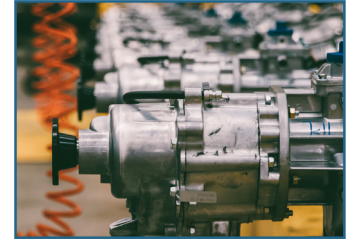


Interface

FORCE MEASUREMENT SOLUTIONS.

CASE STUDY

Accelerating Automotive Excellence with Interface Testing Lab Solutions



About

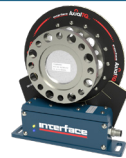
In the world of test and measurement labs, automotive testing labs have been positively impacting consumers since the early inventions of moving vehicles. In fact, the automotive testing lab known as Piquette Avenue Plant in Detroit, Michigan was built in 1904 and was the birthplace of the Ford Model T. The plant was used for various purposes, including testing and prototyping of automobiles.

Automotive testing labs validate safety, quality and reliability of vehicles and the components used in ICE and EV passenger cars, trucks, vans, motorcycles, tractors and commercial vehicles. Types of testing are used for compliance, fault and failure testing and validating advancements in auto technologies.

Challenge

To meet the regulations of the automotive industry, vehicle and part manufacturers utilize test labs to confirm the performance, quality and dependability. From brakes and seat belts to engine and materials, every single part undergoes testing. These labs perform a wide variety of tests on vehicles including component and sub-component level testing, suspension testing, electrical and noise testing, engine performance and durability testing, motor and fuel efficiency testing, power analyzing, and crash testing.

Testing labs confirm parts and systems meet or exceed industry regulations. The biggest challenge is utilizing test equipment that is accurate and reliable, while also ensuring tests are done properly. This is especially important with the new innovation like electric and driver-less vehicles. These new vehicles come with a different set of rules and standards, so test labs are undergoing modernization with new testing devices and measurement solutions.



AxialTQ™ Wireless Rotary Torque Transducer



WMC Sealed Stainless Steel Miniature Load Cell



9330 Battery Powered High Speed Data Logging Indicator



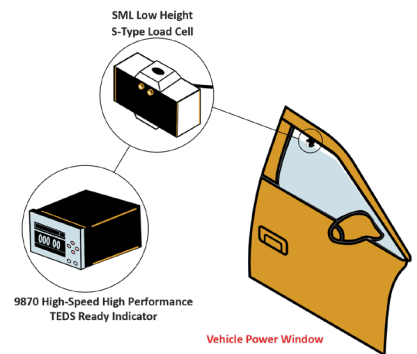
SI-USB4 4-Channel USB Interface Module

Interface Solutions

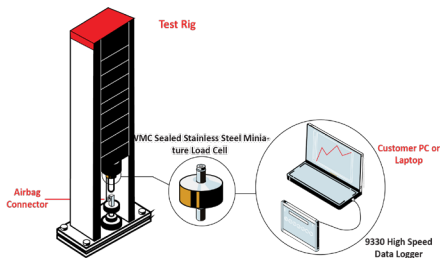
Interface sensor solutions, instrumentation and accessories are used across all facets of the automotive and vehicle industry. Our force sensors and total system solutions provide precision measurement data and consistency. The automotive and vehicle industry rely on Interface products and services for load cells, miniature load cells, calibration grade cells and systems, load frames, multi-axis sensors or specialized torque transducers like our AxialTQ. We are also seeing an increasing need for wireless, and Bluetooth enabled sensors, digital instrumentation and custom solutions. By engineering highly responsive, critically accurate, and quality load cell and torque sensors, test labs for engines and exterior bodies, tires, batteries, fuel pumps, displays, and electronics depend on Interface. As innovation is constant in the automotive industry, Interface offers custom solutions for unique vehicle challenges.

Automotive Window Pinch Force Testing

An automotive test lab needs a force testing system for power windows to prevent any injuries by testing the strength of pinch force. Interface's **SML Low Height S-Type Load Cell** was placed in between the power window and the door frame. Two plates were attached to the top and bottom of the SML with **LB Load Buttons**. As the power window pinches the SML load cell, force results were sent and displayed using the **9870 High-Speed High Performance TEDS Ready Indicator**.



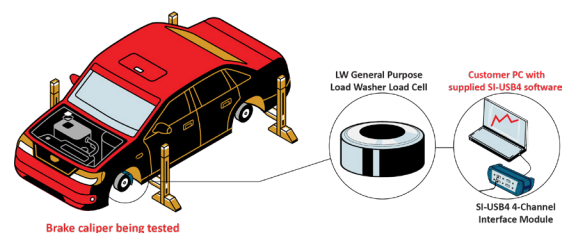
Airbag Connector Testing



Testing airbag connectors functionality is needed to ensure perfect deployment. There are 8 - 12 connectors installed in each vehicle, and tests are needed to clarify the connectors are working effectively. The amount of force needs to be tested to see when an electrical current is connected. Interface recommends attaching **WMC Sealed Stainless Steel Miniature Load Cell** to the actuator of the test rig. The airbag connector was held in place at the bottom of the test rig. Applied forces are measured using the **9330 High Speed Data Logger** as the connector was pushed down to latch together. Results were logged and reviewed when connected to a computer.

Brake Caliper Testing

A brake caliper is a component in a disc brake system that houses the brake pads and applies pressure to them, causing them to clamp onto the brake disc or rotor. Calipers change over time from aging, temperature fluctuations, and environmental conditions. As a result, it becomes crucial to continuously calibrate and test calipers to ensure optimal braking performance and vehicle safety. Interface's **LW General Purpose Load Washer Load Cell** can be placed between the piston and brake pad of the caliper. A brake pad test is conducted and the data from the LW is collected, displayed, graphed, and logged when connected to the **SI-USB4 4-Channel USB Interface Module**.



Learn More

Contact us to learn how we can help you with force measurement solutions for auto and vehicle testing.