

# Robiscan<sup>®</sup> Battery weld inspection



ONE-STOP SHOPPING

# Robiscan<sup>®</sup>

## The Platform you need

The basis for infinite quality inspection possibilities is the robust but flexible platform concept of Robiscan<sup>®</sup>.

The heart of the system is the main processing unit in a switch cabinet enabling high speed quality inspection. This guarantees stable long lifetime and fast processing speed. We provide different inspection heads for nearly any optical metrology tasks. Especially for battery inspection systems we supply a unique proven sensor head.

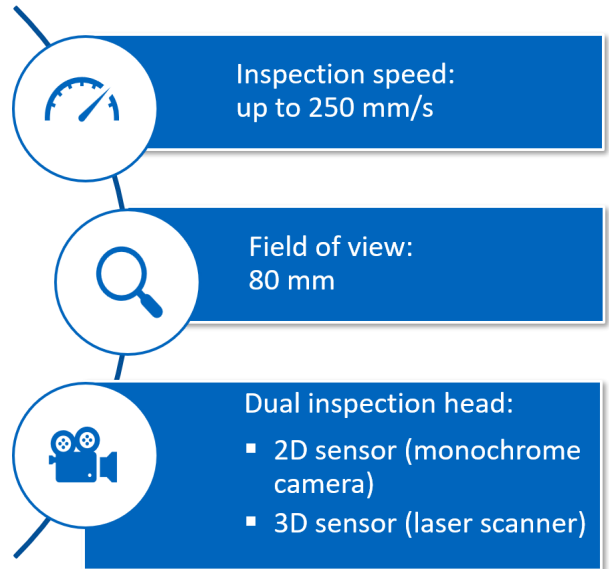
In addition to our standard inspection heads we can offer you a customized solution according to your application requirements. The Robiscan<sup>®</sup> system provides multiple features e.g. various statistical visualizations like defect statistics and defect distribution heat maps and options for part monitoring and direct production feedback or rework stations are available.

## Your Challenges

- Seams require individual settings
- Frequent changes during process implementation
- Defect specifications are worked out in the process
- Quality requirements for structural welds, cross section, surface sputter, electrical resistance and other processes like paintings

## Our Solutions

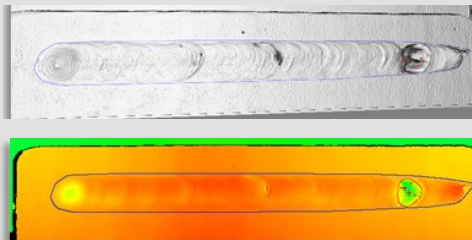
- No missed defects for 100% customer satisfaction
- High-speed inspection algorithm for maximum productivity
- Combination of weld inspection and process parameter control
- Highest reliability with 100% detection and 0.007% pseudo defect
- Proven Technology with more than 250 worldwide installed systems



## CELL CONNECTION



## TIE ROD



## STRUCTURAL WELDS



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## Battery Cell - Electrochemical energy storage

- Detection of material impurities
- Inspection of contaminated sealed seam
- Non destructive testing (NDT) of damage-free electrode surface/edges

## Battery Module - Cell connectors and housing

### Cell connectors

- Laser welding seam defect detection (laserpower, defocus, gap, etc.)
- Quality compliance of the welding seam (weld splatter, irregularity, porosity, etc.)

### Tie rod

- Laser welding defect detection (laserpower, defocus, gap, etc.)
- Safety compliance of the welding seam (A dimension, cross section, etc.)

## Battery System - Battery management system and housing

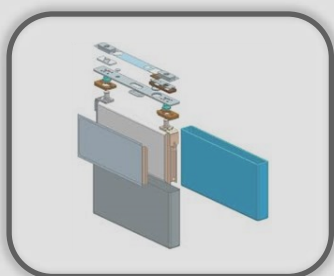
### Battery box

- Laser welding defect detection (laserpower, defocus, gap, etc.)
- Safety compliance of the welding seam (A dimension, cross section, etc.)

### Module interconnection & battery management-system

- Laser welding defect detection (laserpower, defocus, gap, etc.)
- Quality compliance of the welding seam (weld splatter, irregularity, porosity, etc.)

### 100% QUALITY ASSURANCE ALONG THE BATTERY VALUE CHAIN



BATTERY CELL



BATTERY MODULE



BATTERY SYSTEM



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# The requirements of battery production

Within a long-term study to find a specialized optical test system for battery inspection it turns out, that a combination of 2D and 3D optical inspection leads to the best results for the special needs.

Our well-known image processing platform implements the 40 years experience of Automation W+R and offers unique algorithm for all kind of task and providing an unbeatable speed performance for inspection solutions.

The continuous development of the platform is also covering the newest AI solutions, which are specially trained for solving problems where classical algorithms do not satisfy.

## How can we support you?

### Specialized Battery Sensor

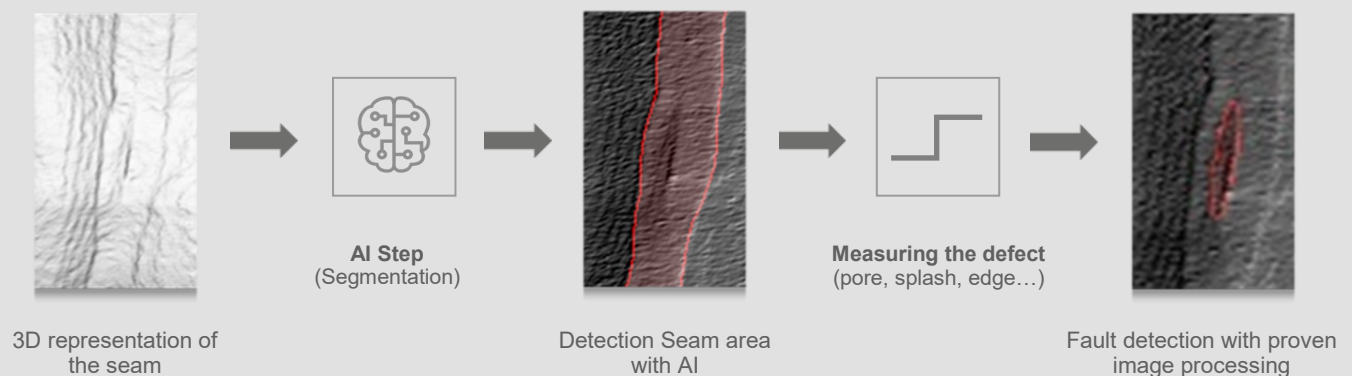
Our innovation battery inspection sensor head enables a full inspection of the weld in 2D and 3D. This unique combination in one head leads to multiple benefits:

- Comprehensive analysis of the weld in 2D and 3D
- Saving production space, time and costs since only one station for 2D and 3D inspection is needed
- The Combination of these technologies in one head enables inspection possibilities far beyond the results of each technology alone and even beyond the sum of both

## 3D Evaluation - ISO EN 5817 standard compliant

- **Transparent evaluation** - Results at a glance in in-house software
- **Self-developed algorithms** - work reliable even in otherwise problematic areas, such as very flat seams
- **Measuring instead of comparing** - decisions are based on comprehensible values and objective criteria
- **Complete 3D image acquisition** - no impact on the inspection process by inconsistent light or contamination such as smoke

### ARTIFICIAL INTELLIGENCE MEETS 3D EVALUATION



## Your benefits and advantages of Robiscan®

- Know-how transfer from our long years' experience
- We offer feasibility studies to ensure a zero-defect strategy
- Full process monitoring with accurate and reliable inspection results
- 100% inline inspection of your security and functional relevant applications
- Worldwide support of test implementation and optimization of series production
- We don't just deliver inspection systems, we support you from the very beginning
- Comprehensive consulting for the evaluation of your quality criteria for the best possible system configuration

### Individual optimization - 100% detection with only 0.007% pseudo defects

- By remote maintenance
- Employee feedback is needed only in the first weeks
- Fast implementation of new inspection systems based on sample parts
- Automation W+R individually configures the detection for each single seam
- High level of expertise based on more than 7 years of battery production experience

## One-stop shopping

Autision Group is a group of companies consisting of several independent companies dealing with surface inspection, metrology and robotics. That is why Autision stands for the combination of **AUTOMATION** and **VISION**. With us, you receive application-oriented complete solutions from a single source.



100%  
RELIABLE



EASY  
HANDLING



NO UNEXPECTED  
RETURN



STANDARD  
ISO EN 5817



measure



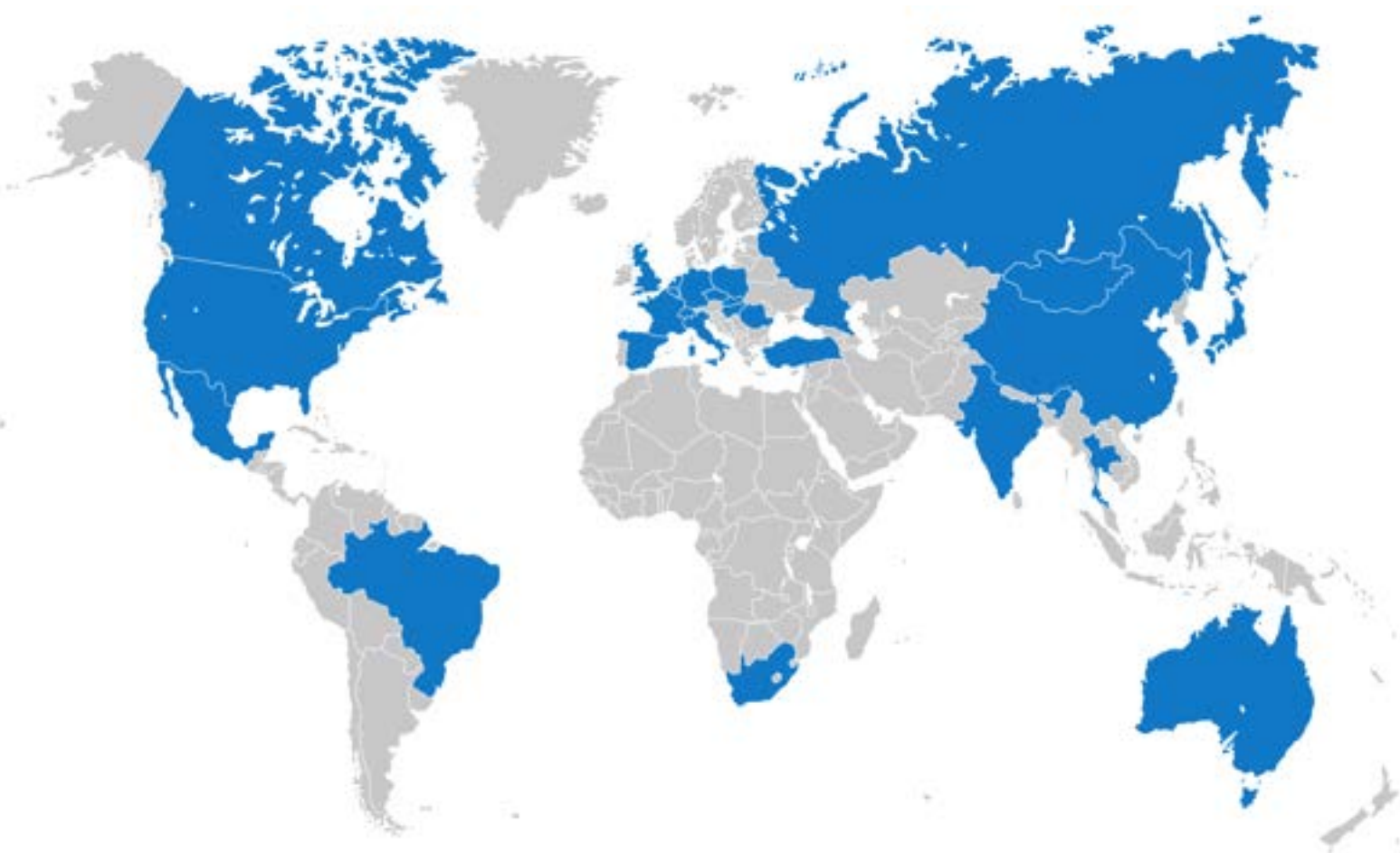
inspect



robotics

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## WORLDWIDE INSTALLATION OF OUR SYSTEMS



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