

Laser welding of sill board reinforcements

Challenge of Linde+Wiemann

Linde + Wiemann successfully supports the construction of innovative chassis designs with sill board reinforcements based on profiling technology. In this case the challenge was about the production of sill board reinforcements for several Audi models. Full-volume production quantities of over 10,000 sets per week and high demands on crash test performance dictated the use of laser-welding and online process controls integrated in a high productive welding line. The sill board reinforcements are designed in a wide variety of versions and lengths, made from ultra high-strength galvanized steels which are assembled by laser overlap welding.

AWL Solution

The company choose AWL to supply the laser welding line, approximately 1.000 m² of production area on which 5 handling robots and several other logistic elements provide two laser welding stations with parts. For the realization of this project, AWL worked very closely together with the customer as well with sub supplier Rofin Sinar, who supplied the laser source and the scan box.

Special notice has been taken to the fixture design and air flow management within the welding station, which are the keys to a reliable laser welding process. An integrated dimensional checking station and on line process controls assure continuous product quality in this high automated production process.

Results

A high productive flexible laser welding line fully integrated in the total production process, produces sill board reinforcements in a wide variety of versions and lengths, made from ultra high-strength galvanized steels.

For an equivalent spot welding cycle approximately 22 spot welding units and the double number of jigs would have been necessary to replace the 2 laser welding stations. The crash test requirements could only be met with laser welding.

A major milestone in the production of sill boards has been achieved with this installation.

CUSTOMER FACTS:

Customer:	Linde + Wiemann	Results:	Full-volume production of > 10.000 sets
Product:	Sill board reinforcements		per week
Country:	Germany		High quality
Industry:	Automotive		Cycle time saving
Application:	Laser welding, CO2 Laser		Operator saving
AWL solutions:	A high productive flexible laser welding line.		Cost saving