

Krautkramer UltraWELD Ultrasonic testing of laser welds



The automotive industry ...

Different welding and joining methods are used for making car bodies. Besides resistance spot welding and stud welding, continuous laser welding is becoming more and more important – for reasons of economic efficiency.

In view of optimizing the welding parameters, as well as of quality assurance with regard to product liability, inspections of such laser welded joints are absolutely necessary. It may happen during the welding process for example that the lower sheet is not covered by the laser beam – for example due to a fit-up defect.

... and our solution

Along with the increased safety requirements within the automotive industry, the importance of non-destructive test methods has also increased.

To check laser welded lap or fillet welds, our ultrasonic system USLT 2000 for spot weld inspection was further developed now enabling an additional manual and mechanized test of laser welds. The innovative roller probe system comprises two angle beam probes which are flexibly interconnected with each other for a better adaptation to the surface geometry.

A swivel-joint mechanism enables a troublefree inspection without any readjustments even on varying geometries. As the roller probes are designed for dry coupling, it is possible to totally leave out a liquid couplant. The height of the through-transmission amplitude is a measure for the quality of the weld.

An evaluation software UltraWELD enables, in combination with the PC-based ultrasonic flaw detector (desktop version), the true-to-location recording and documentation of distance information and of the corresponding ultrasonic signal: An exact B-scan evaluation, right to the millimeter, of the complete test track is displayed. At the same time, the program produces a direct online analysis of the weld's state.

