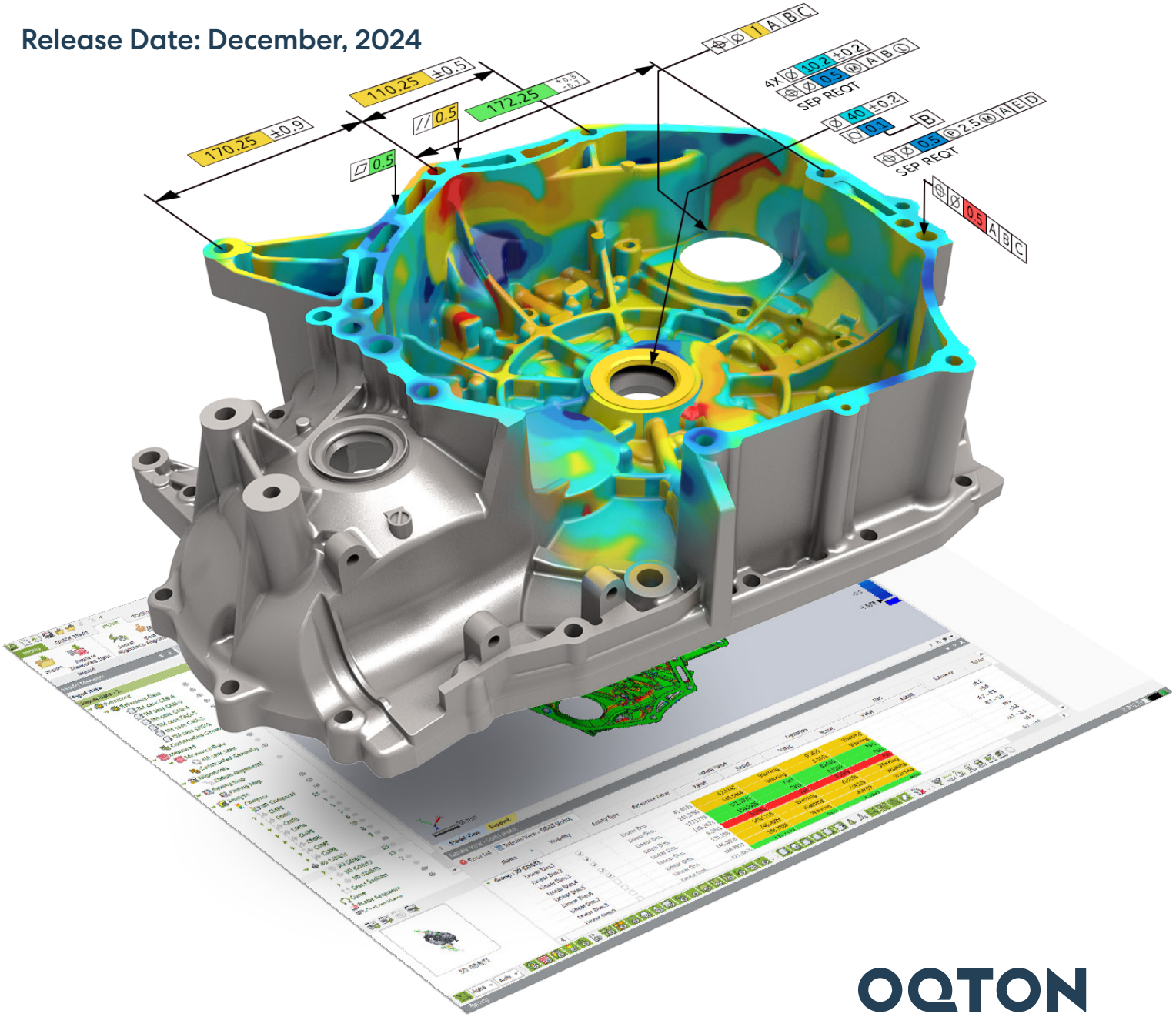
Geomagic Control X

Release Notes

Version: 2025.0.0

Release Date: December, 2024



OQTON

Note: The CX-E / CX-EC labels indicate features that are also available in Geomagic Control X Essentials and Geomagic Control X Essentials Connect software packages.

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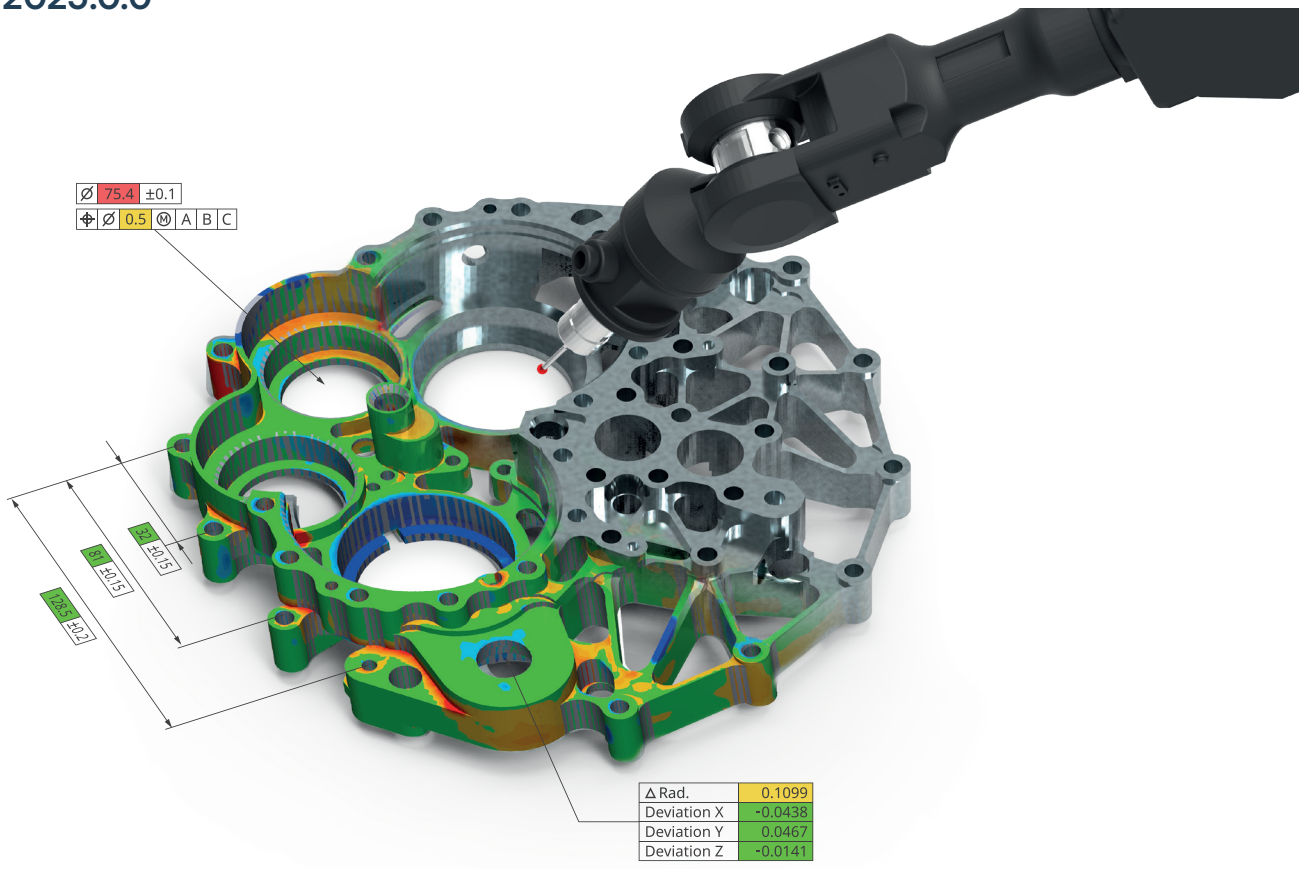
1 INTRODUCTION

INTRODUCING GEOMAGIC® CONTROL X™

Version: 2025.0.0



Ensure Quality Everywhere

Bring the power of 3D scan-based inspection to more people in more places with industry-leading 3D metrology software that makes it easy to capture and interpret scan data.

Geomagic® Control X™ is a comprehensive metrology software platform that delivers the industry's most powerful tools within straightforward workflows. With Geomagic Control X quality managers are enabled with revolutionary ease-of-use, intuitive, comprehensive controls and traceable, repeatable workflows for the quality measurement process. Its fast, precise, information-rich reporting and analysis enable significant productivity and quality gains in any manufacturing workflow.

What Can You Do with Geomagic Control X?

Geomagic Control X includes features to help you ensure quality for each stage of your manufacturing workflow including designing, manufacturing, inspecting, and maintaining.

Design

- Design for manufacturability
- Find and fix problems

Manufacture

- Identify and resolve manufacturing and assembly issues
- Eliminate costly scrap and rework

Inspect

- Solve your toughest measurement problems
- Improve quality documentation
- Reduce quality control bottlenecks

Maintain

- Assess damage, deformation, or wear accurately and consistently
- Predict part failure before it happens

2 INSTALLATION

System Requirements

For the latest system requirements information and to learn about specific qualified system configurations, go to the System Requirements page in the Geomagic Support Center. Some users have had success running system configurations that deviate from the supported listed on our website. In such cases, these configurations are not officially supported by Oqton.
Additionally, we test a variety of hardware platforms in combination with the graphics subsystems. While we make every attempt to be as thorough as possible, hardware manufacturers change their products frequently and may be shipping newer products or have discontinued active support for others. Check the support section of the website for the latest system requirement information and specific qualified systems.

Download and Install software

You can download and install the software from https://softwaresupport.oqton.com/s/article/Geomagic-Control-X.
To enable automatic updates, set the **Check for Latest Version** option to **True** in **Preferences**. The application will check for updates at launch and notify you if a newer version is available, guiding you through the download process. You can also manually check for updates by going to **Help > Check For Latest Version**.

Activate License

Geomagic Control X requires license activation to run the application on your PC. You can choose to use a trial license for a 15-day period or activate a permanent license.
After you start your application, the License Manager window opens. The License Manager allows you to activate and use the Geomagic Control X software.
NOTE: When you launch the License Manager, you can click the Help ? button found at the top right corner of the window to read the CimLM Licensing Guide.

3 NEW FEATURES AND ENHANCEMENTS

Important Notice

Instructions for using legacy scanner plug-ins are available on the **Oqton Software Support Community** at the following link: https://softwaresupport.oqton.com/s/article/Enabling-Legacy-Scanner-Plugins-for-Design-X-Control-X-2024-1

Additionally, instructions for **PMT Probe** Plug-Ins can be found on the Oqton Software Support Community at the following link: https://softwaresupport.oqton.com/s/article/PMT-Scanner-Plugin

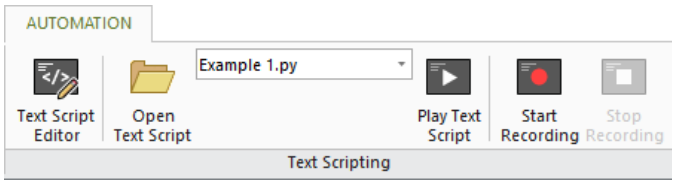
Note: The CX-E / CX-EC labels indicate features that are also available in Geomagic Control X Essentials and Geomagic Control X Essentials Connect software packages.

Automation with New Text Scripting

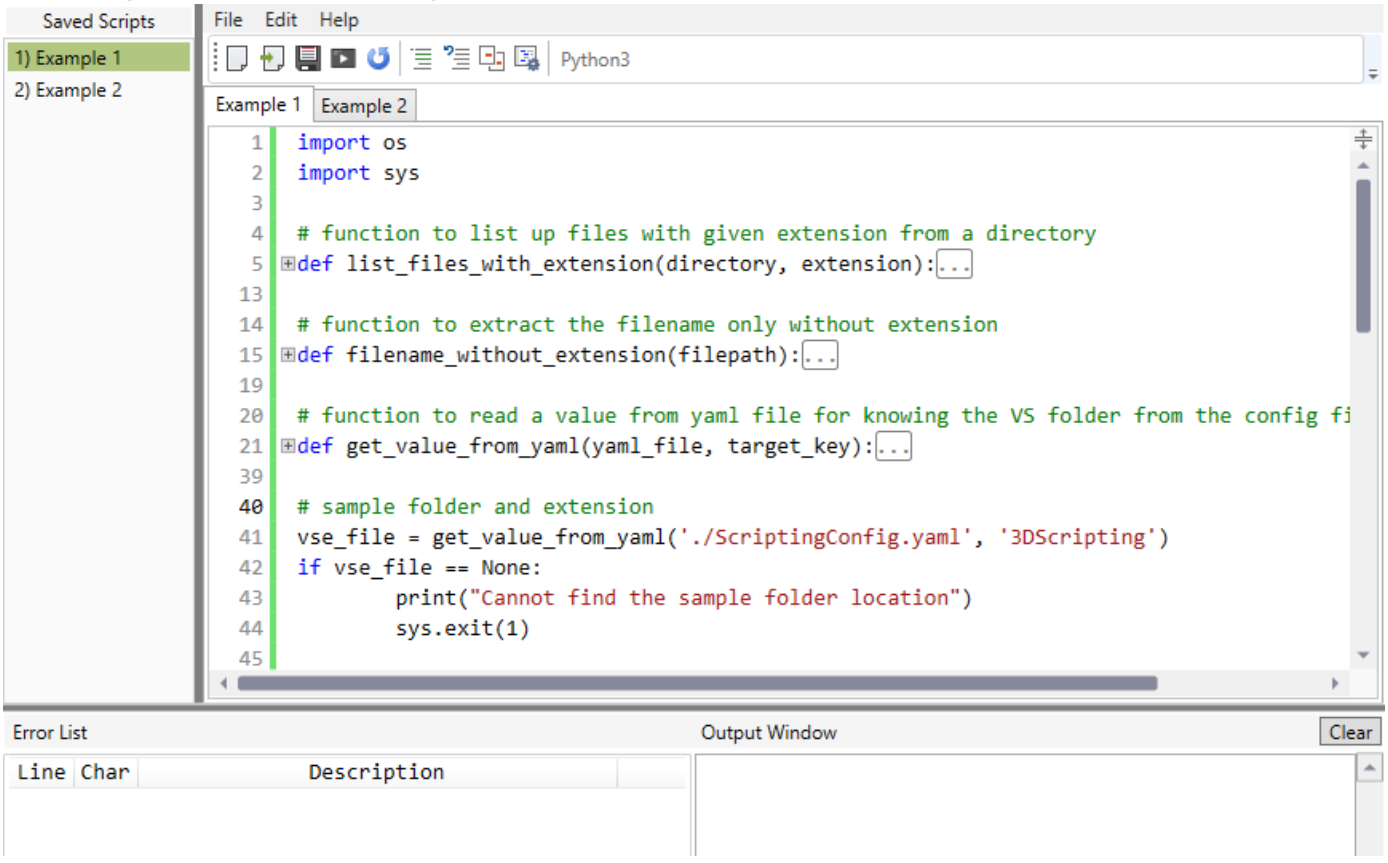
Introducing **Text Scripting** to expand automation capabilities in Geomagic Control X. This new tool enables the creation of custom workflows using Python APIs that correspond to Geomagic Control X commands, offering an efficient way to automate inspection processes.

Key Features

- **Custom Workflows**: Build workflows from scratch or use the script recording feature to capture scripts automatically while performing inspection tasks in Geomagic Control X.



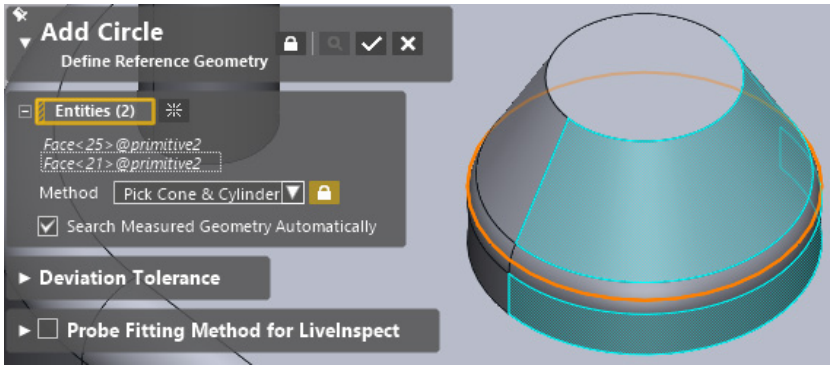
- **User-Friendly IDE**: The built-in integrated development environment (IDE) simplifies coding with features like IntelliSense for easier navigation and effective API usage.



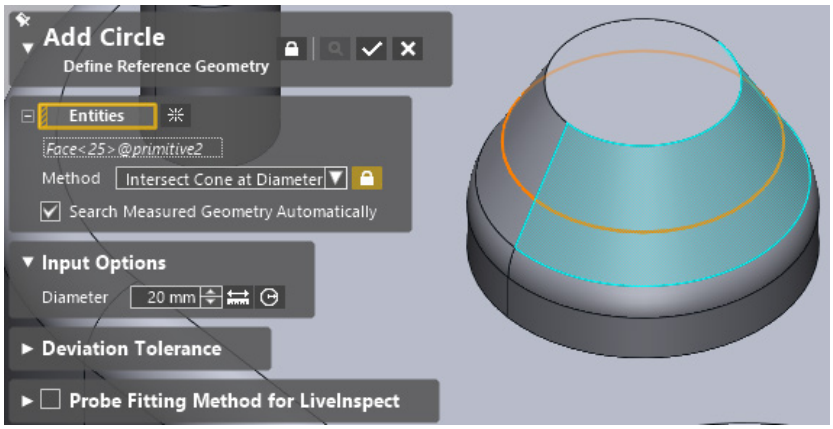
New Circle Creation Methods CX-E CX-EC

Two new methods for Circle Constructed Geometry creation have been introduced:

- **Pick Cone & Cylinder**: Create a circle from the intersection of a cone and a cylinder.

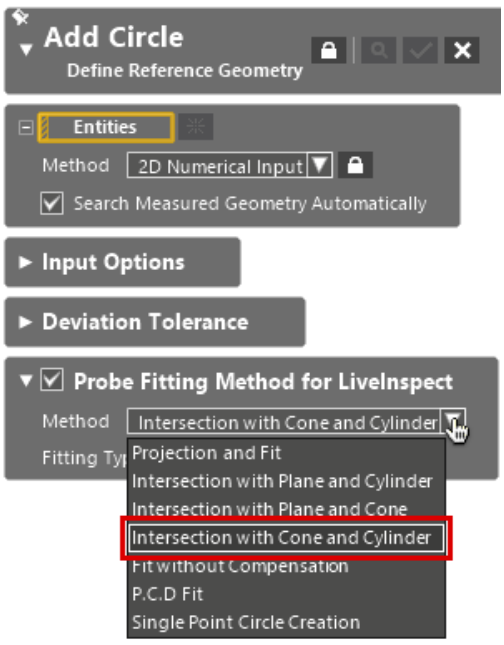


- **Intersect Cone at Diameter**: Create a circle from a cone at a specified diameter.

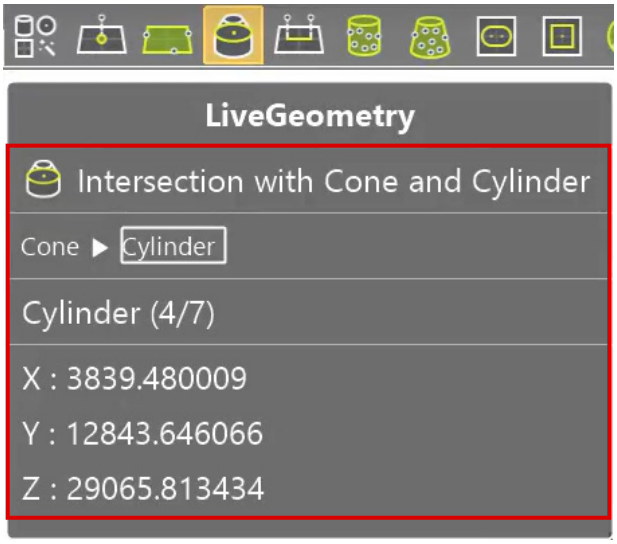


New Probe Fitting Method For LiveInspect CX-EC

A new "**Intersection with Cone and Cylinder**" Probe Fitting Method for LiveInspect has been added to the **Circle** command. This method, also available in **LiveGeometry**, allows for the creation of circles based on the intersection of cones and cylinders.



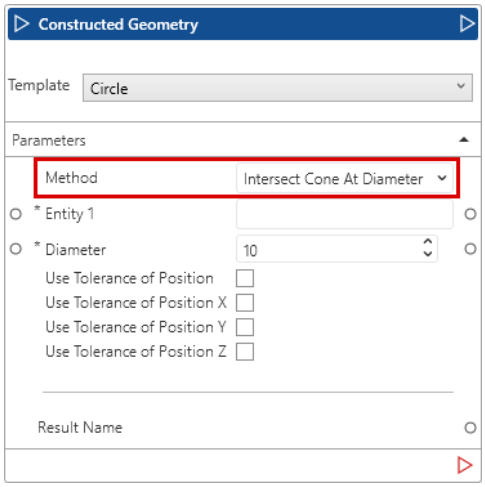
Intersection with Cone and Cylinder Probe Fitting Method for LiveInspect in Circle command



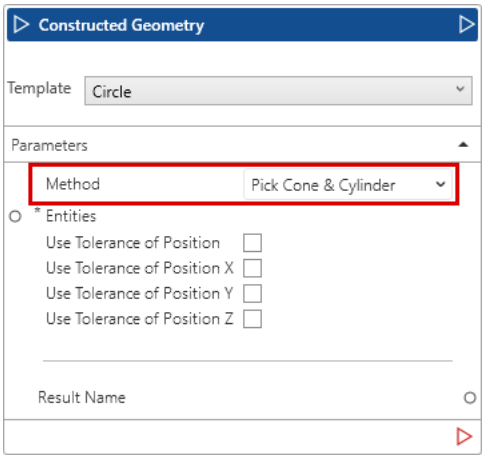
Intersection with Cone and Cylinder in LiveGeometry

New Circle Creation Method in Visual Script Editor

The **Visual Script Editor** now supports the "**Intersect Cone at Diameter**" and "**Pick Cone & Cylinder**" methods for Circle Constructed Geometry creation.



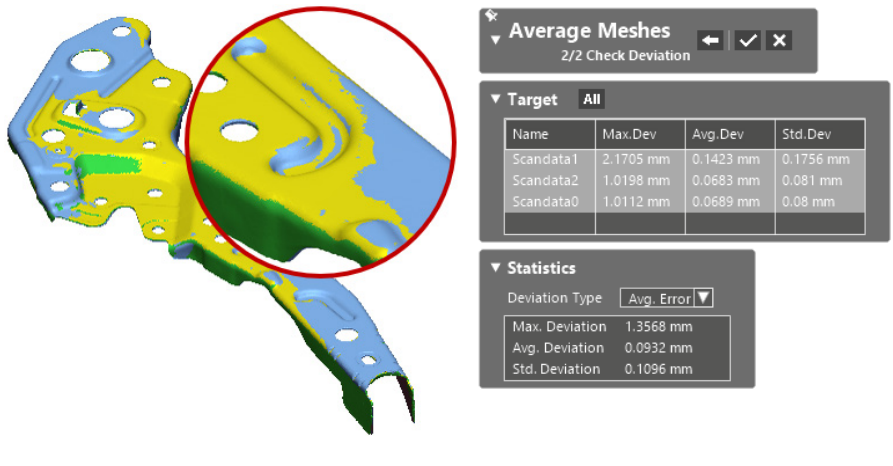
Circle (Intersect Cone At Diameter) Action



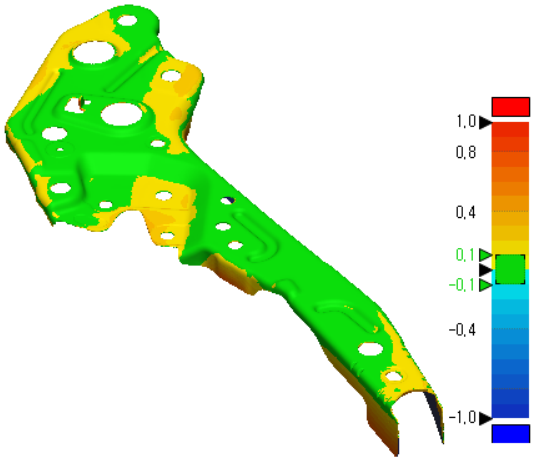
Circle (Pick Cone & Cylinder) Action

New "Average Mesh" Command

The "**Average Mesh**" command, previously exclusive to Geomagic Design X, is now available in **Geomagic Control X**. This tool allows you to average multiple meshes and generate a new mesh or feature shape, which can serve as a standard part for inspection purposes.



Target Meshes to Be Averaged



Averaged Mesh

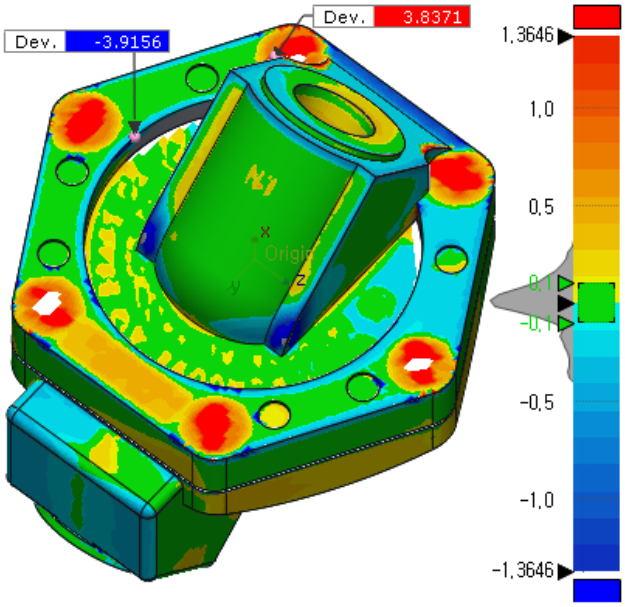
3D Compare Improvements CX-E CX-EC

Improvements to 3D Compare provide more accurate deviation results and improved comparison analysis.

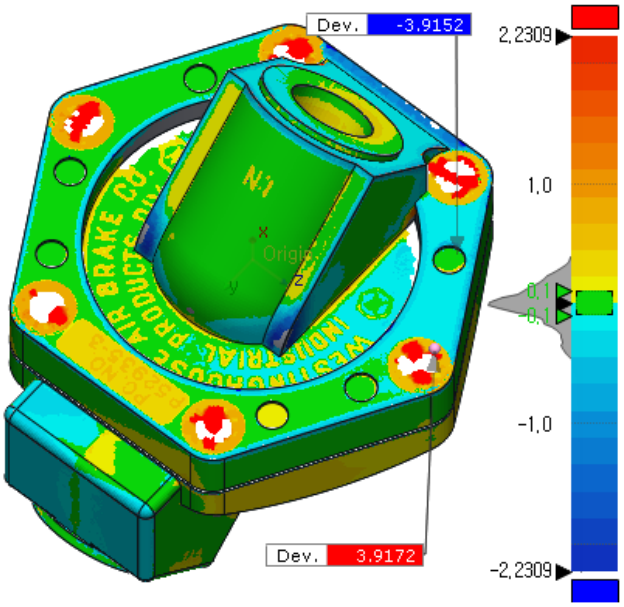
Color Map Resolution

A new **Color Map Resolution** option allows control over the density of data points used to generate the color map. This provides flexibility in adjusting the level of detail and smoothness when analyzing deviations between Reference and Measured data.

This option also ensures that local average deviation results created with the **Color Map** Result Option align more closely with results from **Whisker** and **Color Point** Result Options, providing consistent deviation results across all options.



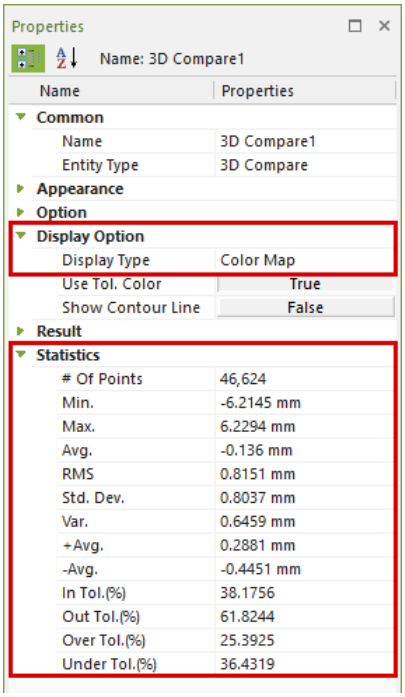
Low Color Map Resolution



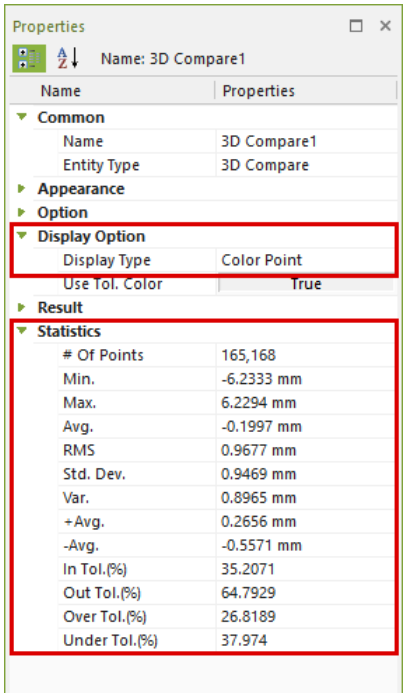
High Color Map Resolution

Statistics Display

The **Properties** for 3D Compare now display statistics calculated from raw scan points for **Whisker** and **Color Points** Result Options, as well as statistics calculated from averaged scan points based on the user-defined **Color Map Resolution** for the **Color Map** Result Option.



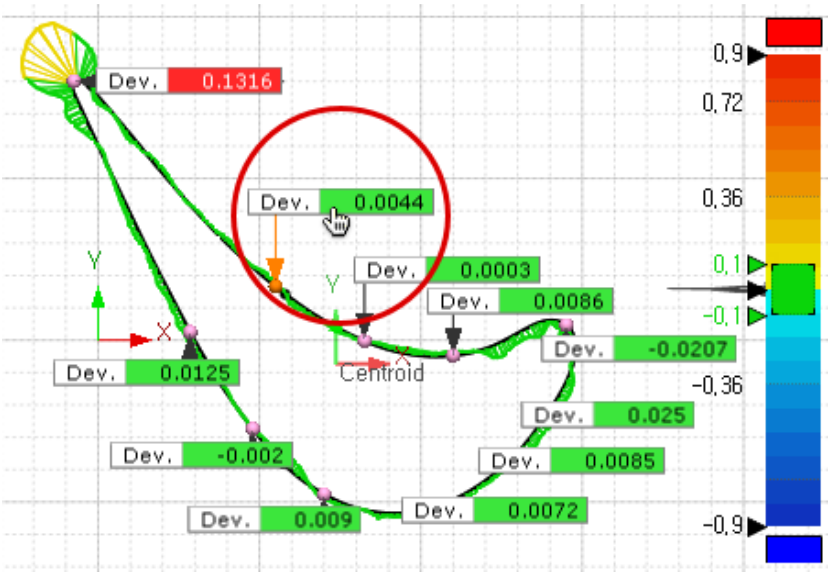
Comparison Statistics from Color Map Result while Low Color Map Resolution



Comparison Statistics from Color Point Result while Low Color Map Resolution

Annotation for Twist Analysis

The **Twist Analysis** command now allows the creation, selection, and repositioning of annotations for local average deviation, offering more intuitive inspection and greater flexibility in customization.



Report Improvements CX-E CX-EC

The **Report** now includes "**Pass/Fail**" indicators in the data table, enhancing clarity and usability of inspection results.

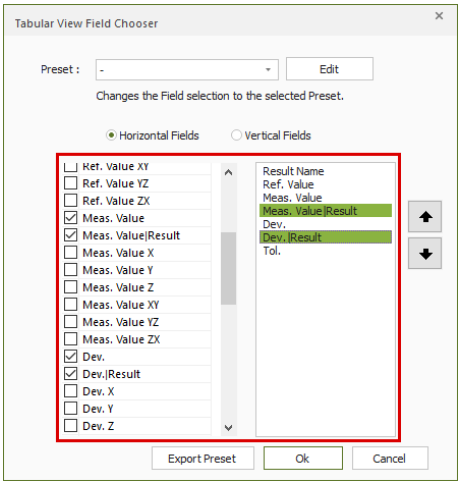
Name	Result Name	Ref. Value	Meas. Value		Dev.		Tol.
			Value	Result	Value	Result	
Linear Dim. 1	Result Data - 1	122.75	122.4374	Warning	-0.3126	Warning	±0.5
Linear Dim. 1 (1)	Result Data - 1	28	26.4722	Fail	-1.5278	Fail	-0.1 ~ 0.5
Linear Dim. 1 (3)	Result Data - 1	68.35	68.8404	Fail	0.4904	Fail	±0.3
Linear Dim. 1 (4)	Result Data - 1	44.75	44.865	Pass	0.115	Pass	±0.3
Radial Dim. 1	Result Data - 1	9	8.7239	Warning	-0.2761	Warning	±0.3

Name	Result Name	Meas. Value		Tol.	Bonus Tol.
		Value	Result		
Parallelism 1	Result Data - 1	0.3712	Warning	0.5	0
Perpendicularity 1	Result Data - 1	0.0883	Pass	0.5	0
Perpendicularity 1 (1)	Result Data - 1	0.2747	Warning	0.5	0
Position 1	Result Data - 1	1.1079	Fail	0.5	0
Position 1 (1)	Result Data - 1	1.1136	Fail	0.5	0

Report Entity Templates for the following features have been updated to include "**Pass/Fail**" indicators by default:

- Cross Section
- Airfoil
- Result Navigator
- 3D GD&T
- Cross Section Group
- 3D GD&T Group

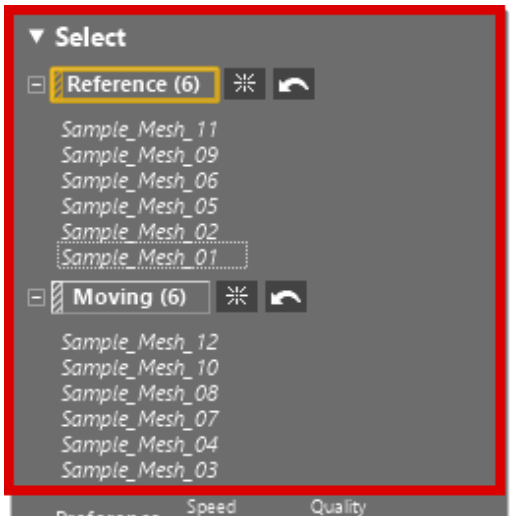
Additionally, the "**Pass/Fail**" indicators for inspection features with deviation results can now be customized in their templates using the **Field Chooser**.



User Interface Improvements CX-E CX-EC

Display of Selected Entity Count

All commands now display the number of selected entities in the target or tool, allowing for easier identification. The count updates in real-time as selections are made.

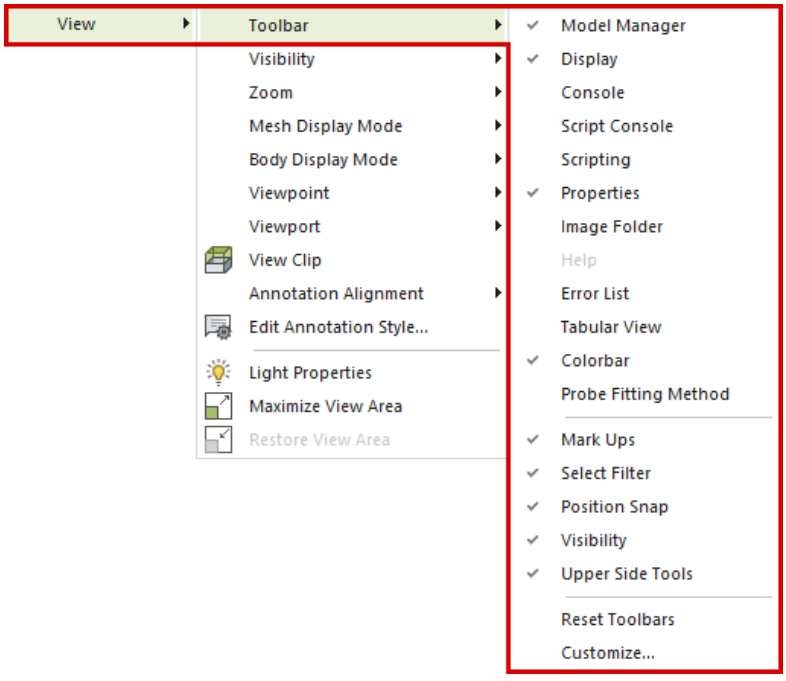


Simplified the process for showing or hiding docking toolbars

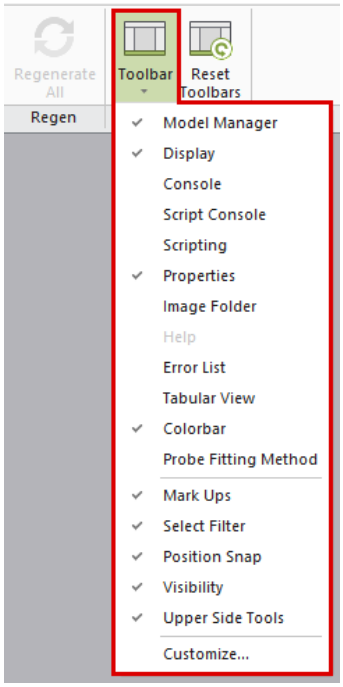
The process for showing or hiding docking toolbars (e.g., Feature Tree, Properties Window) has been streamlined for ease of use.

In addition to using the context menu, you can now manage toolbars through two additional methods:

- **Menu**: Go to **Menu > View > Toolbar** and select the toolbar you want to display from the submenu.
- **Home Tab**: In the **Layout** group on the **Home** tab, under the **Toolbar** menu, select the toolbar you want to show.
- **Context Menu**: Right-click an empty space in the bottom toolbar and select the desired toolbar from the context menu.



Toobars in Menu

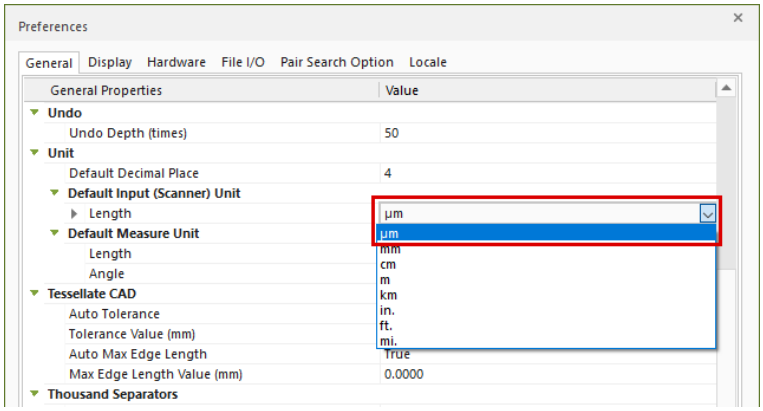


Toolbars in Ribbon Bar

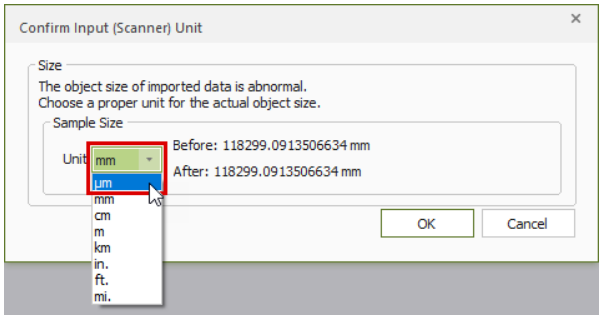
File I/O CX-E CX-EC

Micrometer Unit Support

The micrometer unit ("**µm**") is now supported for handling small models accurately. You can select micrometers as the default measurement unit in Preferences or when importing scan data with mismatched units.



Unit Selection in Preferences



Confirming Input (Scanner) Unit

LiDAR File Import

Added support for importing **LAS** and **LAZ** files from **LiDAR 3D scanners**.

Simulated CMM for Geomagic Control X Essentials Editions CX-E CX-EC

The **Simulated CMM Point** command is now available in both **Geomagic Control X Essentials** and **Geomagic Control X Essentials Connect** editions.

Miscellaneous Enhancements

Faster Software Startup Process CX-E CX-EC

Execution performance has been significantly improved by optimizing and reducing unnecessary pre-processing tasks, which previously affected only certain regions.

Enhanced "Show Fitting Deviation on Preview" Option CX-E CX-EC

The "**Show Fitting Deviation on Preview**" option has been improved to hide selections during the preview for better visibility. Users can also edit the **Color Bar** directly during the preview when using **Constructed Geometry** commands.

4 FIXED BUGS

Note: The CX-E / CX-EC labels indicate features that are also available in Geomagic Control X Essentials and Geomagic Control X Essentials Connect software packages.

Common

- **GV-28675:** CX-E CX-EC — The application crashed when forcing a rebuild after opening a specific file.
- **GV-28126, GV-27807, GV-27806:** CX-E CX-EC — Certain items in Preferences were improperly migrated from the previous versions during updates.
- **GV-27433:** CX-E CX-EC — When customizing the Color Bar in the Edit Template window, the colors or context in the custom Color Bar are displayed incorrectly or disappeared in the Manage Colorbar Template window.
- **GV-27223:** CX-E CX-EC — The context menu did not appear when right-clicking on the Color Bar template in the Edit Template window.
- **GV-26293, GV-25877, GV-23238:** CX-E CX-EC — Geomagic Control X took a long time to launch offline and also experienced delays when online due to a delayed license verification check.

Region Segmentation

- **GV-26992:** CX-E CX-EC — The application crashed when clicking the Estimate button in the Mesh Roughness option in the Auto Segment command.

Constructed Geometry

- **GV-28055:** CX-E CX-EC — The Color Bar still appeared when using methods that do not support the 'Show Fitting Deviation on Preview' option or when the option was disabled in supported methods in the Constructed Geometry Commands.

Compare Tools

- **GV-29225:** Analysis results remained in the Tabular View even after 2D Twist Analysis was canceled.
- **GV-29009:** CX-E CX-EC — Comparision results differed when saving a rebuilt file, reopening it, and rebuilding it again.
- **GV-28729:** CX-E CX-EC — Comparison Point features in the revision file displayed errors after reopening and rebuilding.
- **GV-28612:** Curve Deviation features in the revision file displayed errors after reopening and rebuilding.
- **GV-28125, GV-22013, GV-18428:** CX-E CX-EC — Deviation results from the same location differed based on the Result Option in the 3D Compare command. Additionally, deviation results from 3D Compare at the same location were inconsistent with those from the Comparison Point.
- **GV-4682, GV-3458:** CX-E CX-EC — Minimum and maximum deviation values in annotations generated by Automatic Local Average Tagging differed from the statistical values displayed in 3D Compare's tabular view.

Visual Script

- **GV-28753:** Running 3D Compare in Visual Script produced different results compared to those in the application.
- **GV-26512:** The connection between Geomagic Control X and the Visual Script Editor broke after approximately 10 minutes if a single Visual Script action exceeded this duration.

Automation

• **GV-28341, GV-26779:**	The Inspection Result window on the server displayed “OK” even when the inspection project included features with no results.
• **GV-25764, GV-24896:**	The Automation Client became unresponsive when the Monitoring folder was empty, and a large file was written directly from a scanner application.
• **GV-23280:**	Geomagic Control X for ScanTech crashed during batch processing when a predefined scan process was selected as the target result.

File I/O

• **GV-28458:** CX-E CX-EC	Importing a specific STP (STEP) file caused the application to crash.
• **GV-28206:** CX-E CX-EC	The Sampling Ratio option in the Import dialog did not work correctly for PTS (Geomagic Point) files.

Hardware Interface

• **GV-26607:** CX-EC	The on-screen probe tip was displayed incorrectly when using the ScanTech Plug-in.

Report

• **GV-28023:** CX-E CX-EC	Disclaimers on the cover page of report templates incorrectly referenced 3D Systems instead of Oqton.

Localization

• **GV-28343:** CX-E CX-EC	Translation and layout issues occurred in the Japanese user interface.

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