GENIUS TOOLS®

INNEO® That's IT.

# GENIUS TOOLS Library

Version 11.0.0.0

# Description of all functions

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# I. GENIUS TOOLS Library

GENIUS TOOLS Library contains the following components.

GENIUS TOOLS Library is part of the product package Startup TOOLS.

## 1. Library management („Library“)

The component *Library* allows you to conveniently manage objects from a library and assign certain actions to them – such as copying or inserting into a model by copying.

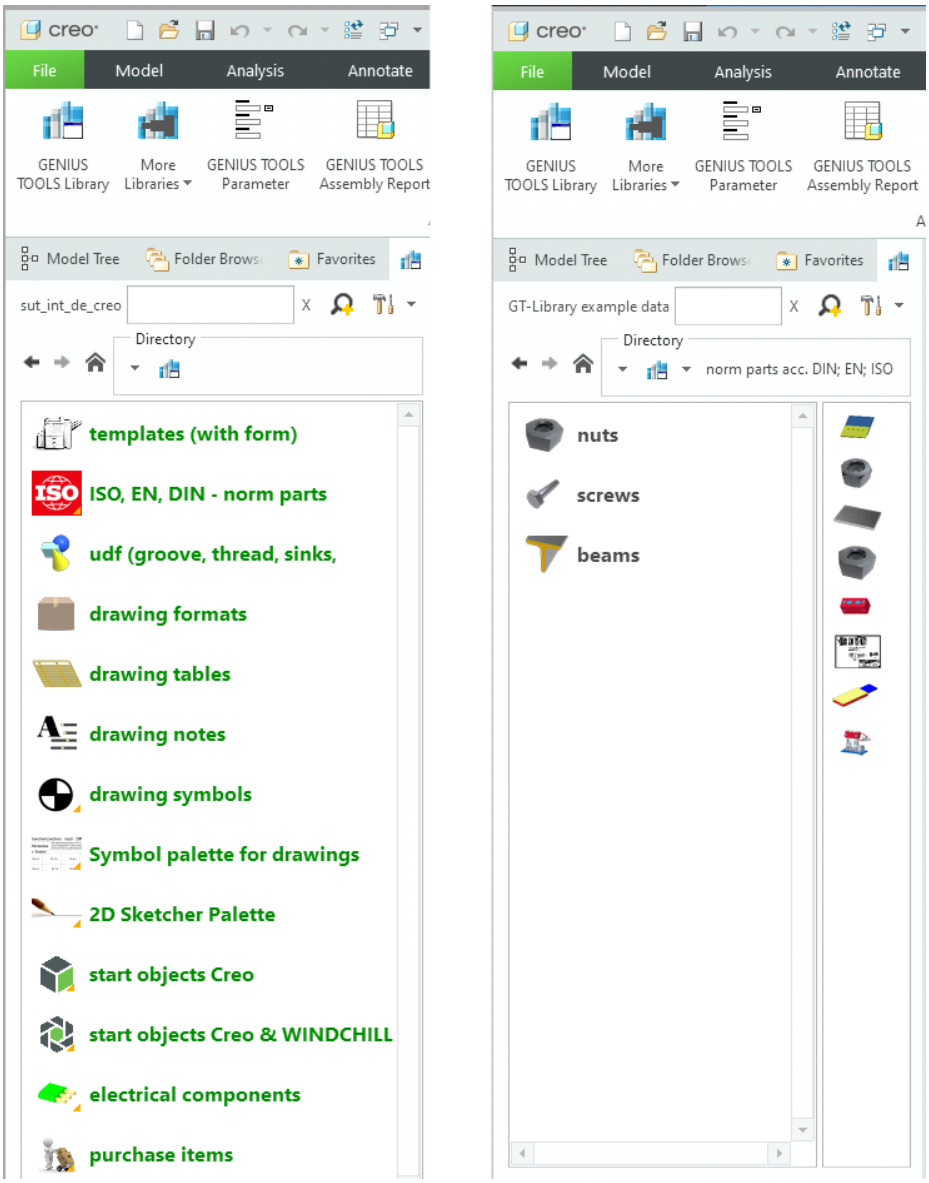
With configurable forms for inputting model properties and inserting features, a uniform standard for constructing can be enforced.

In addition, you can customize copy rules that help to quickly create assemblies based on templates.

The supported Creo object types are:

- Component, Assembly, Drawing, Sketch.
- UDF (User-defined feature)
- drawing table, frame, drawing symbol, drawing text

Library objects and data can be uploaded from hard drive or Windchill. Other PDM/PLM systems are possible on request or after customization.




*Display of various library objects*

The following functions are available in multiple languages:

- fast search for Creo objects across the entire library content
  - independently of model storage
  - filtering by status: visible, invisible, preferential use
  - advanced search for: Types, status, parameters and dimensions
- configuration options
  - for selection tables
  - for copy definitions (copy, copy paste)
  - for object creation with Forms
  - for the use of UDF with the UDF Forms component
- automatic synchronization with Windchill by using GENIUS TOOLS Library Data Importer
- automatic template selection by value files generated by external systems.

The following objects are available ("Design TOOLS"):

– native Creo Parametric objects, 100% data compatibility
– DIN standards for models, automatic sizing according to DIN, selection table
– editing of modules from all states
– uniform mask structure and consistent installation structure for all modules
– modules: eears, shaft ends, shaft-hub connections, undercuts, special elements
– gear shafts according to DIN5480 with modeled cutter runout
– straight and helical gears with involute flank, profile shift and root trochoid (undercut)
– straight and helical bevel gears with straight flank line
– single and multi-start worms and spindles with switchable pitch direction
– company-specific expandability

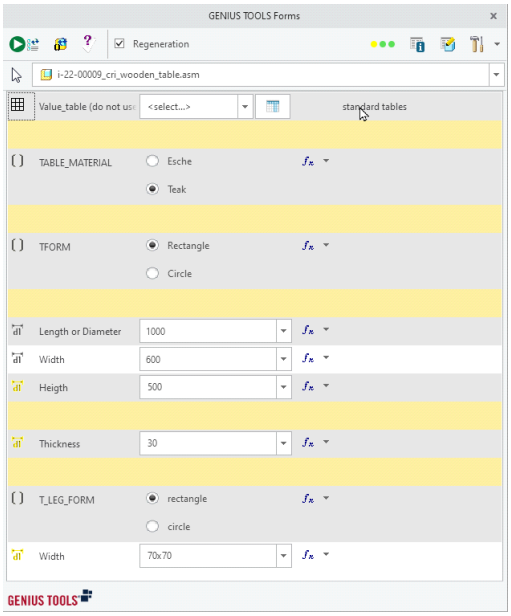
## 2. Importing external model data („Library Data Importer“)

This component imports external model data – usually from PTC Windchill – into a library for GENIUS TOOLS Library. In the process, library objects can be enriched with metadata (additional information such as parameters, object type, status, etc.) to simplify easy retrieval of the library objects.

The setup of this component is very customer specific and should be done with the support of INNEO.

## 3. Form-driven models („Forms“)

The component Forms generates user-defined form masks that allow Creo users to quickly customize the properties of parts and assemblies (PRT/ASM). Forms are stored directly in the models and defined in a graphical editor. They can be grouped into family tables for faster switching between different configurations.



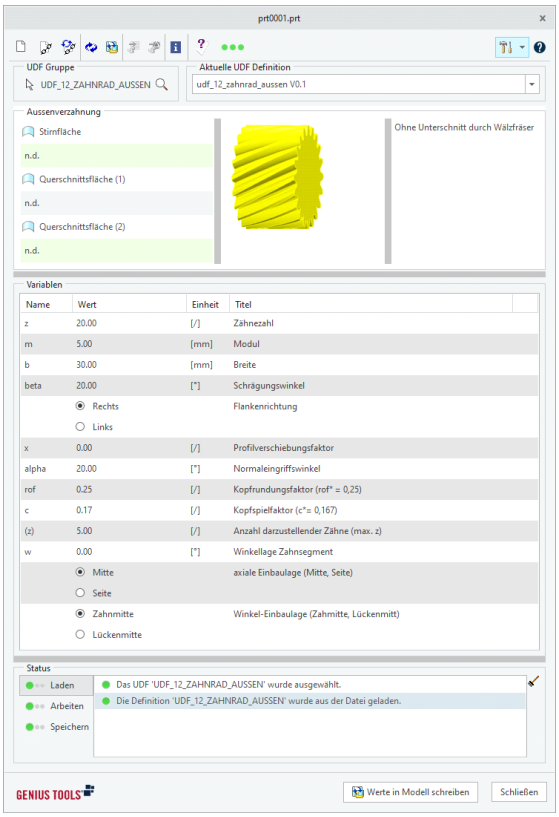

The following functions are available in assembly mode, part mode, sheetmetal mode, skeleton mode, layout mode and drawing mode:

- overview and changes of model properties in form dialogs:
  - dimension values
  - parameter values
  - features
  - replace components
  - variant dimension tables
  - execute saved mapkeys
  - define rules between properties with JavaScript.
- suppress features or components
- manage object creation with Library
- loading of external data into the mask is possible (e. g. EXCEL, CSV).

# 4. Form-driven UDFs („UDF Forms“)

With this component user-defined features (UDF), e. g. mechanical engineering standards, are defined in accordance with standards once and can thereafter be used comfortably in the design process. UDF can be edited via a form even after having assembled them.

UDF Forms has been developed from *Design Tools*.

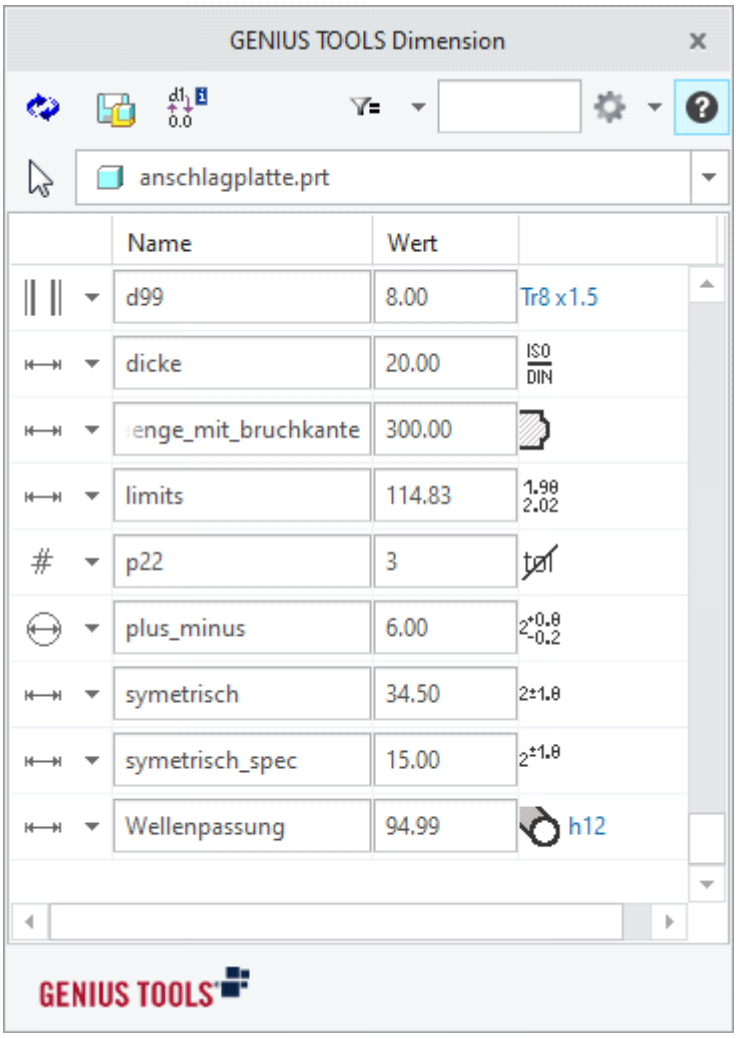



The following functions are available:

- creation of UDF groups in models - optionally with variable dimensions from lists and tables
- use of UDF family tables - for form control
- use of variable parameters (only feature parameters located at the first feature of the UDF group)
- subsequent editing of already created UDF groups
- re-placing groups with the same values of already created UDFs
- support of UDFs containing body references (as of Creo 7)
- integration of DIN information for modules with automatic size selection
- rules between properties can be defined with JavaScript.
- loading of external data into the mask is possible (e. g. EXCEL, CSV).

# 5. Multi-dimensional editing („Dimension“)

The component *Dimension* allows simultaneous and fast editing of dimension values and names of a feature, a part, an assembly or the subcomponents of an assembly, as well as variable UDF dimensions.

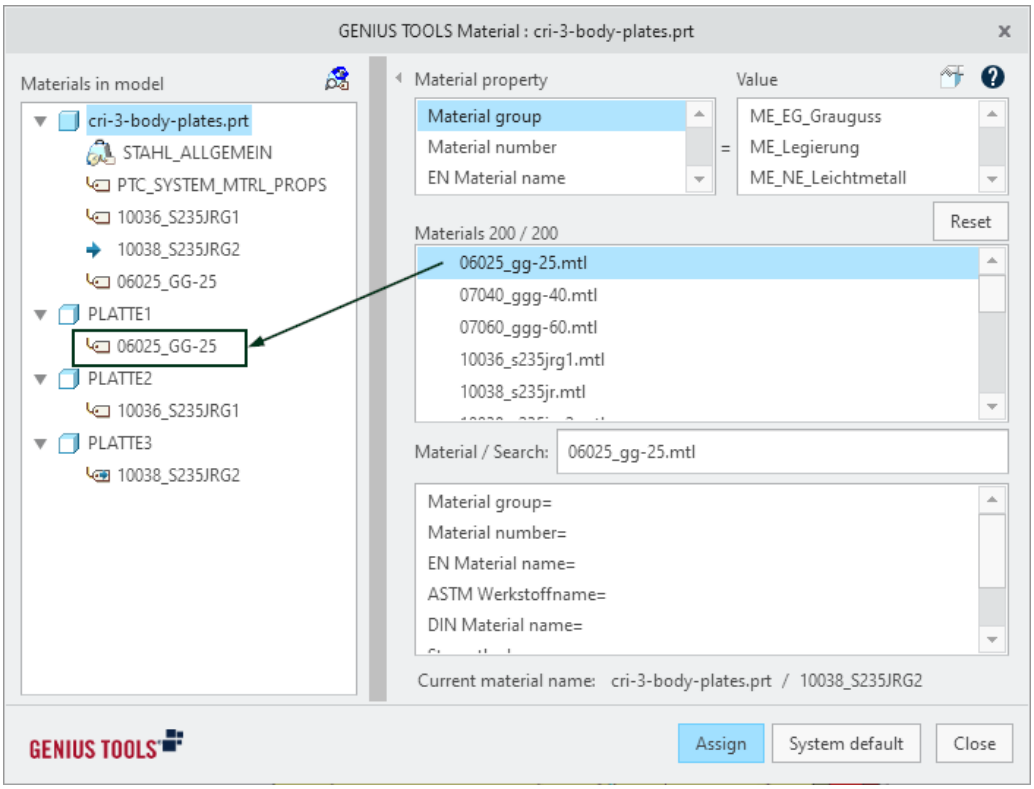



The following functions are available:

- Displaying and modifying dimensions with properties: dimension type (linear, angle, diameter, radius) dimension name and value, tolerance type, dimension status (e. g. in relations, family tables)
- Filtering the displayed dimensions by name, dimension type and tolerance type
- Free text search for dimensions including auto-suggest function
- Highlighting dimensions in the graphics window when selecting a value in the *GENIUS TOOLS Dimension* user interface
- Renaming of dimensions
- Links for quickly accessing the Creo ribbon menu *Dimension* and the Creo dialog *Relations* (for relation-driven dimensions)
- Quickly assigning dimensions to family tables
- Saving the values as a CSV-file

# 6. Material selection („Material“)

The component *Material* allows users to select materials based on various properties and assign them to a model or body.

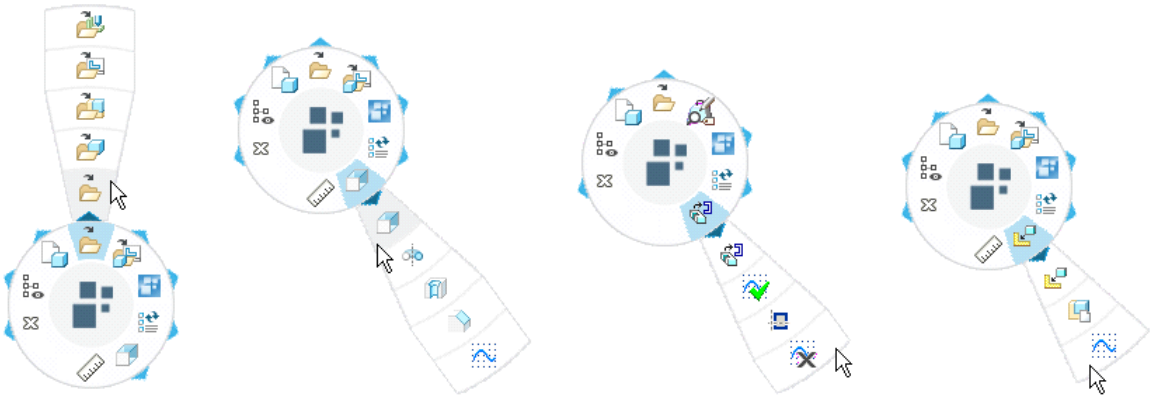



The following functions are available with the graphical editor for material selection:

- make material files from the PRO_MATERIAL_DIR directory uniformly available to all users.
- manage materials with material attributes and associated values
- adjustment and representation of the material data, e. g.
  - output in different languages
  - provision of extra information (documents, URL)

# 7. Ring menu and mapkey management („Quick Access")

The component *Quick Access* is a ring menu that provides quick access to suitable commands in different Creo modes and can include individually configurable mapkeys (macros).




The following functions are available:

- Using regular and intelligent mapkeys, i. e. using variables, parameters and placeholders
- Defining commands depending on mode and selection
- Different usage scenarios:
  - Central configuration
  - User-specific configuration
  - Simultaneous central and user-specific configuration
- Easy-to-use graphical editor for a homogeneous operating environment
- Exporting and importing all customized mapkeys with images and descriptions for easy data exchange

# 8. Transferring model properties („Value Transfer“)

This component can be used in assembly mode to change numerous values in dimensions and parameters as well as material definition files of assembly components in one step.

The following functions are available:

- search for assembly components with optional filters and view search results in a clearly laid out table format
- display of the current parameter values for each assembly component before each value change
- fast transfer of an assembly parameter (e. g. project number) to all assembly components

# 9. Name Generator

The component *Name Generator* assigns names with sequential numbering for file names of parts, sheet metal parts and assemblies. Name Generator can be used both individually on stand-alone workstations (local) and in a network (global).

# 10. Editing assembly parameters

This function generates component parameters in assemblies. Different component parameter values can be assigned for component models with the same name.

# 11. Converting multibodies into assemblies („Multibody to Assembly“)

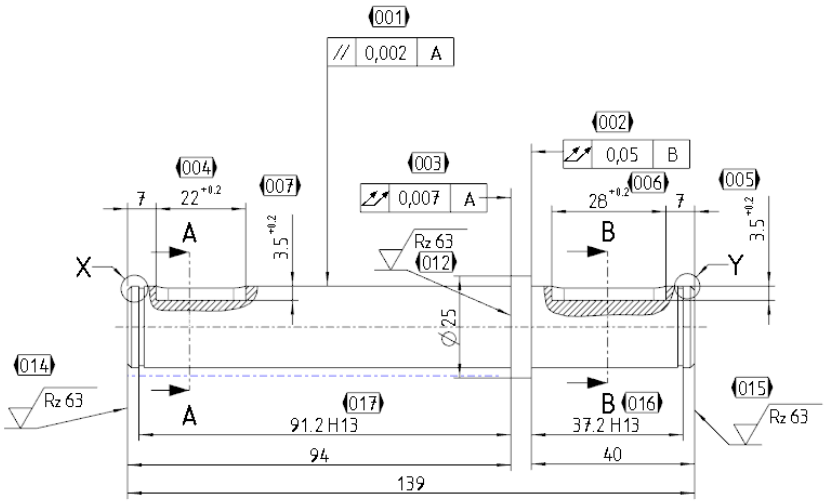
This function allows you to transfer parts that have been created with bodies into an assembly structure. Every created part includes an external copy geometry feature that references exactly one body.

# 12. Open / create drawing

This function opens a drawing, if a drawing with the name of the model already exists, or creates a drawing.

# 13. Inspection and change symbols for drawings („Inspect“)

With the function Inspect you can place, number, and manage inspection and change symbols on drawings and you can also store all versions of inspection symbols and can create a revision history of all symbols.




Automatic numbering of inspection symbols

The following functions are available:

– placing inspection characteristics freely or link them to dimensions, shape and position tolerances, notes etc.

– free placement of tables that show the properties and numbering of all inspection symbols
– clean documentation of all changes on a drawing with the Inspect Revision dialog
  · creating a snapshot of all inspection characteristics on a drawing at a specific point in time
  · defining a revision level of a drawing with a drawing revision parameter and display a history of all revisions

# 14. Export table to EXCEL, CSV and PDF

These function fills a file template with parameters and data from table cells of a Creo drawing. An Excel report, a CSV report or a PDF report is written.

# 15. Create tolerance tables on drawings

This function creates a tolerance table at a freely selectable location on a drawing using pre-defined tolerances.

# 16. Javascript Editor

With *Javascript Editor* you can develop and test JavaScript code in several GENIUS TOOLS components.

# 17. Configuration Utility

*Configuration Utility* is an interface for editing all configuration options and saving them to the correct locations.

The following functions are available:

– Viewing, modifying, commenting and deleting individual configuration options for each level
– Quickly checking different configuration variants using the memory function of variants

# 18. Further useful tools („Utilities“)

## 18.1 3D Note Form

Enables quick modification of dimension and parameter values in the notes on the model via editable form masks.

## 18.2 CS Assembler

Automates the assembly of components into an assembly using defined coordinate systems.

## 18.3 Export Points

Outputs reference points (single points or point fields) or dynamically generated curve points (X-Y-Z values) to a PTS or DAT file.

## 18.4 Extend Relations

Adds more functions to model relations that can be used to create parameters for models and bodies.

## 18.5 Full Backup

Quickly saves the current model with all dependent data.

## 18.6 Load Save Converter

Saves Creo objects from previous Creo-, Wildfire- or Pro/ENGINEER versions in the currently used version.

## 18.7 Open Base Model

Opens geometric base models that are the reference source for a feature.

## 18.8 Select Surfaces by Color

For selecting surfaces of the same color or all uncolored surfaces.

## 18.9 Show Information

Creates company-specific information in text form and displays it in the Creo Parametric main window.

## 18.10 Work Dir Manager

Automatically collects all directories used during the work process and enables the current working directory to be changed quickly.

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