

Application**brief**

Eclipse Product: SER (Version 3) Auto Recupe Burner

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Application: Rotary Retort Furnace Upgrade

Description: The largest Heat Treat operation under one roof is the DaimlerChrysler-KTP facility in Kokomo, IN. Desiring to decrease their fuel expenditures, they turned to SMA Systems, Inc. to review their operation in the fall of 2002.

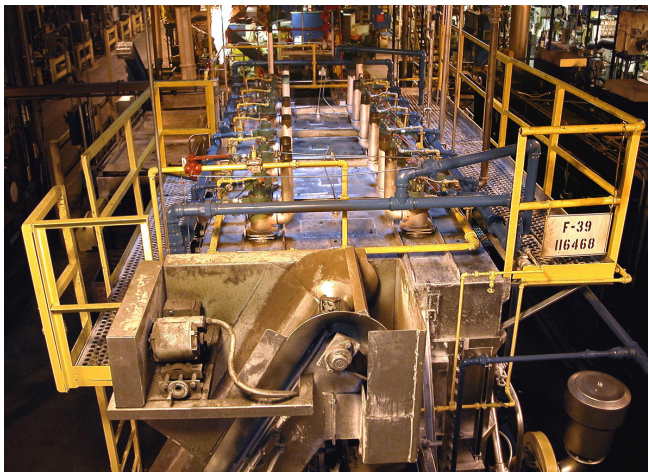
Using a proven twelve step process based on an American Gas Association publication and Eclipse's years of experience, the #5 Rotary Retort was chosen as the first furnace to be dealt with. This furnace was originally placed in service nearly a half century ago and had antiquated premix combustion equipment and controls.

During frequent consultations with DaimlerChrysler-KTP personnel it became apparent that although energy efficiency improvement was of paramount concern, there were other areas to consider for a more total project approach, especially when considering future requirements.

The project involved a wide variety of Eclipse personnel and their expertise, not limited to Sales, Engineering, Finance, Application Engineering, Technical Service, Research & Development, and Marketing.

The results were profound. Notably:

- A reduction from (28) premix Burners to (14) SER (Version 3.0) AutoRecup Burners.
- Significant safety improvements by using SER (Version 3.0) AutoRecup Burners with it's nozzle mix design and electronic ignition.
- A savings of \$40,000 annually was gained with decreased maintenance associated with the older equipment.
- The SER (Version 3.0) AutoRecupe Burners provided product quality improvements attributed to better temperature uniformity.
 - Fuel savings of \$35,000 per month allowed payback in months instead of years.
 - NOx emissions were cut in half and allowed the facility to compete for the prestigious DaimlerChrysler Corporate Environmental Improvement award.
 - A significant increase in production output was realized.
 - The facility is well known for their desire to train operating and maintenance personnel so a portion of the project involved classroom and furnace training.

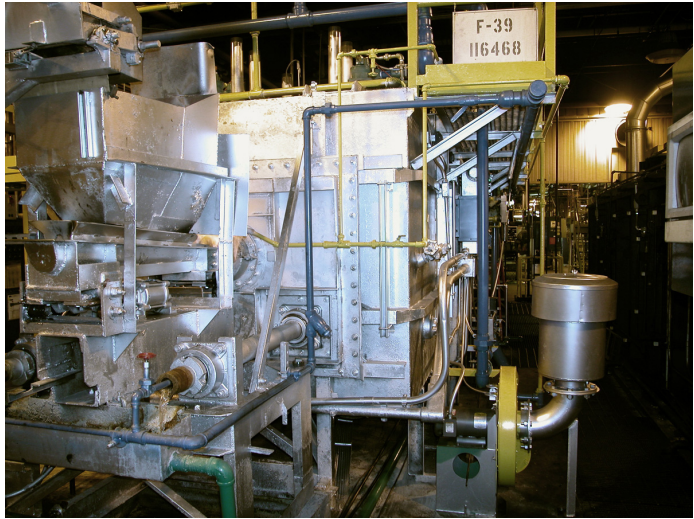


Overall view of Furnace showing all 14 SER burners

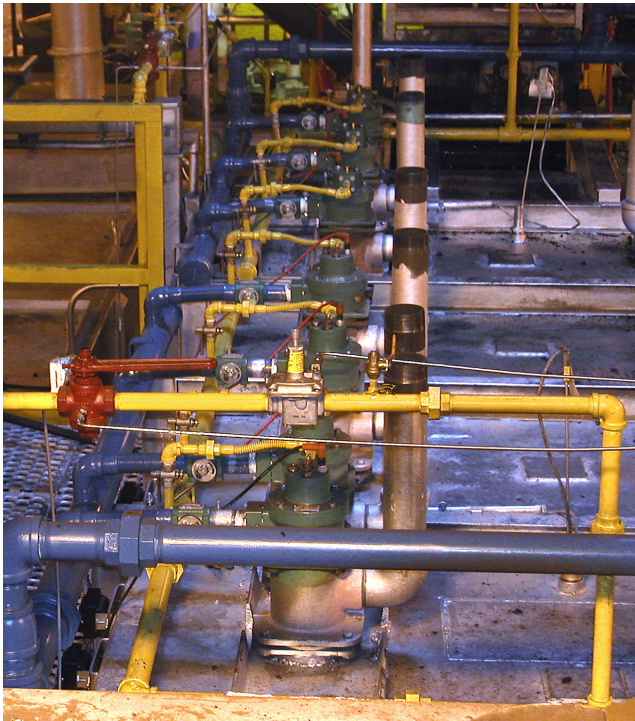
And what's next? Not content to rest on their laurels, DaimlerChrysler-KTP is in the process of upgrading their #4 Rotary Retort Furnace (spring 2005) with other furnaces close behind. Can American industry compete? DaimlerChrysler-KTP sure thinks so.



Side view after upgrade showing gas piping



Eclipse SMJ Blower for combustion air supply



Close up view of roof mounted SER Burners



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