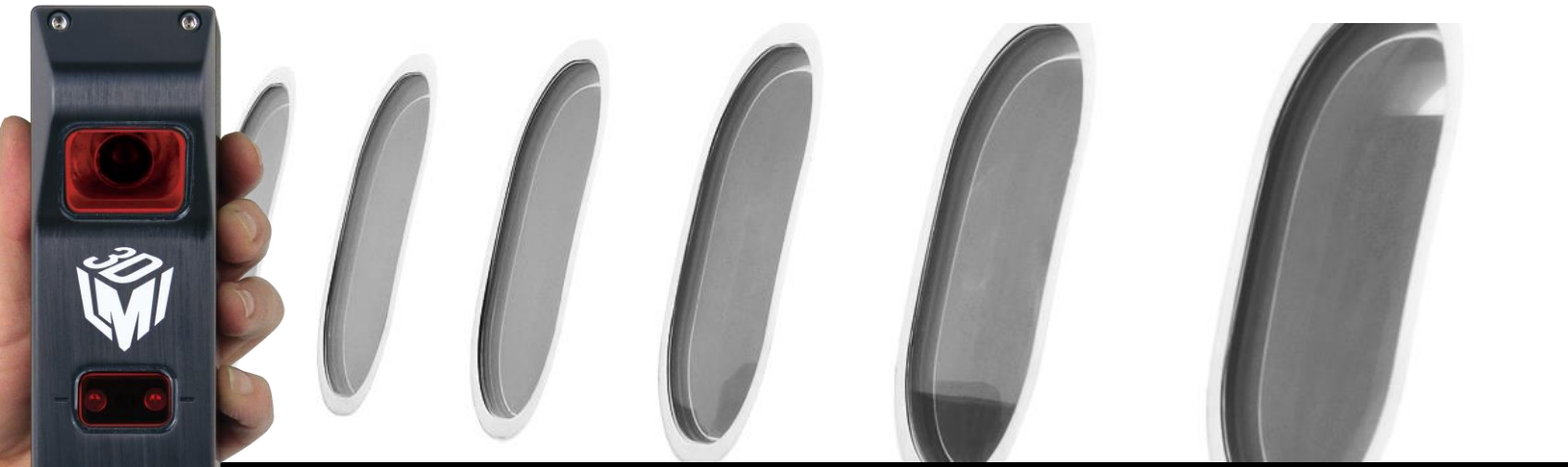
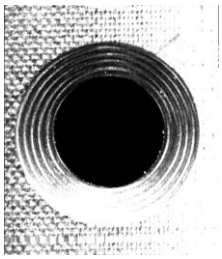
LMI TECHNOLOGIES



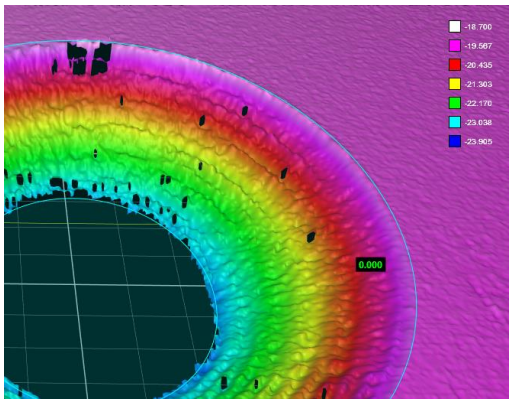
Gocator® | Hole Cutter Inspection

THE APPLICATION

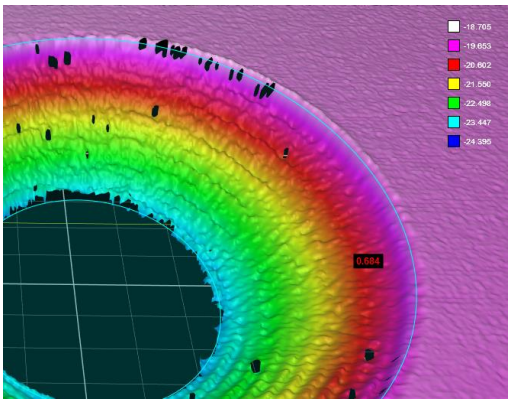
In aerospace applications, precision cuts to materials and parts are crucial to make sure vehicles are safe and reliable, and to also to decrease drag, which translates to fuel economy. Cutting into assemblies such as plane fuselages without knowing for certain that the cutting tools are in good condition and installed properly is risky. Manufacturers often cut into test material first, and then inspect these cuts. If these cuts pass inspection, cuts are then made on the actual target. Proceeding this way greatly reduces the risk of ruining expensive components.



Gocator 3100 series snapshot sensors, which can be mounted on robotic systems and can quickly scan and analyze targets, are ideal for the application.



Hole with no counterbore (flush with surface): PASS.



Hole with some counterbore / ridge:

FAIL (cutting tool needs reinstallation).

THE IMPLEMENTATION

A Gocator 3109 sensor, mounted to a robotic system, moves to a hole on a piece of *test* material, and quickly takes a scan of the hole. An instance of the built-in Countersunk Hole measurement locates the hole and returns several measurements, including the radius of the outer and inner holes, the depth of the hole, and counterbore. In this application, any holes showing a counterbore indicate that the hole cutter is likely installed incorrectly, as the holes must be flush with the surface. The radius of holes not cut deeply enough would be smaller than the radius of holes cut at the correct depth, so radius measurements would also be used to identify holes not cut deeply enough. In either case, the cutter is not used on the actual assembly until it has been reinstalled, tested again, and passed the required tolerances.

THE BENEFITS

Using a Gocator 3100 series snapshot sensor lets you quickly get accurate 3D representations of countersunk holes on a variety of materials. You can then use this data to determine whether cutting tools are in good working condition and installed correctly. This reduces the risk of making bad cuts in expensive assemblies, saving you and your customers time and money.