

ProSonix™ OptiShear™ Jet Cooker

PSX C-Series Jet Cooker with OptiShear™

- **Starch Slurry processing** - Designed for starch slurries with solids concentration of up to 40% concentration.
- **Types of Starch** – The OptiShear™ is well suited for all types of starch such as corn, potato, wheat, cassava, rice, & tapioca.
- **Precise temperature control** of +/- 1°F for reliable heating performance.
- **Materials of Construction** - Standard carbon steel or 316SS with optional wear coatings available for erosive slurry conditions.
- Standard ANSI class connections (NPT threaded or RFF flanged) for 150 psig steam, with optional 300 psig available.
- **Design Standards** - Designed to ASME B31.1 Also optional ASME, CRN, or CE/PED certifications available

Control Features & Specifications:

- Motor - AC (Fractional Hp)
- Electrical - 110 VAC, 1 ph, 60 Hz
- Contactors to operate:
 - Open/Close
 - Reverse,
 - Position Feed back
- Approximate 300:1 gear drive turndown



The ProSonix OptiShear™ Jet Cooker is designed for starch cooking, wet mill processing of starch, ethanol production, and fructose & alcohol production. ProSonix™ unique method of direct steam injection utilizes **internal steam modulation** via an integral Pneumatic Actuator and **variable position steam plug**, to accurately meter the mass flow of steam, through choked flow conditions. **Choked flow** is the phenomenon of accelerating a vapor to maximum velocity by creating a pressure differential through an engineered opening. By establishing choked flow, the **steam mass flow can be metered** to precisely control the heating of the liquid. This produces predictable results based on position of the stem plug. Through a variable-area steam injector, steam flow is metered at the point where steam and liquid first contact and mix.



OptiShear CT Auto Drive System

The OptiShear™ is a unique method of automatically controlling the gap the starch slurry passes through between the condensing tube and the steam injector. The OptiShear™ is operated electrically from the customers control system.

Advanced Drive System - The tube movement in the ProSonix heater to adjust the starch gap is accomplished using a threaded engagement. The tube is rotated, and an external thread moves the tube towards or away from the injector (nozzle). Moving the tube in this way changes the orientation of the tube inside the heater, reducing localized wear. This has the beneficial effect of evening out the wear of the internal parts, extending their operating life.

Radial Slurry Flow - In the OptiShear™ design, the condensing tube and steam nozzle interface is truly coaxial, ensuring the starch slurry gap is uniform throughout the full 360° flow path. The tube rests on multiple bearing surfaces so there is no movement of the tube relative to the injector except to adjust the gap.