Why Upgrade to ZONE3?

ZONE3® vs MeasureMind® Software Feature Comparison

Comparison Menu

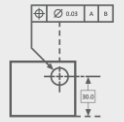
ZONE3 vs MeasureMind


Measurement Tools


Constructions


Features


Walk Up Measurement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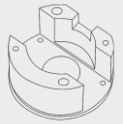
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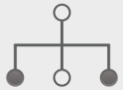
Alignments


Evaluation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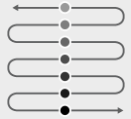
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SSA


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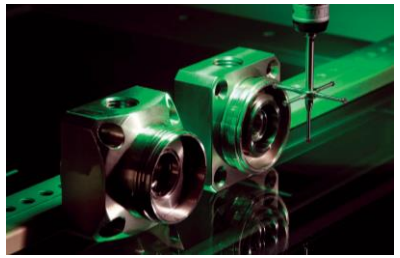
Measurement Tools

Targets and finders (optics/laser/touch probe) used to measure features



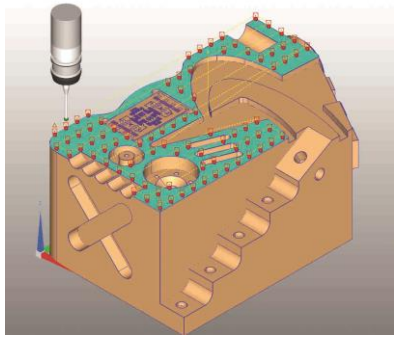
Tactile Sensors
Tactile sensors measure areas that cannot be seen by optics, such as cylinder interiors or sphere exteriors. Touch trigger tactile sensors find data points one at a time, while continuous contact scanning sensors offer high speed data gathering for surfaces.

ZONE3

- SP25 known and unknown scanning with QVI Controller
- Auto Adjust Lights
- Replace Finders
- Path Generation with numerous strategies for all tools/sensor based CAD
- Numerous filters for all tools/sensors
- Multiple finders and tools/sensors in a single step
- Second Evaluation
- Full Field Image Parallel Processing

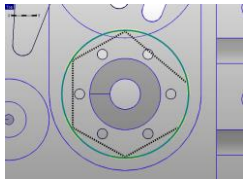
MeasureMind 3D

- FeatureFinder, Strong Edge, Weak Edge, Edge Trace, Control, Auto Focus and Manual Targets
- Touch Probe, Laser Focus and Laser Scan
- Probe Path Generation based on user entered nominals
- Laser Filters
- One finder per step

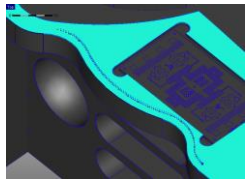


Touch Probe

Path Generation
ZONE3 AutoPath uses CAD nominals to automatically create an optimal path for each measurement. AutoPath is fully multisensory capable. Use AutoPath with any sensor

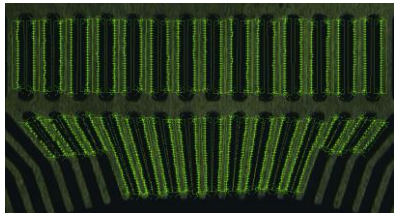


Video



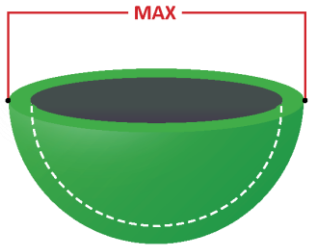
Laser

Full Field Image Processing
Snapshot Full-Field Image Processing combined with intelligent routine **Optimization** can be used to measure as many features as can be seen simultaneously.

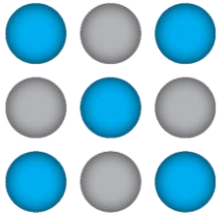


Constructions

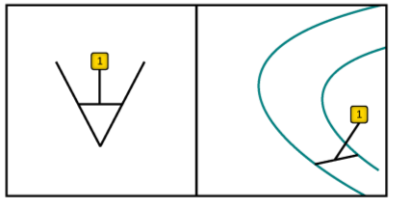
Calculations based on measured features



Max Sphere
New construction type fits the largest possible sphere between points from two separate features. Reporting the diameter of this sphere is useful for determining the maximum wall thickness.



Pattern
Construct Pattern is now a part of the construction ribbon so it can be directly accessed without using Auto-Construct.



Gage Distance Line
For two reference non-parallel lines or two 2D curves, GageDistanceLine reports the location of a line of a given length constructed between them. For a GageDistanceLine construction, you specify the length of the constructed line.

ZONE3

- Min/Max Sphere (Wall Thickness)
- Gage Depth
- Circle
- Intersect Circle
- Intersect Line
- Midline
- Midplane
- Extreme Points
- Offset Line
- Offset Plane
- Pattern
- Parallel Lines
- Parallel Plane
- Perpendicular Distance
- Perpendicular Line
- Perpendicular Plane
- Pierce Point
- Project Arc/Circle
- Project Line
- Slot Centerline
- Tangent
- Gage Distance Line
- Tangent Line
- Tangent Plane
- Vertex Point
- Volume
- Auto-Construct
- Angle visualization in Model Window

MeasureMind 3D

- Distance
- Width
- Angle
- Midpoint
- Intersection
- Gage Ball
- Gage Diameter
- Plane to Point

Features

Geometry to be measured

Blob

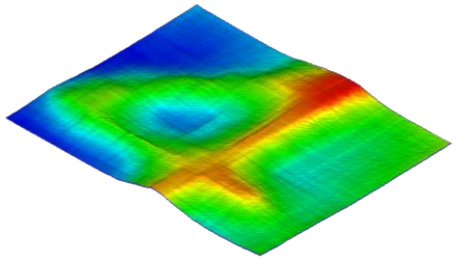
The **Blob** finder locates irregular geometries and reports advanced results such as area, centroid, perimeter, bounding length/width, etc. in single or multiple FOV's. Also useful for searching an area of unknown defects or features.

ZONE3

- Blob
- Contour
- Slot
- Area Multi-Focus
- Surface
- Advanced Edge
- Caliper Tool

MeasureMind 3D

- Point
- Line
- Circle
- Curve
- Plane
- Sphere
- Cylinder
- Cone



Area Multi-Focus

The Area Multi-Focus tool uses optical focus to create an array of 3D data points that can be used in constructions or feature definitions.

Caliper Tool

New video target type to quickly obtain the distance between two features. This tool can also be used in a step to obtain the center point of a specified span.

Walk Up Measurement

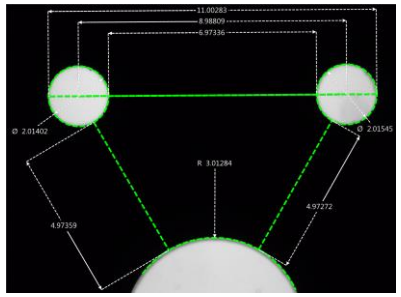
Performing quick measurements without the intention to turn into a program

ZONE3

- FeatureExtractor
- Manual Focus
- Reverse Programming
- AutoID (Single and Multi-FOV)

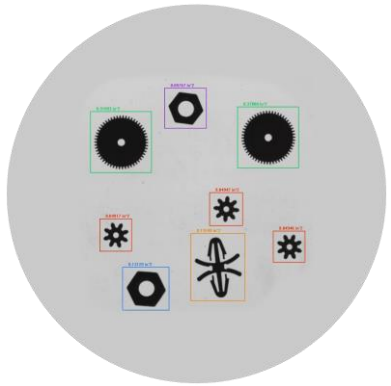
MeasureMind 3D

- Active Finder
- Digital Read Out (DRO)



Manual Focus & FeatureExtractor

Use FeatureExtractor to automatically identify and measure features visible within the FOV. With one click, all prominent features are displayed as flyouts in the video window and you can hover over features to see relationships to other geometries.

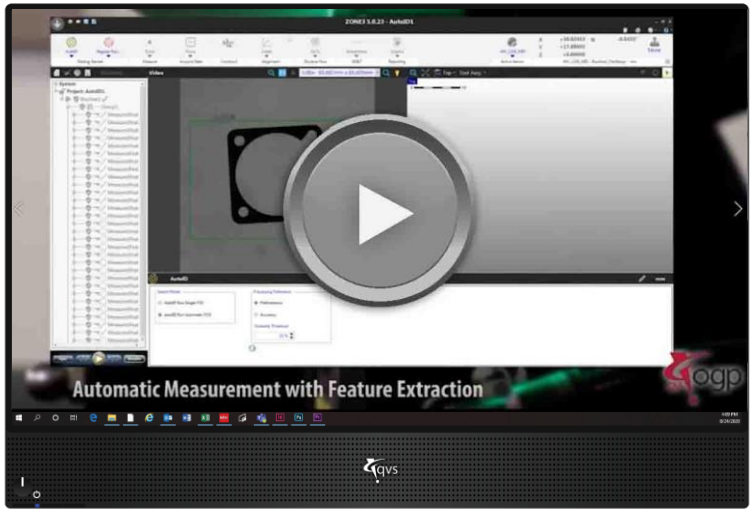


AutoID

Use AutoID to automatically run a routine. ZONE3 will search for and automatically run part routines that match the part(s) that you have placed on the machine stage and are visible within the video window.

FeatureExtractor & AutoID

Automatic FeatureExtractor immediately finds and measures all part features in the viewing area, saving time compared to long part routines.



Tolerancing

Limits within a part that is considered good

Decimal Digits Table

	Positions	Tolerance
1x	(1.0)	+/-0.5
2x	(1.00)	+/-0.05
3x	(1.000)	+/-0.005
4x	(1.0000)	+/-0.0005
5x	(1.00000)	+/-0.00000
6x	(1.000000)	+/-0.000000
7x	(1.0000000)	+/-0.0000000
8x	(1.00000000)	+/-0.00000000
A		+/-1.0000

Block Tolerancing

Block tolerancing allows you to enter default tolerances based on the number of decimal places shown on a print. Often a drawing will have a table to indicate what the tolerances to be used if not indicated directly with the nominal value. In ZONE3, a table can be configured so tolerances can quickly be added to measured features.

ZONE3

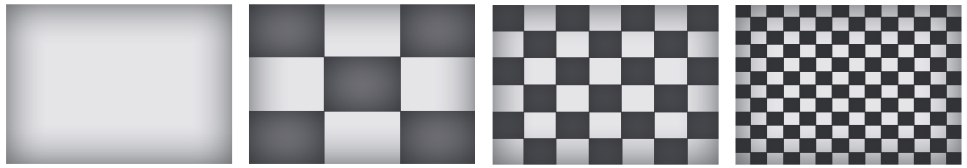
- Global (Block) Tolerancing
- ISO 2768 Tolerances
- Limits & Fits
- Unilateral Tolerances

MeasureMind 3D

- ANSI and ISO +/-, +/+ and -/-
- Form Tolerances (circularity, straightness, flatness, sphericity, cylindricity)

ISO 2768

ISO 2768 is an additional block tolerance type supported in ZONE3. This automatically applies tolerances based on the specified degree of coarseness (i.e. Fine, Medium, Coarse, or Very Coarse).



Fine | Medium | Coarse | Very Coarse

Unilateral Tolerances

Unilateral tolerances restrict deviation from nominal only is one direction and not both larger and smaller than the nominal value.

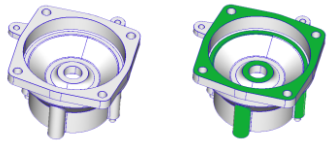
	Feature	Attribute	Nominal	Actual	Tolerance	Code	Upper Tol.	Lower Tol.	Graphics
	Circle1	Diameter	2.25000	2.30155	Limits & Fits	H9	0.02500	0.00000	0.05155 (206%)

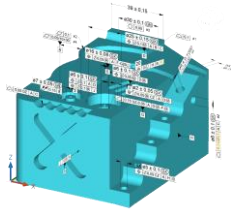
CAD

Tools related to using nominal information provided in a model

CAD Programming

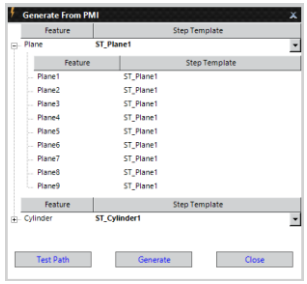
CAD models can be imported from their original format from any popular CAD package.





PMI Import

When importing a CAD model with embedded PMI information, a log is now generated with notes about the conversion into ZONE3 features as well as identifying anything unsupported in ZONE3 that was not imported.



Step Templates

Step templates are used in conjunction with the automatic generation of steps from CAD models that contain Product Manufacturing Information (PMI).

ZONE3

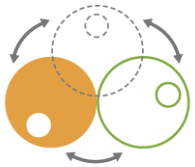
- True CAD programming supporting import and automatic programming from STEP, IGES, DXF, VDA, STL, QIF, EIF, Gerber, Excellon as well as native formats from NX/Unigraphics, Creo/ProE, CATIA, Solid Works, and Inventor.
- Replacement of models in existing programs as revisions occur.
- Import of CAD models with PMI (Product and Manufacturing Information) with automatic program creation.
- Apply to Similar tool takes existing measurements and automatically generates steps for features in CAD model that share common user definable characteristics.
- Video to Align to CAD
- Step Template/Recipes

MeasureMind 3D

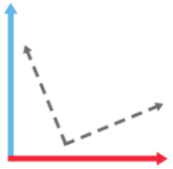
- CAD import for visual comparison in model window

Alignments

Coordinate systems used to orient and define measurement locations



System Alignments
The system alignment feature is used based on a machine axis in addition to an active tool being used for measurement.



Freeform Alignment
Alignment step that allows you to fit measured data to a CAD model or a stored part image. This uses the existing principles of the reposition via video and AutoID tools with the benefit of being a step in your project.

Moving Average

Best Fit

Roundness

Tolerance Alignments
Filtering features used to differentiate tolerances on measurements.

ZONE3

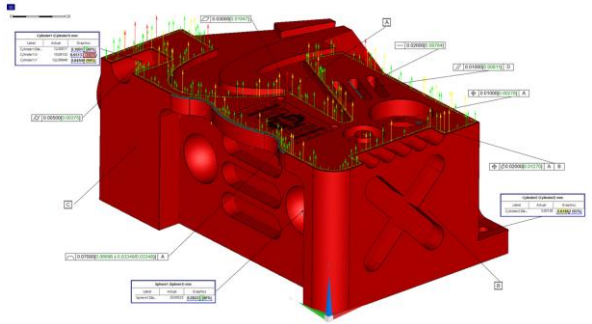
- System (Fixture) Alignments
- Manual Part Setup with Automatic Finders in Steps
- RPS Alignment
- FreeForm Alignment (CAD/Video)
- True 321 Alignment Creation
- Indexed Alignments
- Interactive Coordinate System Displays
- Leap Frog Alignment
- Tolerance Alignments

MeasureMind 3D

- Datum Origin, Axis and Plane
- Manual Part Setup with Targets and DRO

Evaluation

GD&T and specialized modules like roughness, threads and gears



Total Runout

Total feature variation to a 360° datum rotation

Symmetry

Tolerance ensuring features are uniform across a plane

Line

Tolerance zone around any line in any feature

Surface

Three dimensional tolerance zone around a feature

Thread

Thread measurement and evaluation

Gear

Gear measurement and evaluation

Roughness

Overall texture of a surface

ZONE3

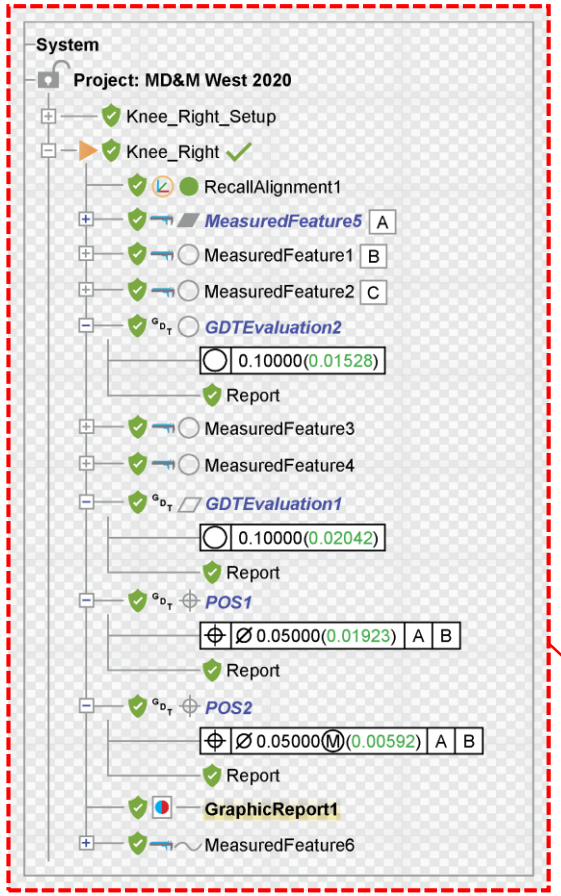
- Full ISO 1101 and ASME Y14.5 compliant GD&T library supporting the different standards.
- Circular runout
- Total Runout
- Symmetry
- Line Profile
- Surface Profile
- Material Modifiers on Datums
- Simultaneous Evaluation
- Datum Targets
- Animated tolerance zones allow you to visualize the specified tolerance condition.
- Thread Evaluation
- Spur Gear Evaluation
- Surface Roughness Evaluation

MeasureMind 3D

- Form
- Angularity
- Perpendicularity
- Parallelism
- Concentricity
- Position
- Material modifiers on features

Logic and Customization

Math, variables, branching, etc.



Logic and Feedback

ZONE3's logic and customization capabilities allow integration with your entire team to optimize the design and production processes.

ZONE3 projects can be easily customized using user input prompts, variables, branching, and other advanced parametric programming capabilities.

These tools provide the logic to create turnkey solutions that can easily be incorporated into automation environments with robotic integration.

ZONE3

- Variable Step
- Macros (Functions)
- Dynamic adjustment of step attributes
- Loop Step

MeasureMind 3D

- Math Step
- If/Else/GoTo Logic

Loop Step

A loop is a routine flow step that groups steps in the program together for the ability to repeat them by a specified number, variable, or logical expression.

Reporting

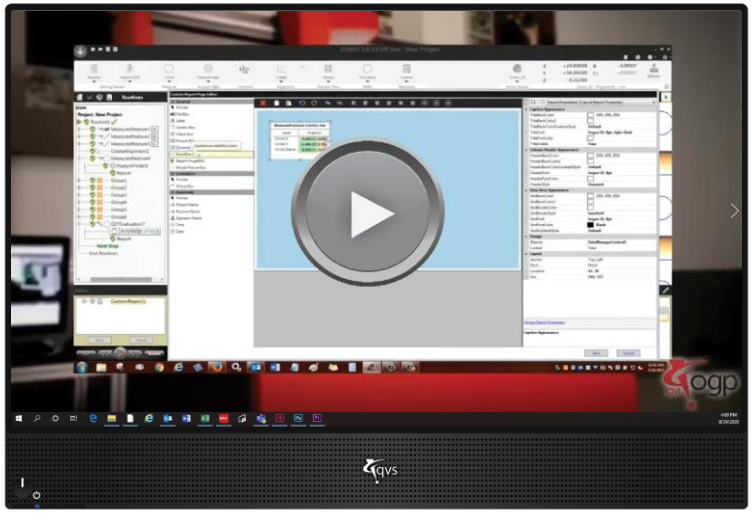
Output of measurement results

Output Formats

Results can be output to PDF, Excel or graphically to truly visualize data results. File output can also be used to export in any text-based format (TXT, CSV, DAT, STA, etc.) to provide raw data or point clouds for external validation.

Custom Reporting

Projects can be customized using user input prompts, variables, branching, step adjustments and other advanced parametric programing capabilities.



ZONE3

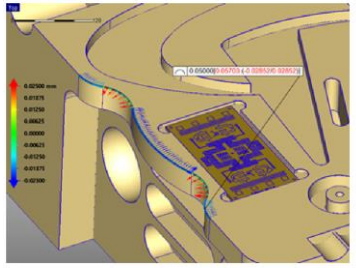
- PDF Output
- Excel Output
- Colored Tolerance Graphics
- Form Plots
- Custom Reporting/Templates
- Whisker Plots/Model Based Graphics
- Re-Report Step
- Multi-Run Report
- Graphic Reporting

MeasureMind 3D

- Any text Based Outputs

Graphic Report Deviation Scale

When viewing deviations in a graphic report, the scale displayed now shows the actual tolerance values when the scaling is set to be based on Tolerance or Status.



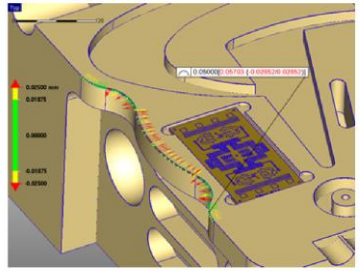
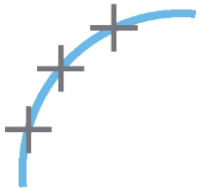


Image Capture

Saving, reporting, and measuring from captured measurement images



Replace Finders

Existing Finders can now be easily replaced within a step. Simply right-click on the finder to replace, choose the new tool/finder type, and then generate a path based on the previous finder's measurement data. This allows for large or complex features to be quickly programmed for measurement when not using a CAD model.

ZONE3

- Save Images to PDF Report
- Save Images with Finder Graphics
- Measure Off Saved Images
- Extended Depth of Field Imaging (EDFI)
- Acquire Image Step
- Image Capture Error handling

MeasureMind 3D

- Save Video Images to file during run

Acquired Image Tool

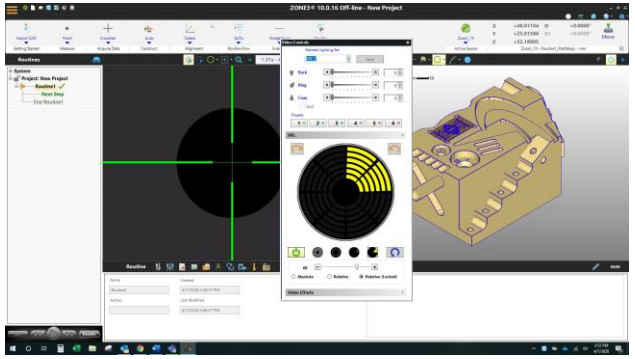
This tool allows a video image to be acquired and archived, or used in a subsequent re-measurement (useful for visualization and documentation of part conditions).

On Failure System Properties

Error handling can now be configured on the system level inherited by default with new projects. Existing projects will override the system level settings.

Lighting

Changes the scene in which optical measurements take place



Named Lighting
This tool allows Named Lighting sets to be created in the Video Window and used to save light settings under a unique name. Named Lighting sets are listed on the Sensors tree.

ZONE3

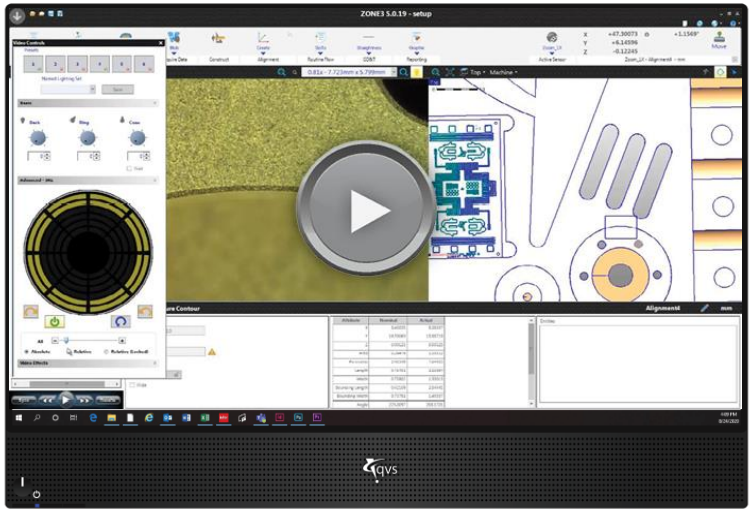
- Preset Lighting
- Named Lighting
- Auto Adjust Light Tools
- Pseudo Color Visualization
- Saturation Threshold
- Programmable Ring Light (PRL) Support

MeasureMind 3D

- Slider Controls
- Interactive SRL Control

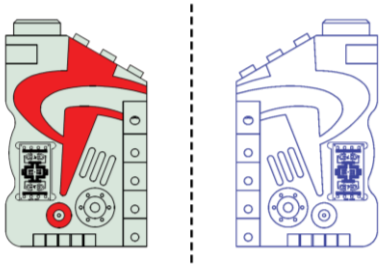
Auto Adjust Light
A Finder type that performs a scene intensity analysis and sets the designated light source to the specified intensity goal. Useful for portability of routines from machine to machine, or when variation in part surfaces or ambient lighting requires lighting adjustments.

Programmable Ring Light (PRL)



Routines/Editing

The saved sequence in which measurements take place



Routine Mirroring

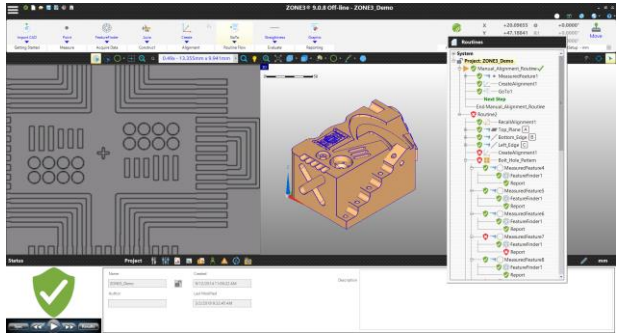
When measuring two parts that are a mirror copy of each other, a program only needs to be written for one part. That routine can then be mirrored to automatically measure the other part. If a CAD model is used, the model will also be mirrored as part of the second program.

ZONE3

- Mirror and Grid Copy
- User Definable Step Names
- Intelligent Routine Optimization
- Move/Rearrange Steps Easily
- Insert Steps easily
- Routines Tree
- Update Selected (Global Edit on Steroids)
- Step Searching
- Multiple routines per program
- Group Steps for program organization
- Multi-Select

MeasureMind 3D

- One Routine Per Program
- Step Numbers
- Print/Edit Window
- Step Edit
- Global Edit
- Insert Step programmatically
- Delete Step(s) programmatically
- Linear/polar Copy



Routine Trees (Printing)

Any of the trees can be printed to either a physical printer or pdf. This allows you to easily review a measurement program without the need to have ZONE3 and the project open.

Routine Trees (Float and Resize)

When docked, the routines tree can be expanded horizontally to review project details without the need for horizontal scrolling. It can also be undocked and floated to resize as desired.

Multiple Select Found

Multiple found steps from Advanced Search can now be selected at once. This is helpful for manipulating multiple steps that could not all be easily selected other than through the Search tool.

Error Handling

How ZONE3 reacts when there is a measurement or report failure

Error Handling

ZONE3 offers a series of settings for handling failed feature measurements and/or reports. For finder failures, you may choose to Continue, Assist, or End. For report failures, you may choose to Continue or End. Allowed recovery modes are accessible based on user permissions.

Failure Assistance Notes

If Assist is chosen for a finder failure, the operator may manually adjust finder settings and retry, or stop the program. If adjustments are made, the operator can add *Assignable Causes, Corrective Actions,* and *Notes* to be documented and reported to indicate the finder was adjusted, for traceability.

ZONE3

- Error Handling Assist Modes
  - Assist
  - Manual Assist
  - Finder/Report Failure Assist
  - Planned Assist
- Image Capture Error Handling

MeasureMind 3D

- Stop on Out of Tolerance
- Missed Edge Override

Regulated Environments

Tools which help restrict user access or document actions for auditing

Locking Projects
Prevents unauthorized editing and gives user 100% control over project progress.

Audit Trails
Records audit trail reports generated by ZONE3 and ICE. Audit trails give a complete detail of past work to see what project steps were completed.

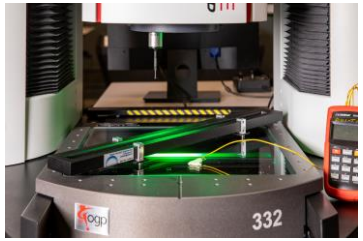
E-Signatures
This tool lets users create individualized CFR Part 11 compliant signatures.

ZONE3

- Windows Based User Access Controls
- Locking Projects/Configurations
- Task Lists
- Audit Log Viewer
- Assignable Causes/Corrective Action Notes
- LaunchPad Operator Interface
- Expiring Sensor Qualifications
- E-Signatures
- IQOQ FDA Compliance Services

MeasureMind 3D

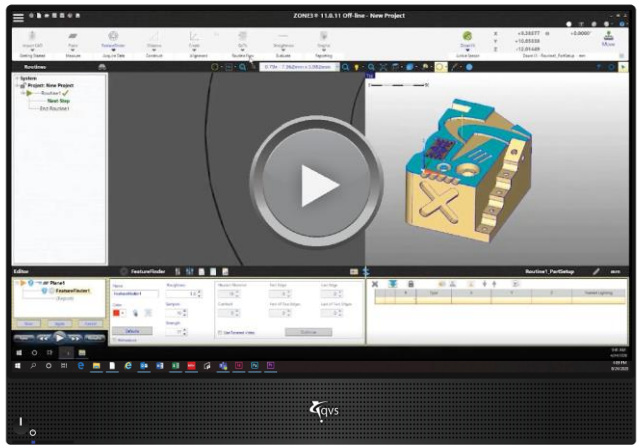
- Menu Configuration



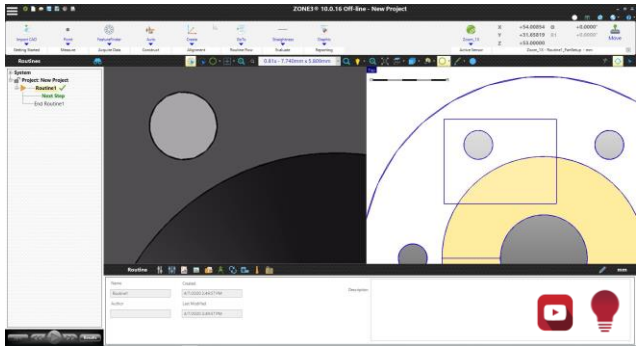
IQOQ FDA Compliance Service
Compliance with FDA regulatory requirements is required for many medical device manufacturers. ZONE3 has built in features that directly support these regulations and requirements.

ZONE3 OFFLINE VERSION Offline Version

Creating or editing programs without a machine



Offline CAD Programming
ZONE3 Offline allows for remote programming of 3D CAD models with no machine required. Offline mimics the features and capability of ZONE3 Professional.



Simulated Video/Lighting
ZONE3 Offline features Simulated Video imaging. Images are in shades of gray and as you adjust the video controls, the grays become lighter or darker to simulate brightness and lighting angle.

ZONE3

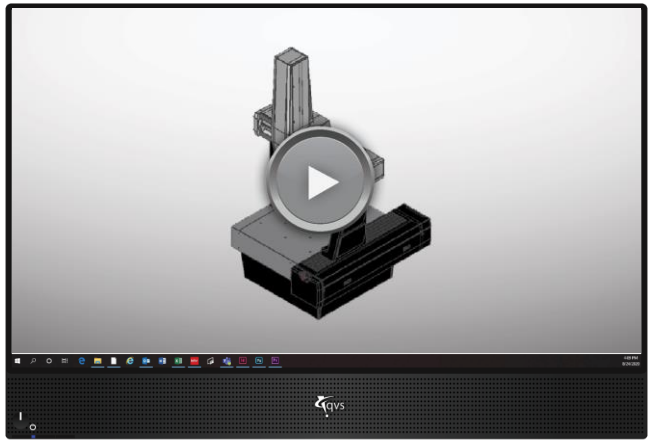
- True Offline CAD Programming
- Simulated Video/Lighting
- Has all capabilities of ZONE3 Pro but in an Offline package

MeasureMind 3D

- Edit Report Attributes
- Delete Steps

Video/Model Window

Means to view measurements live or overlaid on top of CAD



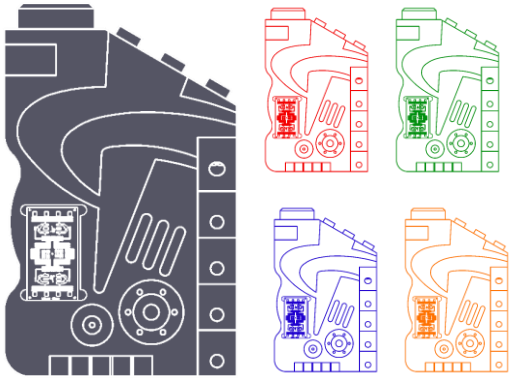
Real-Time Kinematic Model
Kinematic model simulation of the machine, parts, fixtures, and sensors, update in real time and can be used to detect potential collisions.

ZONE3

- Kinematic model simulation of the machine, part, and sensors update in real-time.
- Touch Probe Collision Detection
- Video Window Pan/Zoom
- Model Window Color Customization
- CAD Model Visualization Controls
- Sync Video and Model Windows
- Video Window Pan/Zoom
- Video Window Overlays: Nominals/Actuals, feature Callouts, CAD, Tolerance Bands.

MeasureMind 3D

- Model Window Display of Actual
- Nominal
- Point Visualization



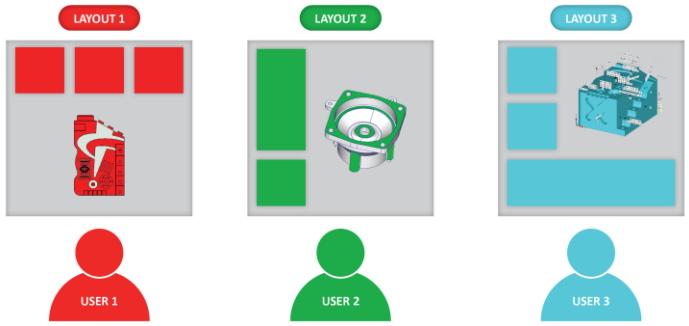
CAD Overlay
A wireframe view of any loaded CAD model can be seen in the video window when this new overlay option is enabled. The color of the CAD overlay is controllable through the model color controls.

Solid Tolerance Bands (CAD Overlay)
Previously only available as a silhouette that identified the limit of the tolerance, solid zones can also be used that fill in the entire area within the tolerance bands.

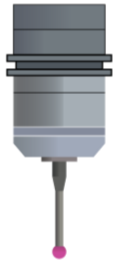
Curve Tolerance Bands (CAD Overlay)
Tolerance bands can now be displayed for Curve2D features that reference CAD and have a profile tolerance applied to them.

Customization

Personalization settings



Personalized Layouts
Desired layouts can be saved and transported to other systems or specified through a new Portal user access control to automatically open .



Import/Export of Probe Components
Probe components can now be easily imported and exported from the Tool Builder. This eliminates the need to rebuild components if using the same probe configurations on multiple systems.

Dynamic Repeat
The number of repeats to execute when running a program can now be easily set in a routine header without the need to modify the routine.

ZONE3

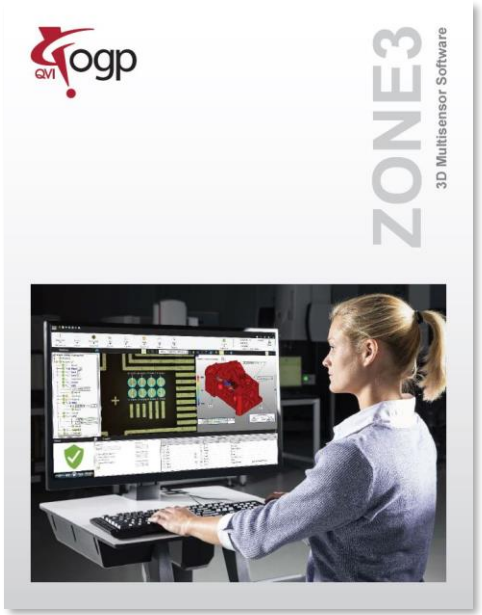
- User definable Personalized Layouts
- Ability to Pop Out and Adjust Window Sizes
- Import/Export System Properties
- Tool Substitution
- Digital I/O with up to 16 Channels
- External Access to ZONE3 Status
- Hide Undesired Attributes
- User Definable/Dynamic Repeat
- External Storage of Run Data
- Routine Mirroring
- Save as previous Version (No need for SmartTree)

MeasureMind 3D

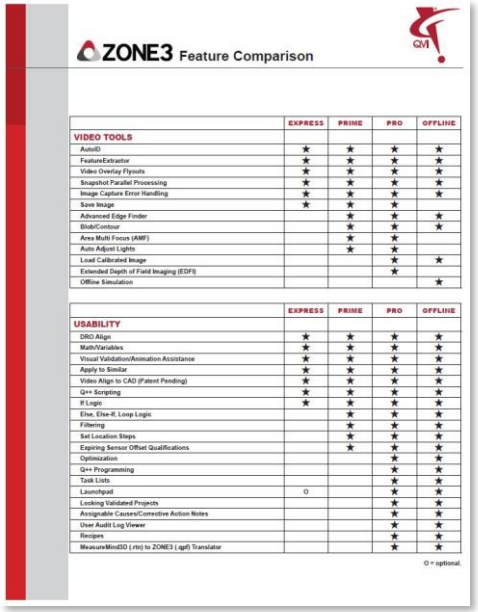
- Standard or Classic Modes
- Digital I/O with up to 8 Channels
- Part/Fixture Repeat

References

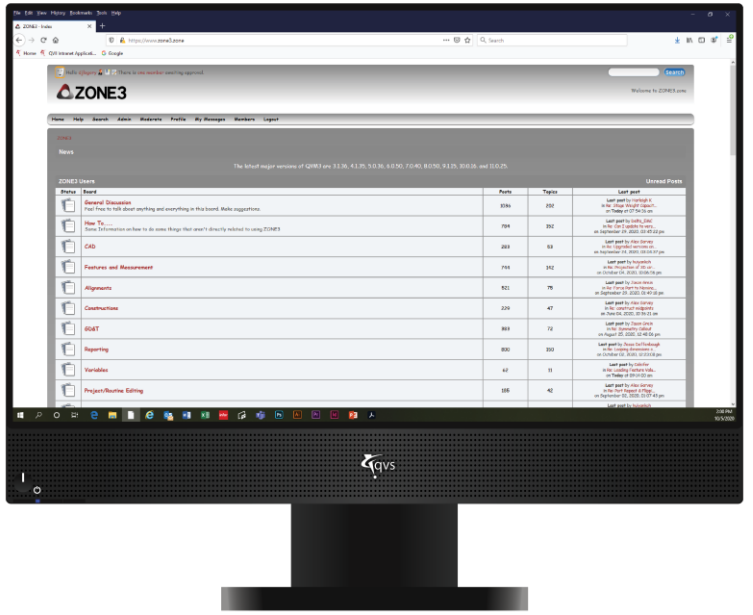
Documentation and resources to help better understand ZONE3 capabilities



ZONE3 Brochure
Detailed look into ZONE3 and all of it's new and unique features.



ZONE3 Feature Comparison
Compare ZONE3 Express, Prime, Pro and Offline to see which fits your needs.



ZONE3.ZONE
ZONE3.zone is the online forum for ZONE3 users. Connect with fellow ZONE3 users and OGP Application Engineers to share metrology tips and get answers to your questions about ZONE3 features – from alignments and measurement, to routine editing and reporting, and everything in between.

Through the forum, **Software Subscription Agreement** (SSA) holders can easily download the current release of ZONE3 (see next slide) as well as access an extensive database of ZONE3 Knowledge Documents.

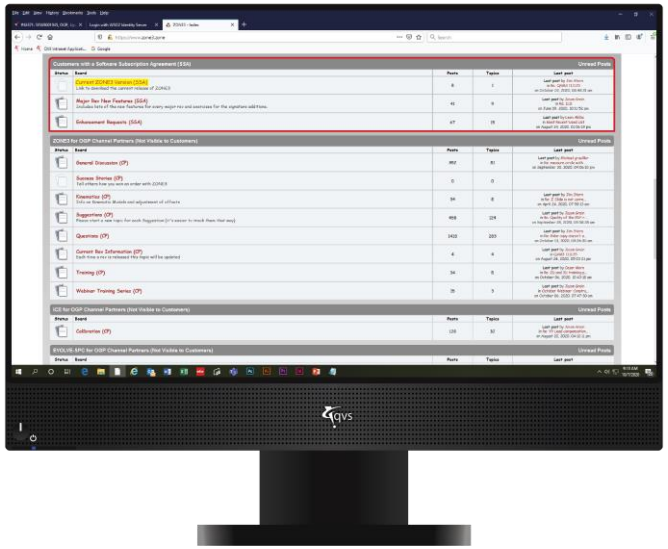
Software Subscription Agreement (SSA)

Periodic enhancements to your measurement software

ZONE3 SSA Flyer

Software Subscription Agreements provide a periodic update to your measurement software, to keep it current. When new versions are released you will automatically receive the new version updates to the software running your machine. This ensures your machine is running the most up to date software, giving you access to new and valued features.

SSA's are purchased as a yearly contract giving you access to all major software enhancements during that 1 year time period. See SSA timeline example below, keep in mind this is just an example:



SSA Section on ZONE3.zone

On ZONE3.zone there is a section specifically for SSA customers. Here customers can download the current version of ZONE3, view major revisions and features of each released version and provide ideas/comments for upcoming software releases.

ZONE3 customers without an SSA will still have access to ZONE3.zone but will not have access to the SSA section.

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