






B15749, B20853, B21258  
B21724, B21936, B21967

# Combustion Equipment Upgrade and Safety Control Panel for a Change in Fuel

## Application: Steel Reheat Furnace

Bloom engineered a combustion system upgrade, **using the existing burners**, in order to accommodate a customer **change in fuels**. Along with the physical equipment changed, Bloom provided **upgraded controls for better reliability and safety**.

### Purpose/Drivers

-  Fuel Change
-  Reliability
-  Safety

### Scope

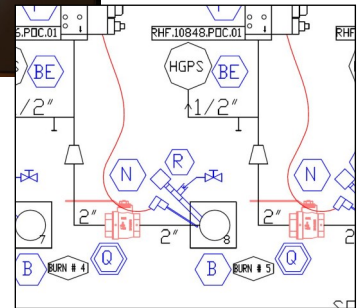
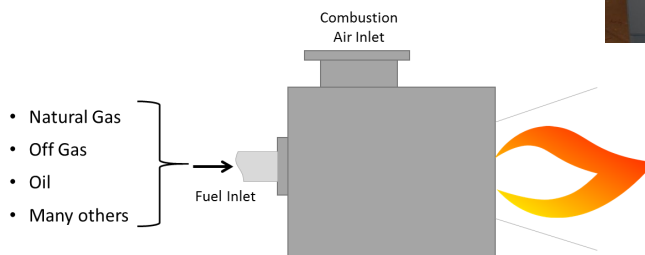
- Gas Components for the Burner
  - Orifice Plates
  - Gas control valves
  - Other components
- Main gas line components
  - Shut off valve
  - Valve proving system
- Flame Safety components
- Spark ignition equipment
- Control Panel

### Achievements

- Operation with a new fuel
- Improved operational safety
- Compliance with local codes (CSA)
- Reliable ignition

#### Key Points:

- 1) **Minimizing capital expense and downtime** was possible by reusing existing burners and combustion air equipment.
- 2) **Compliance with local codes (CSA)** achieved.
- 3) **Reliability and safety** were achieved with Bloom's solution including modern flame safety components and updated controls logic.



A Canadian steel maker had been using an off-gas for its primary fuel. Due to a change in upstream process, the calorific value of the fuel changed significantly, and the existing system was unable to function optimally. Bloom analyzed the existing system and determined the most cost effective solution to bring the combustion system into proper performance. The existing Bloom burners did not require replacement, and all existing combustion air equipment was also sufficient. Fuel valves and metering components were no longer appropriate, however. Bloom replaced these items with more reliable equipment. In addition to the replacement of several gas line components, Bloom updated the flame safety and ignition systems. Furthermore, Bloom developed the appropriate protocols to interface with the customer's existing control systems.

**Keywords:** Fuel change, flame safety, retrofit, steel reheat

**Bloom Engineering Company, Inc.**  
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