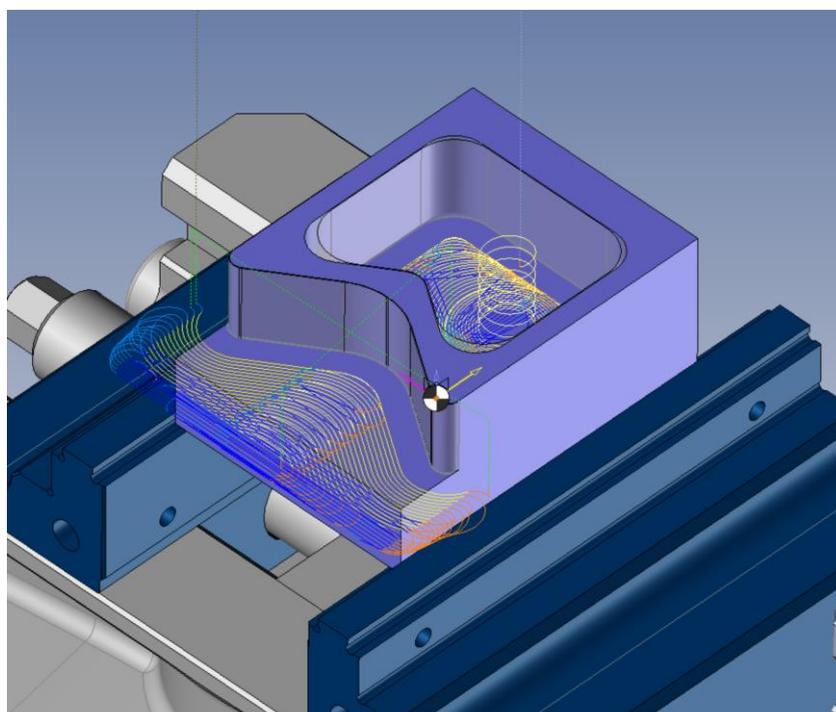


Training guide

Import of cutting conditions from the Fraisa ToolExpert



© 2022, TOPSOLID SAS.

7, Rue du Bois Sauvage

F-91055 Évry, FRANCE

Web: www.topsolid.com

Email: contact@topsolid.com

All rights reserved.

TopSolid® is a registered trademark of TOPSOLID SAS.

TopSolid® is a product name of TOPSOLID SAS.

The information and the software contained within this document are subject to change without prior warning and should not be construed as a commitment by TOPSOLID SAS.

The software covered by this document is supplied under license, and may only be used and duplicated in compliance with the terms of this license.

Hard copy or digital materials provided during training or accessible on-line as part of the training represent a protected original work that is the property of the training organization. They cannot be reproduced in part or in full without the express consent of the training organization.

All the texts, comments, works, illustrations and images reproduced on these materials are protected by copyright worldwide. Any use other than that designed for the purposes of training is subject to the prior authorization of the training organization, subject to prosecution. The Customer shall refrain from using, reproducing, representing, lending, exchanging, transmitting or transferring and more generally exploiting all or part of the documents without the prior written consent of TOPSOLID SAS. The Customer shall also refrain from extracting all or part of the data and/or transferring it to another material, and from modifying, adapting, arranging or transforming it without the prior written consent of the training organization. The Customer is only granted a right of use, to the exclusion of any transfer of ownership in any form whatsoever. Therefore, only the reproduction and representation of the content authorized by the French Intellectual Property code on a screen, and a single hard copy for archiving purposes, are authorized, for strictly personal purposes, and for professional use.

The Customer also undertakes to not take part in competing, directly or indirectly, with the training organization by transferring or communicating these documents to anyone.

Version 7.15 Rev.01

Summary

Generalities	1
Requirement	1
Setting	2
1. Material identification	2
2. Tool identification.....	3
3. Cutting Diameter and number of tool teeth	4
Import of cutting conditions	5

Generalities

The Fraisa ToolExpert module allows you to import cutting conditions directly into TopSolid without having to search on internet or in the cutting tool catalogue.

This module is available from version 7.15 SP8 in TopSolid'Cam Standard Milling, Standard Turning, Pro Milling, Pro Milling-turning.

Requirement

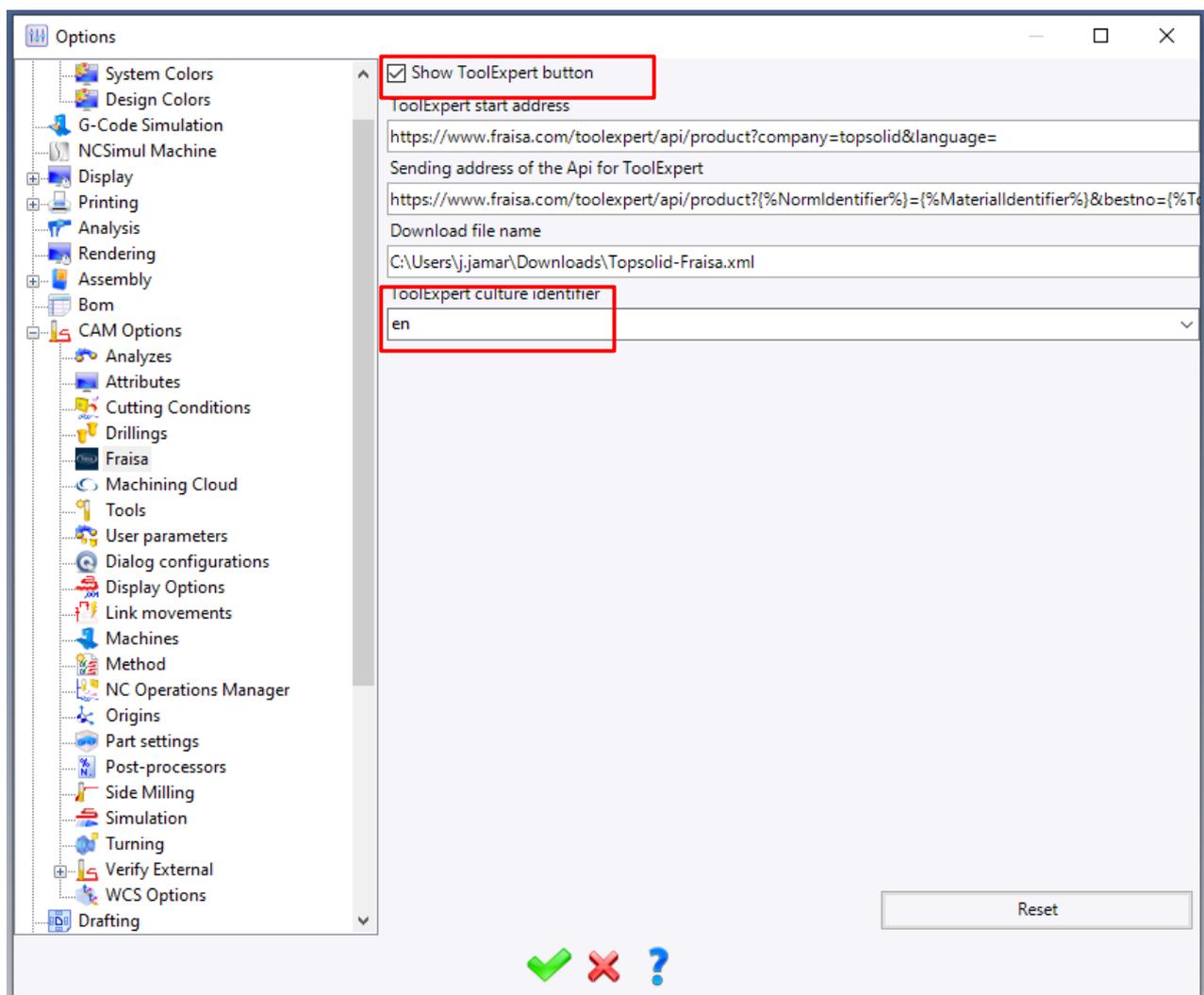
In order to establish the link between TopSolid and the Fraisa ToolExpert, in the Tools/Options/Usage/Fraisa tab, check the "Show ToolExpert button" box.

Then enter the download directory in « Download file name ».

This module is available in several languages. To define the desired language, in "ToolExpert culture identifier", enter en for English.

(English : en, French : fr, German : de, Italian : it, Hungarian : hu, Chinese : cn)

Finally, the computer used must have an Internet connection.

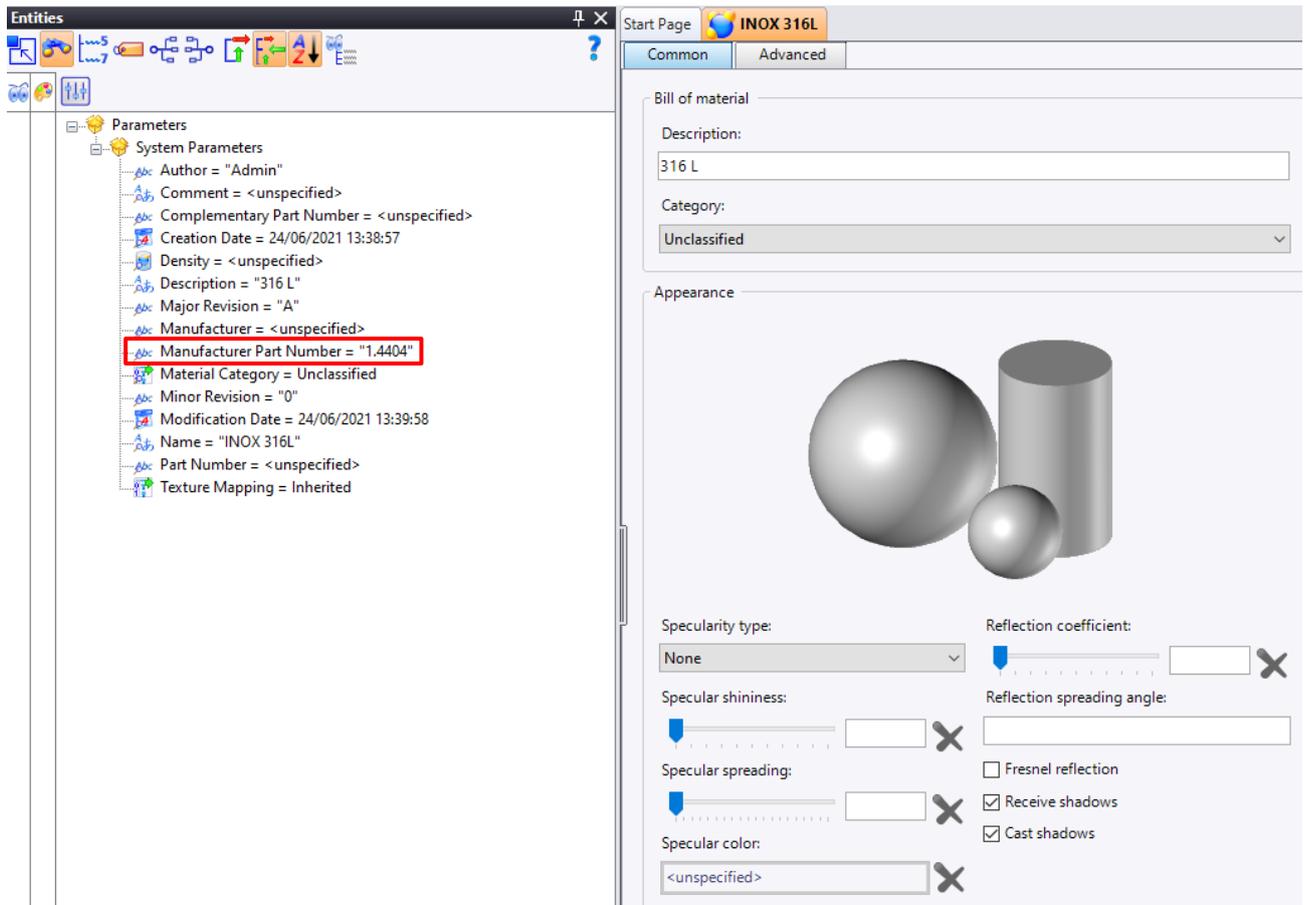


Setting

In order to import cutting conditions, you must first enter several pieces of information such as the material of the part to be machined, the reference of the cutting tool, its diameter and its number of teeth.

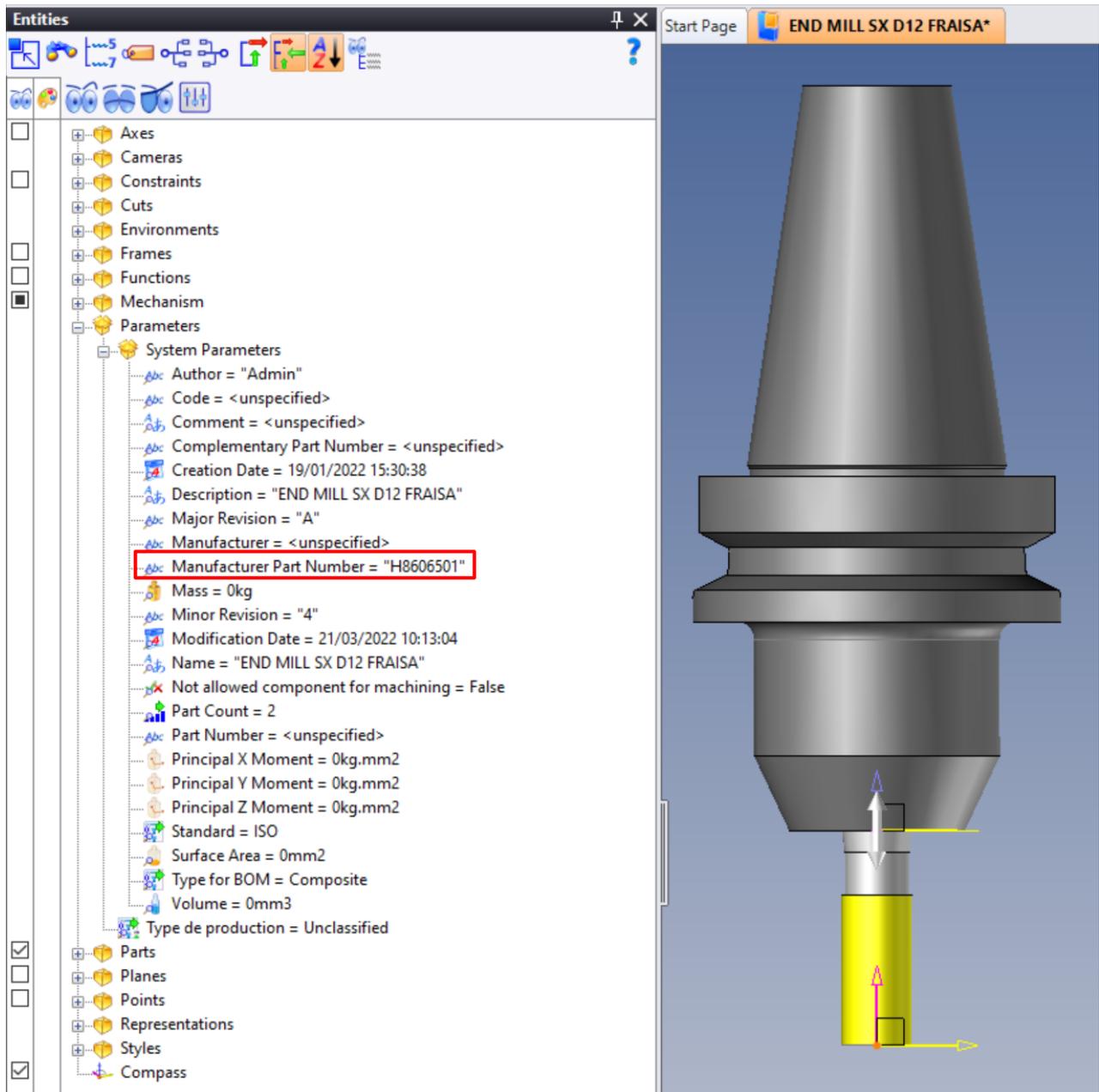
1. Material identification

In order for ToolExpert to automatically select the material of the part to be machined, the part must be associated with a material. The material document in TopSolid must be identified by a "Manufacturer Part Number".



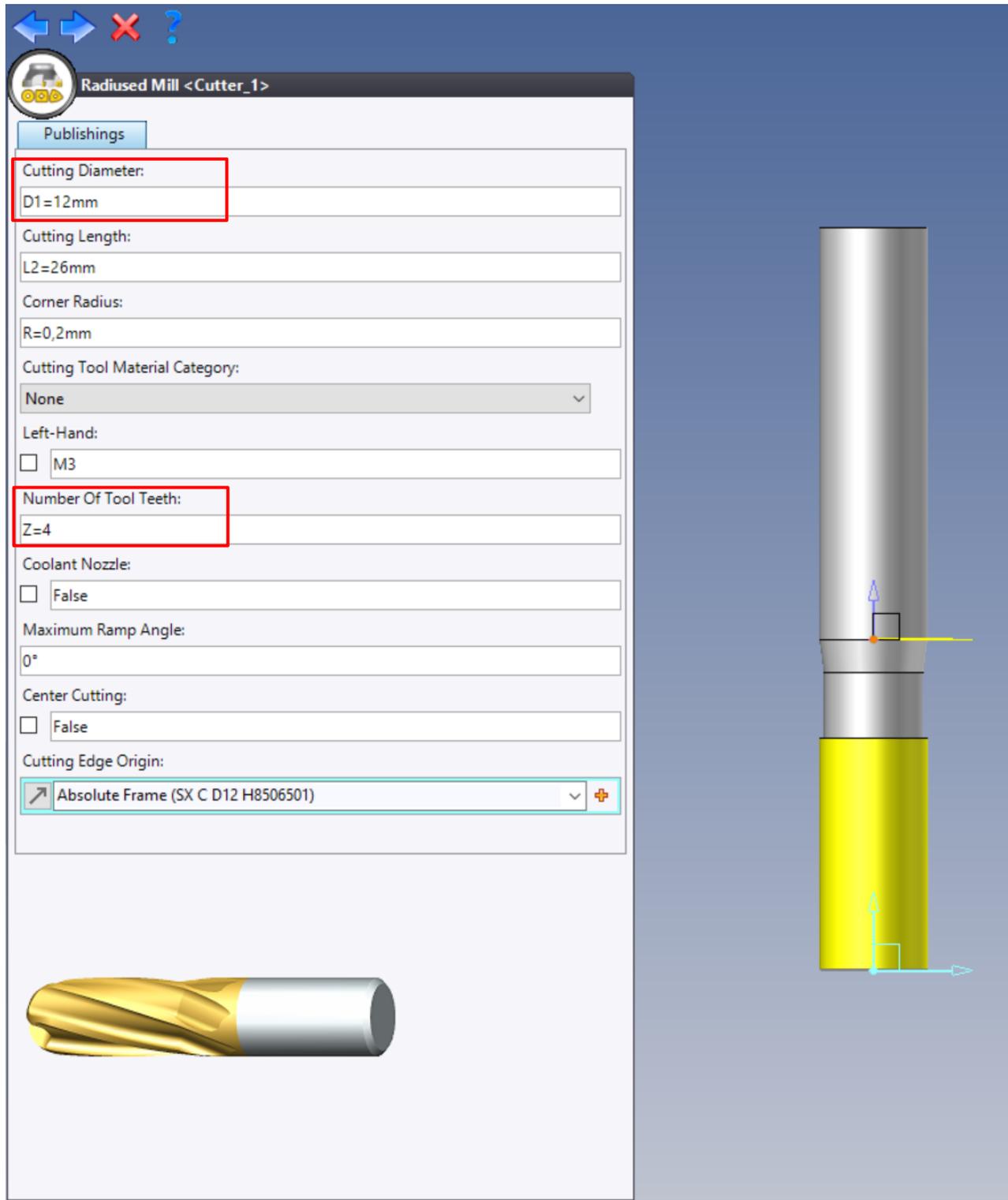
2. Tool identification

In the same way as for the material, the "Manufacturer Part Number" must be entered in the tool or the tool/toolholder assembly.



3. Cutting Diameter and number of tool teeth

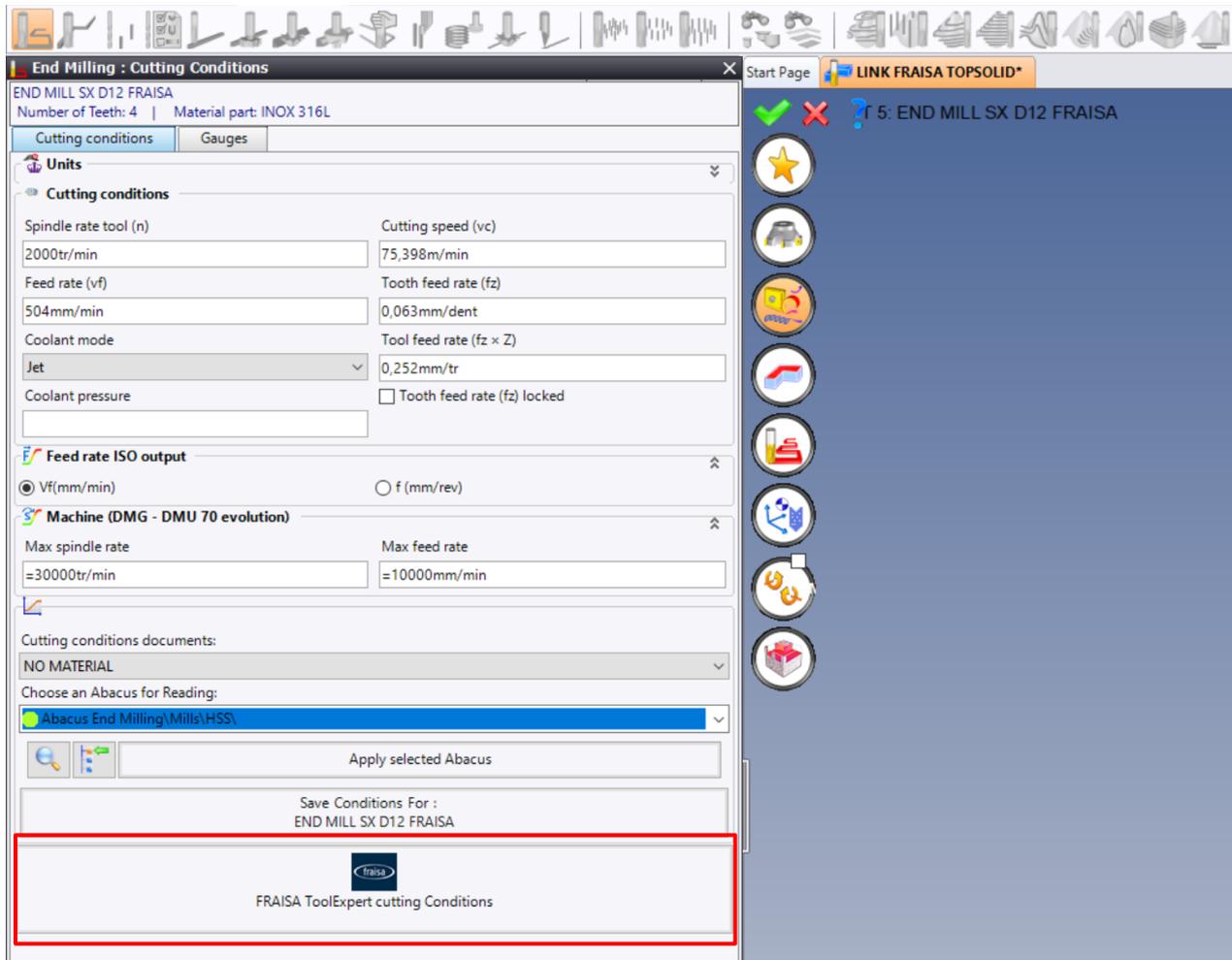
This information is retrieved directly from the tool when it is created via the Tools/Functions/TopSolid'Cam Assistants/Machining component assistant tab.



The screenshot displays the 'Radiused Mill <Cutter_1>' configuration window. The 'Cutting Diameter' is set to D1=12mm, and the 'Number Of Tool Teeth' is set to Z=4. Other parameters include Cutting Length (L2=26mm), Corner Radius (R=0,2mm), Cutting Tool Material Category (None), Left-Hand (M3), Coolant Nozzle (False), Maximum Ramp Angle (0°), Center Cutting (False), and Cutting Edge Origin (Absolute Frame (SX C D12 H8506501)). A 3D model of the tool is shown on the right, and a 3D model of the tool is shown at the bottom left.

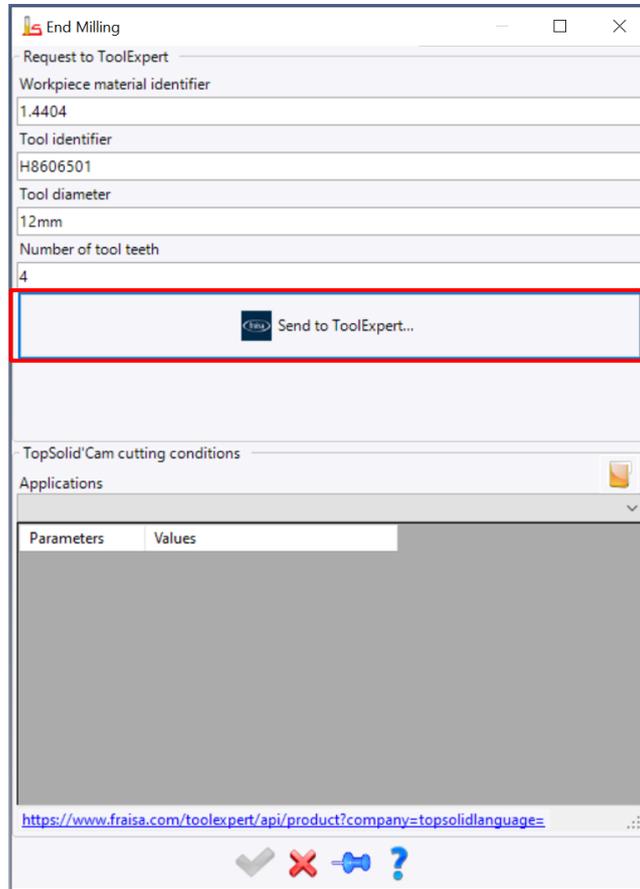
Import of cutting conditions

In the milling operations, in the "Cutting conditions" tab, the Fraisa ToolExpert button is now visible.

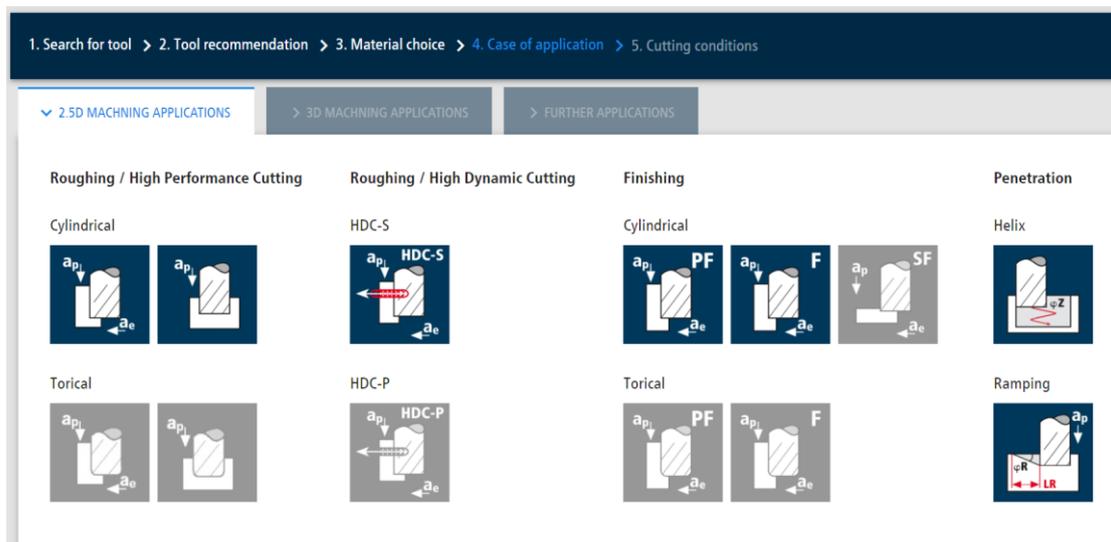


Clicking on this button opens a window containing the various information automatically retrieved by TopSolid, which is required to import cutting conditions.

Click on the "Send to ToolExpert" button to be redirected to it.



On the ToolExpert, the material is preselected if several variants exist, otherwise you will be taken directly to the page for choosing the application.



Select the application you are interested in and the ToolExpert will suggest cutting conditions that you can modify if necessary.

TopSolid/Fraisa

If you wish to import additional cutting conditions for the material penetration, which may be different, click on the "Add application case" button.

Cutting data



Emulsion / Oil
Excellent suitability

Recommended cutting data

Select your HDC application ⓘ

- Low dynamics 10%
- Medium dynamics 7.5%
- High dynamics 5%

Diameter of the cutting edge	d1	[mm]	12
Number of cutting edges	z	-	4
Cutting speed	vc	[m/min]	147
Feed per tooth	fz	[mm]	0,198
Axial infeed depth	ap	[mm]	26
Radial infeed depth	ae	[mm]	0,9
Radial infeed depth	ae	[%] d ₁	7,5
Tool angle of action	ew	[°]	31,8
Spindle speed	n	[min ⁻¹]	3909
Feed rate	vf	[mm/min]	3103
Material removal rate	Q	[cm ³ /min]	72,62

Actions



Download PDF file

Add another application

Select another application for the tool and material you have already selected and add it.

+ Add application

TopSolid

A small description here to explain what the user could do while being inside the ToolExpert interface triggered by MDM

Download XML

Back to TopSolid

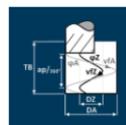
The ToolExpert then asks you to select another application, so select the cutting conditions according to the type of material penetration.

To integrate the selected cutting conditions into TopSolid, click on "Download XML" and then on the "Back to TopSolid" button.

Cutting data



Emulsion / Oil
Excellent suitability



Recommended cutting data

Diameter of the cutting edge	d1	[mm]	12
Number of cutting edges	z	-	4
External diameter of the drilled hole	DA	[mm]	22,8
Diameter of the centering path	DZ	[mm]	10,8
Hole depth	TB	[mm]	26
Cutting speed	vc	[m/min]	80
Feed per tooth	fz	[mm]	0,054
Spindle speed	n	[min ⁻¹]	2120
Feed rate of the centering path	vfZ	[mm/min]	458
Penetration angle of the centering path	φZ	[°]	5

Actions



Download PDF file

Add another application

Select another application for the tool and material you have already selected and add it.

+ Add application

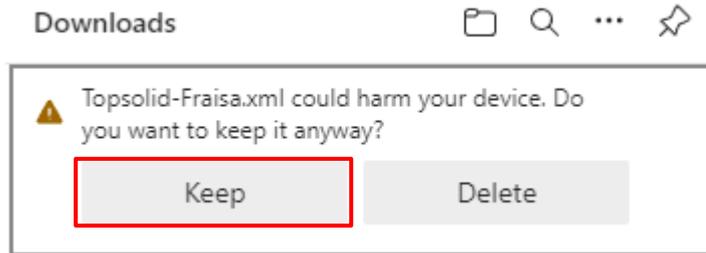
TopSolid

A small description here to explain what the user could do while being inside the ToolExpert interface triggered by MDM

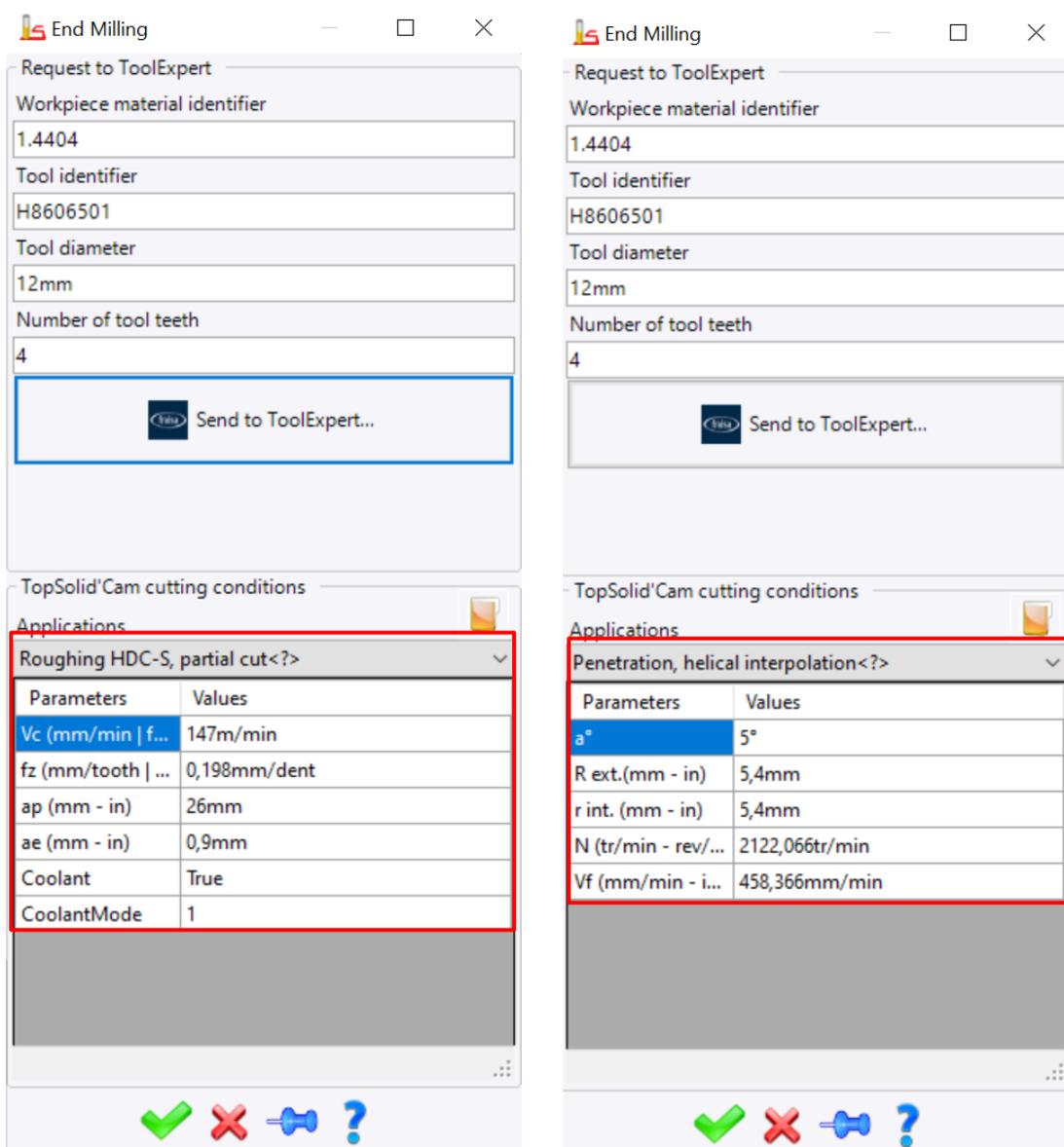
Download XML

Back to TopSolid

Note : Some browsers automatically block downloads. In order to be able to import the cutting conditions, the download of the XML file is mandatory, so you will have to allow/hold the download.



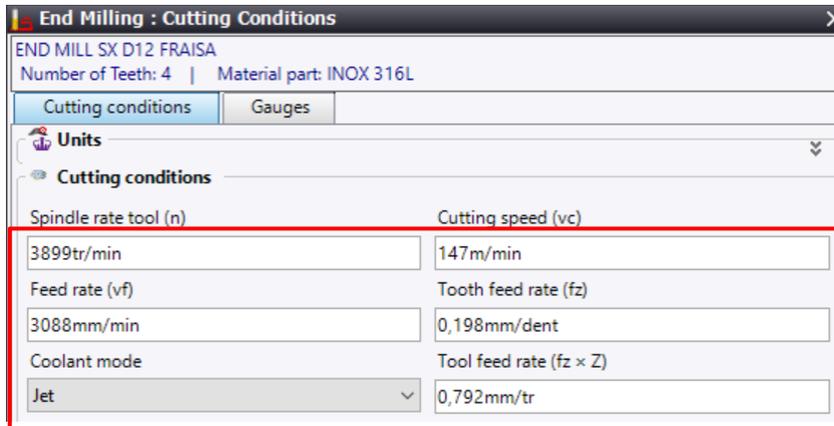
Back in TopSolid, we can see that the cutting conditions are now accessible in the "Applications" drop-down list.



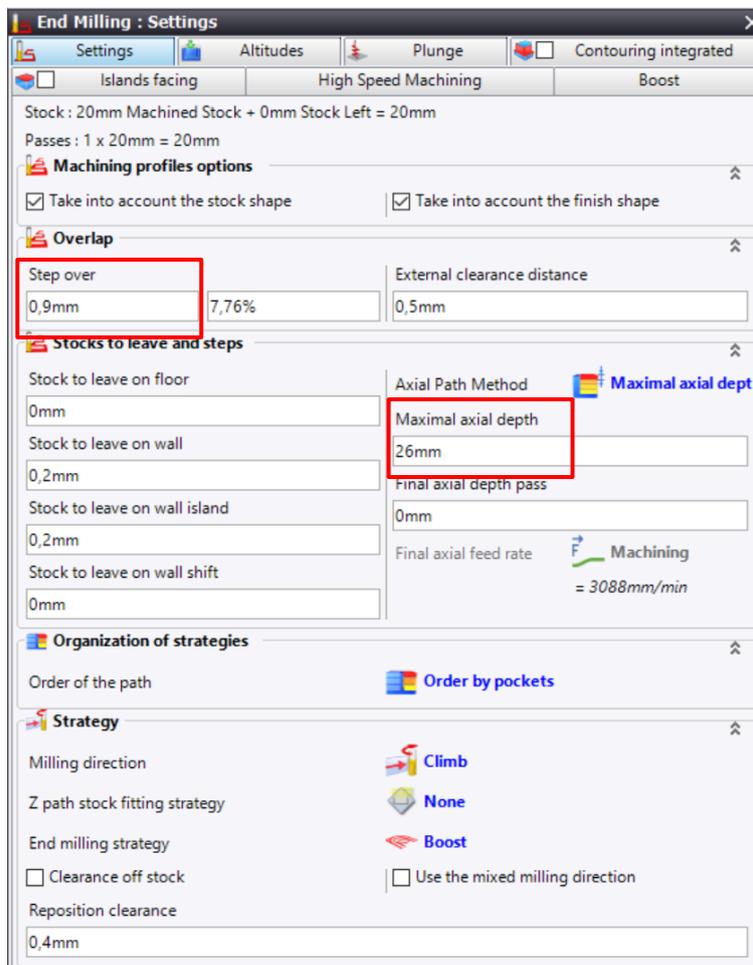
Simply validate to apply the cutting conditions to the tool and the operation settings.

Various parameters are imported:

- Cutting speed (Vc)
- Feed per tooth (fz)
- Spindle rate (N)
- Feed rate (Vf)



- Radial infeed depth (ae)
- Axial infeed depth (ap)



- Penetration strategy
- Radius of helix
- Penetration angle
- Custom penetration feed rate
- Custom penetration spindle rate

