

Selas Duradiant® K9208 Burner

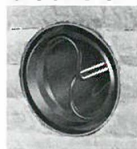
- A State-of-the-Art burner for petrochemical processing with the following benefits:
- No ceramic burner blocks or ceramic sleeves
 - Easy furnace wall mounting
 - Burner servicing without furnace shutdown
 - Quick, trouble-free ignition
 - Nozzle mixing to permit a wide turndown range
 - Low nitrogen oxide emissions
 - Fuel flexibility

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The growing use of fiber insulation in petrochemical furnaces has created an industry demand for burners specially designed to ease installation, lower installed costs, and provide increased burner life. The Selas Duradiant K9208 vortex burner, designed for use with fiber insulation, meets all of these needs.

The Duradiant K9208 vortex burner needs no ceramic blocks or sleeves.



The K9208 vortex burner replaces the ceramic burner block, common on burners

designed for brick-lined furnaces, with a stainless steel tube that is easily inserted through a hole cut in the fiber insulation. The burner assembly is mounted to the furnace wall, making installation of support brackets inside the furnace unnecessary.

This sidewall burner greatly reduces the installation costs over those incurred when installing ceramic block burners with fiber insulation, and outperforms them as well.

The Duradiant K9208 vortex burner provides superior heating uniformity

Because of the whirling action of the vortex burner design, the K9208 burner spreads a flat flame over the entire wall of the furnace. Exceptional uniformity of heating is accomplished with

this burner because the flat flame pattern allows heat to be quickly and efficiently transferred to the processing tubes.

The Duradiant K9208 vortex burner nozzle is designed for thorough fuel blending.

The vortex action is developed by high pressure jets that fire tangentially within an alloy ring. Draft induced combustion air combines with the gas and, when ignited, forms a whirling flame along the flat wall of the furnace. Ignition is easier, and rapid heat transfer from the flame to the process helps to reduce the level of nitrogen oxides.

The Duradiant K9208 vortex burner accepts many kinds of fuels.

A wide range of gaseous fuels, from hydrogen to ethane, can be burned in the Duradiant K9208 without changing the fuel gas orifice. Because it is a nozzle mix burner, backfire can't occur, and turndown is limited only by the control system.

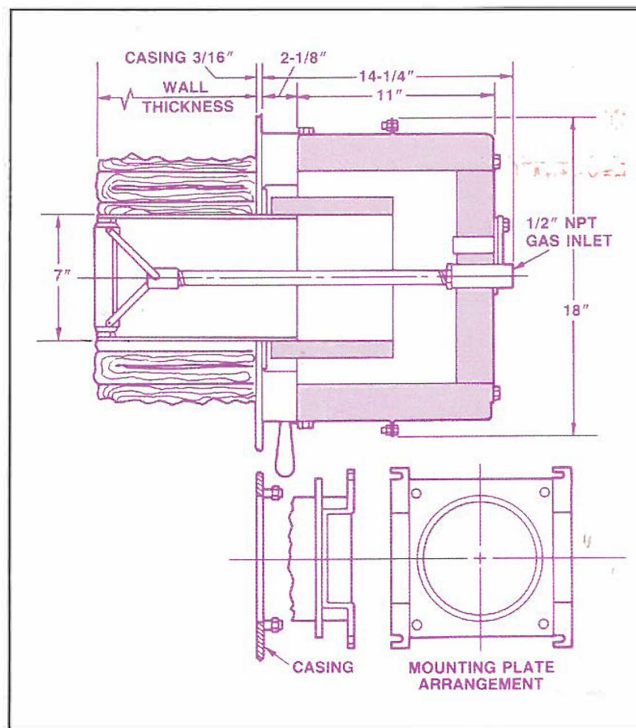
The K9208 vortex burner can also be used with brick-lined furnaces, and can be adapted to either draft-fed or forced-air configurations.

The Duradiant K9208 vortex burner is designed for easy maintenance.

The K9208 vortex burner is removed easily for inspection without shutting down the furnace. Fuel to an individual burner can be shut off and the burner mount loosened and removed from outside the furnace. A spare burner assembly can then be inserted and put into use while the removed burner is serviced.

The Duradiant K9208 vortex burner standard draft model includes a silencer.

The silencer controls burner noise and meets all existing domestic and international standards.



K9208 Technical Features

Capacity: At a firing rate of 1,250,000 Btu/hr with natural gas (based on its higher heating value), the K9208 requires a furnace draft of 0.2 inches water. Under similar conditions, the smaller K9308 burner has a capacity of 720,000 Btu/hr. A typical fuel pressure would be 20 psig. At higher drafts or with forced air, the capacity can be increased at least 50%.

Noise: The silencer, standard equipment for the draft version of the vortex burners, reduces noise to less than 68 dBA for natural gas and 80 dBA for 100% hydrogen fuel. In both cases the noise is measured one meter from a single burner.

NOx Emission: The burner has a remarkably low emission of nitrogen oxides. The emission varies with excess air, furnace temperature, and certain other process variables but is typically less than 50 ppmv.

Applications: Selas Duradiant vortex burners are used in processes for ethylene, vinyl chloride, ketene, synthesis gas, hydrogen, catalytic reforming, and others.

The data above represent typical values which are subject to variations. The values should not be used for specification purposes.



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