T O L 1

Tolerance Calculation
and Tolerance Analysis

for Windows

Tolerance Calculation and Tolerance Analysis
TOL1 software helps you to reduce both the time spent calculating dimension chains and the potential sources of errors to a minimum. In future, you create an element draft and a table table with all dimensions, tolerances, and dependancies. TOL1 then calculates the maximum and minimum dimensions between any desired distance within the dimension chain.

TOL1 Structure
In a table you define all dimension elements with predecessor element, nominal diameter, tolerances and direction. In a second table you define the critical distances (closing dimensions) to be calculated with minimum and maximum dimension.

Free Size Tolerances
TOL1 takes account of free size tolerances for general mechanical engineering in accordance with ISO 2768, for molded plastic parts in accordance with DIN 16742, for extruded parts in accordance with EN 12420 and for punched parts in accordance with DIN 6930.

ISO Tolerances
The program includes all ISO tolerances in accordance with ISO 286. If you enter H7 , for example, TOL1 will automatically take account of the upper and lower deviations in the calculation, according to the specified nominal dimension.
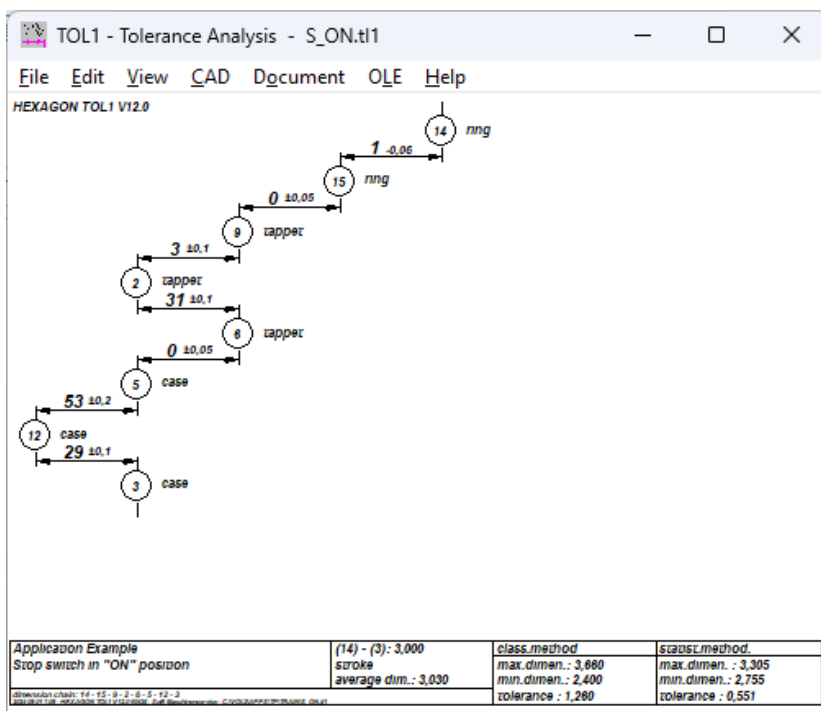
Closing Dimensions - Draft
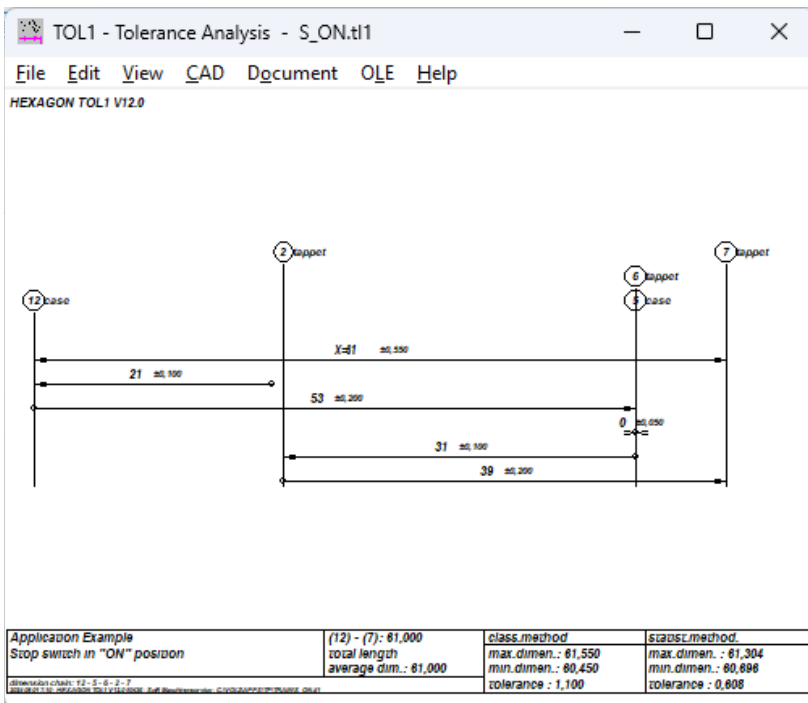Overview about dimension chain of the closing dimension

Closing Dimensions - Drawing
Scaled drawing with dimension elements of the closing chains defined by closing dimension.

Closing Dimensions - Printout
The text printout also lists the percentage share of the closing dimension tolerance for each dimension element.

Statistical distribution methods

The maximum and minimum dimensions in the dimension chain are calculated as the arithmetic sum (worst case), as well as from the square root of the tolerance squares (normal distribution). The statistical method, which is based on the normal distribution of all dimensions according to the bell-shaped Gaussian curve, is used above all for series-manufactured parts. The anticipated reject ratio can thus be estimated right from the design phase with the aid of the results of the statistical evaluation. You can display the dimension chain, which is made up of all the relevant elements, in the form of a graph on the screen. There is also a function for showing the distribution according to the bellshaped Gaussian curve for any desired distance.

Table Drawing

TOL1 generates a table drawing with input data of the dimension chain (element table) and result data (closing dimensions) with ISO 7200 drawing header.

MS Excel Import/Export

You can exchange your input data of the dimension chain directly with a worksheet of Microsoft Excel.

Text Printout

Input data and calculation results may be printed, saved as text or HTML file, or displayed on screen.

Graphic Printout

Drawings and diagrams can be printed on each Windows printer, or exported to CAD.

CAD Interface

All drawings and diagrams can be saved as DXF or IGES file to be loaded with CAD programs.

Units

TOL1 can be switched between metric units (mm, N, MPa) and imperial units (inch, lbf, psi).

Export Formats

DXF, IGES, HTML, TXT, TL1, Excel, TOL.

Import Formats

TXT, TOL, Excel, TL1.

System Requirements

TOL1 is available as 32-bit app or as 64-bit app for Windows 11, Windows 10, Windows 7.
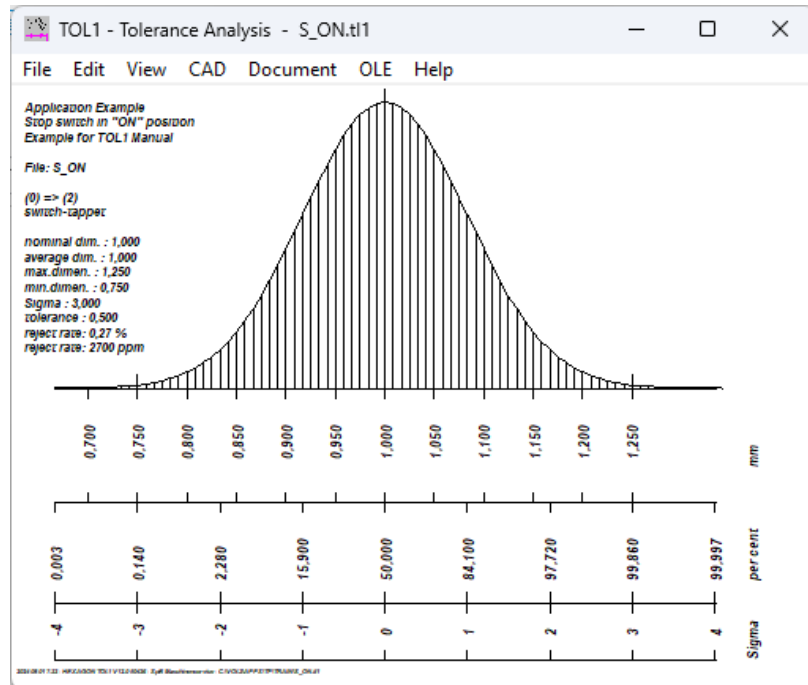
Scope of Delivery

Program with user manual (pdf), example applications and help images, non-expiring license for unlimited time use with update rights.

Software Maintenance

HEXAGON Software is continuously improved and updated. Registered users are regularly kept informed of updates and new editions.

Guarantee

HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email without extra charge.