

IR Gas Burner Construction

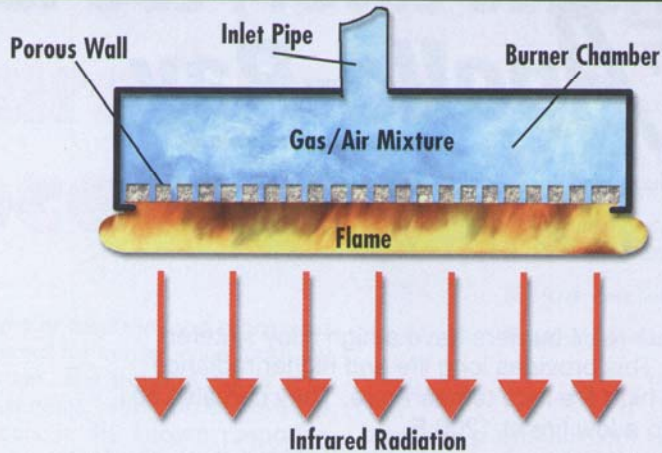


Fig. 3: Gas burners for IR ovens use gas pouring through perforations in a metal or ceramic wall to create heat. The mixture burns just outside the porous face, heating the surface until it glows. C.G. Masi Technology Communications, Golden Valley, Ariz.

For More Information

Pyramid Food Processing
Equipment Manufacturing
Tewksbury, Mass.
www.pyramidoven.com

APV Baker
Grand Rapids, Mich.
www.apvbaker.com

Red-Ray Manufacturing
Company
Cliffside Park, N.J.
www.red-ray.com

Fig. 5: To create an IR-emitting surface spanning the product-conveyor width, oven manufacturers mount several burners on a common manifold pipe. They then mount several such units in parallel over the conveyor to make the oven as long as necessary. Red-Ray Manufacturing Company, Cliffside Park, N.J.



Radiant Wall IR Oven Concept

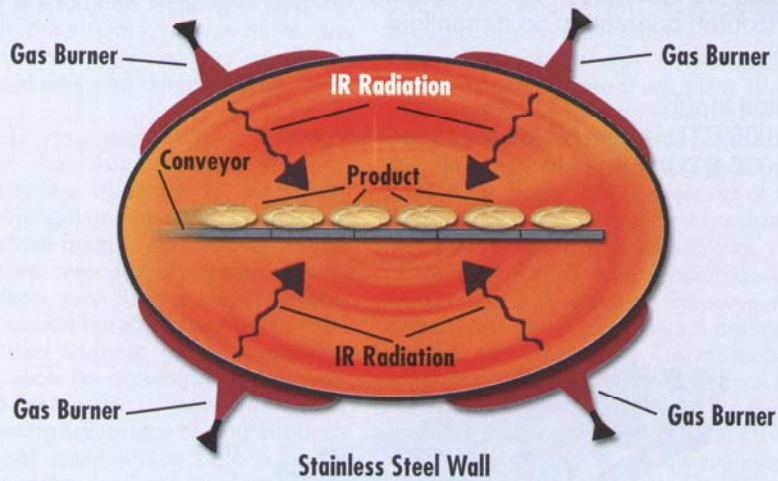


Fig. 7: Pyramid's Radiant Wall Oven uses an elliptical stainless steel tube as an IR emitter. The shape provides an even IR field completely surrounding the product to be toasted or browned. Pyramid Food Processing Equipment Manufacturing, Tewksbury, Mass.

according to Wolfer, "either gas infrared or electric infrared. Gas infrared is by either propane or natural gas. With anything else, you have a tendency for combustion products to taint the product."

"Electrically heated IR ovens use calrods to convert electricity to heat the oven walls," according to Holm. "Heating and cooling cycles damage the calrods, which have to be replaced on a pretty frequent basis."

"There have been more catastrophic failures with electric IR just because of the high heat of the bake chamber," Wolfer reports. "The customer is looking to get toast points when the product hits the conveyor mesh to get that toasted

look. That drives up the bake chamber temperatures up to typically 700 to 800°F and as high as a thousand degrees."

Generating the heat with electricity is not very efficient in this application, either. "We have two 1.5 million BTU burners firing this oven," Holm reports. "That's a lot of heat to generate by electricity!"

While electricity is fine for toasters in home kitchens, equipment vendors and users agree that it is a distant second choice for industrial-scale food processing. Natural gas' advantages of lower cost, more reliable supply and more robust equipment make it the fuel of choice when you make a living by cooking food.