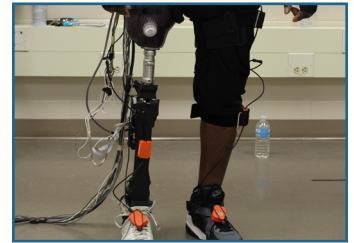
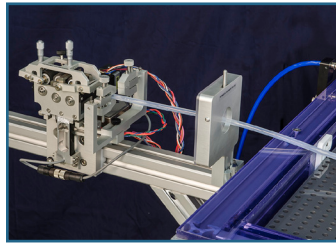
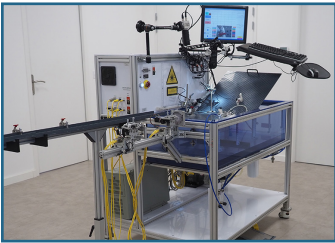


Interface

FORCE MEASUREMENT SOLUTIONS.

CASE STUDY

Interface Ensures Premium Accuracy and Reliability for Medical Applications



About

Interface supports customers in some of the most hazardous and highly-regulated industries in the world, including aerospace and defense, industrial, automotive and medical. Although each market sector has its own rigorous requirements, healthcare is the most heavily regulated and the need for compliance continues to grow. Interface works with OEMs across the world who develop life-saving medical devices, implants and tools. These customers turn to Interface because of our proven track record for producing the most accurate, reliable and efficient force measurement products and accessories for collecting critical data.

In this case study, we will be reviewing the challenges our customers encounter when developing medical devices, as well as taking a look at some of the medical applications Interface products are used to develop and test them.

Customer Need / Challenge

Products, devices and machines medical professionals use to keep people healthy, and in some cases, alive, require stringent test, review and clearance from governing bodies before they can be put into practice with a patient. The challenge our customers run into when developing medical products is finding test and measurement equipment accurate enough to manufacture safe and reliable devices which pass test and inspection requirements.

When testing medical products, there are many standards which manufacturers need to meet and be accredited in before test equipment is approved for use. The medical devices being tested also have to pass strict inspections and FDA regulations before meeting the requirements necessary to bring a product, device, implant or machine to market. To meet these requirements, medical OEM's need proven solutions from accredited partners.



3AXX 3-Axis Force Load Cell



BSC4A Multi-Channel Bridge Amplifier and PC Interface Module



6AXX 6-Axis Force Torque Load Cell



BX8 8-Channel Data Acquisition System and Amplifier

Interface Solution

Interface offers a wide variety of load cells, torque transducers and signal conditioners to collect the data medical OEMs worldwide need to both optimize a medical solution and prove safety, reliability and functionality to governing bodies. Because of the small and precise loads tested in the medical industry, we offer a broad lineup of Interface Mini™ Load Cells and accessories are available for capacities as low as 0.11 lbf / 0.5 N and as high as 100 kN. We also offer custom solutions for unique product development projects. In addition, Interface is ISO17025 accredited - the main ISO standard used by testing and calibration laboratories.

In another medical application, Interface supplied products to help our customer test how a prosthetic foot responds as it is loaded during different stances. Interface Model 3A120 3-Axis Load Cell was installed between the leg socket and the prosthetic foot. Model 3A120 was then connected to customer's portable data acquisition system. Data was logged for X, Y, and Z axis, so that a review of results could identify premature foot flat and dead spots during foot's use. The testing help to identify improvements to the design and overall performance of the prosthetic.

Another medical application relying on force measurement equipment are plasma separation machines. Interface's MBS low-capacity aluminum bending load cell is being used in plasma separation machines which must be calibrated for every patient in order to collect the right amount of plasma. The machine separates the blood in a centrifuge and a saline solution is pumped back into the patient. There are two load cells in each plasma separation machine, and they play a vital role in ensuring the accuracy of the process.

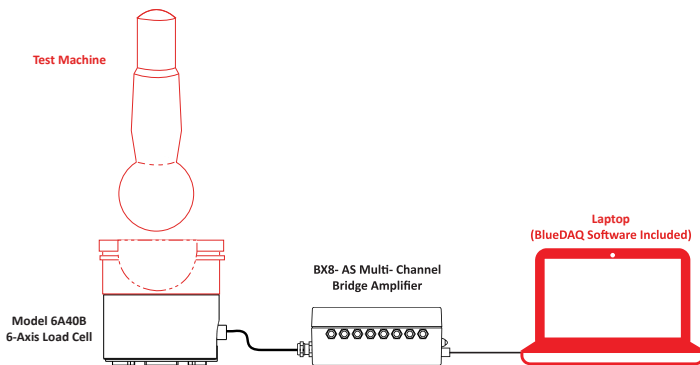


Figure 2 – This test rig simulates the actual movements of a hip and tests the durability of the prosthetic's design using an Interface 6-Axis Load Cell

Results

Interface provides a large number of products and services necessary to produce top-of-the-line medical products, devices, implants and prosthetics. Our expertise in the medical industry has been established for many years and OEM's consistently use our products for their most challenging force and torque measurement testing requirements. Our load cells and torque transducers are carefully crafted to ensure industry-leading accuracy and consistent reliability.

For dependable, reliable and accurate data, medical industry OEMs can turn to Interface for all of their product development and testing needs. For more information on how Interface can help solve your medical product test and development challenges, please visit www.interfaceforce.com.

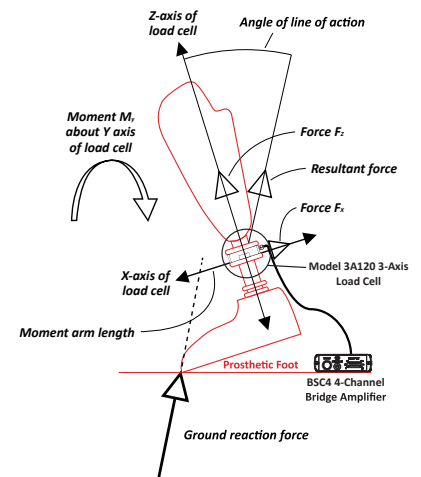


Figure 1 - shows how an Interface 3-Axis load cell is used on prosthetic foot performance testing

Prosthetics, like those used in knees, hips, and joint replacements, also test for strength, fatigue and stress using Interface load cells and torque transducers. One of the unique ways they're designed is by testing force measurement products on cadavers and using that data to emulate human joints. When completed, the prosthetics then go through multiple cycles of stress tests to ensure they will hold up for extended periods of use. This process is carried out using multiple load cells and torque transducers, which are hooked up to a test rig.