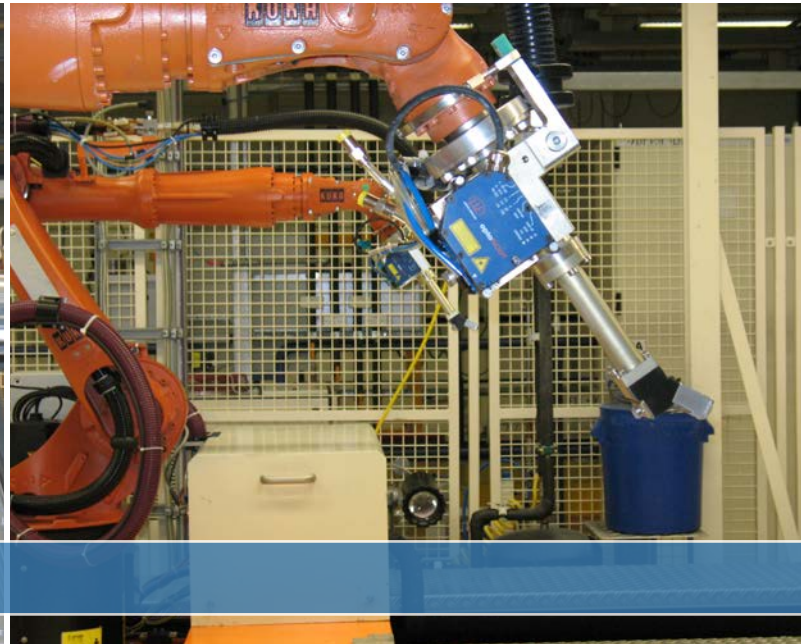




Robot positioning in seam welding



In the bodywork shop at the BMW AG factory in Leipzig, the roof panel and side frames are welded together. In order to permanently seal this weld against ingress of moisture etc., seam welding is carried out prior to the filler coat being applied to the vehicle body.

The application of the adhesive beading is performed using a robot positioned on either side of the production line. Two optoNCDT 1700 laser sensors from Micro-Epsilon are used for precise positioning of these robots. The sensor and nozzle for applying the adhesive beading are located on the end effector. The sensors measure the position of the roof channel on the vehicle body. Using the calculated data, the nozzle is positioned precisely over the weld seam, enabling error-free application of the PVC seam.

Due to its fast exposure regulation RTSC (Real-Time Surface Compensation) the optoNCDT sensor is used here. The steep transition into and out of the roof channel is measured reliably and without errors using RTSC. As the maximum load capacity of the robots is almost reached with the applicator alone, the sensor must be as compact and lightweight as possible, with high measurement performance and low space requirements. This combination of installation size, weight, accuracy and price were decisive factors in this application.

Reasons for choosing the system

- Fast exposure regulation (RTSC)
- Integrated controller with high performance class
- Stable die cast aluminium housing
- High accuracy
- Excellent price/performance ratio

Sensor design

- optoNCDT1700

