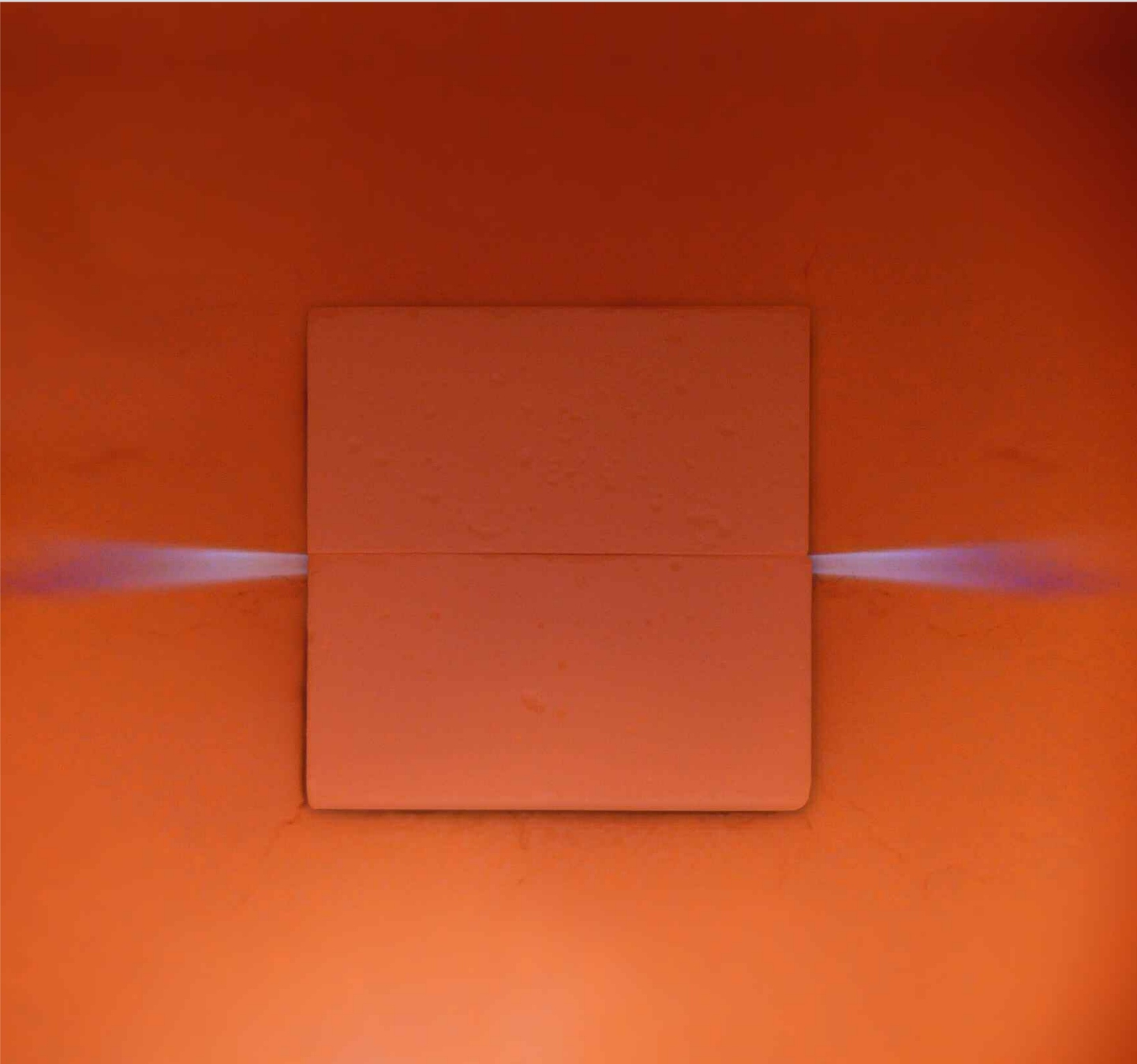


DOC-Forehearth Oxy-Fuel Burner (DOC-FH)

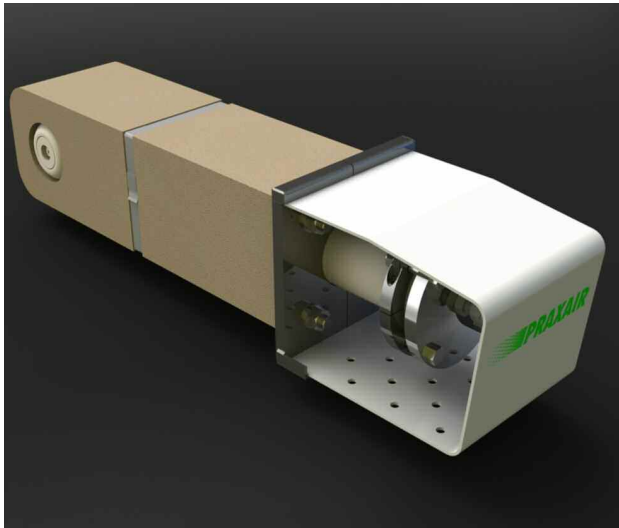


Advanced Oxy-Fuel Burner System for
Glass Melting Furnace Forehearths.



Praxair's DOC-Forehearth burner was designed to provide substantial fuel savings for glass forehearths, relative to air-fuel forehearths, while improving glass melt temperature uniformity. This new burner design allows for retrofitting existing air-fuel forehearths to oxyfuel, or can be installed in greenfield forehearths as well. Its approximate 8-to-1 air-fuel to oxyfuel forehearth burner replacement ratio offers one of the lowest capital investment outlays required to take advantage of the benefits of the oxyfuel combustion technology in forehearths.

This burner is specifically designed to generate an oxyfuel flame near the sidewalls of the forehearth targeting the heat release to the region with the highest heat loss. The targeted and controlled heat release close to the walls, as opposed to toward the center of the forehearth, results in a relatively flat temperature profile across the forehearth cross-section, reducing the glass melt temperature gradient, improving glass quality.



Benefits

- Capital cost savings due to less number of burners
- 60 to 70% fuel savings, relative to an air-fuel forehearth
- 60 to 70% CO₂ reduction
- 80% NO_x reduction
- Improved temperature homogeneity across the width of the forehearth
- Reduced volatilization in forehearth due to reduced momentum of burners

Flame Characteristics

Unlike conventional forehearth burners, the new Praxair DOC-FH burner generates flames parallel to the sidewalls of the forehearth. This creates a flame coverage targeted at the region of the forehearth where the highest heat losses occur.



Burner Design

Currently, the DOC-FH is available in 2 block sizes: 4.4 inch x 4.4 inch and 3.625 inch x 3.625 inch burner blocks and comes in two firing rate ranges: 15 scfh to 50 scfh NG and 35 scfh to 75 scfh NG.

Praxair understands the impact of oxygen supply parameters (including pressure and purity) on combustion system design, performance, and cost. As your oxygen supplier, we are uniquely positioned to work with your engineers and procurement specialists to design a fully integrated package that meets your specific oxy-fuel combustion needs.