

USGasTech Inc

Providing gas-related technologies to the American Gas Industry

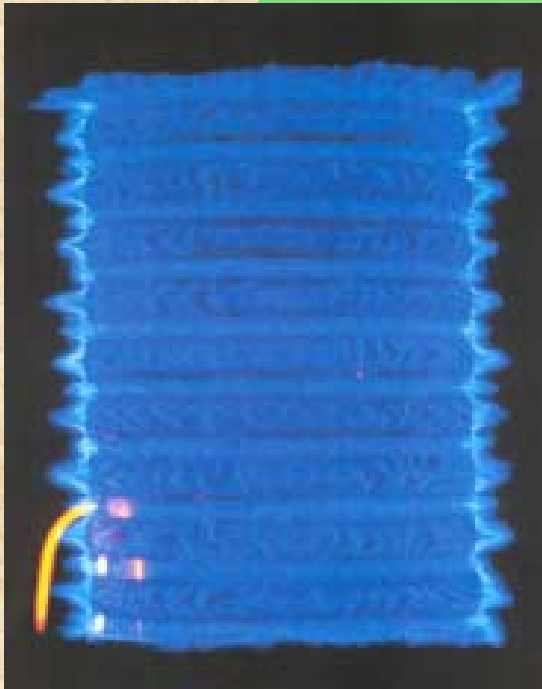
THE SCIAM BURNER

**AN INNOVATIVE LOW COST AND EMISSIONS
SURFACE COMBUSTION BURNER**

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➤ Development



A major European gas company has developed and patented a unique surface combustion burner with a very high power output of 1,300,000 Btu/ft² (4 MW/m²).

This new technology involves a versatile burner for industrial boilers, capable of achieving significant emission reductions.

This burner is brought to the USA by USGasTech, Inc.

➤ Description



This burner is constructed of metallic wires combined to form a mesh.

This mesh is shaped in a ring form with an outer diameter of 6 inches (150 mm) and a nominal output of 150,000 Btu/h. The actual ring diameter can be changed as needed to fit a particular model of boiler.

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Combustion occurs at the surface of the material that stays cold, backfire testing have demonstrated the very high level of safety of operation of this burner. It was totally impossible to create a backfire.

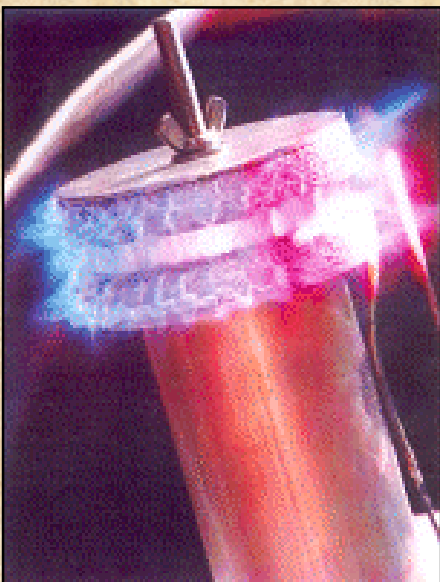


A burner is assembled by stacking necessary number of rings with space rings in between each combustion ring.

The modular design and the use of inexpensive material has allowed to reduce dramatically the cost of manufacturing.

An average production cost of \$ 30 per ring could be reasonably achieved in an annual production level of 1000 units.

➤ Combustion



Air and gas are mixed and introduced by a fan into the cylinder.

The mixture goes through the wires. An ignition rod provides the spark to initiate the combustion of the mixture, the flame moves from one ring to the next one.

A nonporous space ring inserted in between each ring allows a very good flame stability as well as a reduction of the number of rings for the same output and at a much lower cost.

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➤ Emissions

The results of the laboratory evaluation conducted by IGT shown that emissions levels are well below any European or North American standards.

- ✓ CO levels are below 20 ppm.
- ✓ Nox are below 9 ppm (3% O₂),

➤ Application

- The primary application for this burner is to provide heat for commercial boiler. A French manufacturer has already designed a specific boiler to match the burner circular shape. This new design will allow an important global cost reduction. The US targeted markets are retrofit of commercial coal boilers and oil burners.

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- ✓ New low cost boilers could also integrate this new burner.