



## CASE STUDY

# Inspection Equipment Survey Provides G.W. LISK an Implementation Pathway

G.W. LISK is a privately held company headquartered in Clifton Springs, NY, employing more than 650 people. The company produces a variety of solenoids, solenoid valves, DVDT's, and Flame Arrestors. These products are used in a variety of industries such as: Aerospace, Defense, On Highway & Off Highway Engines, Construction, Agriculture, Oil & Gas, and Medical applications. G.W. LISK has grown considerably in recent years and is now focused on meeting increasingly stringent customer requirements.



### Client Challenge

G.W. LISK makes products for applications with very demanding design specifications and exceptionally tight manufacturing tolerances. The small and intricate parts used in these products present challenges in both fabrication and inspection. Often, process limitations result in the production of parts that do not meet required specifications and must consequently be reworked or scrapped. As new generations of product have even tighter dimensional tolerances, these challenges have resulted in increased scrap and rework and an increase in the Cost of Quality (COQ) due to internal defect rates.

In order to reduce the COQ, G.W. LISK sought to improve in-process inspection of manufactured components to identify and address component defect rates earlier in the manufacturing cycle. To achieve this, the company requested that the Center of Excellence in Advanced & Sustainable Manufacturing (COE-ASM) at Rochester Institute of Technology (RIT) evaluate their current inspection capability and provide detailed recommendations on new and upgraded equipment options to enhance these capabilities.

### COE-ASM Work Performed

The requirements in this case were centered on equipment that would be operable in a shop-floor environment so that quality problems could be detected early in the production process. In addition, the company needed equipment capable of inspecting a part in less than four minutes per part, support for manual data entry capability, as well as compatibility with the company's current inspection software. Above all, G.W. LISK required equipment capable of precisely measuring a full range of parts with different size scales and a variety of different internal and external features. Based on these requirements, the COE-ASM team worked with G.W. LISK supervisors to evaluate the company's existing inspection equipment and found that the inspection capabilities did not meet the demands of current tightly toleranced components. In order to evaluate new inspection

### CLIENT CHALLENGE

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### COE-ASM WORK PERFORMED

- Evaluated the company's existing inspection equipment and found that the inspection capabilities did not meet the demands of current tight tolerance components.
- Developed ten generic component CAD models that incorporated features and tolerance schemes from G.W. LISK's products.
- Identified several candidate inspection equipment options.
- Contacted vendors to verify equipment capabilities; obtained price quotes.

### RESULTS

- Estimates of potential cost savings were evaluated against the cost of the recommended equipment to determine the potential return on investment.
- Cost and performance data was compiled and recommendations presented to G.W. LISK.

## TESTIMONIAL

"Initially, we were running into problems where our component inspection measurements didn't agree with the functional test results of finished products. COE-ASM came in with several different ideas to address our difficult inspection challenges; I don't think they could have done a better job."

- Scott VanCamp,  
G.W. Lisk

technologies, COE-ASM developed ten generic component CAD models that incorporated features and tolerance schemes from G.W. LISK's products. These generic models could be sent to potential inspection equipment vendors without disclosing the company's proprietary designs. COE-ASM researchers identified several candidate inspection equipment options for G.W. LISK products and contacted vendors to verify equipment capabilities and obtain cost quotes. Cost and performance data was compiled and recommendations presented to G.W. LISK for further consideration.



## Results

The project results provided G.W. LISK with a narrowed set of inspection equipment options and prioritized recommendations based on requirements and capabilities. The project summary identified which inspection systems would be able to meet the measurement requirements for the full list of critical components while meeting the desired cycle time and operating environment constraints.

Each of the company's parts relies on critical features that can drastically affect performance—and in the specialized applications to which the company caters, compliance with specifications is essential. The ability to do timely in-process inspection of these critical components will allow G.W. LISK to reduce the cost of scrap and rework; estimates of potential cost savings were evaluated against the cost of the recommended equipment to determine the potential return on investment. With the analysis and recommendations provided by COE-ASM, G.W. LISK can now move forward with upgrading its inspection equipment to ensure that tight-tolerance product quality is maintained while minimizing costs of poor quality incurred in the manufacturing cycle.

## The Center of Excellence in Advance & Sustainable Manufacturing (COE-ASM)

is a specialized applied research and development center dedicated to helping emerging and existing NYS manufacturers to enhance productivity and become more competitive through innovation and technology in sustainable products and processes. COE-ASM is located at the Golisano Institute for Sustainability and is a New York State Center of Excellence, a NYSTAR partnership.



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## For more information please contact us:

**Tel:** 585-475-4246

**Web:** [www.rit.edu/gis/cesm](http://www.rit.edu/gis/cesm)

**e-mail:** [sustmfg@sustainability.rit.edu](mailto:sustmfg@sustainability.rit.edu)

190 Lomb Memorial Drive  
Rochester, NY 14623

