



Design Update Bulletin

Combustion Systems

November 2002

No. 102.5

New nozzle tip design for tangential fired units reduces thermal distortion for a longer service life...

“Double Shroud Tilting Nozzle Tips”

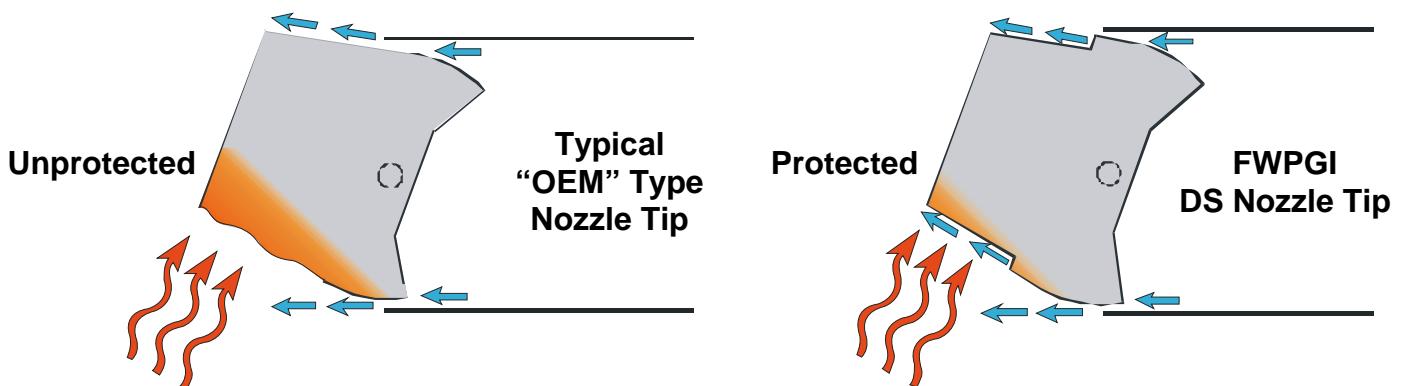


New FWPGI “double shroud” tilting coal and air nozzle tips provide effective radiation protection over current designs.

- Improves plate protection from radiation during tilt operation
- Reduces nozzle tip distortion
- Reduces accumulation of debris on outer plate surfaces
- Extends nozzle tip service life between replacement
- Applicable for all coal, air, auxiliary fuel and overfire air nozzle tips
- Help improve tilt system reliability

Fuel and air burner nozzle tips of tangential fired units are exposed to severe furnace conditions that can lead to thermal distortion and/or high temperature oxidation. This age-old problem requires operators to annually replace many of their coal and air nozzle tips at a fairly high cost. In today's competitive environment, improvements that lower operating and maintenance costs and increase emission performance are more important than ever. Especially on tangentially fired units, the condition of the nozzle tips plays a key role in sustaining long term optimal combustion performance. In response to this need, FWEC has developed a new generation tilting nozzle tip that provides effective radiation protection over existing tips. High velocity jets of air, strategically directed from specifically designed channels, blanket the nozzle tip with cooling air. This novel feature not only provides added cooling, it also decreases the thermal gradient across the plate. The combined effect reduces the thermal stresses and the subsequent distortion. This "Double Shroud" (DS) nozzle tip design (US Patent No. 6,260,491) is available from FWEC as a replacement for most tilting tangential coal, air, oil, gas and over fire nozzle tips. In addition, the DS style tips are fully compatible with your existing OEM tilting components, minimizing installation time.

Secondary Air Flow Paths



Application and Design Features

- Provides greater radiation and oxidation protection over existing designs
- Aerodynamic configuration
- Available for tangential coal, air, auxiliary fuel and OFA nozzle tips
- Compatible with existing windboxes, coal nozzles, seal plates and tilt linkage
- Available in one or two piece designs

Cost Saving Benefits

- Extends the operating service life of nozzle tips
- Reduces capital and installation costs
- Maintains optimum fuel / air mixing performance longer
- Helps maintain combustion efficiency over extended periods.

The information presented above is continually updated. Please contact your local Foster Wheeler Power Group office for specific details.

Foster Wheeler Power Group – U.S./International Service Centers

Hdqtrs. Clinton, New Jersey
 Perryville Corporate Park
 Clinton, NJ 08809-4000
 (908) 713-2260
 Fax: (908) 713-2285
 parts@fwc.com

Chicago Illinois
 1401 Branding Lane Suite 315
 Downers Grove, IL 60515
 (630) 241-2050
 Fax: (630) 241-2050

Atlanta, Georgia
 1000 Johnson Ferry Road
 Marietta, GA 30068
 (770) 509-0337
 Fax: (770) 509-0797

International Office
 9645 Scranton Road Suite 230
 San Diego, CA 92121-1761
 (858) 458-3187
 Fax: (858) 558-3406