Accurex

Application Sheet

BREUCKMANN OPTOTOP HE PROVIDES DETAILED CROSS-SECTIONS OF FRAGILE PARTS

Touchless system

This telecommunication customer had fragile metal parts for which he required high accuracy cross sectional information. Because of the tendency of the material to flex under the lightest pressure, equipment that touches the part, such as articulated measurement arms or coordinate measuring machines could not provide the solution that he was looking for. Accurex Measurement used the Breuckmann OptoTOP HE structured light scanner to collect dimensional information about the part. The scanner consists of a projector on one end of base which projects multiple light patterns onto the object, and a camera which photographs each pattern. A patented algorithm then triangulates up to a million points for each scan. The part is not touched during the measurements.

Fast measurement cycle overcome stability requirements

The scan data is collected in about a about one second. In practical terms this means that there is very little possibility of an object moving during the data acquisition stage. This was particularly useful capability in this case because the fragile nature of the part meant that it would most likely be deformed if any effort was made to clamp it down during the measurements.

Some reflective surfaces can be measured without coating

Because much of the part consists of shiny materials, many scanners would require the use of a non-reflective powder. However, the OptoTOP HE was able to measure the reflective surfaces without any coating.

Very rapid measurement cycle

The part is placed on a rotating table and rotated six times between scans to get full coverage. The complete measurement cycle is less than fifteen minutes per part. The scans were merged by using the geometry of overlapping portions of adjacent scans. This capability is built into the Breuckmann OptoCAT software, so no index marks need to be fixed to the part (which would not be permissible in this case.)
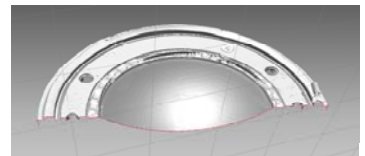
OptoCAT software has cross section and feature measurement capabilities
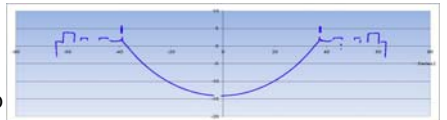
Breuckmann OptoCAT software is capable of extracting the cross sections that were required. It also has the capability of measuring the dimensions of certain features that were required.
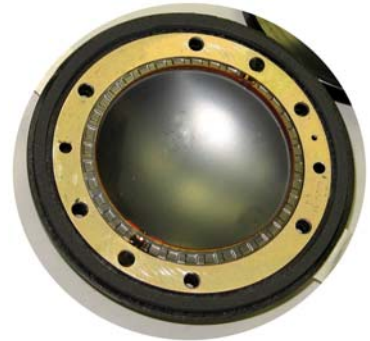
Shiny surfaces measured without coating

Scan data without spray or coating

Scan data without spray or coating