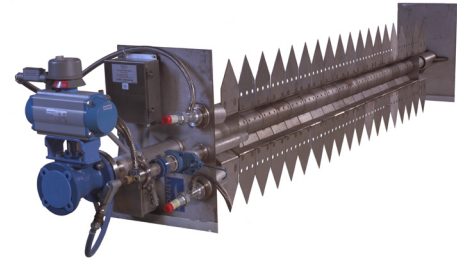




A UTC Fire & Security Company

# Forney Duct Burners

*Forney duct burners offer reliable performance and dependability to meet the complex needs of the combined cycle and cogeneration industries.*



## Features & Benefits

- **DURABLE FLAME STABILIZERS**  
Investment cast stabilizer design utilizes the cooling effects of the exhaust gas stream to ensure long life and consistent performance.
- **RELIABLE LIGHT-OFF**  
High Energy Spark Ignition (HESI) is provided as standard equipment for consistent performance in low oxygen and high water vapor environments.
- **FLOW BAFFLES**  
Forney includes baffles when needed for improved mixing of gases and shortened flame lengths.
- **AUGMENTING AIR**  
Augmenting air is added in unique cases where firing conditions require supplemental oxygen and/or low exhaust gas temperature adversely affect combustion performance.
- **INTEGRAL SUPPORT**  
Supports are included when needed for the duct burner elements to reduce vibration caused by vortex shedding.
- **LOW NO<sub>X</sub> AND LOW CO**  
Forney emissions meet or exceed those required in today's strict regulatory environment.
- **DETAILED ENGINEERING**  
A dedicated engineering team ensures the proper design for each project.

## Product Overview

Forney duct burners provide clean combustion for supplemental firing of turbine exhaust gas, fresh air, and other process streams. Forney incorporates solid engineering and structural design with durable materials to deliver superior quality. From high temperature applications to repeatedly cycled units, Forney selects the right design and correct material for varying conditions. Stainless steel construction provides long equipment life for components in the exhaust gas stream, including stabilizers, fuel manifolds, baffles and igniters.

Forney's duct burner firing history dates back to the 1960's and has expanded to the variety of duct burner designs offered today. These include the adVantage<sup>®</sup>, Modified adVantage<sup>®</sup>, Conventional, and Compact duct burner designs. Each design is unique to the conditions and environment presented. Forney engineers select the appropriate design given the spacing and design constraints. The adVantage<sup>®</sup> and modified adVantage<sup>®</sup> duct burner are used in applications with high water content when emissions are a concern. The Conventional and Compact duct burner designs provide flexible solutions for smaller duct sizes.

Forney offers a versatile line of duct burner solutions to meet the ever changing demands for today's power and industrial markets. Forney's range of duct burner designs allow users to accommodate for every environment. Forney duct burners can be found in all markets from large cogeneration plants and refineries to hotels and colleges.

The proven experience, flexible designs, and durable construction make Forney the best investment in duct burners.

# Forney Duct Burners

Pub # 404004-06  
Rev 01/2011

## Scope of Supply

Forney supplies a complete scope of equipment with our duct burner system.

### Typical Scope:

- Horizontal Burner Elements, Integral Flow Baffles and Supports
- ANSI B31.1 Fuel Skid
- Burner Management System
- Scanner Cooling Air Blowers
- MAXFire® Igniter with HESI
- Flame Scanner

### Optional Scope:

- Distribution Grid and Burner Frame (for ease of installation)
- Inlet Fuel Pressure Reduction
- CFD
- Fuel Flow Measurement
- Augmenting Air System
- Interconnecting Piping
- ANSI B31.3 Fuel Skid

## Applications

Forney duct burners are used in various applications including:

- Cogeneration and Combined Cycle - Increase steam generation and plant power output.
- Fresh Air Firing - Used as a backup source of hot gas to HRSG/WHRU when combustion turbine is off-line.
- Air Heaters - Heat a large volume of air with minimal pressure drop.
- Process Heating - Many different process streams can be heated, including but not limited to SCR Reheat applications, Ammonia/Urea Vaporizers and CFB inlet air heaters.

## Operating Conditions

Forney duct burners offer customized solutions with flexible operating conditions.

Heat Input:	10 - 1,100 MMBtu/hr, LHV
Inlet Exhaust Gas Flow:	30,000 - 5,750,000 lbs/hr
Inlet Exhaust Gas Temperature:	up to 1,250°F

Depending on specific emission requirements, augmenting air may be required when inlet oxygen levels and/or turbine exhaust gas (TEG) temperatures are very low. Even temperature distribution is key to system performance and is highly influenced by the uniformity of the combustion air / TEG velocity profile. Typical exhaust gas distribution to the duct burner should be a minimum of  $\pm 25\%$  of the average velocity over 90% of the duct cross section.

