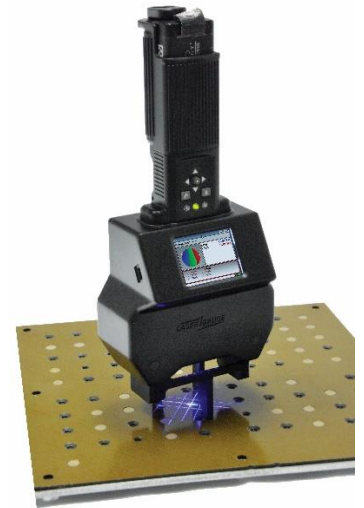


OVERVIEW

The HS742 DSP sensor is a 3D laser profiler housed in a totally self-contained, portable, handheld package. Expanding on the unique capabilities of the LaserGauge® line of DSP sensors, the HS742 utilizes a laser stripe grid with cutting edge optics and is specifically designed for inspecting and measuring fastener flushness, countersink alignment and dielectric fill height. Surface maps are displayed in real-time on the color LCD, and measurements are extracted and simultaneously written to the data table.

The HS742 DSP sensor’s scanning region is 1.20” x 1.20”, giving it the capability of measuring countersinks and fasteners from 0.250” to 0.625” in diameter that provides measurement repeatability of +/-0.001”. Because the sensor maps the surface and uses Blue Laser Technology, measurements can be taken on curved surfaces as well as surfaces made of solid metal, composite, shiny, dull or translucent materials.

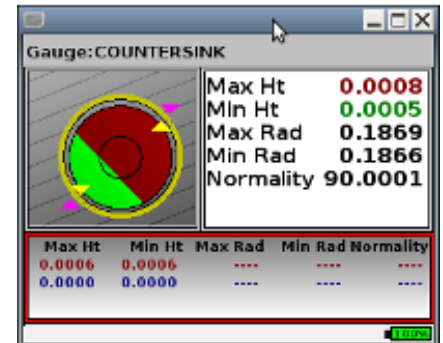


APPLICATIONS

COUNTERSINK

The Countersink function in the HS742 extracts critical measurements from the scan that completely defines the quality of the countersink. Measurements include:

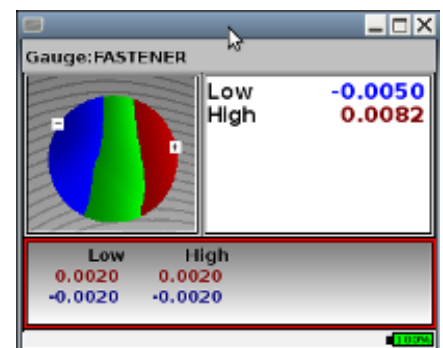
- **Countersink Average Diameter** – For a CS not perpendicular to surface or CS on a curved surface, diameter isn’t a fixed number, so this averages the radius around the edge of the CS and multiplies by 2.
- **Virtual Fastener Min/Max Height** – Highest and lowest point of a virtual fastener relative to the surface height.
- **Countersink Min/Max Radius** – The minimum and maximum radius for a countersink that is not perpendicular to a flat surface.
- **Normality** – Angle of the CS relative to the surface normal vector.
- **Bearing** – Orientation of the tilt of the CS.



FASTENER

The Fastener function measures the 3D configuration of a flat-head fastener. Algorithm is incomplete for domed fasteners. The height calculations exclude any embossed lettering, tooling pins or tooling hole.

- **Fastener Min/Max Height** – highest and lowest point of fastener relative to the surface height.
- **Normality** – Angle of the fastener relative to the surface normal vector.
- **Bearing** – Orientation of the tilt of the fastener.



FILL

The Fill function calculates the maximum and minimum height of the fill in a user-specified region in the scan. The heights are calculated relative to the projected surface through the fill region, giving the best measurement of the fill.

PRODUCT DATASHEET

HS742 Sensor

SENSOR FEATURES

COLOR DISPLAY

The 2.4" high resolution color LCD provides graphical and textual information before, during and after the scan. The surface profile is plotted in real-time and the measurement results are instantly written to the data table. Results are color coded for immediate identification of out-of-spec conditions.

UNIQUE STANDOFFS

A special, interchangeable surface contact standoff that insures accurate and repeatable placement over the feature of interest for use on flat or complex curved surfaces.

ADVANTAGES

Modes of operation

- **Go/No Go** – The inspector is alerted to Pass/Fail conditions by red or green value indicators. Data or scans are not saved.
- **Gauge** – Data saved to table will running the same gauge over and over.
- **Routine** – Operators follow graphical instructions to position the sensor at predetermined measurement locations, and the appropriate measurement algorithm is loaded automatically. Data files are saved automatically.

Fully portable – A rechargeable, lithium-ion battery provides power for three to four hours of constant operation. Power saving functions can be used to extend operating times even longer. Files are constantly saved, so data is never lost. The on-screen fuel gauge and a "low battery" message informs the operator when it is time for a fresh battery.

SENSOR SPECIFICATIONS

Type	DSP – 3D, handheld, self-contained
Size	5.1" (w) x 4.9" (h) x 8.5" (l)
Weight	23oz (27oz with battery)
User Interface	2.4" Color Display, 3 LED's, 5-Way Joystick and 2 buttons
Communications	Removable Cable – USB 2.0A to Mini 5-pin USB, 6' length
Processor	1GHz Speed
Memory	8GB of data/scans/routines
Battery	High capacity, rechargeable lithium-ion Inspired Energy series NB2037
Scanning Region	1.20" x 1.20" (30mm x 30mm)
Grid Scanning Resolution	0.0015" (38 μm)
Accuracy	+/- 0.001" (25 μm)
Diameter Range	0.250" To 0.625" (0.635mm to 15.87mm)
Shock Protection	Cast urethane housing
Environment	0° – 70° C