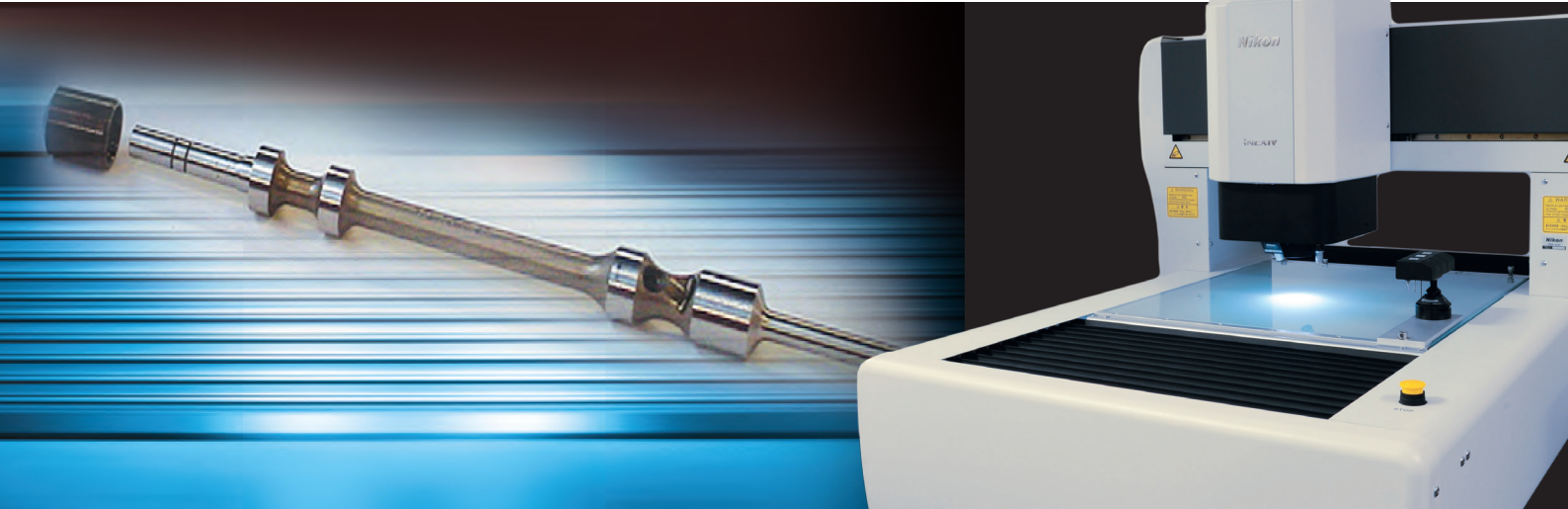




ApplicationFocus

Fuel Injectors



Inspection and measurement of fuel injectors

The design of fuel injection systems for internal combustion engines has become increasingly complex in recent years. Due to more stringent requirements to provide increased fuel mileage, reduced emissions and ever greater efficiency, tighter tolerances for fuel injection components such as nozzles and plungers are becoming more prevalent not only in automotive design but also in other fields such as aerospace and home and garden

equipment. As the design and manufacturing requirements for fuel injectors have become more complex, the need for faster, more accurate, and more highly automated inspection of individual components has also increased. Traditional manual methods of inspection such as use of optical comparators, which yield only qualitative data resulting in "go" or "no go" decisions, are no longer adequate today.

System Challenge

Optical comparators are limited in their ability to:

- Measure complex, irregular shapes
- Assure compliance with tighter tolerances
- Accurately check a part's form and dimensions
- Generate feedback for process improvement

Nikon's Solution

NEXIV Vision Systems with Automeasure Software

- Profile complex parts and compare this profile with the CAD file*
- Generate CAD overlay with tolerance bands
- Align CAD overlay with part to allow best fit analysis
- Generate quantitative data for statistical process control
- Measure multiple samples with faster throughput times

*CAD overlay is an integral part of the system, not an add on software package

CNC Video Measuring Systems

NEXIV

