

SMARTflow™ Flow Modeling Improves Performance

Hamworthy Peabody Combustion announces the completion of their new SMARTflow™ Technology Center at their Shelton, Connecticut location. The 1,000 square foot facility has been utilized for new product development, analysis of new installations, and improvements of existing applications for end-users.

The most common application of flow modeling is combustion air flow. Burner design and performance is always based on three assumptions; flow modeling assures that what actually takes place will correspond to these assumptions:

- Each burner (in multi-burner systems) gets equal amounts of air flow.
- Air enters the burner evenly around the periphery of the burner.
- Air enters the burner radially, that is, with no tangential components.



Based on SMARTflow™ flow modeling analysis, strategically placed baffles and diverters can be designed to avoid in advance, or solve existing, problems resulting from these assumptions not holding true.

- Eliminate vibration
- Increase turndown
- Reduce emissions
- Increase capacity
- Reduce CO₂ footprint.
- Reduce Excess Air/Increase Efficiency
- Decrease power utilization costs: fan power and static requirements
- Reduce maintenance costs due to vibration, flame impingement, and incomplete combustion.

Applications analyzed include:

- Multi-Burner Turbo-Furnace
- Single-Burner Package
- Multi-Burner Front-Fired
- Air Heaters
- Tangentially-Fired
- Fluid-Bed Boilers



In addition to combustion air flow, modeling is useful in analyzing flue gas recirculation systems, secondary air systems, coal pipe and fuel distribution systems, stack modeling, etc.

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