

Heating Nylon with a Model E4 Radiant Heating Chamber

Application

A manufacturer of heart catheters heating a continuous .004 inch (.1 mm) diameter strand of nylon used in the center of the catheters.

Problem

Poor Quality - The natural curve in the nylon strand produced curved heart catheters that were difficult for surgeons to use.

Multiple Production Lines - The manufacturer required one heating system that could be used on multiple production lines.

Line Speed - The manufacturer wanted to increase line speed from 32 to 55 feet (9.7 to 16.7 meters) per minute to meet production output requirements.

Solution

Heat - A Model E4-16 Radiant Heating Chamber applied heat to the nylon strand before it entered the first coating station.

Power Control - A Model 664F Phase Angle SCR Power Controller controlled the power to the Radiant Heating Chamber.

Instant On/Off - The Radiant Heating Chamber heated up and cooled down instantly in response to changes in line speed.

Installation - The Radiant Heating Chamber and SCR Power Controller were mounted on a mobile cart.

Benefits

Improved Quality - The heat applied by the Radiant Heating Chamber straightened the nylon strand, enabling the manufacturer to produce straight heart catheters that were easier for surgeons to use.

Mobile Heating System - The mobile cart holding the Radiant Heating Chamber and SCR Power Controller allowed the heating system to be moved between production lines as required.

Increased Line Speed - The line speed was increased to the manufacturer's requirement of 55 feet (16.7 meters) per minute.

Responsive Heat Source - The instant on/off capabilities of the Radiant Heating Chamber prevented nylon burns and strand separation when the line stopped moving.