

# Heat Shrinking Shrink Tubing on Wire with Model 4185 Infrared Strip Heaters

## Application

An automotive wiring harness manufacturer heating shrink tubing on a large wiring harness.

## Problem

**Large Assembly** - The wiring harness required 1 inch (25 mm) shrink tubing which was too large to heat with the Research, Inc. *Tube Toaster*<sup>™</sup> Processing Oven normally used by the manufacturer to heat shrink tubing.

**Time Requirement** - To meet production output requirements, the manufacturer could allow 90 seconds for the heat shrinking process to be completed.

**Limited Production Output** - The heat gun used by the manufacturer to shrink the large tubing was not fast enough to meet production output requirements.

**Poor Quality** - The heat gun caused the finish on the shrink tubing to become dull which was unacceptable because the wiring harness would be visible to the automobile owner.

## Solution

**Heat** - Two Model 4185-10 Infrared Strip Heaters were installed facing each other, with a back-up reflector, to create a heating station to heat the shrink tubing.

**Power Control** - A Model 5620 Phase Angle SCR Power Controller controlled the power to the Infrared Strip Heaters.

**Glare Reduction Shields** - The lamps in the Infrared Strip Heaters were enclosed in glare reduction shields.

**System Integration** - The heating station was installed as part of slide table that acted as a handling system for the harness assembly and activated a switch that caused the SCR Power increase output when required.

**Improved Quality** - The quality of the of the finished product improved with the use of the Infrared Strip Heaters which did not cause the shrink tubing to become dull.

**Responsive Heat Source** - The instant on/off capabilities of the Infrared Strip Heaters, combined with the SCR Power Controller and slide table with which they were integrated, enabled the manufacturer to operate the heating station without warm up time and to immediately stop running the heating station when a wiring harness was no longer present.

**Operator Comfort** - The glare reduction shields reduced the visible light produced by the lamps in the Infrared Strip Heaters, providing a comfortable environment for the heating station operator.