SCOTT INDUSTRIAL SYSTEMS
Hydraulics • Pneumatics • Electronic Controls

Gen 6 Engine Block Automation Re-Tool

CASE STUDY

BACKGROUND

A leading automotive manufacturer required a comprehensive automation upgrade to accommodate the production of a next-generation engine block. The project focused on replacing an aging robotic system, introducing advanced vision capabilities, and implementing adaptive tooling - all while ensuring minimal production downtime and maintaining alignment with current processes.

CHALLENGE

The manufacturer needed to transition to a new engine block design without interrupting ongoing production of the current generation.

Key objectives included:

- Reducing cycle time to meet higher throughput demands
- Improving part quality and handling accuracy through enhanced vision technology
- Ensuring flexibility in tooling to manage both legacy and new engine block variants during the transition period
- Minimizing downtime to keep operations running efficiently

Watch this project in action.

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SOLUTION

The automation cell was retooled with a FANUC R-2000iC/210L robotic system paired with a KEYENCE RB-1200SO 3D vision system. The 3D vision solution was selected for its ability to:

- Deliver high-precision part detection
- Reduce fault occurrences and error recovery time
- Improve overall reliability and cell uptime

In addition, new adaptive tooling was implemented to handle multiple engine block generations, providing operational flexibility and ensuring a smooth phase-out of older components while ramping up next-gen production.

IMPLEMENTATION

Careful planning and extensive pre-installation testing were conducted to ensure seamless integration.

The upgrade strategy included:

- Coordinated scheduling to minimize disruption to production
- Thorough system validation to meet stringent performance benchmarks
- On-site adjustments for fine-tuning and alignment with existing equipment

RESULT

The upgraded automation system delivered significant benefits:

- ✓ Increased reliability and accuracy through advanced vision technology
- ✓ Reduced cycle time, improving throughput and operational efficiency
- ✓ Seamless transition between engine block generations, avoiding costly downtime
- ✓ Enhanced system flexibility for future production requirements

The project exceeded customer performance expectations and established a foundation for continued innovation and process improvement in the manufacturer's operations.