

# NATCOM

National Combustion Equipment INC.  
a division of aqua-chem, Inc.

NEW  
GENERATION

LOW-NO<sub>x</sub>

## INDUSTRIAL BURNERS

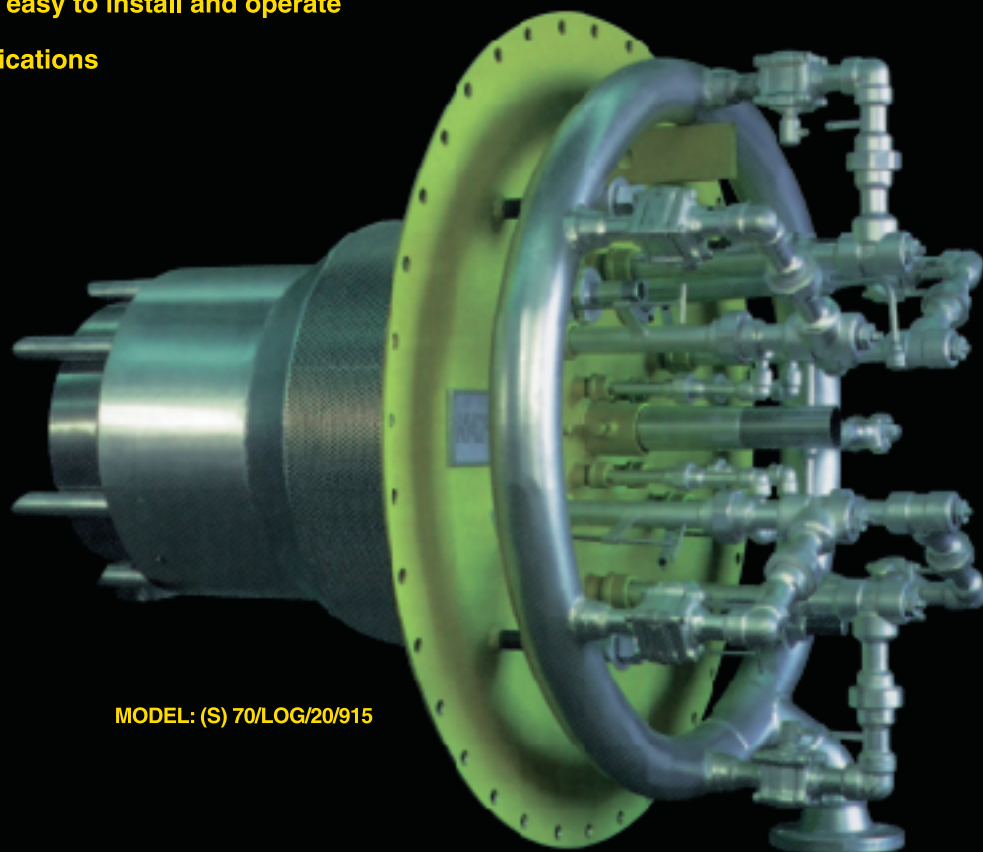
ENGINEERED FOR HIGHEST PERFORMANCE AND LOWEST EMISSIONS

- Lowest operating cost burner available
- Lowest NO<sub>x</sub> achievable without FGR
- Adaptable to any furnace/windbox configuration
- Superior quality construction, reliable, easy to install and operate
- Ideal for single or multiple burner applications

### **Adaptability is NATCOM's response to complexity**

NATCOM burners are adaptable to all types of combustion chamber configurations to maximize boiler efficiency and reduce emissions.

**A revolutionary system** that permits "on-line" adjustments of the burner components. This maximizes the use of any combustion chamber to reduce emissions down to the lowest achievable NO<sub>x</sub> levels without the need for flue gas recirculation.

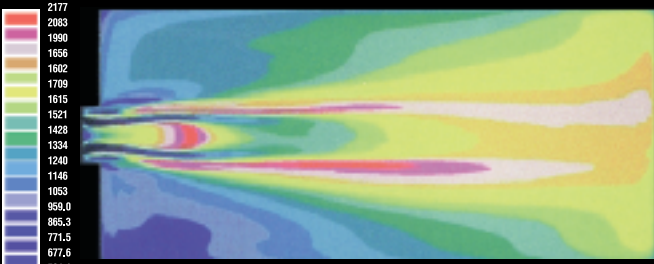


MODEL: (S) 70/LOG/20/915

**NATCOM**  
sets New Standards

20 to 400 MMBTU/hr for heavy oils, Natural gas and low BTU gases

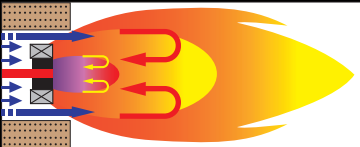
# COMPUTER DESIGNED COMBUSTION AERODYNAMICS



NATCOM burner simulation: natural gas flame temperature contours in a 250,000 lb/hr A-Type boiler

### Absolute flame stability

Natcom's dual swirl flame stabilizer uses variable pitch blades to produce strong back-flows of hot gases that sustain a very wide flame front. The result is an absolute flame stability at all boiler loads for a range of excess air from minus 20% to plus 400%.

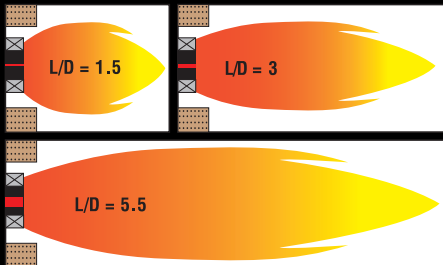


### High fuel-air mixing efficiency

The axial, radial and tangential air flow fields generated at the burner outlet are combined with high momentum fuel jets for maximum diffusion between boundary layers. This results in a stable and well defined mixing pattern that produces very homogeneous fuel-air mixtures.

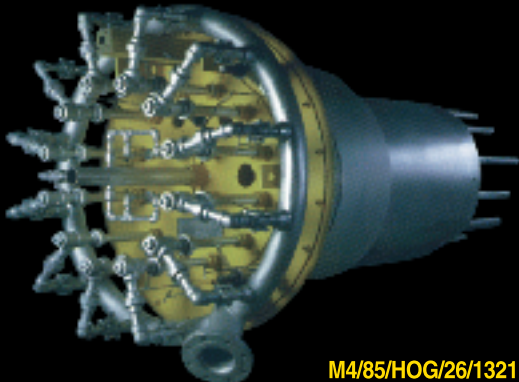
### Adaptability

Burner aerodynamics can be adapted to produce either short and wide flames or long and narrow flames. Flame length to diameter ratios from 1.5 to 5.5 will fit any boiler type. Fuel gas flow and injection direction can be adjusted on each individual gas injector in order to match the air flow perfectly. For fuel-oil injection, Natcom uses a proprietary variable-geometry atomizer which is adjustable on line for optimum oil flame shaping.



### Low NO<sub>x</sub>

Individually adjustable fuel staged gas injectors allow for optimal use of any given combustion chamber configuration, resulting in lowest achievable NO<sub>x</sub> emissions without FGR. If necessary, flue gas recirculation may be used to reduce NO<sub>x</sub> even further.



M4/85/HOG/26/1321



## A TOP PERFORMER: NATCOM score sheet

- O<sub>2</sub> < 1%
- CO < 10 ppm
- **Natural Gas Firing:**
  - NO<sub>x</sub> < 0.05 lb/MMBTU (40 ppm)
  - NO<sub>x</sub> < 0.01 lb/MMBTU (8 ppm) w/IFGR
- **Heavy Oil Firing:** (< 0.3% N<sub>2</sub>)
  - NO<sub>x</sub> < 0.20 lb/MMBTU (150 ppm)
  - Particulates < 0.03 lb/MMBTU
- **Turndown ratio**
  - > 40 : 1 (Natural Gas)
  - > 15 :1 (Oil)

**NATCOM**  
National Combustion Equipment Inc.  
a division of aquo-chem inc.

8515 Lafrenais, St-Leonard, Qc, Canada H1P 2B3  
TEL.: (514) 326-2571 FAX: (514) 326-9347  
<http://www.natcomonline.com>