ADAPTIVE ENERGY SUCCESS STORY

Ramping Up Component Production Testing for Luxury Automobiles

Adaptive Energy's iPx system captures real-time X-ray images in digital format providing quality control of aluminum struts for a line of high-end cars

The Challenge

The Customer, renowned for its industrial design and technology innovation, was poised to launch a major new automobile line into the global marketplace. The company's future hinged on the success of this flagship launch and its ability to establish and maintain quality control protocols for the production processes of the new line.

One key component of the vehicle is its aluminum struts. Struts are large structures that are typically surrounded by coil springs, and are an integral part of a car's suspension system. In conjunction with shock absorbers, their function is to prevent the car from bouncing and bumping on poor quality roads, providing a smooth and comfortable ride. In addition, struts impart a level of control for the driver to help keep the wheels from skidding off the road.

With the integrated X-ray and iPx solution that Adaptive Energy created, the Customer is able to view X-ray images for immediate quality verification of its aluminum components, and capture documentation to satisfy industry and government standards.

The aluminum struts for the Customer's automobiles are produced using an aluminum high-pressure casting process. During production, aluminum components can be subject to defects such as cracks, porosity, or shrinkage. The Customer needed to be sure that this critical vehicle component met both its own internal quality criteria for strength and durability, as well as external criteria such as ASTM.

Industry: Automotive

Technology: Digital Radiography

Products & Services: iPx / Porosity, shrink and crack detection in metal parts

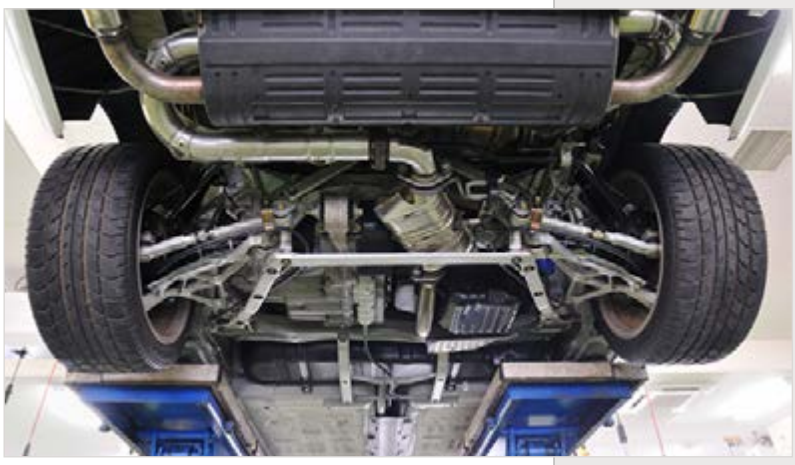
Customer Profile: A U.S. manufacturer of high-end automobiles

Business Challenge: Checking the quality of critical aluminum struts prior to an important new product launch and maintaining quality control protocols while ramping up to full production volumes to meet expected sales

Solution: Collaboration with company engineers to deploy the proprietary iPx system, which allows real-time capture and storage of X-ray images in digital format

Benefits:

- Provides verification that struts have no defects, porosity or shrinkage, meeting safety standards
- Allows testing at high speeds, ensuring quality without slowing the manufacturing line
- PC-based iPx system is cost effective, and user-friendly for the Customer's production-line quality inspectors



The undercarriage of an automobile showing metal struts connecting to the suspension system near each wheel

The Adaptive Energy Solution

Adaptive Energy designed a solution that provides on-line, non-destructive testing of the aluminum struts. The solution incorporates proprietary iPx technology to capture X-ray images in digital photo format in real time, and software that allows a user to control the camera.

The iPx image processor was designed and developed by Adaptive Energy to provide digital technology integration into new and existing real time X-ray systems. The system uses the latest, full-frame rate camera technology and matched optics. Offering a vast performance improvement over early analog-based camera systems, iPx is also cost-effective, using PC-based software that allows the user to control the camera, and including a processor that can hold three times more imaging data than typical analog based X-ray systems.

Results

With the integrated X-ray and iPx solution that Adaptive Energy created, the Customer is able to view X-ray images for immediate quality verification of its aluminum components, and capture documentation to satisfy industry and government standards. The new automobile line was launched with significant fanfare and has received highly positive industry reviews and buyer satisfaction ratings.

About Adaptive Energy

Adaptive Energy creates customized, non-destructive material evaluation solutions to address mission-critical, time-sensitive testing needs. By combining the latest digital radiography, computed tomography, and ultrasonic imaging technologies with innovative mechanical and robotic assemblies, Adaptive Energy's integrated systems offer rapid deployment, are easy to learn and maintain, and perform reliably under pressure.

Working collaboratively with organizations in the aerospace, automotive, energy, petro-chemical, defense, infrastructure, and materials industries, our experts develop optimized solutions for flaw and crack detection, composite delamination, weld inspection, hardness testing, custom radiation enclosures and overhead gantry systems, and more.

Adaptive Energy is also the exclusive distributor in the U.S. and Canada of FORCE Technology's P-Scan ultrasonic scanners, including the P-Scan Stack with Phased Array, a next generation automated inspection system.

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