

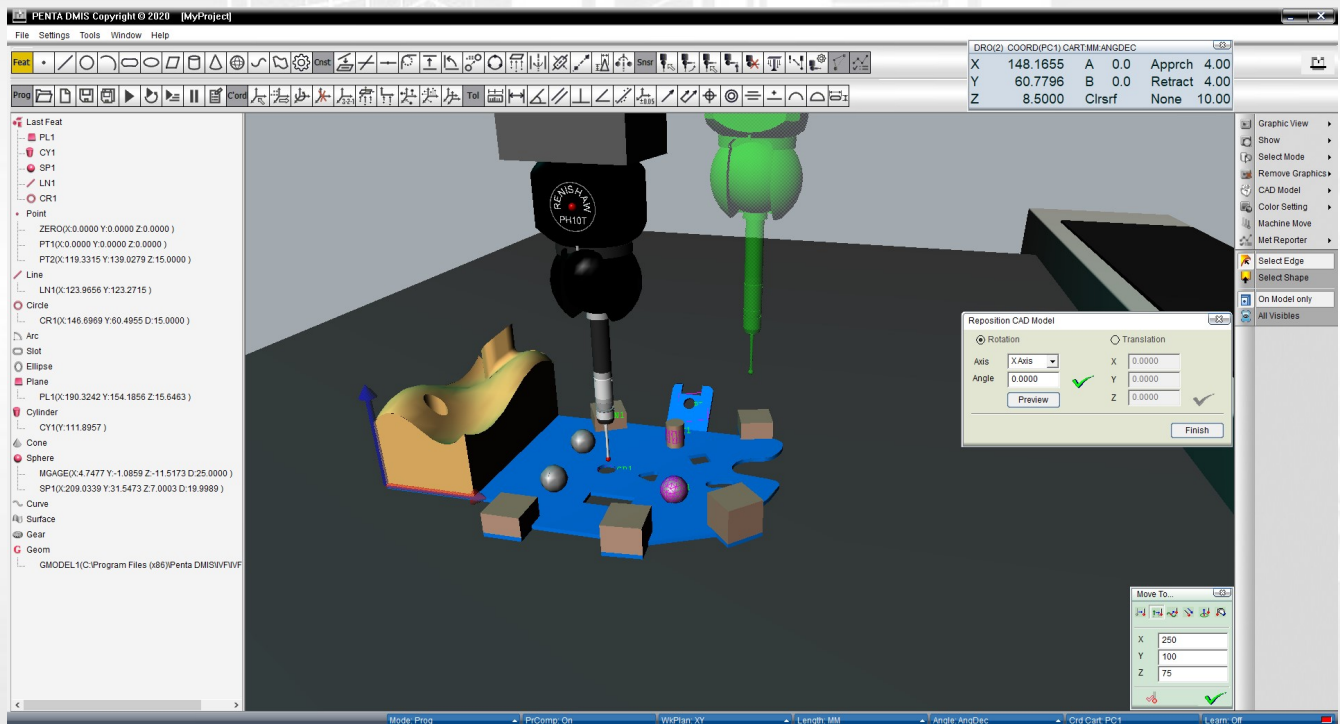
Penta DMIS

Intelligent and effective
approach to CMM Measurement

Penta DMIS is a CMM software developed by using decades of accumulated experience and the drive to create a practical user environment for easy and effective CMM Measurement.

Using Smart-tools, full prismatic part geometry is available with automatic feature recognition and measurement.

Developed with the Dimensional Measurement Interface Standard (DMIS 5.0) as its foundation in pure Native Format it is engineered to comply to ASME/ISO geometric GD&T demands.

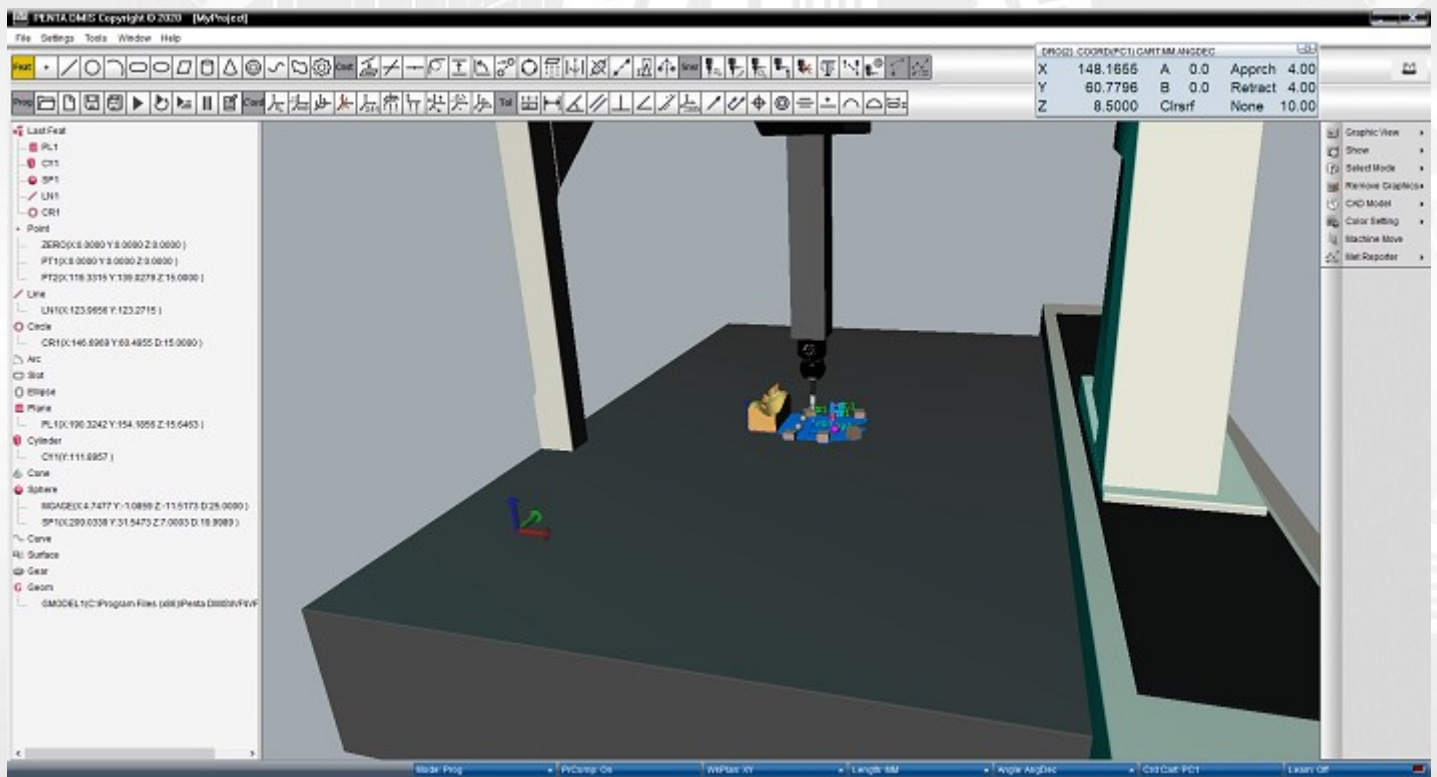


5-Axis Capable

Benefit from faster, more accurate measurement by using the latest 5 Axis infinite PH20 Measurement Probe from Renishaw plc that is fully integrated – Existing Indexing Head Programs are 100% compatible after upgrade

User Interface

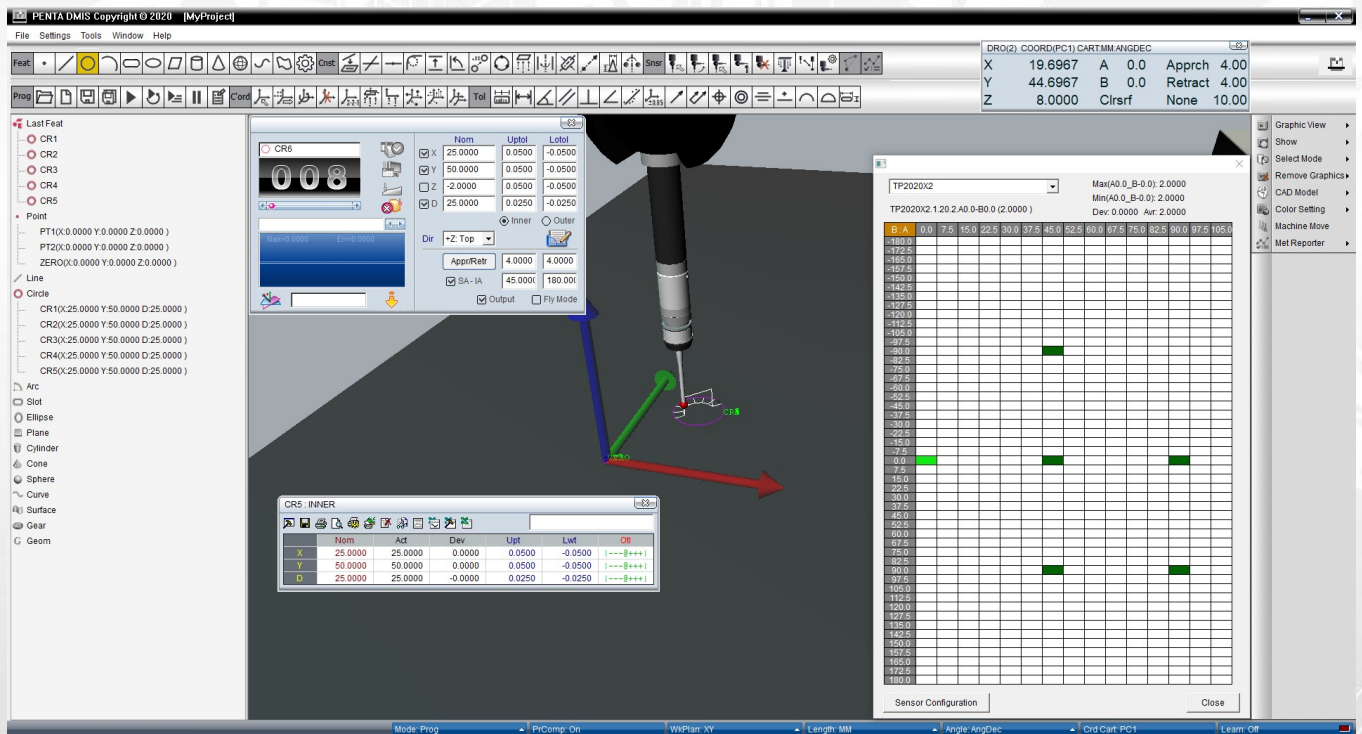
- Single Page Menu
- Visual Interactive Database
- Smart Tools – Start, Measure, Features, Construct, Probe Movement Path
- Smart DMIS – Simplified Programming
- Integrated CAD Capable
- Drag & Drop Feature Use
- Single Page Display



User Interface is simple, designed so that all primary features and functions can be viewed at-a-glance with direct access to metrology functions & smart drag-and-drop tools to simplify use.

Intelligent Measurement

- Smart Start - Setup coordinate systems by following set routines
- Smart Measure Tools – Automatically determines the correct feature
- Smart Construction – Only allows legal feature combinations
- Smart Probe Path - Moves CMM model and probe previews motion
- Auto Measure – From CAD, database and partial features
- Automatic Indexing Head alignment to feature minimising probe-foul
- Sensor Grid Table – View all positions with Multi-function view
- Automatic sensor calibration routines – Time-saving optimised paths



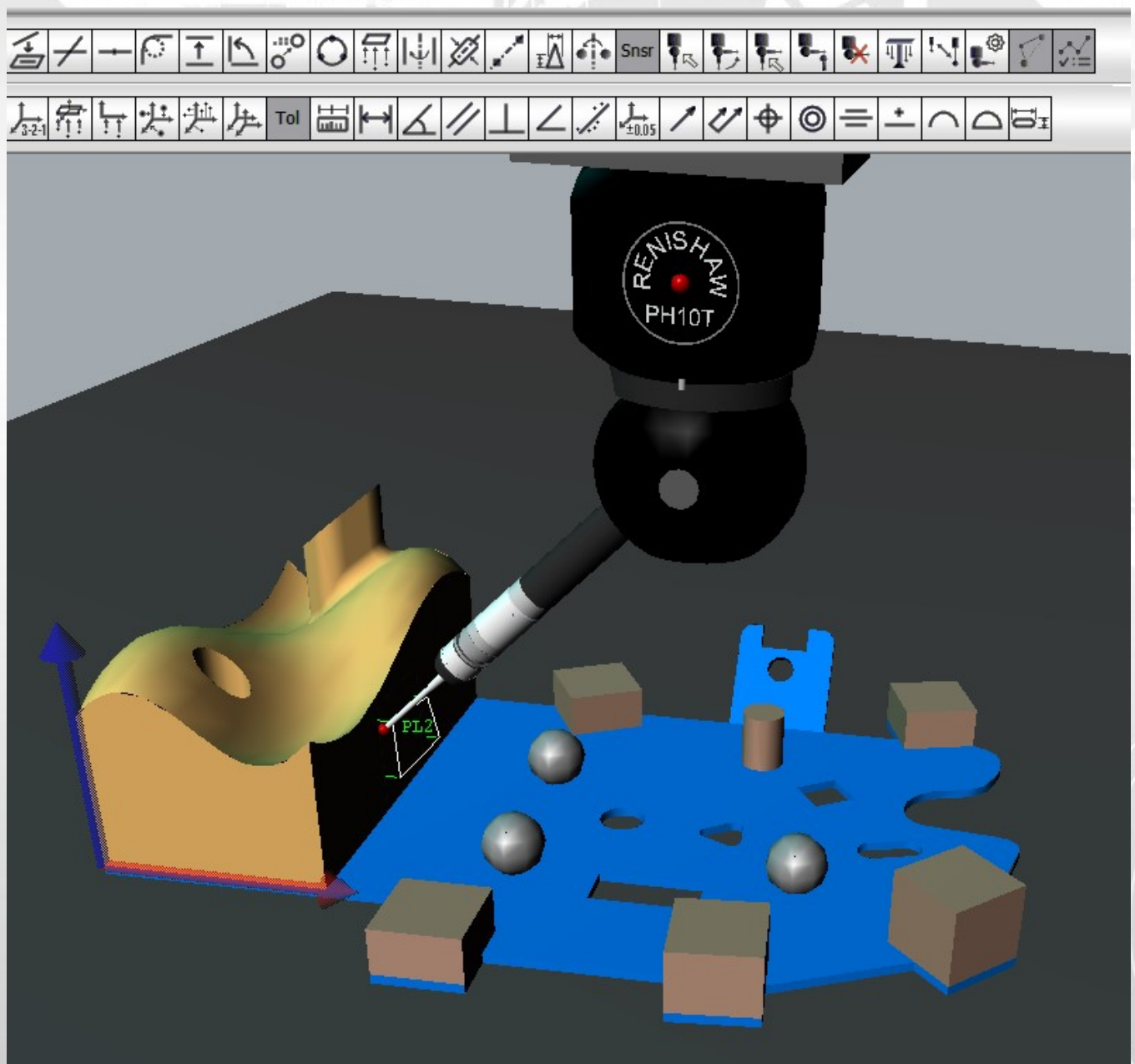
Probing Systems

Automatic Probe Head Alignment to feature selects the optimum position to access features and minimise risk of fouling the part.

Automated Calibration capable to allow unmanned operation

Grid selection of head positions provide easy look-up for available calibrated probes

Supports 3-Axis & 5-Axis Probe Heads

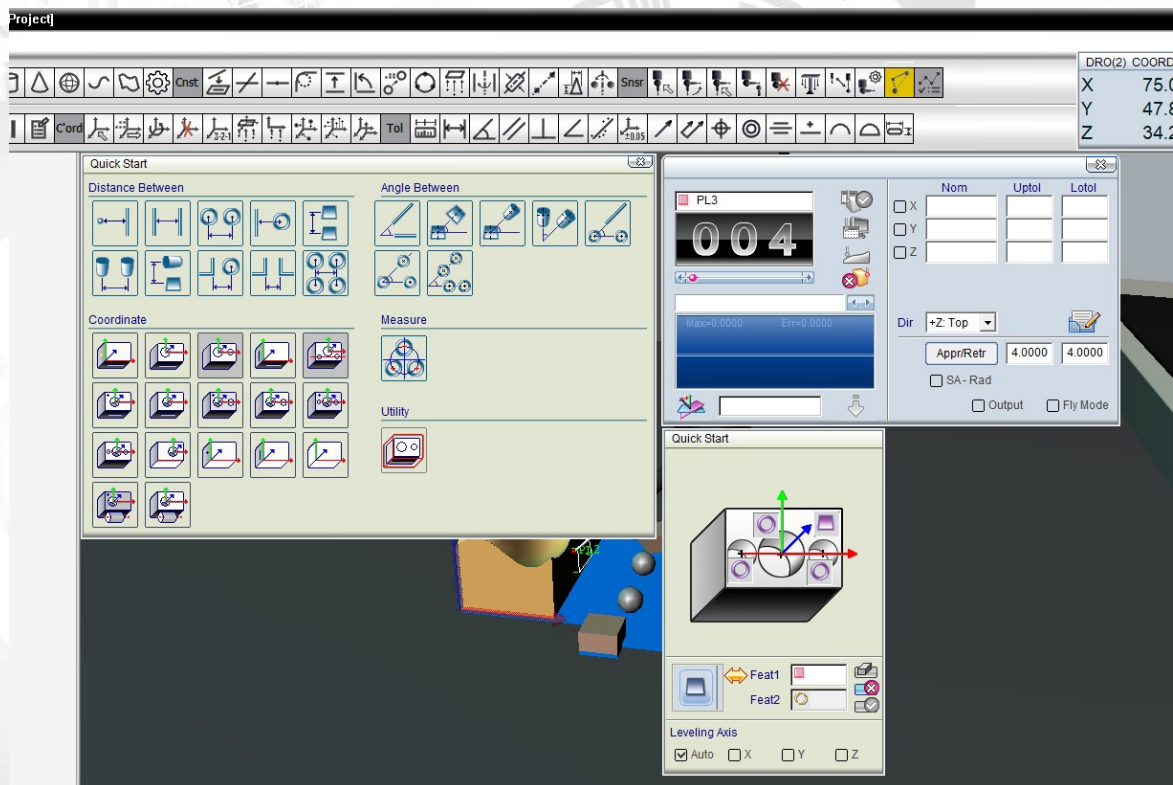


Smart Measurement

Smart Start uses set routines to simplify the alignment process and automatically populates the required data

Smart Measure routines enable the CMM to automatically determine the features being measured without operator input.

Smart Construction uses the last 2 features allowing quicker use of the function



CAD Capable

Direct feature selection from the Model – including Curve

Select Point on any surface to assess material condition

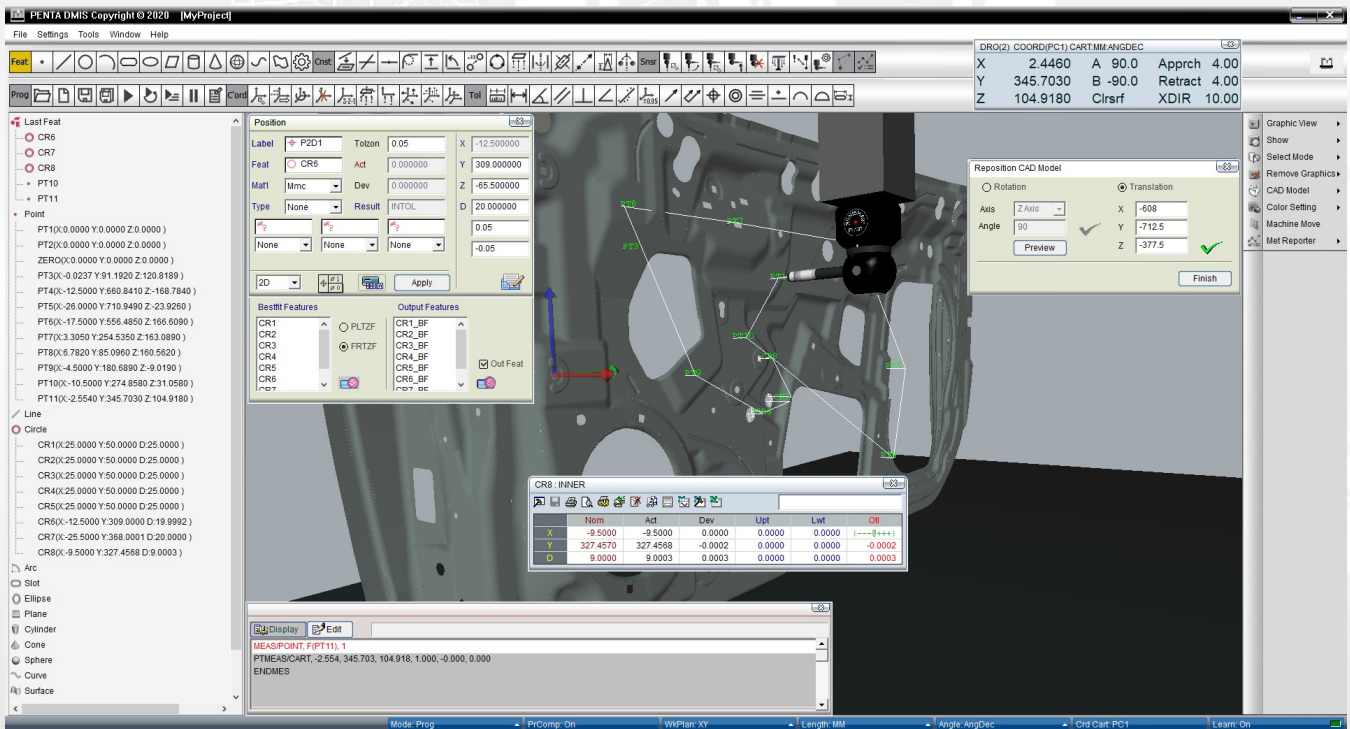
Multiple Model function to allow use of fixturing and/or assembled parts

Solid or Wire Frame visualisation to aid programming

Mirror & Translate facility to orientate model to correct position

Standard Import IGS/STEP & Export IGS

Native Format CAD Files used - optional



Programming - DMIS

Simplified DMIS code assists the user to create automated routines for repeat measurement with Easy Editing.

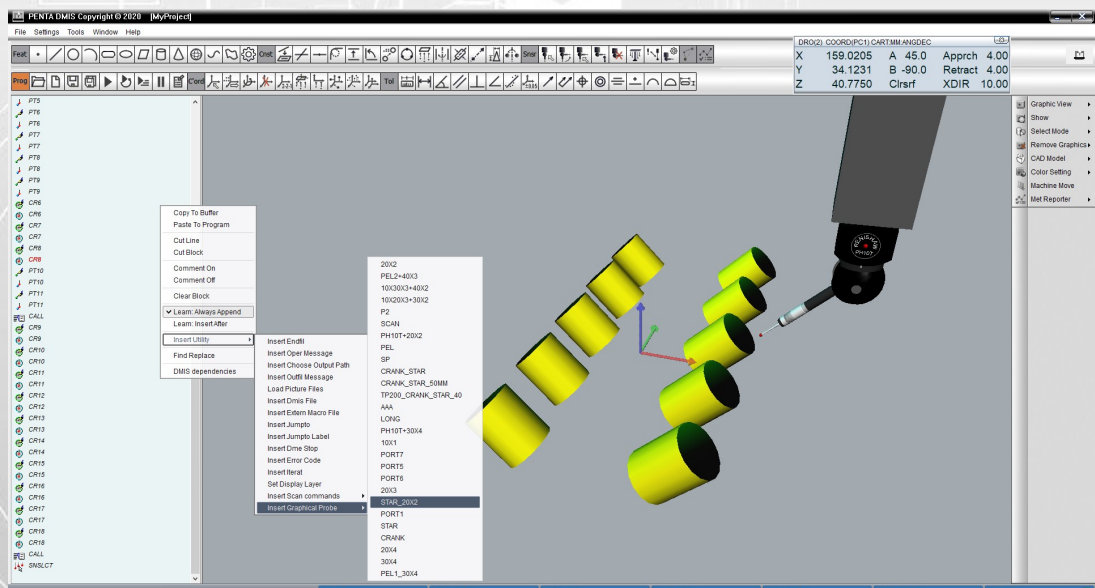
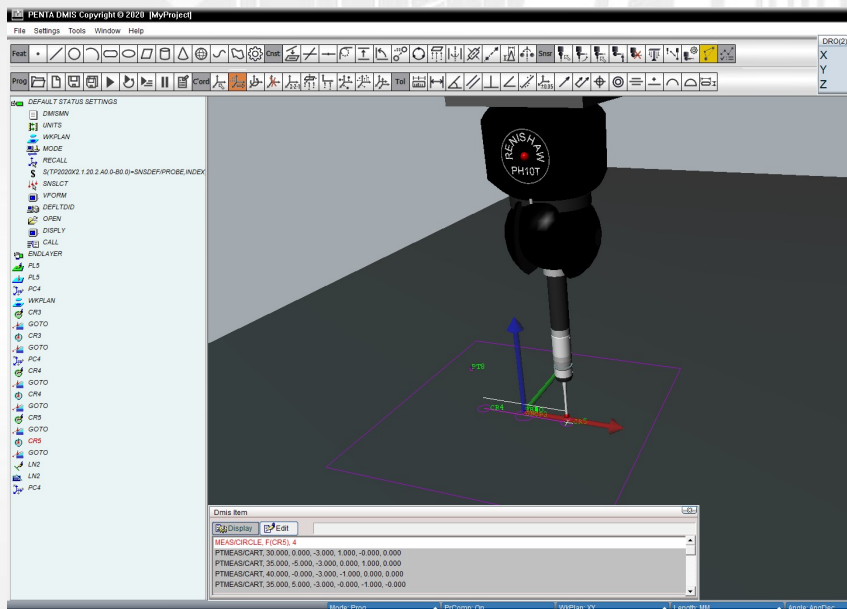
Program intelligence monitors Probe Setup & Coordinate Systems throughout. This means selecting specific areas highlights the correct configuration to run from.

Integrated CAD model use provides direct access to Feature nominal geometry thereby minimising manual entry of data and visualise the probing access

Motion Path Simulation with Auto-Collision avoidance

On-Line & Off-line Capable

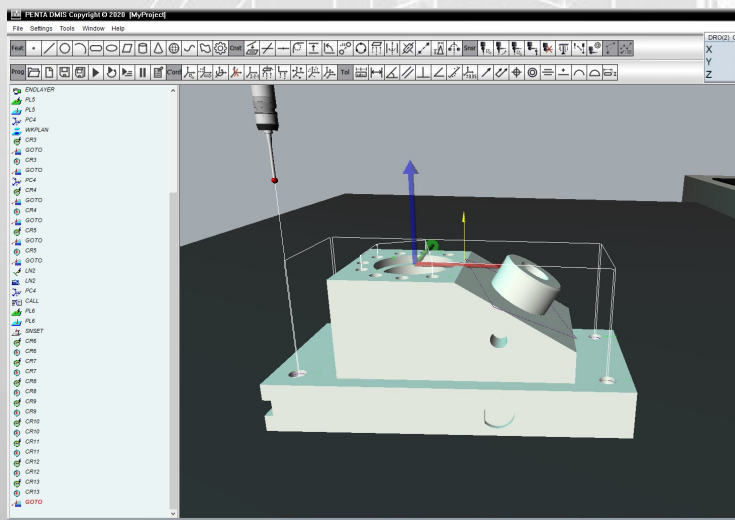
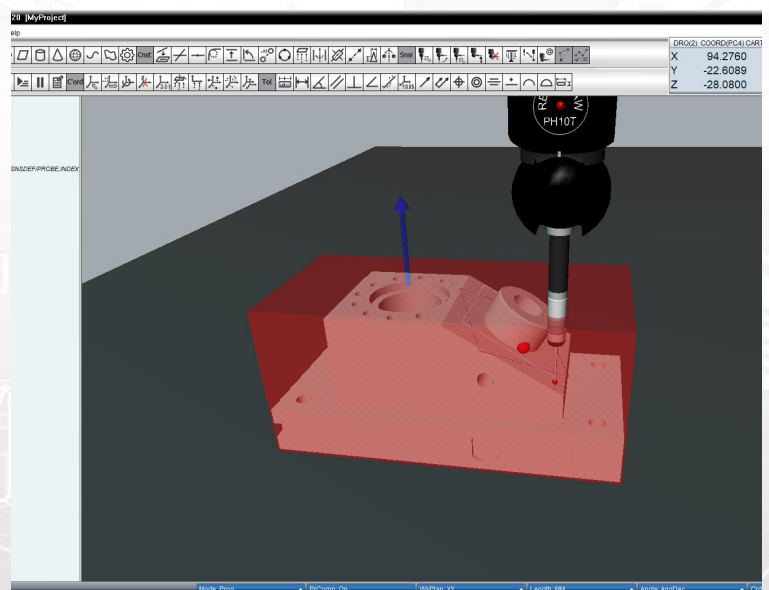
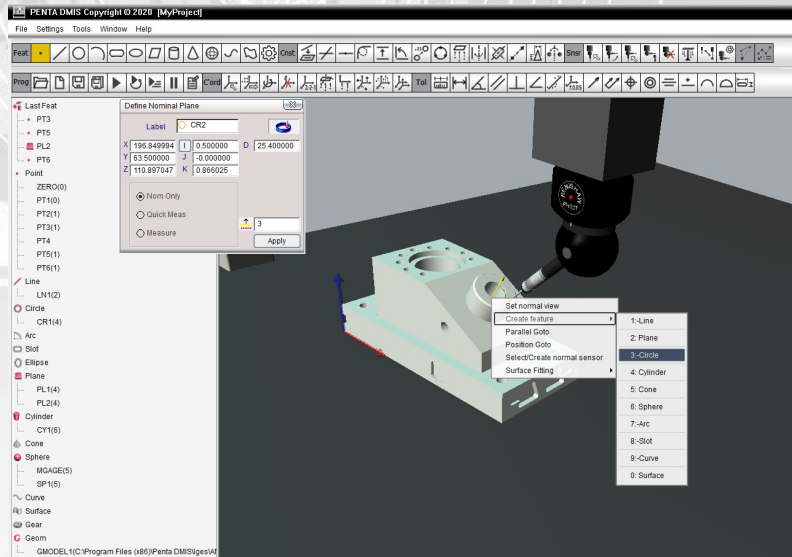
Access to DMIS High Level Code is available



Programming with CAD - DMIS

Integrated CAD model use provides direct access to Feature Select nominal geometry to minimise manually entering data and visualise the probing access

Motion Path with Auto-Collision avoidance & simulation



Inspection Report

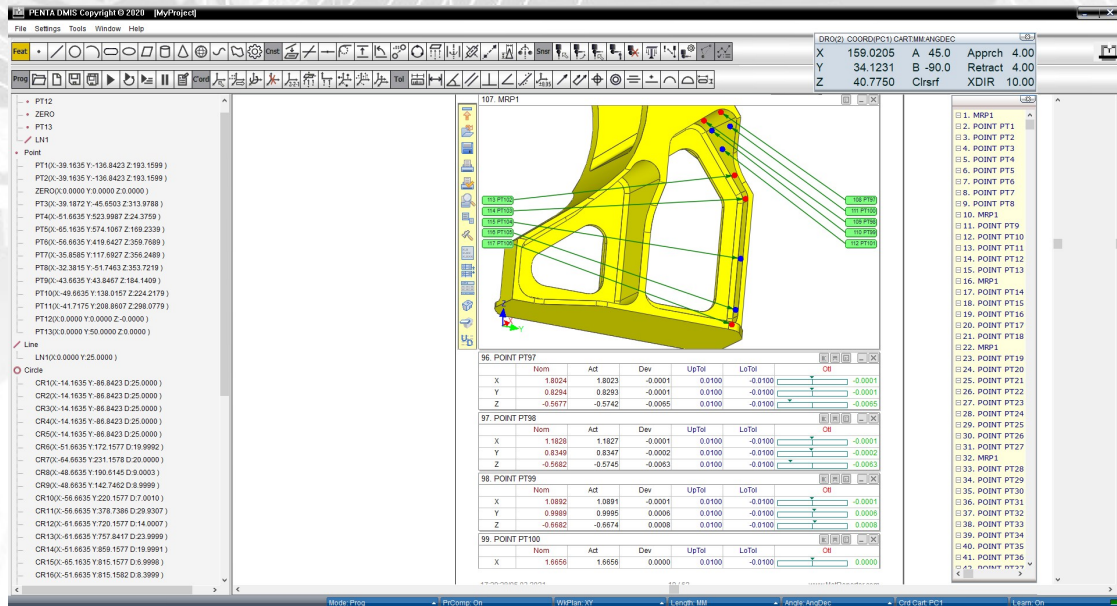
Graphical & Numerical display of measured results

Manipulate the view to obtain prime view

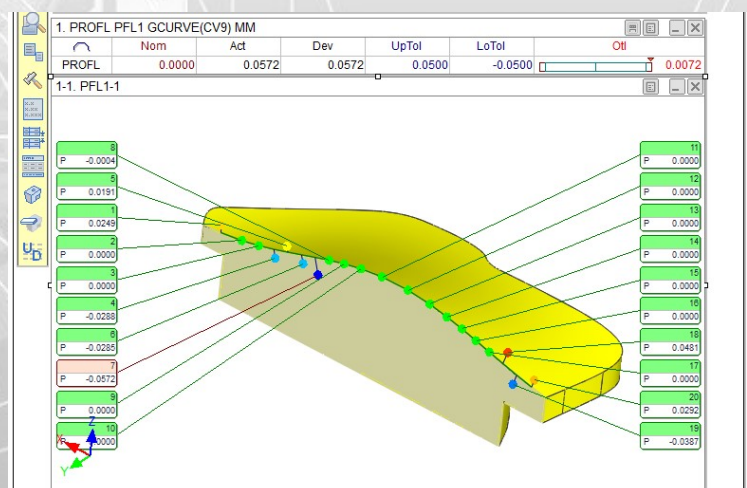
Visual Form Analysis

Update Nominals & Tolerances dynamically

Results Data export in major formats



1. PARCEL PAR1							
//	Nom	Act	Dev	UpTol	LoTol	Otl	
PARCEL	0.0000	0.0040	0.0040	0.0100			0.0040
2. CONCEN CNN1							
⊗	Nom	Act	Dev	UpTol	LoTol	Otl	
CONCEN	0.0000	0.0105	0.0105	0.0100			0.0005
3. CIRCLE CR3							
	Nom	Act	Dev	UpTol	LoTol	Otl	
X	-0.0000	-0.0042	-0.0042	0.0050	-0.0050		-0.0042
Y	-0.0000	-0.0051	-0.0051	0.0050	-0.0050		-0.0001
D	459.4000	459.3357	-0.0643	0.0500	-0.0500		-0.0143
4. CONCEN CNN6							
⊗	Nom	Act	Dev	UpTol	LoTol	Otl	
CONCEN	0.0000	0.0132	0.0132	0.0500			0.0132
5. CIRCLE CR4							
	Nom	Act	Dev	UpTol	LoTol	Otl	
X	0.0000	-0.0033	-0.0033	0.0050	-0.0050		-0.0033
Y	0.0000	-0.0040	-0.0040	0.0050	-0.0050		-0.0040
D	434.0000	433.9819	-0.0181	0.0000	-0.0500		-0.0181
6. CONCEN CNN7							
⊗	Nom	Act	Dev	UpTol	LoTol	Otl	
CONCEN	0.0000	0.0104	0.0104	0.0250			0.0104

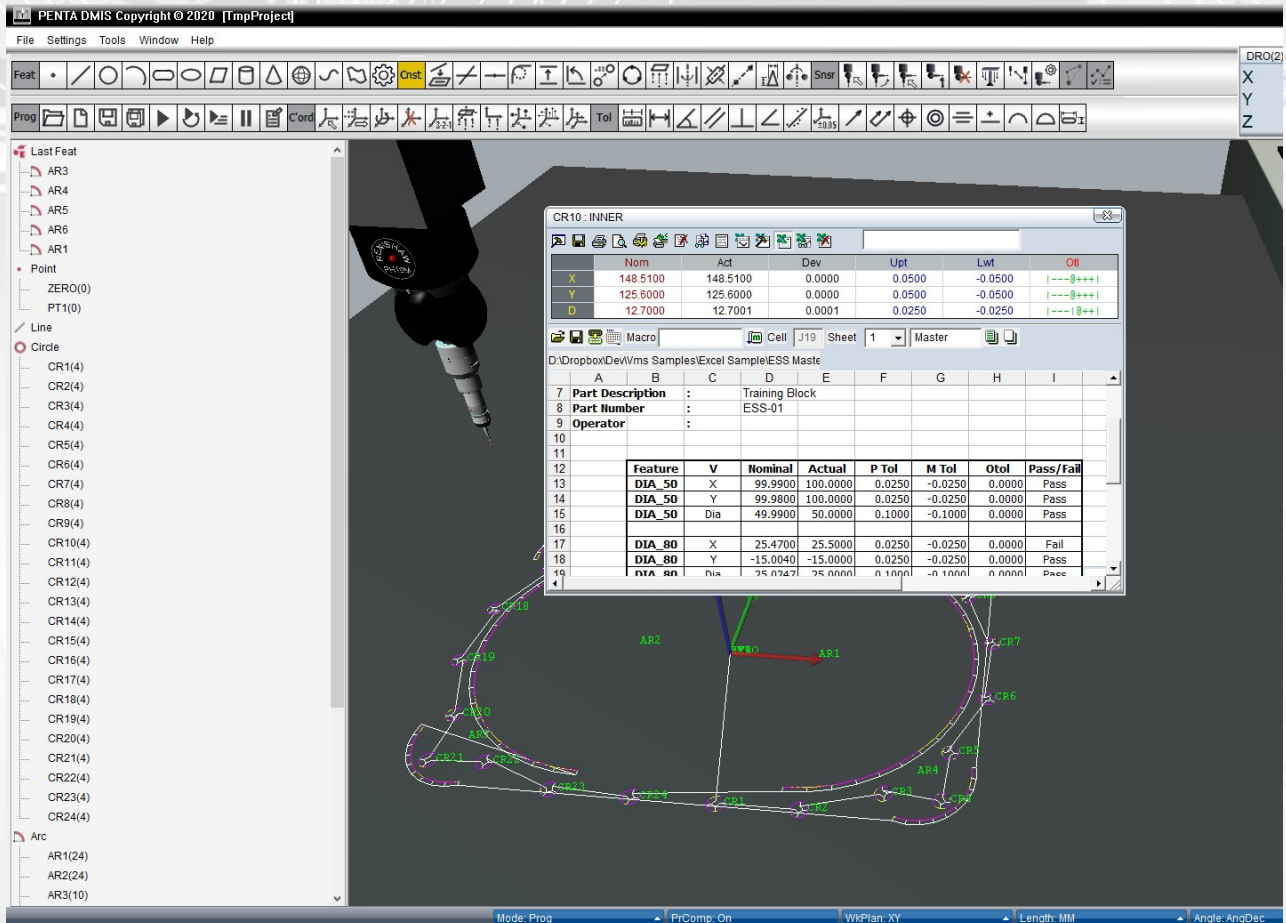


Formatted Excel Output

Integrates results data directly into Microsoft Excel

Post-measurement processing using Microsoft Excel macros

Use corporate styled reports



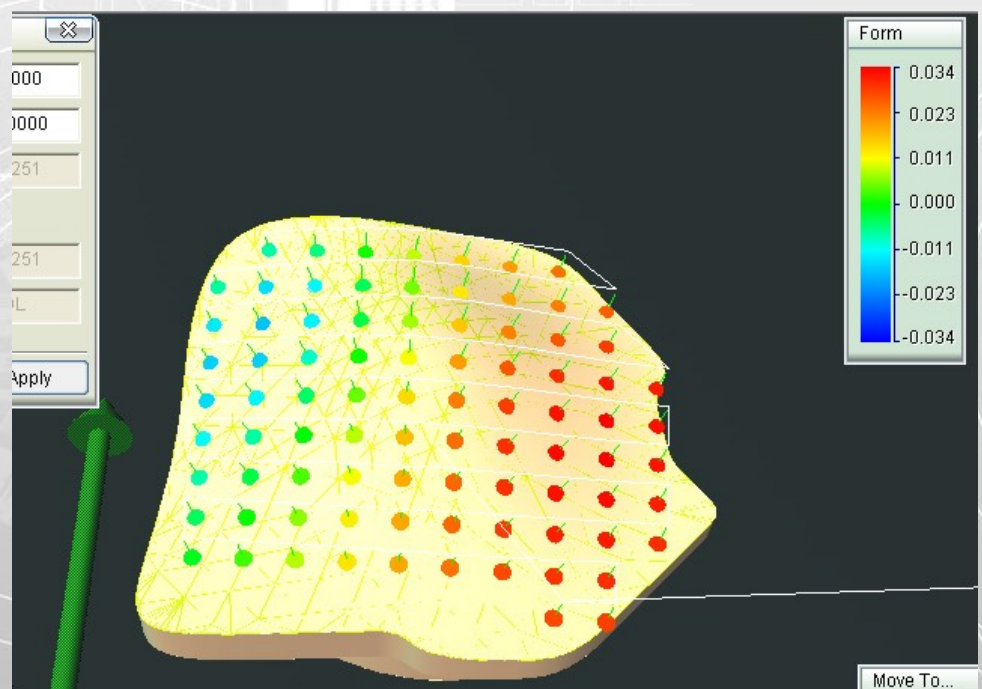
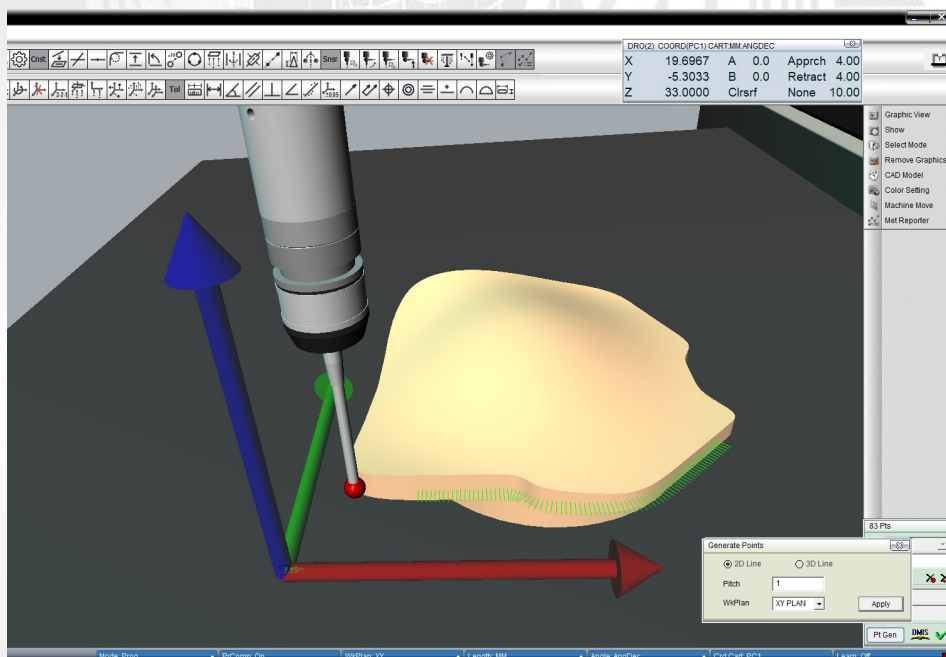
Surfacing

The Surfacing Module extends Penta DMIS capabilities as a graphical analysis tool for complex 3D surfaces

Iterative alignment routines allow the physical part to be aligned accurately off the CAD model for the most complex of parts. C

Automatic point collection and tolerancing of the nominal surface provides a full visual report.

All data can be exported in ASCII/IGS Curve or IGS Surface format.

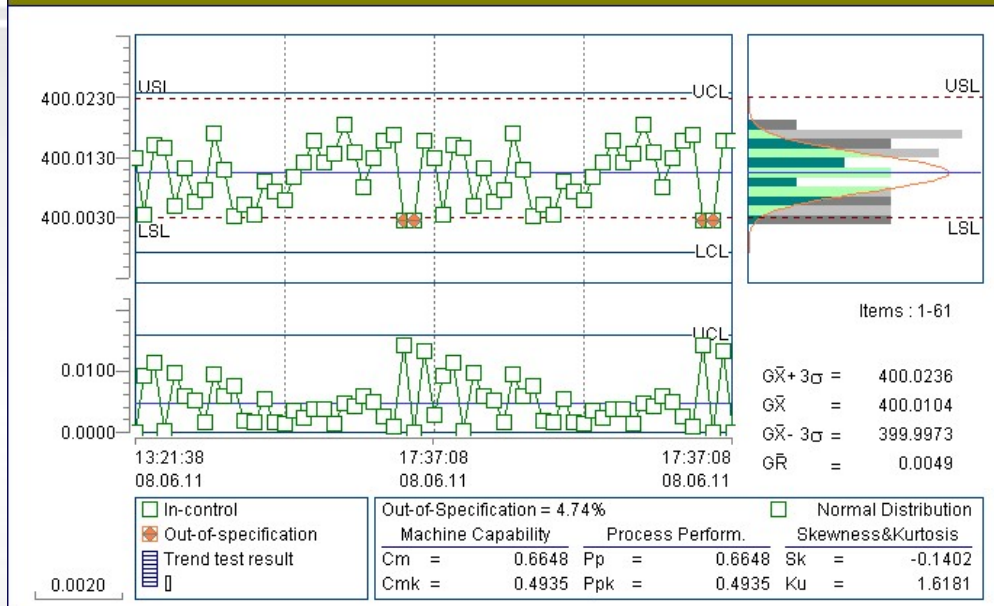


SPC Option

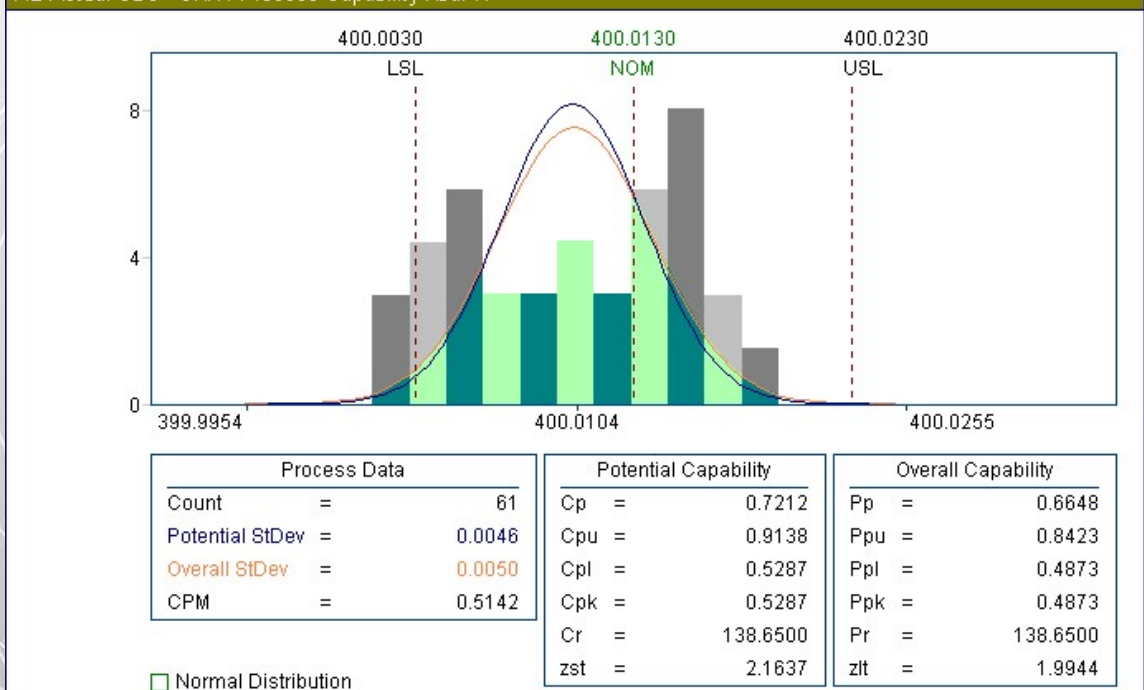
Integrated SPC functionality providing live data analysis

- SPC Calculations including
- X-bar and R charts
- Histograms
- Run charts
- Capability studies (Cp,Cpk)

7.2 Actual UDs - CRX : Individual-R Chart



7.2 Actual UDs - CRX : Process Capability Xbar-R



Gear Option

Helical & Spur Gear Forms

Used with or without 4th Axis Rotary Table

Easy-Load Gear Data Parameter Table

Standard supported include DIN, JIS, ISO & AGMA

Graphical & Numerical Reports

