ogp

EVOLVE SmartProfile 3D

Part of the EVOLVE Model-Based Software Suite

EVOLVE **SmartProfile 3D**

Part of the EVOLVE Software Suite

EVOLVE Suite

The EVOLVE software suite from OGP optimizes design, production and inspection processes enabling manufacturers to shorten product design & development time, improve quality, and reduce costs through improved efficiency.

EVOLVE uses a part's three dimensional CAD model as the basis for all tolerance evaluations, statistics and manufacturing data.

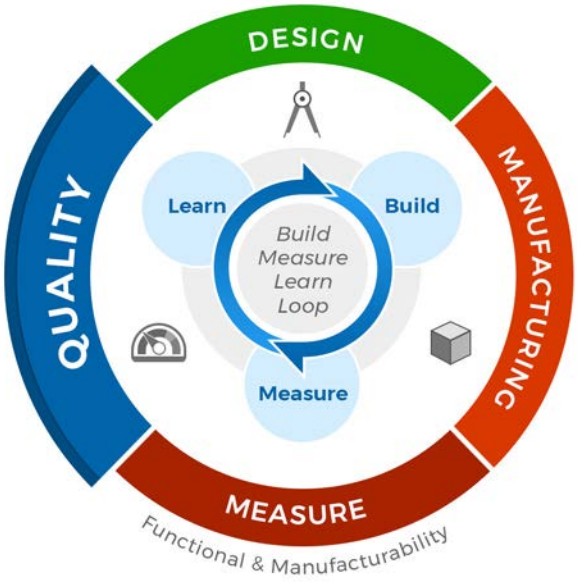
EVOLVE **SmartProfile**

EVOLVE SmartProfile® from OGP is the world's **leading dimensional analysis software**.

SmartProfile provides guidance for adding or modifying part design tolerances. It combines measurement data with the CAD model of the part and automatically runs GD&T (ASME) and GPS (ISO) evaluations. Its rich set of tools allow engineers to analyze and solve complex manufacturing problems.

With SmartProfile you can:

- **Eliminate inspection results variability** caused by using different evaluation techniques and/or metrology software.
- **Eliminate human error** caused by incorrect interpretation and implementation of ASME Y14.5 and ISO 1101 standards.
- Quickly assess part tolerances and processes to **improve production efficiency**.
- **Optimize enterprise resources** by separating part measurements from the tolerance evaluation process.



EVOLVE **Design** helps designers correctly apply GD&T (GPS) specifications by proofing the callouts in the CAD Model and providing guidance directly from the standards.

EVOLVE **Manufacturing** analyzes measurement results from a manufacturing point of view, indicating why a part has failed the GD&T evaluation and helping the user determine specific corrective actions to the manufacturing process.

EVOLVE **SPC** is a full statistical process control software solution usable as a standalone product with existing measuring systems or integrated into the EVOLVE Suite.

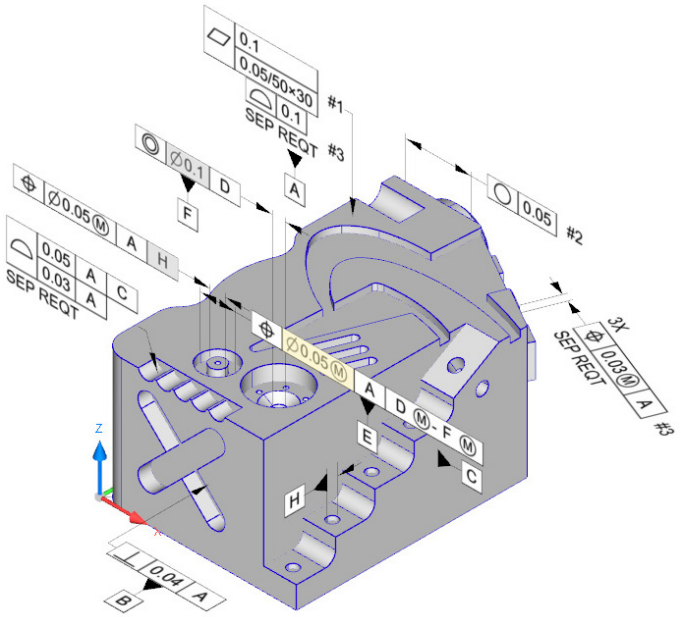
EVOLVE Suite Model-Based Family of Software

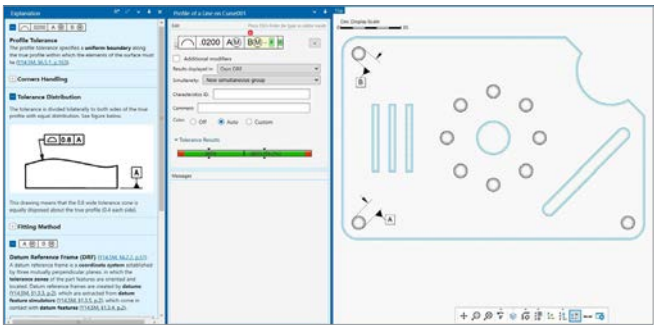
Easy GD&T/GPS Evaluation

1 Import CAD Models

SmartProfile can import popular native CAD file formats or industry standards including **STEP**, **IGES**, **DXF**, and **QIF**.

CAD models with **PMI** (Product and Manufacturing Information) can be imported from **QIF** (Quality Information Framework) files.





2 Define Tolerances

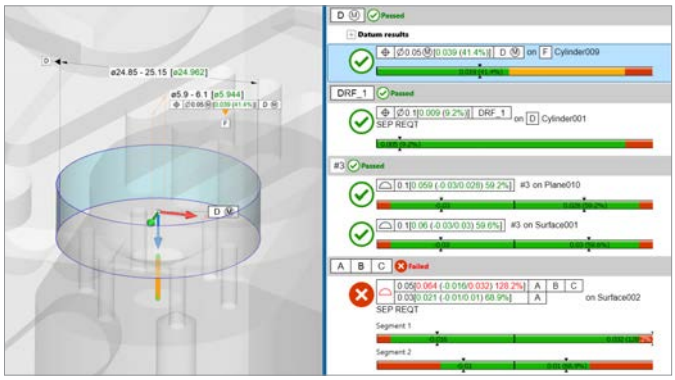
SmartProfile allows you to **define GD&T and ISO GPS** (Geometrical Product Specifications) **tolerances** according to your chosen standard (ASME Y14.5M – 1994/2009/2018 or ISO 1101).

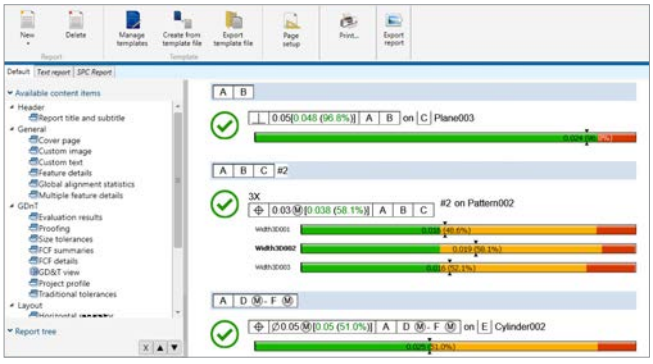
SmartProfile supports enhanced GD&T callouts including **multi-tier tolerances**, **compound datums**, **simultaneous & separate requirements**, and more. Its built-in explanatory system always shows relevant contextual information.

3 Import measured points and Evaluate GD&T

Import measured points from any measuring device: **CMM, laser scanner, CT and others**. Process large point clouds using the optional **Data Preparation** tool to speed analysis without loss of analysis integrity.

Evaluate the entire GD&T project with one click. SmartProfile eliminates results variability caused by different evaluation techniques, software algorithms and human interpretations between design and inspection.





4 Reporting

Create custom graphical and text reports from the results and export into PDF, text, QIF and other file formats.

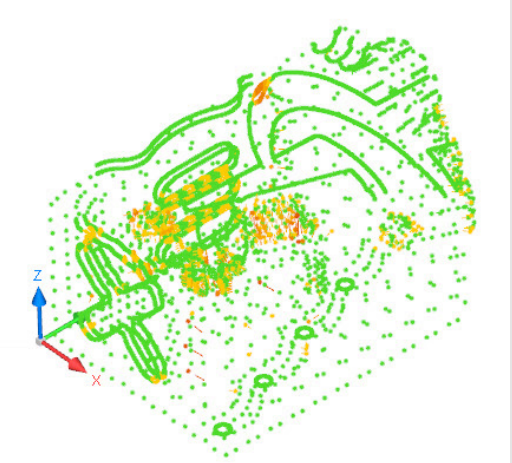
Save the SmartProfile project for future reference and import it into other parts of the EVOLVE suite.

Data Preparation Tools

The Data Preparation tools option allows efficient, lossless importing and handling of point clouds with large numbers of points.

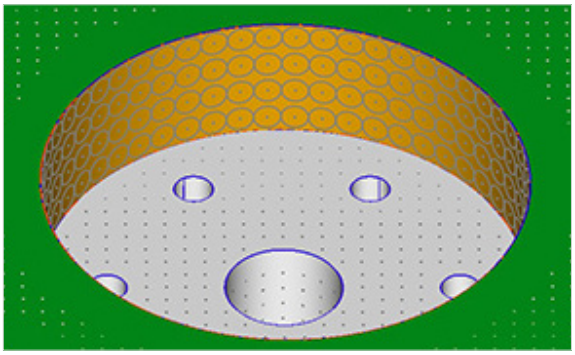
Deviation Coloring

Color-coded deviations while processing points allows easy monitoring. Deviation colors are available for source vs. result, and for CAD vs. result.



CMM-like Sampler

A CMM-like Sampler tool extracts reliable representative surface points from dense and noisy measurement data point clouds.

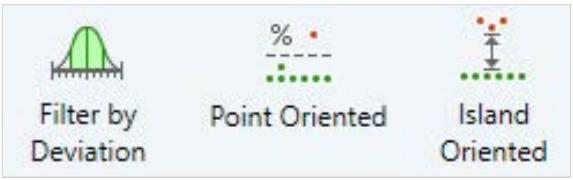


Noise Reduction

Settings for Noise Reduction include surface and curve-based options depending on the point structure.

Filter by Deviation

The Filter by Deviation tool eliminates outliers, islands and unnecessary points based on how much they deviate from the CAD model.

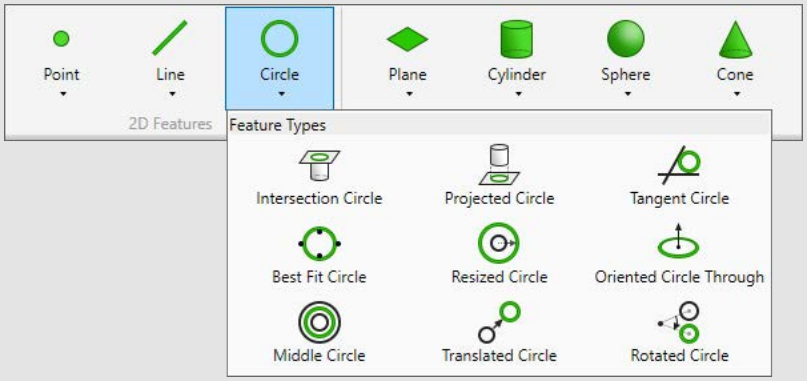


Advanced Features

Construct features, define distances, visualize deviations and do much more with SmartProfile.

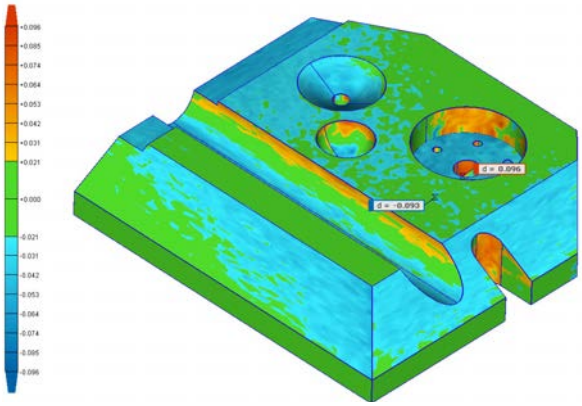
Constructions

Construct new features from existing CAD geometries that can be used as datums or other GD&T/GPS calculations.



Global Alignment Deviations

Global Alignment Deviations mode displays sample deviations on a color map and allows locating deviation labels and documenting those deviations in a completed report.

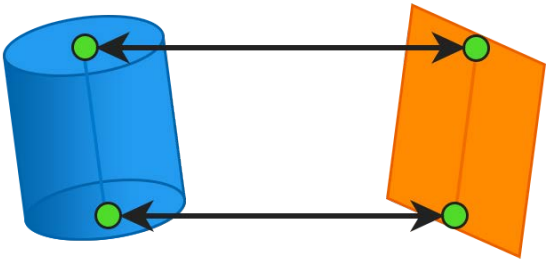


Quick Align

Enhanced Quick Align and the associated Finalize Assignment algorithms automatically detect outliers in the data resulting in a much more robust and proper fit.

Traditional Tolerances

Define plus-minus distances and angle tolerances between any two arbitrary features.



EVOLVE **SmartProfile**

Product Configurations

PRODUCT NAME	DESCRIPTION	LICENSE OPTION
EVOLVE SmartProfile® 3D	GD&T evaluation of any measurement data point cloud	Dongle, PC-Node, Network
LNP (Option)	Optimizes input and analysis of large numbers of points common with scanners and CT measurement systems	Dongle, PC-Node, Network
I++ Client (Option)	Allows direct use with all brands of CNC measuring system controllers	Dongle or PC-Node

Key features

Best-in-class GD&T (GPS) evaluation and analysis algorithms
Eliminates uncertainty from use of multiple analysis software products.

Proofing and Explanatory systems
Helps users apply and verify correct GD&T/GPS usage eliminating misinterpretation.

Supports GD&T/GPS and Traditional Tolerances
Allows users to support different tolerancing schemes within the supply chain and workflow.

Point alignment tools
Variety of tools including Quick, Points-to-CAD, and Manual alignments.

Multiple DRFs
Simultaneous support of multiple Datum Reference Frames.

Hardware independent
Reduce uncertainty by using the same evaluation software engine with any measurement system. SmartProfile analyzes any measurement point cloud to perform its evaluation.

Easily evaluate files from different measurement machines with automated scripting.

Full Report capabilities
Versatile reporting allows for custom data and graphical reporting of specific data of interest clearly showing out of tolerance conditions.

Scripting language
Create custom scripts to automate inspection processes.

Heart of the EVOLVE suite of software
Apply, communicate, evaluate, and optimize with one GD&T engine for all the users in your organization.

OGP – Confidence. When Results Matter

The EVOLVE software suite from OGP is developed by KOTEM®, who is the worldwide leading developer of software for dimensional analysis. The EVOLVE suite of advanced GD&T and fitting software helps manufacturers integrate quality inspection data with their manufacturing and design workflows. KOTEM and OGP are Quality Vision International companies.

QVI® (Quality Vision International) is the world's largest vision metrology company. Founded in 1945, QVI is the world leader in the application of optical, electronic and software technologies into vision and multisensor measuring systems for manufacturing quality control.

To learn more about the EVOLVE suite of software solutions, go to:

www.ogpnet.com/evolve

EVOLVE is fully compliant with all internationally accepted GD&T Standards:

ISO 1101 | ASME Y14.5M-1 994 | ASME Y14.5-2009 | ASME Y14.5-2018

EVOLVE Suite

Check out the other members of our model based family of software:

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Confidence. When Results Matter.™

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