ApplicationFocus
Electronic Connectors

Inspection and measurement of electronics connectors

The design of electronic connectors for a myriad of applications has become more complex in recent years as miniaturization has forced components to become far smaller, and tolerances to become greatly reduced.A connector is made up of plastic or metal housings, pins and contacts in an incredible number of sizes and configurations. At the same time, hundreds of thousands of connectors are used each day in a wide variety of industries including automotive, aerospace and medical devices. As the design and manufacturing requirements for these connectors has become more complex, the need for a faster, more accurate, more highly automated inspection of finished connectors has increased. Traditional manual methods of inspection, such as Profile Projectors and Measuring Microscopes, do not take good care of high production rates as they can be time consuming, prone to user errors and the results limited by the operator's skill level.

System Challenge

Profile Projectors and Measuring Microscopes are limited in their ability to:

- Accommodate a wide range of different sizes, shapes and configurations
- View difficult to see edges and correct for errors caused by flash and burs
- Inspect both individual small components and multiple parts from the same lot
- Automate time consuming inspection of repetitive features within components

CNC Video Measuring Systems
NEXIV

Nikon's Solution

NEXIV VMZ-R3020 or iNEXIV VMA2520 with Automeasure Software

- 15:1 and 10:1 zoom optical systems permit inspection of the features of small multiple parts
- Pattern recognition, feature matching and Auto Position Search reduce need for featuring to hold parts in special jigs.
- Higher numerical aperture optical systems permit an exceptionally clear view of even difficult to see edges
- Powerful edge detection software routines can eliminate problems caused by flash and burs
- Easy to use yet powerful software generates teaching files for repetitive features
- Standard report generator saves and exports measurement data to a SPC package