

Heating Magnesium with a Model 4185 Infrared Strip Heater

Application

An aircraft turbine rebuilder heating magnesium turbine housings prior to welding.

Problem

Temperature Requirement - The area to be repaired had to be preheated to 200°F (93°C) before welding could be completed.

Compound Damage - The turbine housing was typically damaged in one or more areas (usually cracks).

Wasted Resources - Existing heating method required that the complete turbine housing be reheated in a convection oven before each weld, wasting energy and operator time.

Solution

Heat - A Model 4185 Infrared Strip Heater mounted on an articulating arm was used to apply heat to the turbine housings after they were preheated once in the convection oven.

Power Control - A Model 665F Phase Angle SCR Power Controller controlled the power to the Infrared Strip Heater using a thermocouple feedback to a single-loop process controller.

Benefits

Temperatures Maintained - By using the Model 4185 Infrared Strip Heater to apply heat to the turbine housing after preheating, the rebuilder was able to maintain temperatures on the housing following a single preheat in the existing convection oven.

Recovered Resources - By maintaining the temperatures on the housing following a single preheat in the existing convection oven, the rebuilder lowered energy consumption and increased operator productivity.