



# Tessy Ingenuity Improves a Critical Care Medical Device While Streamlining the Manufacturing Process

## Dynamic Engineering and Agile Manufacturing Take Continuous Improvement to the Next Level

Tessy Automation in partnership with Tessy Plastics took on the challenge of working with the product design team to improve a critical care medical device while concurrently streamlining the manufacturing process, developing a fully automated system that will replace two semi-automated systems. The new system takes advantage of the dynamic engineering process offered by Tessy to accomplish two major goals within a single project.

**“The customer contacted our company based on their previous experience and our reputation. This medical device has been used successfully for over 20 years for both pediatric and adult patients, however the customer’s goal was to make the device easier for doctors to use in theater. Developing a fully automated system to replace the two semi-automated systems was the logical next step to save floor space, increase production efficiency and ensure flawless quality.”**

- Bruce Courtney, Managing Director, Tessy Automation

### COMPANY

Tessy Automation

### LOCATION

Meadville, PA

### FOUNDED

1983

### WEBSITE

[www.tessyautomation.com](http://www.tessyautomation.com)

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An ISO 9001:2015 Certified Company

## The Automation Solution Design

The fully automated production line is approximately 31 feet overall in length, producing two assemblies at a time, one assembly per second, for an annual production rate of 17,000,000 assemblies. Because the function of the device is to measure the blood flow rate, there are two critical in-line quality tests, one for torque and the second for flow – these tests measure to the thousands of an inch to ensure each part meets the zero-defect requirement for medical devices.

## The Sequence of Operation

To begin operation, multiple components are loaded into the vibratory bowl feeders that precisely position the parts into the production line. The system uses HMI panels to begin operation and monitor the progression throughout the assembly process. The first stage of the stepped process is the siliconization of the movable components, then onto the ultrasonic swage process at the next component station, and finally onto testing and finishing. The finished assemblies are unloaded by a pair of Epson T3 SCARA robots into bulk bins.

## The Tessy Proprietary Control System Provides Continuous Feedback

Tessy Automation provides a proprietary control system using a sophisticated HMI and Allen Bradley PLC that provides continuous feedback with ergonomic control and functionality. Tessy loads the CAD graphics into the control system to enable users to have a real-time view of each step in the process and enable them to identify and troubleshoot any maintenance issues that arise quickly and efficiently.

## Acceptance, Installation, Start-Up and Training

After a successful Final Acceptance Test (FAT), the system will be broken down into sections, crated and shipped to Tessy Plastics. After general installation is completed (system placement, service hook-up, tests), Tessy Automation personnel will travel to the to assist in start-up and training as with any other customer. This machine builds a subassembly that will combine with another assembly on a second line, also being built at Tessy Automation. The second line will complete the manufacturing process and produce the final product for the end client at their facility.



18114 Research Drive, Meadville, PA 16335  
814.724.6336 | [info@tessyautomation.com](mailto:info@tessyautomation.com)  
[www.tessyautomation.com](http://www.tessyautomation.com)

