

## ProSonix™ Inline I-Series with Angled Steam Injector

Direct Steam Injection Heater for Difficult to Pump & Aggressive Fluids

### ProSonix DSI Heating Solutions

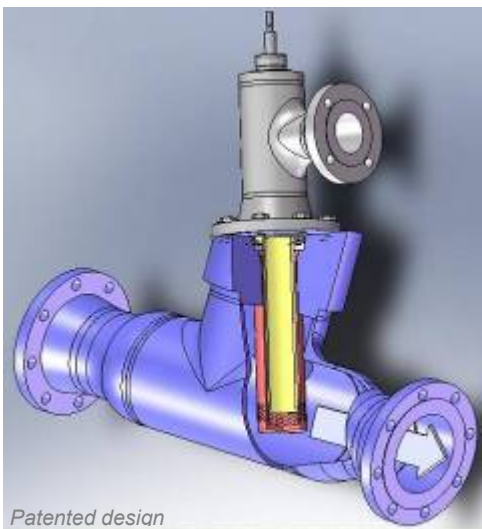
- Angled Steam Injector for difficult to pump sludges & slurries
- Low Pressure Drop typically 1-2 psig.
- Precise temperature control to +/- 1°F.
- Single or Multi-stage heating for flow rates from 1 – 15,000 gpm.
- High temperature rise (up 250°F) in a single pass.
- Materials of Construction - Standard carbon steel or 316SS. Optional alloys and wear coatings available for erosive or corrosive applications.
- Designed to ASME B31.1 - Optional ASME, CRN, or CE/PED certification.
- Patent No. US 8,167,278,B2

### Applications for the Angled I-Series

- High solids, high viscosity, & difficult to pump slurries.
- Fibrous slurries such as pulp stock and biomass.
- Anaerobic digestion of municipal wastewater, animal by-products and biogas production.
- Mining & mineral processing applications.



The ProSonix™ I-Series Direct Steam Injection heater's unique method of direct steam injection utilizes internal steam modulation via an integral Pneumatic Actuator to accurately deliver the appropriate mass flow of steam for the required heating. This modulating design offers a precise method of steam control through a choked flow control delivery of the steam. 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 is 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 diffuser, steam flow is metered at the point where steam and liquid first contact and mix.



Patented design

Angled Steam Jet Diffuser Design

### FEATURES & BENEFITS:

- 3-Dimensional Steam Injector delivers up, down, and side to side steam injection pattern to optimize steam mixing and rapid condensation.
- Angled Diffuser reduces flow disruptions and suitable for fibrous slurries.
- Single Point Steam Injector diffuser connection allows for complete fluid pass through clearance with no build-up points for fibrous materials.
- Eliminates Plugging & Fouling from burn and scorch, sensitive slurries and sludges.
- Internally Modulated Steam Injection controls mass flow of steam allowing for smooth and stable operation.
- Energy Savings from the low pressure drop across the PSX DSI heater.
- Positional Steam Inlet allows steam inlet flange to be rotated in 360° for ease of steam piping connection.
- Secondary Internal Steam Shut-off (Optional) for integral steam shut-off

For additional information, please visit us at [pro-sonix.com](http://pro-sonix.com)