

Application**brief**

- Eclipse Product:** AutoRecupe SER 750 Version 3
- Submitted by:** Brian Shepard, Eclipse, Inc. (Fort Mill, SC Sales Office)
- Application:** Multi-purpose metal treating
- Description:**

For over fifteen years, Eclipse has been a trusted supplier to one of the world's leading producers of nickel-base and cobalt-base superalloys, titanium-base alloys and specialty steels for the aerospace industry. Two furnaces have been in operation for fifteen years equipped with Eclipse Model 63 TFB burners and have experienced virtually no problems during that time.

Several of their multi-purpose metal treating furnaces were equipped with burners from one of Eclipse's European competitors. These furnaces are of the batch type with stacker crane loading. They handle loads ranging from 6,000 lbs. to 25,000 lbs of Titanium, tool steel or Nickel in bars and/or coils. The operating temperatures range from 1000°F to 1,700°F and cycle times vary from 3 hours to 80 hours depending on process requirements. Each of the furnaces uses eight burners. These burners were problematic from the beginning and were becoming increasingly costly to repair. The customer was averaging \$20,000 per year in repair parts. In addition, the burners had to be taken apart every 90 days to be checked, repaired and adjusted.

In 2005, the customer ordered two Eclipse AutoRecupe SER 750 version 3 burners with metallic outer tubes and Silicon Carbide inner tubes. In operation, the burners are mounted above the load with circulation fans between the tubes. Temperature control is achieved by high/off pulse firing and flame detection is accomplished using combination flame rod/igniters. The customer's intention was to test the burners for three months and evaluate their performance. After just a few weeks they were convinced that the Eclipse burners were what they wanted and began the process of ordering the rest of the burners to complete the furnace conversions. Thus far, they have upgraded two furnaces with eight burners each and are planning to upgrade more furnaces in the future.



Close-up views of Eclipse AutoRecupe SER burners installed on multi-purpose metal treating furnace.

Note: See page 2 for additional photographs.



Additional views of Eclipse AutoRecupe SER burners showing valving for pulse firing.