

Machine Vision for Critical Aerospace and Defense Manufacturing

Automated Inspection, Code Reading, and Barcode Verification

Machine vision systems combine cameras and software to automate inspection, code reading, and verification in aerospace and defense manufacturing.

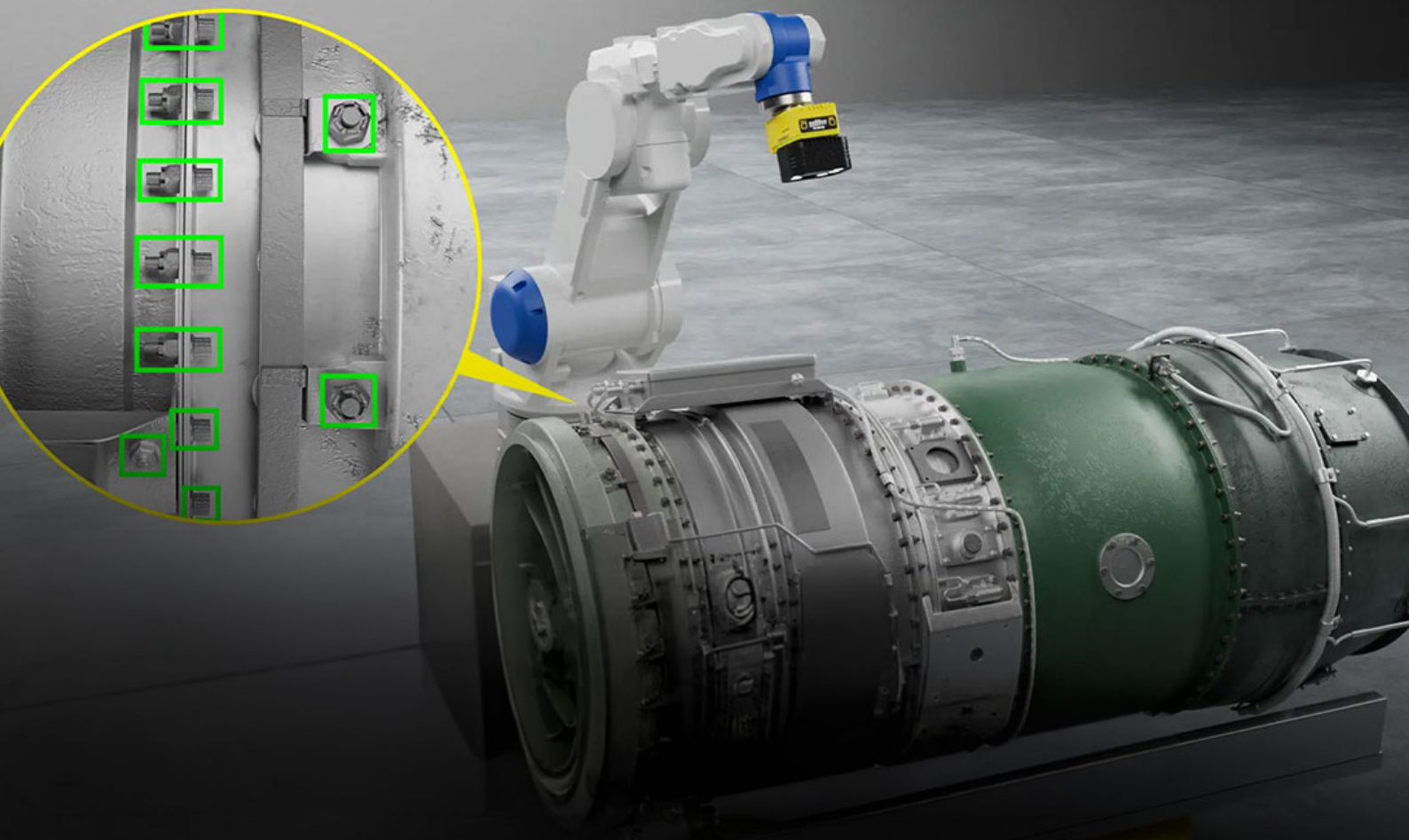
Cognex machine vision solutions, powered by AI, improve quality, reduce costs, and simplify deployment, while ensuring compliance with UID and traceability standards.

Our proven technologies and focus on support throughout the customer journey make your vision-based projects easier to set up, **more effective**, and **more reliable**.

Improve supply chain visibility and ensure accountability

Simplify and safeguard code compliance

Automate high-mix, low-volume operations



COGNEX

Advanced machine vision made easy

Cognex capabilities for aerospace and defense manufacturing

See the potential for your manufacturing environment.

Barcode Reading and Traceability

Easily read codes in challenging settings to ensure full traceability and compliance.

Fixed-mount scanning

Read 1D/2D barcodes and direct part marks (DPMs) on large parts.

Handheld scanning

Scan barcodes on reflective surfaces, metal, and other challenging surfaces.

Barcode Verification and Code Compliance

Quickly determine whether codes meet specifications and provide actionable feedback when a code generates a poor grade.

Handheld verification

Verify DPMs on textured, curved, and reflective surfaces.

Offline verification

Grade codes against industry standards and diagnose quality issues.

In-line verification

Verify DPMs on high-speed manufacturing lines.

Optical Character Recognition and Text Reading

Automatically read damaged codes, verify accuracy, and ensure they are readable throughout the supply chain.

Optical character recognition

Read damaged and obscured alphanumeric codes on shiny surfaces and curved parts.

Optical character verification

Scan codes to confirm their accuracy and readability.

Defect Detection and Assembly Verification

Detect subtle defects, verify complex assemblies, measure intricate features, and quickly distinguish between acceptable and defective parts.

Assembly inspection

Verify that parts in complex assemblies are installed correctly with robotic-mounted and stationary vision systems.

Part verification and defect detection

Detect defects and obtain precise measurements in challenging settings.

Cast mold inspection

Detect residual contaminants, scratches, dents, and other defects in molds.

Heat shield inspection

Identify and classify defects on heat shields and other aerospace components.



Flexible machine vision tools work with powerful optics and imaging technology to automate inspection, verification, code reading, measurement, and guidance tasks with precision and speed.



Simplifies deployment with guided workflows, easy training, and a unified interface across devices.



Quickly integrates with existing PLCs, industrial protocols, MES, and quality systems to minimise downtime.



Reliable performance in tough environments with built-in features like pre-trained font libraries, simple job validation, and robust image formation.



Maximises contrast on reflective, grainy, and rough surfaces for efficient code reading, verification, and character inspection, even under challenging conditions

>40
years in business

25K+
global customers

500+
global customer
support resources

>1,100
technology patents

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