

PRODUCT CATALOG

CUSTOM THERMAL

MAKING THE WORLD A COOLER PLACE

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ABOUT US

For more than 50 years, Noren Thermal Solutions has delivered innovative thermal management solutions based on heat pipe technology, helping prevent electronic components from overheating. All of our products are designed and assembled in the USA, using the expertise and knowledge of our engineering and design staff.

You can rely on the high quality that represents us and our ability to solve heat transfer challenges with cutting-edge designs and technology. Our thermal solution-oriented philosophy, coupled with customer service and satisfaction, has earned us the freedom to think outside the box.

We are currently doing business worldwide and growing as a green business. We pride ourselves on delivering exceptional customer service with each thermal solution.

Mission Statement: Noren Products is committed to engineering and manufacturing quality solutions for a variety of thermal challenges in an atmosphere of excellence.

Quality Policy Statement: Encompassing an attitude of continual improvement, Noren Products Incorporated is committed to teaming with our employees in an ethical business environment to provide innovative product solutions for our customers.

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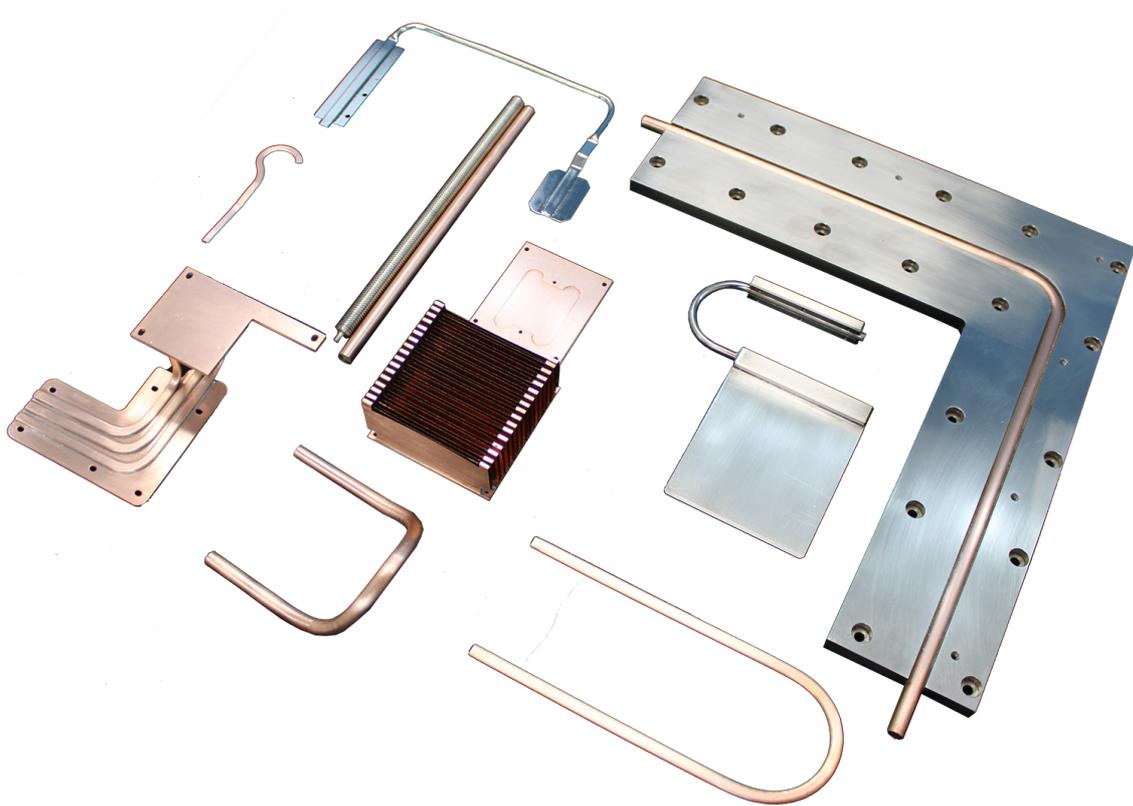
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NORENTM
THERMAL SOLUTIONS

The logo features the word "NOREN" in a large, bold, black sans-serif font. The letter "N" is stylized with a red and blue diagonal split. Below "NOREN" is the phrase "THERMAL SOLUTIONS" in a smaller, all-caps, black sans-serif font. The background of the entire page is a faded industrial scene with large metal silos and complex piping structures under a blue sky with light clouds. At the bottom of the page, there are decorative geometric shapes: a black triangle on the left and a blue trapezoid on the right.

■ CUSTOM THERMAL SOLUTION

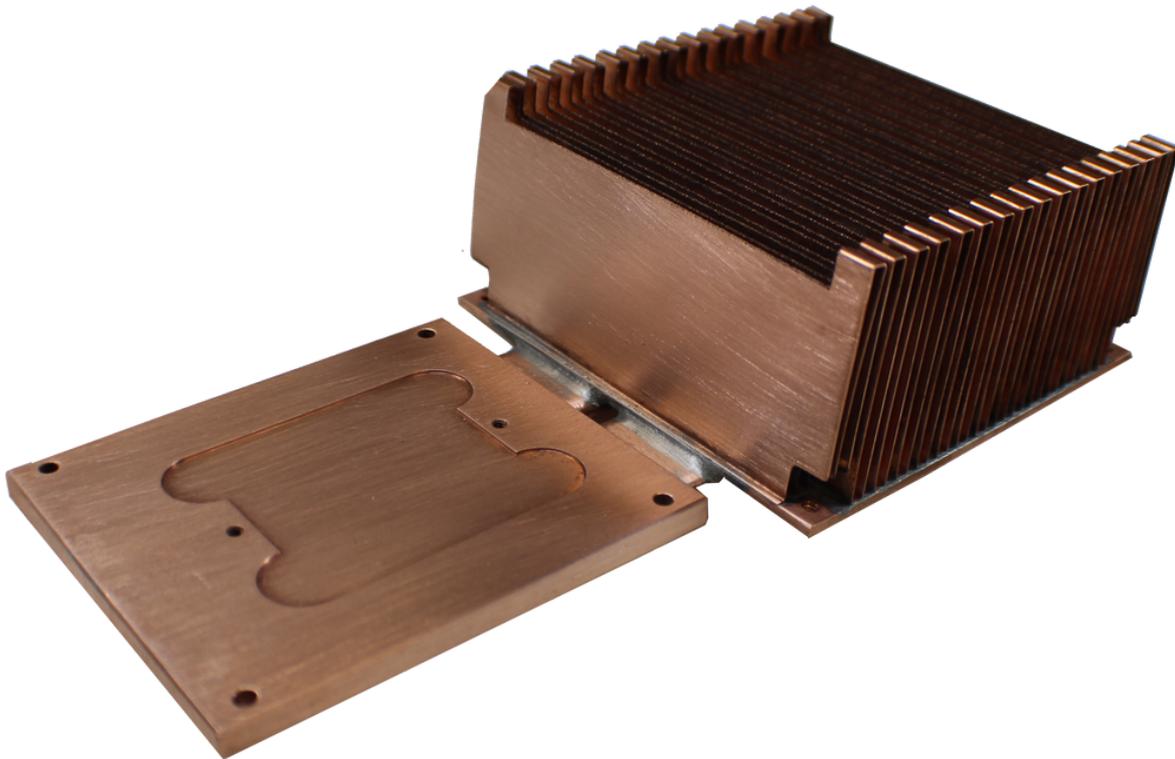


Noren offers customized and innovative management solutions tailored to each customer's needs and requirements. We can create a great variety of thermal heat transfer solutions by taking full advantage of our in-house design and manufacturing capabilities.

Our engineers work closely with each client to generate the appropriate thermal and mechanical analyses to ensure the solution's performance and efficiency.

THE CAPACITY TO PRODUCE PROTOTYPES

At Noren, we work with your team to create the best solution, whether you require an original design to meet your current project's criteria and requirements or an existing design that needs to be tailored for a specific condition.



Using advanced tools such as 3D printing and Computational Fluid Dynamics (CFD), we can produce fast prototypes for a given solution to test its components and overall performance.

**Project
Review**

**Feasibility
Analysis**

**Design
Validation
Review**

**Manufactur
e Ship**

**Customer
Incorporates
Custom Design**

■ HEAT PIPES



A heat pipe is a heat-transfer device that takes advantage of phase-change properties of the working fluid inside to transfer heat from one end to the other with high efficiency and at a constant temperature gradient.

Heat pipes are best-known for their incredibly high thermal conductivity, surpassing commonly used materials (such as solid copper) by providing 10 to 1,000 times more thermal conductivity. Heat pipes are also manufactured in many configurations; bends, angles, flattened pipes, finned, or even embedded into other tubes.

Noren's custom-made heat pipes are designed to optimize and improve the thermal management capabilities of any application. Noren heat pipes provide additional value to your thermal management needs with extended service life and no maintenance work.

HEAT PIPE BENEFITS

- Maintenance-free devices.
- High thermal conductivity.
- Lightweight construction and assembly.
- Fast and steady thermal response.
- Manufacturing is available in different bends, angles, and flattened pipes.
- Heat transfer from heat source over relatively long distances.

APPLICATIONS FOR HEAT PIPES

- Compact Electronics Enclosures cooling.
- Communications.
- Medical electronics.
- Consumer Electronics.
- Aerospace.
- Climate control for electrical enclosures.

■ COLD PLATES



Cold plates are thermal management devices that provide localized cooling by transferring heat from one source to a liquid (working fluid). The flow path of the liquid can be adjusted according to different requirements to achieve the best performance for a given application.

At a basic level, a cold plate is made from a conductive material and has an inlet and outlet that allows working fluid to flow through. The flow path is specifically designed to enhance the heat transfer capabilities of the cold plate.

The most common installation configuration is by contact. The cold plate is placed in direct contact with a component that requires cooling; the cooling fluid absorbs and dissipates the heat from the element utilizing a heat exchanger, then cycles the fluid through the system again. Some working fluids are water, alcohol, and dielectric fluids.

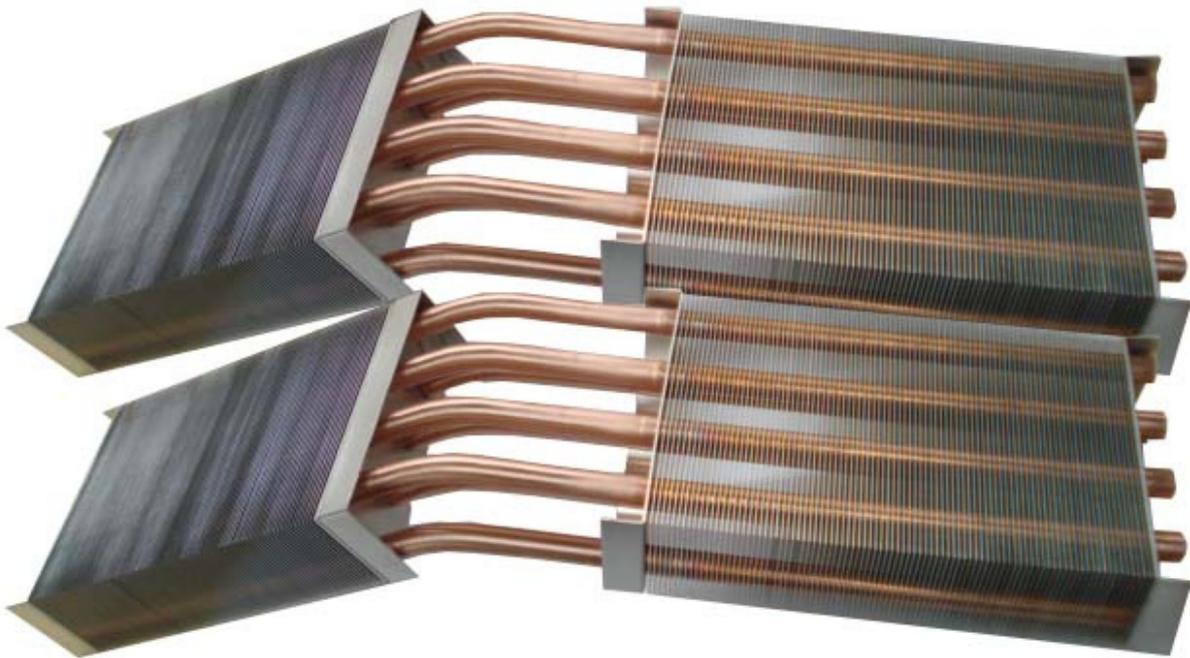
COLD PLATES BENEFITS

- High-capability cooling system.
- Excellent heat transfer capacity employing liquid as a working fluid.
- Variety of use in working fluids.
- Increased performance over air cooling.
- Minimal or no maintenance work.

APPLICATIONS FOR COLD PLATES

- Electronic components cooling.
- Medical devices.
- Heat exchangers.
- Compact electronic enclosures.
- Aerospace components.

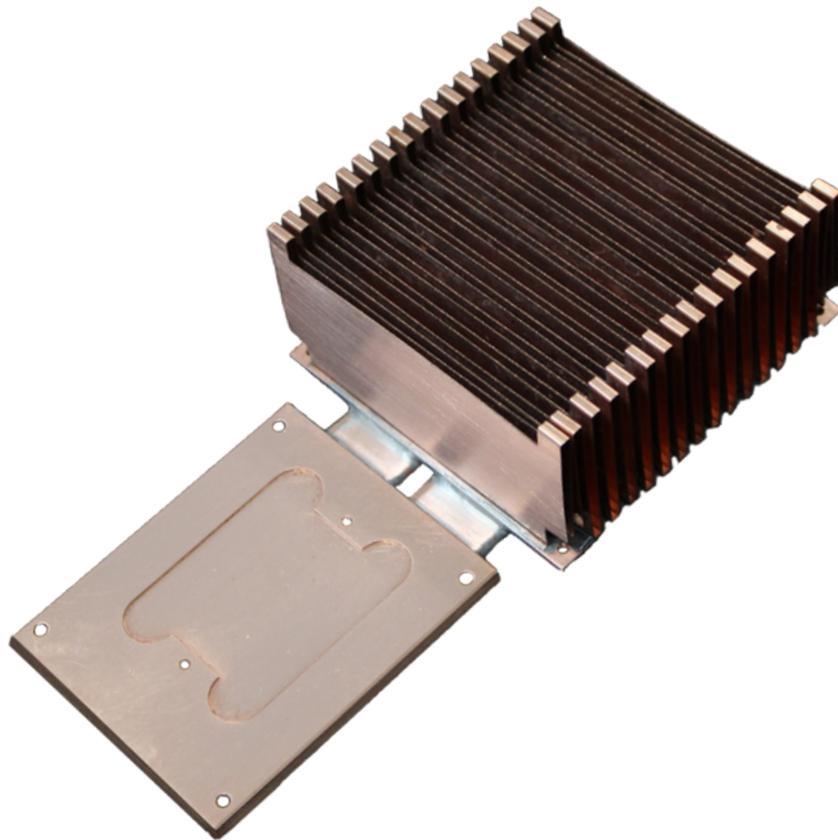
■ HEAT SINKS



A heat sink is a device made of a thermal conductive material that redirects the unwanted heat from an electronic device attached to it. The physics behind this system include the heat transfer principles and the surface area between the device producing excessive heat and the environment.

The goal is to remove the heat produced naturally by electronics, allowing them to last longer and work efficiently.

In addition, Noren offers customers the ability to design and manufacture customized Heat Sinks, using a variety of geometries and materials to maximize the dissipation of unwanted heat.



HEAT SINKS BENEFITS

- High-efficiency cooling for compact devices.
- It can be integrated into other cooling solutions like heat pipes.
- Availability of various manufacturing materials and techniques.
- Lightweight and durable construction.
- Minimal maintenance work is required.

APPLICATIONS FOR HEAT SINKS

- Consumer electronics.
- Power electronics.
- Aviation, defense, aerospace, and medical devices.

■ THERMAL PINS



Thermal pins are high-temperature heat pipes designed for different purposes in the plastics molding industry.

As with any heat transfer device, the goal of thermal pins is to move heat quickly. This product is based on heat pipes which has significantly higher thermal conductivity than a piece of copper of the same dimensions.

Thermal pins are custom made to fit any existing mold, allowing them to cool down even in regions where water cooling is unavailable.

Their excellent heat conducting properties can be used to deliver the right amount of energy in a mold in order to heat it evenly. This will assist in preventing any damage or defect within the plastics being produced.

THERMAL PINS BENEFITS

- Custom-made thermal solution designed to fit in any existing molding core.
- High heat transfer allows them to move heat quickly.
- Isothermal cooling or heating can be achieved.
- Increased productivity by shortening cycle times.
- The thermal pin is maintenance-free and can operate continuously without losing its effectiveness.

APPLICATIONS FOR THERMAL PINS

- Cooling in plastic injection molds.
- Cooling or heating in extrusion, blow, and rotational molding.

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GET IN TOUCH

WE ARE LOOKING FORWARD TO STARTING A PROJECT WITH YOU!

HAVE A LOOK AT THE SECTIONS BELOW.



Contact Noren directly, fill out a form and we will get back to you as soon as possible.



Need some answers? Check out our page for Frequently Asked Questions about Noren.



Find your solution, use our quick calculator to find out which Noren heat exchanger best meets your needs.

NOREN THERMAL SOLUTIONS PROFILE



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