CALIX
CERAMIC SOLUTIONS

CASE STUDY

High Temperature Equipment Manufacturer

Challenges

A High Temperature Equipment Manufacturer struggled to find a consistent, reliable supply of quality Reaction Bonded Silicon Carbide (RB SiC) recuperative burners that met critical property requirements. These parts were essential for their heat treatment furnaces, specifically as heat exchanger tubes in recuperative burners for hardening and carburizing metals used in their bearing assemblies. Manufacturing these components was exceptionally difficult due to their complex geometry and the need for advanced precision fabrication. They also aimed to replace existing OEM RB SiC components in these crucial furnace applications.

Solutions

To overcome the manufacturing challenges, a successful partnership was established with a supplier capable of both meeting the stringent Reaction Bonded Silicon Carbide (RB SiC) material requirements and expertly manufacturing the component's complex design. This collaboration ensured the production of high-quality parts that precisely matched the demanding specifications for use in their heat treatment furnaces, effectively replacing the OEM RB SiC components.

Results

Calix successfully delivered the prototypes and scaled to production: the provided prototypes quickly passed the testing process, allowing for rapid transition to supplying production volumes for the heat treatment furnaces. Calix also provided a value-added innovation: a 3D printed RB SiC component at no additional cost for testing, demonstrating a commitment to advanced solutions and customer partnership in improving the heat treatment process for their bearing assemblies.

"So far, it's performing just as well as the others. Looking down the sight glass into the inside of the burner everything looks good as new. The furnace has been running continuously at 1600-1800°F for 115 days now. When the next furnace goes down we will pull the burner out and give it a look over."

Aaron Hudlington
Principal Process Engineer

716-389-0686 calixceramics.com sales@calixceramics.com