

USER CASE STUDY

General Automotive Manufacturing



Making Quality Portable

General Automotive Manufacturing Plant Finds Borescopes Improve Quality Control by Decentralizing Visual Inspection

The Situation

General Automotive Manufacturing Co. LLC (GAM) produces machined metal parts used in fuel systems, hydraulic assemblies, brake systems, and gas and diesel engines. Some of GA's major clients include Caterpillar, International, Mercury Marine, Stanadyne, Cummins, Actuant and Sheppard.

General Automotive has been in business since 1950. The company specializes in machining components from steel (carbon, alloy and stainless steel) and aluminium (from bar stock, cast or extrusions). Its range of expertise, however, means that General Automotive handles all types of components and materials—from gray iron and ductile iron castings to stainless steel forgings—and can provide the fixtures, machine tools and tooling for even very complex components. The company uses the same industry-leading machining processes of products throughout a wide range of material, heat treat, plating and geometric shape and size requirements. In addition to the traditional manufacturing processes General Automotive also offers in-house honing, lapping, ECM, glass beading, assembly and testing of customer products.

The Need

General Automotive in some instances had found burrs and other part defects that its manufacturing team had not detected before the parts were final inspected by the quality department. Thus, General Automotive had to reprocess “blindly” because it couldn’t “see” the defect at the manufacturing cell level. This reprocessing was expensive and time-consuming.

“Customers are impressed with our inspection capabilities that the borescopes provide.”

Gary Kosterman, Quality Manager

About Optimax

Optimax is one of the UK's leading independent production metrology, optical inspection and force testing specialists.

We offer a technical and solution based approach to our customer's industrial inspection and measurement applications.

With UKAS accreditation and an experienced team of qualified engineers, we also provide calibration, service, repairs, upgrades and training.

Contact us to find out more about how we can support your production metrology and visual inspection requirements.

01858 436940
www.optimaxonline.com
sales@optimaxonline.com

**Optimax**

www.optimaxonline.com

USER CASE STUDY

The problem was obvious: burrs, sharp edges and other defects can be extremely detrimental, especially to mission-critical parts. According to Quality Manager Gary Kosterman, "If you have sharp edges or small burrs, they can erode and eventually clog a system, preventing it from working properly. That's especially true in hydraulic and fuel systems, which have extremely small openings that can become clogged."

General Automotive wanted to do several things. It needed to find inspection tools that could be used inside deep bores and in small-diameter holes. It also needed to report defects and process problems much more quickly to manufacturing teams in order to assure no incidence of defects and meet its promise of 100 percent on-time delivery of orders. As well, the company wanted a tool that it could use both in the quality lab and on the manufacturing floor.

The Answer

To assure the success of its zero-defect and on-time-delivery quality policies, General Automotive worked with Gradient Lens Corporation to find a solution. Gradient Lens's portable Hawkeye Precision borescopes can go anywhere in a manufacturing plant with ease.

According to Kosterman, the borescopes fit conveniently into multiple work cells where necessary. Each cell is a self-contained manufacturing team that includes a visual inspection station. The inspection stations are equipped with a Hawkeye borescope, a portable or fixed light source and often a video system (with camera and monitor) connected to the borescope. The monitor provides a larger viewing image which makes detecting imperfections easier and group viewing possible.

More important, the system provides immediate detection capabilities at the point of operation and allows containment of defects early in the manufacturing process. "This cell concept vs. batch process also allows our operators to have direct input in process improvement," Kosterman says. "We've learned that borescope visual inspection is as important to our manufacturing and quality processes as some of our metrology procedures."

Although the borescope's primary function is checking machined parts, engineers also use them to diagnose the cause when an assembly line machine is having trouble. Ultimately, the Hawkeye borescope gives the company a cost-effective way to continually increase quality standards without slowing down production.

General Automotive's visual inspection process also helps in customer relations, according to Kosterman: "The borescopes help demonstrate capabilities not found in most other manufacturing facilities. Customers are impressed with our inspection capabilities that the borescopes provide."

"Before working with Gradient Lens Corporation, we had tested competitive borescope brands. None compared with the versatility, quality, and affordability of Hawkeyes."

01858 436940

www.optimaxonline.com

sales@optimaxonline.com

**Optimax**

www.optimaxonline.com