Circuit Assembly
Celebrating 50 years

Case Study

Circuit Assembly Designs a Custom Battery Harness for a Global Medical Technology Company

Circuit Assembly Takes Spring Loaded Contact Connector Issue From High Failure to Zero Failure rate!

When a global medical technology company was unable to reach a resolution on a battery cable issue they were having on one of their vital signs monitors, they reached out to Circuit Assembly. Circuit Assembly quickly worked on a wiring harness redesign, which included a completely new connector contact design and delivering 100 prototypes for testing. The medical company gave a resounding thumbs up following full evaluation testing. They have been using Circuit Assembly's redesigned connector and harness for 11 years with tremendous results.

Circuit Assembly's Background

Circuit Assembly has been a leader in interface connectors and cable assemblies since 1969. They have customers all over the world who trust them for a wide variety of quality interconnect products, engineering, design, and production services. They specialize in the production of custom connectors and cable assemblies, built to cutting-edge specifications for today's leading-edge products, and for tomorrow's innovative new solutions.

Their Customer's Challenge

Circuit Assembly's medical technology customer is renowned for delivering world-class patient diagnostic and care technologies. They are a globally recognized company that services health care facilities, science laboratories, and more.

This customer was dissatisfied with the failure rates they were encountering with one of their vital signs monitors. The commonly used contact in this situation is the spring loaded contact (pogo pin). During the initial design and testing phase our customer noted that these pins were sticking.

Circuit Assembly was asked to develop a better connection by redesigning the battery harness. The customer required a system they could rely on consistently; a system that would stand up to the general jostling and vibrations the monitors would encounter in medical environments. Circuit Assembly used their design expertise to create a new contact that would solve the customer's life cycle problems while also yielding a reduction in overall cable assembly cost.

Solution

1. Redesign

The main processor on the vitals monitor relies on a backup battery in the event power is lost to the vitals monitoring machine. The pogo pins required a redesign to a new leaf spring developed by Circuit Assembly, which prevented the connection from being lost to the battery. This was deemed necessary by the medical company's sustaining engineer who analyzes equipment and makes important recommendations.

2. Tooling and Prototype

Circuit Assembly quoted their medical technology customer an agreeable price for tooling and delivering 100 "first articles", or prototypes, for the customer to put into testing. This process had a short turnaround time and exceeded customer expectations.

3. Testing

The medical technology customer put the 100 prototypes into Shock and Vibration testing for a nine-month period. The product was tested in all the environments the end product would be placed in.

4. Quality Product

The customer was exceptionally pleased with the No Failure testing results and proceeded to order full production battery harnesses.

Results

Circuit Assembly's medical technology customer has used their custom battery harness for 11 years with no issues or failures reported. In comparison, their pogo pin failure rates prior were unacceptably high, with no agreeable fix offered by their previous manufacturer.

From Circuit Assembly's medical technology customer:

> *"We have found a reliable partner in Circuit Assembly who have helped us maintain our extremely high standards in a field where we make the tools to protect human health. "*

Do you have a custom project? Let's Connect and Customize today!