



AV GAUGE & AUTOMATION

CMMbot

AUTOMATED QUALITY GATE

*CMM-Grade Precision
+ Production Quality
Verification*

**Inline,
End-of-Line,
or Offline
Deployment**



AV-CMMbot brings lab-grade robotic metrology, functional assembly verification, and full digital traceability directly to the production floor

One Automated Quality Gate Replaces Multiple Disconnected Steps

Production Quality Challenges



Manual Gauges



Stand-Alone Vision



Offline CMM



Operator-Dependent Verification

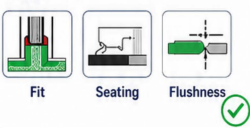


Integrated robotic inspection delivers dimensional proof, functional verification, and traceability for every cycle.

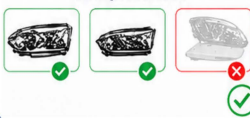
Geometry & GD&T



Assembly Conditions



Presence / Orientation / Completeness



Traceability

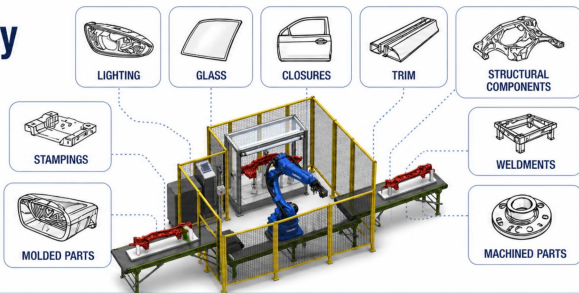


Ultimate Application Flexibility

One platform capable of supporting multiple materials, manufacturing processes, functions, and product types.

From lighting, glass, closures, and trim to structural components, stampings, weldments, molded, cast, and machined parts.

Built for demanding production environments and advanced manufacturing applications across automotive, aerospace, defense, energy, agriculture, and medical industries.



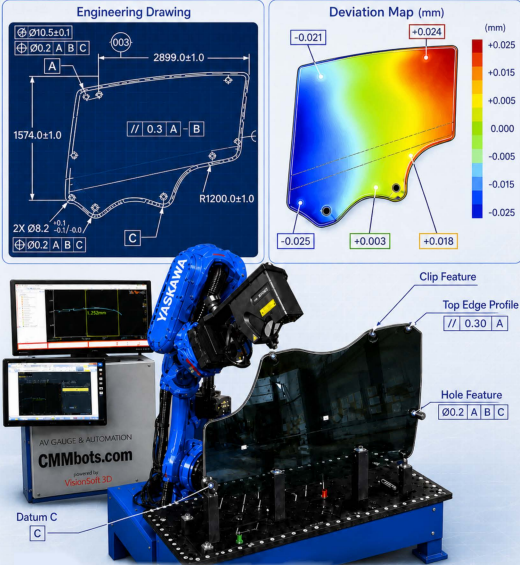
- AUTOMOTIVE
- AEROSPACE
- DEFENSE
- ENERGY
- AGRICULTURE
- MEDICAL

AV-CMMbot is not just a measuring robot. It is a complete automated quality gate for production manufacturing

Automated End-of-Line Quality Gate

Dimensional Inspection

High-Accuracy GD&T Verification with CMMbot



Functional Verification

BARCODE 123456789012 ✓ MATCH	QR CODE ✓ DECODED	LABEL / ID VERIFICATION P/N: A5127-01 REV: B S/N: 2A47C3K12 ✓ MATCH
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IV4 VISION

Inspection Status: **PASS** ✓

Part ID: A5127-01-B
Serial: 2A47C3K12
Time: 04/29/2024 06:52 AM

Inspection Results:

- ✓ Presence / Absence
- ✓ Orientation
- ✓ Sealant
- ✓ Fasteners / Clips
- ✓ Weld / Weld Nut
- ✓ Barcode / QR / Label
- ✓ Defects

Orientation Check: FRONT ↑

Component Presence

Poke-Yoke Check

WELD BEAD ✓	SEALANT BEAD ✓	WELD NUT ✓	THREADED CLIP ✓	STUD ✓
BARCODE ✓	QR CODE ✓	LABEL / ID VERIFICATION ✓	DEFECTS	
			SCRATCH ✗	CHIP ✗
			SURFACE BLEMISH ✗	
COMPONENT PRESENCE / ABSENCE ✓	FASTENER / CLIP VERIFICATION ✓	ASSEMBLED COMPONENTS ✓		

- GD&T features, surfaces, datums, holes, slots, trim edges, and profiles
- Studs, nuts, fasteners, bushings, sleeves, inserts, bosses, and critical datums
- SPC data, Cpk outputs, PPAP measurement plan support, and CMM correlation

AV-CMMbot combines lab-grade metrology and real-time functional validation into a single automated inspection process

Flexible Inspection

Throughout the Manufacturing Process

From component to final assembly, AV-CMMbot delivers accurate, automated inspection to validate quality at every stage

Component Part **Sub-Assembly** **Final Assembly**

Performance Snapshot

Accuracy & Repeatability

- Surface Points: ±0.060 mm
- Trim Edges: ±0.060 mm
- Holes / Slots / FOS: ±0.075 mm
- Studs / Fasteners: ±0.080 mm

System Repeatability

- ±0.035 mm via alignment, calibration, and thermal compensation

High-Speed Production Performance

- Engineered for real manufacturing takt times:
- <1.5 seconds per inspection point
- Supports high-volume, multi-shift production

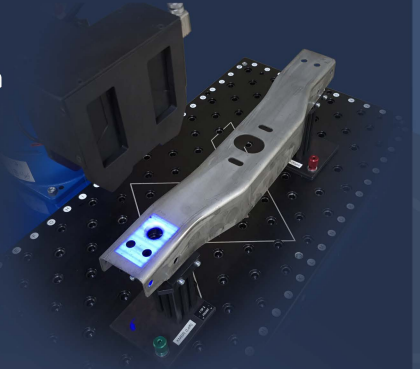


Multi-Sensor Inspection Platform

One robot. Multiple inspection technologies. Complete coverage.

3D Snapshot Scanning

- High-resolution capture of discrete area geometry, surface contour, and profile.
- Feature measurement, true position, pitch, local patterns, and feature sizes.
- Ideal for multiple inspections across a variety of opaque part features.



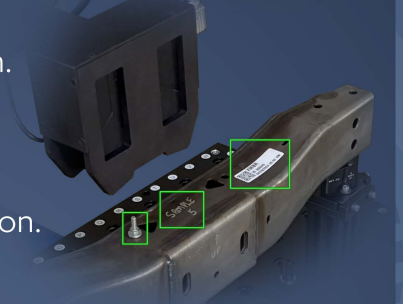
Laser Profiling

- High-speed scanning of transparent/reflective/glossy surfaces found in lighting, glass, machined and coated part applications.
- No need for surface developer spray or use of secondary optical targets.
- Stable in complex optical environments, regardless of ambient light conditions.



2D / AI Vision

- Assembly validation and defect detection.
- AI assisted weld, sealant, adhesive, and paint condition verification.
- Barcode reading, label identification, date stamps, and part number identification.



KEYENCE



COGNEX

Ascend3D Software Intelligence Unified Sensor Ecosystem

All inspection technologies operate within a **single Ascend3D software platform**, enabling:

- CAD-driven robot paths from CAD and inspection point data
- Mixed-model inspection with automatic RFID program selection
- XYZ coordinate reporting, GD&T reports, point maps, image output, and inspection summaries
- Cp / Cpk monitoring, drift alerts, master offsets, nominal shifts, and thermal compensation reporting
- PLC integration, barcode scanning, label printing, and automated pass / fail containment

Ascend  **3D**
SOFTWARE

**Synchronized multi-sensor data acquisition
| Shared Inspection logic |
One interface for complete quality validation**

WHY AV

TRUSTED. ACCREDITED. PROVEN.



DEEP EXPERTISE

40+ years as an industry benchmark, with deep experience in production metrology, GD&T compliance, automated inspection, and assembly processes.



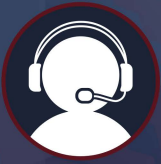
INTEGRATED CAPABILITY

300+ employees across fixture, gauge, automation, robotic inspection, inline measurement, and validation.



END-TO-END SUPPORT

Complete support from measurement strategy and tolerance stack-up through certified tooling, launch, certification, and ongoing validation.



ALWAYS THERE

Canada's Best Managed Platinum status, backed by responsive technical support, on-site programming, training, and production launch experience.

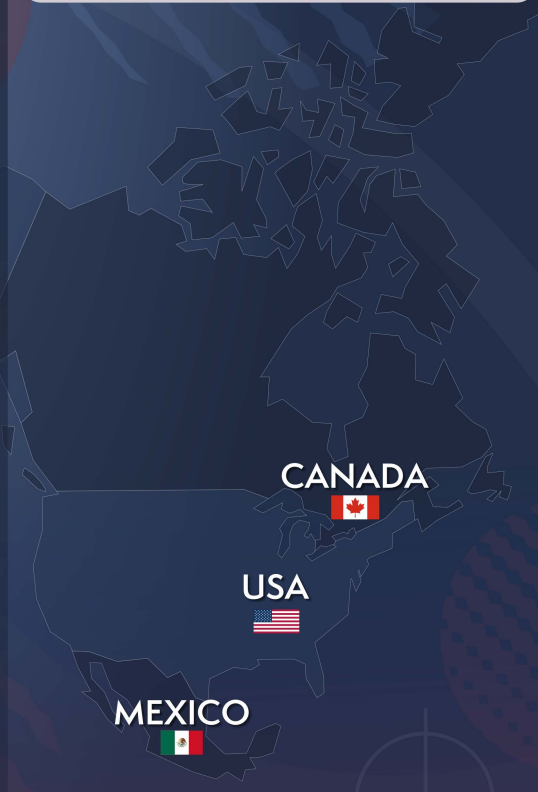
ACCREDITATIONS & RECOGNITION

CANADA BEST MANAGED COMPANIES

Platinum member



ISO 17025 ACCREDITED LABORATORY



When the Process is Proven, the Results are Trusted.



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