

The Perfect Temperature. Every Time.

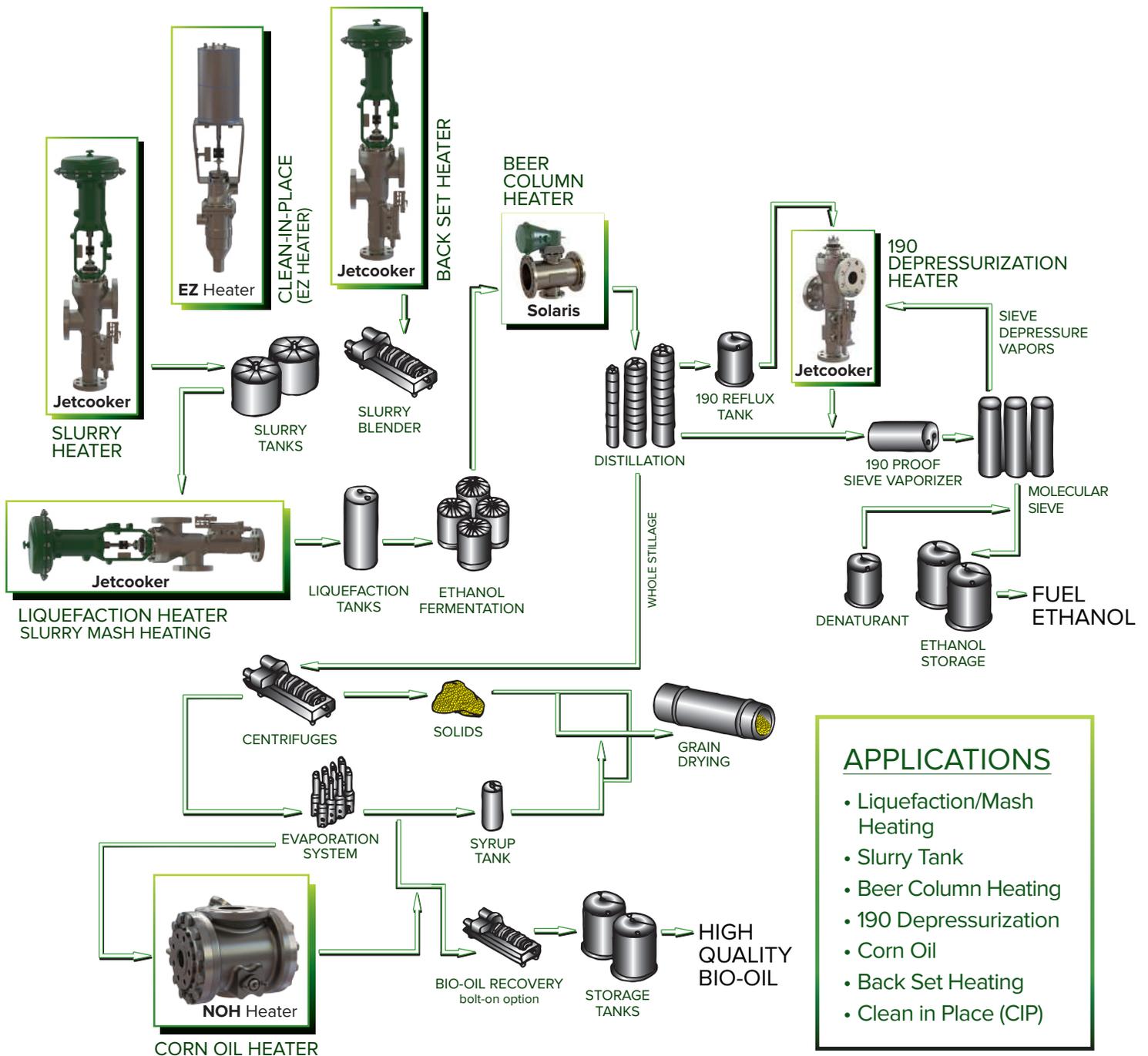


FLUID PROCESSING HEATING

IN THE ETHANOL INDUSTRY

Direct Steam Injection (DSI) Heating for Ethanol Production

Hydro-Thermal's patented direct steam injection technology allows ethanol producers to achieve precise temperature control and optimize their process. A More than 300 Hydroheaters (also known as the Jetcooker) have been installed in Ethanol facilities worldwide. The Jetcooker is known for its versatility, making it a great option to be used all over your facility.



Ethanol Production

Liquefaction

Heating the corn mash in the Jetcooker is the first step to opening the starch molecules so the enzymes can break it down into sugar. The Jetcooker keeps a constant setpoint temperature between 210°F and 225°F [98°C and 107°C]. It is equally important to maintain a constant pressure drop across the Jetcooker optimizing shear, mixing characteristics, and overall performance efficiency.

Slurry Tank Heating

More precise and accurate temperature control is achievable through DSI, which will help with viscosity and give the flexibility to increase slurry solids. Changing viscosity will bring down the beer mash exchanger pressures, which will help maintain your front end production rate while also providing uniform and consistent temperature that could help with enzyme optimization.

Beer Column

Achieve more precise temperature control through established DSI technology. The goal is to provide a more consistent/accurate mash temperature to the beer column (135°F/57°C current temperature to 170°F/76°C future temperature). Reducing energy usage and achieving more flexibility from the beer exchangers are possible, as are improvements for the beer bottom base loss recovery and minimized chemical usage.

Corn Oil Production

Hydro-Thermal's products heat thin stillage/syrup beyond the commonly targeted temperatures, and the increased temperature works as an emulsifier. As a result, ethanol producers may reduce or eliminate their emulsion breaker chemicals while maintaining or increasing oil production.



Water Heating

Beyond processing applications, Hydro-Thermal is also the expert in water heating applications, as we have helped ethanol producers achieve $\pm 1^\circ$ of their desired temperature.



Reverse Osmosis (RO)

Hydro-Thermal can heat RO inlet water or heat membrane backflush water while achieving precise temperature control and eliminating wasted energy.



Clean in Place (CIP)

Proper sanitization and cleaning are of utmost importance. The EZ Heater can optimally clean equipment in one pass.



Tank Heating

The EZ Heater can heat the fluid going into the tank, re-circulate the tank to maintain a specific temperature, or leave the tank cold and heat the liquid exiting the tank, producing hot water on demand.



HEATING SOLUTIONS in Ethanol Production



Hydroheater

Also known as the Jetcooker, the Hydroheater™ has a proven history of heating and processing a complex range of liquids. Known for its adjustability and durability, the near century of engineering and innovation behind the heater's design speaks for itself.

Volume capability: 1 up to 6,700 gpm [0.2 up to 1,522 m³/hr]



NOH (Non-Obstructing Heater)

The Non-Obstructing Heater is rugged enough to handle even the toughest abrasive materials, like sand and grit, to fibrous materials and large particulates. • Its non-obstructive design protects against plugging, fouling, and pressure drop with its powerful, unrestricted flow.

Volume capability: 30 up to 3,035 gpm [6.8 up to 689 m³/hr]



Solaris

Perfect for viscous slurries, the Solaris® heater features an optimized straight-through design and low shear flow, perfect for heavy slurries with medium consistency or higher solid contents. The flow diffuser injects steam across the entire cross-section to ensure thorough mixing and a uniform temperature profile even at a high volume and flow rate.

*Volume capability:
5 up to 25,000 gpm [1 up to 5,678 m³/hr]*



EZ Heater

The EZ Heater® is the industry leader in all hot water applications with its unique internal modulation and self-cleaning ability. High velocity steam eliminates scale build up, making costly chemical baths and unexpected shutdowns a thing of the past.

Volume capability: 2 up to 1,350 gpm [0.5 up to 306 m³/hr]

Need more information about Hydro-Thermal products?

Visit www.hydro-thermal.com or call (800) 952-0121

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