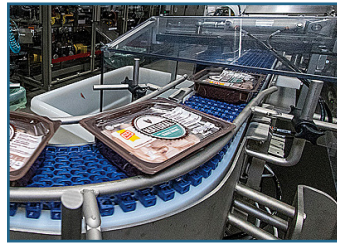


Interface

FORCE MEASUREMENT SOLUTIONS.

CASE STUDY

Force Measurement is Reducing Waste and Automating the Consumer Packaging Industry



About

When we think about force measurement and its relation to product development, we often consider the aerospace, automotive or industrial industry. However, many of Interface's customers use load cells and torque transducers to test and develop machinery used in the consumer packaging industry. This case study takes a look at the wide variety of applications of force measurement tools used to create consistency and quality among the products we purchase daily.

Customer Need / Challenge

If you have ever wondered how a pill or piece of candy gets a little logo stamped on it without crushing it or how every bag of chips is nearly filled to the same capacity, chances are a load cell or torque transducer was involved. Interface works with hundreds of customers who manufacture a wide variety of machines used in the consumer packaging industry. These machines serve numerous functions including logo stamping, bag weighing, bottle capping, sealing and precision cutting.

The challenge our customers run into when building these machines is they require a high level of precision to get consistent and repeatable results. If the machines are incorrectly calibrated, it can lead to excessive waste. For instance, if a bottle of soda isn't capped correctly, it can leak, or if the machine which embosses toilet paper and napkins is too forceful, the paper will be ripped to shreds. Currently, most packaging machines are relying on physical hard stops, clutches, monitoring motor current and laborious tasks to monitor and apply the necessary force and torque. To ensure proper performance and to reduce waste, the most accurate and reliable force measurement tools are required.



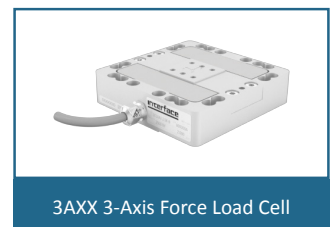
WMC Sealed Stainless Steel Miniature Load Cell



9330 Battery Powered High Speed Data Logging Indicator



5400 Series Flange Style Reaction Torque Transducer



3AXX 3-Axis Force Load Cell

According to Grandview Research, the use of automation, as well as robotics throughout the packaging lines, has seen tremendous growth in recent years. The aim is to improve productivity, reduce the operating costs and prevent waste, thus improving the overall efficiency of the packaging systems. “Big Data” has also gained popularity with operation managers that collect machine data to regulate the performance of the machinery, undertake preventive maintenance and maximize the up-time. In order to meet this demand, customers need force measurement tools that are both accurate and provide the necessary data points to automate and regulate consumer packaging machinery.

Interface Solution

Interface works with hundreds of OEMs who develop machines for the consumer packaging industry. Depending on the function of the machine, we manufacture a wide variety of force measurement products to help reduce waste, ensure repeatable results and provide accurate data to help consumer packaging customers automate their processes. All of our products come with various data communication systems, including analog or digital and Bluetooth®, wireless or Ethernet. This provides customers with flexibility in their data collection methods and the ability to connect systems through Internet of Things (IoT) functionality.

For machines using a precision twisting motion, such as capping machines, we offer nearly 50 types of reaction torque transducers and rotary torque transducers for customers. All of our torque transducers are precision-machined and use our proprietary torque sensors for the most accurate data possible.

For precision weighing or stamping, such as the candy stamping application, we manufacture more than 60 different types of load cells and Interface Mini™ Load Cells. These load cells have capacities as low as 1 lbf (500 gf) for extreme precision. In a recent candy stamping customer application, a test apparatus was outfitted with the Interface Model WMC Mini Load Cell and a 9330 data logging indicator to measure the compression force required to imprint the candy without crushing it, and collect data to finely tune the process.

For applications using robotics, Interface offers multi-axis sensors to test force and torque measurements simultaneously in three mutually perpendicular axes.

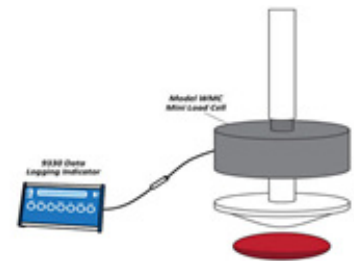


Figure 1 - Model WMC Mini Load Cell attached to hydraulic actuator to measure compression force

Results

Accuracy in packaging is a game changer for cost-savings, production efficiency, time-to-market and product safety. Whether you are measuring, weighing or securing, Interface load cells, mini load cells, torque transducers and instrumentation can assure you the quality and accuracy you need to protect your brand and customer satisfaction.

Interface is one of the leading force measurement manufacturers for the consumer packaging industries. We work directly with OEM’s and engineering consultants to implement systems and products which help to reduce waste, automate the packaging process and provide accurate, repeatable results.

For more information on how Interface can help solve your test and measurement challenges, please visit www.interfaceforce.com.