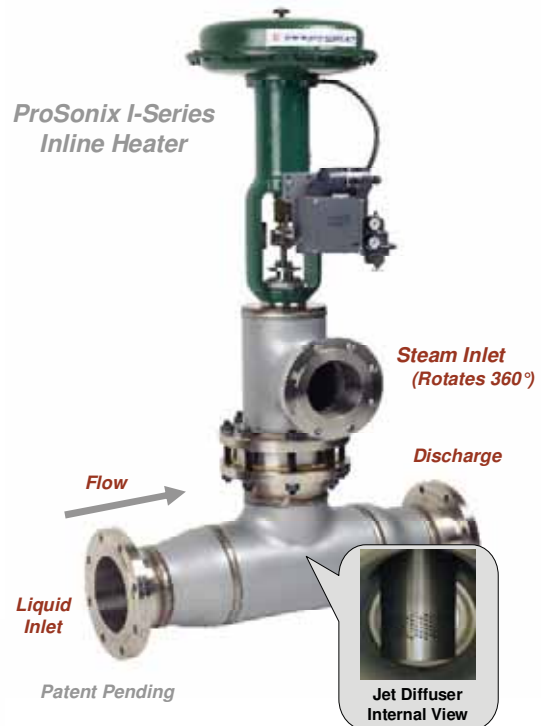


## ProSonix™ I-Series Inline Direct Steam Injection Heater

### PSX Heater with Jet Diffuser Technology...

- **Sonic velocity steam** injection via internally modulated steam control & variable position steam plug for vibration free operation.
- **Precise temperature control** of +/- 1 °F for reliable heating performance.
- **Compact design** allows for minimal installation space requirements.
- **Expanded Body** – Allows for insertion of steam diffuser to maintain proper flow velocities thru heater.
- Configurations allow for **single or multi-stage heating** for challenging process heating applications
- Can be installed in any orientation.
- **High temperature rise** (up 250 °F) in a single pass.
- **Materials of Construction** - Standard carbon steel or 316SS. Optional materials such as Hastelloy, 2205, 317L, Titanium, AL-6XN, etc. along with wear coatings available for erosive or corrosive applications.
- Standard ANSI class connections for 150 psig steam, with optional 300 psig available.
- Designed to ASME B31.1 Also optional ASME, CRN, or CE/PED certifications available



The **ProSonix™** Direct Steam Injection heater is designed for water heating, difficult to pump slurries such pulp stock, wastewater sludge, mineral slurries, and other aggressive fluids. **ProSonix™** unique method of direct steam injection utilizes **internally modulated steam control** 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 diffuser, steam flow is metered at the point where steam and liquid first contact and mix.



PSX Jet Diffuser Internal View

### FEATURES & BENEFITS:

- **Radial Jet Diffuser Design** delivers a sonic velocity steam injection pattern to optimize steam mixing and distribution for uniform heating of the fluid.
- **Sonic Velocity Steam Injection** via choked flow conditions optimize steam mixing for rapid condensation and elimination of steam cavitation.
- **Eliminates Plugging & Fouling** with no hot surfaces for burn & scorch sensitive slurries and sludge's.
- **Internally Modulated Steam Injection** controls mass flow of steam allowing for smooth and stable operation.
- **Energy Savings** as a result of low pressure drop across the heater, typically 1-2 psig, reduces pump demand.
- **Positional Steam Inlet** allows steam inlet flange to be rotated in 360° for ease of steam piping connection.
- **Self Cleaning Design** eliminates mineral & scale build-up



**PSX I-Series - Angled Jet Diffuser**

**Expanded Body** allows for insertion of steam diffuser to maintain proper flow velocities thru heater. Can be used in **Single or Multi-stage** heating arrangements for difficult to heat slurries and sludges.

**Well Suited for...**

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

**I-Series Common Applications ...**

- Tank or Vessel heating
- Inline for continuous or intermittent heating
- Water or Slurry Heating
- Boiler Feedwater Pre-heating
- Supplemental Hot Water Needs
- Seasonal Heating Applications
- Large Pipe & Hi-Flow with low temp rise needs

**PSX I-Series with Electric Actuator**

- Locations with-out compressed air available
- Remote locations



*I-Series with Electric Actuator*

I-Series Inline Heater								
Available Configurations				Connections			Capacities	
Size	Model	Steam to Liquid Connection	Liquid Body Diameter	Steam	Liquid "In"	Liquid "Out"	Type	Flowrate (gpm)
<b>PSX100</b>	PSX101	1x1	3.0"	1.0"	1.0"	1.0"	NPT	49
	PSX10H	1x1.5	3.0"	1.0"	1.5"	1.5"		110
	PSX102	1x2	3.0"	1.0"	2.0"	2.0"		196
<b>PSX150</b>	PSX15H	1.5x1.5	3.0"	1.5"	1.5"	1.5"	NPT	110
	PSX152	1.5x2	3.0"	1.5"	2.0"	2.0"		196
<b>PSX200</b>	PSX202	2x2	6.0"	2.0"	2.0"	2.0"	NPT	196
	PSX203	2x3	6.0"	2.0"	3.0"	3.0"		440
<b>PSX300</b>	PSX303	3x3	6.0"	3.0"	3.0"	3.0"	RFF	440
	PSX304	3x4	6.0"	3.0"	3.0"	3.0"		782
<b>PSX400</b>	PSX404	4x4	8.0"	4.0"	4.0"	4.0"	RFF	782
	PSX406	4x6	8.0"	4.0"	6.0"	6.0"		1761
<b>PSX600</b>	PSX606	6x6	10.0"	6.0"	6.0"	6.0"	RFF	1761
	PSX608	6x8	10.0"	6.0"	8.0"	8.0"		3130
<b>PSX800</b>	PSX808	8x8	12.0"	8.0"	8.0"	8.0"	RFF	3130
	PSX810	8x10	12.0"	8.0"	10.0"	10.0"		4890
	PSX812	8x12	12.0"	8.0"	12.0"	12.0"		6650
<b>PSX1000</b>	PSX1010	10x10	16.0"	10.0"	10.0"	10.0"	RFF	4890
	PSX1012	10x12	16.0"	10.0"	12.0"	12.0"		6650
	PSX1014	10x14	16.0"	10.0"	14.0"	14.0"		8765
<b>PSX1200</b>	PSX1212	12x12	20.0"	12.0"	12.0"	12.0"	RFF	6650
	PSX1214	12x14	20.0"	12.0"	14.0"	14.0"		8765
	PSX1216	12x16	20.0"	12.0"	16.0"	16.0"		11585

Note: PSX Heater selection is based on steam pressure & process heating application conditions.

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