

Forney Plug-n-Play Heat for SCR Reheat Applications

Forney has made low-load SCR boiler applications simple with the introduction of perimeter-fired burners. Forney perimeter-fired burners inject high velocity air at any temperature, anywhere you need it in an SCR duct. This allows you to eliminate the cost of expensive economizer bypass ducts and diverting dampers. Perimeter firing eliminates the engineering and pressure part modifications necessary with split economizer designs. With Forney burners, the solution is simple -- Plug-n-Play Heat.

The burners are located on the outside of the SCR ductwork, firing across the width of the duct. There is no equipment in the duct, and the burners are continuously purged when out of service, so fouling, plugging, flyash erosion, and other maintenance hassles are minimized. The high velocity discharge of the burners ensures adequate penetration of heat across the duct. With Plug-n-Play Heat, no internal flow correction devices are required. This reduces pressure drop on the system, and eliminates another maintenance worry.

Equipment and installation costs associated with Plug-n-Play Heat are lower than those associated with economizer gas-side bypass- especially on units where existing structural steel makes locating new ductwork difficult. Forney perimeter-fired burners are lightweight and in most cases they can be supported by the SCR ductwork. Natural gas consumption is relatively low, and some of the heat added upstream of the SCR reactor can be recovered by the air preheater.

- **CUSTOMIZED SOLUTION** - offering external, in-duct, or perimeter-fired SCR reheater systems. Our engineers will custom design and integrate the system appropriate for your plant.
- **REDUCED INSTALLATION AND CAPITAL COST** - Forney Plug-n-Play burners cost less than economizer bypass ducts with their associated dampers, actuators, and expansion joints. Installation is easier because of the burners' small size and light weight- especially in crowded SCR retrofit applications.
- **CFD MODELING** - Forney engineering can perform CFD modeling of heat distribution to assure efficient SCR operation at all boiler loads.
- **EXPERIENCE** - Forney technologies are proven in SCR and other firing applications around the world.
- **SERVICE** - Forney service engineers provide start-up expertise and periodic maintenance capabilities to ensure your equipment operates reliably.



BURNERS



Re-powering your world





Perimeter Burners

Burner Specifications

| | | |
|---------------------------------|-----------------------|-----------------------|
| Heat Input | 5 mmbtu/hr | 10 mmbtu/hr |
| Exit Temperature | 600-1500 deg. F | 600-1500 deg. F |
| Exit Velocity | up to 800 ft/sec | up to 800 ft/sec |
| Fuel Consumption (per MMBTU) | Natural Gas 17scfm | Natural Gas 17scfm |
| Air Consumption (per burner) | 670 scfm @ 1 psig | 670 scfm @ 1 psig |
| Excess Air | 400-800% | 400-800% |
| Ignition Source | Direct HESI | Direct HESI |
| Flame Detector | Forney IDD-UV | Forney IDD-UV |
| Burner Throat Diam. | 8" | 11" |
| Burner Outside Diam. | 24" | 28" |
| Burner Management | A-B, GE, Modicon | A-B, GE, Modicon |
| Enclosure Ratings | NEMA 4, 7 | NEMA 4, 7 |
| Flame Length | 20" | 24" |

Other Forney SCR Products

Forney has developed a wide variety of products for the utility and industrial SCR market including:

- **Dilution Air Heaters and Ammonia Skids** - Forney has supplied dilution air heaters for many large utility boiler SCR and SNCR retrofits. Built to utility specifications, Forney dilution air heaters are installed for vaporizing both ammonia and urea.
- **CEMS** - In addition to 40CFR Part 60 and Part 70 CEM systems, Forney recently introduced the CEMplicity system specifically for SCR control applications. CEMplicity combines high-quality chemiluminescent NOx analyzers and paramagnetic O2 analyzers to provide a very high availability analyzer system for SCR ammonia injection control.

Accessories

Forney is a leading supplier of burner accessories for the utility burner market. Thousands of Forney igniters, scanners, and oil guns are installed in utility boilers every year. These same components are incorporated into Forney's burners for utility burner performance and reliability. Available accessories include:

- **Igniters** - Natural gas fired, No. 2 oil fired, or direct spark ignition
Class 1, 2 or Class 3 applications
High tension (6000 V) or High Energy ignition (12 joules per spark, 3 sparks per second)
- **Scanners** - Full line of flame scanners for every application.
- **Fuel Trains** - Pneumatic or motorized valves, NEMA 12, NEMA 4, or explosion-proof enclosures.
- **Burner Management Systems** - Fireye E-110, Fireye Nexus, or PLC-based. Forney combustion control systems based on single-point positioning, parallel positioning, or fully metered control strategies.
- **Dilution Air Heater** - Grid style burner with duct work for ammonia vaporization in ammonia injection grid. Complete with fuel skid and Burner Management System (BMS).
- **Fans** - Skid mounted or ship loose fans to supply combustion air for grid register, high velocity, and/or dilution air heater systems. Fans will be sized based upon required heat input.
- **Dilution Air Blower Skid** - Forney also supplies skid mounted blower assemblies which supply air to the dilution air burner system. Blowers are sized to ensure the air flow meets the requirements for