Coordinate Metrology Society
Coordinate Metrology Systems Conference 2003
Greenville, South Carolina | July 21-25, 2003

CMS-2003-006

Non-Contact Laser Scanning Technology for a Flexible In-Line Inspection Cell

AUTHORS
Israel Schechter

ORGANIZATION
IPS Technologies, Inc. (for Nextec)

Published by the Coordinate Metrology Society. Reference number CMS-2003-006.
Copyright remains with the author(s). Redistribution requires permission.

Abstract: Non-contact Laser Scanning technology for Flexible in-line Inspection Cell

100% dimensional inspection of high-volume, stringent tolerances, variety of part sizes and geometry, shiny surfaces, thin walls, foundry environment and slim budget are just a few of the constraints that challenged Nextec in developing and implementing a solution for a tier 1 automotive aluminum foundry. Rate of one casting per 60 seconds with a demand to detect and remove all out-of-tolerance parts require a measurement solution that can acquire data, process it, analyze it, and make go/no-go decisions at similar or better rate. Since the manufacturer runs mixed castings of distinctive size and shape (different cylinder heads for different engines) hard automation was not considered due to high price tag, the need to work in batches, and the long changeover duration. This paper will present and discuss a fully automatic flexible dimensional inspection cell based on high speed, high precision non-contact 3D optical laser sensors, sophisticated motion control systems for surface contouring, all integrated into a high speed 100% in-line turnkey inspection cell.