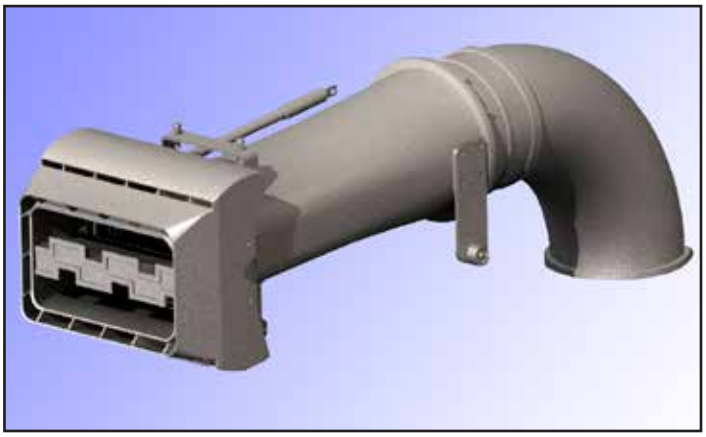
FIRING SOLUTIONS FOR EFFICIENT LOW LOAD COAL FIRING OPERATIONS

Introducing the High Turndown (HTD) Tilting Coal Nozzle Assembly

In this day of tight margins and changing power demands, using support fuel for stabilizing low load coal-firing for extended periods is very expensive. R-V Industries offers a High Turndown (HTD) Coal Nozzle Assembly that allows unsupported coal firing at lower unit loads compared to conventional coal nozzles.

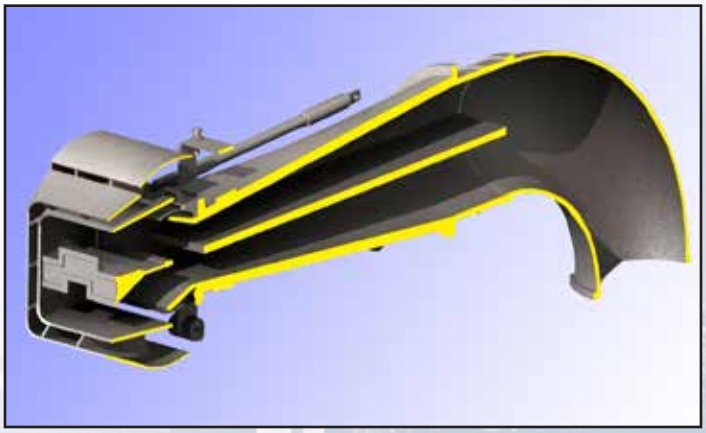
By replacing two or more adjacent stationary coal nozzle and nozzle tip assemblies with the HTD design, stable unsupported low load coal firing can be achieved.



HTD Coal Nozzle Assembly

Performance

Turndown results are unit specific based on: coal type, unit size/heat concentration, number of pulverizers in service, and the current air/fuel transport ratios and velocities. Units equipped with these nozzles have achieved unsupported coal firing as low as 12% maximum continuous rating, with frequent operation in the range of 15% - 30%. R-V Industries' engineers determine the turndown potential for your unit so you can make the appropriate decisions.



Section View of HTD Coal Nozzle

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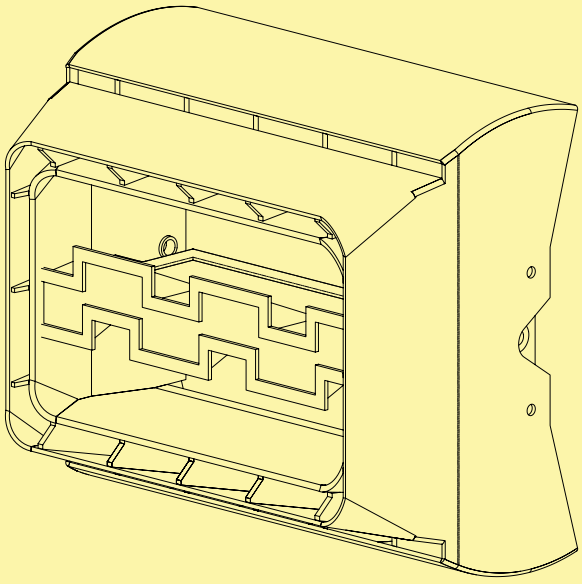

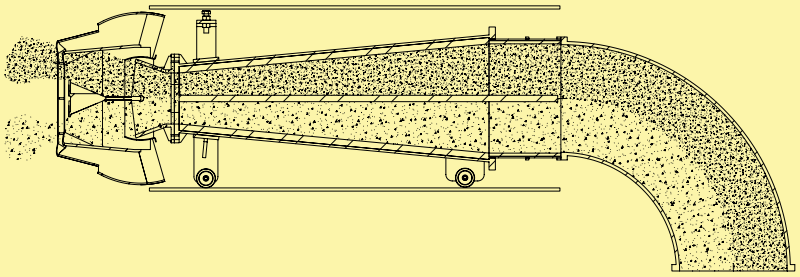

HTD tilting tangential coal nozzle assembly creates the coal firing conditions required for unsupported lower load operation

Design

The HTD design is an updated version of a proven nozzle design from the 1980's. It uses a tilting coal nozzle tip that features a "bluff body diffuser" insert that induces coal particle recirculation at the coal nozzle tip outlet. The resulting low pressure zone causes the coal to recirculate and ignite early, producing stable ignition closer to the tip. The special stationary coal nozzle is designed to adjust the entering coal transport conditions for the appropriate values as the coal stream approaches the coal nozzle tip diffuser.

The HTD assemblies include higher grade stainless materials and appropriate erosion protection. This assembly also includes R-V's proprietary Thermal Guard™ nozzle tip design to reduce outer plate thermal distortion and maintain structural integrity at the increased local temperatures as a result of the closer flame front.

Support Fuel Cost Savings

The HTD nozzle is particularly suitable for units requiring low load operation due to changing dispatch demands. Tremendous savings in the elimination of support fuel costs result in a quick payback for an investment in R-V's HTD nozzles.

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