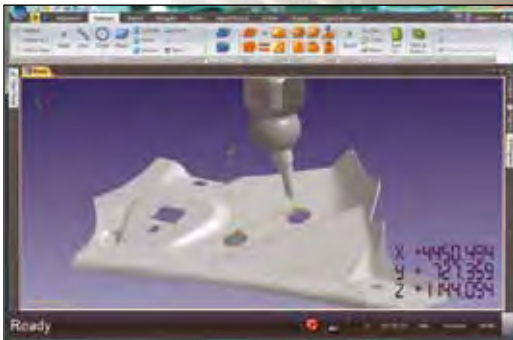




CMM-Manager

Fully featured metrology software
for CNC, manual and portable CMMs



RFM

Resources For Manufacturing, Inc.

NIKON METROLOGY | VISION BEYOND PRECISION

Easy to use, rich functionalities

CMM-Manager 3.0 for Windows is by far the most value-for-money tactile inspection software that runs on nearly all manual, CNC and portable CMMs. Users accomplish more in less time with CMM-Manager, by automating serial inspection or by easily taking a few points on the spot.

It is a task-oriented, highly intuitive software featuring quick walk-in measurement, one-click CAD measure, collision-free CAD teach, virtual simulation, real-time verification, CAD and datum alignment, and many more smart functions.

Combined with the PH20 probe head, CMM-Manager 3.0 turns around inspection work up to 3 times faster. 5-axis blended moves are far more efficient compared to traditional probe indexing. PH20's unique "head touch" capability offers fast, infinite, rotary positioning to measure points by moving only the probe head rather than the entire CMM structure.

Besides the rich functionalities for CNC and manual fixed-bed CMMs, CMM-Manager offers smart features for portable arm measurements, such as improved user guidance, automatic probe recognition and the same part programs for CNC and manual CMM.

Many companies standardize on CMM-Manager because they increase productivity with a single software solution that efficiently and intuitively deals with all the CMM brands that they are using.

The Windows 7 graphical user interface – including intuitive icons, a ribbon bar style layout and graphic tooltips – makes CMM-Manager even more informative and interactive. Touch screen, multi-touch support, intuitive navigation paths, and minitab compatibility offer additional benefits and opportunities.



Quick to start, fast results

Walk-in measurement

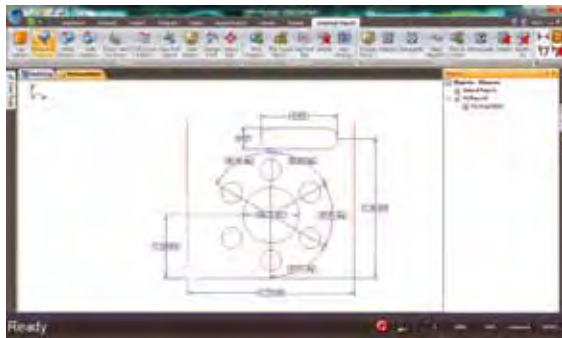
Simply walk up to the CMM, quickly align the part, and immediately measure geometric features and points on planes. When CAD is available, you can even take snap point measurements on the screen to eliminate manually probing the work piece.

Docking and sliding panels provide an open and straightforward CMM-Manager workspace, which allows the operator to quickly inspect complicated features such as hole patterns in minutes.



Graphical dimensioning

CMM-Manager provides intuitive and easy-to-use graphical dimensioning tools. The operator can quickly snap measured features on the screen to display dimensions including distance, angle and size.



Web-ready report

The software automatically generates inspection reports that serve as digital communication tools, graphically highlighting critical dimensions and point deviations.



Easy to use, easy to analyze



True click-and-measure capability

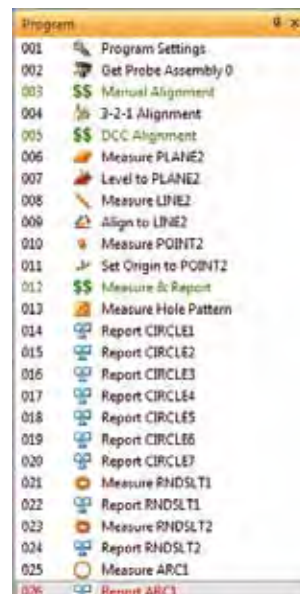
Using CMM-Manager's true click-and-measure capability, the operator is able to pick any feature on the screen display. The software automatically selects the proper probing angle and generates a collision-free path. After the operator confirms the selection, the CMM automatically measures the feature.

Iconized part program representation

In CMM-Manager, part programming is organized on the basis of clear and easy-to-understand icon representations, each indicating a measure, construct or report task. Such a task-oriented interface eliminates the struggle of dealing with lengthy text-based part programming.

CAD-based graphical programming

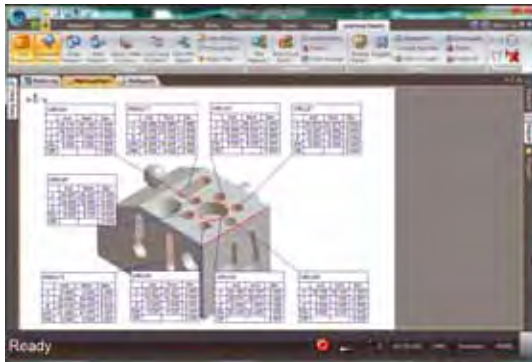
The operator can quickly create inspection programs directly from the CAD model, using graphical programming tools available in CMM-Manager. These part programs can be easily modified and visually simulated to verify program execution.





Graphics assisted tolerance reporting

CMM-Manager reporting covers datum features for easy feature identification, and illustrates dimensions and tolerances in the graphics window for easy visual confirmation.

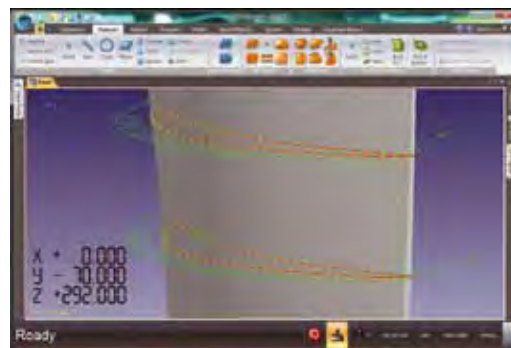
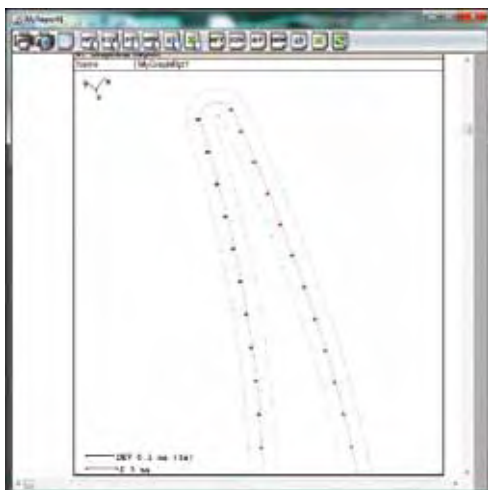


Drag-and-drop graphical report creation

Drag-and-drop functions incorporated into CMM-Manager speed up graphic reporting. To instantly create a graphics report table, for example, the operator simply drags the appropriate item from the report database tree to the graphics report window.

Cross section & freeform surface scanning

In CMM-Manager, it is easy to define a cutting plane for cross section scanning or to pick a freeform surface for digitization.



Smart features for accurate and fast inspection



Automatic probing angle selection

A real timesaver is CMM-Manager' capability to automatically select the best probing angle to measure features. When necessary, the software select multiple probing angles to be able to inspect difficult-to-measure features, such as deep pockets and through holes.



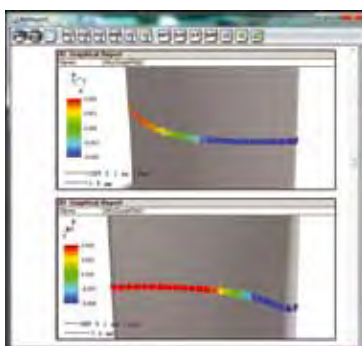
Automatic collision avoidance

CMM-Manager intelligently modifies probe motion to avoid any obstacles along the path once a probe collision is detected. As this is done automatically, it guarantees completely collision-free inspection path.



Iterative datum alignment for soft fixturing

The powerful datum alignment tool of CMM-Manager aligns a part to designated datum points. This soft fixturing function eliminates the need of dedicated hard fixtures and helps customers to reduce expenditure of hard fixture fabrication and maintenance.



Best-fit analysis for improved inspection accuracy

CMM-Manager has a built-in best-fit analysis engine to compare measurement data with the CAD model. This powerful best-fit function eliminates the influence of misalignment and cosine errors in tolerance evaluation to achieve the best inspection accuracy.

PH20 support triples CMM productivity

PH20 probe head support in CMM-Manager for Windows 7 drives fast, infinite, rotary positioning for high-speed point measurement with minimum CMM movement. The probe head brings five-axis inspection capability to smaller CMMs by optimizing the working volume of the measurement platform, increasing touch-trigger CMM inspection throughput up to three times.

Efficient portable measurements

CMM-Manager supports tactile measurements using portable CMMs, such as an articulated arm and a K-Series Optical CMM. It is a highly intuitive and easy-to-use metrology software for inspection tasks at the shop floor covering a wide range of measurement volumes.

Besides the rich functionalities for CNC and manual fixed-bed CMMs, CMM-Manager offers smart features for portable arm measurements, such as improved user guidance, automatic probe recognition and the same part programs for CNC and manual CMM.

A powerful combination

Tightly integrated with MCA and MCA II (6 and 7-axis) articulated arms, CMM-Manager guides the user through every measurement task. CMM-Manager also supports 3rd party articulated arms, such as FARO, Romer/ CimCore, Microscribe, etc.

K-Series spaceprobe for measuring large components

The K-Series Optical CMM with SpaceProbe allows measurements to be taken in a working volume up to 17m³ in a range from 1,5 to 6m. As such, complete vehicles can be easily measured in one track.

Leap-frogging to extend working volume

In case the workpiece exceeds the available working volume, CMM-Manager supports moving or flipping the work piece during the measurement process. This function enables a portable arm operator to measure workpieces larger than the working volume of the measurement system.

Guided plane measurement for 2D feature measurement

This feature enables the operator to set up a guide plane with a specified tolerance zone when measuring a 2D feature with a portable CMM. Measurement points will be taken when the probe crosses the selected guide plane within the specified tolerance zone.

Guided measurement for tactile scanning

The operator can select a guidance feature, such as a plane, line, cylinder, cone, sphere or a CAD surface, with a specified tolerance zone when measuring a point cloud with a portable CMM. Measurement points will be taken when the probe crosses the selected guidance feature within the specified tolerance zone

Audio / visual guidance

With this new feature, the user can set up a tolerance zone and CMM-Manager will change audio tone and color depending whether the probe is inside or outside the specified tolerance zone when the watch window is open.



Software features

Fully integrated measurement environment

- Task-oriented working environment with a Windows 7 intuitive user interface that is easy to learn and use.
- Walk-in measurement for quick dimension check
- Click-and-measure capability
- CAD-based and task-oriented graphical programming
- Virtual simulation and real-time verification
- DMIS part program support covering high-level language
- Same program for CNC and manual CMM

Advanced path planning

- Automatic probing angle selection
- Collision detection and smart collision avoidance
- Inspection path optimization
- PH20 probe head support

Powerful alignment tools

- 3-2-1 alignment for prismatic datum features
- CAD alignment for freeform surfaces
- Iterative datum alignment for soft fixturing

Convenient reporting functions

- Complete ASME Y14.5 GD&T support
- Graphics assisted tolerance reporting
- Graphical dimensioning tool for quick dimension report
- Drag-and-drop graphical report creation
- Various combination of customizable text and graphical report
- Color marks illustrating individual CAD deviations of measurement points
- Web-ready HTML report output
- Built-in best-fit analysis function for CAD comparison
- Excel 2010 compatibility

Reverse engineering support

- Exporting measured features to IGES and DXF file format
- Exporting measured points to IGES and DXF file format

Retrofit capabilities

- Direct interface for CNC CMM retrofits:
 - Nikon Metrology CMM, Sheffield Cordax, Brown & Sharpe, Mitutoyo, Zeiss, Numerex, Starrett
 - Renishaw UCC1/UCC2 controller retrofits
- Manual CMM retrofits:
 - Sheffield Cordax, Brown & Sharpe, Mitutoyo, Zeiss, Numerex, Starrett
- Articulated arm retrofits:
 - Nikon Metrology MCA / MCA II, MicroscribeX
 - Faro, Romer/CimCore
- Nikon Metrology K-Series Optical CMM



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