

Since 1932, Hydro-Thermal's proprietary Hydroheater technology has been acknowledged as an elegant solution for heating process fluids. Over the years, Hydro-Thermal has adapted that technology and our expertise to serve customers in the pulp and paper, chemical, textile, pharmaceutical, food processing, biotech, grain milling, petrochemical, and water treatment industries. Today we remain the leading process heating solutions provider for all types of process industries worldwide.

Customer satisfaction pledge

If, at any time and for any reason, a Hydroheater® should fail to perform as designed*, and Hydro-Thermal is given adequate opportunity to provide a remedy, Hydro-Thermal will, after receipt of the unsatisfactory unit, reimburse 100% of the original purchase price.

**Proper replacement of wear parts required*



Hydro-Thermal Corporation
400 Pilot Court, Waukesha, Wisconsin 53188, U.S.A.
262/548-8900 • Fax 262/548-8908 • Toll Free 800/952-0121
www.hydro-thermal.com • info@hydro-thermal.com

The Leader in Engineered Liquid Heating Solutions.



WE BRING THE HEAT.



Experts in

Hydro-Thermal Corporation is the expert in heating process fluids. For over 70 years, our proprietary Hydroheater technology has provided custom steam heating solutions for clients throughout the world. From simple applications such as heating water to complex challenges such as heating viscous and abrasive fluids, our family-owned company has the expertise, technology, and personal dedication to efficiently meet and exceed your expectations.

The Hydro-Thermal difference

Our Hydroheater® injects precise amounts of high velocity steam to efficiently heat your liquid or slurry and provides:

- **Energy efficiency** – With no heat transfer barrier, our heaters reduce energy and steam consumption by over 20 percent compared to indirect heat exchangers – without a condensate return system.
- **Low maintenance** – Turbulent mixing action prevents scaling, fouling and full pressure to eliminate plugging. With no heat transfer barrier to cause product burn-on, our heaters deliver low-maintenance continuous service even under severe operating conditions.
- **Precise temperature control** – Even with variable liquid flows and inlet temperatures, our heaters regulate temperature as accurately as your system will allow – often within 1/2°F (1/4°C) of setpoint.
- **Immediate heat-up** – Our heaters require no warm-up; discharge temperature responds instantly to instrument signals.
- **Quiet operation** – With their custom design and heavy-duty construction, our units operate without the noise, vibration, and hammer of other heat-transfer devices.
- **Space savings** – Our heaters need less space than indirect heat exchangers, can operate in any orientation and don't need to be hard-mounted to the floor
- **Customization** – We customize our products to your process so you get the best solution for your process heating needs.
- **Engineering services** – Our dedicated personnel, from engineers to sales-people, will help you design, customize, and implement your solution.



steam heating.



Meeting the heating needs for processes around the world.

Our Hydroheater solutions heat all types of process fluids – from water to starch, tomato paste to abrasive, high viscosity and high solids slurries. We serve a variety of industries, including:

- Chemical
- Food and beverage
- Grain milling
- Pharmaceuticals and cosmetics
- Biotech
- Pulp and paper
- Wastewater treatment
- Petrochemical

Providing solutions. Supporting success.

With Hydro-Thermal's customized solutions, you can realize efficient steam heating in your process. We help you choose a solution that matches your operation so you get exactly what you need. We're certain that you'll be more than satisfied with our people, products, and services. We welcome the opportunity to show how they can benefit you and your operation.



Steam – your greatest heating solution.

Harnessing the power of steam

Our Hydroheater® is a direct-contact steam injection heater. Its exclusive design allows Hydroheaters to mix precisely metered amounts of steam directly with a liquid or slurry – providing instantaneous transfer of heat from steam to the liquid. This rapid heat transfer causes the steam to immediately condense, eliminating the hammer and vibration associated with less sophisticated heaters.

The Hydroheater employs a unique internal geometry to control the steam injection process. A variable area nozzle/stem plug is used to precisely regulate the steam flow. A movable combining tube offers an adjustable product flow path, which maintains hammer-free operation and provides additional control of liquid pressure.

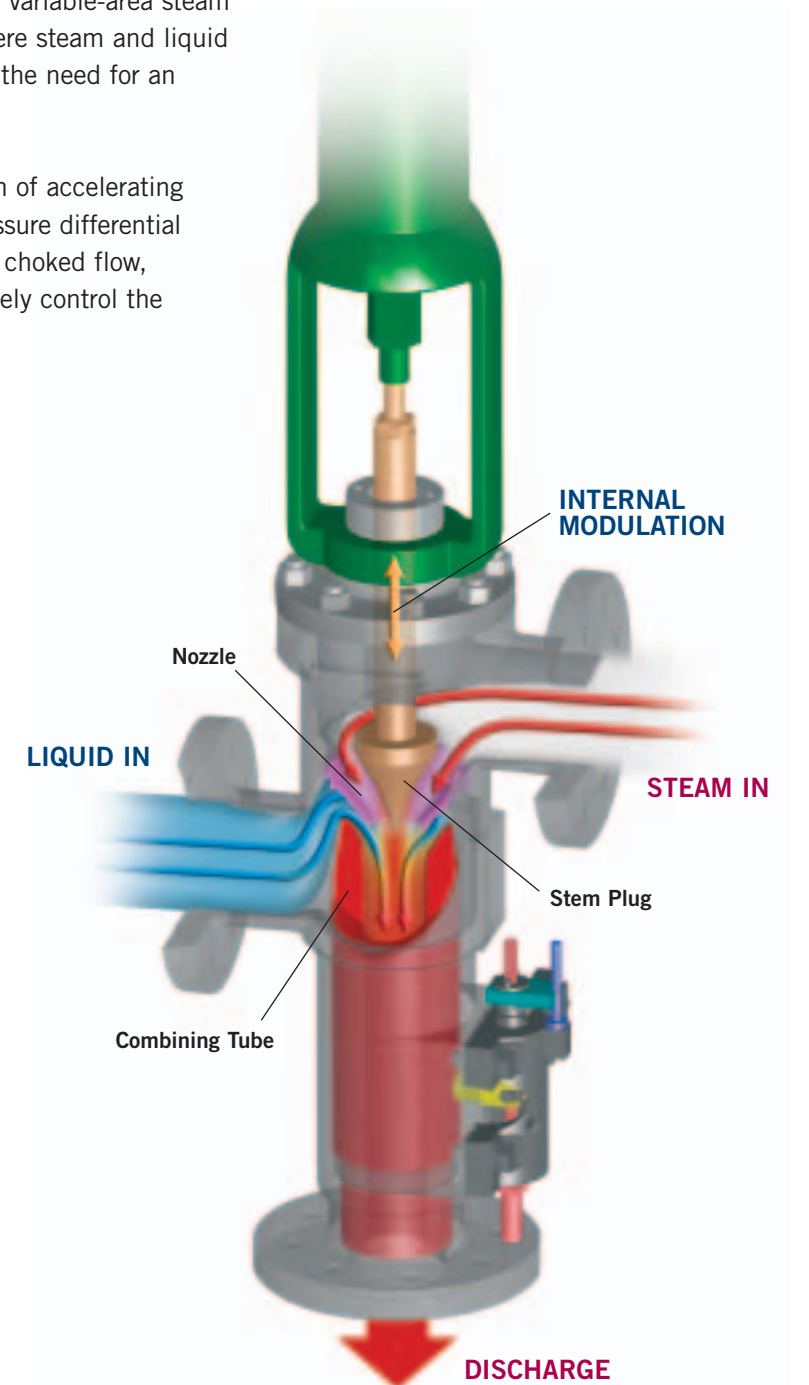
Inside the injector.

We employ two distinct yet interrelated strategies for effective and uniform heating of liquids and slurries. These methods maximize control of the process for accurate temperature control, smooth operation, and the flexibility to optimize performance under varying conditions.

Internal modulation – Our unique internal modulation design offers a precise method of steam control that produces predictable results based on position of the stem plug. Through a variable-area steam nozzle, steam flow is metered at the point where steam and liquid first contact and mix. This method eliminates the need for an external steam control valve.

Choked flow – Choked flow is the phenomenon of accelerating a vapor to maximum velocity by creating a pressure differential through an engineered nozzle. By establishing choked flow, the steam mass flow can be metered to precisely control the heating of the liquid.

Internal modulation and choked flow are just two of many significant technologies that allow Hydro-Thermal® to work with customers worldwide on their most demanding liquid heating applications. Hydro-Thermal products operate in wide-ranging conditions, adjusting internal components to optimize the heating process. No other manufacturer offers this unique combination of solutions to meet heating needs so expertly. Our technology, engineering knowledge, manufacturing capabilities, and process understanding are unequaled in the marketplace.





Put us to the test.

Located in our Waukesha, Wisconsin-based headquarters, our unique Solutions Center allows you to try before you buy. It is fully equipped with everything needed for accurate testing and includes Hydroheaters®, heat exchangers, a boiler, pumps, mixers, kettles, tanks, and data acquisition equipment. Customers are welcome to provide additional equipment and materials. Let us prove to you that our solutions truly are the best. Simply call us to discuss your unique testing needs.

This process fluid heating laboratory is available for confidential product, process, and equipment testing on a fee-for-service basis. Hydro-Thermal® engineers customize the in-house facility to simulate actual production conditions, perform tests, deliver training, and provide results documentation.

We help you:

- Optimize your process
- Train personnel
- Test new processes
- Experiment with direct steam injection
- Solve process challenges
- Evaluate product results

Industrial Hydroheater K series



Industrial Hydroheater M series



Sanitary Hydroheater




Solaris™ Hydroheater



Choose from a complete line of quality heating solutions

Our dedicated personnel will help you choose a solution that fits your requirements. All of our products are engineered to meet our stringent quality controls and come with a 100 percent performance warranty.

- **Industrial Hydroheater** – This Hydroheater is the most efficient heat transfer device available for heating water and water-miscible liquids, slurries, and process fluids in all types of manufacturing processes.
- **Sanitary Hydroheater** – The Sanitary Hydroheater is the most efficient heat transfer device available for heating water and water-miscible liquids, slurries, and process fluids in all types of sanitary processes, such as in the food, dairy, beverage, cosmetics, and pharmaceutical industries. 
- **Solaris Hydroheater** – The Solaris Hydroheater is a direct steam injection heater with a straight-through flow design to minimize pressure drop for viscous fluids and slurries, such as pulp stock and tomato paste.
- **Systems:**
 - **EHS (Engineered Heating Systems)** – Packaged, ready-to-use heating systems. Everything you need for a successful and safe Hydroheater installation.
 - **ATTEC®** – Completely customized steam heating solutions, designed, built, and installed to your individual specifications.
- **Emerging technologies** – With multiple patents worldwide, Hydro-Thermal is constantly evolving our technology and product line to better serve our customers' needs.