Automotive Industry

Track, Trace & Control

Automotive suppliers and OEMs today rely on data tracking for quality assurance, spill prevention, error proofing, reduction of costly reworks, and increasing production yields.

Microscan helps these companies assure quality and increase productivity through diverse applications such as:

Auto ID Tracking & Traceability

- Parts traceability
- WIP tracking
- Spill prevention and containment
- Build-sheet reading
- Verification

Machine Vision

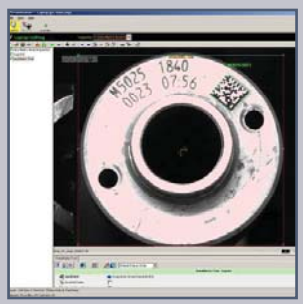
- Placement verification
- Error proofing and assembly validation
- Sorting parts
- Dimensional gauging
- Quality assurance
- Robotic guidance

Application Examples

- Reading and verification of marked Data Matrix

- Work-in-progress verification

- Dimensional check inspection



- Inspection of parts and components

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Examples of Automotive Inspection & Identification

Major Engine Components
- Unit level traceability of engine components using Data Matrix
  - Heads and blocks
  - Camshafts and crankshafts
  - Connecting rods, pistons and pins
- Selective pairing of engine parts using Data Matrix
  - Cylinder heads and pistons
  - Crankshafts, connecting rods and pistons
- Engine assembly error proofing
  - Component identification using Data Matrix
  - Various inspections (i.e. missing threads)

Other Engine Components
- Piston ring inspection
  - Type, presence, orientation and seatedness
- Spark plugs
  - Pre-fired insulator inspection/gauging
  - Print inspection using line scan cameras
  - Gap dimensional measurements

Transmission Components
- Transmission valve body traceability using Data Matrix
- Transmission clutch housing inspection
- Transmission spacer plate inspection
- Torque converter component validation
- Torque converter stator vane inspection

Drive Train Components
- Drive train component traceability using Data Matrix
- Various assembly verification inspections
- Needle bearing assembly verification

Fuel System Components
- Fuel tank component inspection and assembly validation
  - Correctness/completeness checks and other inspections
- Fuel pump component traceability using Data Matrix
- Fuel injector traceability using Data Matrix

Exhaust System Components
- Catalytic converter traceability using Data Matrix
- Various catalytic converter dimensional inspections

Air Bags
- Component traceability using Data Matrix
- High accuracy gauging

Brake Systems
- ABS body traceability using Optical Character Recognition (OCR)
- Other component traceability using Data Matrix

Various Components
- Plating inspection
- Dimensional measurements
- Threads and burrs presence/absence

Electrical Power Systems & Components
- Connectors and wire harnesses
  - Various inspections
- Electrical centers assembly verification
  - Component type and position inspection
  - Fuses, circuit breakers, relays, diodes
- Injection molded housings
  - Various inspections
- Gauges and instrument clusters
  - Inspection
  - Vision guided calibration
  - Various inspections
- Printed circuit boards (PCBs) and ceramic substrates
  - Traceability using Data Matrix
  - Alignment and various inspections

Line Validation Systems
- End-of-line and in-process assembly validation
- Multi-and single-camera inspection stations
- Examples of checks:
  - Facia and bumper
  - Wheels and tires
  - Badges, decals and nameplates
  - Exterior color and trim
  - Door locks, handles and mirror controls
  - Fabric/trim combinations
  - Instrument panel
  - Watertight tests

Work-In-Progress & Final Vehicle Assembly Verification
- PDF 417 label reading
- Data Matrix label reading

MICROSCAN®

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