

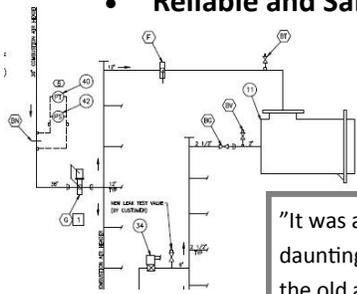
Combustion Equipment Upgrade for an Emissions Reduction



B005607, B010316,
B010994, 894-103

Application: Steel Reheat Furnace

Bloom supplied an engineered solution **to lower emissions** for a steel reheat furnace. The burners used identical air connection locations and sizes, as well as furnace wall openings, Bloom was able to give a solution that was **simple to install** and **to ignite** and that easily achieved the permit requirements.

Purpose/Drivers	Scope	Achievements
<ul style="list-style-type: none">  Emissions  Reliability  Easy Installation 	<ul style="list-style-type: none"> • New Low NOx burners (1610 Cyclops) • Spark Ignition Equipment <ul style="list-style-type: none"> • Ignitors • Transformers • Flame Safety components • Upgraded gas flow components <ul style="list-style-type: none"> • Pressure Switches • Orifice Plates • Assorted Valves 	<ul style="list-style-type: none"> • Reduced NOx by more than half (to less than 0.09 #/MMBtu) • Minimal piping alterations • Reliable and Safe Ignition
<p>Key Points:</p> <ol style="list-style-type: none"> 1) For a significant NOx reduction Bloom customized its ultra low NOx burner design for retrofitting into an existing furnace. 2) In order to minimize capital expense and downtime, Bloom designed the replacement burners to have identical air connection locations and sizes. 3) A properly engineered ignition system made light-up reliable. 		 <div data-bbox="1237 1031 1549 1507" style="border: 1px solid black; padding: 5px;"> <p>"It was a big outage and a daunting task throwing out the old and bringing in the new. We are certainly pleased with the burners in the soak and upper zone with associated flame supervision, etc... Getting away from lighting the way we used to is a big plus and our operators are ecstatic about the improvement."</p> <p style="text-align: right;">-JH [Customer]</p> </div>

Due to a change in the permitting for NOx emissions, the reheat furnace for a domestic steel producer required new burner equipment. Consultation between Bloom and the customer determined that it would be possible to offer the best available emissions reduction technology with a specially engineered design copying the existing air connection locations and sizes, as well as the existing furnace shell penetrations. At the same time, Bloom supplied proper ignition, flame safety and upgraded controls, thus ensuring reliable and consistent furnace lighting. Bloom was easily able to meet the guarantee on the emissions limit as promised.

Keywords: Low NOx, emissions, flame safety, retrofit, steel reheat

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