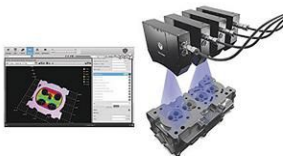
Using Gocator 3210 3D Smart Sensor in Volume Gauging Inspection

The Application

Automotive manufacturers perform engine cylinder head volume measurement to ensure the manufacturing process meets design criteria. In this application, it is critical to determine the volume of the combustion chamber and piston bowl heads to a high accuracy to meet engine performance expectations.



Cylinder head volume measurement is performed on small to medium-sized combustion engines for automotive assembly, automotive parts inspection, and reverse engineering.

The Implementation

The engine block is placed in position under a single sensor or multiple sensors. The more sensors added to the system, the faster the cycle time. Gocator Volume Checker can scan and measure one cylinder in less than 5 seconds. Traditional methods can take up to 5 minutes.

Gocator Volume Checker is a non-contact solution that uses blue LED structured light (fringe projection) to inspect the target in a single snapshot. The 3210's stereo camera design reduces occlusion to see more of the cylinder head.

This fully automated solution replaces traditional volume gauging methods such as fluids, pressurized air, and acoustics.

The Gocator Advantage

Gocator Volume Checker offers a number of unique advantages over traditional and competing solutions, including an industrial package and powerful uniform light projector.

Here are some other benefits this solution provides:

- ± 0.04cm3 accuracy even on highly-reflective surfaces
- Custom, 3D feature volume measurement algorithms
- Tightly integrated solution of hardware and software
- Small form factor for easy system integration
- Accurate measurement without needing to cover valves

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Epson All-in-One SCARA Robot for Simple Applications

Epson's T3 All-in-One SCARA robot, the first product in the T-Series, offers a cost-effective and simple-to-integrate and install automation solution for simple applications such as pick and place, assembly, parts handling and dispensing applications in industries ranging from automotive and medical development, to lab automation, consumer electronics, electronic components and industrial.

The Ultimate Slide Alternative

The T3, which helps lower the total cost of ownership versus current products for manufacturers and system integrators, is ideal for customers looking to automate their factories without wasting time or money on complex slide-based solutions. Since it includes the same intuitive software and powerful features Epson incorporates in its high-end robots, users are getting both the power and simplicity required for their applications.

The feedback from many of Epson's key customers, including manufacturers and system integrators, has been extremely positive, with some already moving to replace slide-based systems with the T3 All-in-One.

Next-Generation Technology

The T3 is a next generation technology robot featuring a built-in controller (conveniently housed in the robot's base), runs at 110 V or 220 V and requires no battery, reducing factory downtime for maintenance. The small and lightweight solution is easy to install and takes up less space than linear-slide solutions, while providing a large work envelope. It is available with Epson's Integrated Vision Guidance option, designed specifically for robot guidance making it easy to automate simple applications when vision is required.

With so many powerful features including the same easy to use Epson RC+ 7.0 software used with Epson's high-end robots, integrated options and much more, the T3 is a full feature robot offered at an ultra-low cost.

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