

## Laser scanning in our facility or on-site –

The most popular applications for Laser Scanning are reverse engineering, part-to-CAD comparison, and inspection.

Reverse engineering is the creation of design media (CAD or drawing) for a part. DMI uses a Coordinate Measuring Machine (CMM) to scan the high-accuracy prismatic features, then we utilize a laser scanner to digitize all of the free form exterior features. We combine all of the scans in one CAD session, and create a finished model for the target part. Scan data can be post processed using ICEM Surf, Alias Studio, Unigraphics NX, or CATIA V4 & V5.

Part-to-CAD comparison is simply done by scanning the parts, and then “best-fitting” the scan data to the CAD model. Best-fitting is accomplished using Geomagic software, and is a dynamic process that can be manipulated to accommodate the customer’s requirements. Geomagic can also perform a part-to-part comparison, which is useful for evaluating several parts of the same design. Color deviation images reflecting every view of the part, as well as an isometric view, are the typical output.

As for the inspection application, the scanned features are identified and fitted to develop the dimensional measurements. However, for real-time, quick inspection of prismatic features (planes, lines, circles, slots, etc.) there is no match to the speed of a modern CMM. But, for large, free-form profiles, the speed and coverage of the laser scanning is the best application.