KHGH tehnologije d.o.o.
INOVATIVNE REŠITVE NA DLANI

DIGITAL QUALITY CONTROL SERVICE

AR visual inspection for industrial quality

From the 3D model to the inspection report – in real time, on site or in your production.

FIELDS OF APPLICATION

Automotive · Process industry · Mechanical engineering · Maintenance



AR overlay of the 3D model on a workpiece in our production

WHO WE ARE

KHGH Tehnologije – an experienced technical partner

A young company based in Celje, Slovenia, building on more than 25 years of hands-on experience of our specialists in mechanical engineering, design, welding and production supervision.

IWE / EWE

International Welding Engineer (EN ISO 14731) – control of welding technologies.

VT Level 2

Visual testing to EN ISO 9712 – certified quality inspection.

PED 2014/68/EU

Pressure vessel design to EN 13445 and AD 2000, CE documentation.

25+ years

Mechanical engineering, 3D design, technical documentation, production supervision.

New service: AR visual inspection

We have added augmented reality to our mechanical and welding expertise – for faster, more precise and digitally traceable quality control.

THE CHALLENGE

Conventional visual inspection slows production down

Paper documentation

2D drawings, printed forms and manual reporting slow down every step.

Subjective judgement

The result depends on the experience of the individual inspector.

Late detection

Deviations are found late – when corrections are already expensive.

STANDARD VISUAL INSPECTION (2D)

3 hours

on average for one inspection of a complex part

Data preparation specifications, drawings, CAD model, standard	~1 h
Visual inspection comparing the part with documents, manual checks	1+ h
Reporting filling in forms, attaching photos	~1 h

THE SOLUTION

What is AR visual inspection?

Augmented reality overlays CAD data directly onto the physical product via a tablet or mobile device – in real time, on the production line or on site.

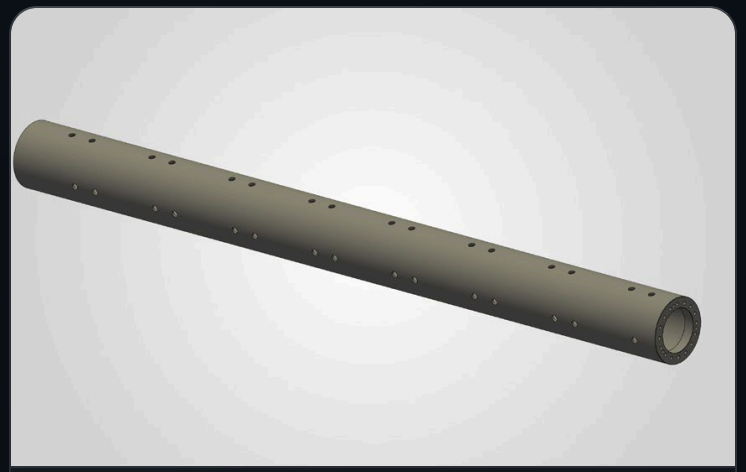
- The operator points the tablet at the part and sees deviations instantly
- Shorter inspection time, higher productivity
- Virtual and physical worlds in a single view



3D model overlaid on a workpiece – captured in our production

HOW IT WORKS

Three steps: from CAD model to report



01 · PREPARATION

Model preparation

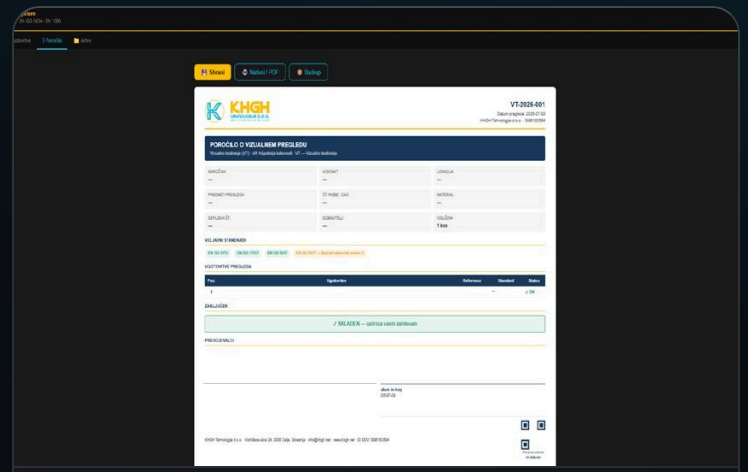
We convert the CAD model (including SolidWorks) into AR tracking geometry and set up the check points.



02 · INSPECTION

AR inspection

An interactive AR check on a tablet – deviations are recorded in 3D, instantly and on the spot.



03 · REVIEW

Online report review

Reports open in any browser – for management, the customer or a remote team.

THE RESULT

From three hours to thirty minutes

BEFORE

3 hours

- Data preparation – 1 h
- Visual inspection – 1+ h
- Reporting – 1 h

WITH THE AR SOLUTION

30 minutes

- ✓ Data preparation – 15 min
- ✓ AR visual inspection – 15 min
- ✓ Report (PDF/Word/Excel) – in seconds

Up to **80 %** time saved, with fewer errors and full digital traceability.

TECHNOLOGY

AI modules for automatic deviation detection

Deep-learning software compares the actual state of the product with the 3D CAD data and detects deviations automatically.

Hole detection

Compares the actual position of holes with the 3D CAD data – every hole matches the drawing.

Spot weld inspection

Neural networks assess the correct position of weld spots against the tolerances.

Bolt and stud presence

Checks that all elements are present and correctly fitted before the next assembly stage.

Plug & play: choose the modules each production line needs.

PARTNERSHIP VALUE

Not just software – engineering responsibility

AR software is a tool. KHGH adds the technical judgement, certified expertise and accountability that industry requires for inspections.

Weld assessment by an IWE

AR inspection results are evaluated by an internationally certified welding engineer.

VT Level 2

Formal qualification for visual testing to EN ISO 9712 – traceable and recognised.

PED / EN 13445 / AD 2000

We understand pressure equipment and documentation requirements, not just geometry.

One local partner

From model preparation to report – no coordination between several suppliers.

NEXT STEPS

Proposed pilot project

On a selected component or assembly, we jointly verify the accuracy, speed and practical value of the solution in your environment.

1

Select a component

Together we choose the part or assembly for the pilot AR inspection.

2

Model preparation

We prepare the CAD model for AR (SolidWorks supported).

3

On-site execution

AR inspection at your site, with results recorded.

4

Report and evaluation

We present the report and jointly assess the savings.

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Thank you for your attention.

We look forward to discussing an AR visual inspection pilot project with you.

Non-binding enquiry www.khgh.net/#contact

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