

Customer

An automotive systems manufacturer

Customer Requirement

Verification that airbag weight sensor connectors are fully inserted

Banner Solution

L-GAGE[®] LE550 laser gauging sensors

Why Banner?

Range & Resolution – Sensor is accurate to 0.5 mm from up to 600 mm from target and < 1 mm up to 1000 mm from the target

Ease of Use – Two-line, eight-character LCD display simplifies setup and adjustment

Price – Costs less with superior performance and display screen than comparable sensors

Customer Benefits

Increased Output – Automated inspections allowed the company to detect and correct errors prior to shipping, increase staff availability and reduce assembly times

L-GAGE[®] LE550 laser gauging sensors



L-GAGE LE550 Features

- Sensing range from 100 mm to 1000 mm
- Repeatability across shiny surfaces
- Visible Class 2 laser for small spot size and easy alignment
- Highly accurate and cost-effective sensor

Learn More

Visit www.bannerengineering.com for product information and to locate a distributor

- [L-GAGE[®] LE550 overview](#)

Company Reduces Returns by Inspecting Small Connectors from One Meter Away



An L-GAGE[®] LE550 gauges the distance to a vehicle seat weight sensor connector to verify proper installation

Background

An automotive supply company makes a range of vehicle systems. Their seating systems combine structure and design with features that enhance comfort and safety. Weight sensors installed on the underside of the seats work in coordination with vehicle safety systems to determine the size and position of a seat occupant. These factors affect how or if airbags will be deployed in the event of an accident.

Challenges

To work properly, the weight sensor connector on the underside of the seat cushion must be fully inserted. If it is not, airbags will not deploy appropriately in an accident. These systems cannot be used by the vehicle manufacturer and will be returned. The difference between a fully inserted connector and one that is not is a distance of 4 mm. The company wanted to implement an automated inspection system that would verify that weight sensor connectors were properly installed prior to being shipped.

Solution

The company chose Banner's L-GAGE[®] LE550 to verify that seat weight sensor connectors are fully inserted. The LE550 is a cost-effective laser displacement sensor with exceptional resolution across its 100 mm - 1000 mm operating range.

Deployed alongside the assembly line, the L-GAGE LE550 targets the back of the weight sensor connector. The visible beam and small spot size made it easy to align and the LCD display greatly simplified setup. To ensure unimpeded travel on the conveyor, the LE550 is located 500 mm from the target. From this range, it is capable of recognizing changes in distance as slight as 0.5 mm.

As the seat passes by, the L-GAGE LE550 measures the distance between it and the back of the connector. If the connector is measured at a distance less than 500 mm an alarm notifies the operator and the line is briefly stopped. The operator can then correct the problem while it is easy to access the connector.