

Spot weld inspection with Laser Microphone for the automotive industry

Designed for robotic automation

The ultrasonic testing technology with Laser Microphone enables automated spot weld inspection for the global automotive industry. Unlike other approaches, this technology does not require physical contact with the car body. This enables fully automated spot weld inspection by robots at high speeds and a reliable distinction between OK and NOK welds.



Similar to conventional, handheld methods, the laser microphone approach determines the lens diameter of the spot weld and compares it to a reference value. Unlike conventional methods that are cumbersome when adapted for robotic use, This method has been specifically designed for robotic automation. This results in an unmatched tolerance to misalignment up to several millimeters. Therefore, Laser Microphone ultrasonic spot weld inspection system is an ideal match for industrial robots in real-life production environments. Compared to state-of-the-art manual inspection, the fully automated solution reduces the costs for ultrasonic weld testing by a factor of ten.

Benefits of Laser Microphone contactless spot weld inspection

- No coupling liquid necessary
- Reduction of inspection costs by a factor of 10
- Inspection time: 5 seconds per spot weld
- Throughput: 8000 spot welds per day
- Measurement accuracy: better than 300 μm
- Tolerance to misalignment: 5 mm
- Robust against surface inhomogeneity