

Quality inspection and defect detection

Automatically inspects fabricated metal components using AI-powered vision systems and CAD model comparison to detect defects, ensuring quality standards are met before delivery.

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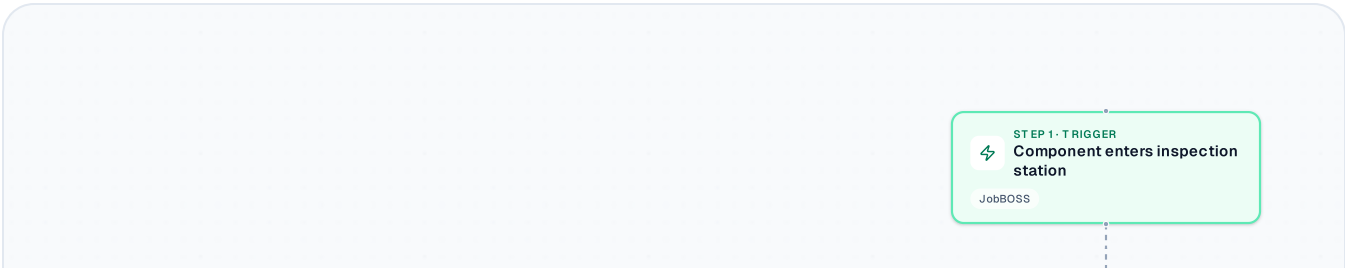


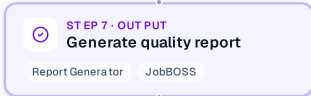
WORKFLOW TRIGGER

Fabricated metal component enters quality inspection station

Visual Flow

Each node represents an automated step. Connections show how data and decisions move through the workflow.





Step-by-Step Breakdown

Detailed explanation of each automated stage in the workflow.

1

⚡ TRIGGER

Component enters inspection station

RFID or barcode scanner detects fabricated component arrival at quality inspection station. Work order data is retrieved from JobBOSS to identify component specifications.

2

 ACTION

Retrieve CAD specifications

System pulls original CAD model and dimensional specifications from SolidWorks or AutoCAD based on work order. Reference tolerances and quality requirements are loaded for comparison.

SolidWorks

AutoCAD

3

 ACTION

Perform 3D scanning and imaging

AI-powered vision systems and 3D scanners capture detailed measurements and surface imagery of the fabricated component. Multi-angle photographs and dimensional data are collected.

AI Vision Systems

3D Scanners

4

 ACTION

Compare against CAD model

AI algorithms compare scanned data against original CAD specifications from SolidWorks or AutoCAD. Dimensional variances, surface defects, and weld quality are automatically analyzed.

SolidWorks

AutoCAD

AI Analysis Engine

5

 DECISION

Evaluate quality compliance

System determines if component meets quality standards based on tolerance analysis and defect detection results. Components are classified as pass, fail, or requiring rework.

AI Analysis Engine

6

 ACTION

Update production records

Inspection results, defect locations, and quality scores are automatically logged in JobBOSS. Non-conforming components trigger rework orders or scrap notifications.

JobBOSS

7

 OUTPUT

Generate quality report

Comprehensive quality inspection report is generated with pass/fail status, defect imagery, dimensional analysis, and corrective action recommendations if needed.

Report Generator

JobBOSS



Outputs

- Quality inspection report with pass/fail status

- Defect location mapping and imagery

AI Business OS

Updated production records in JobBOSS



Key Metrics

- First-pass quality rate percentage
- Average inspection time per component
- Defect detection accuracy rate



Tools & Integrations

- JobBOSS
- SolidWorks
- AutoCAD
- AI Vision Systems
- 3D Scanners
- AI Analysis Engine
- Report Generator

AI Business OS

Actionable AI implementation strategies for business leaders ready to transform their operations.

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