



Robiscan[®] Weld and Braze Seam Inspection



ROBISCAN®

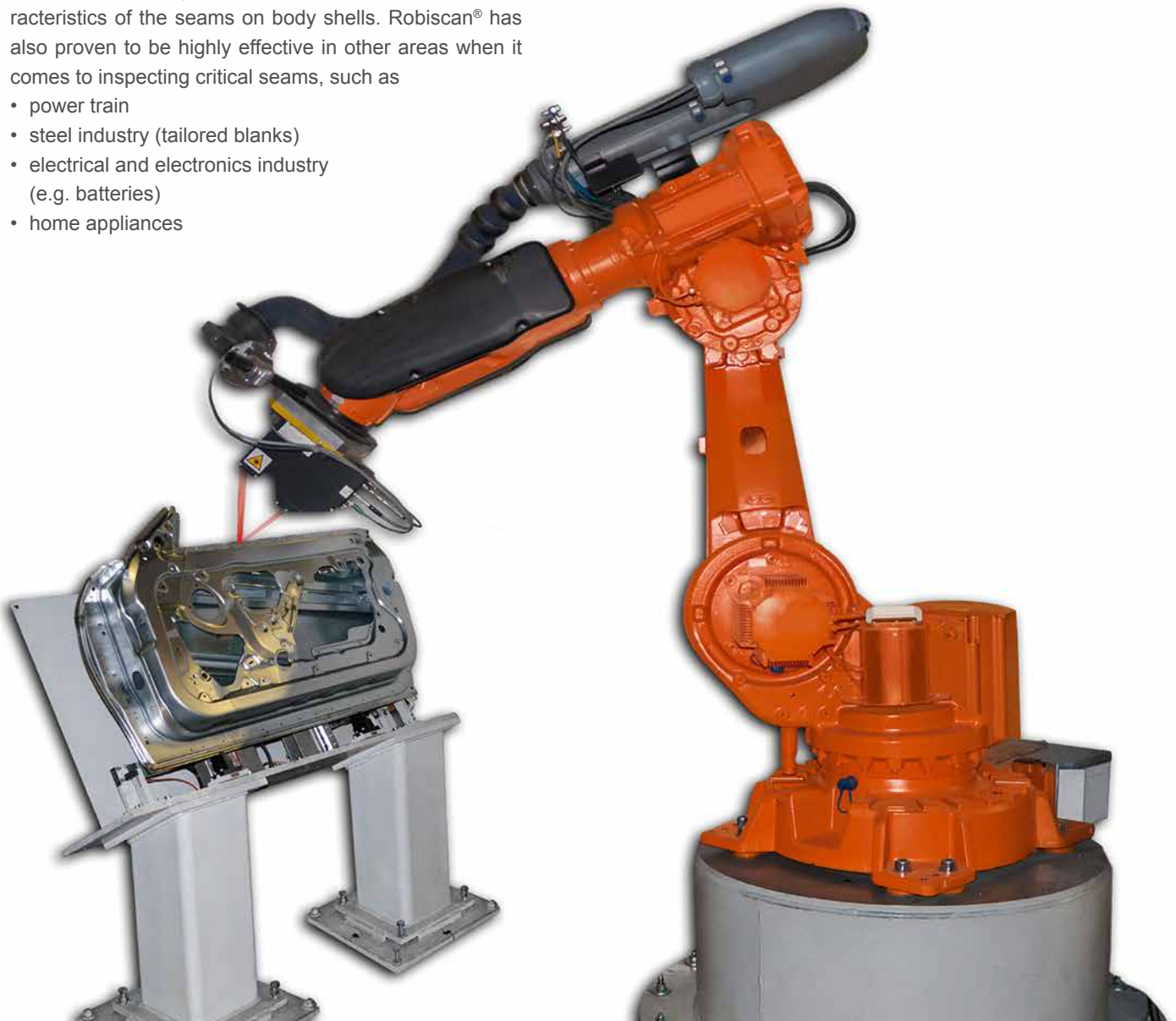
Universally Useable

Robiscan® is a powerful inspection system for weld and braze seams. It detects even smallest defects. Both the strength of a seam and its high-quality appearance can be verified.

Robiscan® is used by well-known car producers around the world, to reliably detect pores, splatter and other characteristics of the seams on body shells. Robiscan® has also proven to be highly effective in other areas when it comes to inspecting critical seams, such as

- power train
- steel industry (tailored blanks)
- electrical and electronics industry (e.g. batteries)
- home appliances

After the welding process the sensor head is moved along the seam. Robiscan® captures and evaluates the images in real time. This means that the result for further processing is available shortly after scanning is complete.



POWERFUL

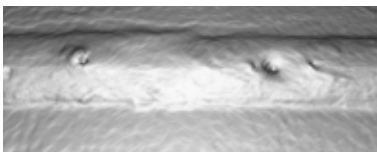
In Many Applications

Robiscan® not only detects geometrical defects which compromise the strength of a seam, it also identifies pores, splatter or edge offsets which are important for the appearance or in the paint shop for corrosion resistance.

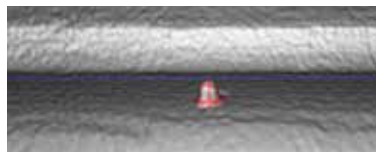
It does not matter if it is a welding or brazing seam. Robiscan® is frequently used in combination with tactile and remote laser, MIG/MAG or CMT.

Thanks to the powerful sensor head and highly dynamic response, Robiscan® is suitable for all conventional metals such as steel, aluminium or copper.

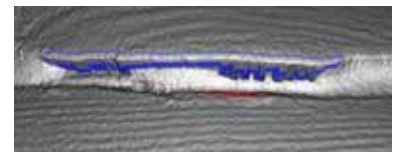
Thanks to optimised evaluation methods and powerful analysis unit, Robiscan® doesn't increase the cycle time.



Pores



Splatter



Edge offset

Selection of detectable defect attributes

- Pores
- Undercut edges
- Splatter
- Edge offsets
- Length, width
- Excess weld metal / underfill
- Excess penetration bead, root concavity
- Balanced seam
- Cracks
- Burn through
- Throat thickness (A-value)
- Wire remnants

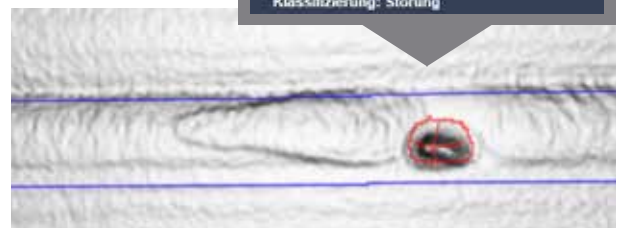
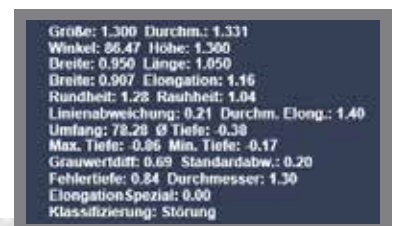
RELIABLE DETECTION

With Low Pseudo Error Rates

Robiscan® detects even the smallest defects such as 0.1 mm large pores with almost 100 % reliability in production – and with extremely low pseudo error rates at that. This makes Robiscan® arguably the most powerful system in the industry.

For this Automation W+R can draw on over 25 years of experience in the field of surface inspection and measuring technology:

- **Full 3D image capture** – external light, dust or smoke residues can no longer cause interference
- **Measuring instead of comparing** – decisions are based on reproducible values and objective rules
- **Algorithms developed in-house** – work reliably even in otherwise problematic areas such as very flat seams
- **Software-based vibration compensation** – allows for distortion-free image capture and use with virtually all conventional industrial robots



Up to 40 geometric measurement values (e.g. diameter, depth) are determined for every defect. Limit values and individually configurable rules allow for objective good/bad decision making or precisely defined quality levels for targeted rework.

EASY SETUP

Saves Costs and Time

Setting up Robiscan® is fast and easy. The clearly arranged user interface can be customised according to your requirements and supports different user levels.

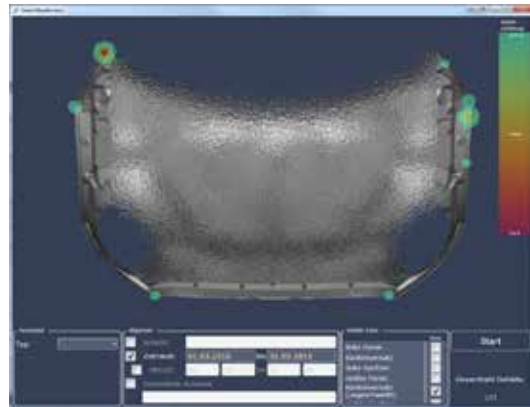
Since the evaluation is based on measurements, only a few sample parts are required for setup. Once the evaluation rules have been defined, testing can be performed with the same specifications around the world without the need for costly limiting samples.



Robiscan® setup interface

The user interface is optimised:

- The **worker** can immediately see where the defect is and can rework it if necessary.
- Comprehensive analyses allow the **maintenance staff** to determine critical areas and to adapt the process.
- All measurement values are stored in a database for long-term **quality evaluations**, so that systematic and detailed analyses can be performed.



Defect frequency screen

VERSATILE, RELIABLE

And Easy to Integrate

The flexible and customisable Robiscan® system combines all the advantages of a standard system such as proven reliability with the advantages of a customer-specific system such as easy adaptation to individual requirements:

- A range of **sensor heads** allows for the best choice of resolution, inspection distance or speed
- **Integration of additional sensors** through modular software design (e.g. for 2D inspections)
- **Extension of the software** through function modules such as database, remote maintenance, QA systems, etc.
- **Flexible interfaces** for system control
- **Supports all common industrial robots**

Robiscan® is in use at numerous large car producers, tier 1/2 suppliers and **household appliance manufacturers** for several years now.

It is **continuously being further developed**, which is illustrated by numerous innovations (e.g. determining an objective appearance factor) or the integration of industry 4.0 applications.

The system is designed for 24 hours a day / 365 days a year operation. Details such as the **sensor head which can be replaced without calibration or software changes** and the **thoughtful backup system** prove the suitability for daily use.

Automation W+R also offers an extensive service portfolio and competent consulting.



EVERYTHING FROM A SINGLE SOURCE

The Autision Group is a group of several independent companies dealing with surface inspection, measuring technology and robotics. The name Autision comes from the combination of **AUT**omation and **VISION**. We provide you with application-oriented turnkey solutions from a single source:

Surface inspection – We provide proven solutions to meet practically all performance requirements in the field of automated surface inspection, crack detection, bondability and paintability testing.

Measuring technology – We have many years of expertise in the area of complex 3D measuring technology and capture – both in industrial environments and for individual, demanding tasks or in research and development.

Robotics and automation – The combination of sensor technology, measuring technology and robot-assisted automation provides new capabilities for your handling and rework requirements.

Surface inspection of steel cables – Winspect® wire rope inspection is the perfect solution for semi-automatic inspection of steel cables such as those on ropeways and hoisting plants.

INNOVATIVE SOLUTIONS FOR YOUR INDUSTRY

Heavy Industry

We inspect surfaces at temperatures of up to 1200°C in harsh environments:

- Continuous casting mill
- Rolling mill
- Mandrel bar inspection
- Crack detection
- Profile measurement
- Fettling of cast parts

Automotive

We offer 100 % quality and reliability, e.g. for:

- Wetting tests for bonding and painting applications
- 3D measuring
- Gap and flush inspection
- Robot guidance
- Bin picking
- Automatic rework

Aerospace

Developing future technologies in close cooperation with R&D:

- Collaborative robotics
- Inspection of composite fibres and surfaces
- 3D Capture
- Rapid prototyping
- Contamination checks

SOLUTIONS FOR BODY IN WHITE

Our body in white solutions are only a small part of our extensive activities in the automotive industry. To learn more: Talk to us.

Surface Inspection

- Weld and braze seam inspection
- Adhesive bead inspection
- Wetting test
- Surface inspection

Measuring Technology

- Robot guidance
- Offline measuring
- Inline measuring
- Gap and alignment inspection



OUR SYSTEMS ARE WORKING WORLDWIDE



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