LMI TECHNOLOGIES

Gocator® | HEXSIGHT

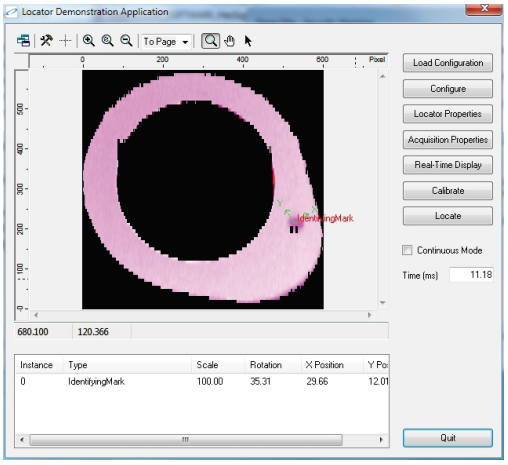
THE APPLICATION

During the manufacture of an engine, the engine components must be installed in a specific order. Identifying marks are typically used to distinguish these components and are therefore used to indicate the installation order. Furthermore, the orientation of components on the conveyor is important: narrower ends of components often must lead in order for production line robots to be able to properly process the parts.

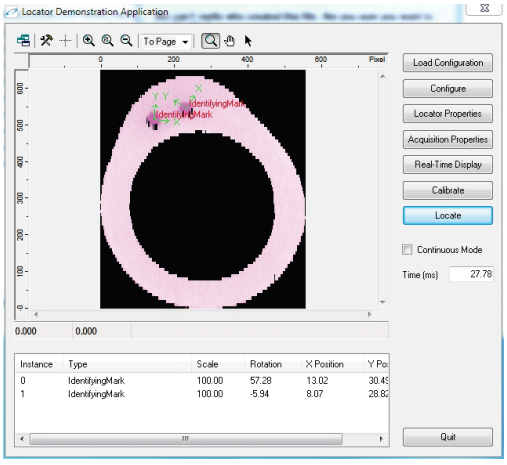
The application is ideal for a laser line-based 3D sensor such as the Gocator used in conjunction with a software library of machine vision tools such as HexSight. The 3D capabilities of the Gocator give a HexSight application the data it needs for the rapid detection of a component's identifying marks and orientation. Correctly sorting components greatly helps increase the efficiency of the automated manufacturing processes used by the automotive industry. Incorrectly sorting parts wastes time and in some cases can cause the breakdown of the manufacturing process.

Gocator used in conjunction with HexSight allows the following:

- Reliable sorting of engine components based on type (for installation order) and orientation
- Sorting every one to two seconds



Engine component with one identifying mark…



… with two identifying marks, different rotation

THE IMPLEMENTATION

The Gocator 3D sensor is integrated into a production line feeder that produces different types of components. Settings such as exposure are first configured through the Gocator sensor's built-in web interface.

A HexSight application, which combines a number of vision tools to form a sequence of operations, is connected to the Gocator and receives 3D scan data in real time. The application identifies engine components in the scan data using models defined in the HexSight user interface. It then determines the components' orientations and the position of their identifying marks. Finally, the results of these tools are combined into a pass/fail result.

THE BENEFITS

Manufacturers are always looking for ways to increase production rates and lower costs. Inaccurate sorting of parts means either that parts have to be resorted mechanically or that a worker has to manually resort parts. Either outcome means delayed production runs and higher costs. Using a Gocator 3D sensor together with HexSight results in reduced manufacturing costs and faster production runs.