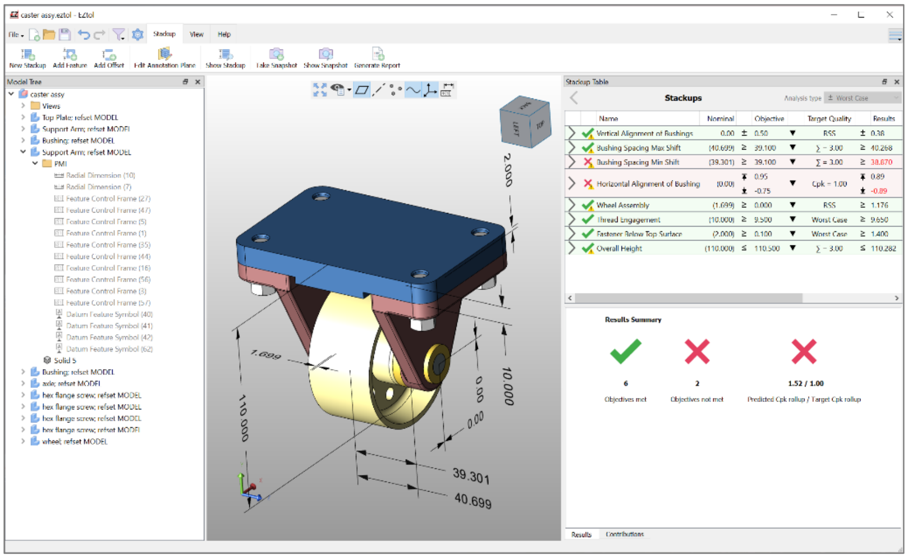
Better Products Through Mechanical Variation Management

EZtol TOLERANCE STACKUP ANALYSIS MADE EASY

EZtol is a 1-Dimensional tolerance stackup analysis program designed to assist in understanding the impact on assembly-level requirements of the accumulation of part-level dimensional variation and part-to-part assembly variation.

Today such analyses are performed in a spreadsheet, most commonly Microsoft® Excel®. Much work is required in creating spreadsheets that manage all of the product requirements simultaneously with consideration of common dimensions and tolerances that feed each one, properly including the impacts of the more complex geometric tolerances, and properly calculating the statistical results.

Analysis spreadsheets often include a visual diagram either from the model or an assembly-level drawing to help explain the components of each of the analyses, but these too must be maintained as updates are made.



Oftentimes all the work creating these spreadsheets doesn't reveal the full story because any 1-Dimensional stackup analysis will ignore 3-Dimensional effects which might have a potentially significant impact on the results. EZtol helps you see the full story. The software warns if the tolerance stackup is not 1D in nature with a note that the calculated results are ignoring potentially significant 3D effects which may result in underestimating the actual variation that will occur during production.

Who benefits from EZtol?

- *Mechanical Product Design Engineers*
- *Mechanical Designers tasked with CAD modeling activities*
- *Mechanical sustaining Engineers*
- *Quality Assurance Engineers*
- *Industrial Engineers*

Sigmetrix

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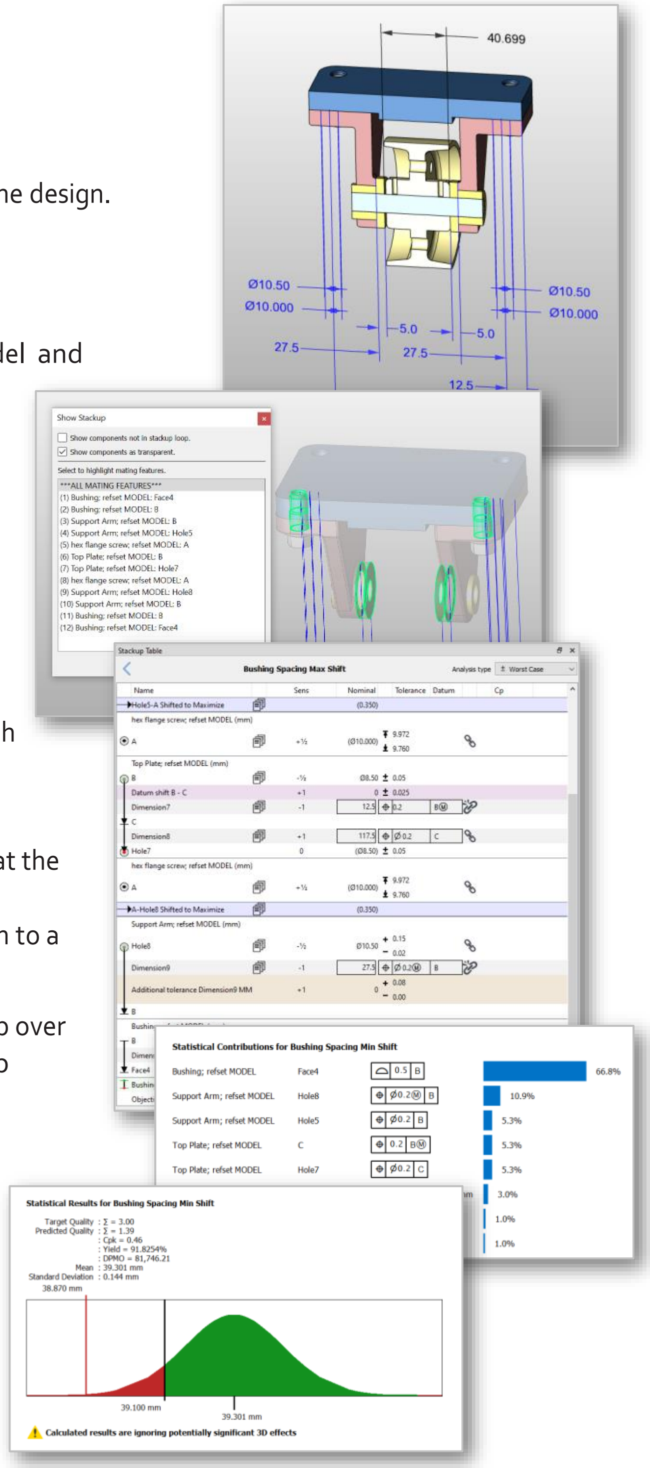
EZtol Feature Highlights



Builds the analysis on top of the 3D design model:

- Uses the actual nominal distances between surfaces/features from the design.
- Helps to ensure all components in the loop are included.
- Shows the optimum dimensioning scheme for the single analysis.
- Reads semantically defined dimensions and tolerances from the model and uses them in the stackup definition.

Automatically calculates the worst-case, RSS, and statistical results of the analysis.

- Metrics for statistical results can be reported as: Cpk, Sigma, DPMO, or % Yield.

Provides a list of contributors sorted from largest to smallest.

Defines multiple tolerance stackup analyses on the same model.

Provides a summary table showing the objectives and results of each stackup analysis along with a visual indication of whether the requirement has been met.

Stores the dimensions, with tolerances, defined for each part so that the user doesn't have to re-enter them for each loop. This also allows the automatic updating of all analyses when the user makes a modification to a tolerance used in multiple analyses.

Generates detailed report with graphical view of the dimension loop over the models involved and a graphical presentation of results and the top contributors.

Provides an indication that the tolerance stackup may not be 1D in nature including a note that the results provided may underestimate the actual variation that will occur during production.

Doesn't utilize CAD license to work with CAD models.

Works with SOLIDWORKS, NX, and CATIA models!

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