

# Heat Shrinking Shrink Tubing onto Rubber Hose with Model 4554 High Density Pyropanels

## Application

A manufacturer of air conditioning and power steering assemblies for the automotive industry heat shrinking two sections of shrink tubing onto rubber hose.

## Problem

**Slow Speed** - Existing method of using multiple hot air guns to heat shrink the shrink tubing took 30 seconds per section of shrink tubing. Only 15 seconds would be allowed to heat shrink each piece of shrink tubing with a new process.

**Limited Production Output** - With two sections of shrink tubing per rubber hose, only one rubber hose could be completed per minute per workstation with the existing method.

**Poor Quality** - The hot air did not heat shrink the shrink tubing evenly and caused ripples in the shrink tubing.

**Excessive Reworked and Scrapped Product** - The quality of the existing heat shrink caused an unacceptable amount of rework and scrap.

**Labor Intensive** - All steps in the existing process had to be accomplished manually.

## Solution

**Heat** - Two Model 4554-A-05-06 High Density Pyropanels applied heat evenly to each shrink tubing section. One Pyropanel was installed above and one below the shrink tubing section to provide heat around its circumference.

**System Integration** - The Pyropanels were incorporated into automated equipment, allowing automatic turn-on, turn-off, part feed and part ejection.

## Benefits

**Increased Speed** - Both sections of the shrink tubing were heat shrunk in six seconds which exceeded process requirements.

**Increased Production Output** - Ten rubber hoses were completed per minute per workstation.

**Improved Quality** - The even heating provided by the Model 4554 High Density Pyropanels allowed the shrink tubing to be evenly heat shrunk around the rubber hose.

**Reduced Rework and Scrap** - The quality of the heat shrink significantly reduced product rework and scrap.

**Automated Techniques** - Many steps in the process became automated with the system integration.

**Reduced Number of Workstations** - By producing ten times the number of hoses per workstation, the manufacturer was able to significantly decrease the number of workstations required to produce the hoses.