

# ADJUSTABLE COAL, GAS, BIOMASS AND AIR NOZZLE TIPS

## Coal Firing - Thermal Guard™ Design

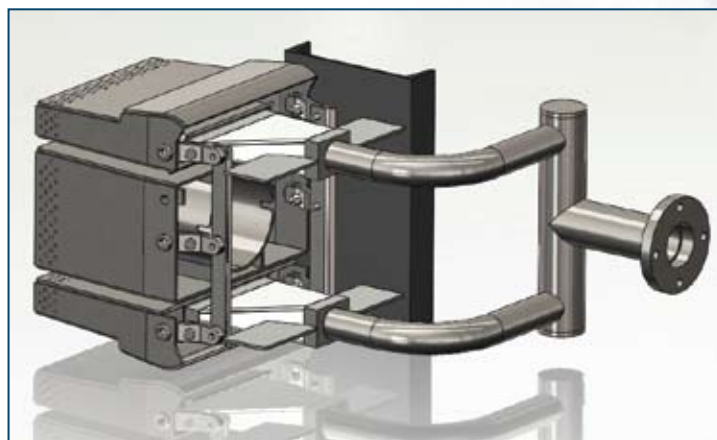
The proprietary self-cooling design extends the performance life of tangential nozzle tips. By reducing plate temperature differential around the outer plate, thermal distortion of the nozzle is greatly reduced when compared with OEM nozzle designs.



## Natural Gas Firing

While the natural gas supplies increase and clean air restrictions become more stringent, an increasing number of plants are converting to or adding natural gas firing. Benefits include:

- Reduced fuel cost compared to oil
- Emission reduction
- Reduced maintenance cost
- Easily adapted to existing coal units



Typical R-V gas compartment arrangement  
with fixed gas spuds and tilting nozzle tips

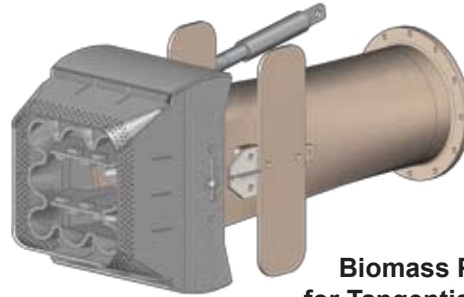


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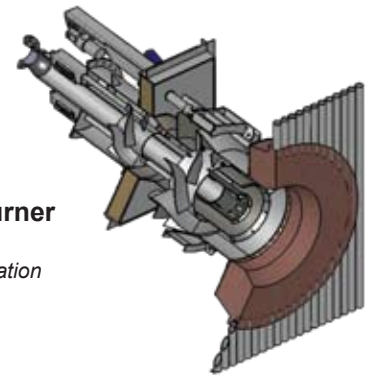
## Biomass Firing

Regardless of the combustion system, we have the industry knowledge to assist you with a coal to biomass conversion or addition. Depending on the firing system and biomass goals, R-V incorporates appropriate design features to maximize flame stability and combustion efficiency.

By controlling the devolatilization and ignition processes, our preheat nozzle and burner designs promote better flame stability when firing biomass fuels.



**Biomass Preheat Nozzle  
for Tangentially Fired Units**



**Biomass Preheat Burner  
for Wall Fired Units**  
*applied for patent consideration*

## Air Nozzles

R-V air nozzles can be designed with the Thermal Guard™ nozzle design to eliminate thermal distortion when in the tilted position.



**YAW-able Air Nozzle**

