

INSPECTION PROBLEM

There are few options for measuring step heights between separated, nominally plane-parallel surface regions of a precision-engineered part. Obstacles to overcome are surface textures as well as accurately representing two surface profiles

Using a mechanical device will show the height of the surface may increase significantly with the tip radius in a manner that biases step height measurements on uneven surfaces.



REQUIREMENTS

Measurements – The LaserGauge® Step algorithm automatically measures the step height between two surfaces and the peaking angle between the surfaces.

Instrument – Step features are usually small and will require a smaller device with high resolution. Laser based measuring devices resolves the problem of tip radius biasing the results.

LASERGAUGE® SOLUTION

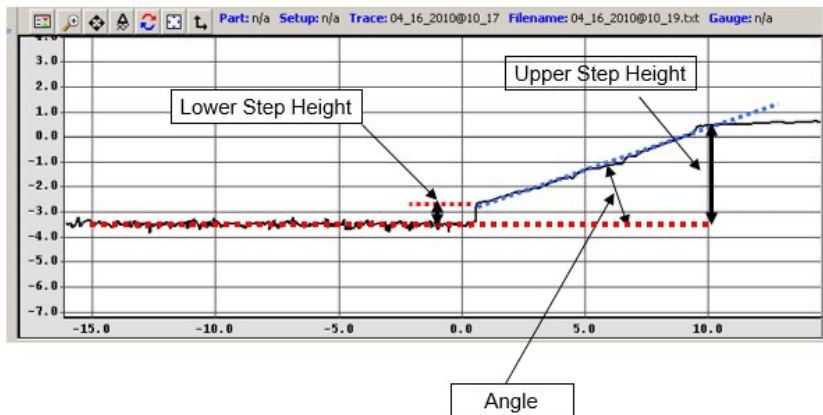
LASERGAUGE® SYSTEM

Depending on the nominal distance between the planes, a TS800 sensor with either a 0.5" or a 1.0" field-of-view paired with an LG7000 controller is recommended. This USB sensor displays the profile in real-time on the LCD so that the operator can make sure that the sensor is positioned correctly.

MEASUREMENTS

Measurements are automatic. The operator positions the laser stripe over the step or angle and releases the trigger. A line fit of the 2 parallel surfaces is calculated then angle between those surfaces is calculated. The surface can be either flat or contoured.

Each measurement takes less than a second to complete and to display the results in the data table on the controller. SPC or tolerance limits can be specified and any measurements that are outside the spec range are shown in red. The data table is automatically saved for documentation of the measurements taken.



ADVANTAGES REALIZED

Size – Due to the smaller, palm-sized TS800, hundreds of locations can be measured in hard to reach areas.

Data Collection & Storage – When the TS800 is paired with the LG7000 controller, data table and scanned profiles are stored directly on the controller for review or archiving. No need to manually transfer.

Accurate & Repeatable – With sensor resolution in the thousandths of an inch, measurements are much more accurate than conventional methods.