QuellTech Laser Scanner Weld Applications

Gap Tracking

Bead Inspection
QuellTech specialized in manufacturing of Laser Line Scanners represents with its development team over 30 years of experience with this technology. The need for a contactless sensor has resulted in the development of a product solution which meets the requirements in production automation. Knowing the demands and restrictions of production lines, QuellTech started developing Laser Scanners with the essential features for the often demanding tasks and the rough environments in production lines.

The QuellTech products are continuously improved and adapted according to customer- and market-feedback. We are one of the technology leaders in 3-D Laser Scanner technology. The range includes special sensor systems for difficult optical conditions and demanding ambient light environments. Our Systems work reliable under extreme environmental conditions. We apply our know-how of various industries through customer specific product modifications. All our products are made in Germany by QuellTech.

QuellTech supplies sensors and systems for following industries: automotive, aerospace, machine manufacturers, welding automation, machine vision, robot systems.

QuellTech Laser Scanners are used in many Industries in applications like:

- Welding gap tracking
- Weld inspection
- Glue bead check
- Metal forming control
- Automotive
- Electronic components measurement

QuellTech Laser Scanners advantages:

- Contactless
- Precise 3D-measurement
- Fast
- Robust against ambient light
- Stable in high glossy material
- No moving parts inside

QuellTech References:

- Bosch
- Lincoln Electric
- BMW
- Kjelberg
- Pemamek
Introduction: Product overview QuellTech Laser Scanner

Options:
- Multiple Scanners can be connected to a single PC. Cascading of multiple scanners can be used for enhancements of measurement, range or speed.
- Ethernet interface allows long cable ranges and switching of connection of several scanners via single cable
- Interfaces are available for application Software for PLC, Robots and analog outputs
- Cooling Modules are available and changeable protection windows
- Several application Software modules can be provided
- Laser Scanners and Software can be obtained in OEM versions

Small Form Factor
Red or Blue Laser
Protection against sputter
Cooler for Water/Air

Large Variety of Scanners and Options available
Applications: Weld gap tracking

Weld gap tracking

The QuellTech Laser Scanner leads the welding torch which follows a pre-programmed path on the metal.

As soon as the seam deviates from the pre-programmed path, the QuellTech Laser Scanner Software outputs a correction signal to the PLC of the welding machine or the robot.

The welding machine then corrects the position so that the torch can weld in the exact middle of the gap.
Applications: Weld gap tracking

Weld Gap Tracking Deep Grove

Gap Tracking Software
Applications: Weld bead inspection

Weld Bead inspection

All visible weld beads can be inspected contactless with QuellTech Laser Scanners. Especially if the weld inspection is trailing the welding process errors like pores, undercutting, sputter can trigger timely alarms and prevent costly scrap.
Applications: Weld bead inspection

Weld Bead inspection

The Quelltech Software can detect various types of errors on a weld bead. These errors can be parameterized in size and tolerances and the resulting alarms can be output to the plc control system and recorded.
Applications: Weld bead inspection

Weld bead inspection of laser weld on gear

Weld bead “Donuts” on Battery contacts
Applications: Weld bead inspection

Weld bead on butt weld with defects

Laser weld bead with small pore defect
Applications: Weld bead inspection

Titanium weld bead with small pore defect
Summary

Advantages of QuellTech Laser technology:
- Contactless
- Precise 3D-measurement
- Flexible connection via Ethernet
- Integration in a complete systems or standalone
- Long life-span, no wearing parts
- Fast
- Robust against ambient light
- Indifferent for color
- No moving parts inside
- High process stability

Advantages of QuellTech as a producer:
- Single unit customization to OEM series production
- Substantial experience on vertical integration in manufacturing
- Flexibility in customization of Hard- and Software
- Kow how of typical processes in manufacturing
- Constant innovative inputs into the product features

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