

Application Story

Measuring flatness of EV Battery Pack

The Challenge

In Electric Vehicles, the battery pack is typically mounted in the frame, or could even be part of the structure of the vehicle. These have critical dimensions, as they must fit dozens of smaller battery cells into the housing. One key check is for **flatness**, as the cells must fit precisely into the housing, or the battery pack will not be properly sealed shut. Any check must be quick, cost efficient, and be able to fit within a robotics package.

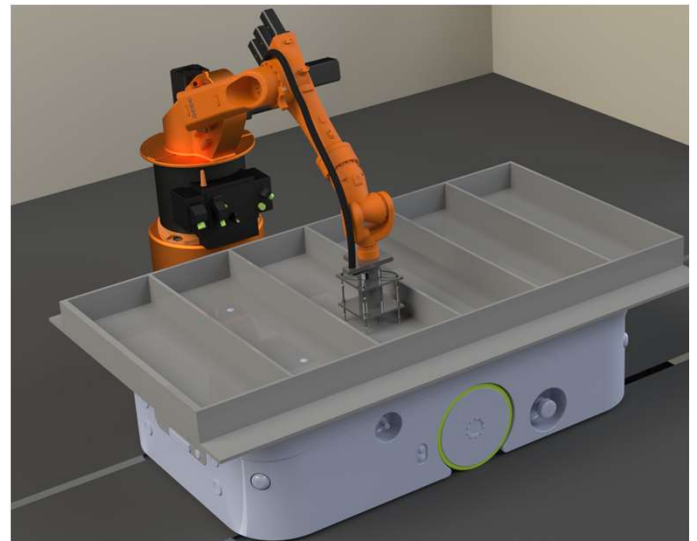
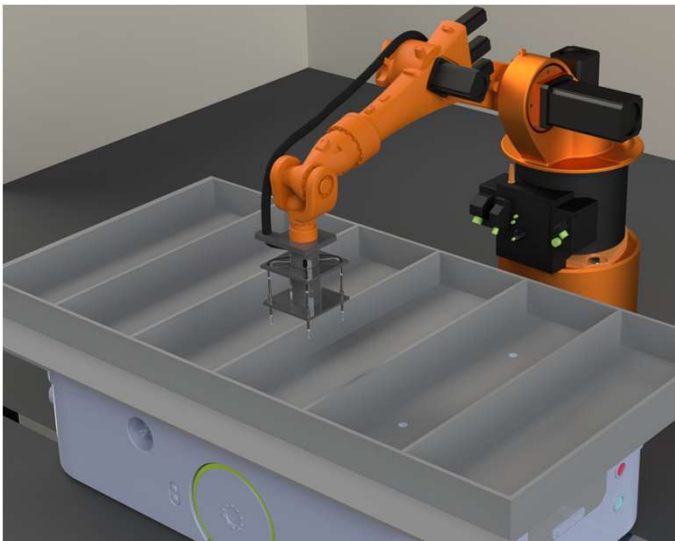
The Solution

Solartron Metrology offers multiple gauging options for checking the flatness of an EV Battery pack. In this case, four **Jet Pneumatic probes** are mounted to a robot arm to gauge the bottom surface of the battery pack. Jet Probes will continue to function pneumatically, even if the gaiter is damaged.

- **Ruggedness in a compact package:** Solartron gauging probes measure just 8mm diameter, with 6mm diameter options, meaning they can mount into the tightest of spaces on a robot arm, yet are built to last for hundreds of millions of cycles if properly maintained
- **Highest Resolution:** A flatness calculation might require the tightest of specifications, but Solartron gauging probes provide resolution of up to 0.01 micron in a cost efficient package.
- **Multiple Output Options:** Solartron offers both Analog and Digital outputs, for any PLC requirements. This includes:
 - **DC and 4-20mA:** Signal conditioning can even be mounted to the end of the probe on our G-Type sensor
 - **Wireless:** Using the Digital Orbit® Network, Probes can be networked together and output via our Wireless Interface Module. Or use a form of our Wi Gauge Technology.
 - **PLC protocol:** Via Orbit®, our probes can output to multiple PLC protocols, including Profinet®, Ethernet/IP®, EtherCAT®, Modbus, and CC-Link®.



Jet probes mounted to the end of a robot arm for automated flatness checks. Due to the quick response time of the probes, the check is instantaneous.



Orbit® – The Total Measurement System from Solartron Metrology

The Solartron Orbit® Digital Measuring System provides a limitless set of measurement solutions, with numerous different interfaces to computers and PLC's.

