



3DXpert™

3DPRINTING EXERCISE

Sinter Box

Tutorial_V1- Updated: 143DXpertv14,0100,1592,839(3DXpertv14SP1)



3D SYSTEMS®

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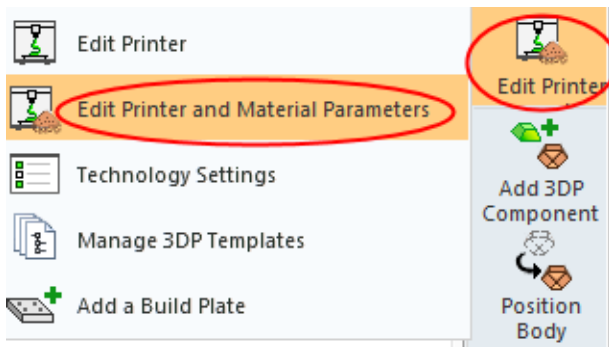
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Make a sinter box over selected components. The sinter box enables you to create a group or protective crate around the parts you wish to keep together or protect. This sinter box enables you to easily retrieve these parts from the powder box.

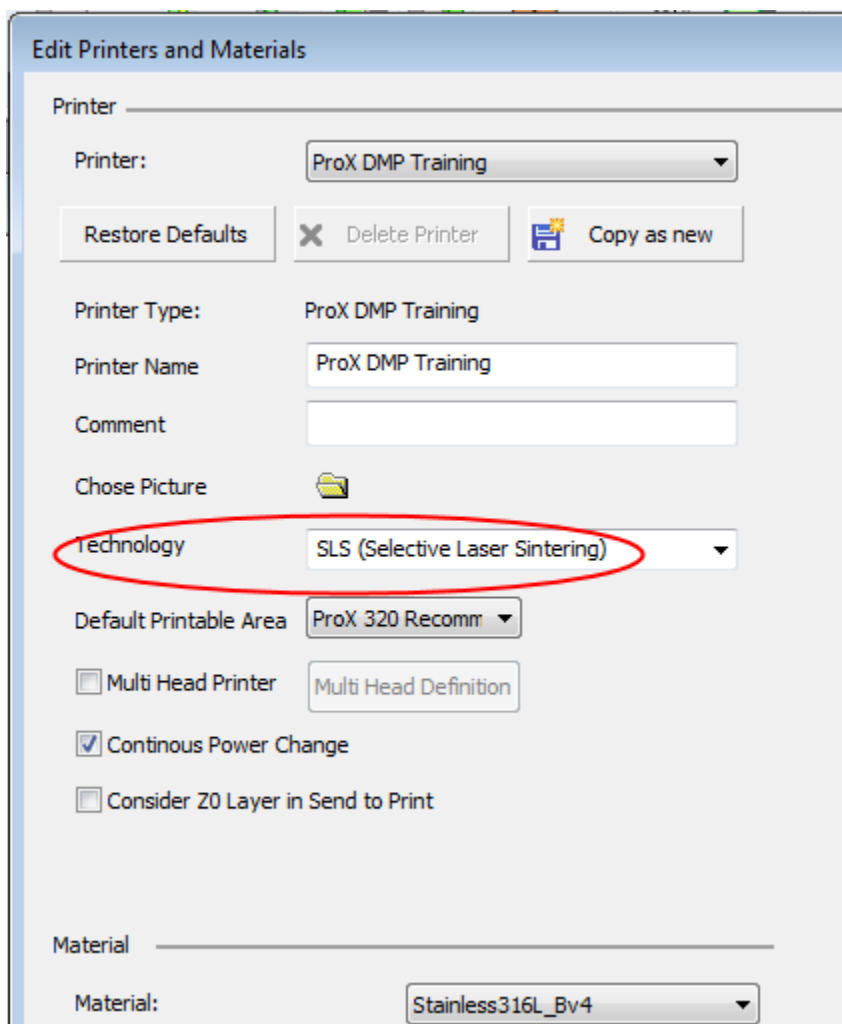
This function is available when printers with SLS technologies are selected (see the Edit Printers and Materials Parameters dialog).

Part 1 – Creating a Sinter Box

1. Unpack the file **sinterbox.ctf** and load the assembly.
2. The Sinterbox function is available when printers with SLS technologies are selected. Enter the Edit Printers and Materials Parameters dialog.

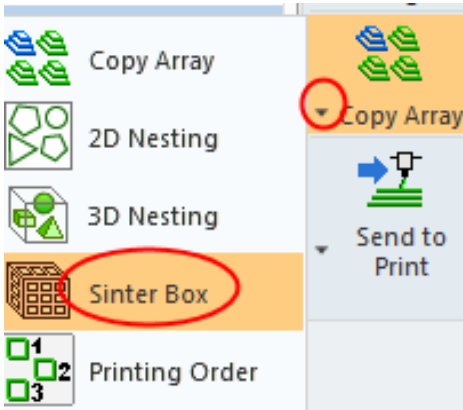


3. Define the technology as SLS (Selective Laser Sintering)



4. Save the printer and exit the dialog.

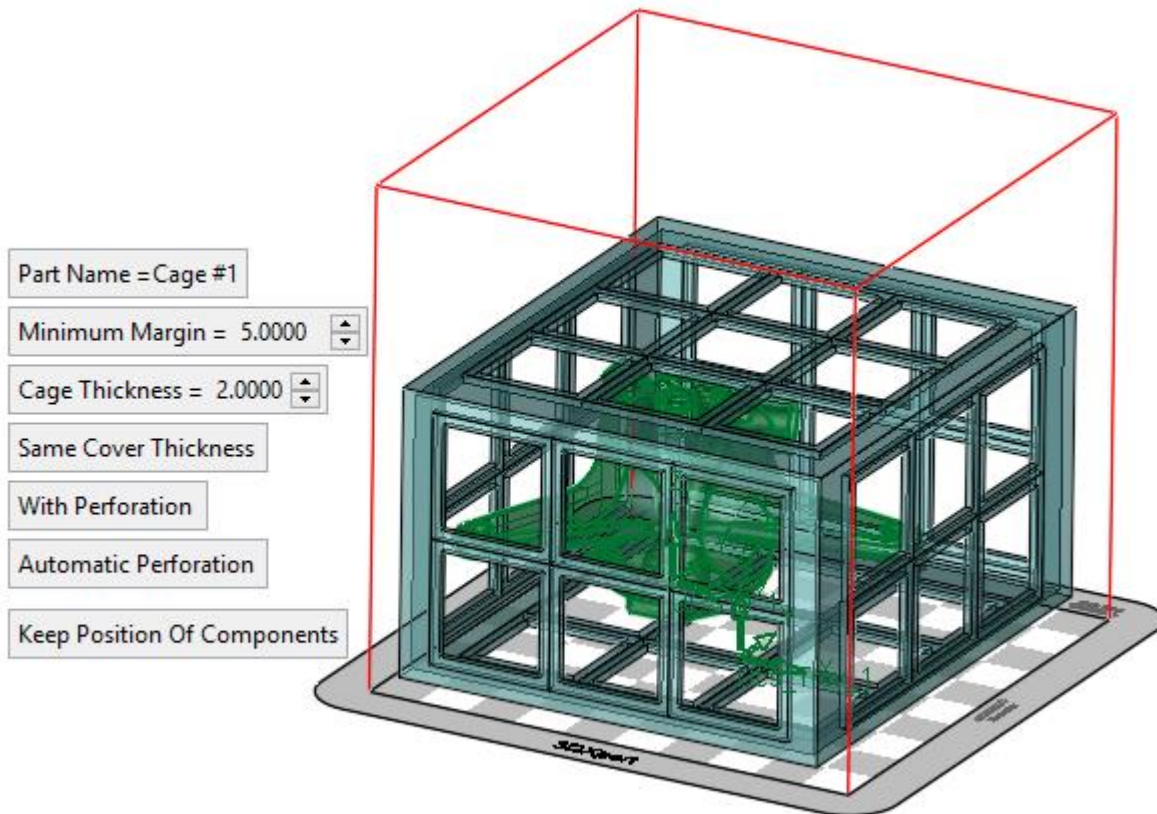
5. From the 3DPrinting Guide Toolbar select the Sinter Box option under the Copy Array split button.



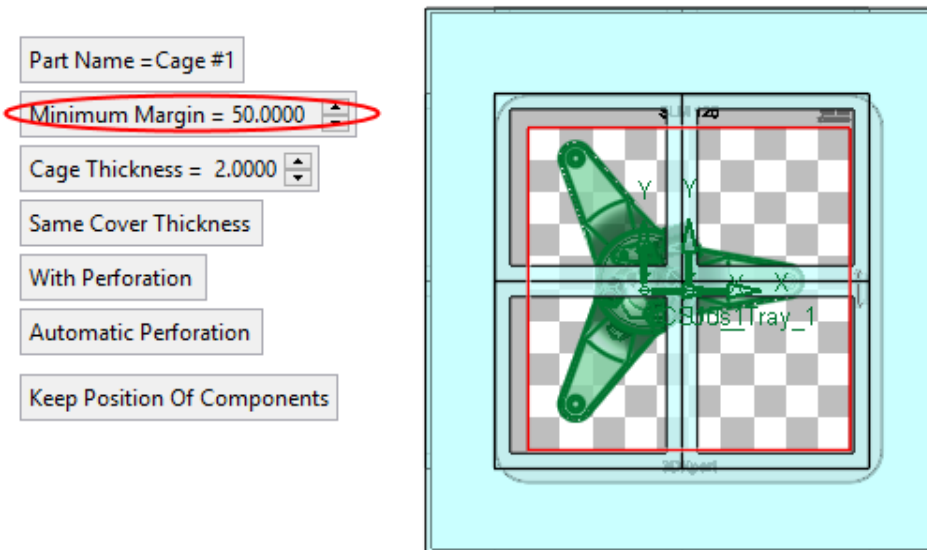
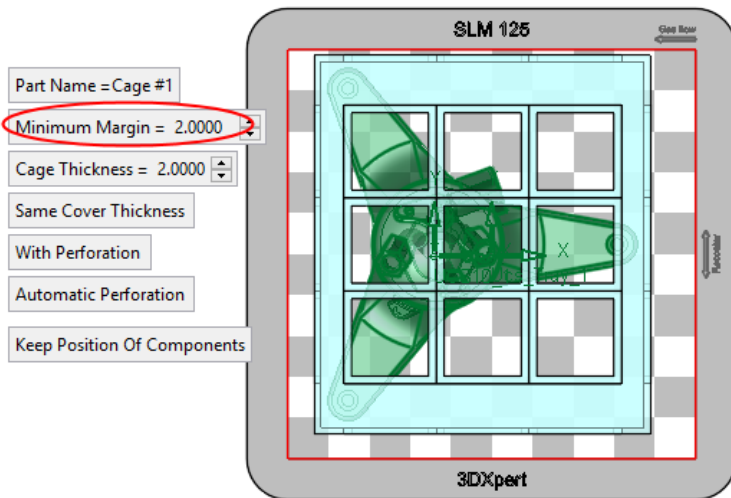
6. Since there is one object in the file it is automatically selected.

Note that supports and non-printed volumes are ignored when calculating the sinter box; it is recommended to delete all supports before creating the sinter box.

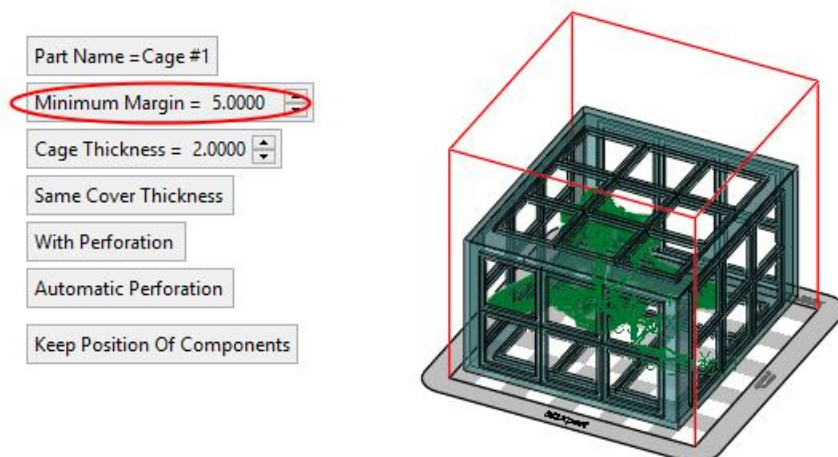
7. The sintering box cage and the its parameters are displayed :



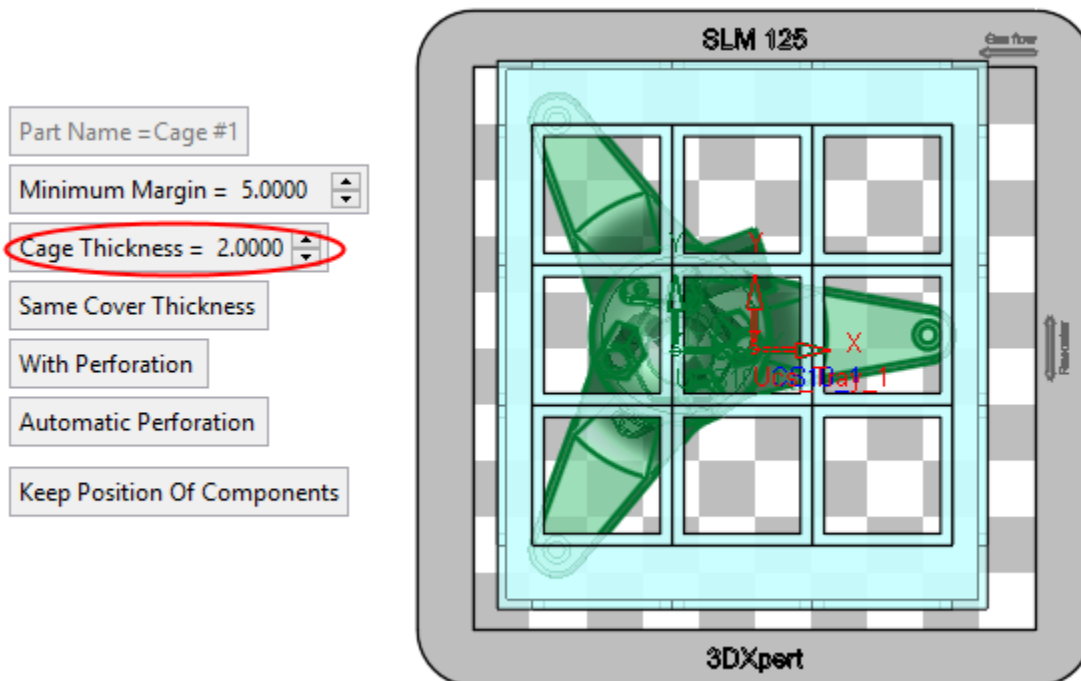
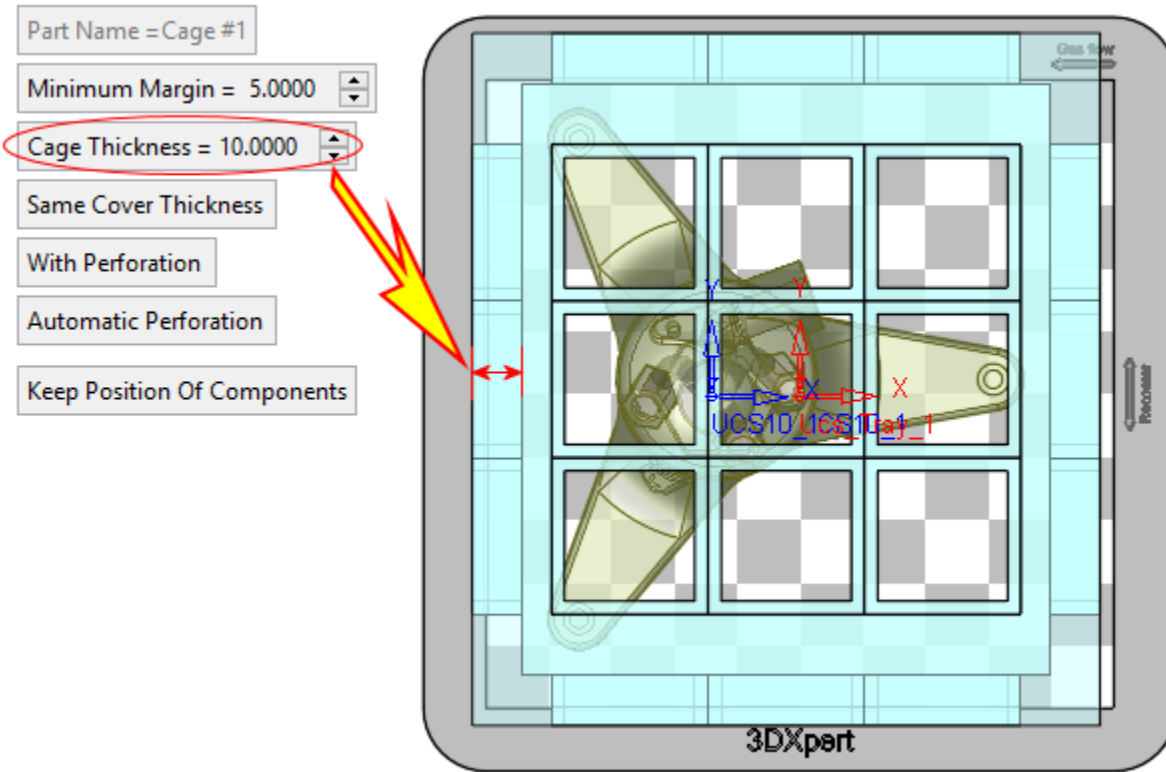
8. The **Minimum Margin** is the minimum distance (spacing) between the selected objects after nesting (if used) and the inner cage box. Change it to 2 and then to 50.



9. Set the **Minimum Margin** back to 5.



10. Set the Cage Thickness to 10 and then back to 2



11. Toggle the option **Same cover Thickness** to **Define Thickness**, which enables the **Cage Cover Thickness** to be defined, independently of the **Cage Thickness**

Part Name = Cage #1

Minimum Margin = 5.0000

Cage Thickness = 2.0000

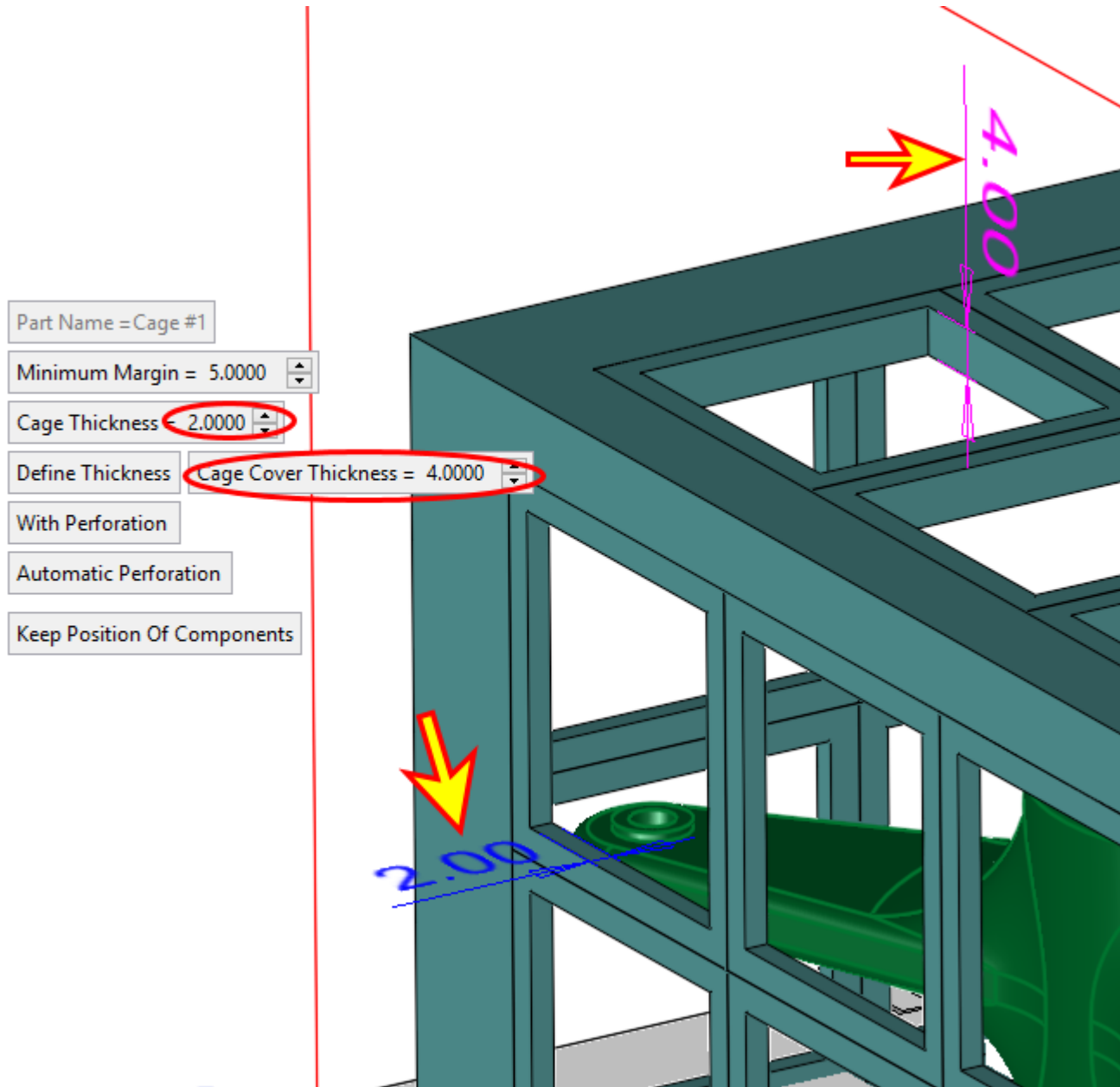
Same Cover Thickness:

With Perforation

Automatic Perforation

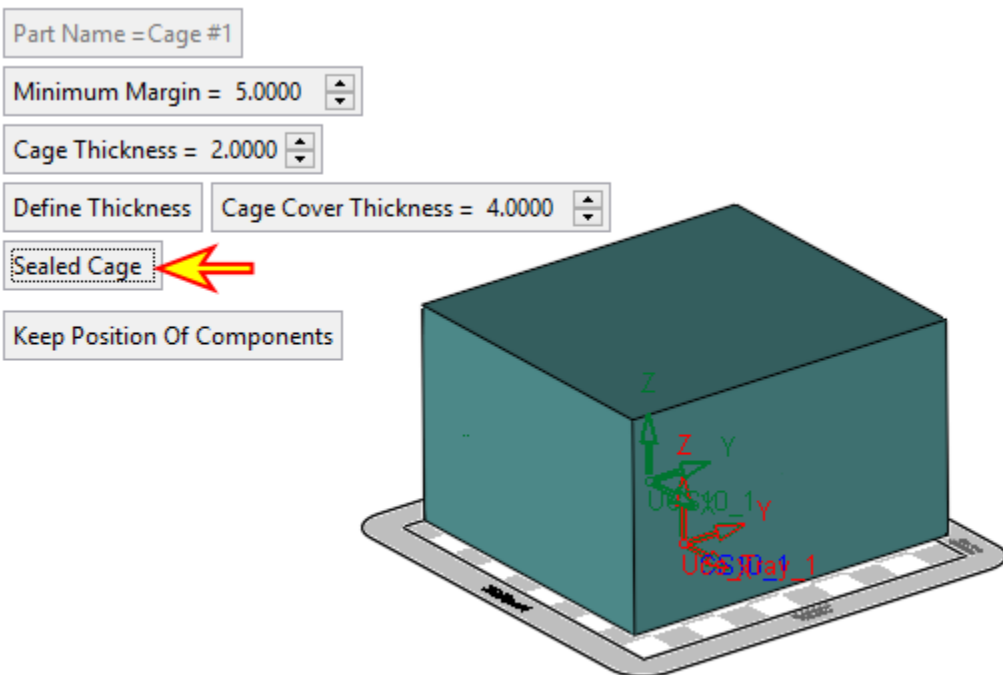
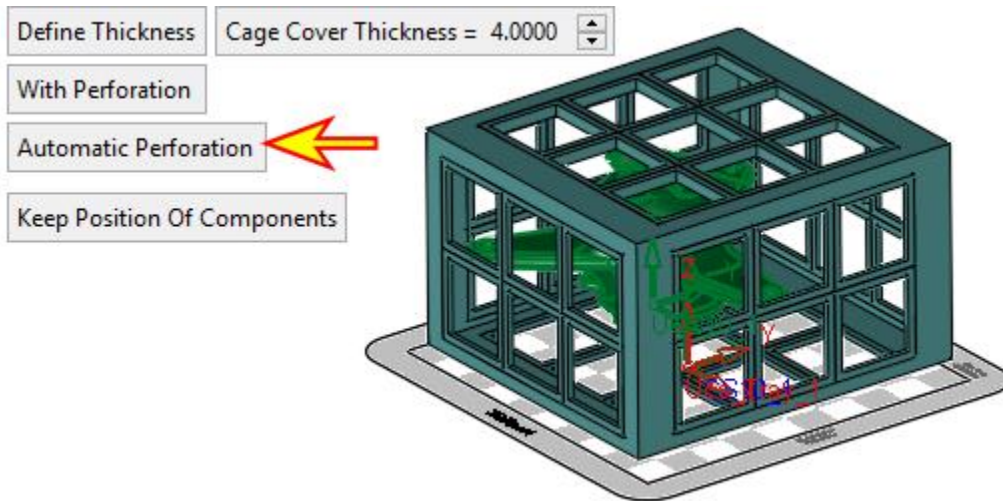
Keep Position Of Components

12. Set the Cage cover thickness to 4.



13. Toggle the option **With Perforation** to **Sealed Cage** and toggle it back.

Default = With Perforation



If the **Automatic** option is selected, the systems finds the smallest perforation size to prevent the smallest selected object from falling out of the cage.

If the **User-Defined** option is selected, define the required **Perforation Size** and the **Interval Length** parameters, as described below.

Default = Automatic.

14. Toggle the **Automatic** option to **User Defined**

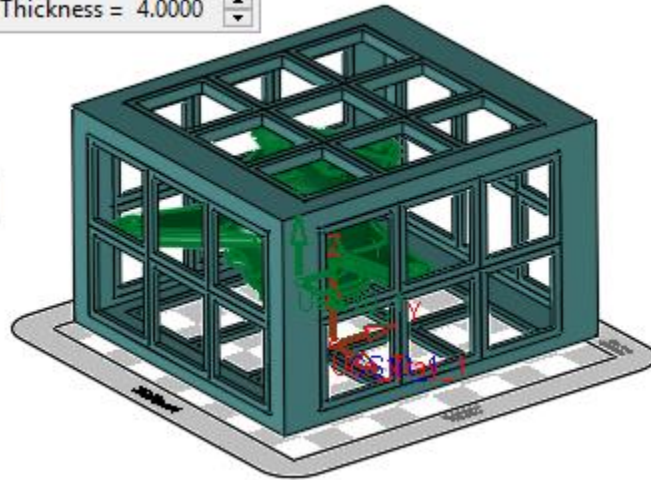
Cage Thickness = 2.0000

Define Thickness Cage Cover Thickness = 4.0000

With Perforation

Automatic Perforation

Keep Position Of Components



Define Thickness Cage Cover Thickness = 4.0000

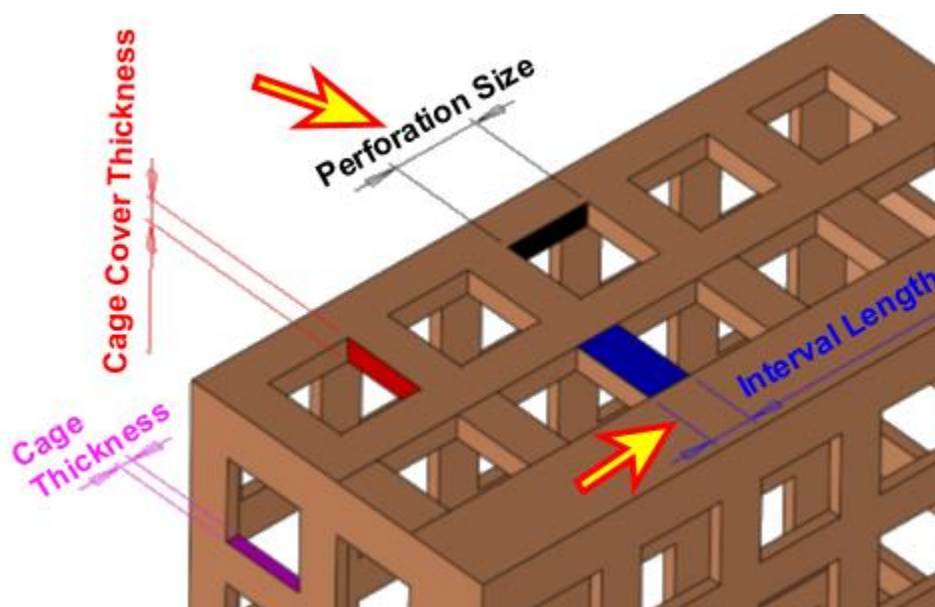
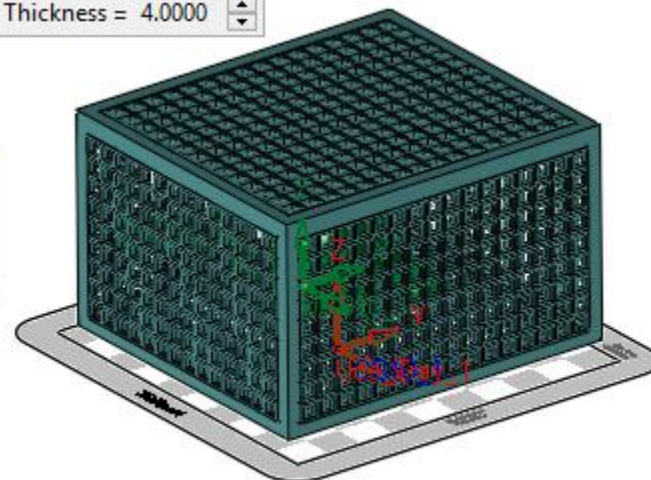
With Perforation

User Defined

Perforation Size = 5.0000

Interval Length = 2.0000

Keep Position Of Components



15. Set the Perforation size to 10 and the Interval Length to 2.

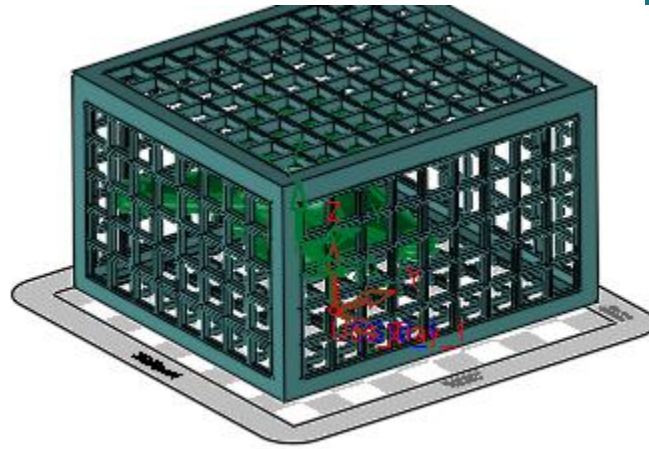
With Perforation

User Defined

Perforation Size = 10.0000

Interval Length = 2.0000

Keep Position Of Components

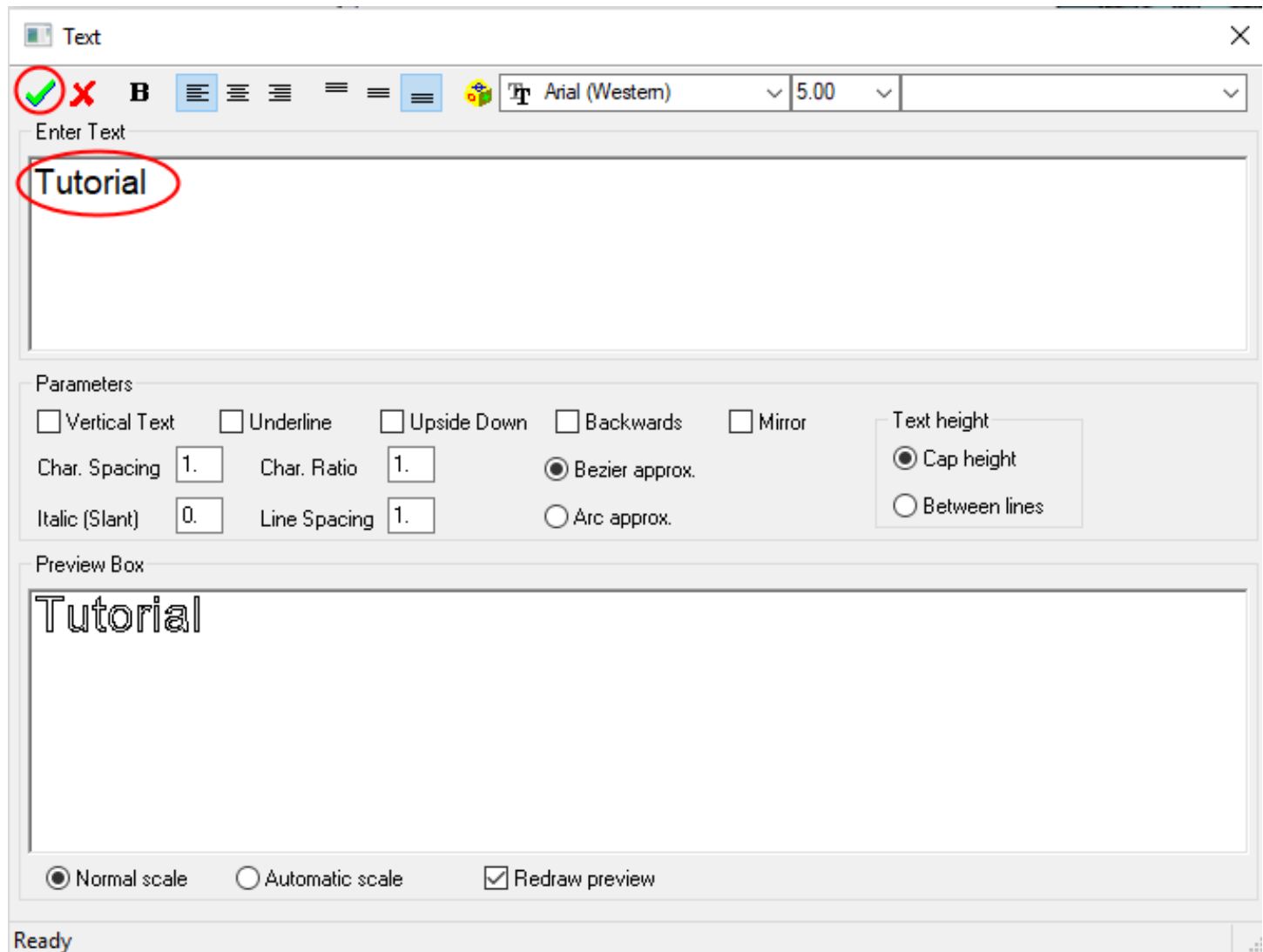


Part 2 – Add a text to the Sinter Box

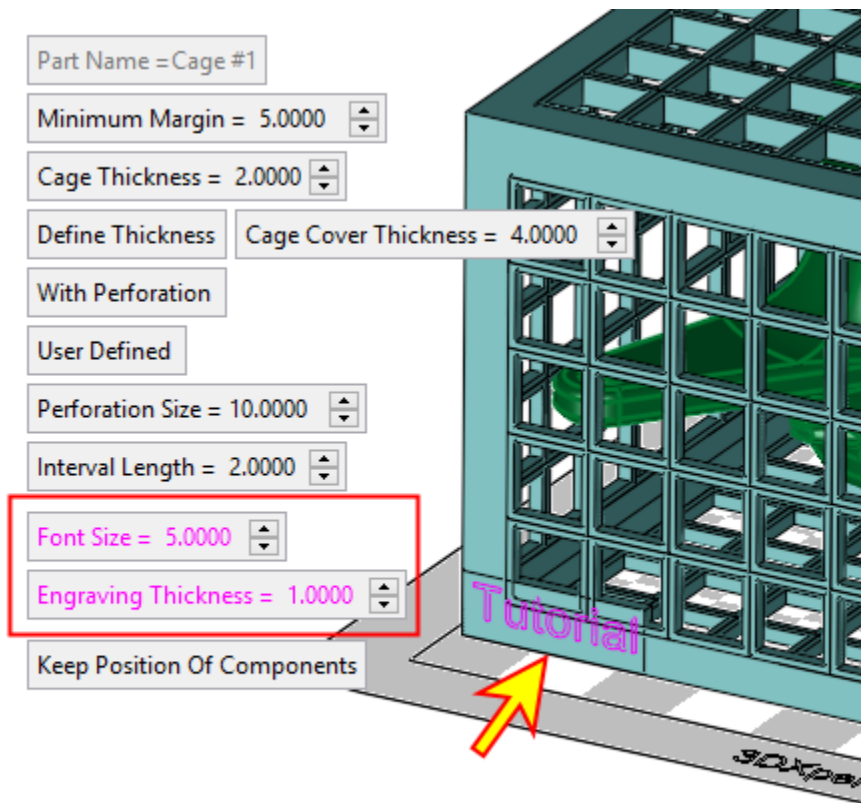
16. Add text to the sinter box. Enter the first optional step in the dialog.

The defined label text is displayed on the sinter box at the vertical lower +X, +Y corner.

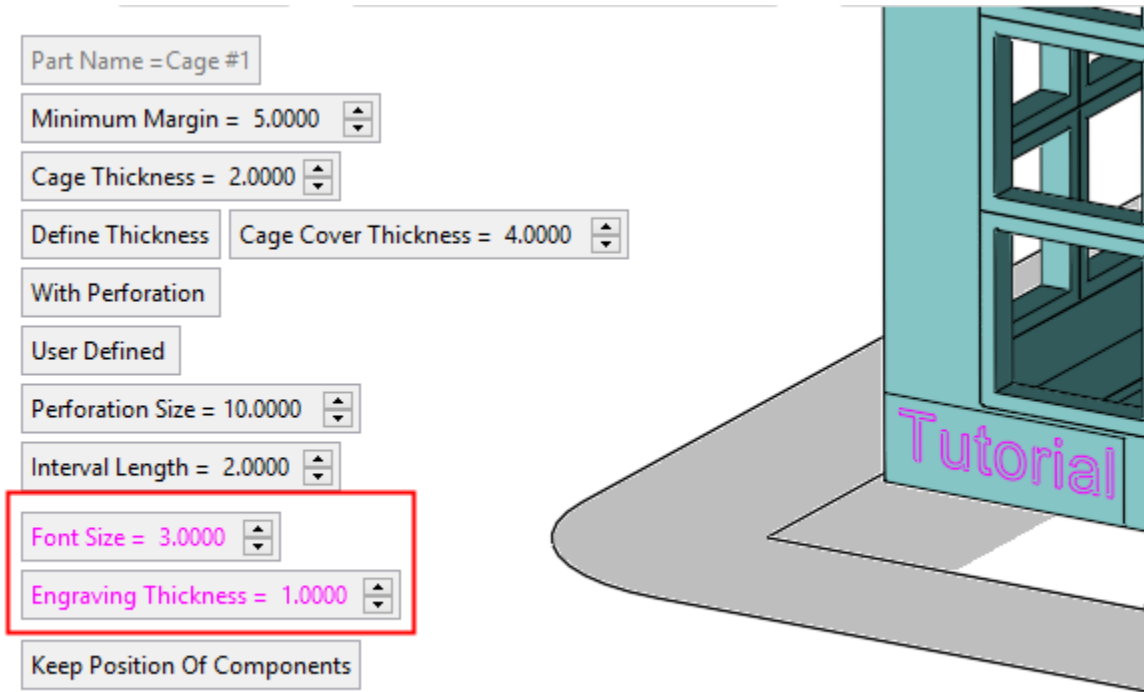
17. Enter the required text and define the style parameters as shown in the picture below and select OK.



18. You may control the **Font Size** and the **Engraving thickness**. The engraving Min. = 0.1 to Max. = 0.8 of the **Cage Thickness** value. The default is 0.5 of the **Cage Thickness** value

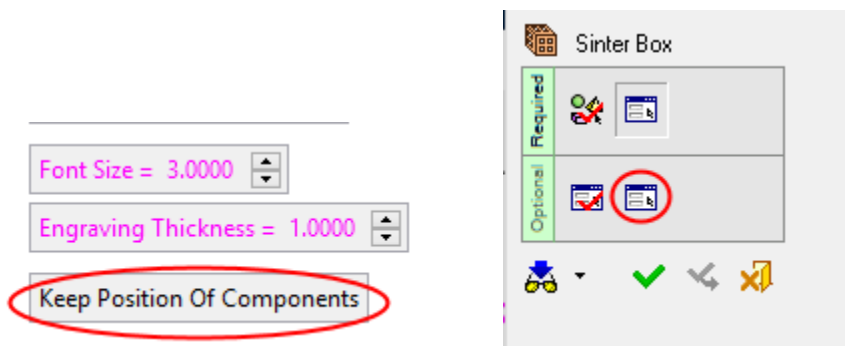


19. Set the Font Size to 3 mm.



20. Notice the toggle option **Keep Position of Components / Define Nesting Box Base**. This toggle option enables you to either keep the current position of the components or to define the base of the box in which the selected parts will be nested.

21. You may enter the **Define Nesting Box Base** option by clicking the toggle button as explained before' or by entering the second optional step in the feature dialog.

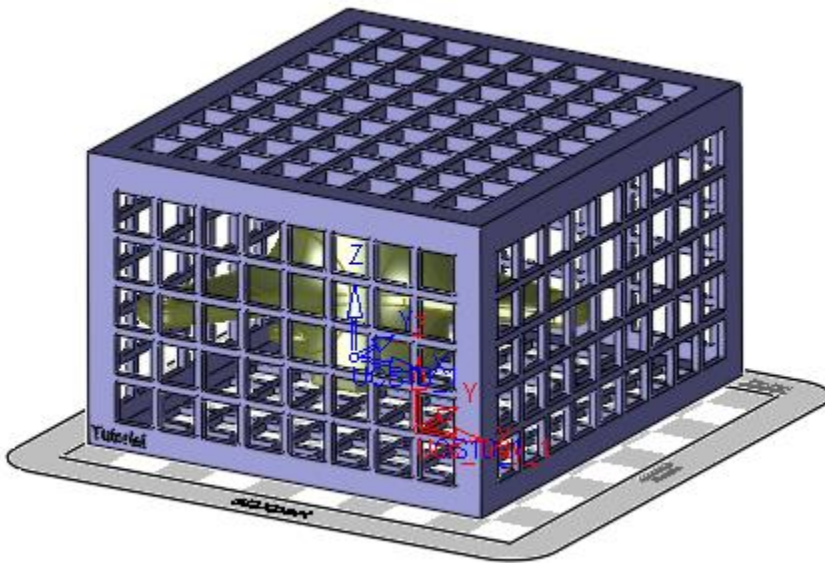
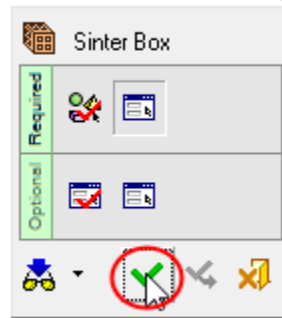


22. Do not calculate the nesting base, approve the sinter box operation by clicking the OK button.

Minimum Distance Between Objects = 5.0000

Do Not Rotate Z

Start Calculation



End of Exercise