



GIBBSCAM 2025 CAM for
Production Machining

Version 2025 : September 2024

CoroPlus Tool Library (CPTL) Plug-In



GIBBSCAM

Contents

Introduction	3
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Getting Started With CoroPlus	4
About Sandvik Coromant	4
About CoroPlus	4
About the CoroPlus Tool Library	4
Setup	4
<hr/>	
Using The CPTL Plug-In	6
Basics	6
Starting CPTL Using the Plug-Ins Menu	7
Starting CPTL Using the Process Flyout	7
Tool Importer Dialogs	9
CoroPlus Tool Library Importer: Main Dialog	10
CoroPlus Tool Library Importer: Quick Build Window	11
OptiThreading	12
When to Use the OptiThreading Process	12
Why OptiThreading Is Used	12
Within CPTL, Create and Export an OptiThreading Assembly	13

Introduction

This document provides information on the **CoroPlus Tool Library** plug-in. It replaces a much shorter book, the *CoroPlus Release Notes*.

The majority of this document discusses use of the CoroPlus Tool Library (CPTL) plug-in within GibbsCAM.

Before using the CPTL plug-in, you should be familiar with the basics of GibbsCAM plug-ins and with terminology and functionality for milling and turning tools. If necessary, consult the *Mill* guide and/or the "Tools" chapters in the guides in the *Mill* and *Turning* guides.

Getting Started with CoroPlus

This chapter provides information on Sandvik Coromant, the CoroPlus Tool Library (CPTL), and steps for setting up an account. It is not a guide to CPTL itself. If you need help or further information on setting up or using CPTL, contact your CPTL representative.

About Sandvik Coromant

Sandvik is the parent company of GibbsCAM. Its Sandvik Machining Solutions (SMS) division is responsible for Sandvik Coromant, which has produced metal-cutting tools, toolholders, tool assemblies, coatings, etc., since 1942. The Coromant Capto modular quick-change tooling concept has become an ISO standard (13399).

About CoroPlus

Since 2016, CoroPlus has been used in the design, planning, monitoring of machining performance, and optimization of machining processes. Its software is available as add-ins or plug-ins for many leading CAM software applications, including GibbsCAM.

About the CoroPlus Tool Library

The CoroPlus Tool Library (CPTL) enables tooling systems components to be built into assemblies and then sent to GibbsCAM. CPTL can also provide speed and feed recommendations to maximize production efficiency, based on specific machine and material parameters. CPTL's Generic Tool Catalog packages (GTC) comply with ISO 13399 standards for digital tool data exchange.

The GibbsCAM CPTL plug-in lets you easily transfer cutting tools and all the associated data from the CPTL catalog of tools and assemblies. The plug-in provides access to detailed models of Sandvik Coromant's line of cutting tools, toolholders, and machine interfaces.

At its initial release, the GibbsCAM CPTL plug-in supports Mill tools, Turning tools, Cutting data (feeds and speeds), Assembly IDs (usable by "Force" in Vericut), and Mill holders.

Setup

Note: This section can be skipped if you already have a Coromant account.

First, register for an account using this link:

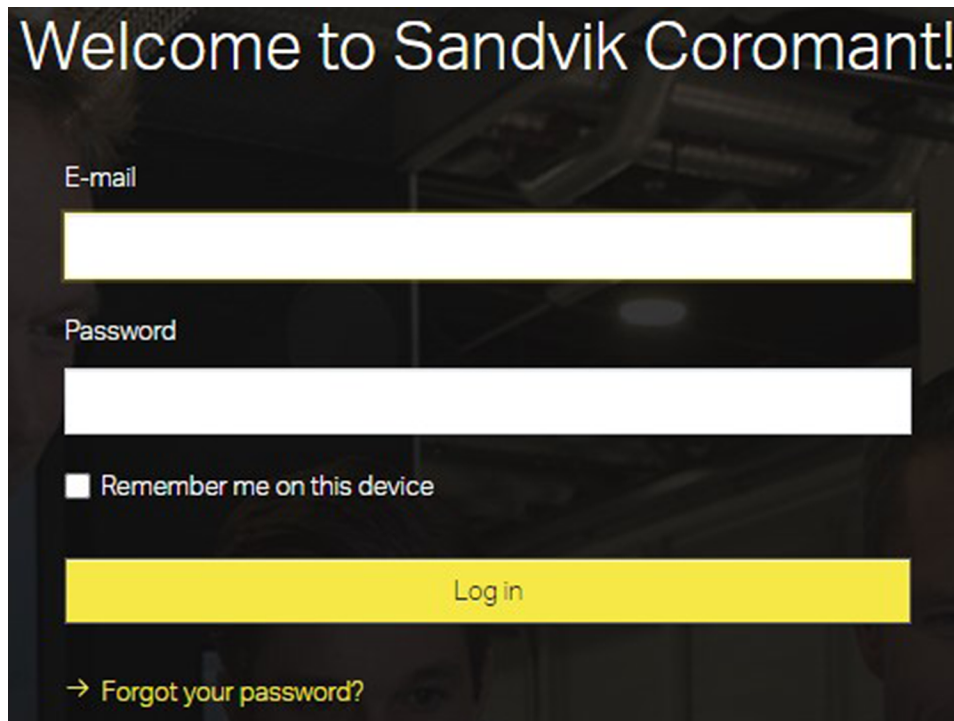
<https://www.sandvik.coromant.com/en-us/tools/digital-machining/coroplus-tool-library>

Then, when you have completed registration, go to

<https://login.sandvik.coromant.com/Account/Login>

and click [Create account](#).

The first time you use CPTL in GibbsCAM, the Welcome screen prompts you to enter your credentials.



If you are the only person to use your workstation, it will save time in the future if you check the checkbox [Remember me on this device](#).

Using the CPTL Plug-In

This chapter provides information using the plug-in for CoroPlus Tool Library (CPTL). Complete details are provided in sections Basics and Tool Importer Dialogs, but the high-level steps as are follows.

1. In GibbsCAM, with a model open, activate the **CoroPlus Tool Library Importer** dialog using either the plug-in or the **Select Tool Type** flyout.
2. If a tool or tool assembly has already been saved in CPTL, find it (possibly using the Search function), select it, click **Send to GibbsCAM**, and see the new tool appear in the GibbsCAM Tool List.

Otherwise ...

3. To create a new tool or assembly, click **New Assembly**. Then:
 - a. In the **Selection of assembly item** window, use the tree on the left side of the window to display possible items for your tool assembly. Click an item and click **Select item**.
 - b. In the **Quick Build** window, use the **Component hierarchy** tree to populate the tool assembly as you want.
 - c. When you have added all items, click **Build Assembly**. After a brief processing period, the tachometer is replaced with a display of the tool assembly.
 - d. Click **Save** and wait for the system to generate a GTC package for the tool assembly.
 - e. Click **Send to GibbsCAM**, and see the new tool appear in the GibbsCAM Tool List.

If you want to continue sending tool assemblies to the current model and/or to other GibbsCAM models, you can keep the **CoroPlus Tool Library Importer** dialog open.

In this chapter:

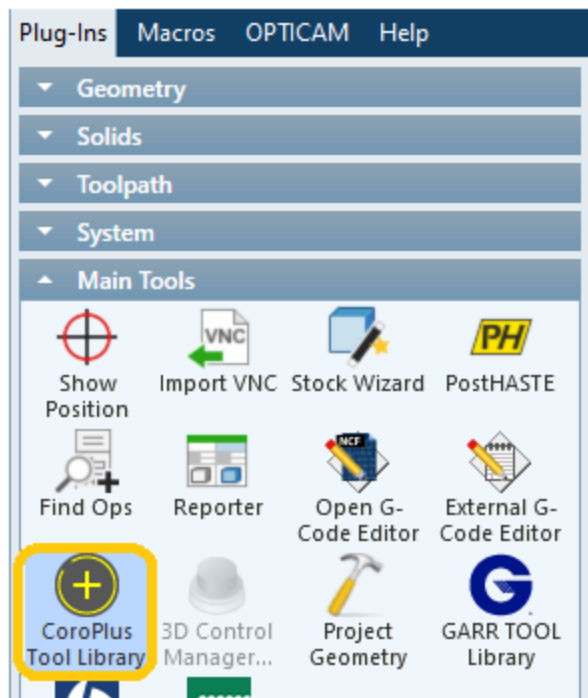
- “Basics” on page 6
- “Tool Importer Dialogs” on page 9

Basics

Please Note: To use the GibbsCAM **CoroPlus Tool Library Importer**, you must have a valid and active CPTL account and tool data (tools, holders, cutting data, etc.)

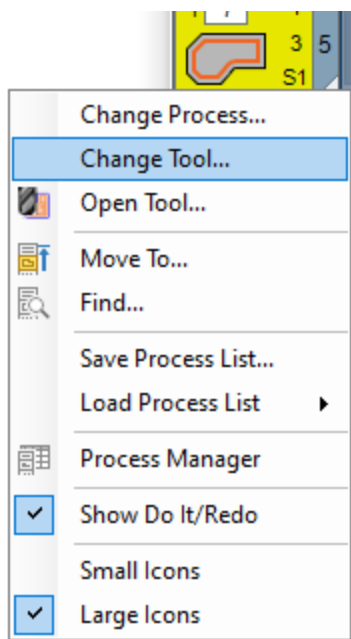
Starting CPTL Using the Plug-Ins Menu

Where to find it: On the **Plug-Ins** menu, under **Main Tools**, click **CoroPlus Tool Library**.



Starting CPTL Using the Process Flyout

Open the **Select Tool Type** flyout, either by double-clicking a blank process tile and selecting a process or by right-clicking an occupied process tile and choosing context menu item **Change Tool**. Then, in the **Select Tool Type** flyout, click **CoroPlus Tool Importer**.



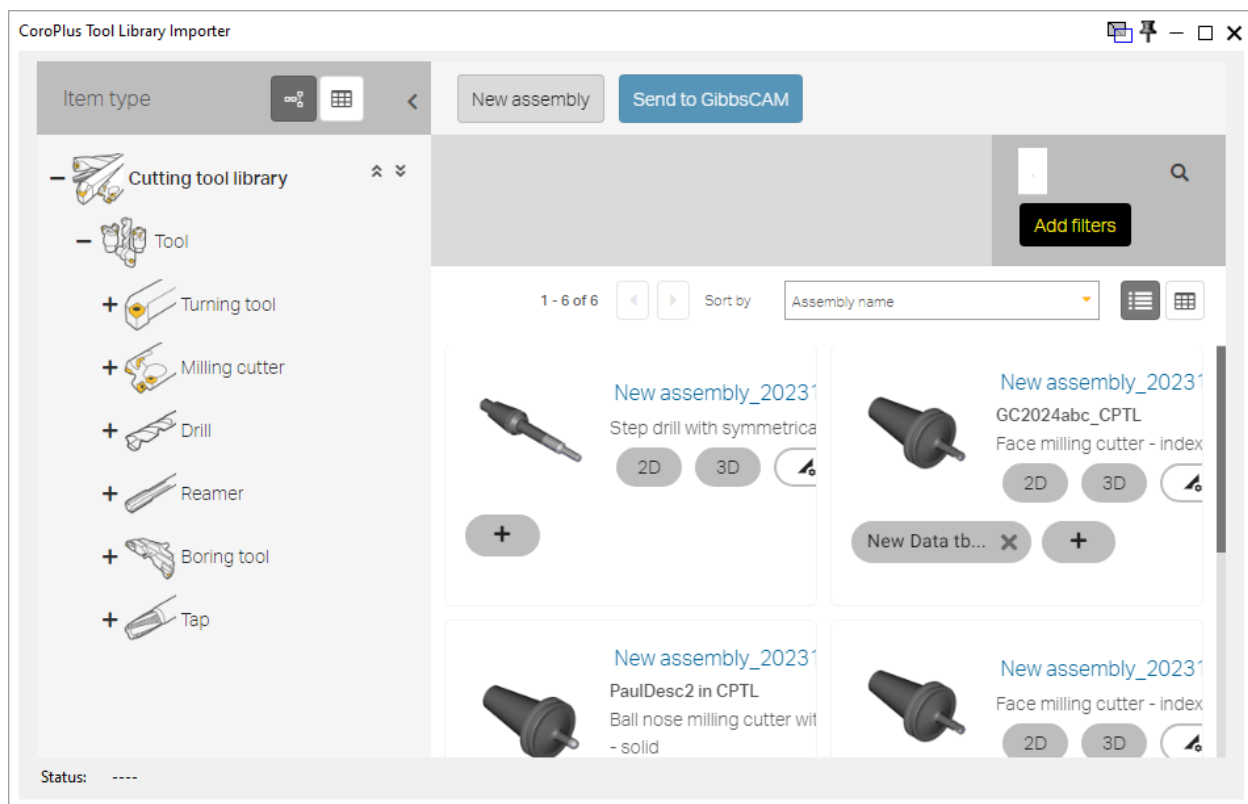
Context menu from right-clicking an occupied process tile.



Select Tool Type flyout

If you are not already logged in to your Coromant account, the Login dialog prompts you to enter your credentials.

Result: After the connections are initialized, the **CoroPlus Tool Importer** dialog appears.

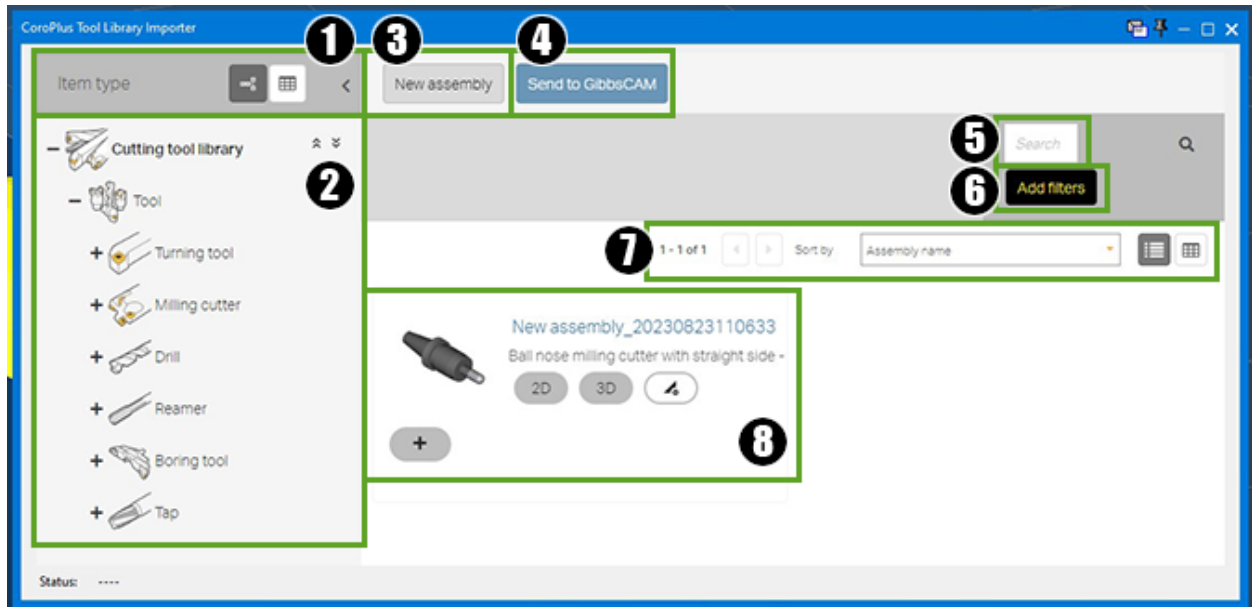


Tool Importer Dialogs

Three dialogs constitute the main interface of the GibbsCAM CoroPlus Tool Library plug-in:

- **Main Tool Library Importer** dialog
- **Selection of assembly** window
- **Tool build / Quick build** window

CoroPlus Tool Library Importer: Main Dialog



1. Item Type

The controls in this area let you toggle the display of the Cutting tool library hierarchy between tree view and grid view. Or you can click the < control to collapse the **Item Type** pane to a strip on the left.

2. Cutting tool library hierarchy

The controls in this area let you navigate the tree and choose candidate items.

3. New assembly

This button opens the **Selection of assembly** window, where you can filter, search, and browse items in the cutting tool library and make a selection.

4. Send to GibbsCAM

If this button is available, a valid GTC package has been created and saved. Clicking this button places the tool in the GibbsCAM tool list.

5. Search

6. Add filters

The three controls in this area let you quickly winnow down the candidate items that are displayed in the main pane. Enter a string in the Search text box or add filters for parameter values and then click the (Search) icon.

7. Icons controlling the main pane display

The controls in this area show you how many items are in the main pane, let you sort by name or date, and let you toggle between List and Grid view.

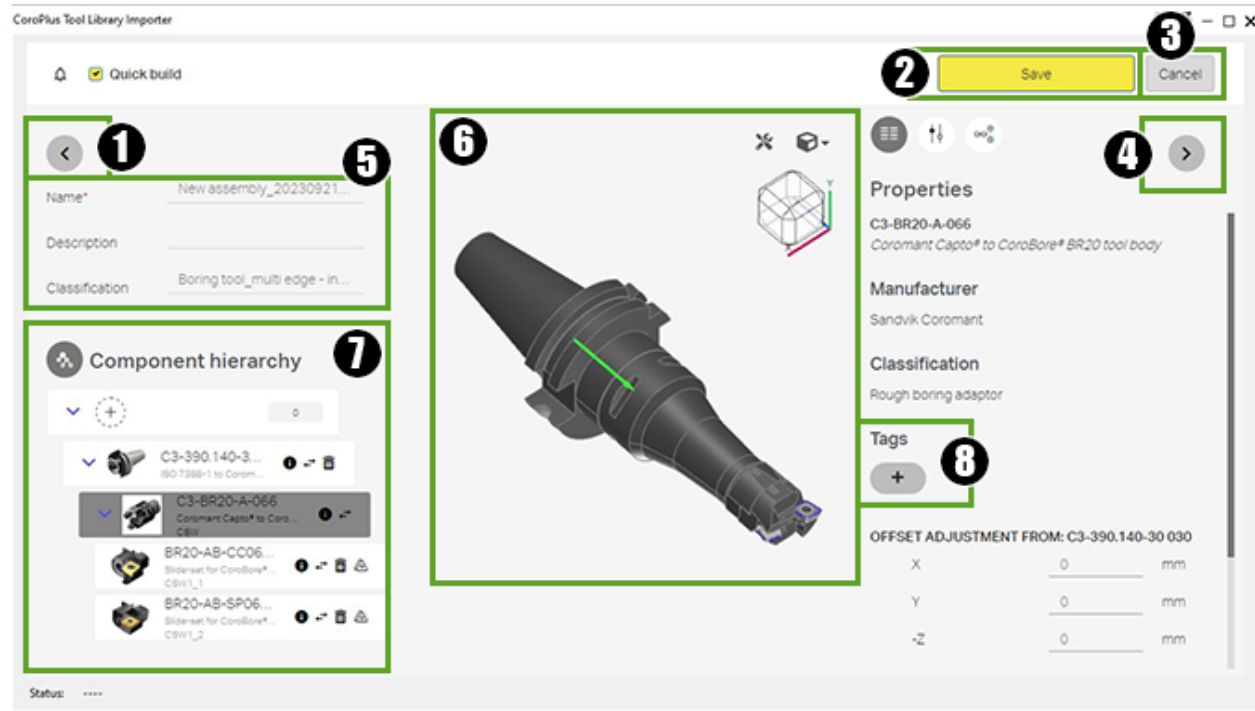
8. Tool component display

Each item in the main pane displays the assembly name, manufacturer, and classification; lets you add a description; and provides a (Cutting Data) icon that lets you show or specify

cutting data and/or get recommendations.

When you click an item in the main pane and click **Open**, the Tool build / **Quick build** window opens

CoroPlus Tool Library Importer: Quick Build Window



1. <
This control lets you collapse the **Component hierarchy** pane to a strip on the left.
2. **Save**
This button saves changes you have made to the currently displayed tool.
3. **Cancel**
This button lets you exit the tool build window without saving changes.
4. >
This control lets you collapse the **Properties** pane to a strip on the right.
5. **Name / Description / Classification**
The text fields in this area show you the item's CPTL-assigned Name and Classification and let you optionally enter a Description.
6. **(display pane)**
This area provides an image of the selected item, with pull-down controls that show you the color legend and let you toggle between basic and detailed 3D models and two kinds of 2D schematics.
7. **Component hierarchy**
The controls in this area let you navigate the tree and choose candidate items.

8. Tags

Clicking the + button lets you add searchable text tags.

OptiThreading

When to Use the OptiThreading Process

High-Precision Applications: OptiThreading is ideal for applications that require high precision and accuracy in threading operations, as in aerospace, automotive, medical device manufacturing, and any industry where precise thread profiles are critical.

Complex Thread Profiles: It is particularly beneficial for cutting complex thread profiles that are difficult to achieve with traditional threading methods. This includes multi-start threads, tapered threads, and nonstandard thread geometries.

Material-Sensitive Operations: When working with materials that are challenging to thread, such as high-strength alloys and exotic materials, OptiThreading optimizes cutting conditions to minimize tool wear and avoid workpiece damage.

Tool Life Optimization: To extend tool life and reduce tool costs, optimization of cutting parameters reduces the wear on threading tools, leading to fewer tool changes and lower overall costs.

Surface Finish Requirements: In scenarios where an excellent surface finish is required, such as in the production of critical components like hydraulic fittings and sealing surfaces, OptiThreading ensures superior surface quality by minimizing deflection and vibration during the threading process.

Long chips: Long chips tangling around workpiece and/or tool can cause unwanted stops in production. OptiThreading will help in these scenarios due to the oscillating movement in and out of the workpiece.

Why OptiThreading Is Used

Enhanced Efficiency: OptiThreading significantly improves the efficiency of threading operations by optimizing cutting parameters such as speed, feedrate, and depth of cut. This leads to faster production cycles and increased throughput.

Improved Thread Quality: By carefully controlling the cutting process, OptiThreading produces higher-quality threads with better dimensional accuracy and surface finish. This is crucial for components that must meet strict tolerances and quality standards.

Reduced Tool Wear: OptiThreading reduces tool wear by optimizing cutting conditions, which leads to fewer tool changes and lower tooling costs. This is especially important when working with or ductile abrasive materials that can quickly degrade cutting tools.

Minimized Material Stress: The optimized cutting strategy minimizes stress and deformation in the workpiece material, reducing the risk of defects such as thread tearing or surface cracking.

Versatility: OptiThreading can be adapted to a wide range of threading operations and materials, making it a versatile solution for various manufacturing environments. It supports different threading types and can be used on both CNC lathes.

Competitive Advantage: Manufacturers implementing OptiThreading can achieve higher productivity, better thread quality, and reduced operational costs, providing a competitive advantage in the market. This technology lets companies meet stringent customer requirements and deliver superior products.

In summary: OptiThreading is used in situations where precision, efficiency, tool life, and surface finish are critical. Its ability to optimize the threading process makes it an invaluable tool in modern manufacturing, particularly in industries demanding high-quality threaded components.

Within CPTL, Create and Export an OptiThreading Assembly

To create, modify, and export an OptiThreading tool assembly, follow these steps.

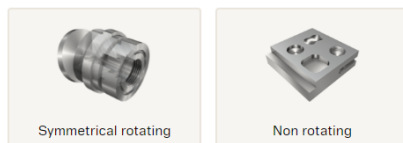
1. Create a new tool assembly: **By application > Symmetrical rotating.**

Create a new tool assembly

By tool type ⓘ



By application ⓘ

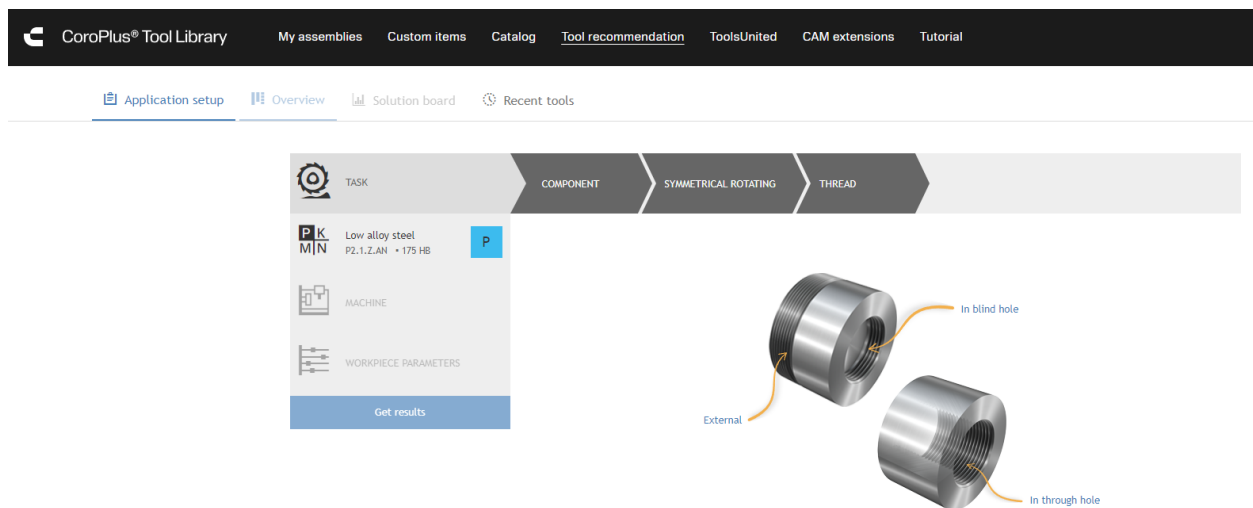
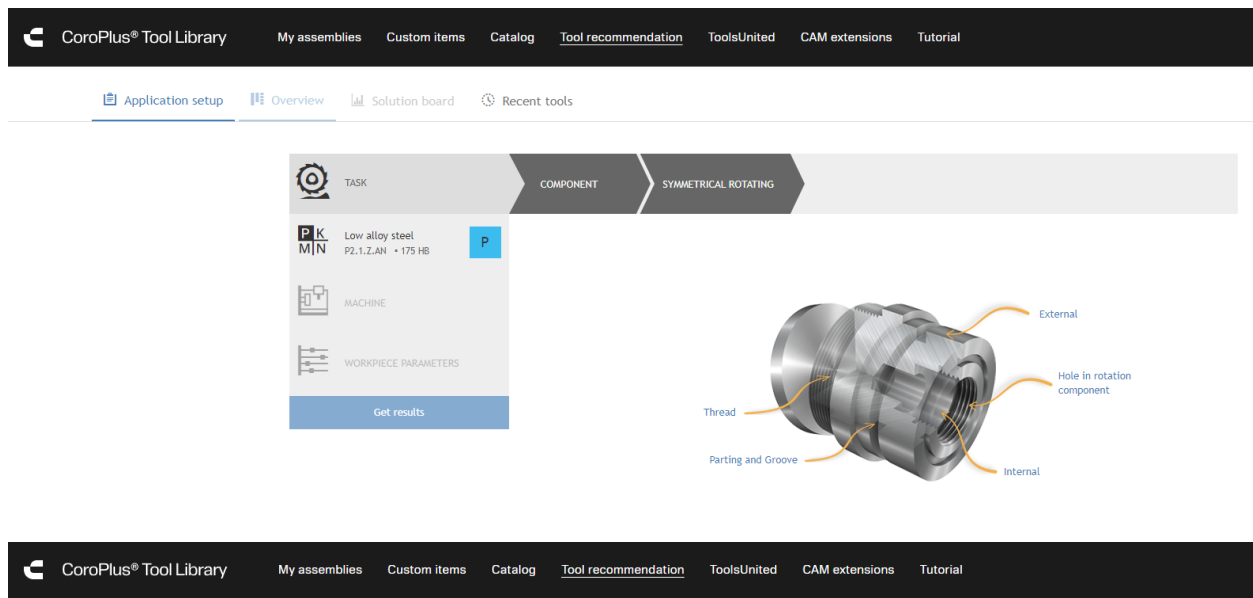


Recent assemblies

My assemblies (2)



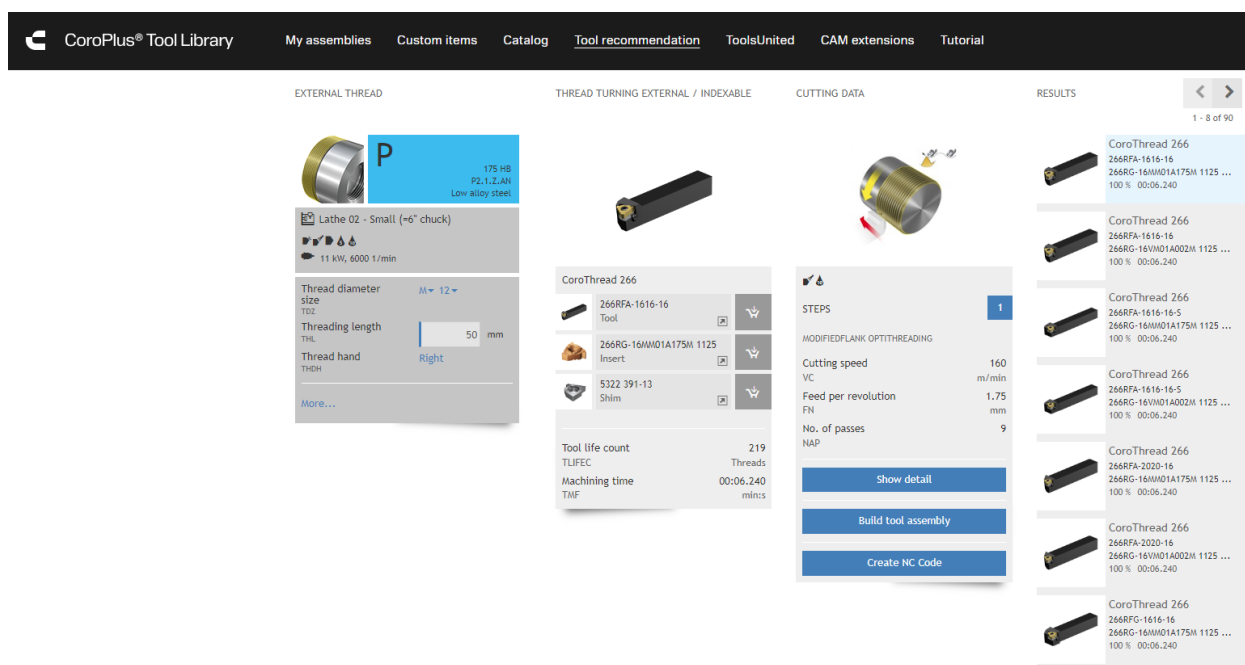
2. Under **Task**: Select the workpiece material (for example: **Low alloy steel**).
3. In response to the prompt, click **Workpiece parameters** and then choose workpiece geometry by clicking the labels attached to the sample picture. For example:




- In the ensuing boxes and drop-down menus, specify parameters for the workpiece, such as TDZ=Thread diameter size; THL=Threading length; THDH=Thread hand; TCTR=Thread tolerance class). Then, below the thread specifications, under the OptiThreading pulldown, toggle OptiThreading enabled from gray (OFF) to **ON** (light blue).



Please Note: The **OptiThreading** toggle must be **ON** to enable the OptiThreading technology.


- After completing your selections, click the **Get results** button at the bottom of the first column.
- Click the **Build tool assembly** button near the bottom of the third (“Cutting Data”) column.

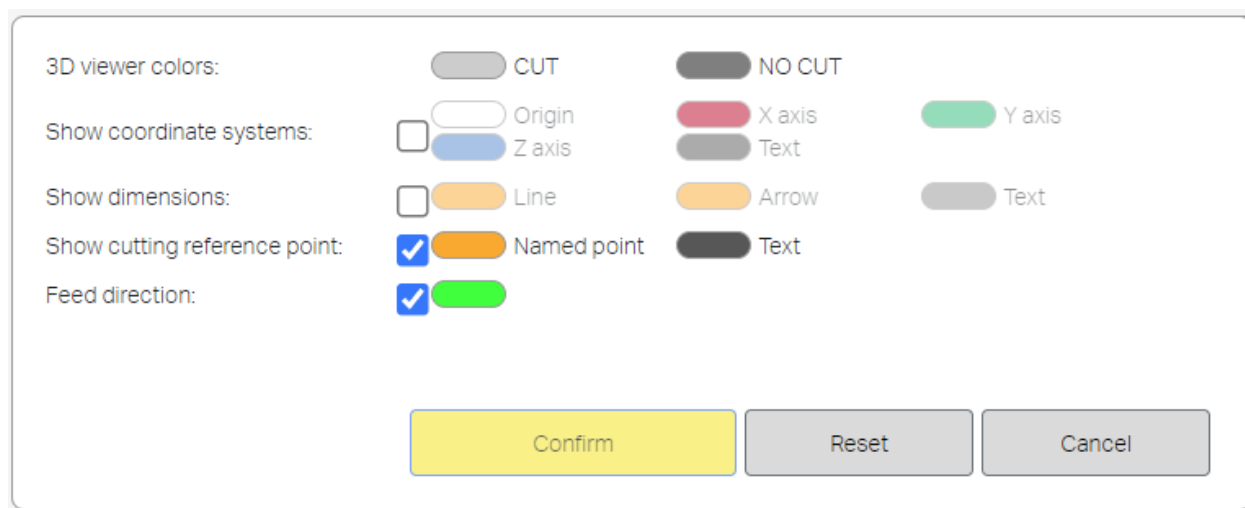


7. In the left column of the tool assembly screen, enter values for Name, Description, and Classification.

8. Optionally, use  controls in the top center of the tool assembly screen:

The   buttons rotate/reset the view rotation.

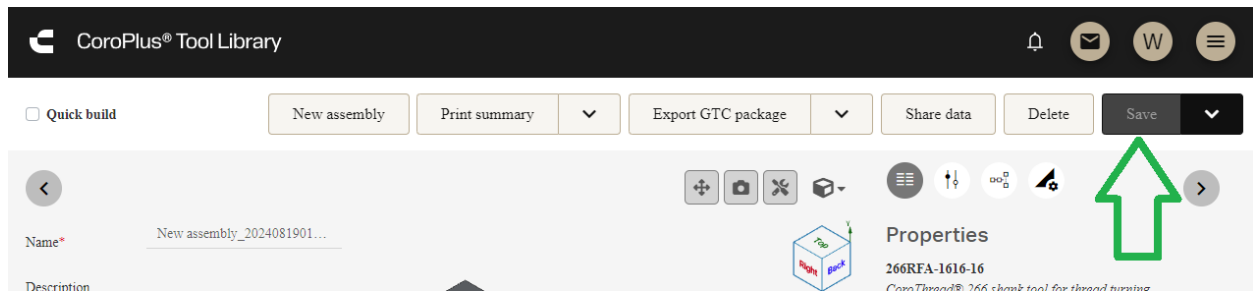
The  button confirms/resets the view settings, as illustrated here:



The  pulldown menu sets the style, from: 3D model, 2D drawing, or 2D family drawing.

You can also view the assembly's Properties (☰), Parameters (⬆⬆), and Connections (⚙️).

9. In the left column of the tool assembly screen, click the **Save** button (or **Save As**).



10. After the assembly is saved, you can optionally click the Cutting Data (⚙️) button and use options like **Get recommendations** or **Specify own cutting data**. You can override (⚙️), edit (✎), copy (📋), or delete (🗑️) the data displayed in this screen.
11. When you are satisfied with the tool assembly and its data, click **Export GTC package**.

Result: The OptiThreading tool assembly is exported and available for selection in the GibbsCAM CPTL plug-in (⊕). In the plug-in, after a GibbsCAM user selects this assembly, clicks the **Send to GibbsCAM** button, and sets the tool orientation, the corresponding tool is brought into GibbsCAM, where it is associated with cutting data (as shown by the ☒ mark in the **Cutting Data** (☒ **Cutting Data**) button in the **Tools** dialog).

Within the GibbsCAM Turning **Thread** process dialog, this data can be accessed by clicking the **Tool** ☒ (☒ **Tool** ☒) button. More importantly, the dialog's **Definition** section offers the option **From Cutting Data**, which provides access to the options and parameters specific to OptiThreading.