

THERMAL REACTION



InfraRed™ Thermal Reactors

InfraRed™ Thermal Reactors represent the newest addition to the Bepex line of innovative thermal technology. The unique design incorporates use of multiple high output radiant heaters located in the top of an enclosed process vessel. Each heater is capable of generating over 20 kW's of heat energy while taking up less than one square foot of space. Multiple heat units allow this design to fit most any drying, heating, reacting or calcining application. Temperatures can instantly and accurately be controlled in a broad range up to 1000°F. Since heat is radiant, high volumes of hot gases are not required to be handled or treated. The unit also lends itself to intermittent operation with quick and easy startup and shutdown and minimal operator intervention.

Features/Benefits

- Gently handles all particle shapes with minimal degradation.
- Reduced utility requirements make for quick and simple installation.
- Instant activation or deactivation of heat source for quick startup or shutdown.
- No high volumes of hot gas makes for efficient and environmentally friendly operation.
- Exact control of input energy allows for variable capacities and turn down ratios as high as 10:1.
- Radiant heat and counter rotation agitation allows precise handling of even sticky materials during thermal reaction.
- Compact design allows for installation or retrofit in applications with space limitations.

Typical Applications

Polymer Crystallization	Organic Acids
Calcining	Polymer Reactions
Agricultural Chemicals	ABS, PVC, PET, PP, PE, etc.
Meat & Plant Proteins	Minerals
Drying	Amino acids
Inorganic Salts	Grain Meals
Ash	Starches
	Sludges



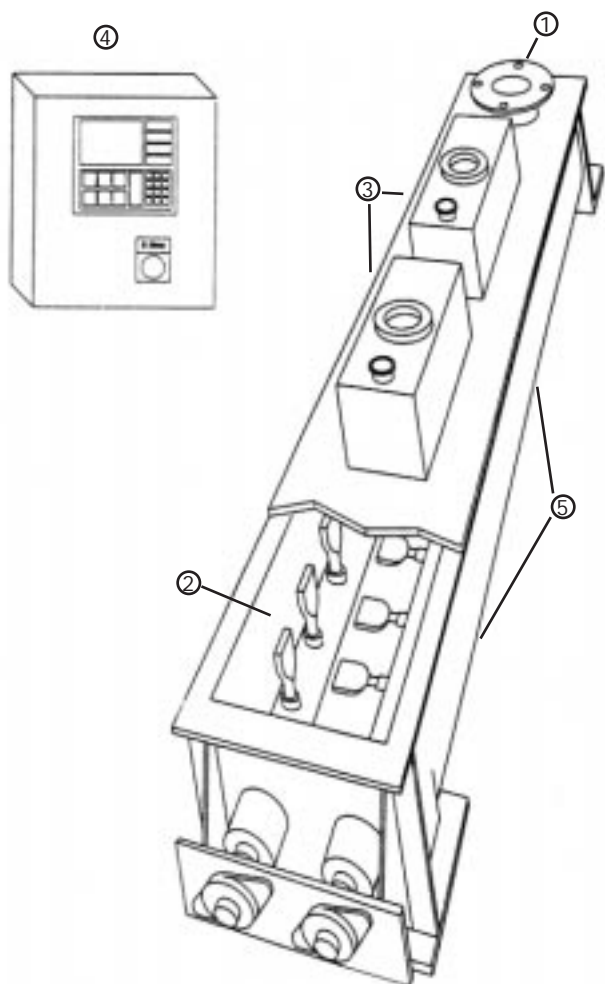
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InfraRed™ Thermal Reactors

InfraRed™ Performance Capabilities

Thermal Process:	Continuous or Batch	Holdup Volume:	0 - 500 Cubic Feet
Heat Source:	Radiant Heaters	Residence Time:	5 - 70 Minutes
Temperature Range:	0 - 1000° F	Product Distribution:	Adjustable backmixing
Material Conveyance:	Mechanical - Adjustable Paddles	Heat Transfer Capacity:	1 - 60 Heaters

How It Works



1. Product is metered into the top flange on the unit.
2. The product is moved through the vessel body by means of counter rotating shafts with adjustable pitch paddles and VFD drive. This conveyance system allows for gentle product movement, controlled backmixing and variable residence times.
3. Multiple radiant heaters are positioned along the top sections of the vessel body. Heat units can be controlled independently or in banks to provide zoned reactions.
4. Optional computer controls can be integrated into a complete instrumentation package to allow precise energy input matched to varying product feed rates, moisture or temperatures.
5. Vessel bodies can be constructed from a variety of materials matched to your application, product and environment. Jackets can be incorporated into the design, particularly at the discharge end, to provide cooling prior to discharge.



Precise control of infrared heat source and alignment of dual paddle agitators allow predictable handling of a vast array of products including many which may become tacky or sticky during thermal processing.



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Some equipment may be shown without guards for illustrative purposes. Guards are supplied and must be in place for safe operation.

Hosokawa Bepex Corporation

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