Applying Tech: Implantables

Mark Russell, Tricia Rodewald, and Michael Klayman

How are you influencing implantable devices?

Mark Russell
Global Market Manager, Medical Electronics, Bal Seal Engineering, Inc.

At Bal Seal Engineering, we’re supporting the advancement of active implantables by providing tool-less connection technology that minimizes the need for set-screws.

The impact of this contribution is especially apparent in devices used to deliver spinal cord stimulation (SCS) therapy, since some complete SCS units have more than 32 connections. Traditionally, these required hand tightening of each set-screw. But the mechanical and electrical capabilities of the Bal Seal Canted Coil Spring® in our Bal Conn® electrical connector reduce that number significantly, lessening surgical complexity and saving precious time during surgery.

With both the BalConn and our newer SYGNUS Implantable Contact System™, we’re helping OEMs enjoy performance improvements and competitive advantages. We’ve reduced Bal Conn sizes to accommodate lead diameters of .9mm. And with SYGNUS, we’ve combined proven Bal Conn technology and silicone isolation seals to create an integrated “stack” that enables OEMs get new devices out to market faster.

Using a collaborative engineering approach, we’re helping designers improve device functionality and make room for innovation. We’re also advancing spring manufacturing technology in an effort to set new industry standards and improve quality of life for patients who rely on active implantables every day.

By Tricia Rodewald

Director of Marketing and Strategic Alliances, Pro-Dex, Inc.

One of the many surgical devices that Pro-Dex, Inc. designs, develops, and manufactures is a battery powered screwdriver that adds power to multiple surgical applications. Especially after a challenging neurosurgery or craniomaxillofacial surgery that may have lasted several hours, many surgeons want a battery powered device to reliably complete the craniotomy after implantation of the skull plate and screws. Adding power to certain procedures can help surgeons reduce fatigue and complete surgeries more efficiently.

By carefully listening to our OEM partners and understanding what their customer's want, it's clear that surgeons increasingly perceive powered devices to be an important continuation of all the other technology that was used during the surgery. We've also carefully designed and developed devices with variable speed and torque so surgeons have greater flexibility, and a compact, secure battery pack that ensures their powered device is convenient to operate during a procedure.

Michael Klayman
Technical Manager, Sensory Analytics, LLC

Medical device manufacturers have been constrained by traditional off-line inspection methods and the limited efficacy of existing quality control tools. Such tools may catch certain problems such as coating voids or poor surface issues, but create their own set of process inefficiencies while delaying the identification of coating quality issues. Systems that generate real-time QA data

would help to better assure the quality of medical devices and strengthen coating QA and testing protocols.

A new generation of QA products can now help to transition the focus of manufacturers of implantables and other coated medical products away from catching defects after the fact to building quality directly into manufacturing and coating processes. Leading this next generation are award-winning SpecMetrix® coating measurement systems that enable manufacturers to incorporate real-time coating or layer thickness measurement directly into their QA and production processes.

These flexible new systems provide non-contact, non-destructive measurement results for clear or opaque coatings or film layer thickness, thereby ensuring more consistent quality and automated data reporting. SpecMetrix® systems can help manufacturers assure uniform wall thickness on balloons, assure capsule coating quality or verify the presence of lubricious, hydrophilic, and barrier coatings on implantables such as stents, catheters, guide wires and orthopedic hardware. Manufacturers and the public will be best served when implantable quality can be best assured.

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