GENIUS TOOLS®

INNEO® That's IT.

Startup TOOLS

Version 11.0.0.0

Description of all functions

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I. Startup Tools

Startup TOOLS provides design engineers with a centrally configured operating environment for Creo Parametric. Every user works with the same Creo Parametric data, e. g. libraries, drawing frames, symbols and design elements, so that compliance with CAD company standards is ensured.

Any company-specific changes to an operating environment or to project settings are made available to all users simultaneously by synchronizing data from a main server to the user computers.

Startup TOOLS is a product package that includes the following products:

I. GENIUS TOOLS Starter: Configuration component for central administration and configuration of operating environments

II. GENIUS TOOLS Parameter & Library: add-on applications for Creo Parametric

III. Creo data packages: Basic data for Creo newcomers

For the implementation of Startup TOOLS or the Creo Parametric development environment, we recommend our installation and implementation service.

II. GENIUS TOOLS Starter

GENIUS TOOLS Starter is used to define all settings of an operating environment centrally on an administration computer. From there, the operating environment is synchronized to the user's computer. Alternatively, an operating environment can also be used locally or as a network folder.

Within an operating environment, users are given access to pre-configured projects. Such a Starter project has a centrally administered configuration – e. g. for license servers, configuration and batch files, language selection, environment variables etc. – as well as company-specific files, e. g. Creo object data.

GENIUS TOOLS Starter consists of the following components:

1. Central management of operating environments (conducted with the program *Environment Administrator)*
2. Project selection for users (with *Starter App)*
3. Configuration of projects (with *Project Configurator)*
4. Editing of configuration files (with *Config Editor)*

The product GENIUS TOOLS Starter is part of the product package Startup TOOLS.

1. Central administration of operating environments

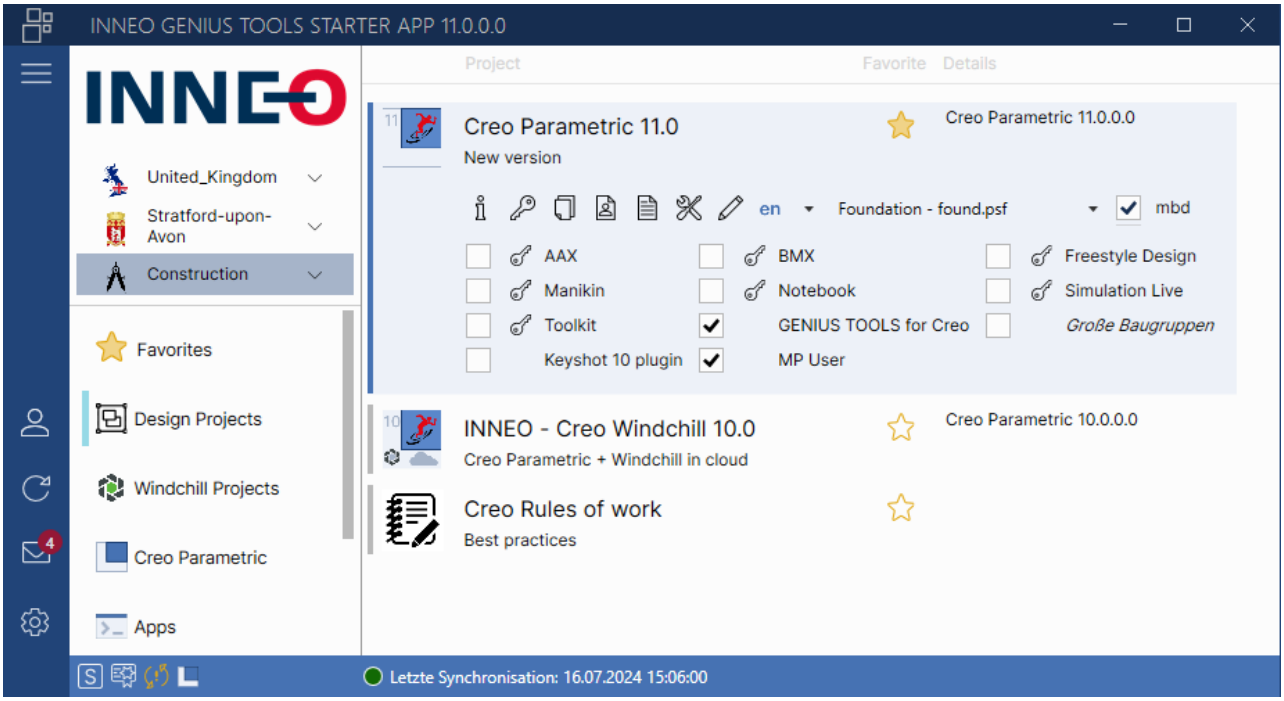
Operating environments are created and administered centrally. Production, test and development environments can be run simultaneously. The required operating environments are synchronized to the user computers.

The following functions are available:

- Operating environments are created with a graphical user interface and their properties are defined, e. g. synchronization and license settings (with *GENIUS TOOLS Environment Administrator*).
- The data synchronization of operating environments can be set up with satellites (mirror server) to reduce the network load. Sites that have a slow connection to the main server can thus access the more accessible satellite and significantly reduce the time required for data synchronization.
- Administrators can send messages to users.

2. Project selection for users

Users can open centrally configured projects to which they have been granted access, as well as see details about the directories and configuration files in use in the user component GENIUS TOOLS Starter App.



The following functions are available to users component GENIUS TOOLS Starter App, if access rights are granted:

- starting a pre-configured Starter project with the possibility to select
  - program language
  - license extensions and addon programs as well as
  - for Creo Parametric: a Creo startkey (license package)
- selection can be saved as a custom project
- view availability of licenses
- license borrowing for mobile work
- deactivation of configuration blocks
- creating a backup copy for user-specific settings
- create user-defined project collection with favorite projects

By default, GENIUS TOOLS Starter authenticates Windows users so that no separate login process takes place. However, you can also select other systems for the authentication of GENIUS TOOLS Starter. There are predefined settings for the integration of Windchill.

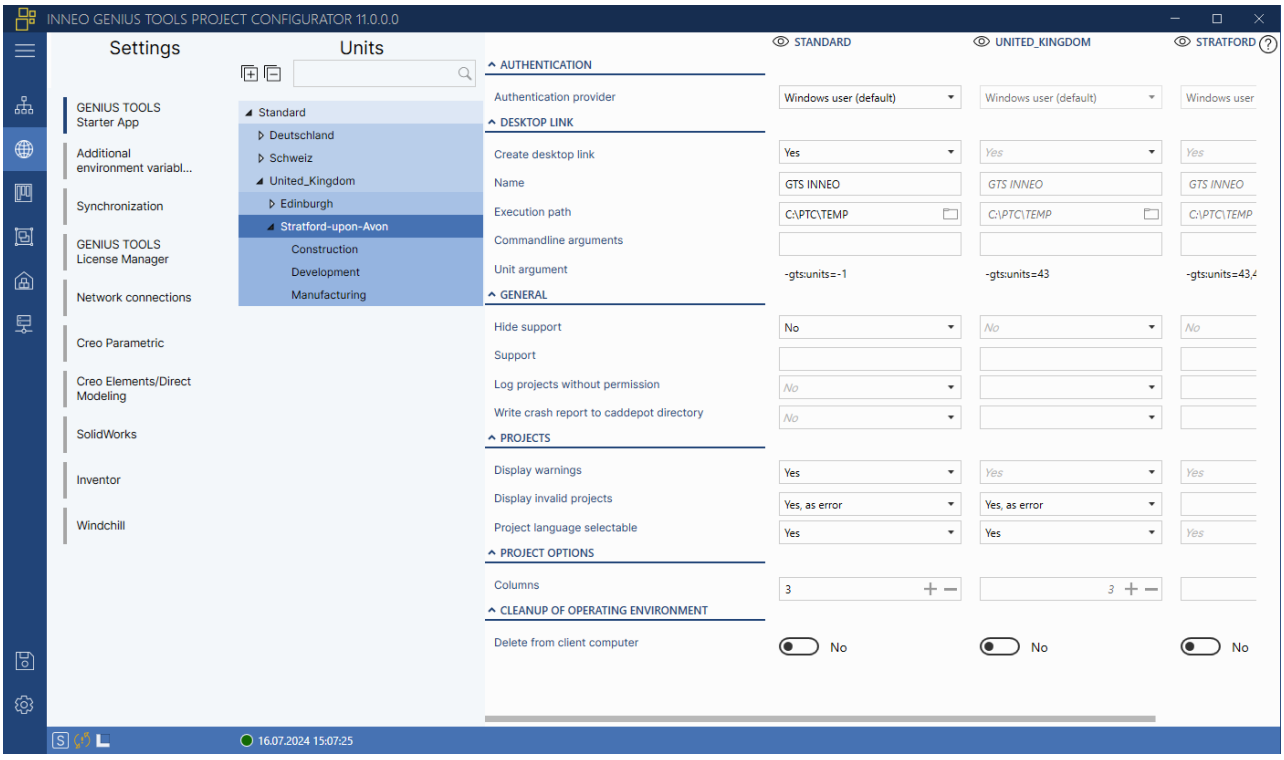
3. Configuration of projects

Administrators define the settings of all projects in an operating environment in the configuration component GENIUS TOOLS Project Configurator. There are different types of projects:

- CAD projects (Creo Parametric, Creo Elements/Direct Modeling, Solidworks, Inventor, AutoCAD)
- projects of other software products
- auto projects (e. g. Mathcad)

The following functions are available:

- define global settings for all projects
- configure projects differently for different user groups, e. g. company-specific sites or departments
- start additional batch files per project or for multiple projects
- restrict project access to certain user groups
- assign role-based access rights for specific functions, e. g. for license borrowing or language selection
- map an organization in a tree structure
- automate changes to user data by accessing Windows user management (LDAP query)



- create and configure Creo Parametric projects
  - Creo settings (language, project and data directory, licenses and more)
  - Windchill settings
  - environment variables

  - Creo startkeys (license packages)
  - PTC license servers
- synchronize Creo Parametric setups to user computers, from which they can be started manually or automatically
- create and configure projects for of other CAD-applications (for Creo Elements/Direct Modeling, SolidWorks, Inventor)
  - settings (language, project and data directory)
  - environment variables
- create and configure projects for AutoCAD, AutoCAD Architecture, AutoCAD Mechanical and AutoCAD LT
- manage synchronization servers (satellites) and monitor their availability in a web browser
- compare configuration files (config.pro files) of two projects directly and edit them in a special graphical editor with autocomplete function

By default, GENIUS TOOLS Starter authenticates Windows users, so there is no separate login process. However, you can choose other systems to authenticate GENIUS TOOLS Starter. For the integration of Windchill there are predefined settings

4. Editing of configuration files

Administrators can directly compare and edit configuration files and configuration blocks using the separate program GENIUS TOOLS Config Editor.

The following functions are available:

- searching and replacing configuration options and entries
- syntax highlighting and display of errors
- batch mode for editing multiple files
- for Creo Parametric:
  - listing of duplicate, hidden and unknown configuration options
  - autocompletion and suggestion function for easy editing of configuration options
  - display of config.pro files and config.sup files for each Creo version

III. GENIUS TOOLS Library & Parameter

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.

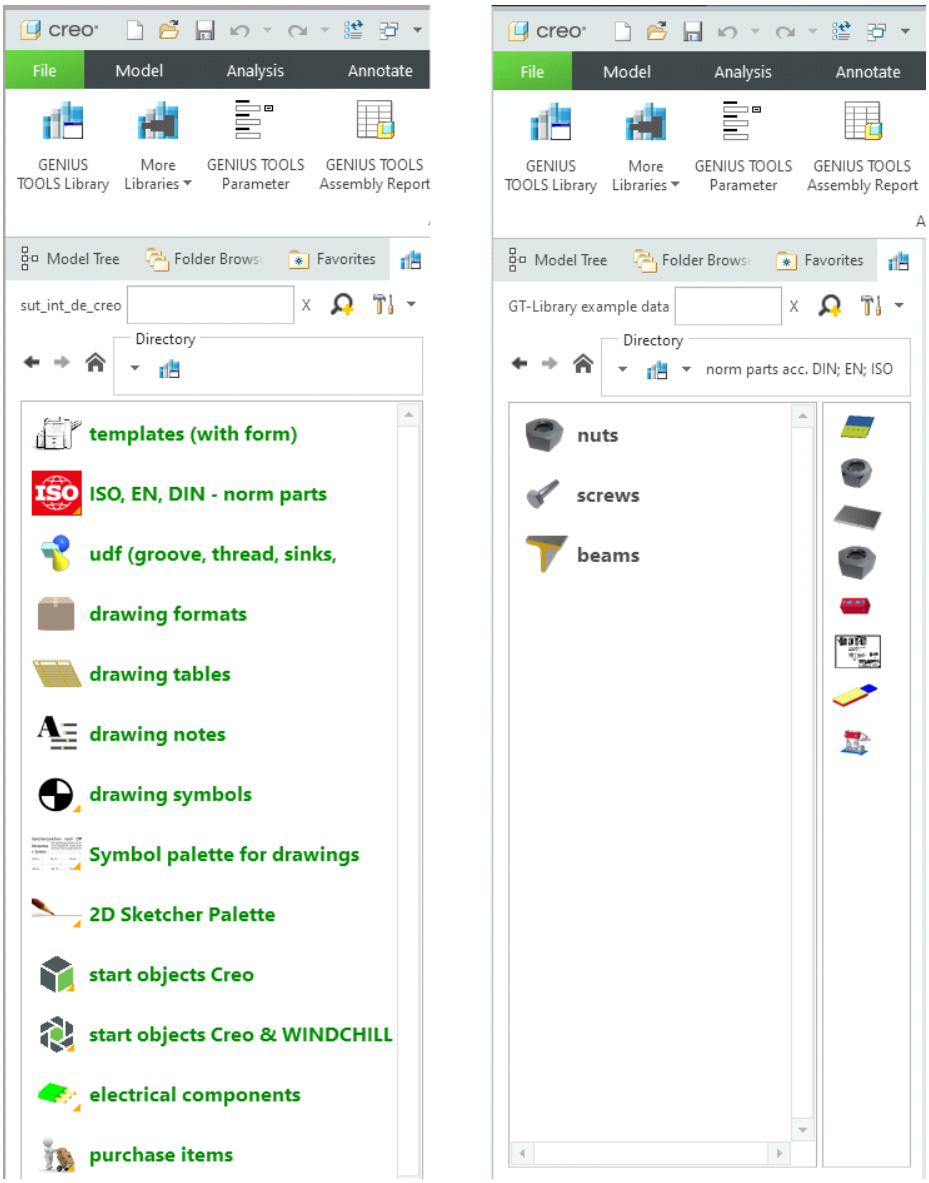
With configurable forms for inputting model properties and inserting features, a uniform standard for constructing can be enforced.

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

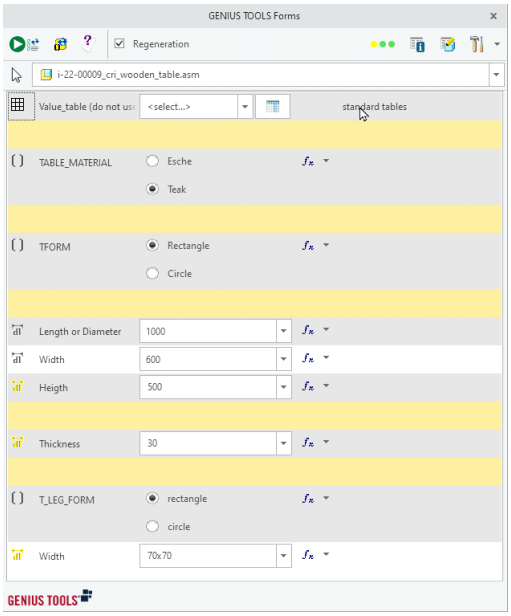
2. Importing external model data („Library Data Importer“)

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.



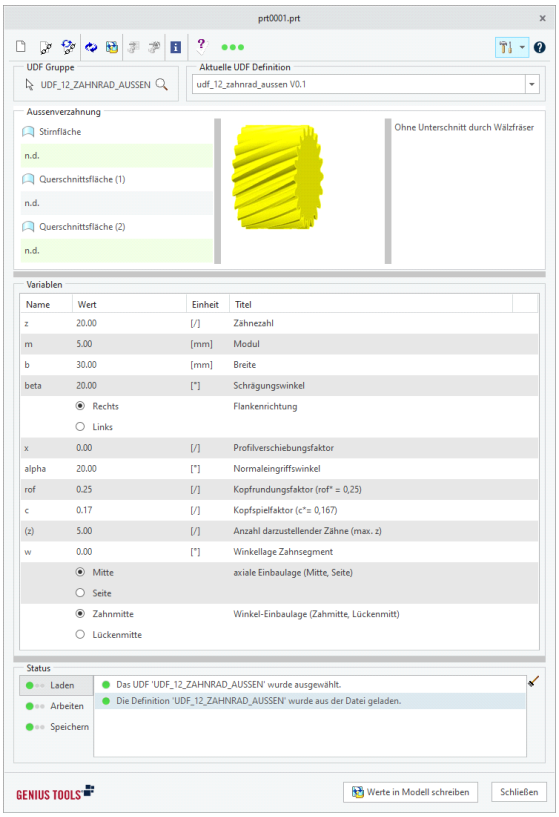
The following functions are available in assembly mode, part mode, sheetmetal mode, skeleton mode, layout mode and drawing mode:

- 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*.

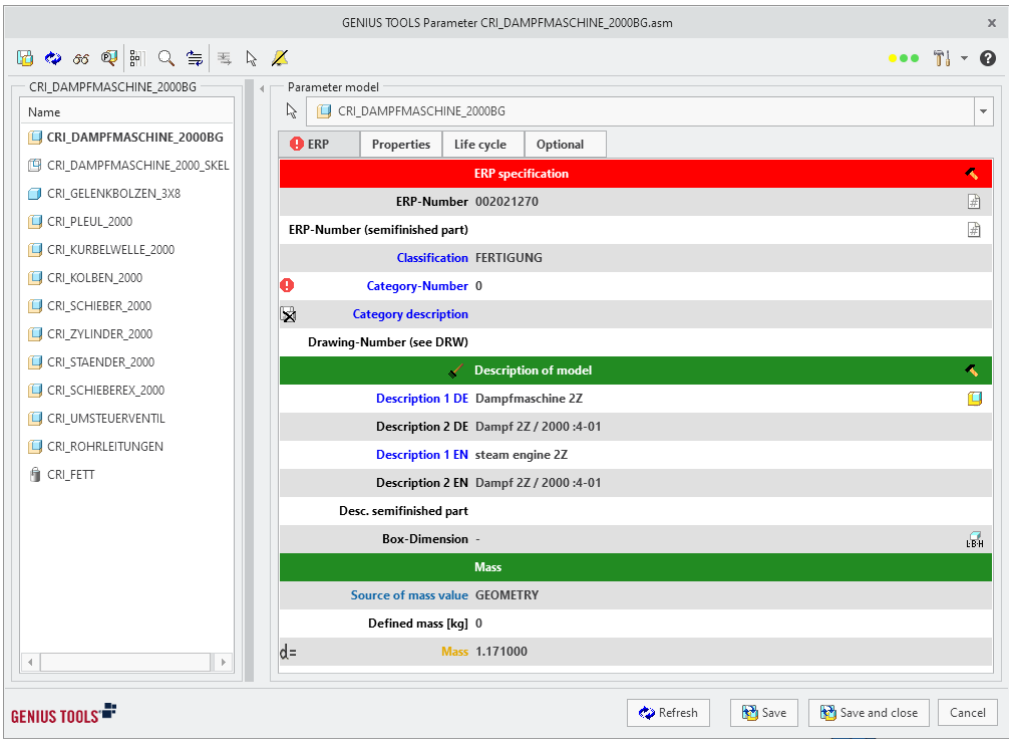


The following functions are available:

- 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. Parameter management („Parameter“)

The component *Parameter* is particularly suitable for creating uniform meta data and using it for the automated generation of parts lists, as well as for preliminary calculations or for a connection to commercial systems. The graphical user interface can be configured for the user, for example to define mandatory input fields as to ensure the completeness of the master data and a uniform, up-to-date database.



The following functions are available:

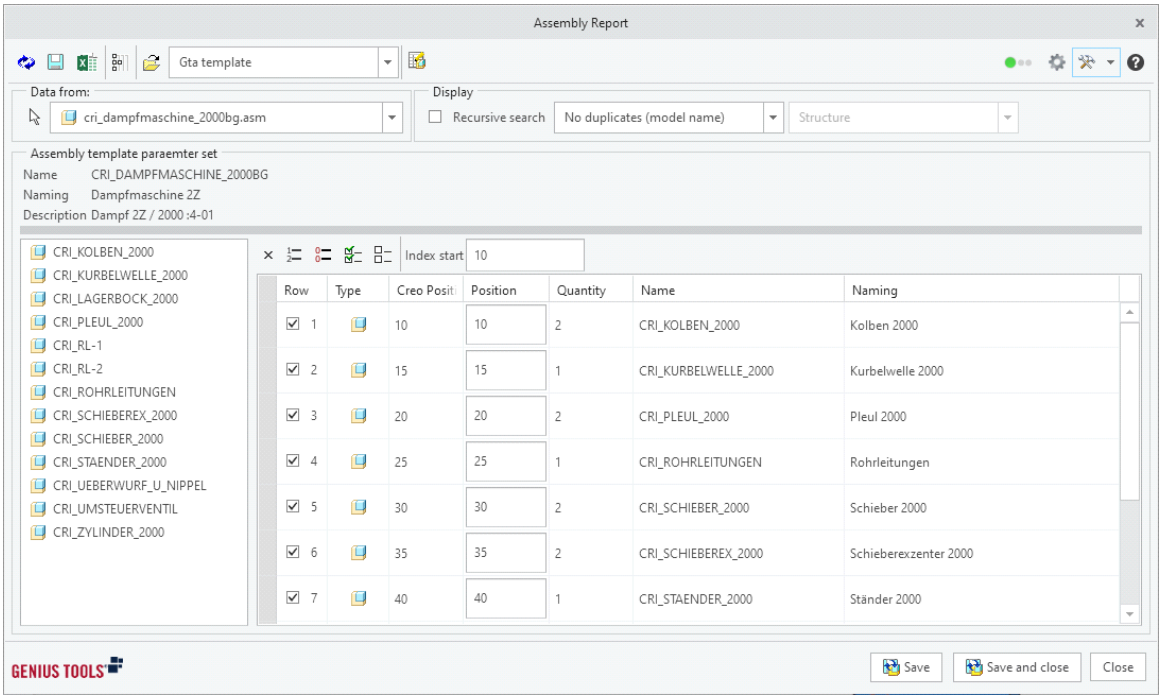
- classifiable meta data definition including
  - a mechanism for auto-selection of parameter definitions
  - freely configurable groupings
- easy creation of parameters
  - with default properties for all types
  - specification for effective ranges (parts, bodies, assemblies and drawings)
- easy editing of parameters by means of
  - free input
  - lists and tables (from files and databases)
  - auto-suggestion function
  - format checks
  - input dependencies
  - adoption of parameters from other Creo models
- individual Creo model tree configuration

6. Bills of materials in assembly mode („Assembly Report“)

The component *Assembly Report* allows users to create reports, such as a bills of materials (BOM), in assembly mode and generates item numbers as component parameters for further use in Windchill, Creo View and Creo drawing mode. BOM and other reports can be customized for each individual assembly using a graphical editor.

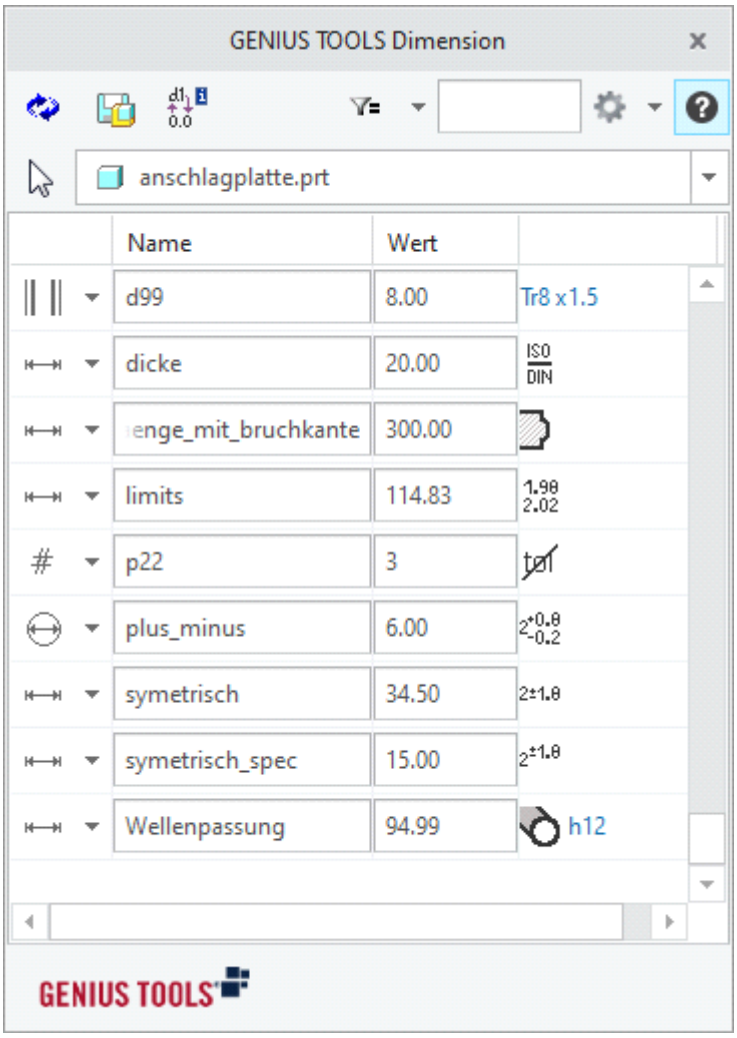
The following functions are available:

– display of tables with different display modes, e. g. single-level, multi-level and bulk bill of materials
– definition of variable columns, such as
  · assembly and part parameters
  · assembly component parameters
  · report parameters (file name, assembly level, model type, quantity, mass etc.)
  · position numbers (as assembly component parameter)
– assignment of position number (if used in BOM)
  · Start and increment value, multiple number ranges, manually editable
– multiple filtering and multiple sorting by all parameters
– export of reports to Microsoft Excel (with template) or as CSV file



7. 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.

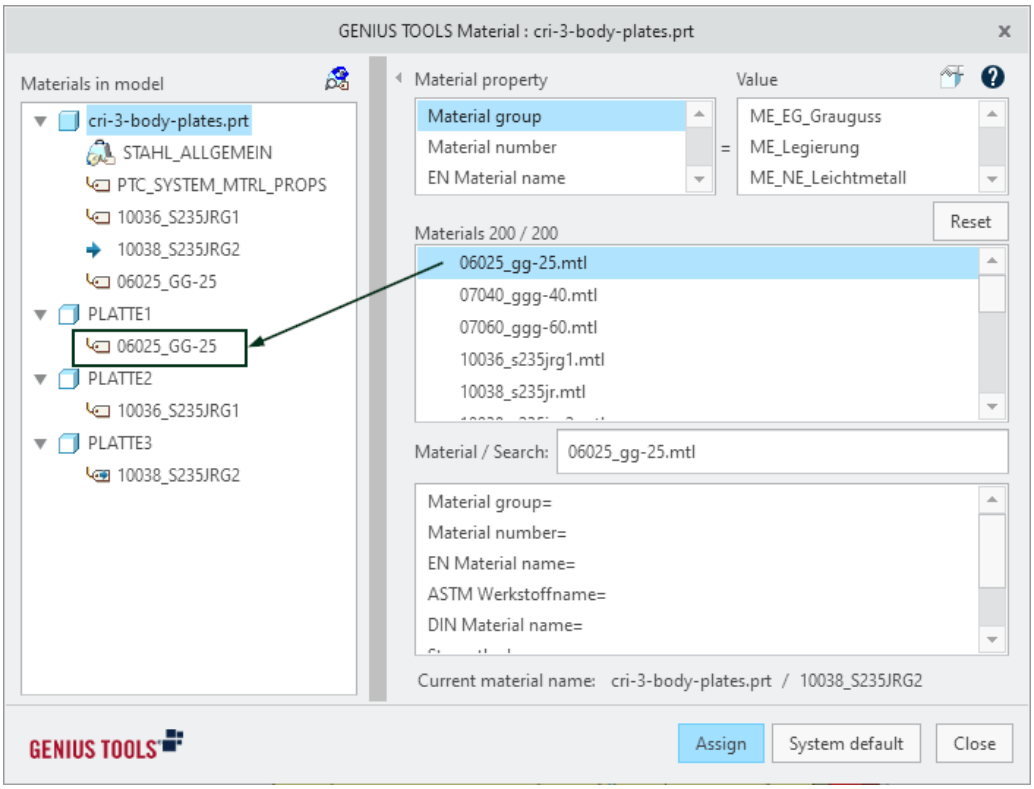


The following functions are available:

- 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

8. Material selection („Material“)

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

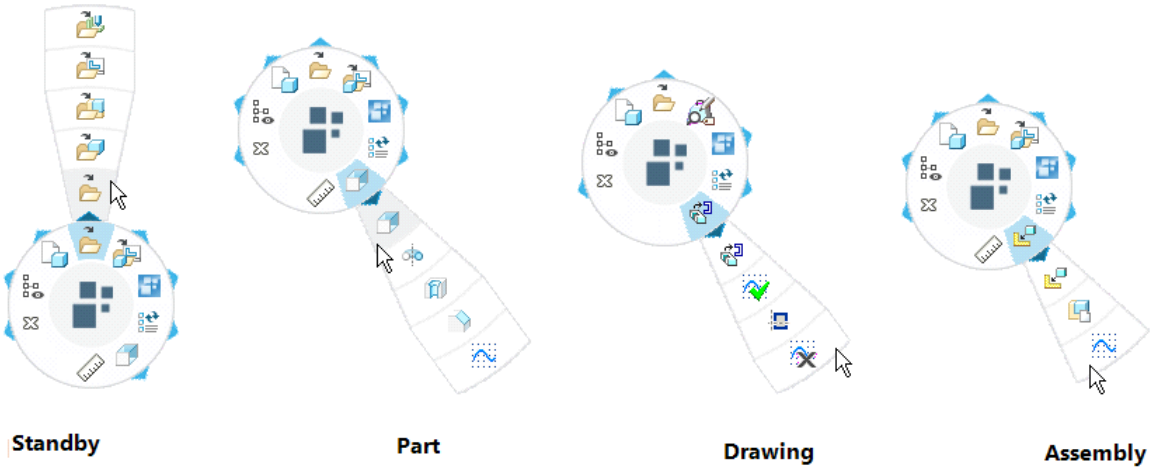


The following functions are available with the graphical editor for material selection:

- 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)

9. 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

10. 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

11. 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).

12. Editing assembly parameters

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

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

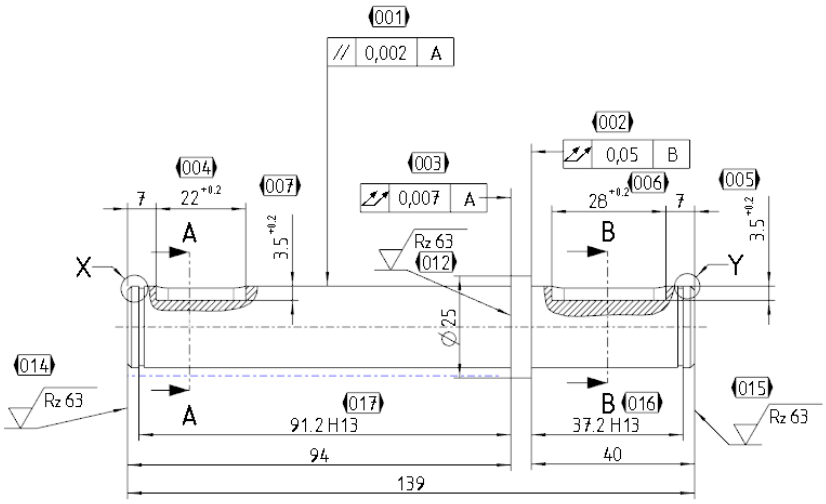
This function allows you to transfer parts that have been created with bodies into an assembly structure. Every created part includes an external copy geometry feature that references exactly one body.

14. Open / create drawing

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

15. 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

16. Export table to EXCEL and CSV

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.

17. Create tolerance tables on drawings

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

18. Javascript Editor

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

19. 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

20. Further useful tools („Utilities“)

20.1 3D Note Form

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

20.2 CS Assembler

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

20.3 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.

20.4 Extend Relations

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

20.5 Full Backup

Quickly saves the current model with all dependent data.

20.6 Load Save Converter

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

20.7 Open Base Model

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

20.8 Select Surfaces by Color

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

20.9 Show Information

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

20.10 Work Dir Manager

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

IV. Creo data packages

These are Creo objects which are matched to fit each other and provided centrally configured for a working environment.

The following data are available:

1. Configuration files (Config.pro files)
   – general Creo Parametric settings
   – drawing environment (DTL file)
   – mapkeys (macros)
   – plot settings
   – color effect definitions
2. Start objects
   – parts and assembly
   – drawing templates
   – drawing frame with automatic title block
   – BOM templates (quantity and BG structure BOM)
3. International parameter & data concept (ISO 7200)
4. Material files
5. Standard parts
6. User defined design elements (UDFs)
7. Drawing symbols (SYM file)
   – weld, edge, balloon symbols
8. Parametric 2D sketches
   – polygons, oblong hole

V. Freeware products

In den Startup TOOLS contain the following freeware products:

GENIUS TOOLS Purge

Provides a clear overview of all backup copies and functions to delete old versions of the files so as to only keep the latest ones.

GENIUS TOOLS Comma-To-Dot

Replaces the comma with a point when pressing the comma key in the number pad of a German keybord.

Graphical display above the task bar of the keys pressed (Shift, Control, Alt), which is useful for training scenarios and presentations.

GENIUS TOOLS Material Browser

Allows for comparing, editing and copying Creo Parametric material files in table format as well as for assigning appearances to materials.

GENIUS TOOLS Flexnet Watcher

GENIUS TOOLS Flexnet Watcher is a free software that displays the expiry date of licenses managed on a Flexnet server as well as expired SSL certificates of web servers.

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