LaserGauge HS722 Sensor

LASER-PRECISE MEASUREMENTS

Overview

The HS722 USB sensor is specifically designed for inspecting and measuring small features in hard-to-access areas. Applications include edge radius, break angles, chamfer angle and length, gap/flush, step height and other measurements where accessibility to the feature is limited.

As with the other LaserGauge® USB sensors, a high-resolution imager captures the 2D surface profile and transfers it to a PC or to the LG1200 controller for processing and display.

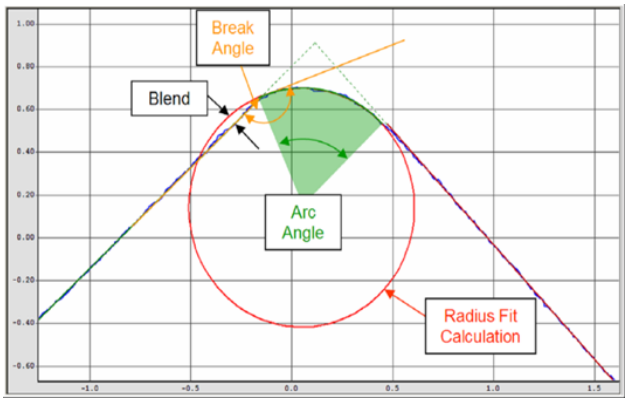
Operating Features

Design – The HS722 is the smallest, most compact sensor in the LaserGauge® product offering. The unique removable standoff guides the user for correct alignment to ensure accurate measurement. The sensor's small size, light weight, reduced footprint and narrow tapered stem gives it access to highly restricted areas.

High Resolution – With a horizontal scanning resolution of 0.0003" and a depth accuracy of ±0.0005", the sensor can be used to measure the smallest of features. The HS722 is currently available only in a 0.40" field-of-view (FOV) model.

Configuration Software – A powerful, Windows™ based software program, LGCommander, is used to configure the sensor and run the algorithm. Scans are displayed in real time and can be saved automatically. Setups, user rights and operational preferences can be safeguarded under passwords, and certification of the gauge for a specific application can be managed through the software.

Applications

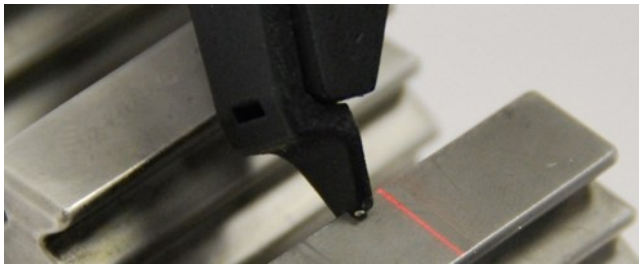


Break Edge - The break edge on corners of critical jet engine parts must be within established maximum and minimum tolerances for the parts to be flight-worthy. An algorithm is needed to inspect edge breaks on corners, such as required for these parts and that will work on parts with curved as well as flat surfaces. *LaserGauge® can help!*

Welds – Potential weaknesses in a weld can be revealed in the evaluation of its surface characteristics. The height, width and area of a butt weld are factors in its strength. Also, the fit-up and angle of the panels welded together have a bearing on the integrity of the weld.

Operators are able to visually isolate areas of concern on the weld but they are unable to measure the features with mechanical tools accurately or repeatably. *LaserGauge® can help!*

Radius – A radius stamped into the part and the location of the radius relative the part's edge, called the flange, must be precise for fit-up and aesthetic reasons. Small inside radii are almost impossible to measure with mechanical radius gages. An inspector cannot always see the fit of the template gage against the sheet metal because of the design of the part. *LaserGauge® can help!*



Gap/Step/Angle - As vehicles are assembled, the fit-up of various parts is inspected by measuring the width of the gap between two adjacent panels and the alignment of the two surfaces, also called flushness. Today's vehicles are designed with flowing contours, angled panels, edges with large radii and closure seals in the gaps. Mechanical devices struggle to measure gap and flush features on such complex surfaces. *LaserGauge® can help!*

Pitting/Corrosion - Pitting on a jet engine turbine blade requires repair once it exceeds a depth threshold. If the pitting is too severe, the blade cannot be repaired and has to be scrapped. Identifying blades that are eligible for repair saves significant costs for the airlines. Attempts have been made to visually inspect the blades and determine the depth by comparing the pitting coloration to examples or templates. Visual measurements are not always repeatable because of the different individual capabilities of the inspectors. Optical comparators have also been used, but these machines lack the portability desired. *LaserGauge® can help!*

Sensor Specifications

Type	USB – Handheld
Size	1.75" (w) x 3.6" (h) x 4.5" (l)
Weight	6.5 oz.
User Interface	3 Pitch/Yaw feedback LED's
Cable Length	USB 2.0A to Mini 5-Pin USB, 6' straight cable
FOV Options Horizontal Scanning Resolution Depth Accuracy	0.40" (12mm) 0.0003" (10mm) ± 0.0005" (12mm)
Shock Protection	Cast urethane housing
Environment	0° – 70° C

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