

# GB SINGLE JET LOW EMISSIONS BURNER

Ideal for Retrofit Applications



BURNERS | FLARES | THERMAL OXIDIZERS  
VAPOR CONTROL | RENTALS | AFTERMARKET



# GB SINGLE JET BURNER

## We define low-NOx innovation.

Creating revolutionary new burner designs proven to achieve low and ultra-low emissions is what we do at Zeeco – and we do it well. We continue to push the boundaries of innovation with burner designs like the ZEECO® GB Single Jet.

This staged, round flame low-NOx burner puts all other process burners on notice with the extraordinary advantages of its compact single tip and cone design. The GB Single Jet also opens doors to new applications and retrofits never before possible.

Here's how we do it.

## Non-symmetrical design to achieve low emissions in a smaller space.

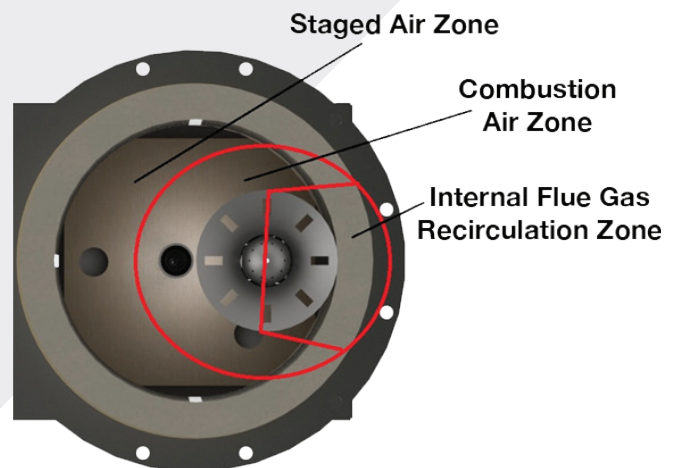
Our GB Single Jet staged fuel burner uses a non-symmetrical design to boost internal flue gas recirculation and staged air to reduce NOx emissions (20 to 49 ppmv for most applications). The burner's unique single fuel gas tip and cone design offers high turndown, predictable flame characteristics, minimal maintenance, and low probability of flame interaction.

- **Stable Flame** – The single tip and cone design provides high flame stability. The tip drilling pattern includes ignition ports, firing ports to create the primary (lean) combustion zone, and a center-staged fuel port to create the secondary (rich) combustion zone. Due to the close proximity of the combustion ports, firing ports, and staged port, ignition gas travels only a short distance, making the GB more stable than conventional staged fuel burners.
- **Compact Design** – The GB's tip and cone design makes the burner compact and ideal for new and retrofit applications due to the burner's limited space requirements.
- **Low Probability of Flame Interaction** – Compared to a conventional staged fuel burner footprint, the GB features a single tip located in the burner throat. This means gas fired from burner to burner is further apart, reducing the probability of flame interaction and a "flame cloud" in the heater, which can lead to elevated emissions.

- **Low Maintenance** – The single tip and cone design is one of the most user-requested burner configurations and is preferred by operation groups since it requires minimal maintenance.
- **Accurate Combustion Air Control** – Controlling combustion air to each burner is key for optimum operation. Zeeco uses a dual damper blade design with a 33-position air door handle for precise, solid air control.

## Single jet low-emissions burner design features.

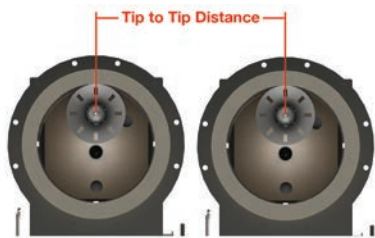
- Round flame, gas-only burner design
- Reduces NOx through internal flue gas recirculation, staged fuel, and staged air
- Natural, forced, induced, balanced draft, or turbine exhaust combustion air induction
- Up-fired, side-fired, and down-fired available
- Compact design makes the burner a great choice for retrofit applications
- Compact flame shape
- Plenum-mounted or individual windbox
- Low long-term cost of ownership



GB Single Jet Zones

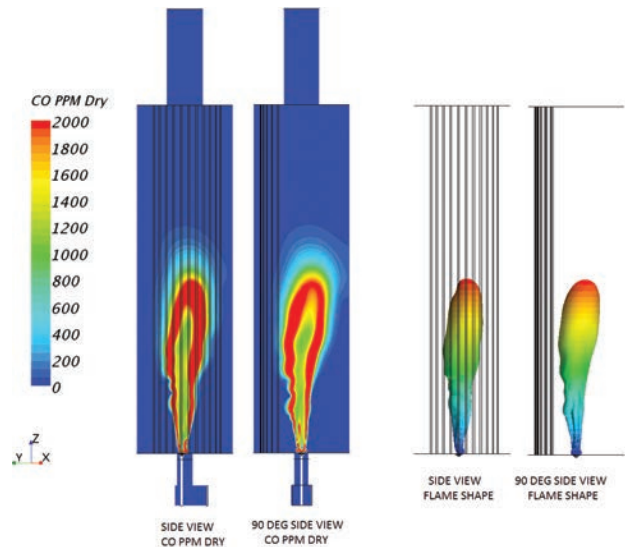
## Single jet performance.

- Low-NOx emissions: uses staged air, staged fuel, and internal flue gas recirculation
- Predicted NOx range - natural draft: 40 mg/Nm3 (20 ppmv) to 100 mg/Nm3 (49 ppmv)
- Heat release range - natural draft: 1 to 20 MM Btu/hr [0.293 to 5.860 MW]
- Heat release range - forced draft: 1 to 75 MM Btu/hr [0.293 to 21.98 MW]
- Turndown: 10:1 or greater for most cases



GB Single Jet Tip Spacing

- Design excess air range: 8% for most cases
- Combustion air pressure drop - natural draft: 0.2" to 1" (5 to 25 mm) water column
- Combustion Air Pressure Drop - forced draft: 0.5" to 10" (12.7 to 254 mm) water column



CFD of GB Single Jet Burner



GB Single Jet Burner

## Compliance reliance. Reputation revered.

The world's most recognized names in the refining, production, LNG, gas processing, power, and biogas industries rely on Zeeco to keep them operating cleaner, safer, and smarter than ever. And no wonder. Zeeco has earned an outstanding reputation for taking on the tougher projects, doing what we say we'll do, and working with our clients to resolve combustion and environmental systems tailored uniquely for their plants. What can we do for you?

Contact Zeeco today and let's start talking. You'll find us in more than 25 locations around the world.



## The Zeeco Difference

Our only business is the combustion business. By concentrating on what we do best, Zeeco has grown into a worldwide leader in combustion solutions. We are a privately held company whose ownership stays highly involved in daily operations, with upper management comprised of the world's leading combustion experts.

When you call Zeeco, we answer. When you make a request, you get a quick, efficient response. We are lean and efficient, able to make decisions quickly, without bureaucracy and red tape. Our sales, engineering, and purchasing groups work hand-in-hand to deliver highly competitive quotes and heroic turnaround times. We stand ready and willing to travel anywhere in the world to discuss upcoming projects firsthand, and to ensure that every existing project runs seamlessly.



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Choose to work with our dedicated, flexible, and innovative team, and you won't be disappointed. Call or email us today to request a quote or to learn more about our proprietary combustion systems.

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