

## RMB™ *Rapid Mix Burner*

Ultra-low emissions from natural gas-firing boilers



### Ultra-Low Emissions

- Less than 9 ppm NOx
- Less than 25 ppm CO
- Less than 3 ppm VOC

### With the added benefits of:

- easy installation and start-up
- a compact & short flame prevents impingement
- no moving parts increases reliability and reduces maintenance
- streamlined air quality permitting tasks; and
- opportunities for emission-reduction credits.
- heat inputs to 300 MMBtu/hr

### Clean Combustion is the Coen Solution

Previously, ultra low-NOx levels could only be achieved with SCRs – and hefty price tags. The *RMB* Rapid Mix Burner has changed this with its revolutionary rapid-mix technology, which not only cuts costs but space requirements as well. Today, the rapid-mix technology is a proven alternative to the catalytic control of NOx emissions.

### Breakthrough Thinking for Advanced Performance

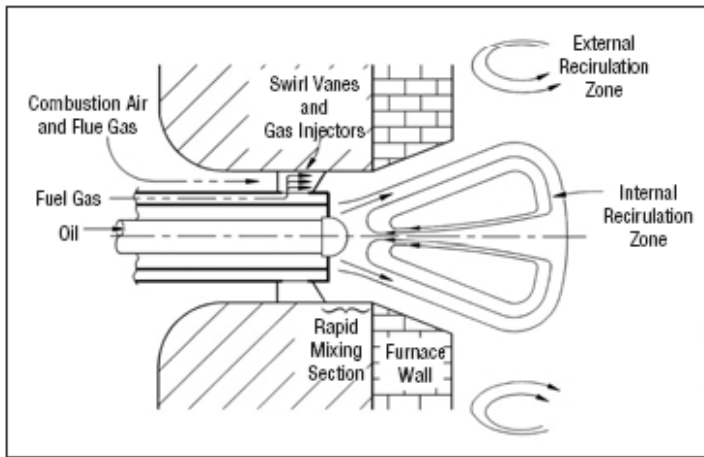
The *RMB* Rapid Mix Burner's innovative technology comes from "start-over" thinking on avoiding the fundamental conditions for NOx formation:

- fuel-rich regions with their potential for prompt NOx formation; and
- higher flame temperatures that produce thermal NOx.

The answer? A radically different gaseous injection and mixing system that utilizes:

- rapid mixing of combustion air and fuel gas prior to the ignition point;
- burner geometry that produces an extremely stable flame; and
- the introduction of FGR to dramatically reduce peak flame temperatures.





## The Ultimate NOx Control by Design

- Parallel-flow air register with no moving parts
- Swirl vanes and gas injectors create near perfect fuel/air mixture
- Minimized thermal NOx using FGR mixed with combustion air upstream of the burner to control flame temperature

## Proven Results, Reliable Operation

For boilers firing natural gas, the *RMB* Rapid Mix Burner's single-digit NOx and ultra-low CO and VOC emissions are proven. Regardless of heat input. With or without preheated combustion air. What's more, a variety of gaseous fuels can be fired by the burner with similar results.

When firing oil, the *RMB* Rapid Mix Burner uses advanced atomizers and FGR to provide NOx levels consistent with conventional low-NOx oil burners.

The *RMB* Rapid Mix Burner contains no moving parts and requires no burner adjustments. Its stable, extremely compact flame is half the length of a staged combustion flame, reducing the required furnace dimensions and eliminating impingement. Unlike other burners, this makes the *RMB* Rapid Mix Burner suitable for use on both new boilers and retrofits of existing units.

## Earn Valuable Emission-Reduction Credits

The *RMB* Rapid Mix Burner helps reduce NOx levels below your local limits, which can result in emission-reduction credits that may be sold or traded on the open market. Credits can also be "banked" to offset future expansion, comply with future regulations, or make other retrofits unnecessary.

Ultra low-NOx and CO emissions also provide welcomed opportunities for positive or improved community relations. In many cases, ultra-low emissions can also keep new NOx sources below certain "trigger points" for permits, reviews, monitoring and other compliance activities.

In many cases, the result of installing an *RMB* Rapid Mix Burner and achieving NOx levels below local limits can result in reduction credits that will actually pay for your retrofit.

## The Right Ultra Low-NOx Solution for Your Application

The *RMB* Rapid Mix Burner is ideal for a variety of applications, including packaged water-tube boilers and field-erected units. In addition, the *RMB* Rapid Mix Burner offers outstanding performance on refractory-lined furnaces for dryers or fluid bed boiler warm-up, meeting the same ultra-low emissions by operating with approximately 50 percent excess air and zero FGR. And because the *RMB* Rapid Mix Burner is easy to install and start up, it expedites the construction of new plants, expansions and retrofits.

Coen Company has the highest quality, most advanced and dependable burner systems in the world. Coen's ultra low-NOx technologies offer significant financial and performance benefits compared to other burner or post combustion systems.