



CT SCANNING & METROLOGY SERVICES

CAPABILITIES

To help our customers meet their time-to-market and quality goals, West has extended its measurement capability and technology by investing in state-of-the-art equipment. This allows the Global Metrology (GM) team the ability to perform a wide range of inspection capabilities using CT scanners, CMMs, and a variety of optical measurement systems.

West's Vision Measurement Systems

- Using newer vision systems, are much more sensitive and accurate having multi-sensors such as touch probes and lasers.
- Using different vision measurement softwares allows the GM team to have a truer 3D alignment which increases the accuracy and the repeatability of the routines developed.

Coordinate measurement machines (CMMs)

- Highly sensitive measurement devices which are built for in-process measurements to keep production timely for critical-to-function features.
- West's CMMs run programs designed in both Calypso and PC-DMIS.

CT scanning

- This testing method is totally non-destructive for assembly investigations.
- Permits internal and external analysis of a part by projecting a beam of x-rays through it while the object is rotated and then generating a 3D point cloud.
- Can scan a wide variety of materials ranging from elastomer materials and plastics to light alloys.
- Measures internal cavities, undercuts, and deep recesses not readily captured by CMMs and laser scanners, all within a shorter time period.

PRODUCT LIFE CYCLE STAGES METROLOGY SOLUTIONS

DEVELOPMENT

Early-stage prototype tooling or assembly build phases can easily and quickly be analyzed against the product 3D geometry to eliminate any guess work of how close the sample is to nominal, aiming for a dimensionally correct sample.



VALIDATION

As part of a product validation, dimensional analysis is key to providing results to our customers proving the quality of the product for production purposes.



DEFECT & ASSEMBLY ANALYSIS

Root Cause failure investigations can be key to reducing defect rates and to improve productivity. CT scanning provides the tools to identify these defects by testing non-destructively.



ENGINEERING MODELING

Provide high quality and accurate data of internal and external geometries to our customers for generation of Mesh or 3D CAD data.

TYPE OF ANALYSIS THROUGH CT SCANNING

2D X-RAY

Single Images generated to inspect internal features

CROSS SECTION X-RAY

Images generated by slicing the X-Ray image at certain locations

FIRST ARTICLE INSPECTION

A report generated from a dimensional program created from a component 3D Model & 2D drawing

PART TO CAD COMPARISON

Comparison of the scanned component against the 3D CAD model

PART TO PART COMPARISON

Comparison between 2 of the same components to each other

DEFECT ANALYSIS

Non-destructive analysis to view internal features and component interaction

ASSEMBLY ANALYSIS

Non-destructive cross-sectional analysis of assemblies to review component interaction within an assembly

POROSITY ANALYSIS

Transparent imaging highlighting porosity or voids within a component

WALL THICKNESS ANALYSIS

Colour coded analysis to view the wall thickness on specific areas of a component

ENGINEERING MODELING

Generate mesh data or CAD data from the CT scan point cloud

EQUIPMENT	ACCURACY
Zeiss O-Inspect 543	(2D - 1.6µm+L/250 µm) (3D - 1.9µm+L/250 µm)
Zeiss O-Inspect 322	(2D - 1.9µm+L/250 µm) (3D - 2.4µm+L/250 µm)
OGP 500	(2D - 2.5µm+5L/1000 µm) (3D - 5.0µm+8L/1000 µm)
Zeiss Metrotom 800	4µm+L/100 µm
DEA Global Performance 07.10.07	1.7µm+L/333 µm
MicroVu Vertex	2.0µm+L/200 µm

