

TUNING SLICING PARAMETERS

Tutorial_V1 - Updated: 13,0600,1489,1694(SP6P1)





Introduction

3DXpert runs slicing calculations based on printer and materials that were pre-prepared for the specific printer and the specific material you use.

Such databases are sealed and should not be changed. They were approved by 3D Systems experts and signed as Certified LaserForm materials.

However, it may be that you need to tune up or adjust a database for specific needs. Some changes are possible, but we aware that any change results in a non-certified material database.

The purpose of this guide is to explain how to adjust the settings.

What are the Slicing Parameters to Adjust?

You can adjust the values for Power, Velocity and Offset parameters for Contours & Hatching, and in Hatching also for the Side Step. In some Printers also the Focus can be modified.

What you set in each of these is not the actual value of the parameter. You enter a factor.

Each factor can be set to a value within the displayed pre-defined range, either by entering the required factor value or by using the slider. Any change impacts on all its relevant parameters inside the Build Style.

For example, applying a factor for Contours-Power, will update the power value for all motions of all contours in this Build Style.



Adjusting the factor for Contours Power



So when setting a factor of, for example 1.2, all the power related definitions in all contours (C1, C2..) of this Build Style will increase by 20 percent in power (for the specific combination of Technology and Build Style.)

How to Adjust Slicing Parameters

1. Load a project, ready to be sliced.



- 2. From the Guide Bar, click Calculate Slices Slices The Objects Slicing dialog shows up, make sure that all the technologies have matching buildstyles.
- 3. There is no need to calculate the scan path. Click the Save_Close button. This creates a 'pending' scan path.





4. Click Scan Path Manager. Ma

Assuming the files was not calculated previously (see later on this guide), there is a non-calculated scan path. Select it.



5. Click the Recalculate Slices button.

-	S Scan-Path ID Sc 3	an-Path Name Comm				St.
aran	Recalculate Slices	© Sice Viewer	Show Silcer Log Send To Print	한말 Print Estimatio	Diri Cari	A Tech
Component Name		Manifold 05				• (1)
Printer Name		ProX DMP 3008				1
Material Name		LangeForm 17.404 (D)	Su£			Ca
Noterial Name		20 Customs Validated N	java Interial			5
Material brand		subsystems valuated M				6
siong vate and Time		08-04-2018 12:22:06			in the second	
sicer	version	13,0601,1489,1690				Slice
_	Technology Name	Objects	Build Style Name			
	Part	2	Part 17-4PH LT-40			E
	Cone Support	24	Solid Support_17-4PH_LT-40			11
2	Cald Cunnert	2	Solid Support_17-4PH_LT-40			
2	Sold Support					

This launches the Objects Slicing dialog, pointing to the internal buildstyles saved in the file.

Note: When you click Calculate Slicing on the Guide Bar, the system matches between the technologies defined within your project and the database installed on your PC.

Once the slicing is calculated (or Saved as in step #3), the database is also kept within the file.

You can access this database through the Scan Path Manager.

Also note that in this image the Material Brand for this material is currently set as 3D Systems Validated Material.



6. Click the Sintering Factors button alongside the technology you wish to adjust.

	lame:	ProX DMP 3008	-	Slicing Data File Format:		Printer F	iormat ~	
laterial I	Name:	LaserForm 17-4PH	I (B)_S∨5					
â	Hide D	etals						
<u> </u>	nue D	cuaio						
Compo	nantr	Margald OF						
Compo	(ienta	Manifold_00		×				
		Technology Name	Objects	Build Style Name		Setti	Sinte	
	1	Machining Offset	4	##Part_17-4PH_LT-40##			問題目	
	2	Part	2	##Part_17-4PH_LT-40##		1	-	
	3	Lattice Support	1	##Lattice_17-4PH_LT-40##		1		
	4	Cone Support	24	##Solid Support_17-4PH_LT-40##		1	100	
	5	Solid Support	2	##Solid Support 17-4PH LT-40##		1		
	6	Wall Support	148	##Wall Support_17-4PH_LT-80##	٠	1		
				Assign Ordering and Alternating				

This launches the Sintering Factors dialog.

7. For example, let's adjust the contours & hatching offsets. Set the factors for these offsets as you wish and press the OK button





8. You ate back in the Object Slicing (through Scan Path Manager) dialog. Press the OK button to calculate the scan path.



9. Once calculation is over, notice:

In the Scan Path Manager, the calculated scan path was replaced or added (in this image, added) according to the settings in the preferences (see below).

Status Scan-Path ID Scan-Path Name Comment 3 3 3 3 Image: Status Image: Status 3 3 3 Image: Status Image: Status 3 3 3 3 Image: Status Image: Status 3	>				
Recalculate Slices Slice Viewer Show Slicer Log Send To Printer Parameter Value Component Name Manifold_05 Printer Name ProX DMP 300B Material Name LaserForm 17-4PH (B)_Sv5 Material Brand 08-04-2018 12:35:08 Slicer Version 13,0601,1489,1690 Image: Component Part 2 Part 2 Part 2					
Component Name Manifold_05 Printer Name ProX DMP 300B Material Name LaserForm 17-4PH (B)_SV5 Material Brand Slicing Date and Time Slicing Date and Time 08-04-2018 12:35:08 Slicer Version 13,0601,1489,1690	Print Estimation				
Printer Name ProX DMP 300B Material Name LaserForm 17-4PH (B)_Sv5 Material Brand					
Material Name LaserForm 17-4PH (B)_SV5 Material Brand Slicing Date and Time 08-04-2018 12:35:08 Slicer Version 13,0601,1489,1690	ProX DMP 300B				
Material Brand 08-04-2018 12:35:08 Slicing Date and Time 08-04-2018 12:35:08 Slicer Version 13,0601,1489,1690 Technology Name Objects Build Style Name 1 Part 2 Part_17-4PH_LT-40	-				
Slicing Date and Time 08-04-2018 12:35:08 Slicer Version 13,0601,1489,1690 Technology Name Objects Build Style Name 1 Part 2 Part_17-4PH_LT-40	-				
Slicer Version 13,0601,1489,1690 Technology Name Objects Build Style Name 1 Part 2 Part_17-4PH_LT-40	-				
Technology Name Objects Build Style Name 1 Part 2 Part_17-4PH_LT-40					
Technology Name Objects Build Style Name 1 Part 2 Part_17-4PH_LT-40					
1 Part 2 Part_17-4PH_LT-40	^				
2 Cone Support 24 Solid Support_17-4PH_LT-40					
3 Solid Support 2 Solid Support_17-4PH_LT-40					
4 Lattice Support 1 Lattice_17-4PH_LT-40	×				

The Material Brand area is now empty, because the result of this calculation - adjusted scan path - is not validated any longer by 3D Systems.



As you work on a project, you may run various iterations of the scan path. Normally, you would like to always keep the last one. In other words, each calculation result will overwrite the last on.

In some cases, you may wish to keep each calculation. This way you can review the past calculations or reuse them.

You can indeed recalculate each one, view the results, send to print of get the time and cost estimation for it.



To set if to overwrite the last one or keep all calculations, enter Tools-Preferences.



Enter Additive-Slicer and set Yes or No to the parameter marked in the image.

'Yes' means that only the last calculation result is kept (recommended)

'No' means that all calculation results will be kept. This will obviously enlarge the file size.



End of Exercise.