

## 1029 OR 1209 SERIES BURNER AS APPLIED TO ALUMINUM INDUSTRY FURNACES

The 1029 Series cold air burner and the 1209 Series hot air burner are specifically designed to meet the requirements of aluminum melting and holding furnaces. The burner is customized to provide optimum "port density." Port density, in conjunction with burner air hole angle (spiral or straight holes), are two of the design factors used for determining the intensity of combustion for a melting/holding furnace burner.

Port densities are generally high for high production rate direct charge melters, somewhat lower for side well charged designs and holders.

Each burner of this design is tailored to the particular furnace, whether it be a direct charge melter, side well melter or holding furnace.

An optimum burner angle is recommended as well as placement of the burner with respect to bath level, distance across the bath in the firing direction, and positioning of burners with respect to the flue for the particular furnace involved.

Burner turndown becomes an important factor when melting furnaces or holding furnaces are used to hold metal for an extended period of time.

Burner turndown can be addressed by pulse firing burners (high-low) or by providing a turndown lance to extend the turndown of the burner that is fired in the proportional mode.

This burner can be turned down to 10/1 in ratio with good flame direction.

The 1029 and 1209 Series burners for aluminum applications are provided with a high alumina burner baffle material to minimize the sticking of aluminum from furnace splash.

Burners for the aluminum industry can be provided with the following options:

- Cleanout provisions for burners subject to aluminum splash.
- A fuel energy feature which provides a visibly luminous flame at all firing rates.
- Angled mounting flanges for the burner air connection and burner mounting plate to simplify mounting the burners at the down angle often recommended for aluminum furnaces.
- Turndown lances for extended turndown. (10/1 in ratio is a common design value.) Higher valves can be designed, limited only by the ability to measure the air and gas.
- Low NO<sub>x</sub> – Special ultra low NO<sub>x</sub> versions of this burner are available for areas of greatest environmental sensitivity.

The aluminum furnace burners retain the ruggedness and minimal maintenance requirements of the general 1020 and 1200 Series Bloom baffle burners so widely used as the world standard for the metals industries.

**CAUTION:** The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with National Safety Standards and/or Insurance Underwriters recommendations