

Drying Eurothane Adhesive on Glass and Rubber with Model 5194 Infrared Line Heaters

Application

A manufacturer of automobile windows drying eurothane adhesive between window glass and the rubber molding inserted in a metal window frame.

Problem

New Adhesive - The eurothane adhesive, SEKA 360HC, was new in the United States and had not been used before in the manufacturer's process.

Slow Drying Time - Convection heat took 10 seconds to make the adhesive 40% dry.

Required Drying Time - The manufacturer required the adhesive to be 80% dry in 10 seconds.

Precise Heating - Heat needed to be applied precisely to dry the adhesive without damaging the rubber molding.

Manual Process - The manufacturer used a manual process to apply and dry other adhesives on the windows. The customer for the windows using the SEKA 360HC adhesive required that the manufacturer use an automated process to apply and dry the adhesive.

Excessive Scrap - The manual process used by the manufacturer to apply and dry the adhesive resulted in a scrap rate in excess of 10%.

Solution

Heat - Model 5194-10 and 5194-16 Infrared Line Heaters applied precise heat to dry the eurothane adhesive.

Power Control - A Model 664F Phase Angle SCR Power Controller controlled the power to each Infrared Line Heater.

Automated System - The Infrared Line Heaters were incorporated into an automated system developed to apply and dry the adhesive.

Instant On/Off - The Infrared Line Heaters responded instantly to signals from the SCR Power Controllers and power to the Heaters was decreased by 95% when the heating process was complete.

Benefits

Fast Drying Time - Using the Infrared Line Heaters, the manufacturer was able to dry the adhesive to 80% dry in the required 10 seconds.

Precise Heating - The Infrared Line Heaters focused heat on the areas containing the adhesive. This, combined with the instant on/off capabilities of the Infrared Line Heaters that allowed the manufacturer to virtually eliminate the power to the Heaters when the heating cycle was complete, protected the rubber molding around the window from damage.

Increased Production Throughput - Installing the Infrared Line Heaters as part of an automated system enabled the manufacturer to meet this customer demand while increasing production throughput.

Repeatable Process - The focused heat provided by the Infrared Line Heaters was precisely controlled by the SCR Power Controllers, making the heating process repeatable 100% of the time.

Reduced Scrap - By using an automated, repeatable process to apply and dry the eurothane adhesive, the manufacture was able to reduce the scrap rate to 2%.

Minimized Energy Consumption - The energy required to operate the drying system was minimized by reducing the power to the Infrared Line Heaters when the heating cycle was complete.