SOLUTIONS

PIECING IT TOGETHER FOR YOU

THE CHALLENGE

A Unique Application
A highly solvent-based coating must be applied evenly around the outside perimeter of a nylon stent. The coating strengthens the nylon balloon thus permitting higher inflation pressures while counteracting localized flow restrictions.

Stents would be inflated on stainless steel mandrels to hold their shape. An automated solution must be flexible enough to process multiple stent lengths and diameters.

A Demanding Manual Process
The current spray process was very labor intensive and did not provide control or consistency. An operator simply sprayed a stent by rotating the mandrel, but they had no feedback on coating thickness or volume.

In addition, with the stent being rounded in nature, care had to be given in assuring the coating material did not flow unevenly or run off of the nylon surface. Of particular concern, the mandrel had to be rotated consistently to provide an even coating across the entire surface.

THE CUSTOMER
A Global Medical Device Manufacturer.

THE EQUIPMENT
PVA2000 Coating System
FCS300-ES Spray Valve
Custom Pallets with Bar Code Program

THE SOLUTION

NON-CONTACT DISPENSING
AUTOMATED STENT COATING PROCESS

What was needed was a system that could automate the process, consistently coat stents, monitor the fluid volume and provide the flexibility to coat various stent sizes. It was determined that the PVA2000 Coating System was the key.

The PVA2000 was utilized in a manually loaded shuttle feed process, where two shuttles were used to permit processing of one pallet, while a second was being loaded by the operator.

Next, custom pallets with a bar code program selection were designed to allow any stent size to be loaded onto the work surface.

Operators would load programs by simply scanning a bar code on the pallet. An onboard PC would then track material volume and SPC data for every product.

A single-axis, servo controlled spindle grabbed and rotated the mandrel during the spray process to assure an even coating.

The FCS300-ES atomized spray valve applied the solvent-based coating to the stent. The coating was atomized in a dry spray process to prevent material flow.

Lastly, an inline flow monitor provided real time feedback regarding material volume for every cycle.

By automating the process, adding volumetric monitoring and reducing the operator role, the customer realized savings due to a faster and more efficient process. Additional savings came from reduced material waste and fewer stents scrapped.

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