



Inspecting Automotive Injection Molded Plastics With ShapeGrabber Ai810 System

Complex shapes are our speciality

Injection molded plastic is used extensively in the automotive industry – under the hood, in vehicle interiors, and for exterior body components. Molded plastic parts can be manufactured to very complex shapes that optimize weight and strength, and new plastics allow injection molded components to be used where metal was once the only option. But, these complex shapes make injection molded plastic parts some of the most difficult to measure for conformance to designed dimensional specifications.

Benefits to Automotive Manufacturers

ShapeGrabber® 3D laser scanners are ideal to quickly and accurately inspect automotive parts by correctly measuring the complete shape. The systems:

- Allow rigorous quality control measures to be applied to precision injection molded plastics.
- Capture millions of data points in a few minutes, which represent the true surface geometry.
- Scans can be easily compared directly to 3D CAD models.
- Scan data provides accurate and timely feedback on prototypes, allowing faster and better part design and process optimization.

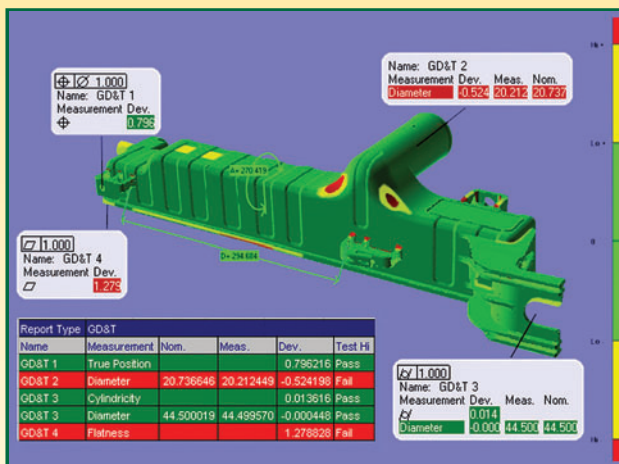
On-line production no longer needs to rely on a few sample points collected with a slow CMM. It is possible to inspect the whole part and still make rapid pass/fail decisions with confidence.

Select Customer List

These are just a few of the automotive companies using ShapeGrabber systems to measure their complex parts:

- Delphi
- Ford
- General Motors
- Honda
- MPC
- Toyota

ShapeGrabber for Injection-Molded Plastic Components



Color map comparing plastic radiator tank CAD file to ShapeGrabber 3D Scan of the same part*

ShapeGrabber systems are particularly valuable for use with injection molded plastic parts because:

- They accurately measure complex shapes with compound curves.
- They can be used to effectively detect and measure warpage, twist, bow and shrinkage, and to troubleshoot fit problems.
- They can scan parts of any size, material, and color.
- Scans containing millions of data points can be completed within minutes, so the complete part can be verified in production.
- The visual nature of the results makes it possible to more quickly troubleshoot the source of a problem and get back to production.
- Parts do not have to be placed in an expensive fixture to be scanned, leading to significant savings in capital costs.
- Scan results are documented in automatically generated reports and can be provided to customers as part of the quality assurance process.

ShapeGrabber® systems include a variety of automated, portable, large and small 3D scanning options to accommodate different needs. Turn the page to learn more about the Ai810 system and accompanying inspection software.

*Inspection results generated using Polyworks® software with ShapeGrabber scan data

Featured Product: ShapeGrabber Ai810

The ShapeGrabber Ai810 automated inspection system is ideal for complex shaped parts where speed, complete coverage and ease-of-use are important. It can accommodate parts as small as a dime and as large as a small refrigerator.

With the Ai810, automotive manufacturers who need to inspect injection molded plastic and other complex-shaped parts can reduce inspection time and greatly enhance part coverage, increasing customer satisfaction by reducing defects and providing proof that specs are met.

Rapid and efficient inspection scans also reduce production equipment downtime, material waste, and human inspection error.



The ShapeGrabber Ai810 scanning an automotive radiator component

System Features

- Full surface 3D quality control
- Automated inspection in minutes
- Easy to use
- No CAD training required
- Go/No Go: back to production
- Complete design verification
- Save and print reports
- Save and share data

Benefits

- Reduce inspection time
- Reduce defect ship rate
- Increase sampling rate
- Reduce equipment downtime
- Improve process monitoring
- Reduce material waste
- Reduce human error
- Provide proof that specs are met

Specifications Overview

Data acquisition rate:	18,000 to 100,000+ points per second
Largest scan volume:	1250 mm X 800 mm by 700 mm (48 in X 30 in X 27 in)
Laser:	Class II, eye safe
Report types:	Color error maps, fly-out boxes, tables, cross sections, GD&T, tabular all available
Report formats:	Excel, Word, HTML, PDF

Systems are available in various configurations to accommodate different part sizes, automation and quality control requirements.

Call us to discuss your specific needs and visit www.shapegrabber.com to learn about our complete product line and to obtain detailed specifications.