


## Comparing Process Gas Heaters

Features for Comparison	MHI Airtorch®	Competitor	Why is it important to have a better-constructed unit? How do superior technologies impact a user?
	 www.mhi-inc.com	 COMPANY NAME	
<b>Power: Is the derating of Power required in the Air or Gas heater during use?</b>	No.	Varies could be derated by 20% typically.	Not requiring any derating is a clear advantage. When derated, the user can access only low powers for their application.
<b>The typical powers offered to date by the manufacturer.</b>	1KW - 45 MW in single units. Very versatile.	Generally, do not span this range for a single unit.	Derating MW systems is a disadvantage tied to the cost of operation.
<b>Pressure drop for a high-temperature exit temperature.</b>	Typically, 0.25 psi or as shown in the quote.  The pressure drop is reported at the use temperature	Typically, four times more, ~1 psi, or as described by the manufacturer. Please ensure the pressure drop is reported at the use temperature.	A lower pressure drop is an indicator of less energy loss. It often determines the life of the heater. A lower-cost blower can be used when the pressure drop is low. Lower pressure drops are good for dusty gas.
<b>Maximum exit temperature offered.</b>	30 °C to 1250 °C depending on the model. (About 80 °F to 2280 °F)	Typically, only 30 °C- 700 °C. (About 80 °F to 1300 °F)	A higher temperature capability indicates a higher life even at a lower use temperature.
<b>Electric Panel.</b>	UL 508A or as required.	As listed (the user should inquire whether the entire panel is rated or only the enclosure is rated).	Safety Standards. It is best to follow known electrical codes.
<b>Energy Efficiency.</b>	Typically, 95% and above	Varies: Typically, ~80%.	A higher efficiency is better for process cost and decarbonization.
<b>Does the shell require external insulation? Shell materials.</b>	No. Shell is stainless steel or as requested.	Very often.	Better efficiency. Safety.
<b>Can the shell be rated to ASME or CRN standards?</b>	Yes.	Yes.	Ratings provide safety and uniformity.
<b>SCR Quality and Flexibility for Current Limit?</b>	Phase Angle or Zero Cross Over – software adjustable. The user has complete control.	Varies.	Phase angle and current limit adjustment provide better efficiency and better proportional control, making changes softer and thus improving life.
<b>What is the size of a 1 MW 400 °C (750 °F heater)</b>	About 24”	Generally, much larger	Compactness offers several advantages, from space to lower transportation and installation costs.
<b>Torispherical terminations.</b>	Yes, almost always.	Generally, it is not provided. Either no termination or Conical.	Pressure vessels commonly employ torispherical terminations.
<b>Provision of Exact Mating Flanges and Pipes</b>	Yes, almost always.	Varies	Ease of installation and compatibility.
<b>The location of the exit process thermocouple.</b>	Typically in the pipe tubing i.e., in the exit flow.	Generally located upstream near the radiator.	The reading should be in the flow when located in the pipe. This is more accurate.
<b>What does the Warranty cover?</b>	Depending on the model, MHI provides a 1-year Warranty on heaters. Not just on manufacturing defects.	Varies. It is unusual to have guaranteed life for heaters.	Quality and Technology is reflected in the Warranty. MHI uses the GAXP® patented long-life heaters.