



**MAPVISION**

QualityGate

**100% In-line Inspection**



“We don’t deliver bad parts”

# Change In-line Inspection Forever.

Manufacturing is changing. 100% quality is becoming a standard, not a luxury. The pressure is on to achieve 100% delivery quality, reduce internal costs, and generate profit. The old quality control methods aren’t working –the key is 100% in-line inspection. **Make the change to industry 4.0 today.**

## Fully-digital 100% in-line inspection for car body and chassis components.

- **Quality Gate** – Simple, robust hardware with no moving parts. No mechanical failure, no inaccurate readings.
- **Mapvision 5** – Automated, self-diagnosing multi-camera measurement and inspection software.
- **Result Suite** – Visualize your production quality data. Use actual production images to quickly spot issues. Understand how you can optimise your processes.

## Measure everything – waste nothing. Change the way you work.

- **Wide range of components:** cross car beams, subframes, twist beam axles, side beams, front end modules (FEC, GOR), hatches, transmission components, underbody modules and even entire ladder frames.
- Perform 100% inspection of every identified feature on every part within line cycle time.
- Analyse hundreds of clearly presented measurement values **with powerful, intuitive software tools.**
- Control and adjust your manufacturing line to optimal efficiency in real-time – reduce costs, produce quality.

# Your Gateway to Quality.

## Quality Gate System Hardware

## Mapvision 5 Measurement Software

## Result Suite

Result Viewer | Image Studio

## Implementation

Individual Design | Measurement Programming  
Installation and Set-Up At Line

## Training and Consultation

System Training | Consultation | On-site Assistance

Mapcare  
HW maintenance | Inspection Maintenance  
Software Maintenance | On-Line Support

Production optimisation with Mapvision 100% in-line data takes place throughout the entire duration of your program, from the beginning of your line installation until the last part you produce is inspected and shipped. Our aim is to provide you with the technology, expertise and support you need at every step to constantly improve your processes and understanding.

## One System.

## A Lifetime of Support.

- Co-creation of inspections that optimally fit your specification
- Robust hardware preconfigured to your specifications
- User and maintenance training
- Training and consultation for using the 100% in-line data
- Pre-production support
- OEM line acceptance support

- Tools and procedure to systematically log your adjustments, including notes on performed actions and images that show the status before and after each adjustment
- Optimisation recommendations
- Measurement modifications
- On-site and online support
- On-site employee partnerships
- Annual service and calibration
- Support you to win the next program

“

We have harnessed our founders’ lifelong passion to develop scalable technology and change in-line inspection forever. You’ve always had the expertise – **now you have the tools to realise your true production potential.**

“



# Your Software. Your Way Towards Zero Compromises.

To achieve high-quality, cost optimised production, you need software that allows you to monitor your production quality with confidence and make adjustments in real-time. Use **Result Viewer** to access detailed, visualised measurement results produced by **Mapvision 5**. View actual production images with **Image Studio**. Gain an overview of your production – and understand where and how you can improve.

“The best support group

I’ve worked with during

my 30 years in this business.”

- **Accelerate line start up** by utilizing 100% in-line data from the beginning of the process.
- **Save time** by directly using internally-correlated, extensive real-time measurement data to adjust your line
- **Ensure quality** by using actual production images to quickly locate problems – analyse and document root cause analysis of issues for speedy intervention or documentation for your customer.
- **Save money** by utilising the whole tolerance range, allowing for more variation while staying within accepted boundaries.

## Mapvision 5 – Real-Time Measurement You Can Rely on.

The utilisation of in-line data for line adjustment is only possible if the data you collect is 100% reliable. Our fully-digital real-time measurement uses one linear and orthogonal coordinate system over whole measurement volume, guaranteeing uniform result quality across the whole part.

- Speed: hundreds of 3D points (x,y,z) in less than 30 seconds
- Repeatability: typically +/- 0.02 mm with real production parts
- Reliability: measurement self-diagnosis through multi-camera correlation calculations

### Automated Visual Inspection

- Fully-automated visual inspection for component presence and orientation
- No penalty to inspection time

### Multi-camera correlation

Each measurement point is observed by multiple cameras. This allows the system to ensure the accuracy of each measurement by checking the coherence of the camera observations.

# Result Suite – Analyse and Visualise.

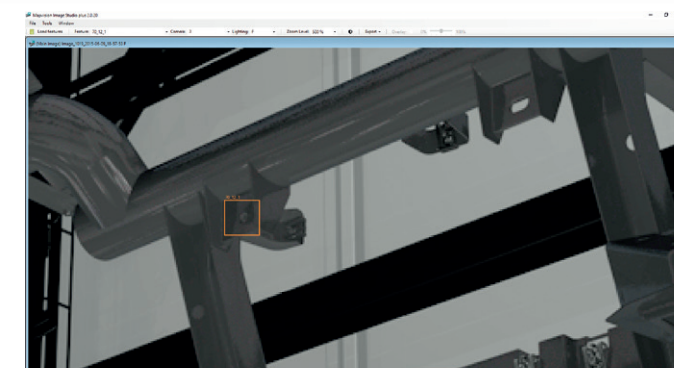
Mapvision 5 provides the reliable data and images you need for 100% production quality. Result Suite brings them to life. Easily convert Quality Gate inspection data into a comprehensive view of the parts you are producing - and what needs to be improved.



## Result Viewer – Make Process Data Understandable

Get exact numbers for direct use in line adjustment and an overall view of your process. Result Viewer combines automatic statistical analyses and clear trending graphs with an intuitive 3D model of error vectors.

- Freely configurable graphs, statistics
- Error vectors displays
- Individually configurable displays for different purposes
- Access to measurement images directly from result display
- Automatic Data storage in Result Database
- Capability analysis: Correlation, Type-1 Study, Type-2 Study and Type-3 Study



## Image Studio – Bring Camera Images to Life

Understand your production status – look at measurement images and animations of **any part and any feature**. Easily identify defects, save time and money.

- Animate up to 500 images from any measurement camera to visually inspect and identify defects
- Use Feature Locators to identify inspected features in on-screen measurement images
- Analyse geometric deviations from reference parts with one click
- **Visually analyse even non-measured issues, such as surface quality, cracks and weld seams**
- Automatic image storage in Image Database



# Hardware 4.0 – Move Past the Mechanical.

Our Quality Gate series houses fully-digital multi-camera inspection technology. No mechanical components, no moving parts – no resulting inaccuracies. Purpose-built for demanding factory conditions with high temperature and vibration tolerances. Hardware built to perform – and last.

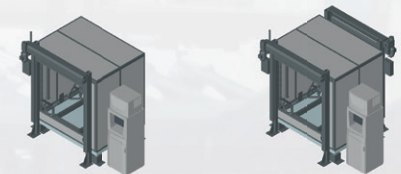
- Fully digital system – no moving parts
- Simple, robust design
- Resistant to vibration and temperature effects
- No special foundation needed
- Low maintenance cost

# One System. Many Configurations.

## Quality Gate 2200 Series

For compact chassis, body and transmission components such as trailing arms, side beams and axle components.

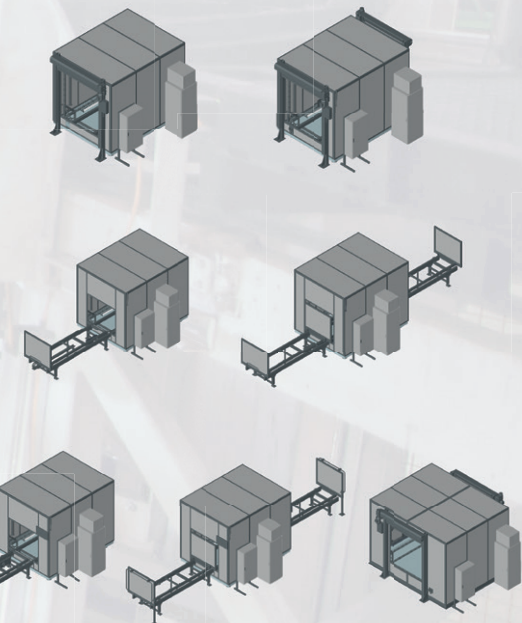
- Maximum length of part approx. 860 mm
- Footprint: 2.1 x 1.6 m
- Robot loading: one or two doors



## Quality Gate 4200 Series

For mid-sized chassis and body components such as subframes, cross car beams and rear axles. Underbody module inspection with two-module configuration.

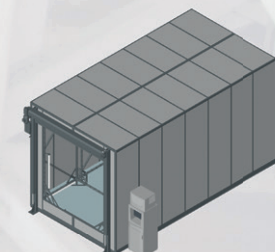
- Maximum length of part approx. 1800 mm (standard Gate Unit) or 2500 mm (two module Gate Unit)
- Footprint: 2.9 x 2.2 m (standard)
- Direct robot loading: one or two doors
- Robot loading with shuttle: single or double shuttle
- Manual Loading: powered or manual shuttle



## Quality Gate 6200 Series

For full vehicle chassis and body assemblies such as underbodies and bodies in white.

- Maximum length of part approx. 5000 mm
- Footprint: 7.0 x 4.0 m
- Part loading by conveyor



**“The only system in my line  
that continually operates  
without problems.”**





# About us

We provide digital 100% in-line inspection for the automotive industry. Our customers are manufacturers of structural car body and chassis components, and OEM body shops.

Our in-line inspection solutions include result-handling software, training, and extensive consultation for improving your operation with 100% in-line inspection data.

Our fully-digital multi-camera measurement technology provides self-correlated, immediately available 100% in-line measurement data for every feature on every part, helping ensure delivery quality and reducing production costs.

Our products are used by a portfolio of leading global OEMs and Tier 1 suppliers. Find out more about the digital revolution of in-line inspection at [www.mapvision.fi](http://www.mapvision.fi)

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