Curing an Epoxy Coating on Silicone with a Model 5194 Infrared Line Heater

Application

A manufacturer drying an epoxy coating on silicone medical implants.

Problem/Requirement

Small Area - The medical implants being heated had a very small surface area.

One Piece Processing - Existing curing method processed one implant per cycle.

Poor Quality - The epoxy coating “skinned over” if exposed to too much heat.

Slow Speed - Existing curing methods required too much time because the heat had to remain at very low temperatures due to the narrow cure window.

Increasing Production Requirements - The manufacturer needed to increase production output to satisfy demand for the implants.

Solution

Heat - A Model 5194 Infrared Line Heater was used to apply heat to cure the epoxy coating.

Curing from Inside Out - The focused infrared provided by the Infrared Line Heater penetrated the epoxy, curing it from the inside out.

Power Control - The Infrared Line Heater was controlled with a Model 664F Phase Angle SCR Power Controller equipped with closed loop feedback on voltage.

Benefits

Increased Speed and Output - The Infrared Line Heater applied a higher temperature to the epoxy, enabling the manufacturer to process ten parts at a time.

Improved Quality - Curing the epoxy from the inside out prevented the quality problems associated with the epoxy “skinning over”.

Repeatable Results - The power control and closed feedback system made curing results consistent and repeatable.