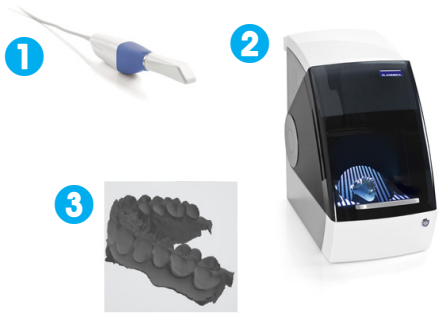
Planmeca Creo® C5

Printing with Creo® C5

Dental models

Scan models to get STL files.

1. Intraoral scanner
2. Lab scanner
3. STL file



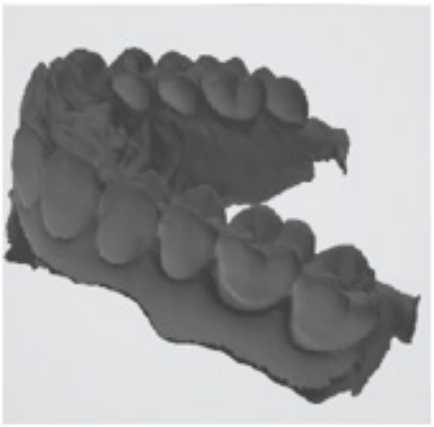
Converting raw STL files to printable models

NOTE! Scanned STL files are raw data and cannot be printed as such. Digital models must be made out of STL scan files before continuing to Creo C5 Studio.

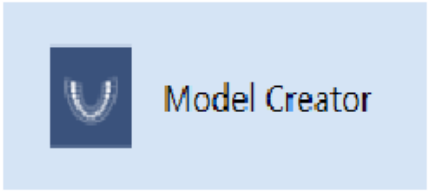
Convert scanned STL to a printable version using model creator software, such as Planmeca PlanCAD Premium Model Creator module or Planmeca Romexis Model Analyser module. You can also search the internet for free software that converts models into STL file format.

Import the scanned STL file to model creator and create a printable STL file.

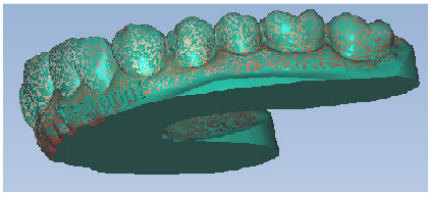
1. Import the scanned STL file to model creator software.



2. Create a solid or a hollow model.



3. Import the watertight dental model STL into Creo C5 Studio for nesting.

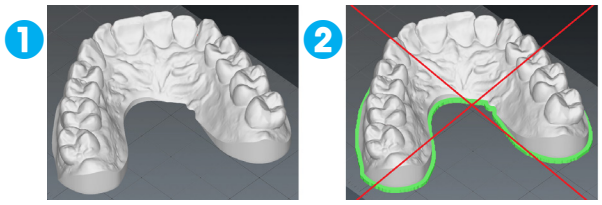


NOTE! Creo C5 Studio is intended only for the nesting of STLs.

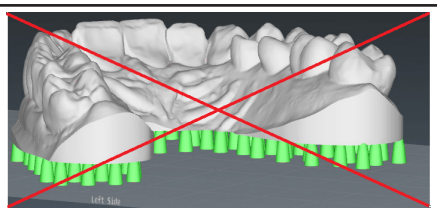
Printing single dental models (solid or hollow)

Open the Creo C5 Studio and import the previously created STL file.

Do *not* use base.
1. Correct: without base
2. Incorrect: with base



Support pins are not recommended when printing solid models.

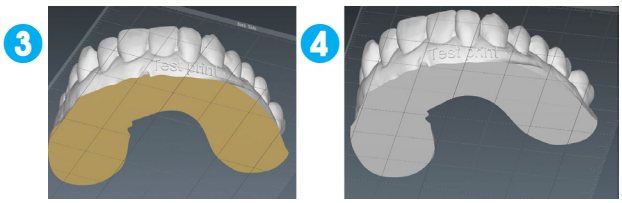


Place the model directly on top of the build platform.

Make sure the bottom of the model touches the surface of the build platform. The model is correctly placed when the bottom of the model turns beige.

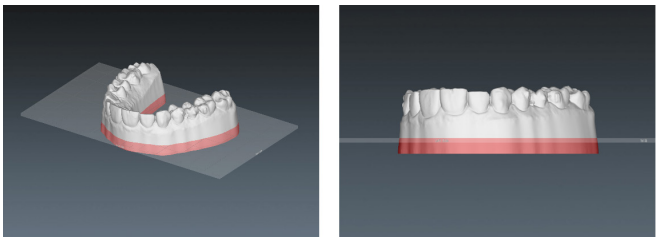
Rotate the platform to view the model from below.

3. Correct: model touching the platform
4. Incorrect: model not touching the platform



To make sure the model touches the platform, drag the model through the platform. The area underneath the platform shows in red and will not be printed. Use this option if there is a part in the printable model that does not need to be printed.

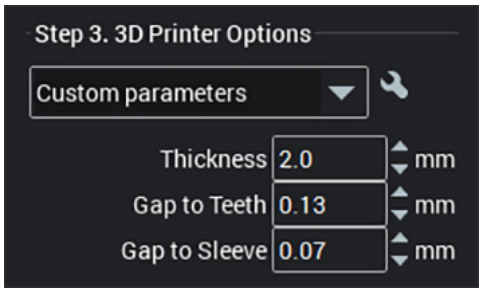
After placement, perform the slicing.



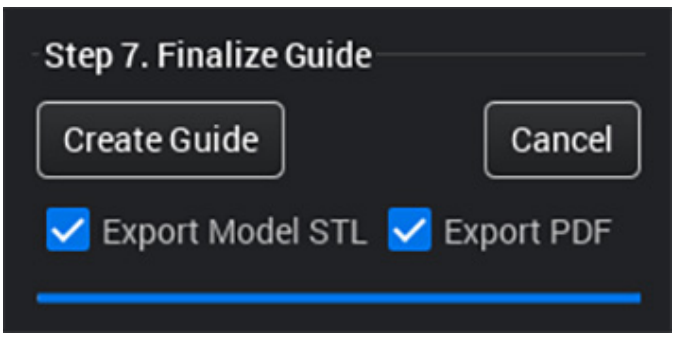
The Creo C5 Studio creates a printable zip file which can be used with Creo C5 printer. Check the zip file for the first layer image. If you do not see any white shapes on the first layer, please go back and place your model so that it touches the platform.

Printing surgical guides

If you are creating a guide in Romexis software, you can select 3D printer options directly in software.



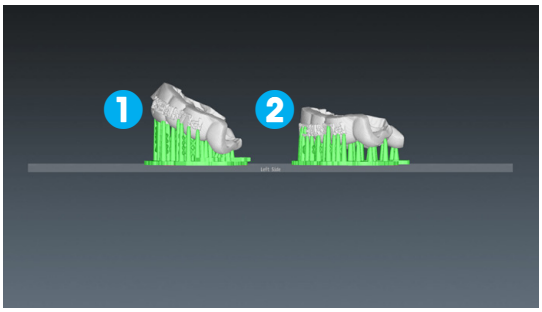
When finalizing the guide, you can create a printable STL file directly from Romexis. No third-party software is necessary, simply export the file from Romexis and import it into Creo C5 Studio for nesting.



Print orientation

Tilting the object will often increase the chance of a successful print: angled object (1) has a smaller cross-sectional area and less overhangs compared to the same object when it is oriented horizontally (2) and close to the build platform.

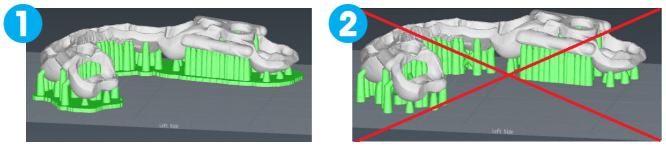
If you are experiencing broken support pins or otherwise failed prints, it is recommended to increase the tilt angle of your design.



Printing several small guides

If there is enough space on the platform, you can place multiple objects on the build platform at the same time. All the models may be placed horizontally in order to save time, but placing them angled will often increase the chance of a successful print. When printing surgical guides, always use support pins and base. Do not place support pins on the inner side of the guide, or the guide will not fit.

1. Correct: guide with support pins and base
2. Incorrect: guide with support pins only



Printing multiple bigger guides

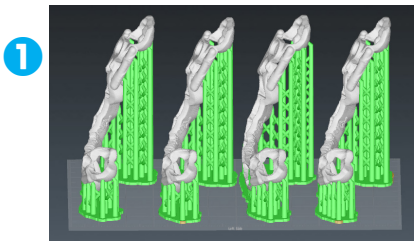
Place the guides in vertical position.

Note that printing two guides two times in horizontal position requires less time and material, than printing four guides in vertical position.

When viewing nesting from the bottom the red color indicates the critical areas requiring more support. Automatic support pins are not 100% secure. Always check that there is enough support to ensure successful printing.

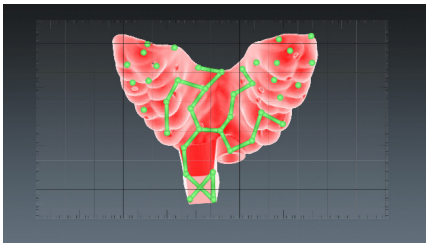
1. Multiple guides on the platform

Always add bases when using support pins!

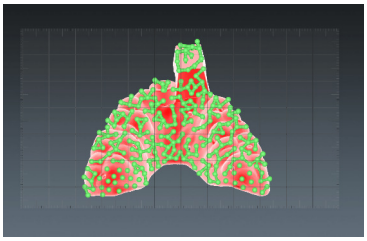


Adequate support

Red colour indicates critical areas. Add more support.

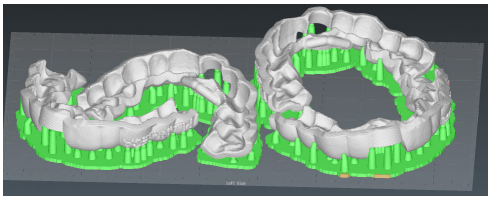
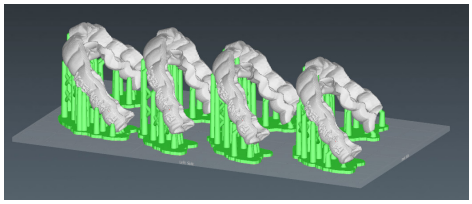


Example of enough pins. The red colour will not disappear after adding supports.

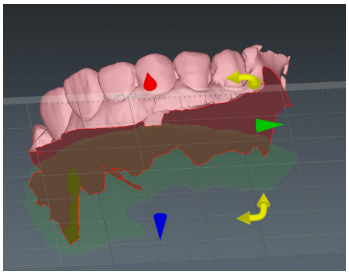
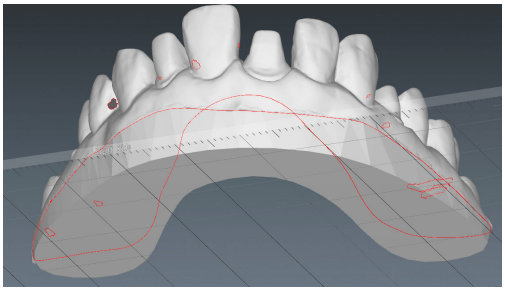
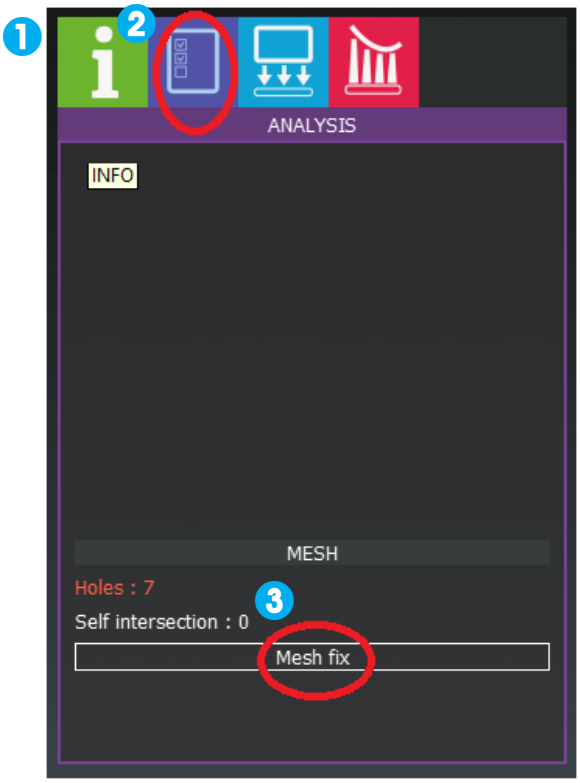


Examples

Correct placement

Placement example for faster printing with bigger overhangs and cross-sectional areas	
Placement example for longer printing time with better object orientation	

Inadequate preparation

This scanned STL file cannot be printed as it has not been properly generated into a model.	
This model created in Romexis Model Analyzer module seems watertight but the red lines indicate there are holes in the model.	
To close the holes before printing: 1 Activate the model. 2 Select the Analysis tab from the wizard. 3 Click the Mesh fix button.	

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