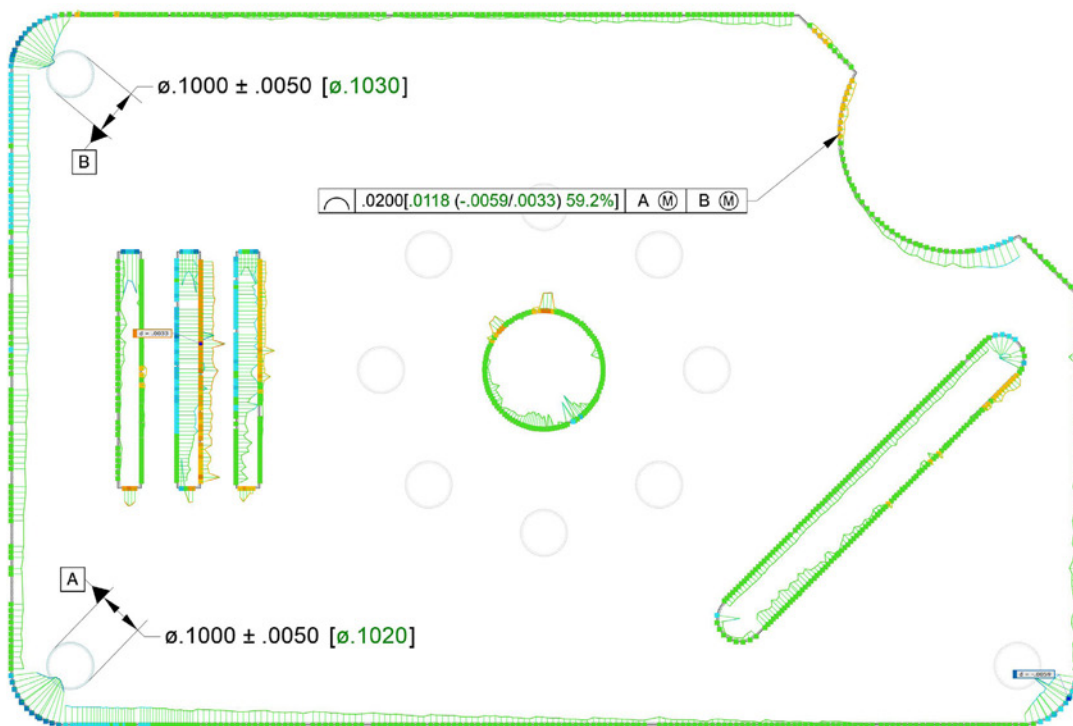![KOTEM]

EVOLVE
SmartProfile 2D

Comprehensive GD&T Evaluation Software
for Manufacturing Quality Control
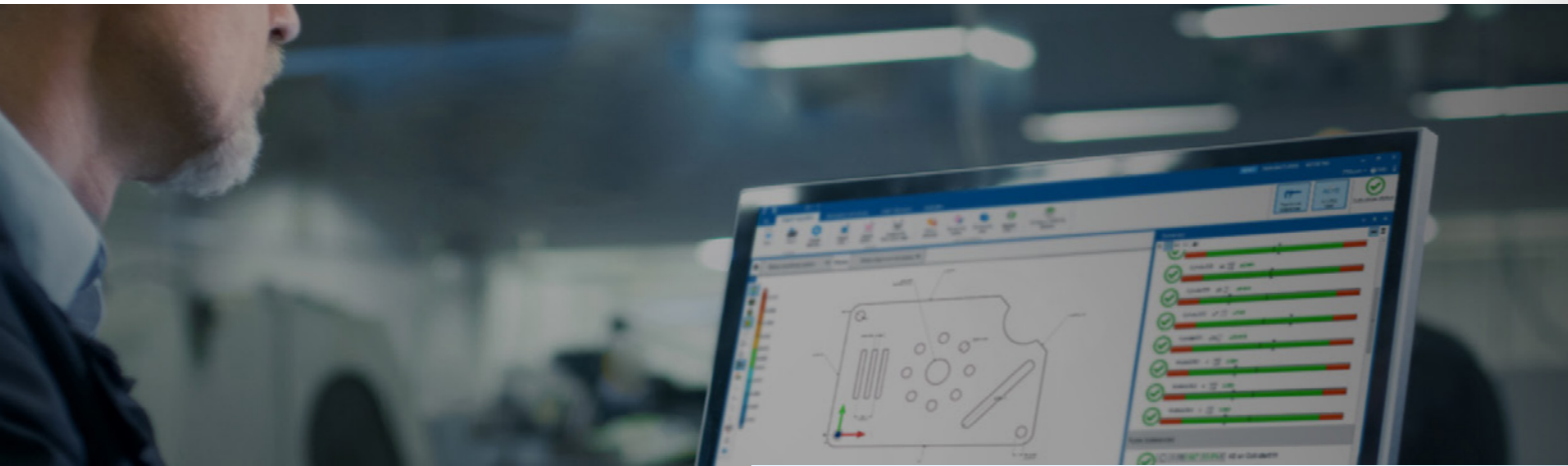

EVOLVE Suite   Model-Based Family of Software

EVOLVE **SmartProfile** 2D

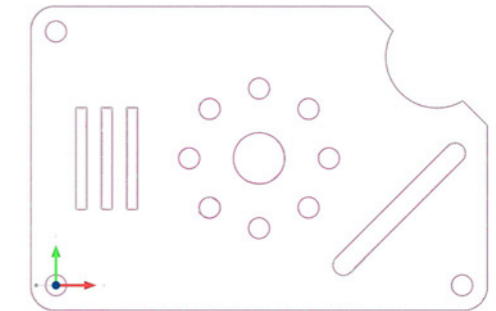*Comprehensive GD&T Evaluation Software for Manufacturing Quality Control*

Easy to Use GD&T Evaluation

1 Import 2D 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.

EVOLVE Suite

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

With its fully automatic GD&T evaluation of design tolerances, an annotated digital three-dimensional (3D) model of a product serves as the authoritative information source throughout a product's lifecycle in a Model Based Enterprise (MBE).
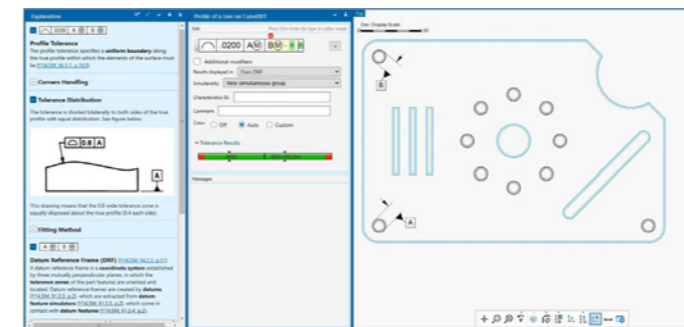
EVOLVE **SmartProfile**

EVOLVE SmartProfile® from KOTEM 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.

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.
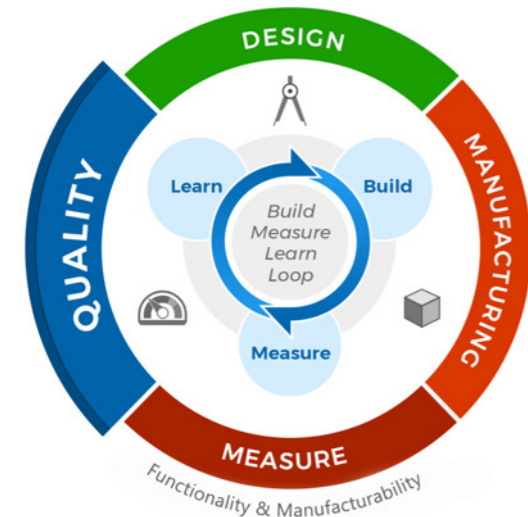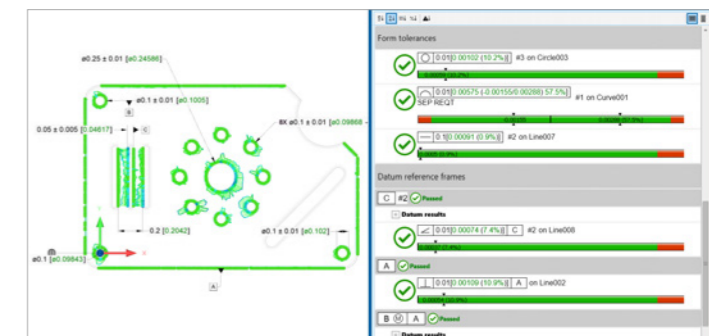
4 Reporting

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.

EVOLVE **Design** helps designers apply and verify GD&T (GPS) specifications by proofing the callouts and providing guidance directly from the standards.
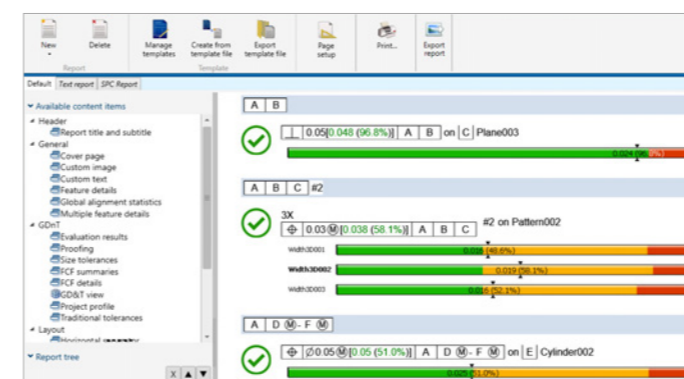
EVOLVE **Manufacturing** identifies systematic problems with manufactured parts and recommends solutions to minimize future manufacturing errors.

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.
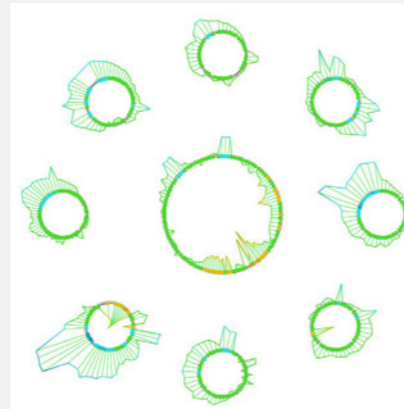
Data Preparation Tools

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

Advanced Features

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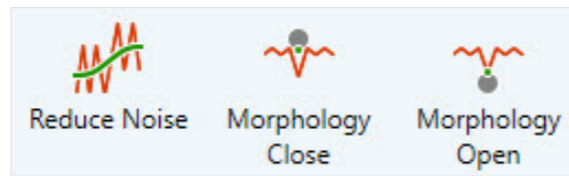
Deviation Coloring

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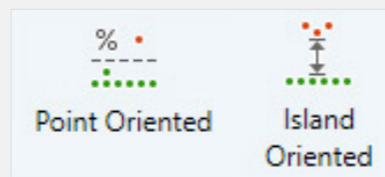
Constructions

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

Noise Reduction

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

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.

Filter by Deviation

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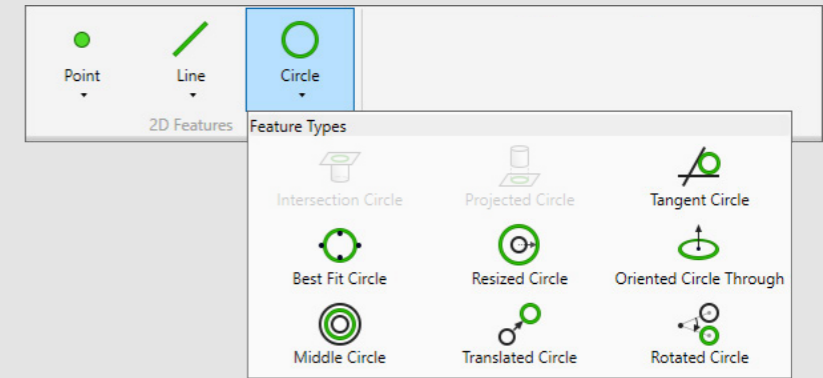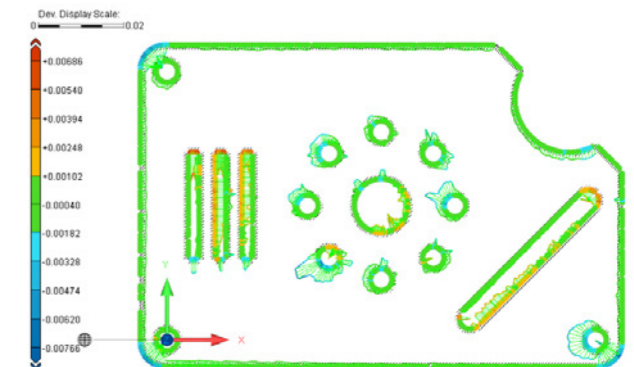
Quick Align

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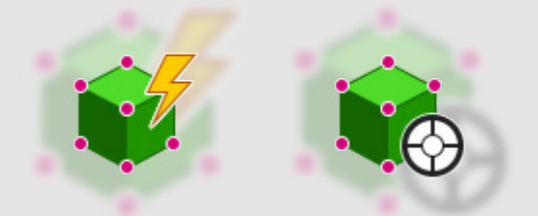
Traditional Tolerances

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

Product Configurations

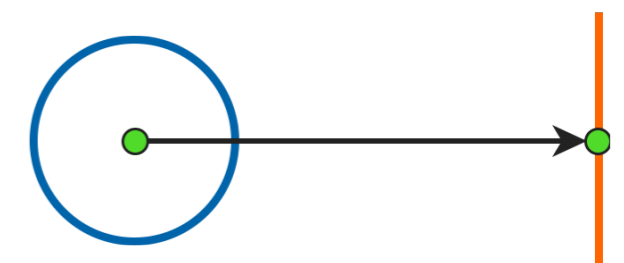| PRODUCT NAME	DESCRIPTION	LICENSE OPTION
EVOLVE SmartProfile® 2D	GD&T evaluation of any measurement data point cloud	Dongle, PC-Node, Network
I++ Client (Option)	Allows direct use with all brands of CNC measuring system controllers	Dongle or PC-Node

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.

KOTEM

The leader in dimensional analysis software

KOTEM 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 is a Quality Vision International company.

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.kotem.com/evolve-suite

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

ISO 1101   ASME Y14.5M-1994   ASME Y14.5-2009   ASME Y14.5-2018

EVOLVE Suite

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

EVOLVE Design helps designers apply and verify GD&T (GPS) specifications by proofing the callouts and providing guidance directly from the standards.

EVOLVE Manufacturing identifies systematic problems with manufactured parts and recommends solutions to minimize future manufacturing errors.

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.