

Automotive Products Application



Typical Hardware for This Application

- Checker 252 – CKR-252-001
- Mounting bracket – CKR-200-BKT
- SensorView 350 – SV-350-000
- Lens kit – CKR-200-LENSKIT

Reference Information

- Checker Reference Guide
- Checker Solutions Brochure
- Checker Product Guide

Verifying Component Thickness

Problem

A manufacturer needed to verify the thickness of an automotive part after it was machined. The parts were inspected manually and the process was unreliable.

Difficulty

The parts were coming down a conveyor and not precisely oriented. Using photoelectric sensors to verify thickness would have required the addition of expensive mechanical fixturing and a slower line speed.

Solution

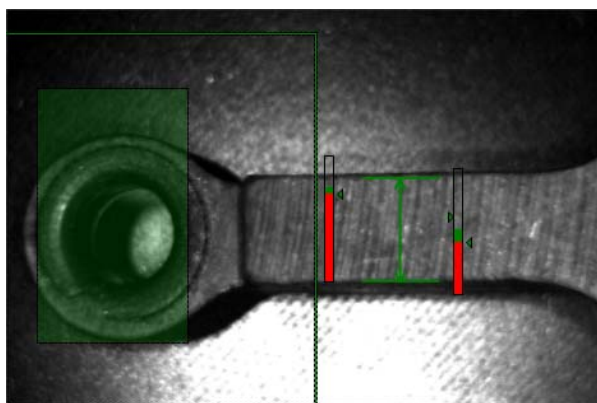
Checker® vision sensor is the ideal retro-fit solution and capable of verifying the thickness of the part with its Height Sensor. First, Checker's Part Finding Sensor locates the part on the conveyor, without the need for mechanical fixturing. Checker's Height Sensor then measures the thickness of the part and determines if the part was machined correctly.

Results

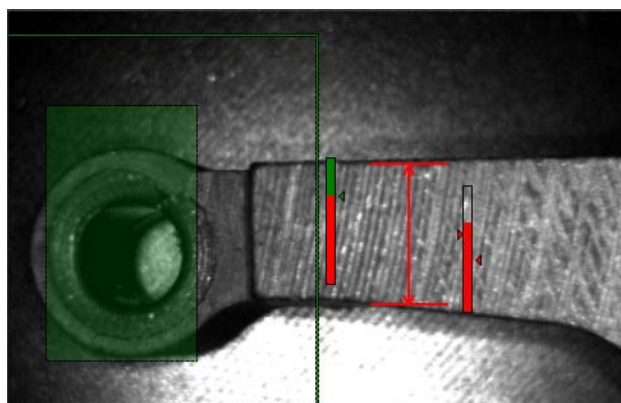
Quality was improved by replacing inaccurate manual inspection with an automated inspection step. Line speed was maintained by eliminating the need for mechanical fixturing. An additional benefit for the manufacturer is that Checker is able to store images of failed parts for later review, giving the manufacturer data to improve their process.

Sensors Used

- Part Finding Sensor
- Height Sensor



Correct Thickness



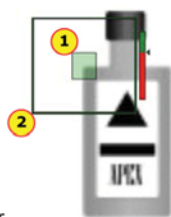
Wrong Thickness

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Sensors Used in this Application

Part Finding Sensor

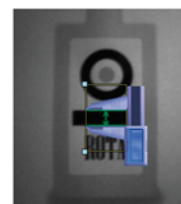
A Part Finding Sensor detects and locates your part in the image. You create a Part Finding Sensor by drawing a box around a feature of part that is present on both good and bad parts.



1. The feature Checker is looking for.
2. The Search Region (where Checker looks for the feature).

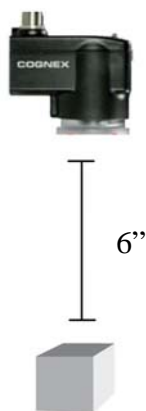
Height Sensor

Use to measure the width of a feature having horizontal edges.



Application Setup

Mounting (Approximate)



Lens: 8mm optional lens supplied with Checker Lens Kit (CKR-200-LENSKIT)

Lighting: Internal lighting from Checker – no need for external lighting in this application

Input / Output

This application uses the standard I/O ports available on Checker

Output 0 is tied to the Part Finding Sensor. It signals that Checker has located the part. This output could also be used as a trigger input to other devices, like a vision system.

Output 1 is tied to the Height Sensor. It signals that the part has failed the measurement and the part is too thick.

Both outputs may be fed into a PLC.

SensorView allows users to view jobs and images without a PC.