

Training guide

Import of cutting conditions from the Fraisa ToolExpert





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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.

🔠 Options		— 🗆 X
Options Options Design Colors Options G-Code Simulation NCSimul Machine Display Printing Printing Palysis Rendering Bom CAM Options	 Show ToolExpert button ToolExpert start address https://www.fraisa.com/toolexpert/api/product?company=topsolid Sending address of the Api for ToolExpert https://www.fraisa.com/toolexpert/api/product?(%NormIdentifier% Download file name C:\Users\j.jamar\Downloads\Topsolid-Fraisa.xml ToolExpert culture identifier en IoolExpert culture identifier en Download file name C:\Users\j.jamar\Downloads\Topsolid-Fraisa.xml ToolExpert culture identifier en Download file name Distribution of the start of t	- C × &language= }={%MaterialIdentifier%}&bestno={%T
Analyzes Attributes Cutting Conditions Urillings Fraisa Machining Cloud Fraisa Comparents Dialog configurations Dialog configurations Display Options Display Options Link movements Machines Machines Method Corgins Part settings Post-processors Side Milling Simulation Verify External Verify External Verify External		
Drafting	v	Reset
	✓ × ?	

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.

Radiused Mill <cutter 1=""></cutter>	
Publishings	
Cutting Diameter:	
D1=12mm	
Cutting Length:	
L2=26mm	
Corner Radius:	
R=0,2mm	
Cutting Tool Material Category:	
None	
Left-Hand:	
M3	
Number Of Tool Teeth:	
Z=4	
Coolant Nozzle:	
False	4
Maximum Ramp Angle:	
0.	
Center Cutting:	
False	
Cutting Edge Origin:	
Absolute Frame (SX C D12 H8506501)	
	Δ.

Import of cutting conditions

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

	\$ rd \$1 \$	R\$ 4440001
Les End Milling : Cutting Conditions	>	Start Page 🚽 LINK FRAISA TOPSOLID*
END MILL SX D12 FRAISA		
Cutting conditions		J V A I 5. END MILL SA DIZ FRAISA
a Units	~	
Cutting conditions	Ŷ.	
Spindle rate tool (n)	Cutting speed (vc)	
2000tr/min	75,398m/min	
Feed rate (vf)	Tooth feed rate (fz)	$\overline{\bigcirc}$
504mm/min	0,063mm/dent	
Coolant mode	Tool feed rate (fz × Z)	
Jet 🗸	0,252mm/tr	
Coolant pressure	Tooth feed rate (fz) locked	
E Feed rate ISO output	\$	
● Vf(mm/min)	⊖ f (mm/rev)	Ĭ
Machine (DMG - DMU 70 evolution)	\$	
Max spindle rate	Max feed rate	
=30000tr/min	=10000mm/min	
Cutting conditions documents:		Ă
NO MATERIAL	~	1 (🎓)
Choose an Abacus for Reading:	,	
Abacus End Milling\Mills\HSS\	*	
C F	oly selected Abacus	1
Save Condi	itions For :	
END MILL S	K D12 FRAISA	
FRAISA ToolExpert	cutting Conditions	

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.

占 End Milling		\times
 Request to ToolExp 	pert	
Workpiece material	identifier	
1.4404		
Tool identifier		
H8606501		
Tool diameter		
12mm		
Number of tool tee	th	
4		
	Send to ToolExpert	
 TopSolid'Cam cutt 	ing conditions	
Applications		
		~
Parameters	Values	
https://www.fraisa	.com/toolexpert/api/product?company=topsolidlanguage=	:
	💞 💥 👐 ?	

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					Actions
app HDC-S mulsion / Excellent su ae Excellent su	Dil itability				
Select your HDC application					Page 1
Low dynamics 10%	Med	lium dynamics 7.5	%	High dynamics 5%	👲 Download PDF file
Diameter of the cutting edge	d1	[mm]	12		Add another application
Number of cutting edges	z	-	4		Coloct another application for the tool and material you have
Cutting speed	VC	[m/min]	147		already selected and add it.
Feed per tooth	fz	[mm]	0,198		
Axial infeed depth	ар	[mm]	26		+ Add application
Radial infeed depth	ae	[mm]	0,9		TopSolid
Radial infeed depth	ae	[%] d ₁	7,5		A small description have to explain what the user could do while
Tool angle of action	ew	[°]	31,8		being inside the Toolexpert interface triggered by MDM
Spindle speed	n	[min ⁻¹]	3909		
Feed rate	vf	[mm/min]	3103		Download XML
Material removal rate	Q	[cm ³ /min]	72,62		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



Add another application

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



TopSolid

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



<u>Note</u>: 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.

Do	wnloads	Ð	Q		\Rightarrow
•	Topsolid-Fraisa.xml could you want to keep it anyw	harm your dev ay?	ice. Do	5	
	Кеер	Dele	te		

Back in TopSolid, we can see that the cutting conditions are now accessible in the "Applications" dropdown 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)

End Milling : Cutting Conditions	×
END MILL SX D12 FRAISA	
Number of Teeth: 4 Material part: INOX 3 TOL	
Cutting conditions Gauges	
🐔 Units	*
Cutting conditions	
Spindle rate tool (n)	Cutting speed (vc)
3899tr/min	147m/min
Feed rate (vf)	Tooth feed rate (fz)
3088mm/min	0,198mm/dent
Coolant mode	Tool feed rate (fz \times Z)
Jet 🗸 🗸	0,792mm/tr

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

占 End Milling : Settin	gs		×				
占 Settings i	Altitudes 🗼	Plunge 😽 🔲	Contouring integrated				
slands facing	High Spe	ed Machining	Boost				
Stock : 20mm Machined Stock + 0mm Stock Left = 20mm							
Passes : 1 x 20mm = 20n	nm 						
A Machining profiles options							
Iake into account the	e stock shape	Take into account t	he finish shape				
/ 🖆 Overlap			\$				
Step over		External clearance dist	ance				
0,9mm	7,76%	0,5mm					
Stocks to leave and	steps		\$				
Stock to leave on floor		Avial Path Method	Maximal axial dept				
0mm		Maximal axial denth					
Stock to leave on wall		26mm					
0,2mm		Final axial depth pass					
Stock to leave on wall is	land	0mm					
0,2mm			Ê Mashisina				
Stock to leave on wall sh	nift	Final axial feed rate					
0mm			= 3088mm/min				
Organization of stra	itegies		A				
Order of the neth	-	💶 Order by packate	^				
Order of the path		e order by pockets					
Strategy		_	\$				
Milling direction		🛁 Climb					
Z path stock fitting strat	egy	None					
End milling strategy		Const Const					
Clearance off stock							
Reposition clearance							
0,4mm							
<u></u>							

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

占 End Milling : Settings		_	-	×
<u>L</u> Settings 📩 Altitud	les 🗼	Plunge	₩□	Contouring integrated
Islands facing	High Spe	ed Machining		Boost
✓ Start at same point				
Plunge authorized				
Inside Material				\$
🗌 🚊 Use forced Z altitude plung	e			*
Plunge strategy		🗯 Helix		
Helix radius		Helix minimum	radius	
5,4mm		5,4mm		
Helix type		Angle		
Helix angle		Helix step		
5°		=7,8mm		
Down feed rate		📜 Custom		
> 458mm/min				
Spindle Rate		Section 2		
> 2122,065908tr/min				
Dwell after each spindle speed move	ment			
Os				
Custom coolant				*)
着 Outside Material				\$
Plunge strategy		Direct		
Down feed rate		F Rapid		
		= Rapid		
Safety distances				\$
Safety distance		Peripheral safe	ty distand	e
2mm		2mm		