

AutoRECUPE BURNERS

Single-Ended Radiant Tube Burners

Fuel efficient burner provides uniform temperatures, low emissions and long tube life.

The Eclipse AutoRecupe offers the most efficient method available for radiant tube firing. With a burner and recuperator coaxially mounted inside a radiant tube, the AutoRecupe internally transfers waste exhaust heat to the burner air supply, providing high pre-heat temperatures.

The standard AutoRecupe design:

- Cuts fuel costs from 35% to 55% over sealed ambient air burners; even more when replacing atmospheric burners.
- Eliminates the hot air ductwork required by external recuperators, further increasing heat recovery.
- Places the recuperator within the furnace wall, minimizing heat loss.
- Scrubs internal tube surfaces with a jet flame technology, increasing heat transfer efficiency.
- Moves exhaust and air past the heat transfer tube in opposite directions, creating a highly efficient counter-flow pattern.
- Can be fitted to nearly any furnace, gas or electric.

The new AutoRecupe Ultra:

- Provides all of the above plus lower NO_x (up to 1/2!), better temperature uniformity and higher heat flux in an SiC/Metal hybrid.

Great Versatility

- From convection ovens to heat treating furnaces, AutoRecupes have been applied wherever clean, exhaust-free



heat is required. They are available in sizes and materials to suit nearly any job.

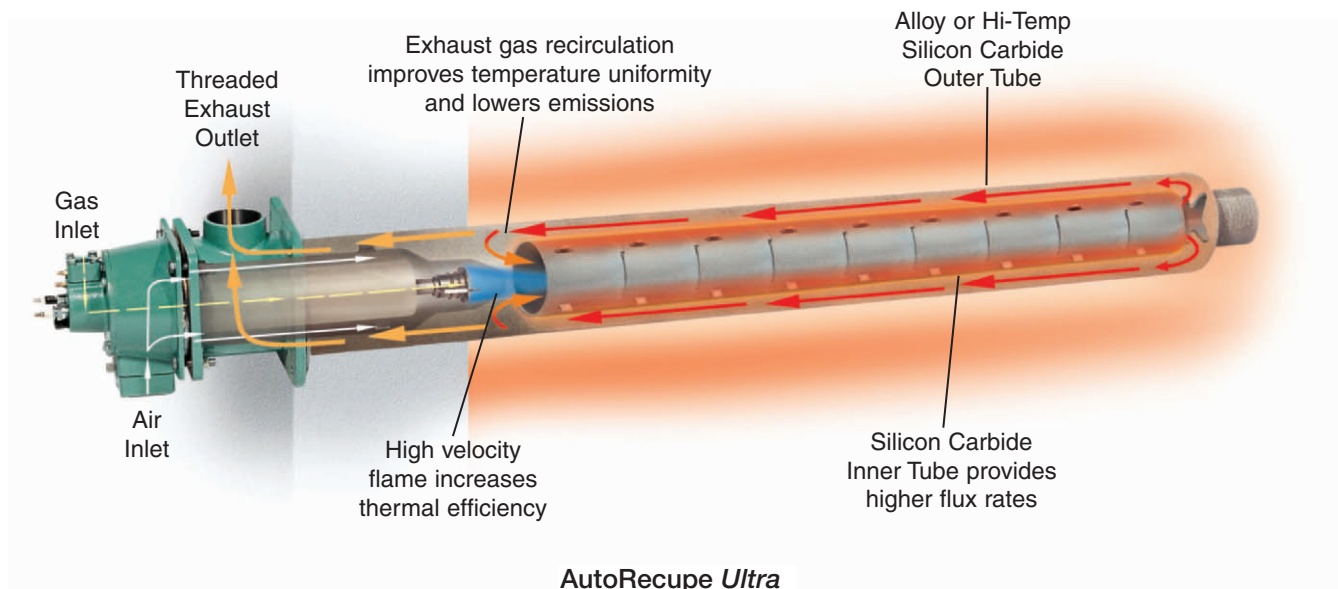
- **Metallic Tubes:** For furnace temperatures up to 1850°F (1000°C), AutoRecupes are available with flame and outer tubes in a variety of alloys with diameters from 3-1/4" to 7-1/2" (83mm to 190mm).
- **Silicon Carbide Tubes:** For furnace temperatures up to 2300°F (1260°C), silicon carbide (SiC) tubes can provide twice the heat output of metallic tubes. In most cases, SiC tubes also withstand corrosive environments better than metallic tubes.

Easy to Use

- Integral air and gas orifices for easy set-up and monitoring.
- Single-ended design accommodates thermal expansion, eliminating troublesome expansion joints and seals.
- Convenient rear access allows burner maintenance without disturbing air connections or tube alignment.

AutoRecupe Burners

Ideal for indirect heating where emissions and temperature uniformity are at a premium



Typical Application

The AutoRecupe Ultra is ideally applied where high efficiency, low emissions and superior temperature uniformity are essential to the process. In this example, Eclipse AutoRecupe burners are horizontally mounted in a six zone, mesh belt furnace. This furnace is capable of 6000 lb/hr production rates at a fuel efficiency rating of almost 70%. The uniform heat release profile of the AutoRecupe helps prolong belt life and provides superior part quality in this hardening operation. Able to operate in a variety of atmospheres, the AutoRecupe burner family can be used in horizontal or vertical mounting configurations, and is ideally suited for continuous (pictured) or batch type furnace designs. The new AutoRecupe Ultra also produces minimal emissions when compared to other available burners.



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