

Medical Injection Molded Plastics Inspection with ShapeGrabber Ai310

Complex shapes are our specialty

Injection molded plastic provides the light weight and design flexibility required for parts used in medical applications. From orthopaedic and prosthetic devices to laboratory equipment and medical tools, molded plastics can be manufactured to very complex shapes that optimize weight and strength. These complex shapes make injection molded plastic parts some of the most difficult to measure for control to dimensional specifications.

Benefits to Medical Device Manufacturers

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

- 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.

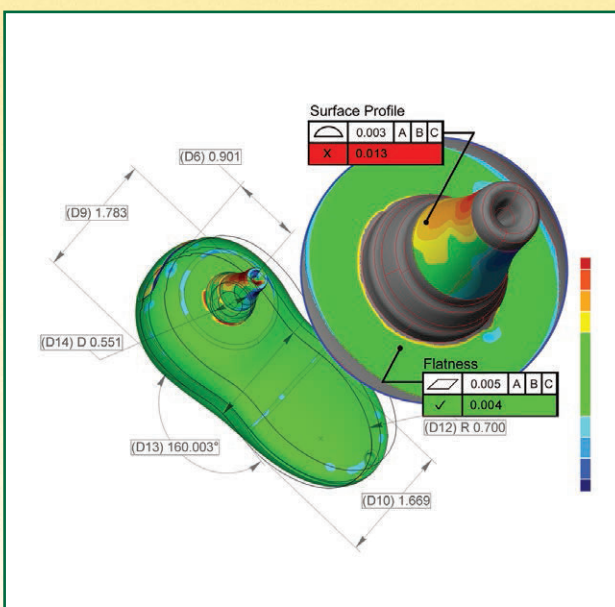
With ShapeGrabber 3D scanners, it is no longer necessary to rely on a few sample points collected with a caliper or a slow CMM. ShapeGrabber makes it possible to inspect the whole part and still make rapid pass/fail decisions with confidence.

Application Examples

ShapeGrabber 3D scanning systems are used to inspect injection-molded medical parts and devices such as

- Orthopedic & prosthetic devices
- Hospital equipment
- Laboratory equipment
- Surgical & medical tools

ShapeGrabber for Injection-Molded Plastic Components



Color map comparing the 3D scan of a plastic medical device to its CAD model*

ShapeGrabber 3D scanners 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.
- The visual nature of the results makes it possible to more quickly troubleshoot the source of a problem.
- Parts do not have to be placed in an expensive fixture to be scanned, leading to significant cost savings.
- Scan results are documented in automatically generated reports and can be provided to customers as part of the quality assurance process.

ShapeGrabber scanners include a variety of automated, portable, large and small options to accommodate different needs. Turn the page to learn more about the Ai310 system and accompanying inspection software.

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



The ShapeGrabber Ai310 scanning a turbine blade.



The SG156 scanhead is ShapeGrabber's 6th-generation technology, providing the ultimate in speed, accuracy, and ease of use.

Featured Product: ShapeGrabber Ai310

ShapeGrabber® 3D laser scanners are ideal for the complete inspection of complex-shaped medical parts:

In particular, the ShapeGrabber Ai310 automated 3D scanner is ideal for complex shaped parts where speed, complete coverage, and ease-of-use are important.

Its compact size allows the Ai310 to fit easily on a workbench or standard inspection table. With it, medical device manufacturers can reduce inspection time (both first article and production) and greatly enhance part coverage. This increases 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.

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
- Automatically 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 – Ai310 with SG156 scanhead

Data acquisition rate:	39,000 to 350,000+ points per second
Scan volume:	Cylinder of 300 mm (12 in) in height by 200 mm (8 in) in diameter
Laser:	CDRH Class II / IEC Class 2M
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.

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