

# MEASUREMIND 3D MULTISENSOR



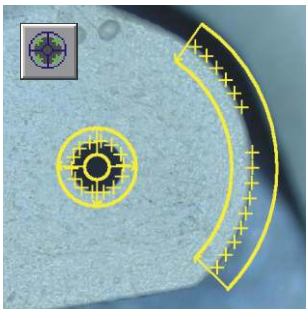
Premium Metrology Software

Precise measurement  
and total control  
at the click  
of a mouse

MeasureMind® 3D MultiSensor metrology software is the premier acquisition and control software for OGP® video measuring systems. Get maximum productivity from video, laser, touch probes, and micro-probes, including measurement of parts mounted on single or compound rotary indexers. It includes:

- Full field-of-view (FOV) video image processing and weak edge analysis
- Single and dual monitor solutions
- Software interface control of all illumination sources and zoom lens settings
- Real-time graphical display of measurement results, with interactive editing tools
- Intuitive mouse-driven user interface with icon toolbox for direct access to important measurement functions
- Color 3D models with color-coded in- or out-of-tolerance conditions
- Advanced analysis functions, including math operations, branch on condition, and if-then-else statements
- Choices of data reduction methods, including best fit and min/max geometry
- Compatibility with optional OGP software: SmartCAD® 3D for CAD compatibility; MeasureFit® Plus for composite form analysis; SmartReport® Plus for custom report generation and export to spreadsheets or databases; third-party software for SPC analysis; MeasureMenu™ for productivity enhancement

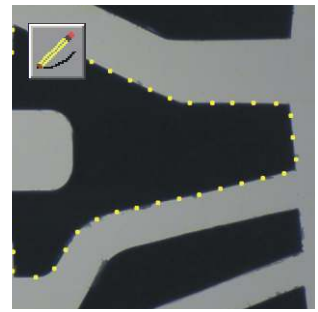




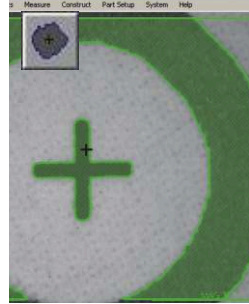
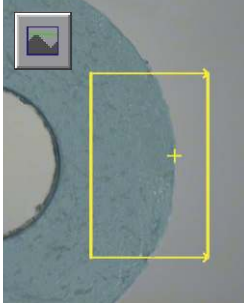
**FeatureFinder™** automatically finds valid data points along arcs, circles, or straight edges. Powerful image processing algorithms ensure that extraneous dirt and debris will not influence measurements.

**An extensive set of video tools** make it easy to measure any edge or part detail. Simply click an icon to invoke these powerful tools.

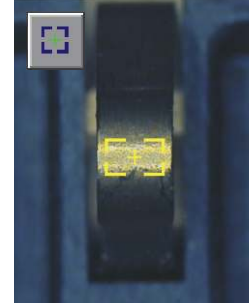
Edge contours are easily measured with the **Edge Trace** tool. Simply click on the start and end points. The stage will move the entire edge into the field of view a segment at a time — automatically.



A trio of **Weak Edge Point** tools reliably and accurately find and measure extremely faint or indistinct edges. Weak Edge tools make it easy to find localized minimum or maximum points.

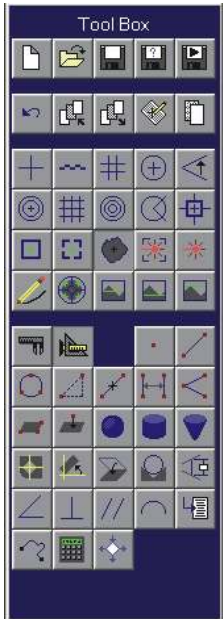


The **Centroid 2** tool measures irregular shapes. It determines the XYZ center of the centroid, its min/max radius, its True Position, and data points on its perimeter.

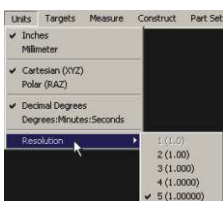


With the **Advanced Autofocus** tool, simply click on a feature to automatically perform an optimized focus analysis using software-calculated parameters on-the-fly. The result is fast, precise autofocus, every time.

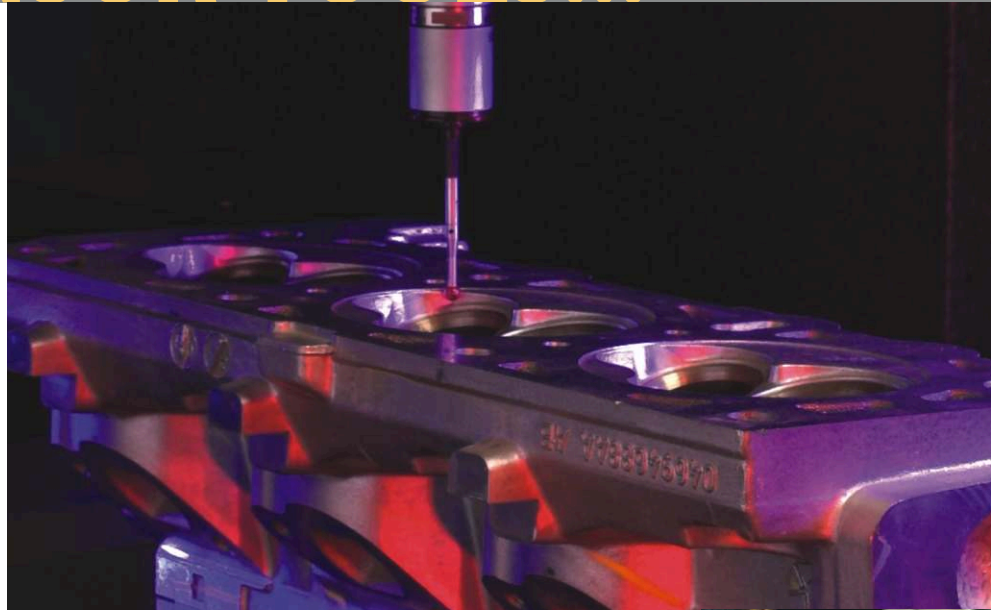
# VIDEO AND MULTISENSOR TOOLS...



The icon **Tool Box** in MeasureMind 3D MultiSensor makes it easy to open, edit, and save a part routine, construct conic geometries, and more. There are icons to change units of measurement, select measurement tools, or run a saved part routine. Others let you measure a point, line, midpoint, circle, plane, or sphere. There are also tools for measuring widths, intersections, perpendicularity, parallelism, axis alignment, relationship of a point to a plane, gage diameter, and much more.

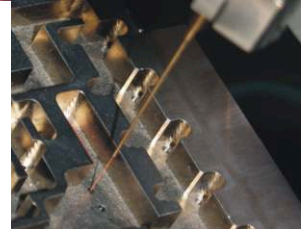


Of course, all these tools are also accessible with pull-down menus, if you prefer.



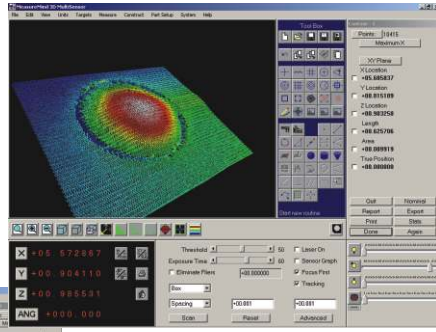
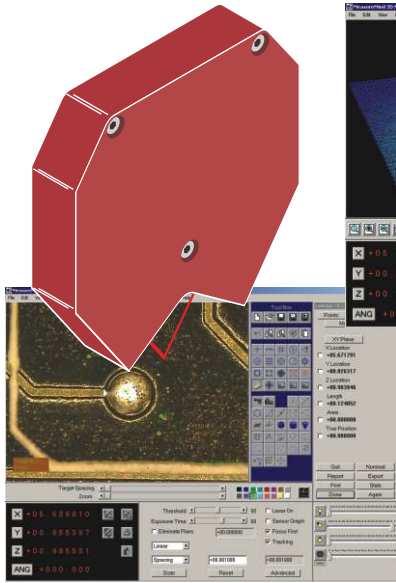
MeasureMind 3D MultiSensor does it all — so you don't have to. It controls all aspects of system operation, accepts inputs from multiple sensors in any order, relates all the data points to one another, and presents the results numerically and graphically. And it does all this with a user interface that is easy to learn, and easy to use.

Image processing tools anticipate the feature you want to measure. Touch probes, lasers, and video edge sensors follow complex paths automatically. MeasureMind 3D deploys sensors when needed and retracts them out of harm's way. It even controls the articulated PH10 touch probe in touch trigger and scanning modes.\*

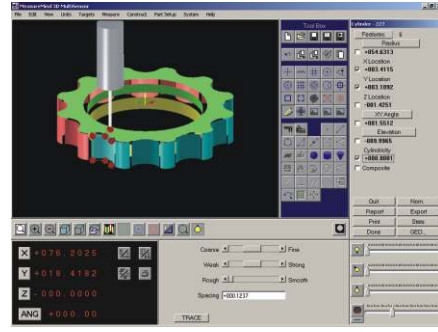


MeasureMind 3D supports a variety of sensors, like the innovative Feather Probe™ micro-probe. This sensor can measure extremely small features, with its micro-miniature stylus and minimal trigger force.

\*On properly configured OGP SmartScope measurement systems



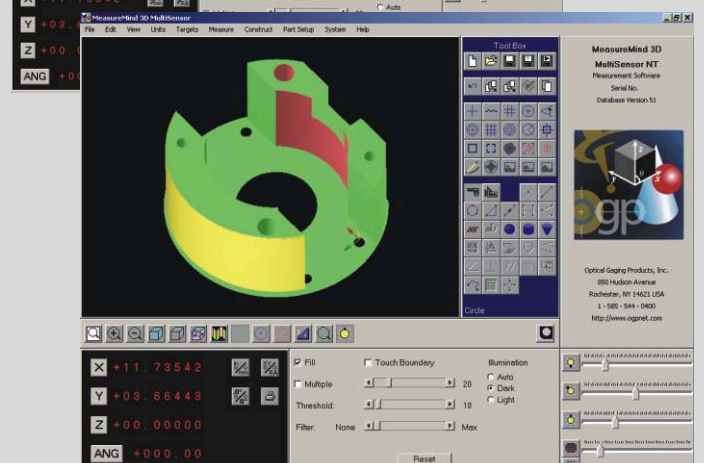
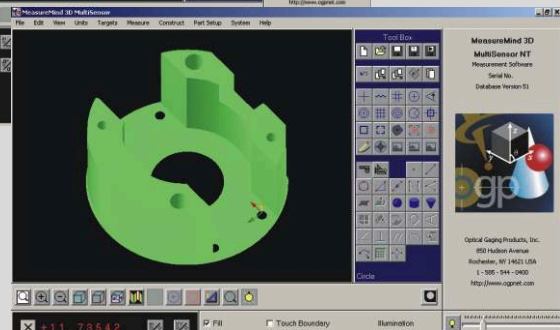
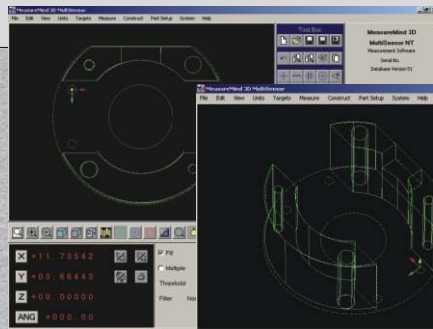
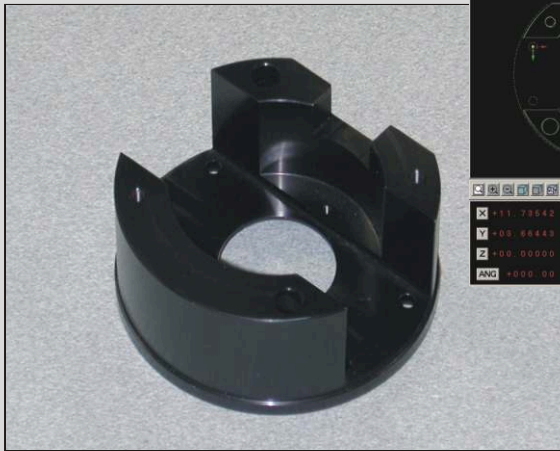
Laser profiles add another level of detail to part characterization. Measure edges of a solder bump with video (left) and profile its surface geometry with laser (above). Together, video and laser data provide more complete information.



MeasureMind 3D provides complete control of touch probes for measuring features inaccessible by video or laser. Touch trigger probing includes the Probe Path generator. Select as few as three points on a part radius or diameter, and Probe Path generator will automatically create a path to measure the number of points per radius with the spacing you select. Once put into motion, part programs select the probe from a changing rack, perform the measurements, and put it away — for totally unattended operation.

# FOR THE RESULTS YOU NEED...

## Acquire and Process Data Points — Easily and Accurately



MeasureMind 3D easily integrates video, laser, touch probe, and micro-probe sensor data to give you the dimensions of every critical feature of your parts. Rich graphics and detailed numeric results help you relate measurements to design drawings. Rotate the part model to see hidden feature relationships. Rendered 3D models help you visualize the results, while tolerance variations appear in different colors. Tell at a glance which features are in or out of spec.

“Construct” tools let you thoroughly assess measured features. Then, simply save the part routine and call it up when needed. Fixture the part and run the routine. And it’s easy to edit a routine when your designs change. Simply edit the affected steps by clicking in the model, and save it as a new routine.

MeasureMind 3D MultiSensor is an intuitive, complete dimensional measurement application that lets you use your SmartScope to maintain the quality your customers expect. It does all you need it to do — and more — making it an industry favorite.

# MEASUREMIND 3D MULTISENSOR

## Technical Specifications

### COMMON FEATURES

#### Coordinate Systems

- Cartesian (XYZ) and Polar (RAZ)
- Decimal/degrees or deg/min/sec
- English and metric units
- User defined display resolution

#### Measurement Types

- Coordinate point
- Line
- Radius and diameter
- Included angle and intersection point
- Width
- Distance: XYZ, polar, 3D, point-line or plane
- Gage diameter and gage ball
- Cylinder
- Cone
- Contour
- Centroid
- Sphere
- Plane
- Intersection(s) of lines-circles, lines-planes, cylinder-planes
- PTB-certified measurement algorithms

#### Tolerances

- Size – ANSI (+/-) and ISO (+/+, -/-, +/-)
- Location – true position, concentricity, linear
- Form – circularity, straightness, flatness, coplanarity, cylindricity
- Orientation – angularity, parallelism, perpendicularity
- Profile – arc, line, or plane
- Modifiers – MMC and LMC

#### Graphics Model

- Real-time display of measured features, nominal features, and raw data points
- Orthographic, 3D wireframe, or 3D rendered surfaces
- Auto-scaling graphics model
- Color-coding by tolerances
- Zoom in/out with mouse
- Build constructions by selecting features in model window
- 3D isometric view rotation

#### Data Reduction

- Calculate from image processing data or previously measured features
- Best fit (Gaussian), minimum, or maximum
- Automatic dirt/defect removal
- Select active plane for projections

#### Datum Operations

- Origin set and skew alignment
- Auto leveling
- Axis preset
- Translate origin and rotate axes
- Construct from basic dimensions
- Full 3D datum structures

### CNC Control

- XYZ positioning
- Magnification (zoom lens systems)
- AccuCentric automatic zoom lens calibration\*
- Illumination source and brightness
- Single or compound rotary indexers\*
- Edge detection and image analysis
- Autofocus
- Probe scanning

### Data Output

- Configurable hard copy report
- Default and custom report headers/comments
- Configurable data export to Excel or database
- Run time overrides
- Print image and model
- Export to SmartFit® 3D, MeasureFit® Plus, SmartReport® Plus, or MeasureMenu™ software; or third-party SPC software
- Geometric calculation
- Comparison to nominals and tolerances
- Digital I/O

### Editing

- Undo last step
- Insert, delete, change, and copy step
- Run from step
- Interactive editing while measuring
- Standard, condensed, and expanded listings

### Languages

- Chinese, Dutch, English, French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Swedish

### CAD Compatibility

- CAD import and export
- DXF, IGES, and other formats

### System Configuration

- Power-up defaults
- Language
- RS-232 port configuration
- Default report and export templates
- Printer type and port
- Audible warnings and tones

### Macros

- Copy and Step & Repeat: XYZ or RAZ offsets
- Math operations
- Branch-on condition and If-Then-Else statements

### On-Line Help

- Full-featured Windows Help
- Hyperlinks, related topics, index and search

### VIDEO FEATURES

#### Image Processing Tools

- FeatureFinder – Double click image to automatically measure lines, arcs, circles
- Edge trace – Automatically measure irregular contours in or out of field of view
- Weak edge – Measure features based on image conditions
- Strong edge – Highest contrast or directional scan
- Centroid

#### Autofocus Tools

- Edge and surface focus
- Advanced focus – first, last, or highest contrast
- SoftSectioner

#### Computer Generated Targets

- Calibrated size
- Re-size by dragging with mouse
- Crosshair, box, circle, focus, grid, protractor, centroid, and multiple combinations

#### Calibration Utilities

- Optics, stage, autofocus, touch probe, laser, and rotary calibration

#### Image Operations

- Save image during run (24 bit TGA format)
- Print image (laser, inkjet, & video printers)
- Positive and negative masks
- Transparent or solid overlays

### MULTISENSOR FEATURES

#### Digital Range Sensor (DRS and TTL) Laser\*

- Non-contact surface profiling
- AutoFocus
- Single point, linear, and area scans

#### Touch Trigger Probe\* and Scanning Probe\*

- Touch probe path generation
- Calibrate touch probe to optics
- Calibrate auxiliary probe tips
- Manual or automatic safe point generation
- TP20, TP200, PH10, and SP25 compatibility
- Programmed deployment/retraction\*

#### Micro-Probes for Micro-Features\*

- Rainbow Probe
- Feather Probe
- Programmed deployment/retraction\*

#### Rotary Indexers\*

- Control of single and compound indexers
- XYZ grid rotates with indexer, feature relationships are retained

\*if equipped



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Multisensor Metrology

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