermocouples are designed with precise tip placement for quick,

accurate temperature sensing and can be custom built to your size and length requirements. Our molded, stainless steel epoxy filled transition heads are moisture resistant and come standard on thermocouples used in packaging applications.



Steam Heater

*Fully Cleanable.
Reliable Performance.*

Nexthermal's new Steam Heater is ideal for shrink labeling, shrink packaging and food production. Our

innovative and unique Steam Heater features a compact, low profile design that's easily integrated into steam tunnels and other machines requiring steam. Its unique hygienic design allows it to be easily disassembled for cleaning. With its serpentine channel pattern and integral coil heater, water is quickly turned into steam for use in packaging and food cooking or warming applications.



Hotlock & Axial Clamp — *Easy to Install.*

Installation is easy for mini coils with either the Hotlock or Axial Clamp.

Hotlock's positively locking positioning ring and machined components ensure repeatable performance. With a simple twist of the end cap ring, the heater is secured into position on the nozzle. The nickel coated inside diameter makes removal quick and simple. Fine pitched threads deliver more heat toward the tip and smaller net outer diameter allows for closer drops.

Axial Clamp mini coil heaters are a proven performer for high cavitation packaging applications. Our Axial Clamp heaters positively lock on the nozzle ensuring excellent heat transfer and durability. Adjustments can be made with a single front facing allen screw, greatly simplifying tightening and removal.



Nextflex® Flexible Tubular Heater

*User Formable.
Same Day Shipping.*

Nextflex is engineered with a flexible solid casing that stays in the groove yet is easy to

install. Conveniently marked at the center and cold sections to facilitate installation and shipped in straight lengths, Nextflex is ideal for tray sealing companies with lean manufacturing initiatives. Installation is quick and easy, reducing maintenance and replacement time.

- **In stock and ready to ship in either 8.0mm or 8.5mm heater grooves**
- **Designed for operating temperatures up to 700° F**
- **Comes standard with screw terminal tip, but also available with Plug-n-Heat connection**
- **Provides a more even distribution of heat than standard tubular heaters**

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MMSDC

Michigan Minority Supplier
Development Council



Packaging



Thermally optimize packaging machines to improve seals, decrease scrap and maximize product throughput.

Participated in the 2010 Olympics testing for controlled substances and creating snow.

Enabled mass spectrometry systems to detect parts per billion.

Extend the capabilities of existing hot runner injection molding designs and assist new product development.

Designed assemblies to improve food production cycle time, hygienic design and capacity.

Helped make disease detection of Malaria, Bird Flu, and more than 2,000 other diseases faster, more affordable and portable.

Created energy savings opportunities for food production companies.

nexthermal

*Imagine what we can do when we
combine experience and innovate together.*

