

SCOPE OF WORK

The Client is a large Industrial Bakery in Gauteng, a primary producer and distribution hub of bread loaves in Johannesburg.

They selected Combustion Technology to supply equipment to support their continuous Steam Demand, lower their production costs and improve the quality of Steam supply.

Combustion Technology was awarded the tender to supply a new I.VAR BHP 3000 boiler complete with a new Limpsfield Natural Gas burner. The goal of the project was to address two important issues: energy savings and improved emissions.

KEY OBJECTIVES

- A Turnkey project.
- Deliver on Gas savings projections offered at tender phase.



Customer:
Bakery

Location:
Gauteng, South Africa

Project awarded:
December 2021

Remote Monitoring:
24/7 Combustion Technology
Boiler Management System
Interface

Controller:
*Autoflame Mini MK8 MM
* Autoflame MK8 O2 interface
* MK8 I/O unit
* Custom built control panel

Boiler
I.VAR BHP 3000

Burner:
Limpsfield LCN 25

Fuel:
Sasol Natural Gas

Fuel savings:
40%

INSTALLATION DETAIL

The existing steam boiler had to be removed as it had failed.

Once removed and disconnected from all connections, the new boiler was positioned in its place and connected to water, steam and gas. All by our Fully Trained Staff and Registered Gas Practitioners.

After the complete turnkey Installation, our Engineers Commissioned the Steam Boiler Plant to match our promised emissions levels.

The plant was then placed into service in anticipation of results.



TECHNICAL INFORMATION

The Boiler control panel is fitted with an Autoflame Mini MK8 controller for burner management and IVAR boiler control panel and safety devices to ensure safe boiler operation. The 24/7 Combustion Technology Boiler Management Interface is used for remote monitoring and plant management. Built-in alarms alert our Engineers at the Combustion Technology Head Office if set points drift off commissioned values. Thereby maintaining a High efficiency of operation 24/7.

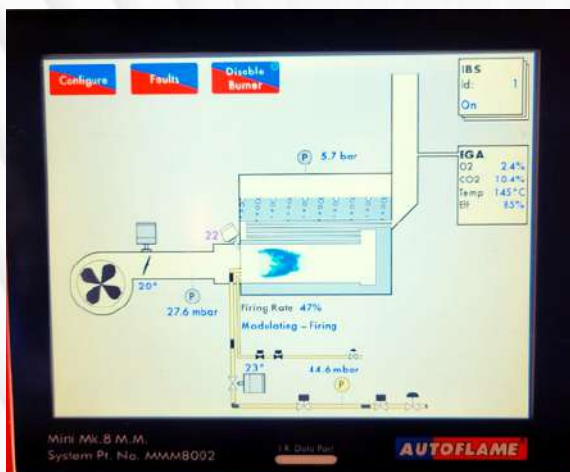


KEY FACTORS FOR THE SUCCESSFUL INSTALLATION

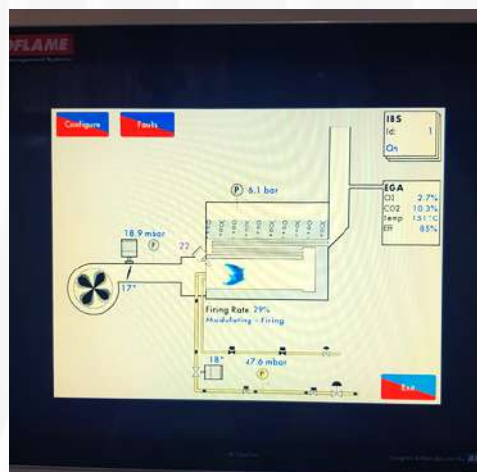
Combustion Technology's Technical team regularly attend Training Schools on all our Products; this always contributes to a speedy and quality installation.



24/7 Combustion Technology Boiler Management System Interface



**Limpsfield Burner Controller
Autoflame Mini MK8**



**Autoflame Mk8
Boiler Management Interface**

BENEFIT AND COST SAVING ACHIEVED

- HUGE fuel / gas saving of consistently 30% and peaking 40% at times after conversion!
- Reduced Boilerhouse noise levels - <85 dB.
- Better burner turndown 6:1 resulting in less system starts-and-stops compared to conventional package burners.
- Better heat input control due to SUPER PID control.
- Consistently Maintained Emissions levels throughout the 6:1 Turndown.



CONFIRMED BURNER PERFORMANCE

Burner emission results obtained:

**Extremely high CO levels
Indicate Unburnt Gas and Fuel Wastage**

BEFORE conversion

Low firing range
High firing range

O2%

7.8
2.5

CO (ppm)

3
2223

CO2%

7.34
10.3

Exhaust Temp

204
240

AFTER conversion

Low firing range
High firing range

2.8
2.8

0
0

10.29
10.31

175
216

★ At a full 6:1 turndown ratio these emissions levels are maintained throughout and trimmed to Commission Values 24/7.

**ZERO CO
Perfect Combustion**

**Only Limpsfield burners offer guaranteed oxygen levels of
<3% and < 10ppm CO on Natural Gas throughout the complete burner firing range
Or
YOUR MONEY BACK!!**

Fuel savings:

a MASSIVE fuel saving of 40% was achieved

The Customer's previous weekly average gas usage reported was 1,400m³ and has since reduced to an average of between 850m³ - 950m³ for the same production demands.

The Customer's gas supplier had also noticed the reduced gas consumption!

We offer same principle/solution for any boiler plant (boiler and burner system) anywhere in the country.

We offer a cost saving solution with state-of-the-art equipment and unmatched burner performance.

We guarantee Sub 3% O₂ and < 10 ppm CO throughout the burner firing range.

**Or
Your Money Back**

