

iTero™ | exocad™

# iTero™ Design Suite

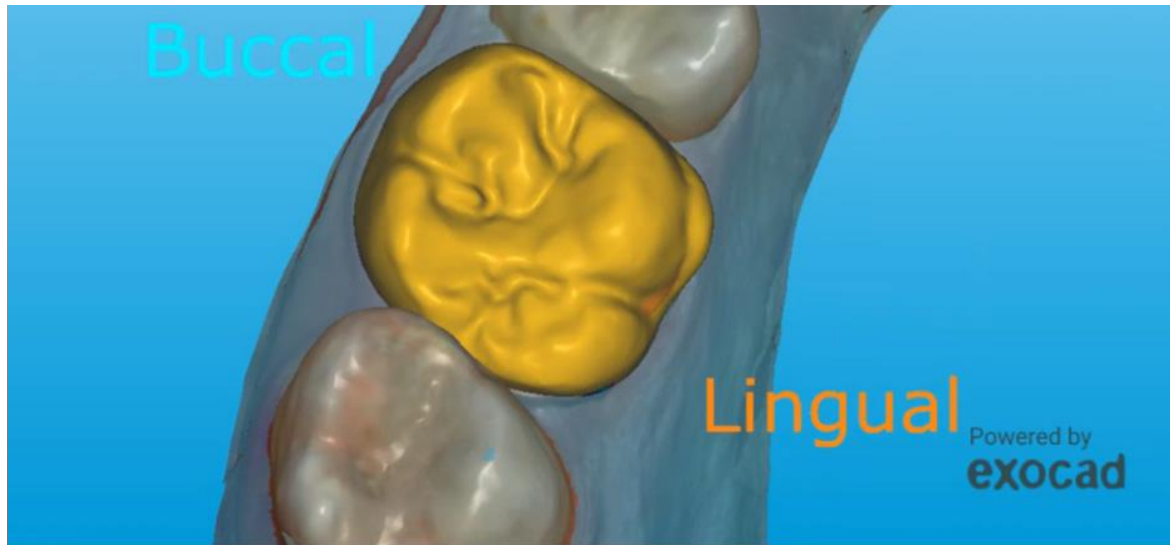
*CAD design*

## Ultimate Bundle



# Design Suite

Single Tooth Crown



# Design Suite

# Single Tooth Crown

1

Step 1. Set Work Order

2

Step 2. Draw Margins

3

Step 3. Set tooth models

4

Step 4. Tooth Placement

5

Step 5. Freeforming

6

Step 6. Adapt to pre-op (optional)

7

Step 7. Save and Export

# Step 1. Set Work Order

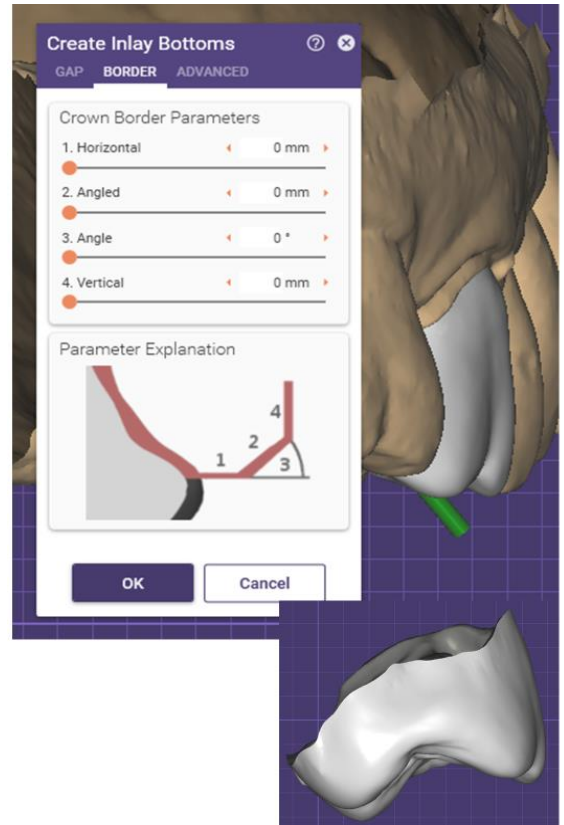
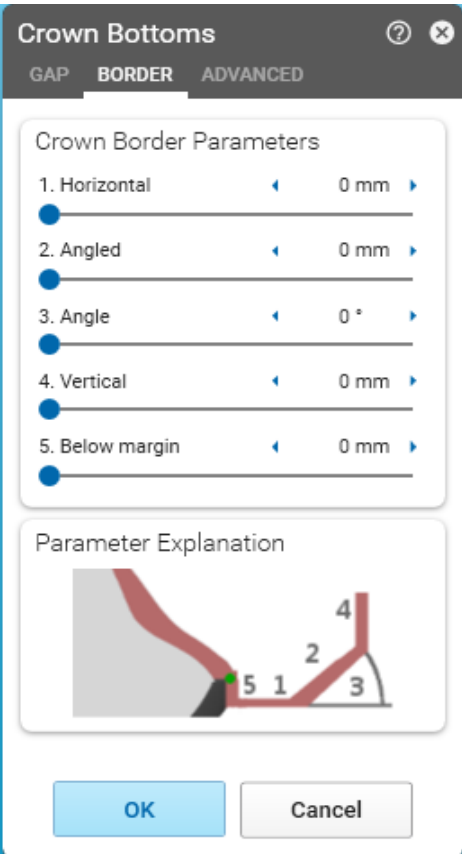
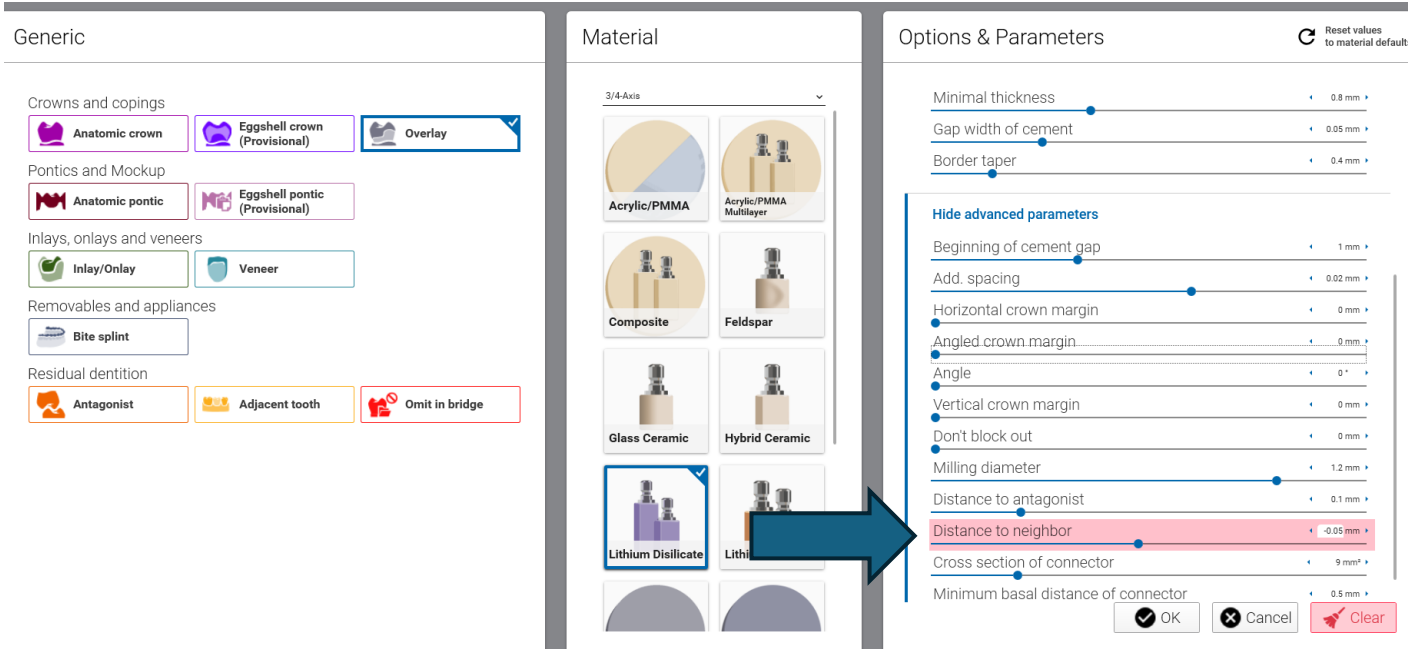
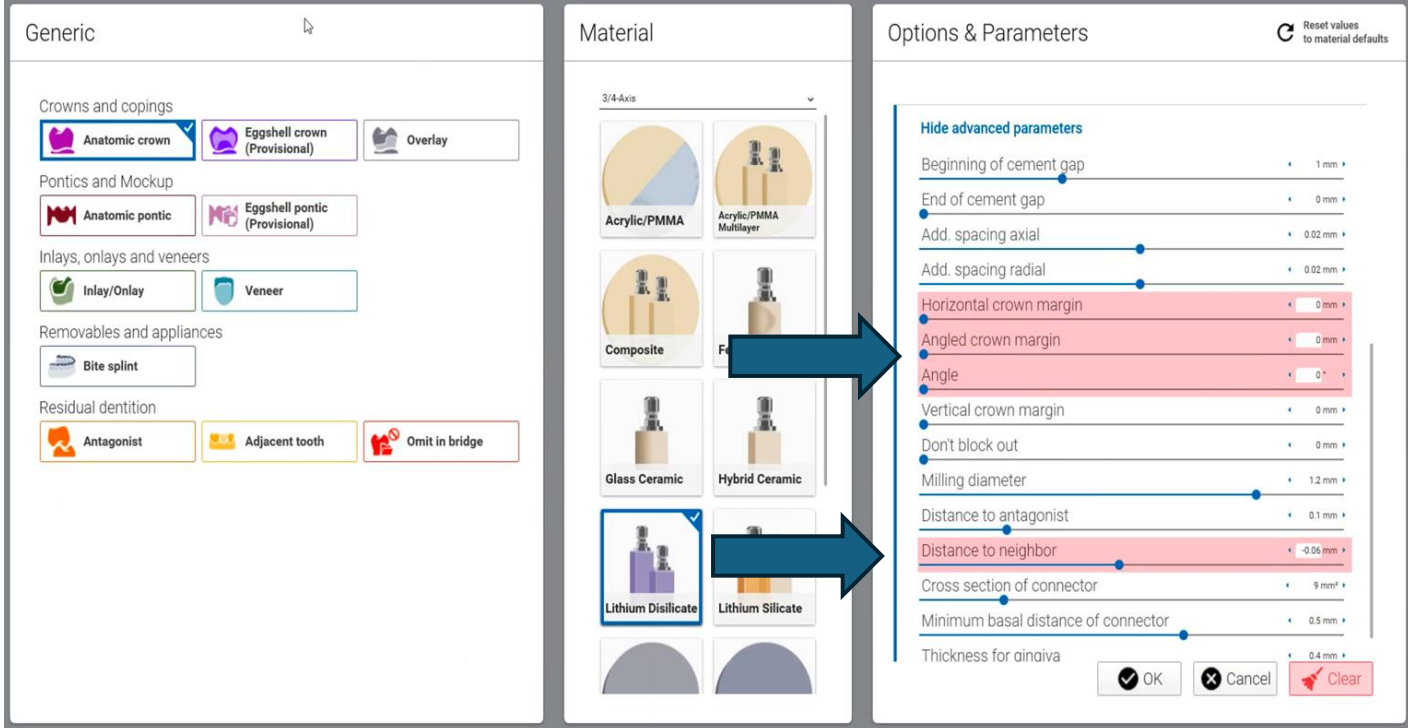
- Choose design
- Choose Machine & axis
- Choose Material
- Adjust Options & parameters according to manufacturing method.

The screenshot displays a software interface for setting a work order, divided into three main sections:

- Generic:** Contains categories for design selection:
  - Crowns and copings:** Anatomic crown (selected), Eggshell crown (Provisional), and Overlay.
  - Pontics and Mockup:** Anatomic pontic and Eggshell pontic (Provisional).
  - Inlays, onlays and veneers:** Inlay/Onlay and Veneer.
  - Removables and appliances:** Bite splint.
  - Residual dentition:** Antagonist, Adjacent tooth, and Omit in bridge.
- Material:** Shows manufacturing options:
  - 3/4-Axis:** Acrylic/PMMA and Acrylic/PMMA Multilayer.
  - 5-Axis / Laser / 3D Print:** Composite and Feldspar.
  - Other materials:** Glass Ceramic, Hybrid Ceramic, Lithium Disilicate (selected), and Lithium Silicate.
- Options & Parameters:** Allows for material and design customization:
  - Material shade?** A color selection grid with categories A, B, C, D and sub-categories A1-A4, B1-B4, C1-C4, D2-D4, and 0M1-0M3. The 'D3' shade is selected.
  - Additional Scans?** Pre-op model (selected) and Extra gingiva scan.
  - Additional design steps in wizard?** Copy or mirror.
  - Cervical adaption?** Pull to margin (selected) and Preserve tooth library shape.
  - Minimal thickness:** Slider set to 0.8 mm.
  - Gap width of cement:** Slider set to 0.08 mm.
  - Show advanced parameters:** A link to expand the options.
  - Buttons:** OK, Cancel, and Clear.

# Emax Crown/Overlay:

- Lower border parameters if doing same-day crowns or printed crowns, assuming you have an accurate mill. These numbers are increased as needed to prevent margin chipping. Increasing borders will require manual finishing of the margins.
- Overlay has a more tapered margin than a crown.
- Decrease the distance to neighbor to 0.06mm for a tighter contact.

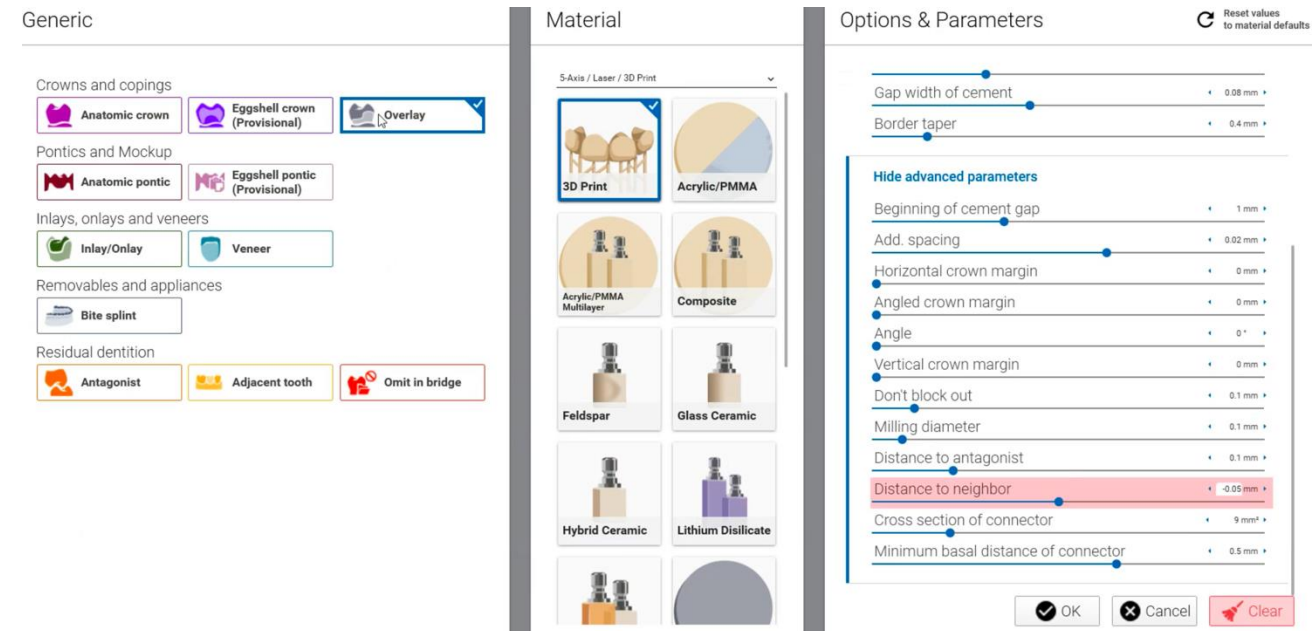
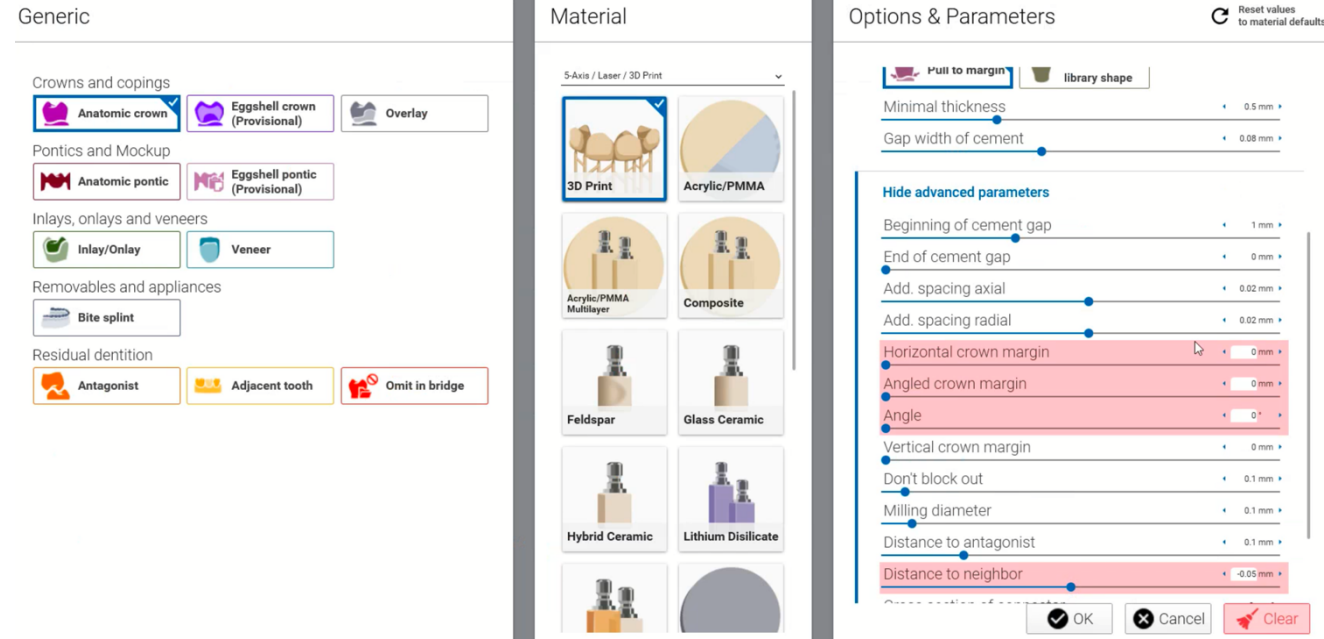
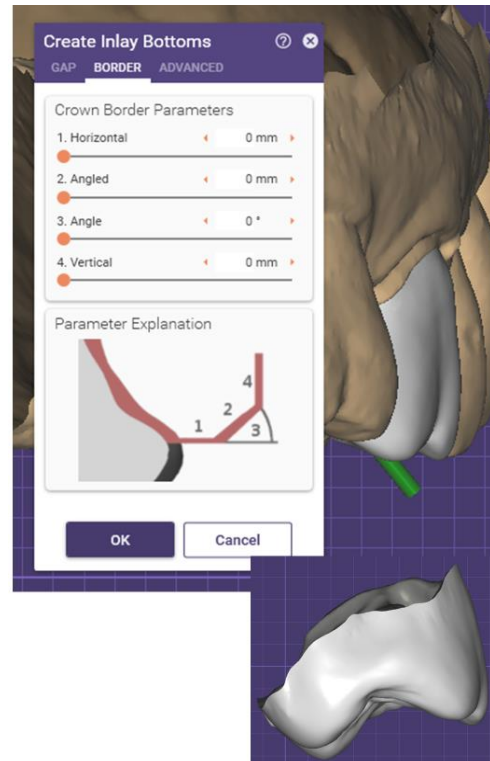


# 3D Printed Crowns

Tip:

- Choose an anatomic crown or overlay for 3D printed crowns. If selecting a crown, you must adjust the crown margin parameters. Overlay defaults to 0mm for crown margins and will add border taper to the margin, creating a more refined margin.

- Verify that crown borders are set to 0.0mm
- Adjust the distance to neighbor to a slightly negative value if your printer is giving light contacts.



# Zirconia

Zirconia necessitates higher border settings to avoid chipping. This results in a thin band of additional material along the margin because pre-sintered zirconia is quite fragile.

### Generic

Crowns and copings  
 Anatomic crown  Eggshell crown (Provisional)  Overlay

Pontics and Mockup  
 Anatomic pontic

Inlays, onlays and veneers  
 Inlay/Onlay

Removables and appliances  
 Bite splint

Residual dentition  
 Antagonist

### Material

5-Axis / Laser / 3D Print

Lithium Silicate	NP Metal
NP Metal (Laser)	Titanium
Titanium (Laser)	WAX
<input checked="" type="checkbox"/> Zirconia	<input type="checkbox"/> Zirconia Multilayer
Zirconia Translucent	

### Options & Parameters

Cervical adaption?  
 Pull to margin  Preserve tooth library shape

Minimal thickness

Gap width of cement

**Hide advanced parameters**

Beginning of cement gap

End of cement gap

Add. spacing axial

Add. spacing radial

Horizontal crown margin

Angled crown margin

Angle

Vertical crown margin

Don't block out

Milling diameter

Distance to antagonist

### Sintered Zirconia

Create Inlay Bottoms

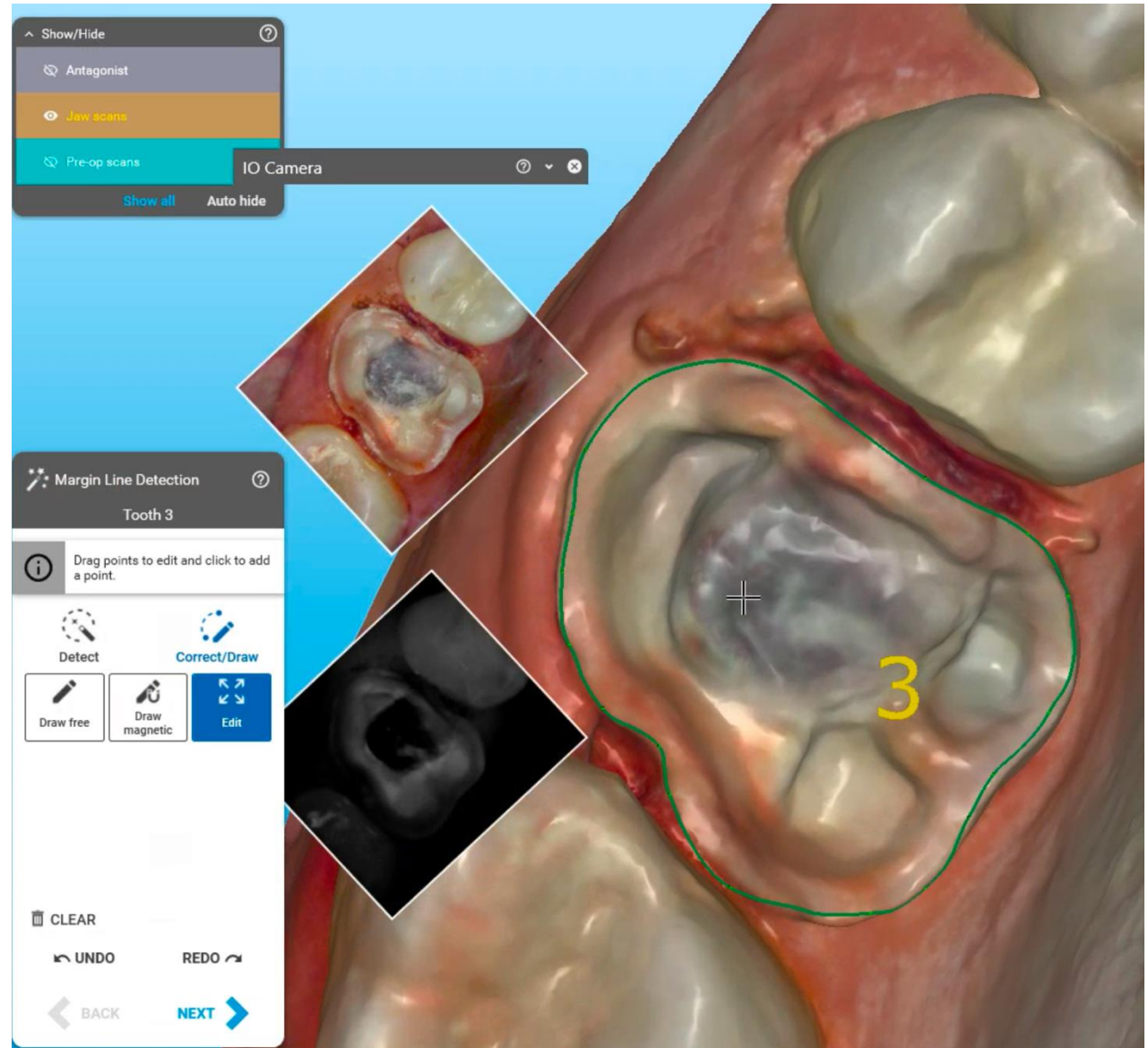
GAP BORDER ADVANCED

Crown Border Parameters

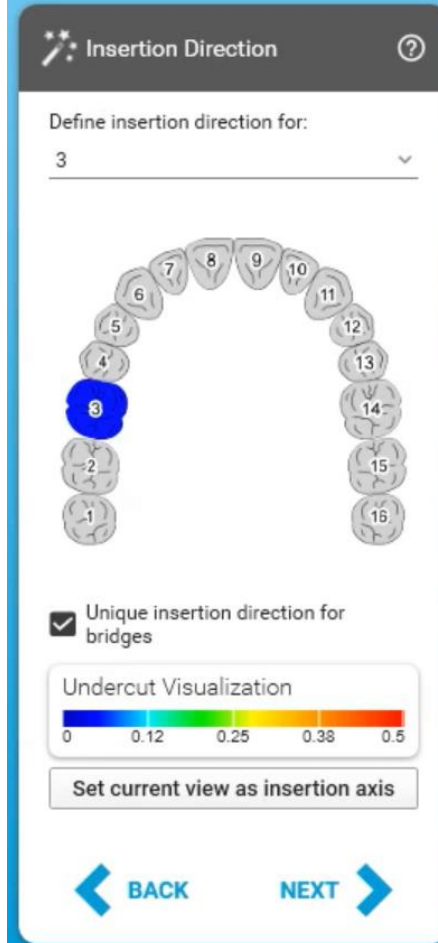
1. Horizontal	<input type="text" value="0.2 mm"/>
2. Angled	<input type="text" value="0.3 mm"/>
3. Angle	<input type="text" value="60°"/>
4. Vertical	<input type="text" value="0 mm"/>

Parameter Explanation

Step 2. Draw Margin With IO camera enabled.



# Step 3. Set Insertion Direction



# Crown Bottoms-

Adjustments are only necessary if they were not configured during the work order setup, as the design suite will bypass this step by default. To make any changes, enter Expert mode and select Bottoms.

The image displays a 3D dental model of a crown preparation with three 'Crown Bottoms' settings panels overlaid. The background shows a close-up of the crown preparation with a green pin indicating a specific area.

**Panel 1: Crown Bottoms - GAP**

- Cement Gap:** Includes a 'No cement gap' option (selected) and a 'Gap' slider set to 0.08 mm.
- Select Zones by Distance:** Includes a 'From margin' slider set to 1 mm.
- Additional Spacing:** A dropdown menu.
- Buttons: OK, Cancel

**Panel 2: Crown Bottoms - BORDER**

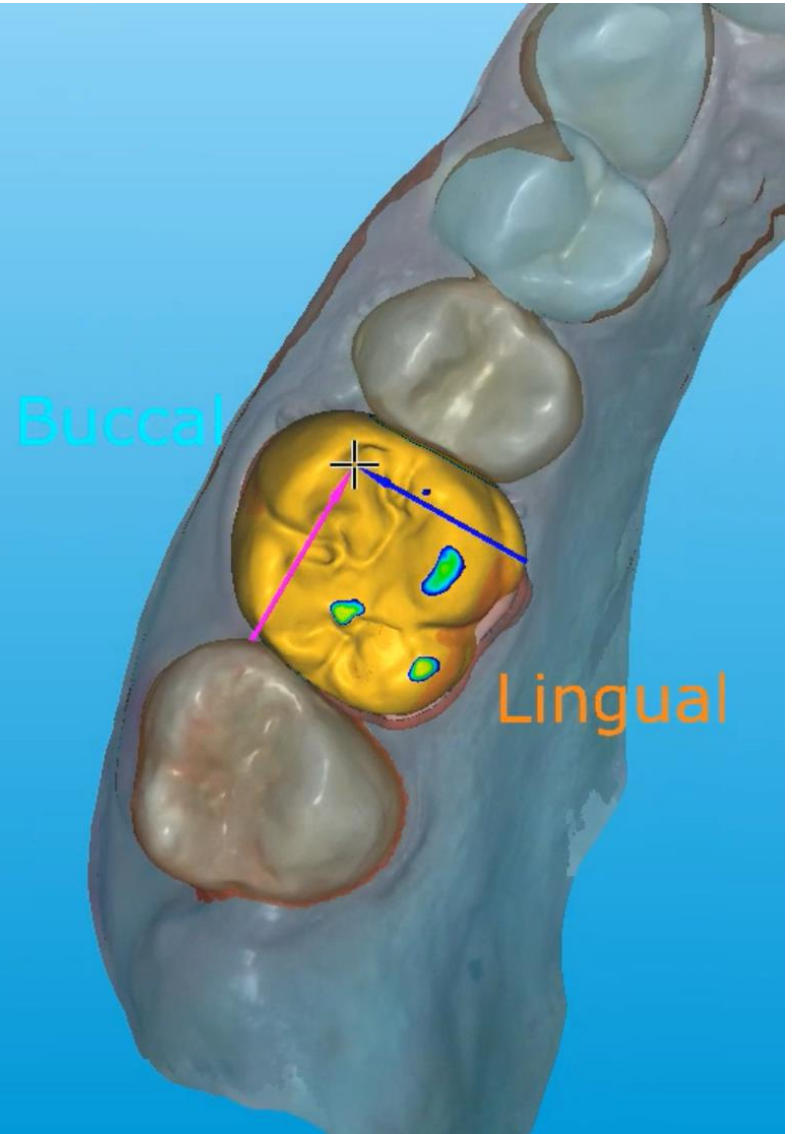
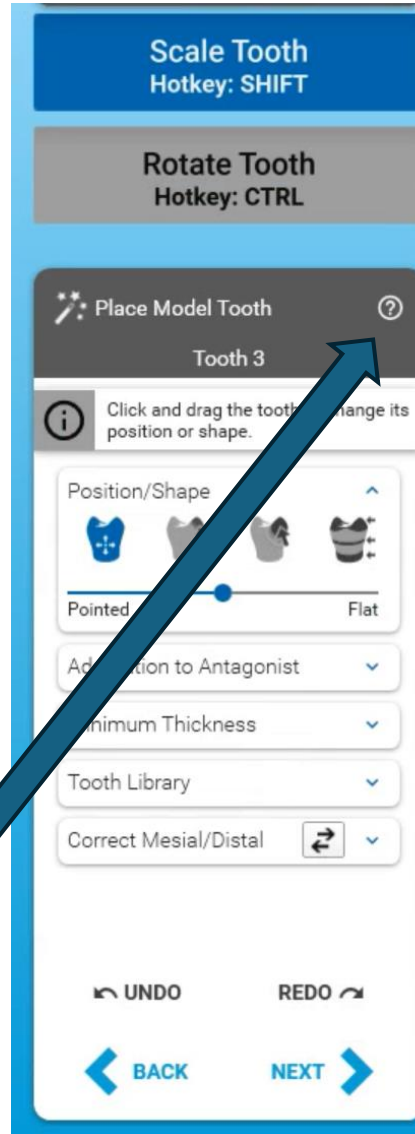
- Crown Border Parameters:** A list of five parameters, each with a slider set to 0 mm: 1. Horizontal, 2. Angled, 3. Angle, 4. Vertical, 5. Below margin.
- Parameter Explanation:** A diagram showing a cross-section of a crown margin with five numbered points (1-5) corresponding to the parameters.
- Buttons: OK, Cancel

**Panel 3: Crown Bottoms - ADVANCED**

- Undercuts:** Includes a checkbox for 'Do not block out undercuts' (unchecked), an 'Angle' slider set to 0°, and a 'Protected zone near margin line Size' slider set to 0 mm.
- Milling:** Includes a checked checkbox for 'Anticipate milling', a 'Diameter' slider set to 1.2 mm, a checkbox for 'Bullnose/flat tool' (unchecked), and a 'Tool tip flat percentage' slider set to 80%.
- Buttons: Apply, OK, Cancel

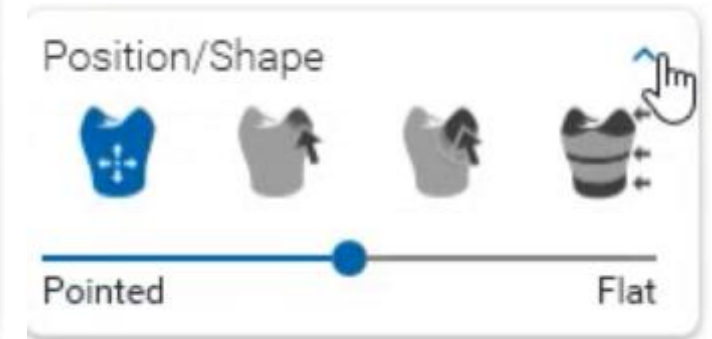
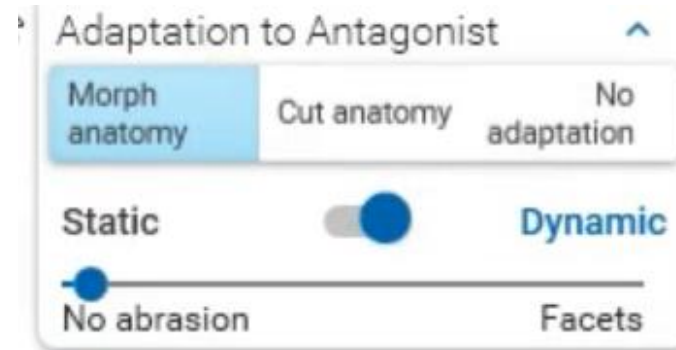
# Step 4. Tooth Placement

- AI will initially position the tooth appropriately; in many cases, simply scaling the tooth is sufficient for adjustment.
- The position and shape of the tooth can be modified, although many users prefer to refine the shape during the freeforming stage.
- Click the question mark icon for detailed information on advanced placement settings.



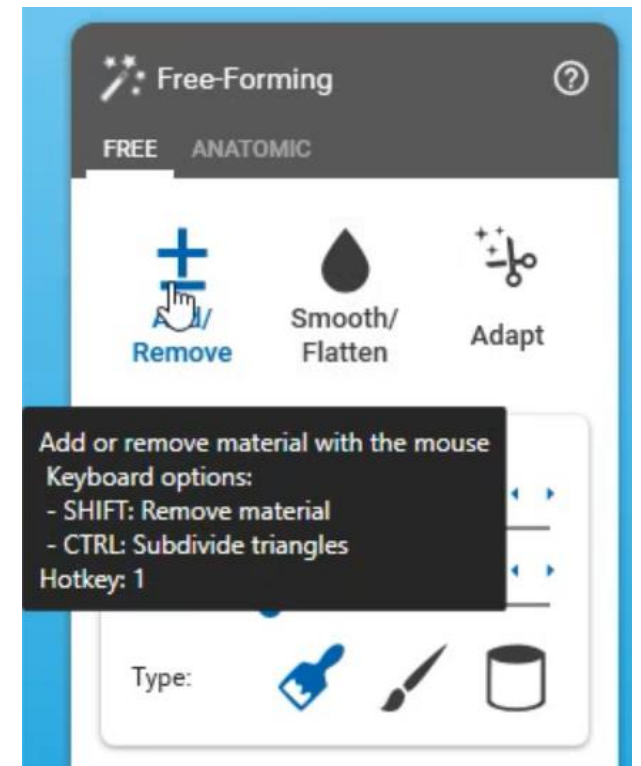
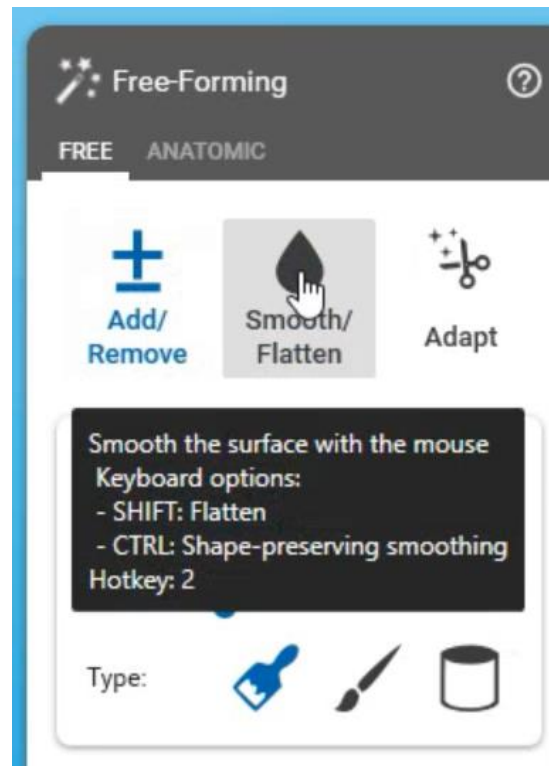
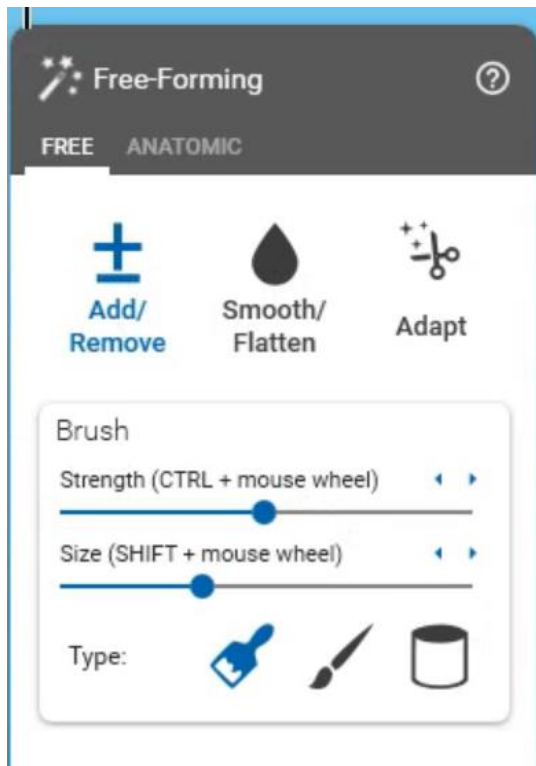
# Tooth Placement Options

- Position/Shape allows you to adjust individual tooth components or the entire tooth, similar to anatomical tooth movements in freeforming.
- Tooth Library lets you choose your preferred tooth set. The Generic and Generic Smooth libraries offer minimal to moderate anatomy and typically require little modification. For anterior teeth and mockups, I recommend using the HD library.
- Adaptation to Antagonist automatically modifies contact points as you adjust parts of the tooth. You can also remove contacts by selectign cut anatomy or choose to leave contacts unchanged without adaptation.
- Correct Mesial/Distal is primarily used when working adjacent to an edentulous space.



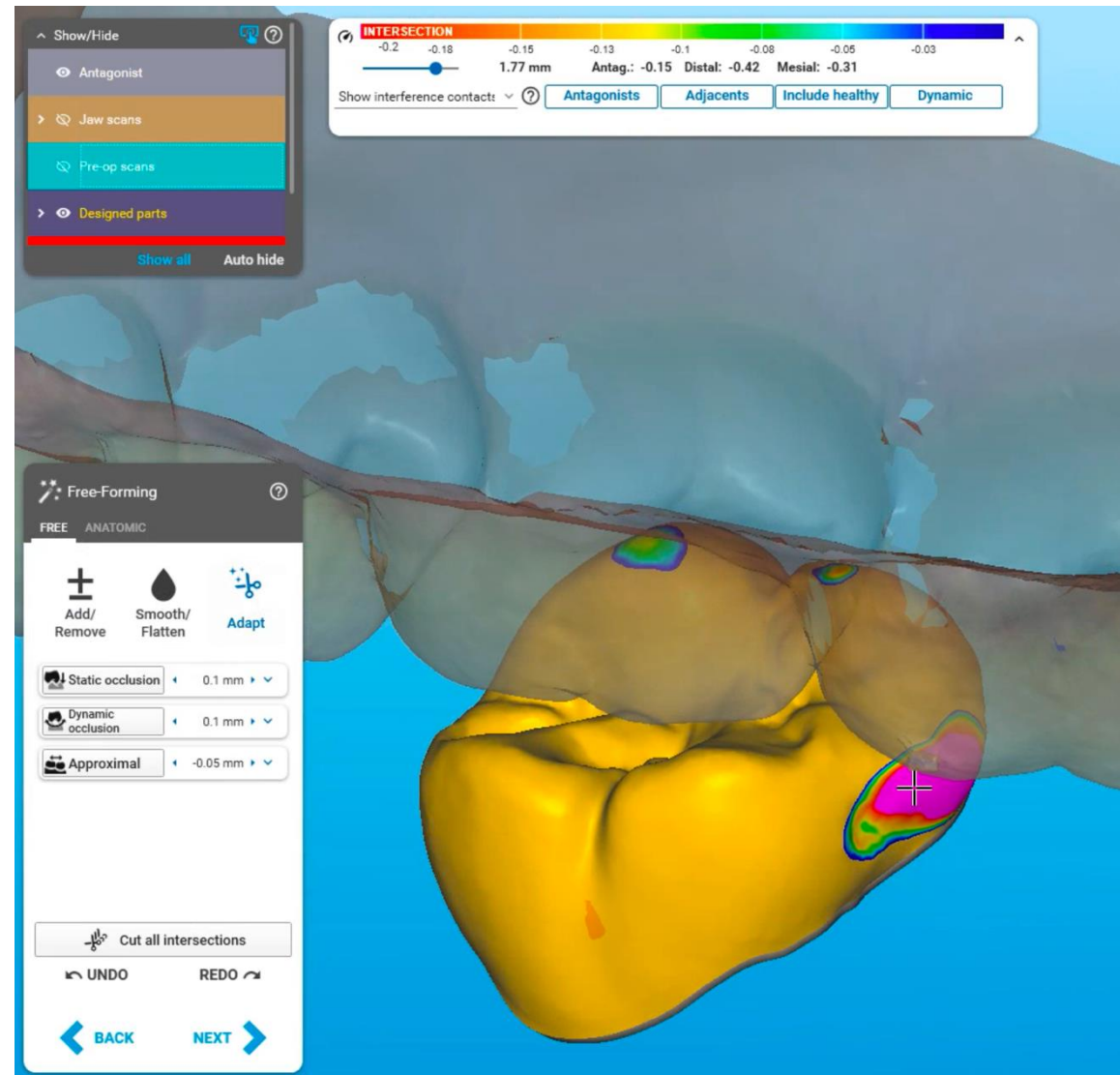
## Step 5. Freeforming

- Utilize these tools to smooth out uneven areas and increase thickness where necessary.
- The Knife tool, when set to remove mode, is ideal for carving anatomical grooves and defining secondary anatomical details.



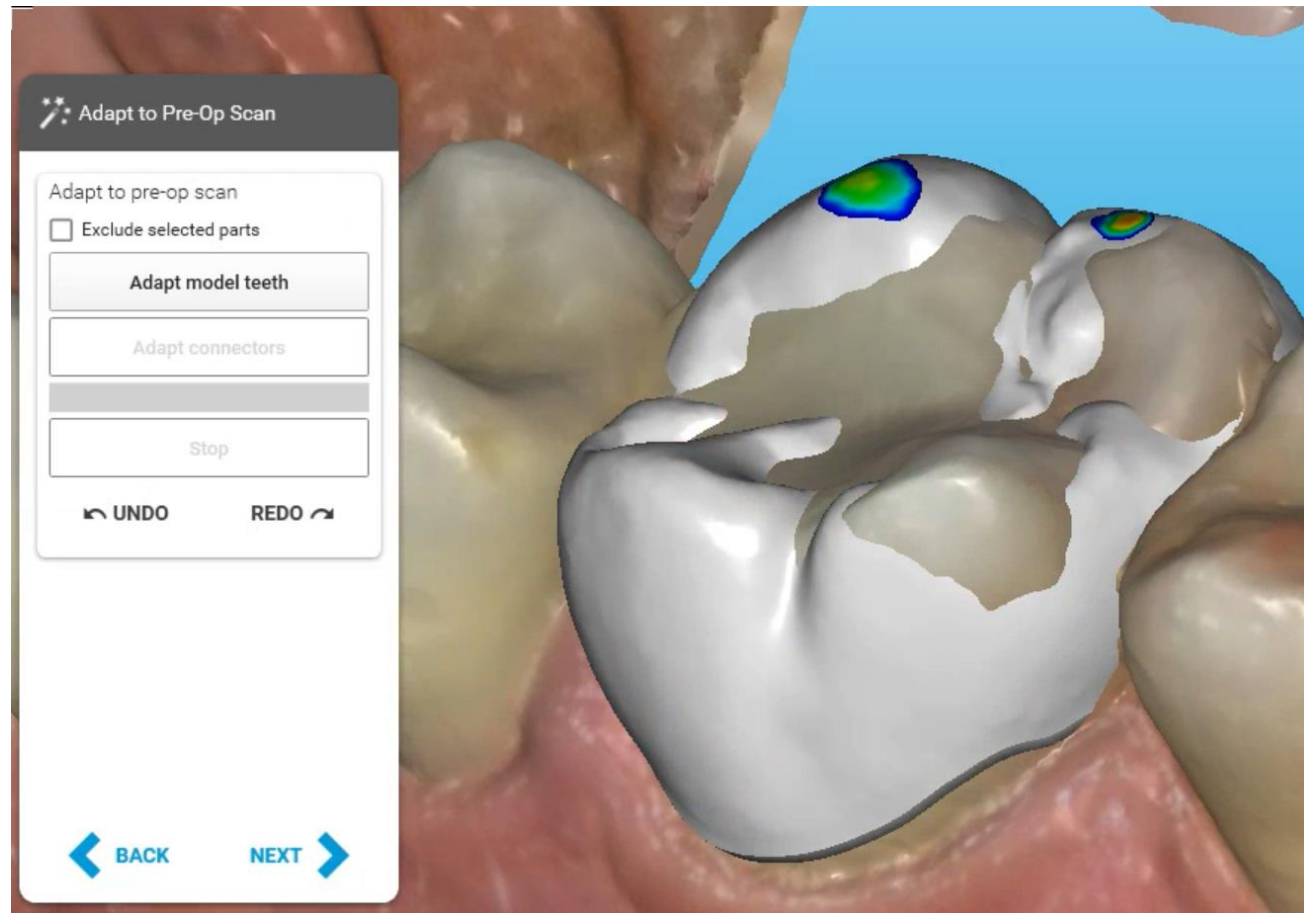
# Freeform: Adapt

- Enable Show Distances to show contact areas.
  - Place the mouse pointer on a location and the numbers will show on the scale.
  - Cut all intersections to remove interferences in static, dynamic, and approximal regions.
  - Slight smoothing may be completed after adaption.
  - Wizard mode automatically incorporates dynamic occlusion with a virtual articulator.



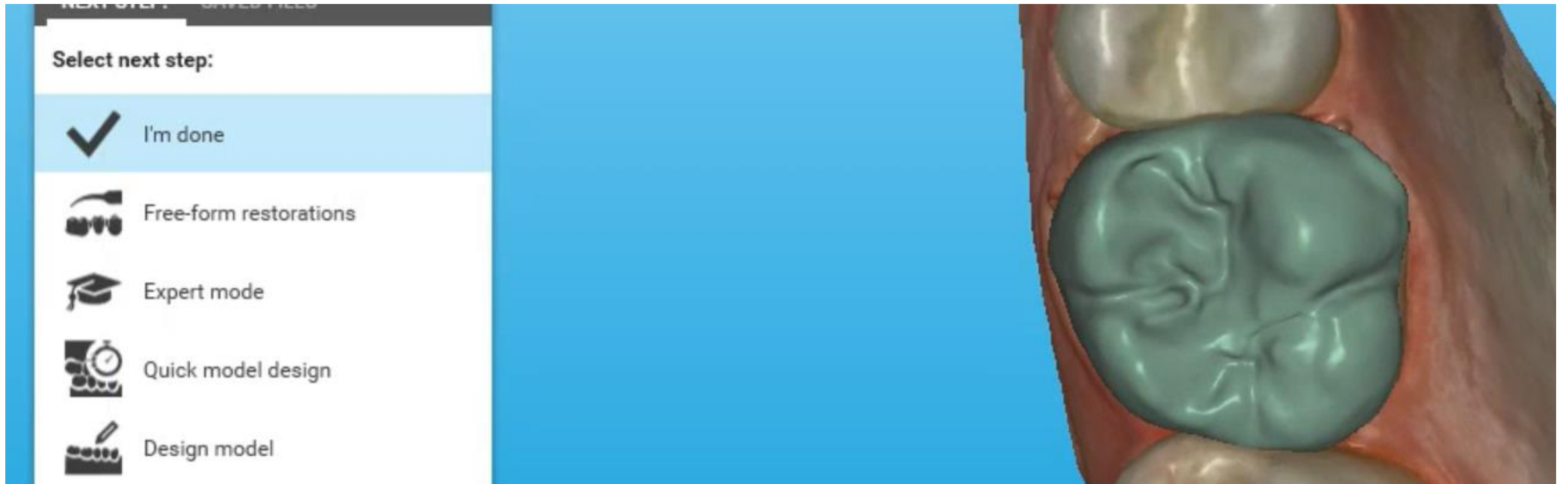
# Step 6: Adapt to pre-op scan (optional).

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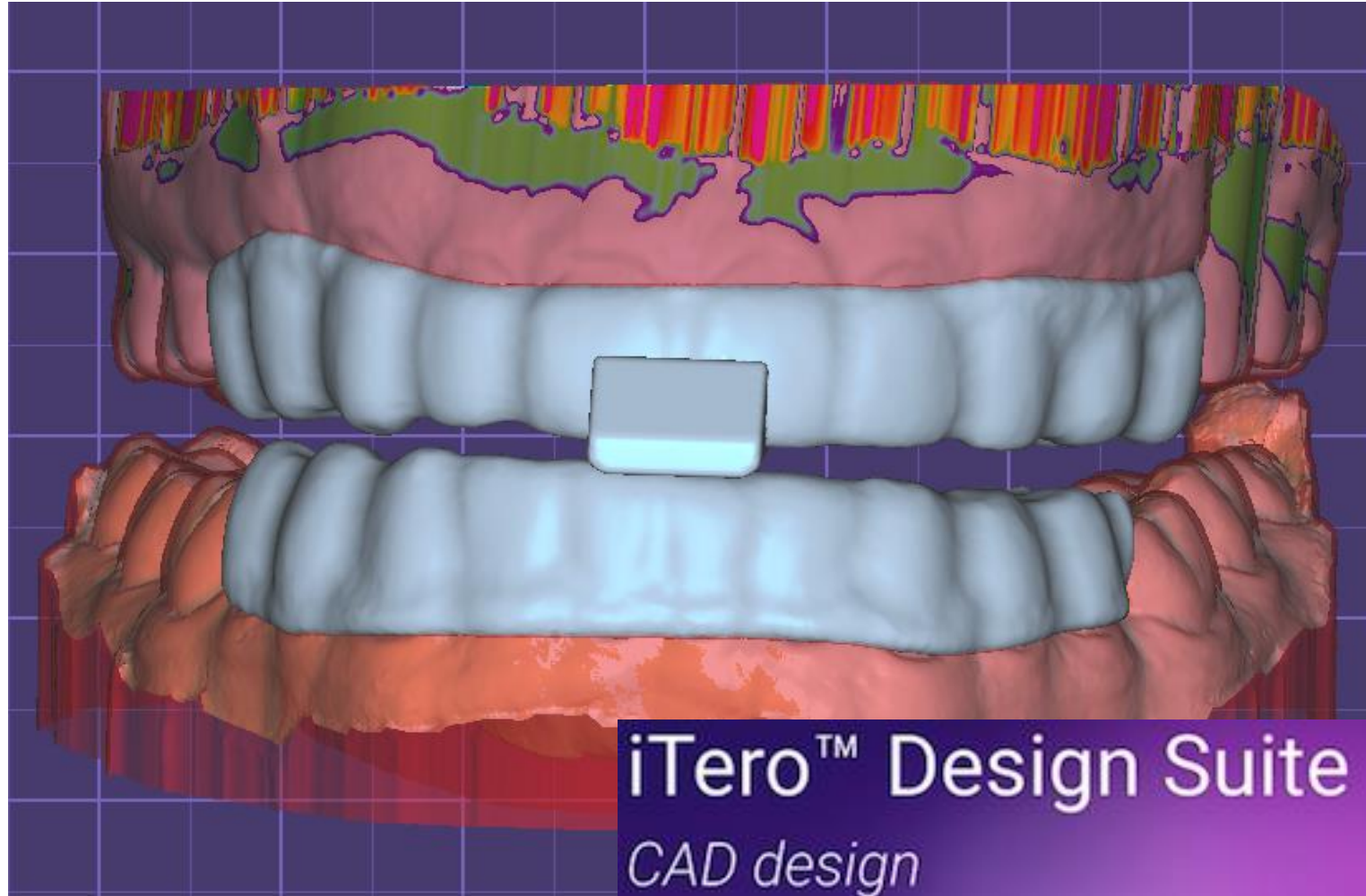


# Step 7: Merge and Save>Manufacture

- Note: Once saved click:
- I'm done to export and manufacture
- Open expert mode,
- Design quick model design ,
- Design model
- Hitting next will close the software.
- Right Click on Screen to Save to network otherwise it will save to the pc you are working on.



# Designing a Dual Arch Anterior Deprogrammer



# Anterior Deprogrammer & Lower Slider

1

Step 1. Set Work Order

2

Step 2 Segmentation: Skip

3

Step 3. Set Insertion Direction

4

Step 4. Articulator (optional).

5

Step 5. Mark Splint Margins

6

Step 6. Freeform Waxup Model

7

Step 7. Freeform Bite Splint Top

8

Step 8. Save and Export Shells

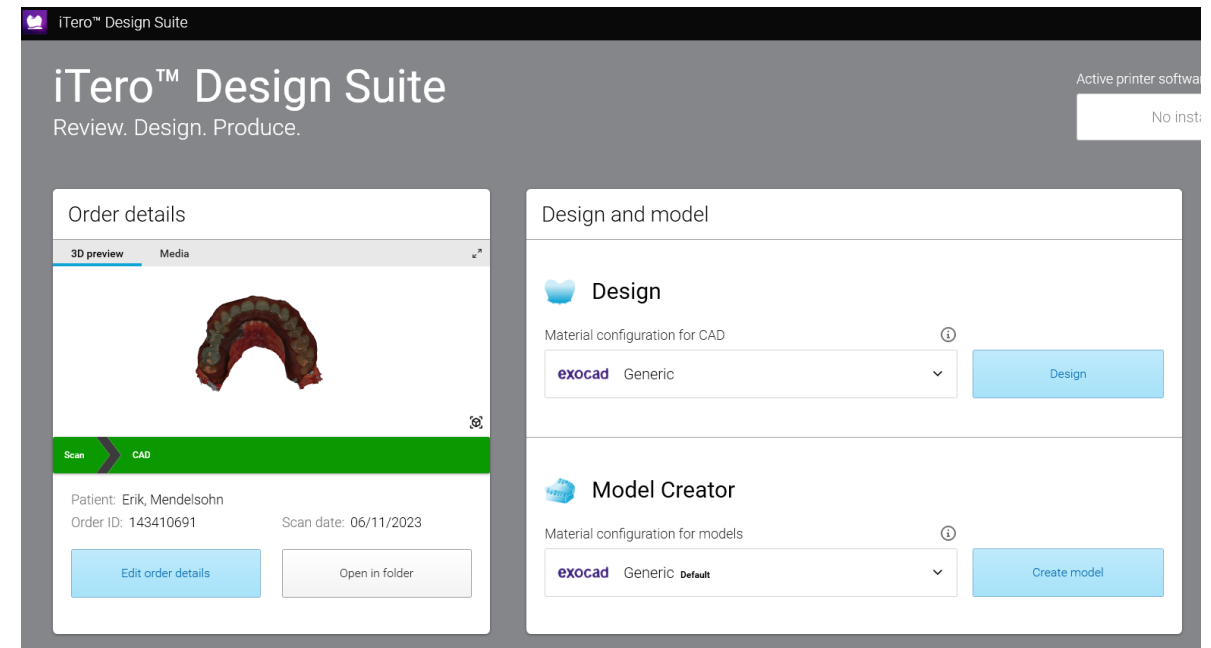
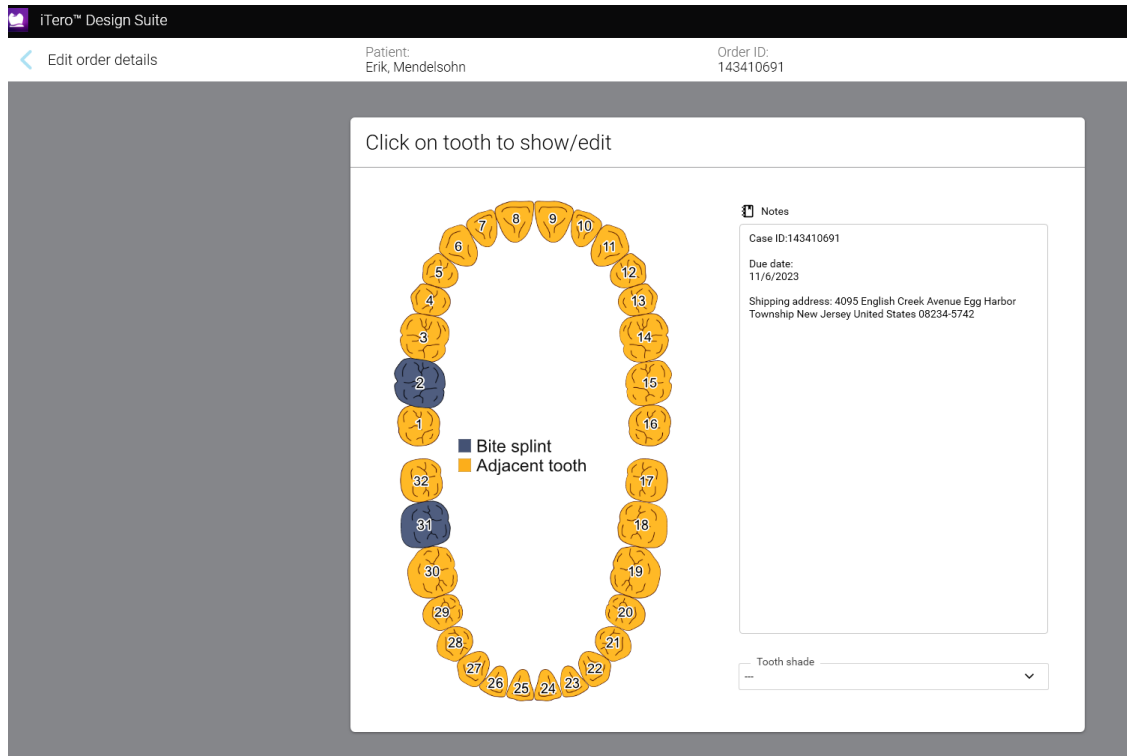
9

Step 9. Add discluder in Meshmixer

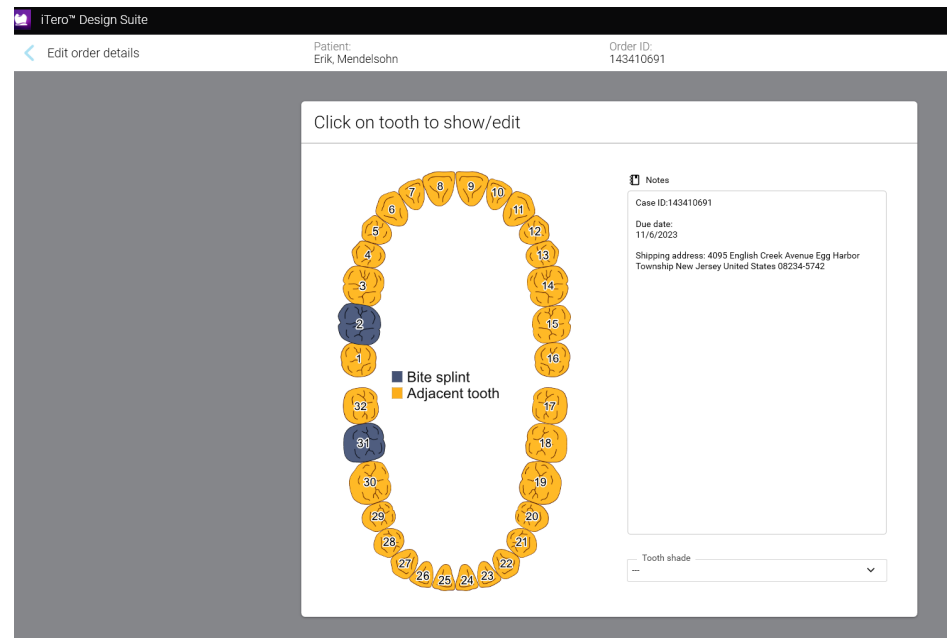
10

Step 10. Export and Print

# Step 1. Set Work Order >> Click Design to Open Design Suite.



# Select a tooth to verify procedure, material, options and parameters.



# Options and parameters.

- Tip: Adjust these settings to get your ideal fits. If you want a more rigid splint increase the peripheral border to around 1.5mm.

< Tooth 2

Patient:  
Erik, Mendelsohn

Order ID:  
143410691

## Generic

### Crowns and copings



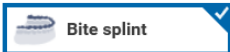
### Pontics and Mockup



### Inlays, onlays and veneers



### Removables and appliances

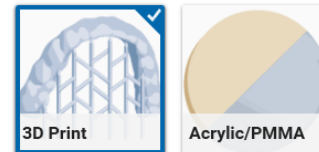


### Residual dentition



## Material

5-Axis / Laser / 3D Print



## Options & Parameters

### Additional design steps in wizard?



### Virtual extraction?



### Bite splint mode?



Minimal thickness ◀ 0.3 mm ▶

Block out angle ◀ 0° ▶

Peripheral thickness ◀ 1 mm ▶

Occlusal thickness ◀ 2.5 mm ▶

Smoothing (bite splint top) ◀ 3 mm ▶

### Hide advanced parameters

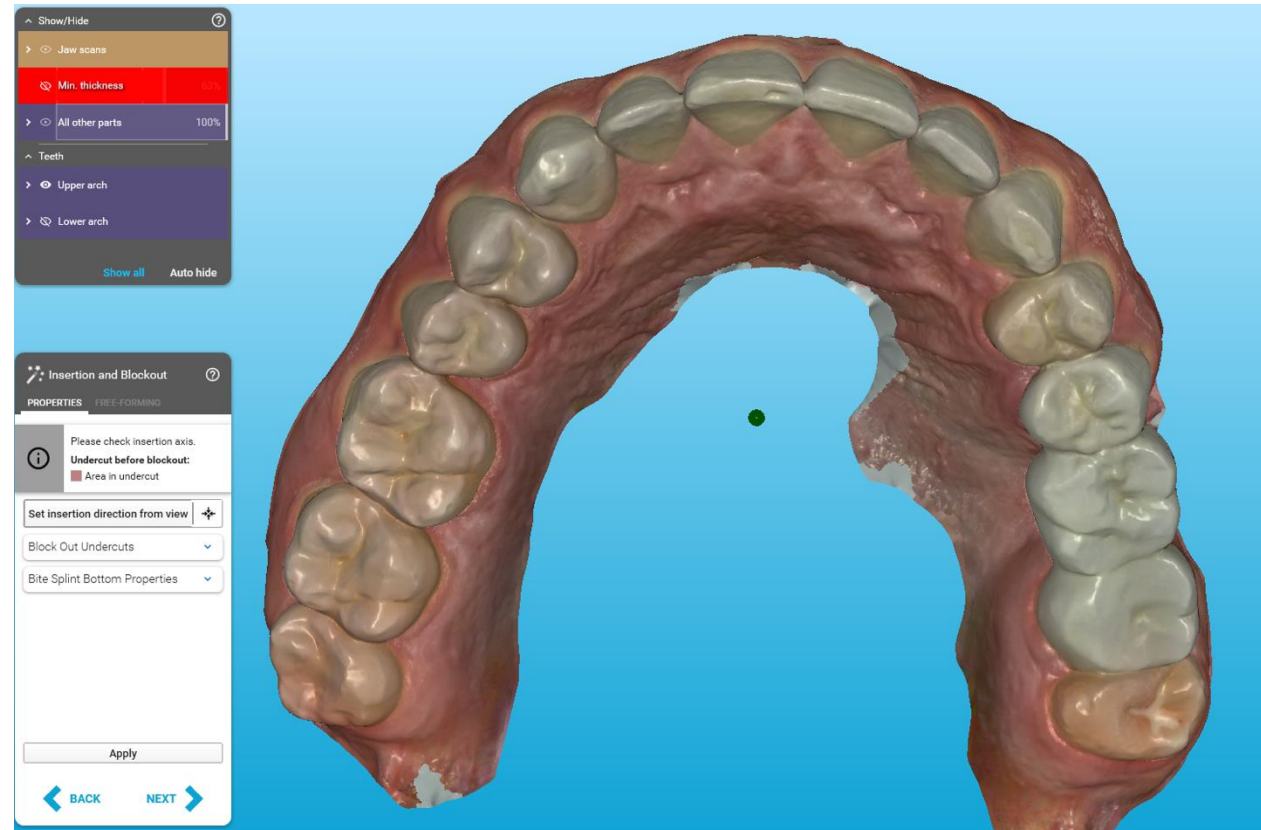
Milling diameter ◀ 0.1 mm ▶



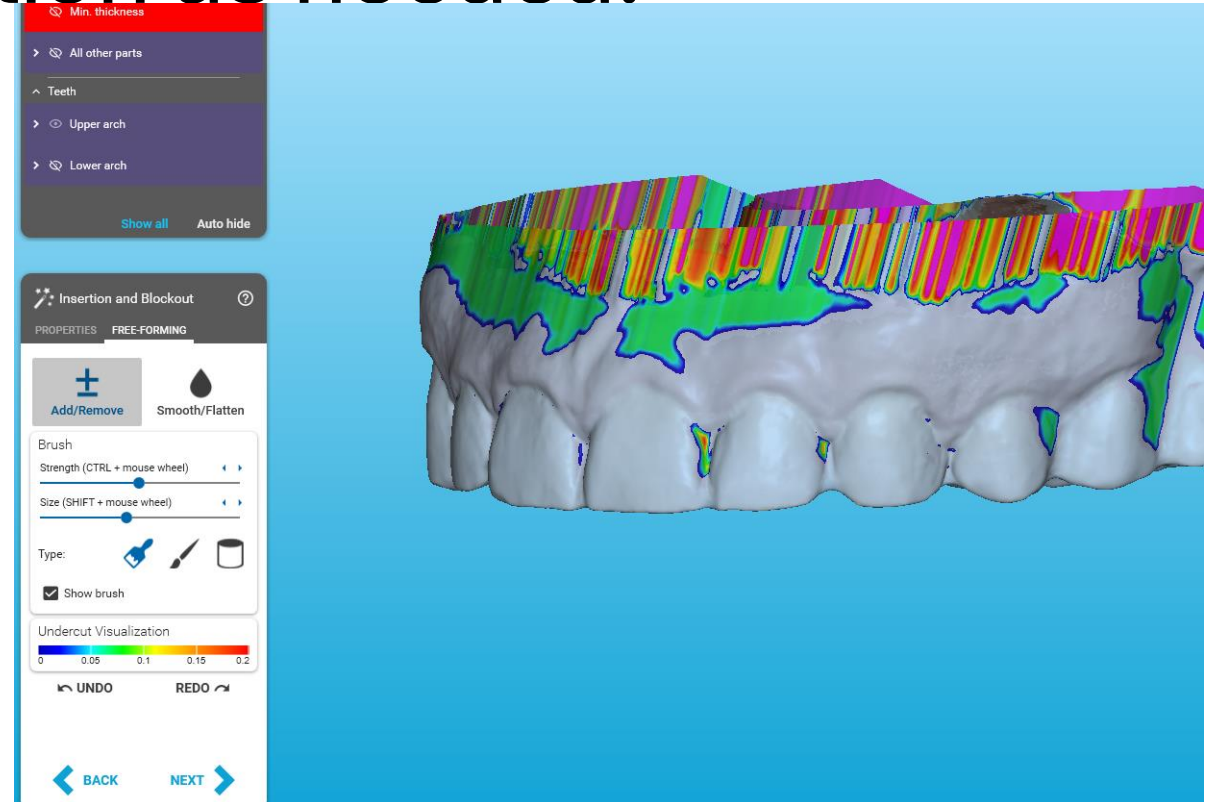
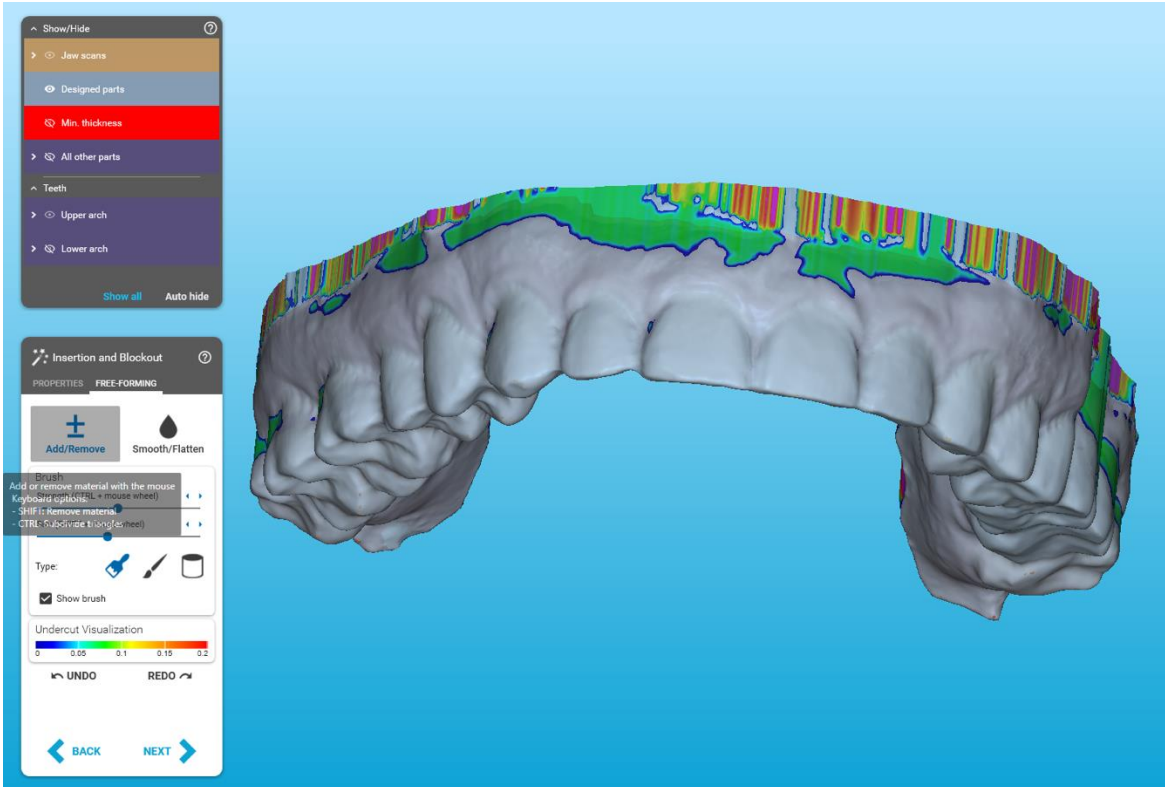
# Step 2. Skip auto segmentation.



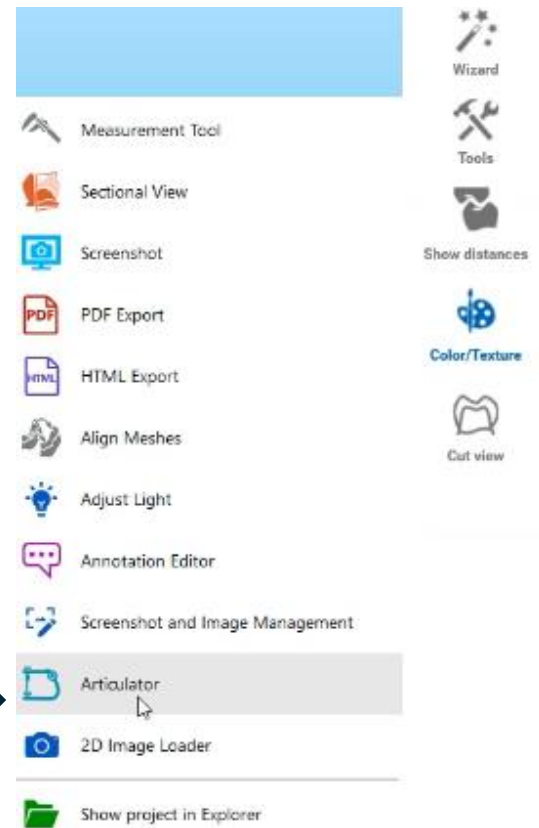
Step 3. Set insertion direction and hit apply to create blackout model.



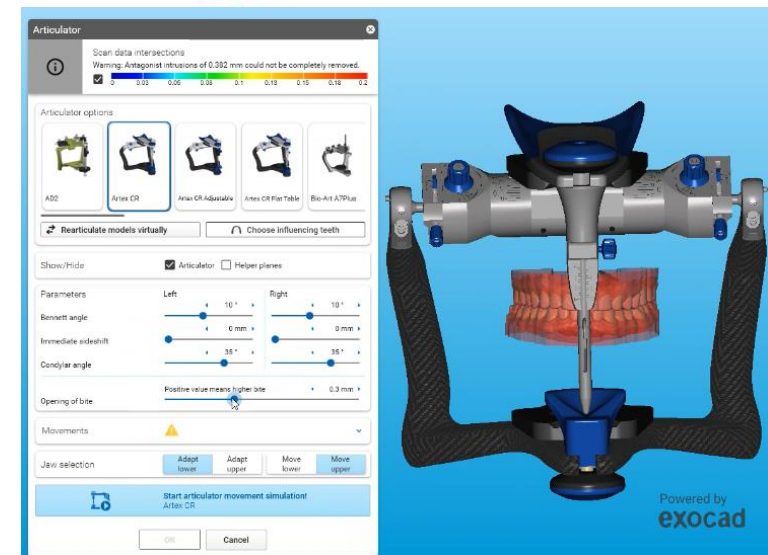
Develop a blackout model and proceed with freeform adjustments to the virtual wax blackout, modifying it to increase or reduce retention as needed.



# Step 4. Opening VDO (optional):

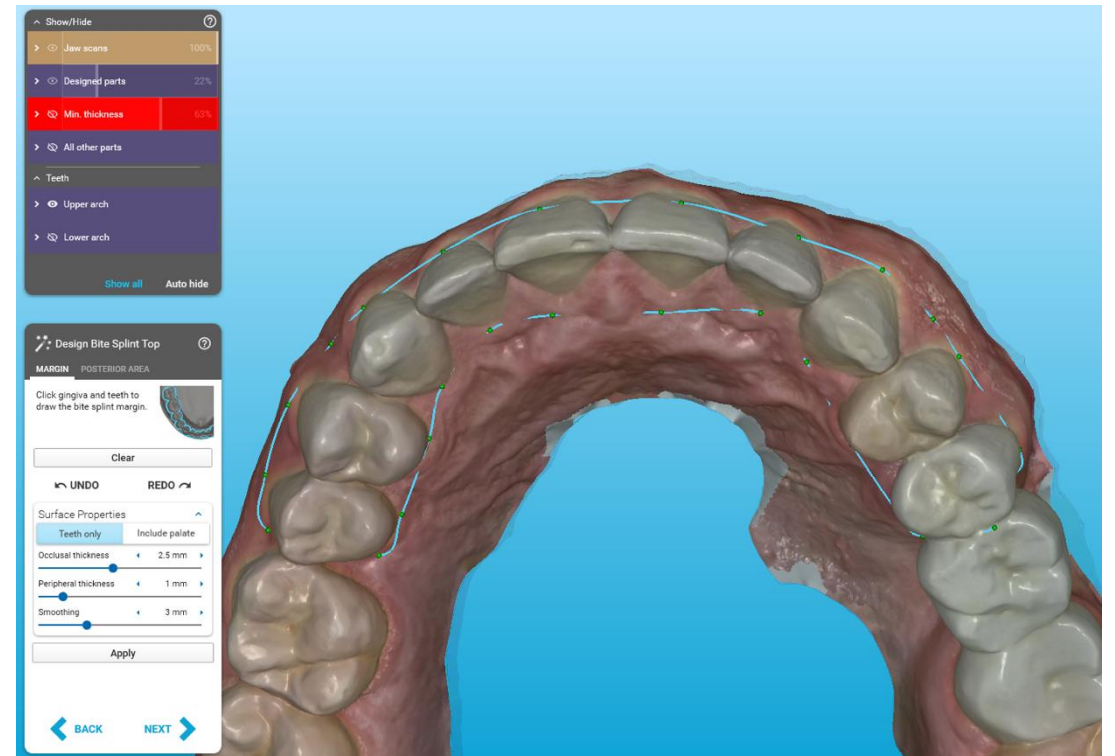


- Mount the models on the articulator
- Open to desired VDO (not necessary if you scanned at an optimal VDO).
- Tip: The Articulator is not accessible until the blockout models are created.



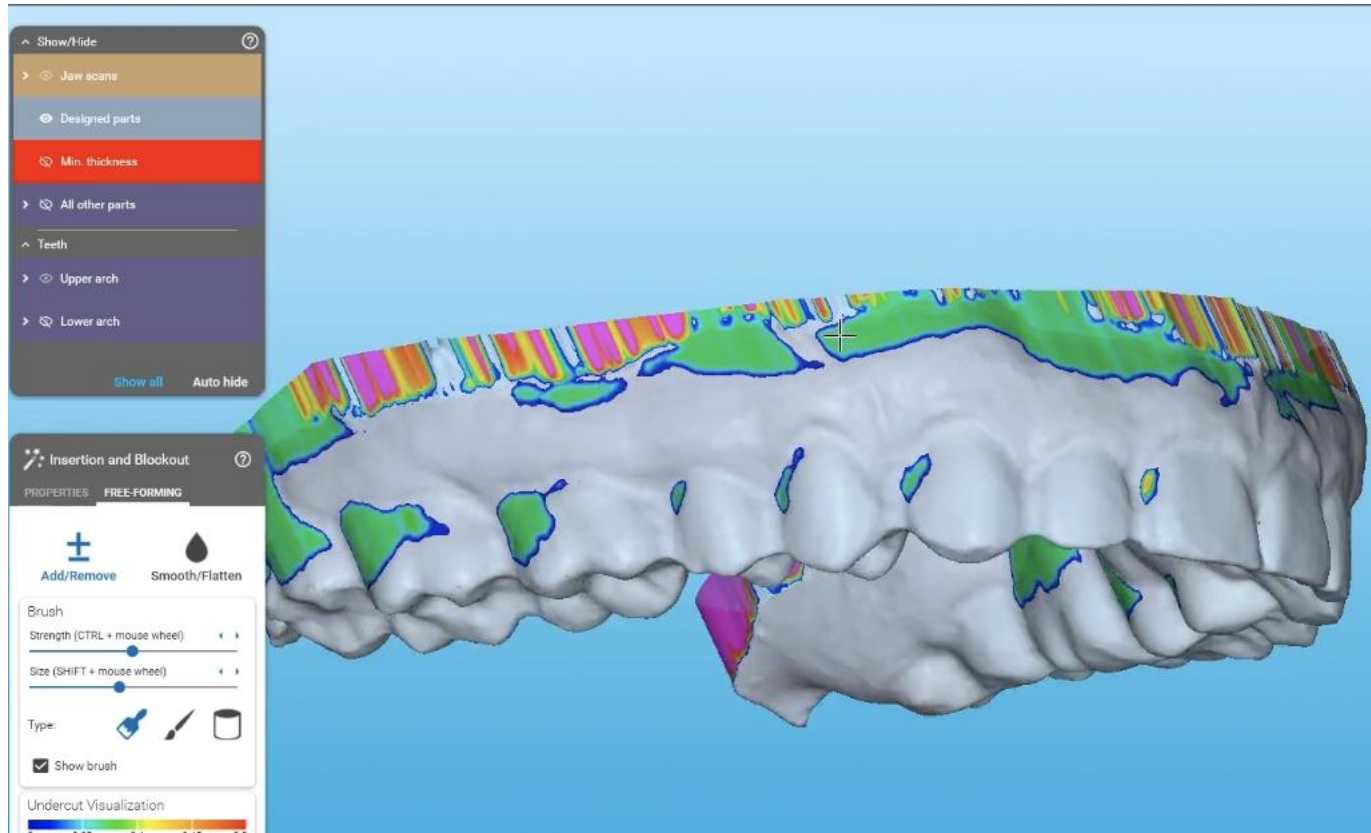
# 5. Mark Splint Margins.

---



# Step 6. Freeform Blockout Model

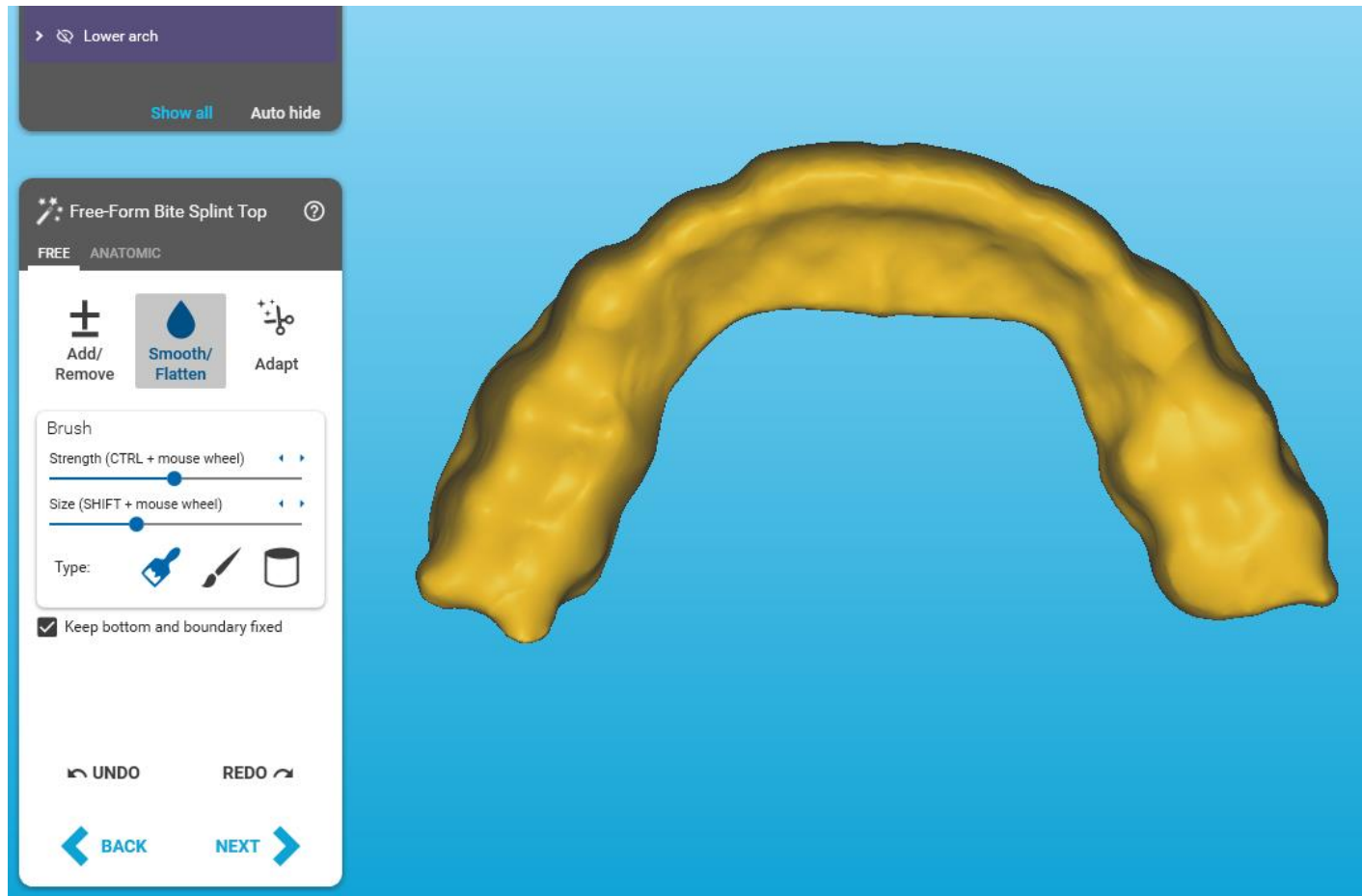
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Tip: Utilizing the freeform tools enables you to add or remove virtual blackout material. Removing material enhances retention, while adding blackout material reduces retention. Use the add/remove tool to make adjustments. Holding the Shift key removes blackout material.

# Step 7. Freeforming Bite Splint Top

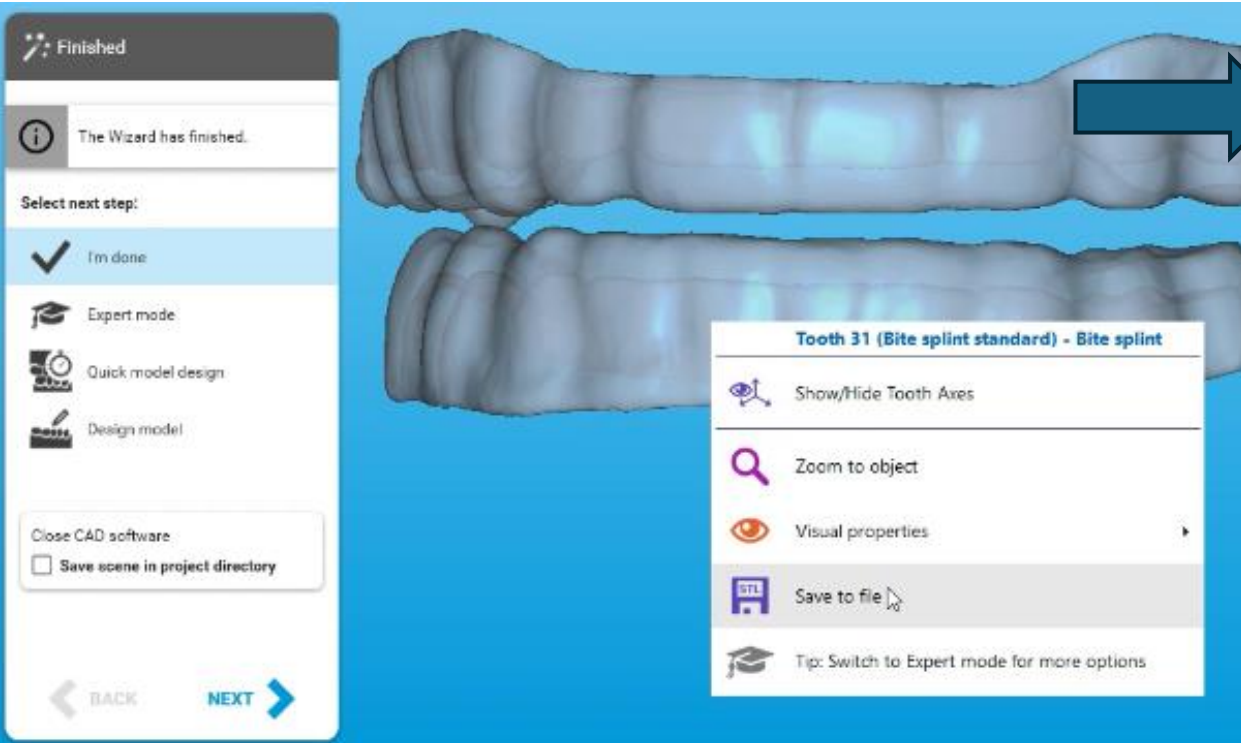
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- Flatten the posterior cusp tips to reduce the likelihood of posterior contacts. This adjustment aids in preventing excessive opening of the vertical dimension of occlusion (VDO).
- Use the Cylinder tool with a large size and moderate strength to flatten.

# Step 8. Saving the Shells.

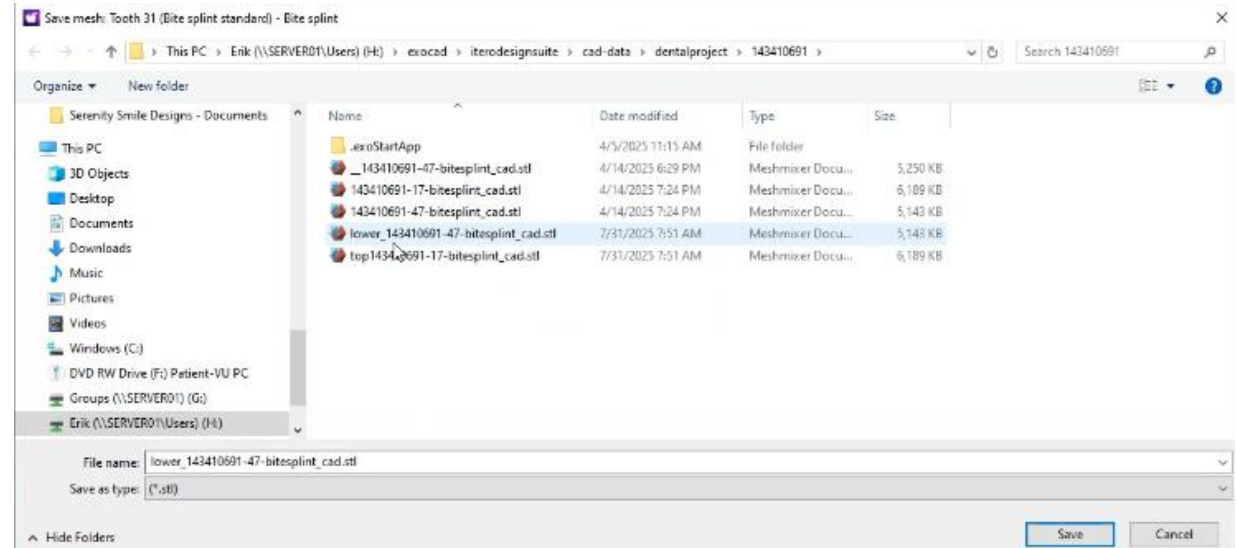
Right Click each shell >>Save to file>>Select Plain STL>>Use Default Coordinate System.



What coordinate system should be used for saving?

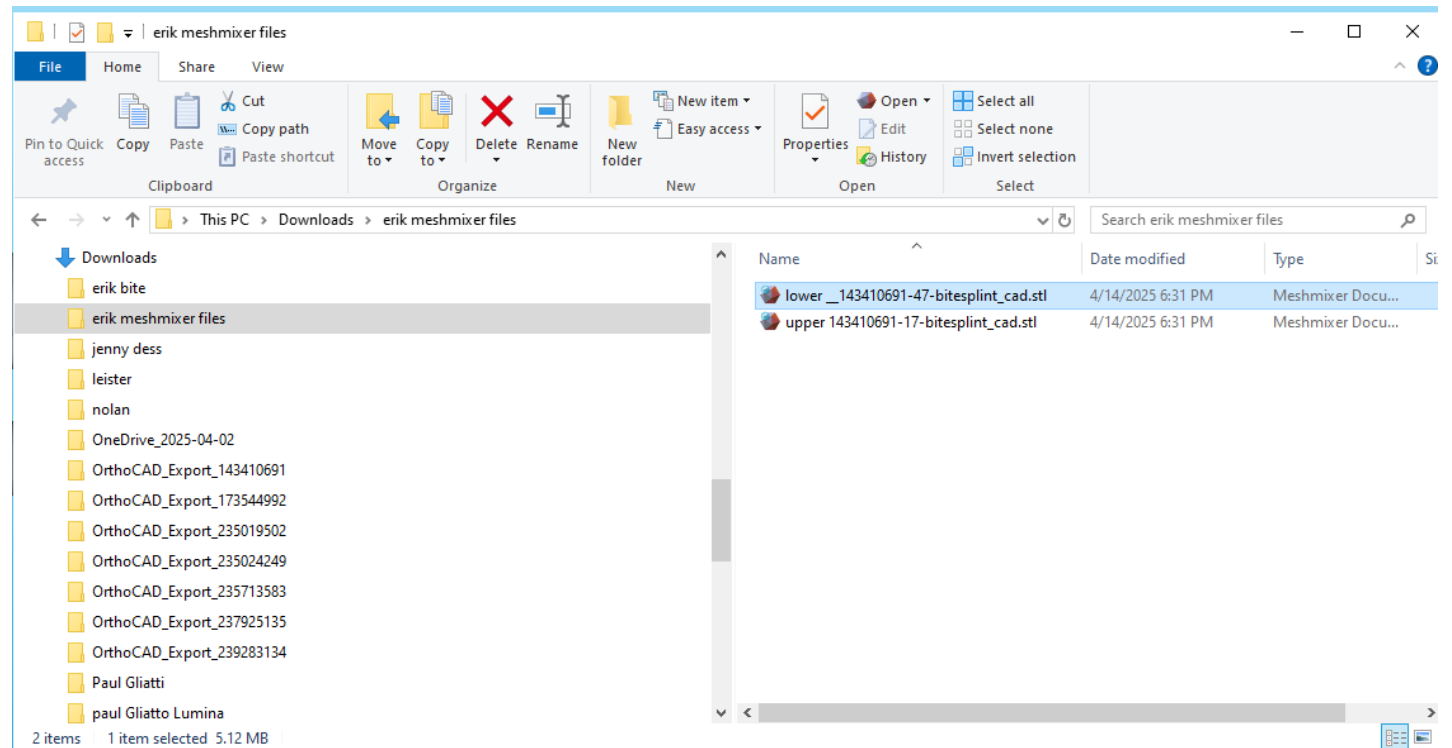
**Use original coordinate system of scan data**  
Discard position changes and save object(s) relative to original scan data orientation and position.

**Use default coordinate system**  
Keep changes of orientation and position.



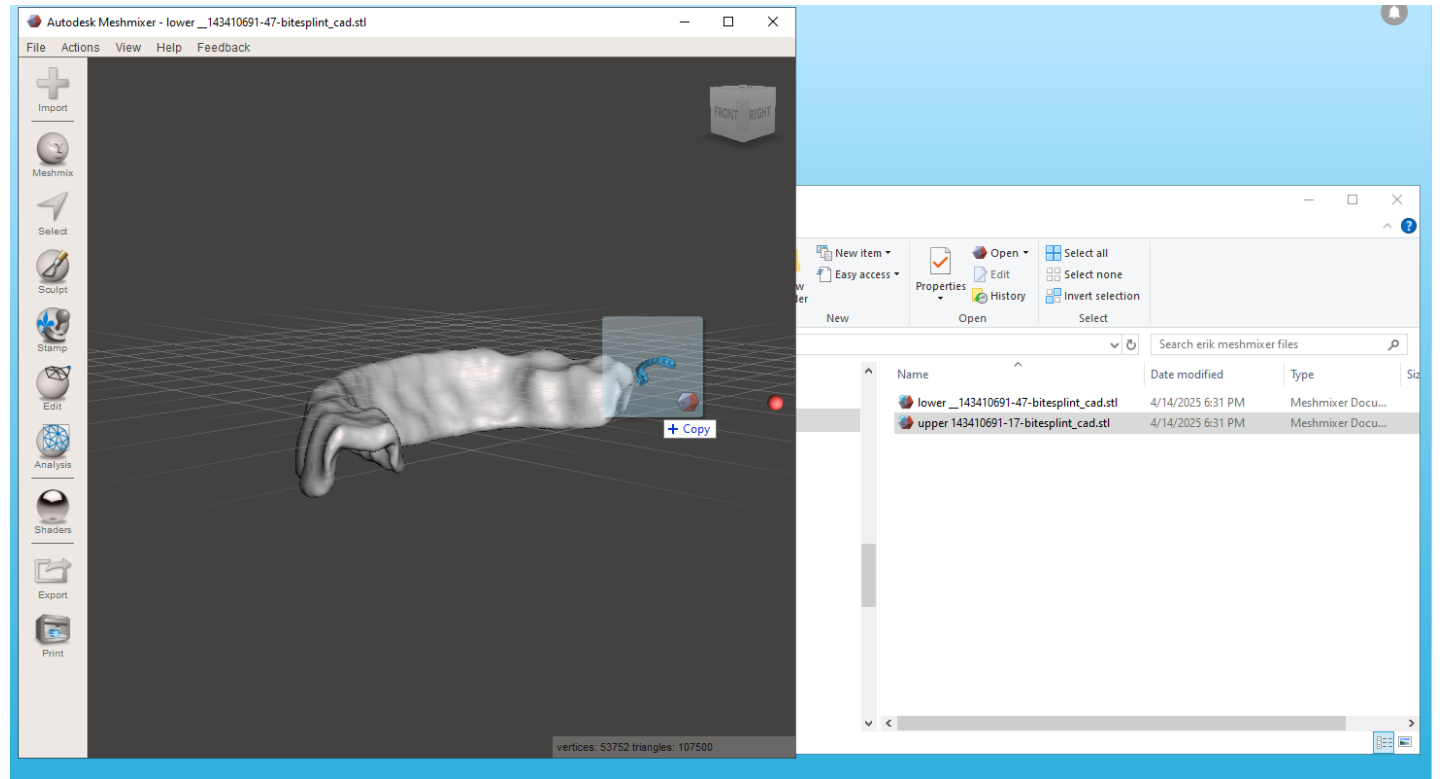
# Step 9. Use Meshmixer to add the deprogramming element.

Double click  
on one of the  
files to launch  
meshmixer.

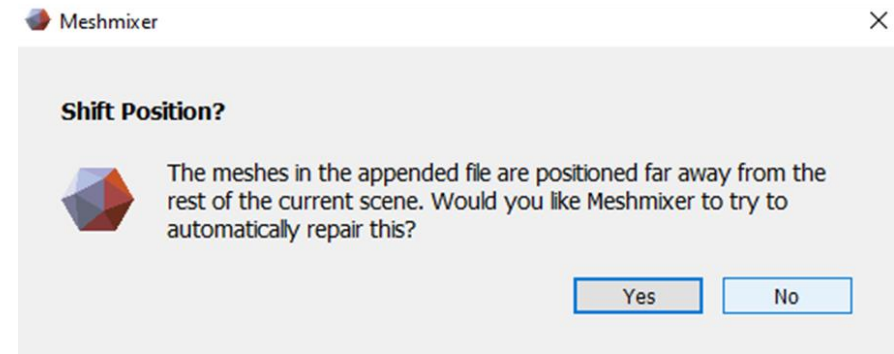
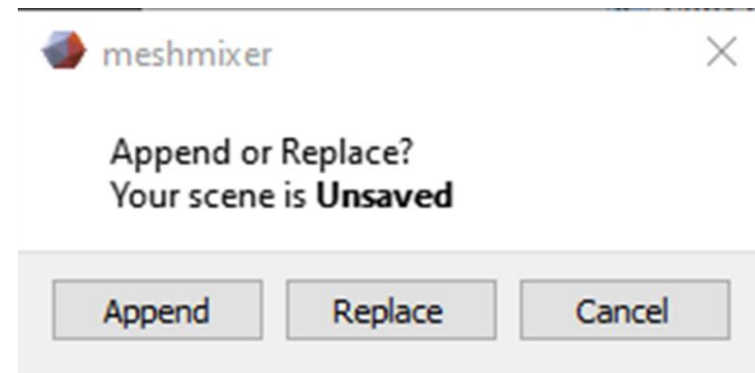
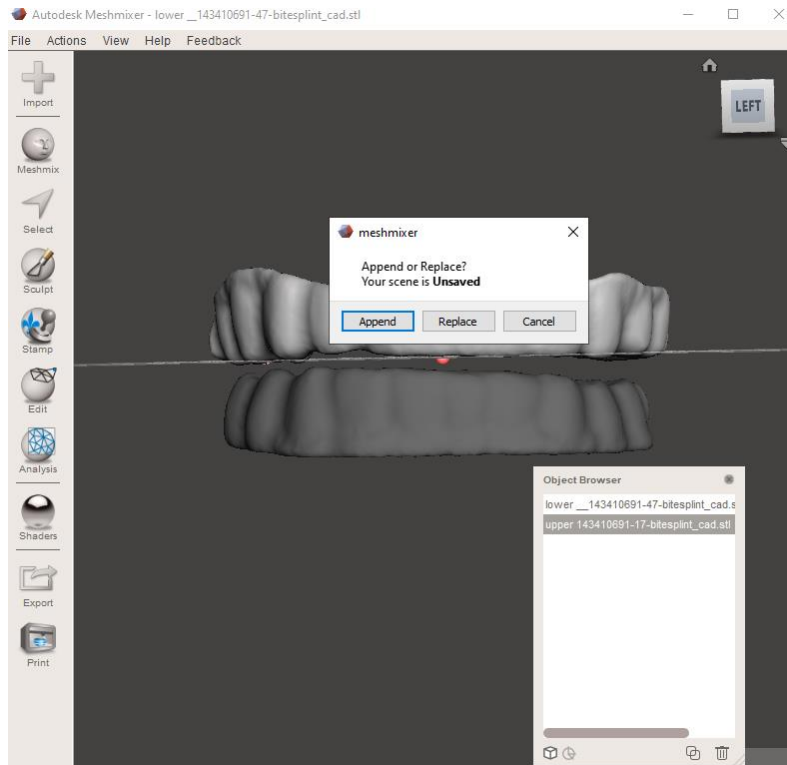


Meshmixer, a complimentary program developed by Autodesk, performs effectively on PCs but is less optimized for use on Mac devices since it was discontinued but can still be downloaded.

Drag and drop the opposing arch

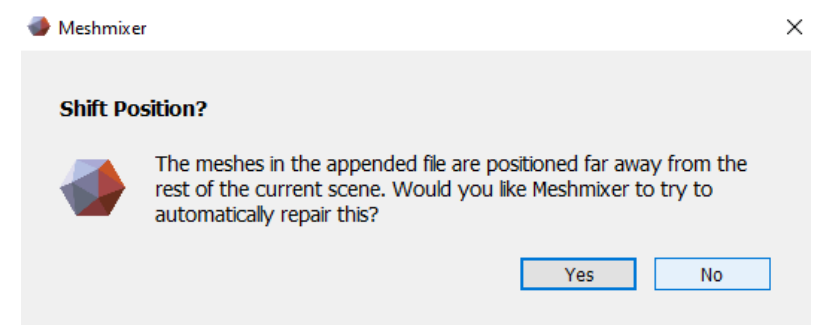
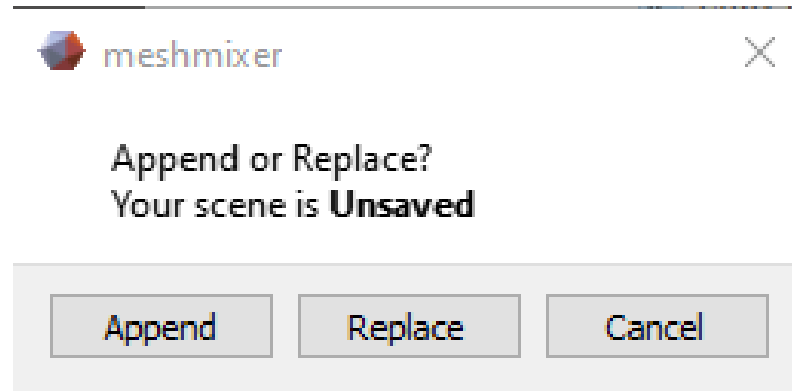
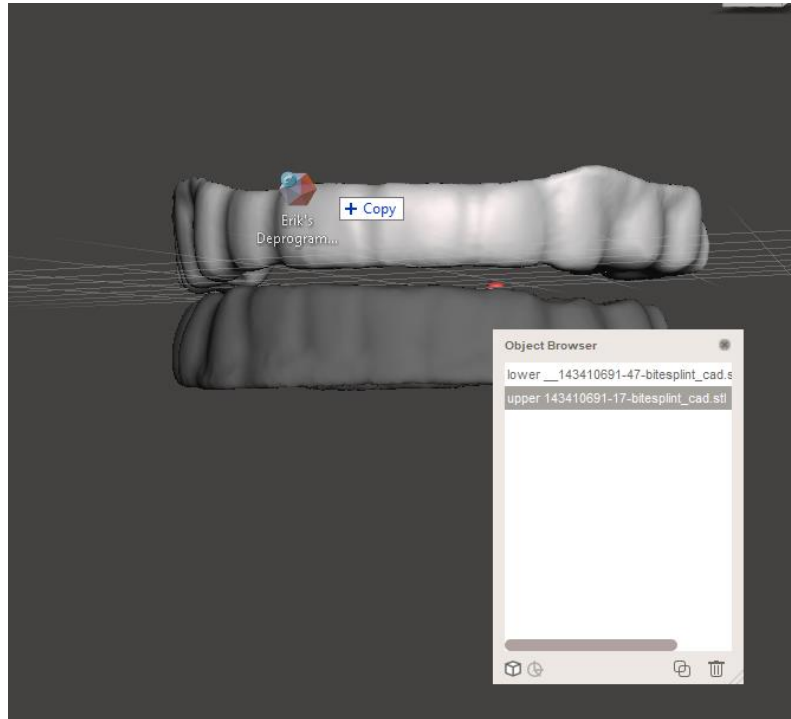


# Append the arch and do not repair.

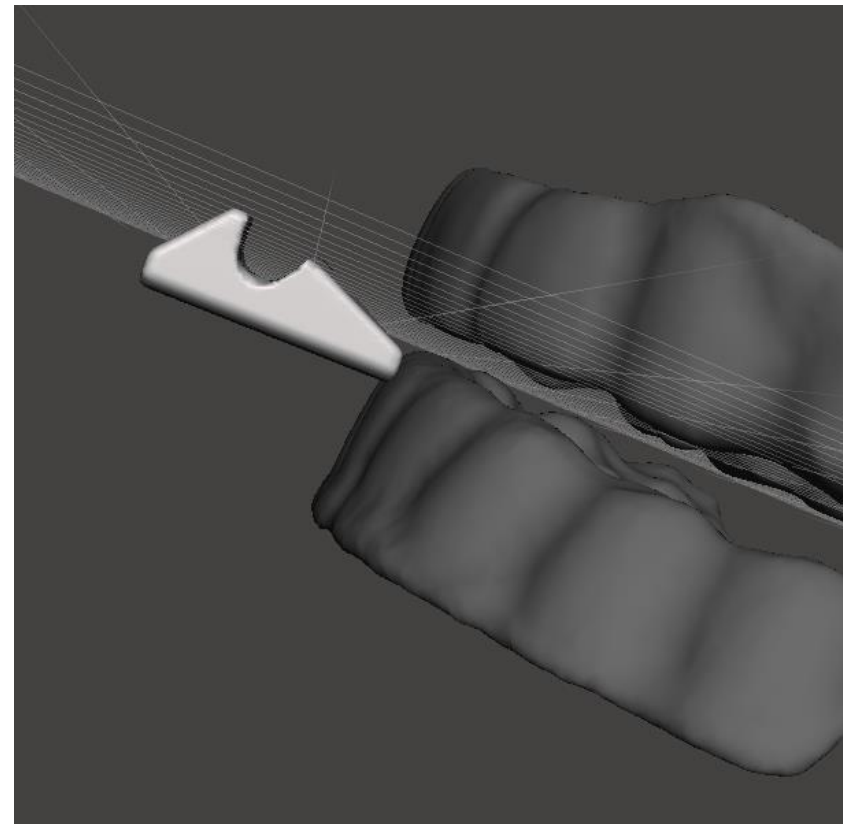
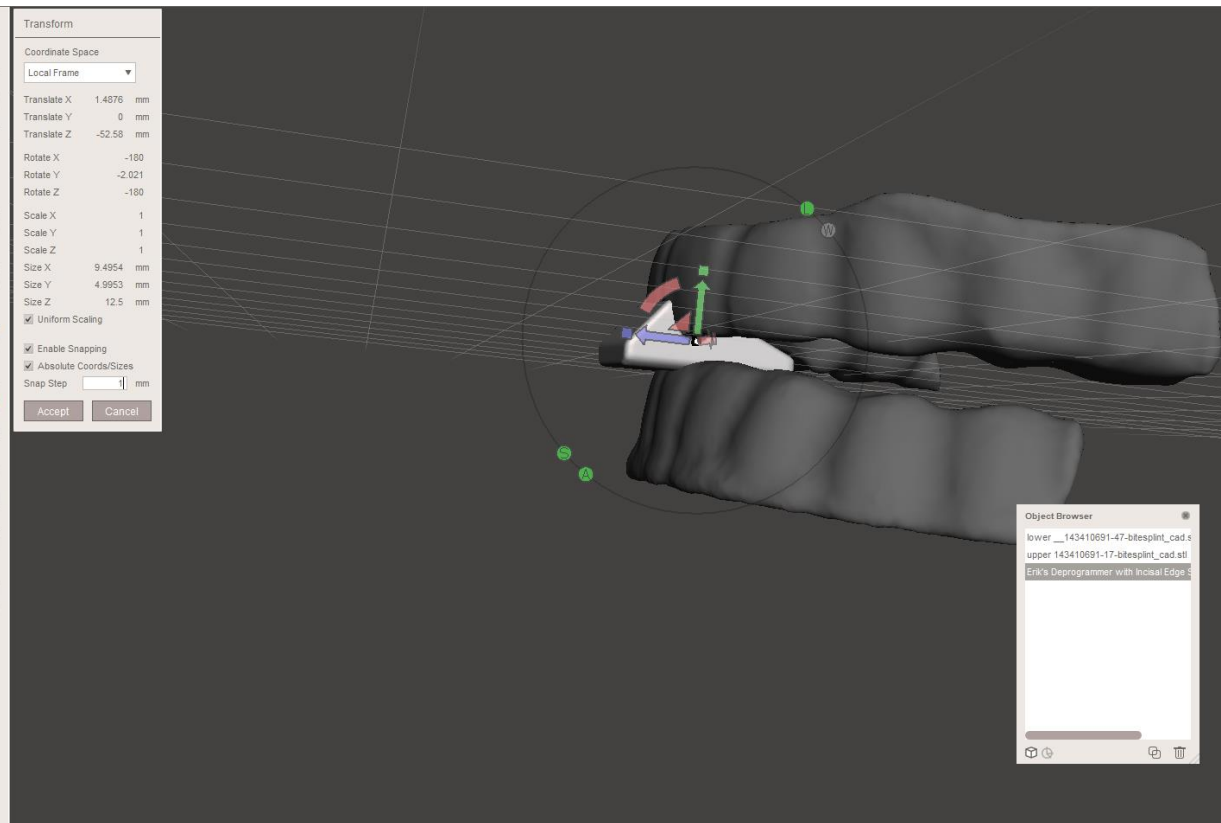


If you exported the files using the default orientation, they will import into Meshmixer maintaining the same orientation as the bite position you recorded.

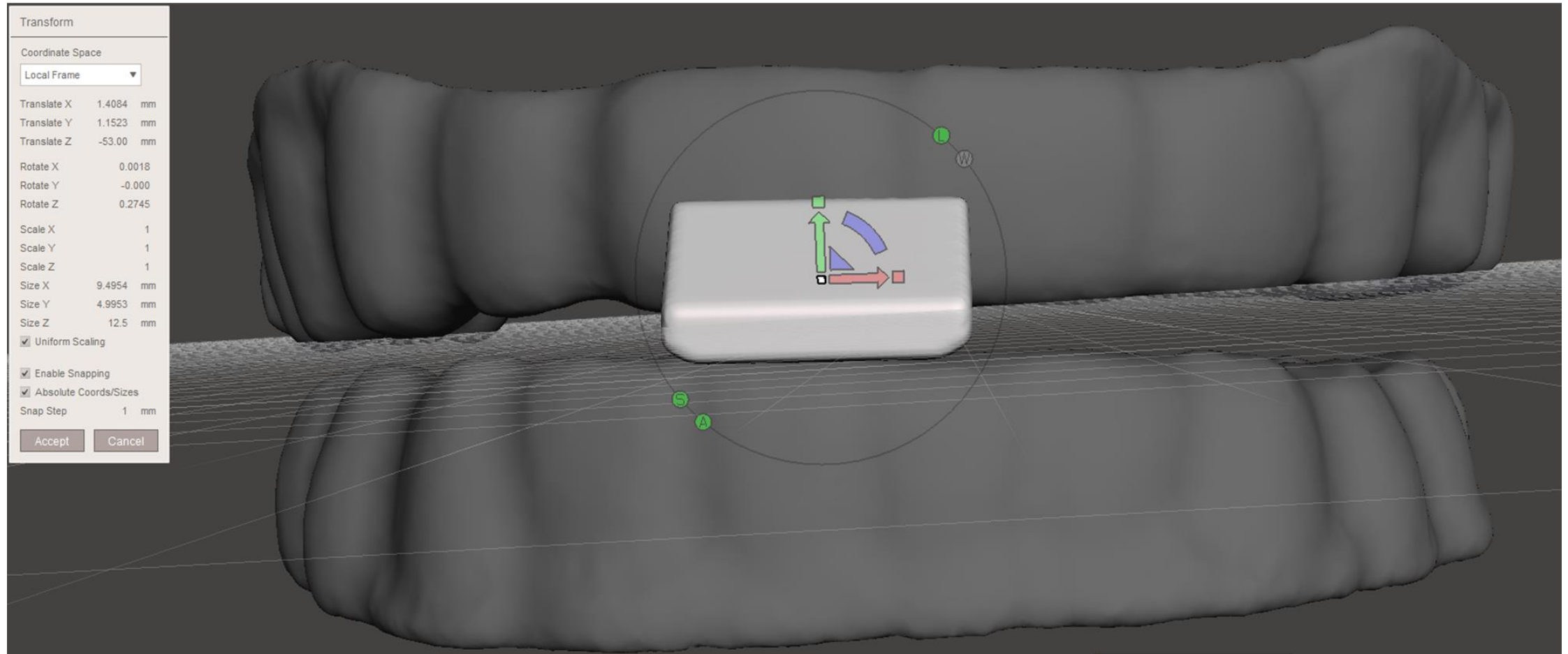
Drag and drop the discluder Click Append>> Do not repair position!



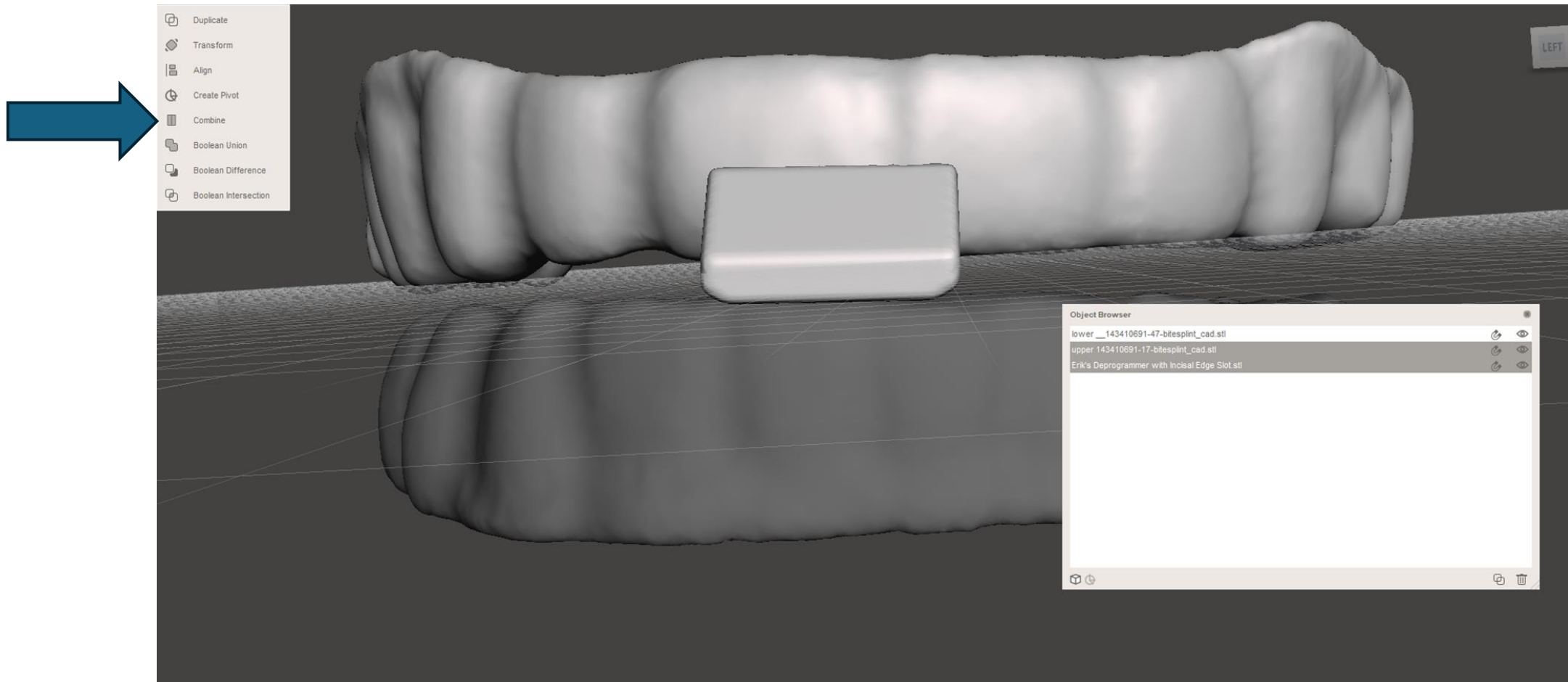
Click T(transform) then move the discluder into place. Drop Snap scale to 1mm.



# Tip: Resize using squares and rotate using arrows.

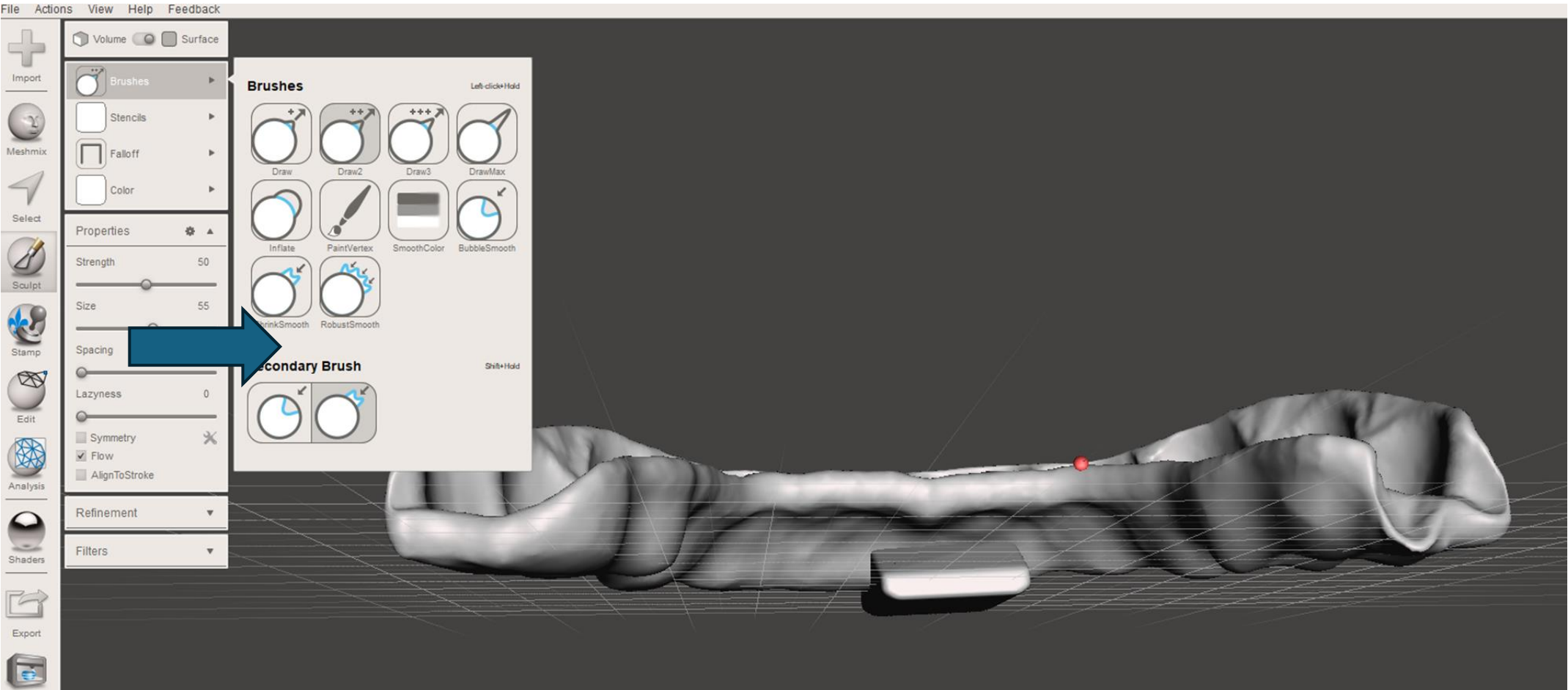


Select the upper shell and deprogrammer, then combine the meshes.



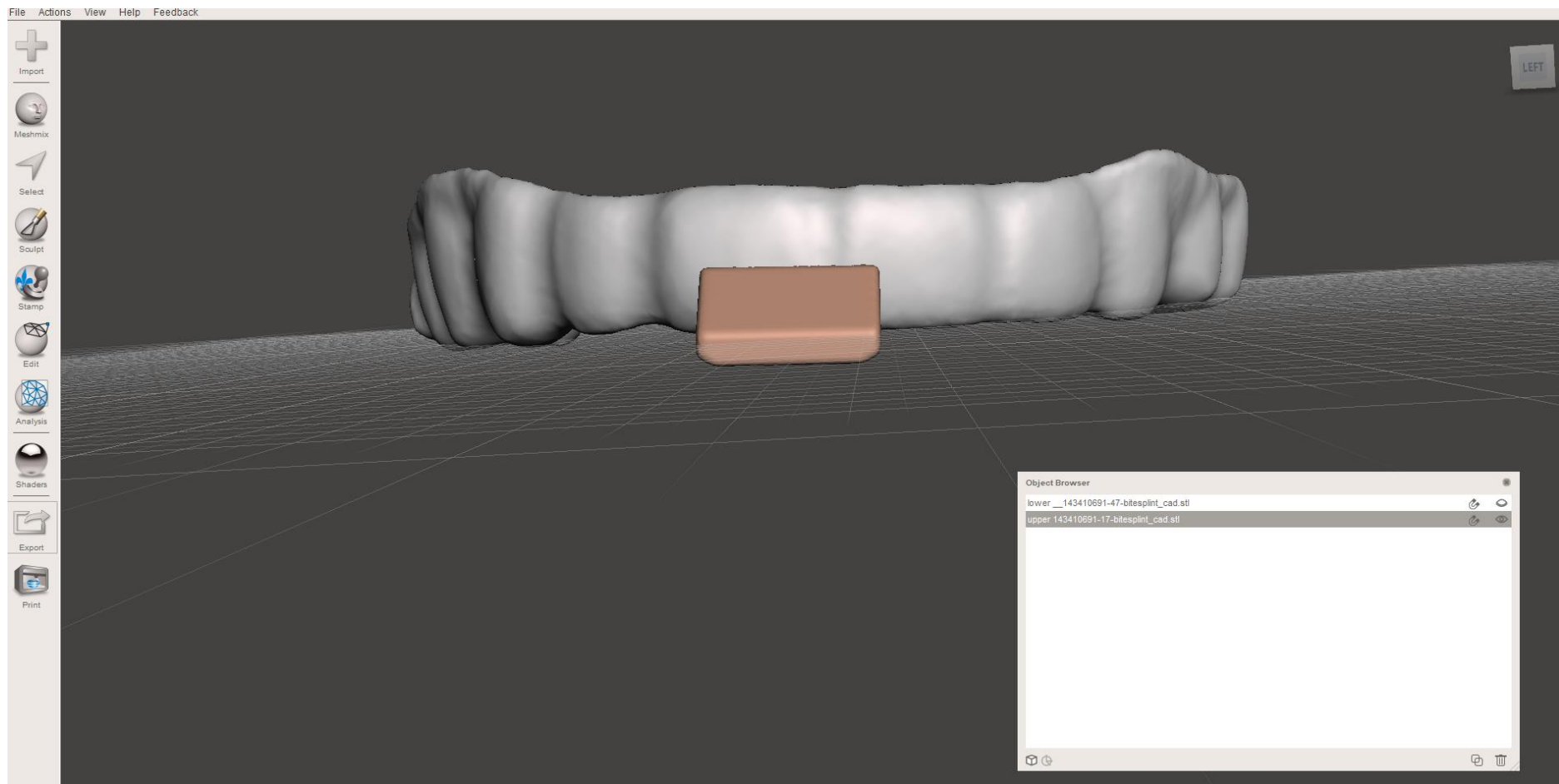
Selecting both the discluder and the splint shell simultaneously will trigger a popup that allows you to combine them.

# Smooth the Appliance

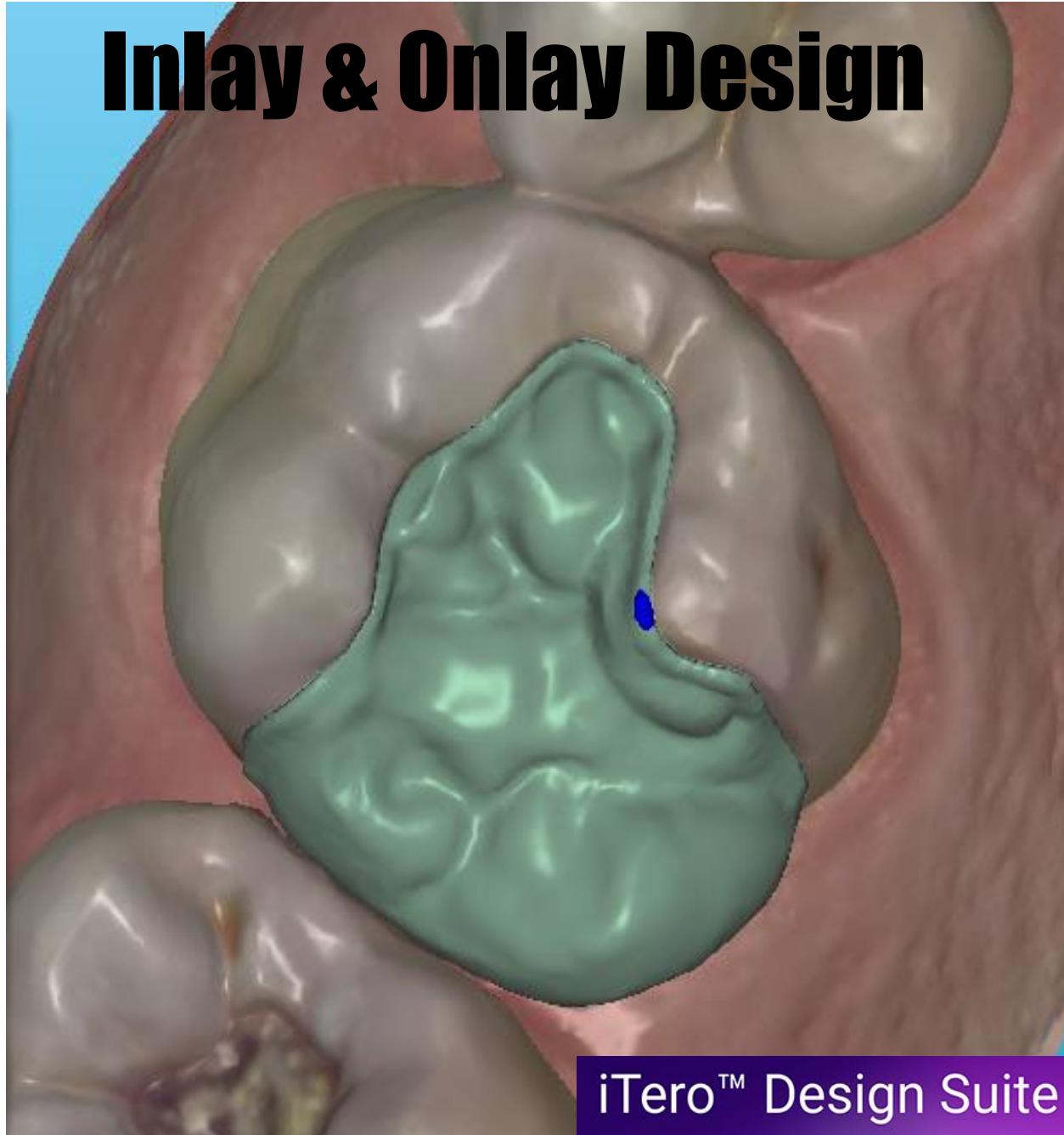


# Step 10. Combine, Export, and Print

In the View Objects browser, select both the shell and the deprogrammer by holding the Shift key. This action will trigger a prompt to merge the shells. After combining them, proceed to export the file.



# Inlay & Onlay Design



iTero™ Design Suite

# Launching Design Suite & Setting Order Details

## Orders

ID Scan Date Procedure NIRI Order Status

249330689 06/24/2025 Fixed Restorative Yes Completed

View Rx

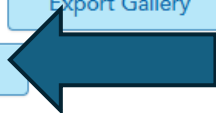
Viewer

Export

Export Gallery

iTero Scan Report

iTero Design Suite



244075259 05/12/2025 Study Model/iRecord No Completed

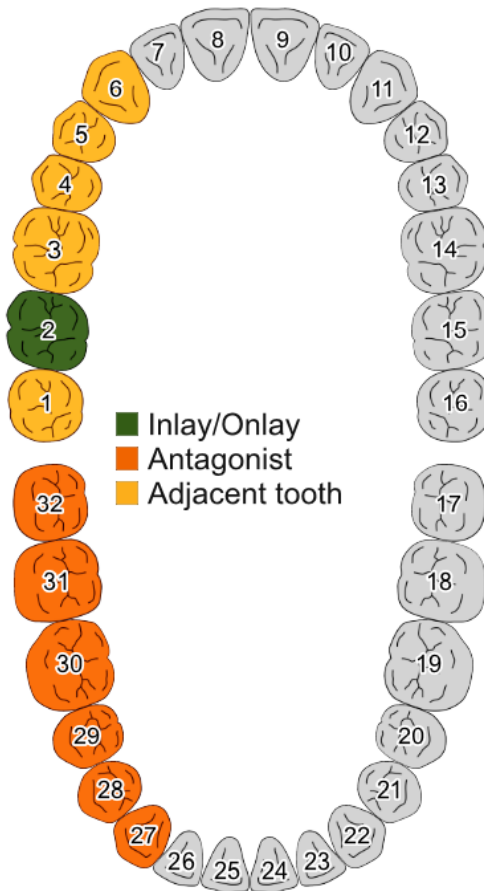
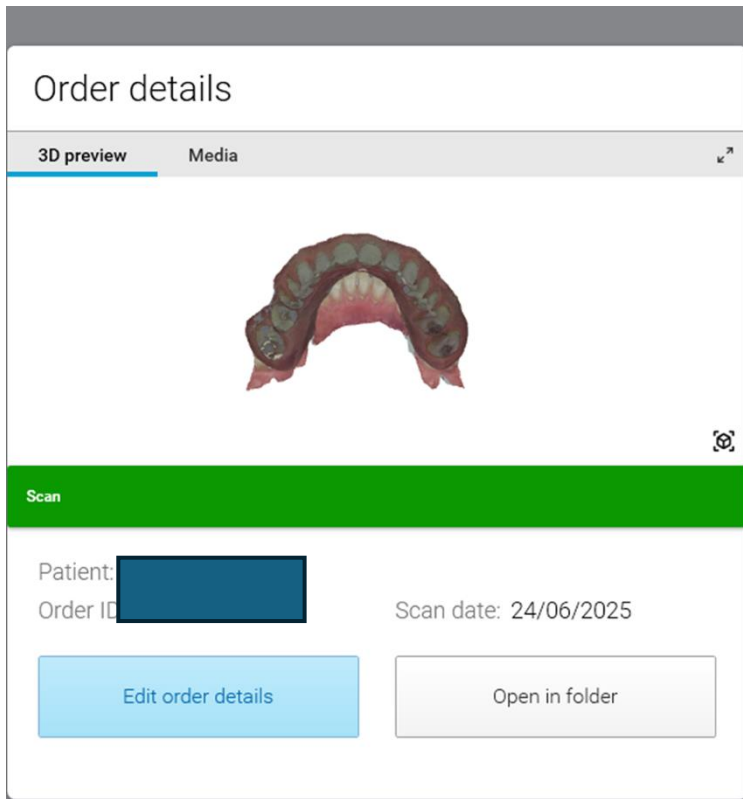
iTero | exocad

iTero™ Design Suite  
Version 1.0

# Editing Order Details:

Advice: Configuring advanced settings before launching design software can greatly enhance workflow efficiency and eliminate the necessity of switching to expert mode later.

Click on tooth to show/edit



## Generic

### Crowns and copings



### Pontics and Mockup



### Inlays, onlays and veneers



### Removables and appliances

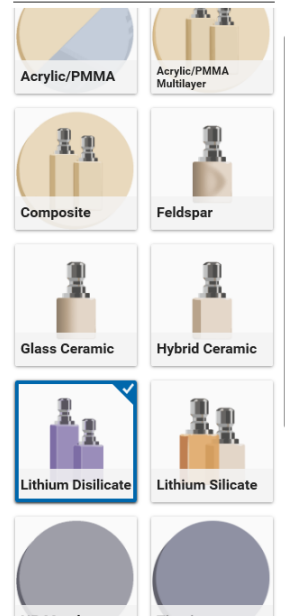


### Residual dentition



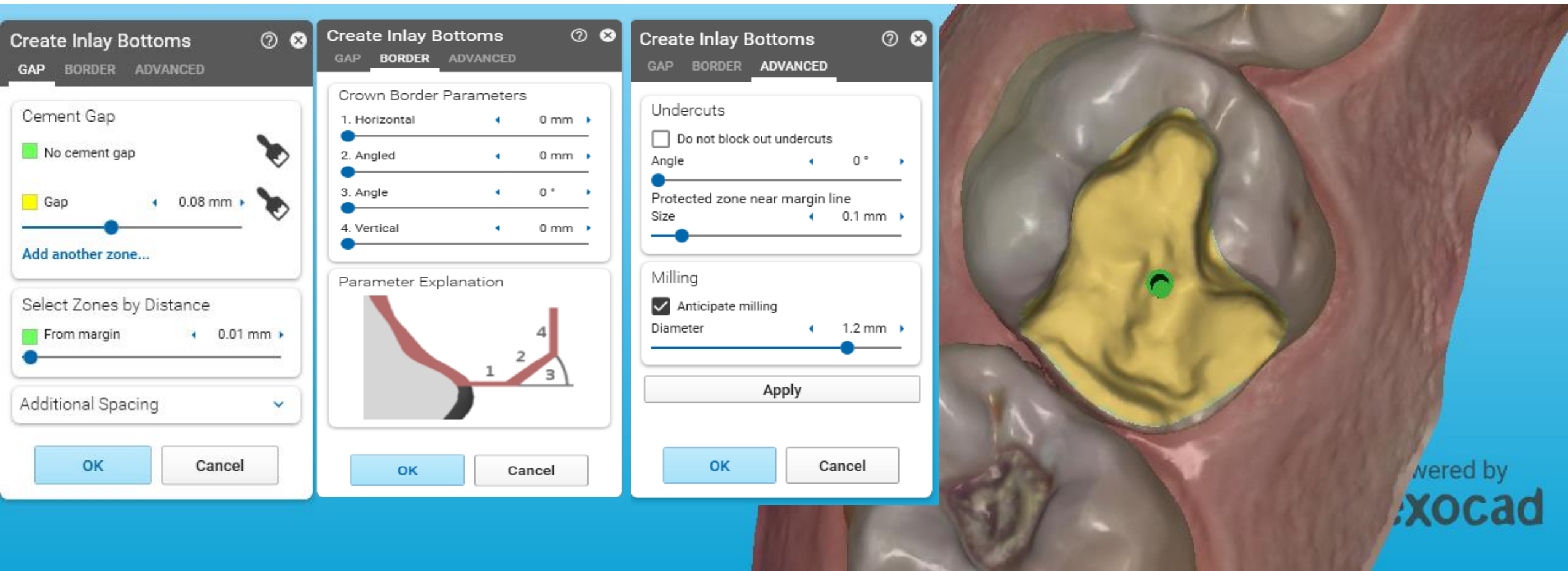
## Material

3/4-Axis



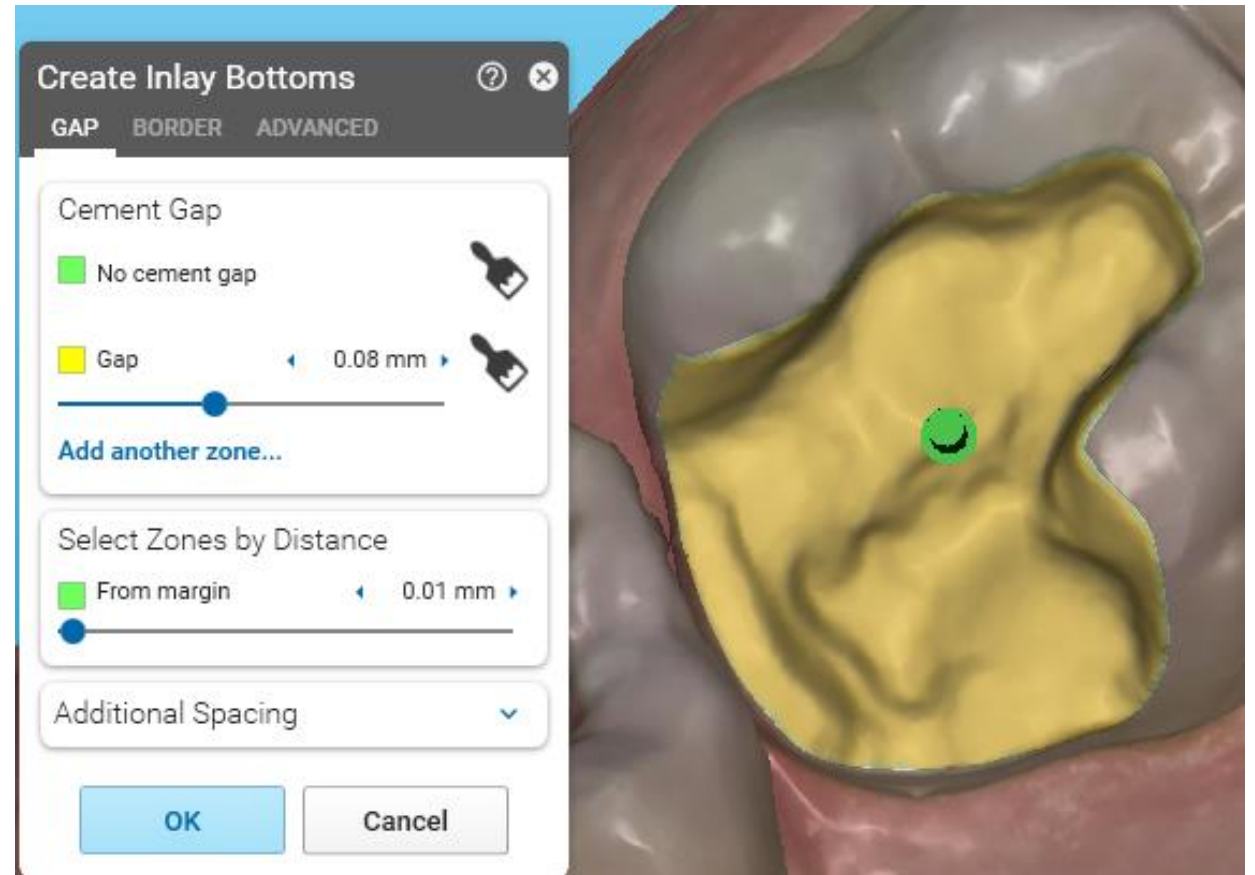
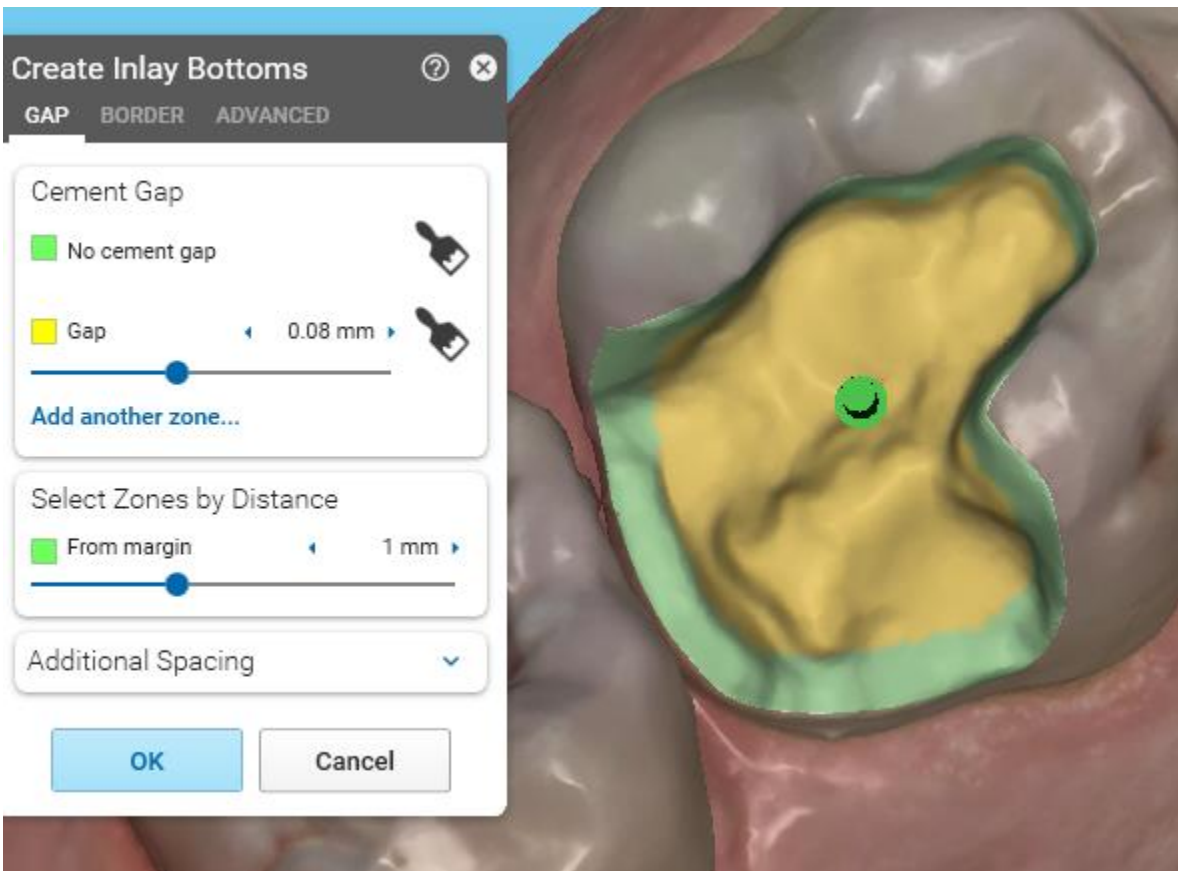
# Editing Order Details: Understanding Inlay Bottoms:

1. The term "gap" denotes the space allocated for cement, while the green areas represent regions without any cement gap.
2. Adjusting the border parameters allows for an increased margin thickness, which helps minimize chipping during the milling process (set these all to zero for Inlays & Onlays).
3. Milling anticipation is necessary to create the tool path if you are milling the restoration.



# Editing Order Details: Cement Gap Settings

- Reduce the margin zone to minimize seating problems and binding on axial walls and cavo-surface margins.
- Adjust the clearance to within the 0–0.1 mm range if binding is observed during insert visits.



# Editing Order Details: 3D Print Settings

## Generic/3D Print

Crowns and copings

Anatomic crown Eggshell crown (Provisional) Overlay

Pontics and Mockup

Anatomic pontic Eggshell pontic (Provisional) Mockup

Inlays, onlays and veneers

Inlay/Onlay Veneer

Removables and appliances

Bite splint

Residual dentition

Antagonist Adjacent tooth Omit in bridge

## Material

5-Axis / Laser / 3D Print

Castable Resin NP Metal (Laser)

Permanent Resin Temporary Resin

Titanium (Laser)

## Options & Parameters

Reset values to material defaults

Gap width of cement 0.08 mm

Border taper 0.4 mm

Hide advanced parameters

Beginning of cement gap 0.01 mm

Add. spacing 0.02 mm

Horizontal crown margin 0 mm

Angled crown margin 0 mm

Angle 0°

Vertical crown margin 0 mm

Don't block out 0.1 mm

Milling diameter 0.1 mm

Distance to antagonist 0.1 mm

Distance to neighbor -0.04 mm

Cross section of connector 9 mm²

Minimum basal distance of connector 0.5 mm

OK Cancel Clear

- Decrease beginning of cement gap into the range of 0- to 0.1 mm to prevent seating issues.
- Decrease the distance to the neighbor into the range of negative 0.02 to 0.04mm to tighten contacts.

# Editing Order Details: Emax & LiSi Settings

## Generic/Milling

### Crowns and copings



### Pontics and Mockup



### Inlays, onlays and veneers



### Removables and appliances

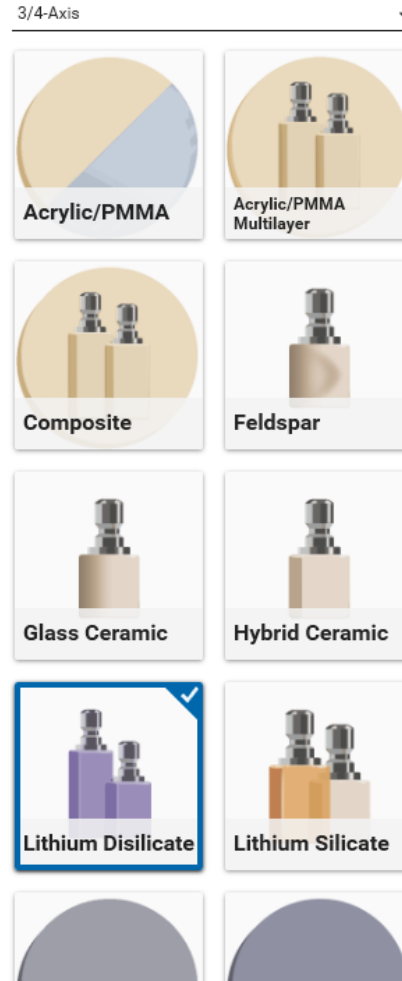


### Residual dentition



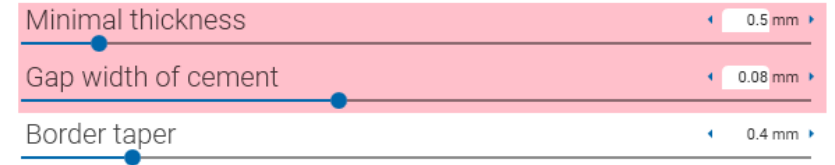
- Decrease the beginning of cement gap into range the of 0.01-0.1 mm to prevent seating issues.
- Decrease the distance to the neighbor to a range of negative 0.04 to 0.06 mm to tighten contacts.

## Material

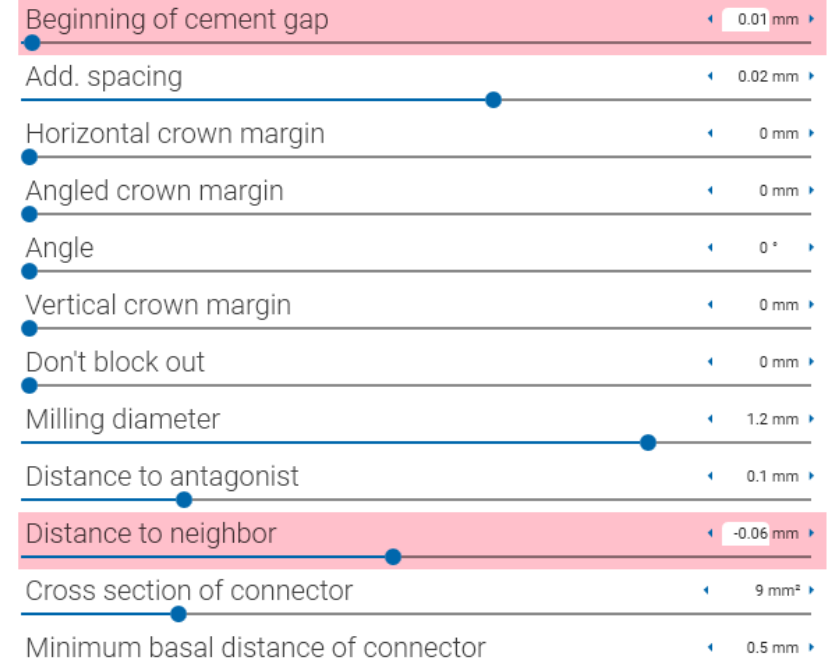


## Options & Parameters

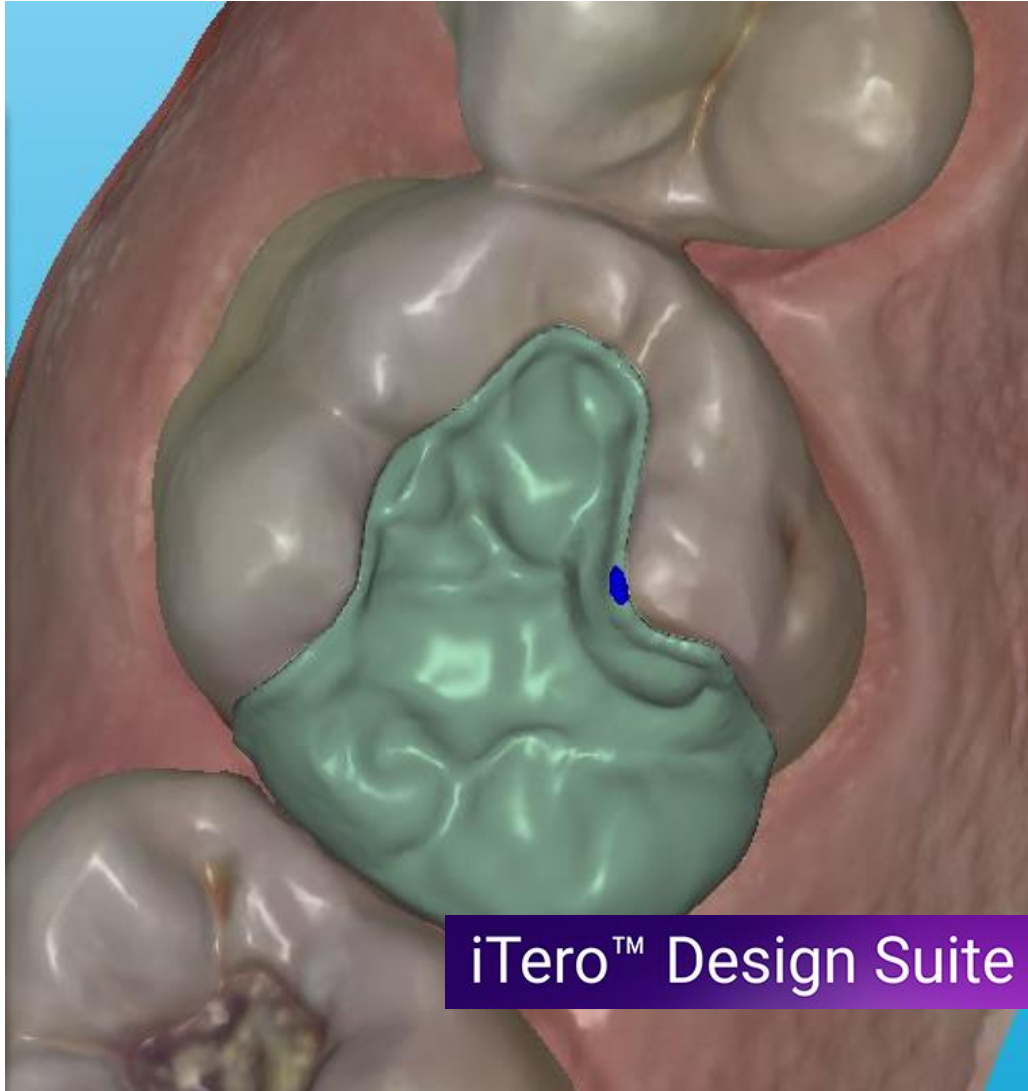
Reset values to material defaults



### Hide advanced parameters



# Designing the Restoration



Margin Line Detection ⓘ

Tooth 2

ⓘ Draw the margin. Double click to end.

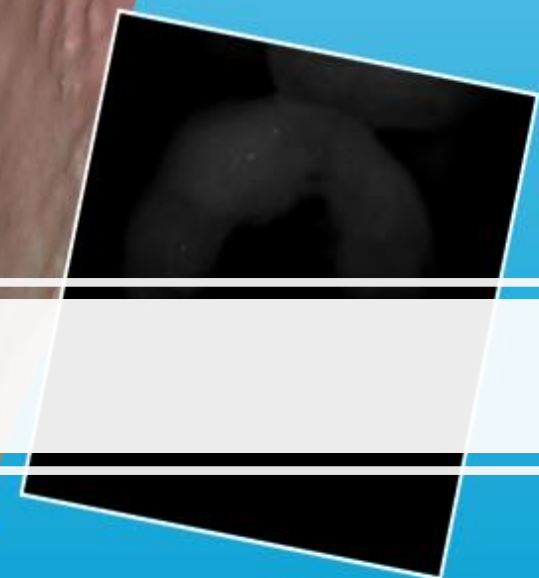
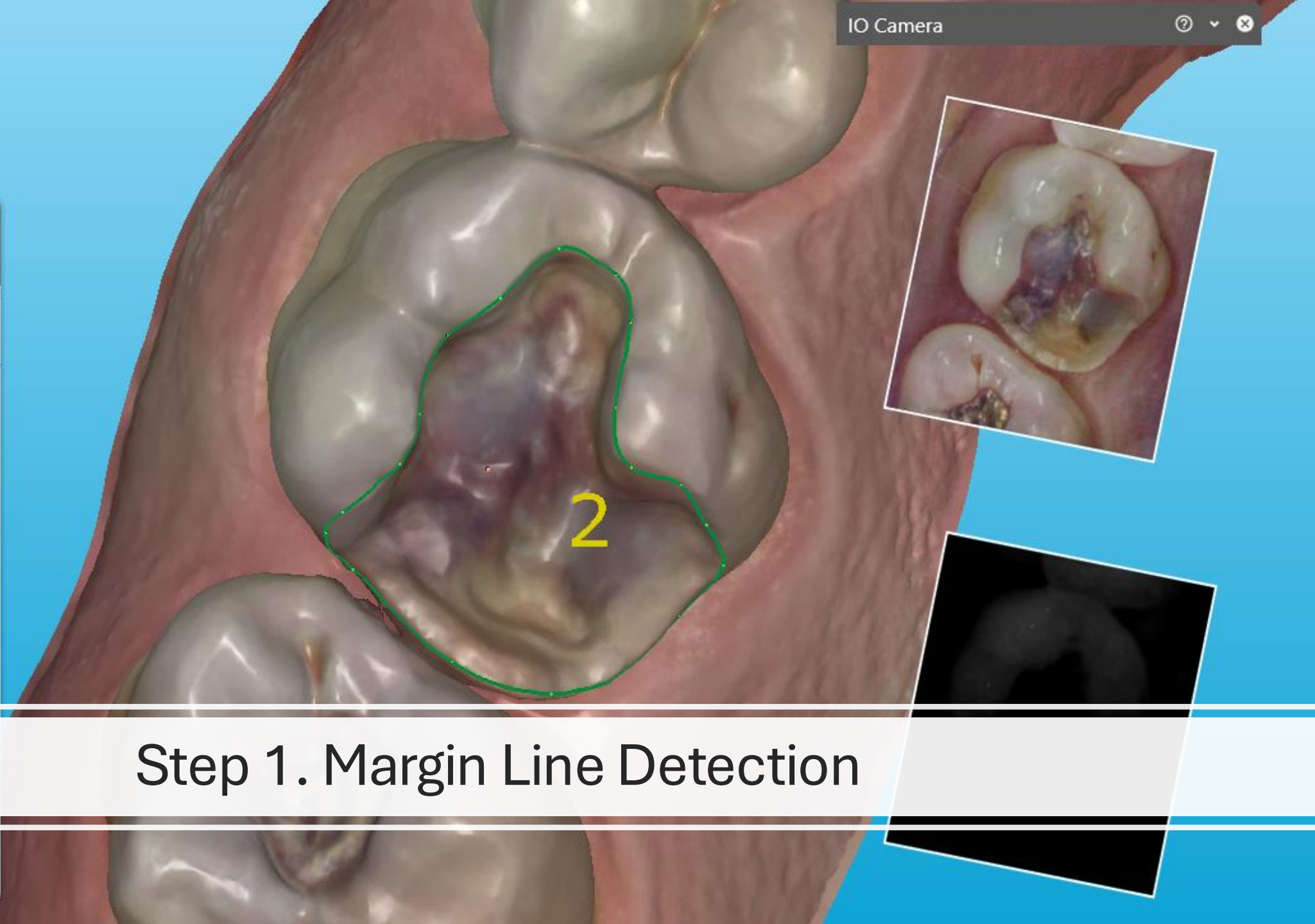
Detect Correct/Draw

Draw free Draw magnetic Edit

CLEAR

UNDO REDO

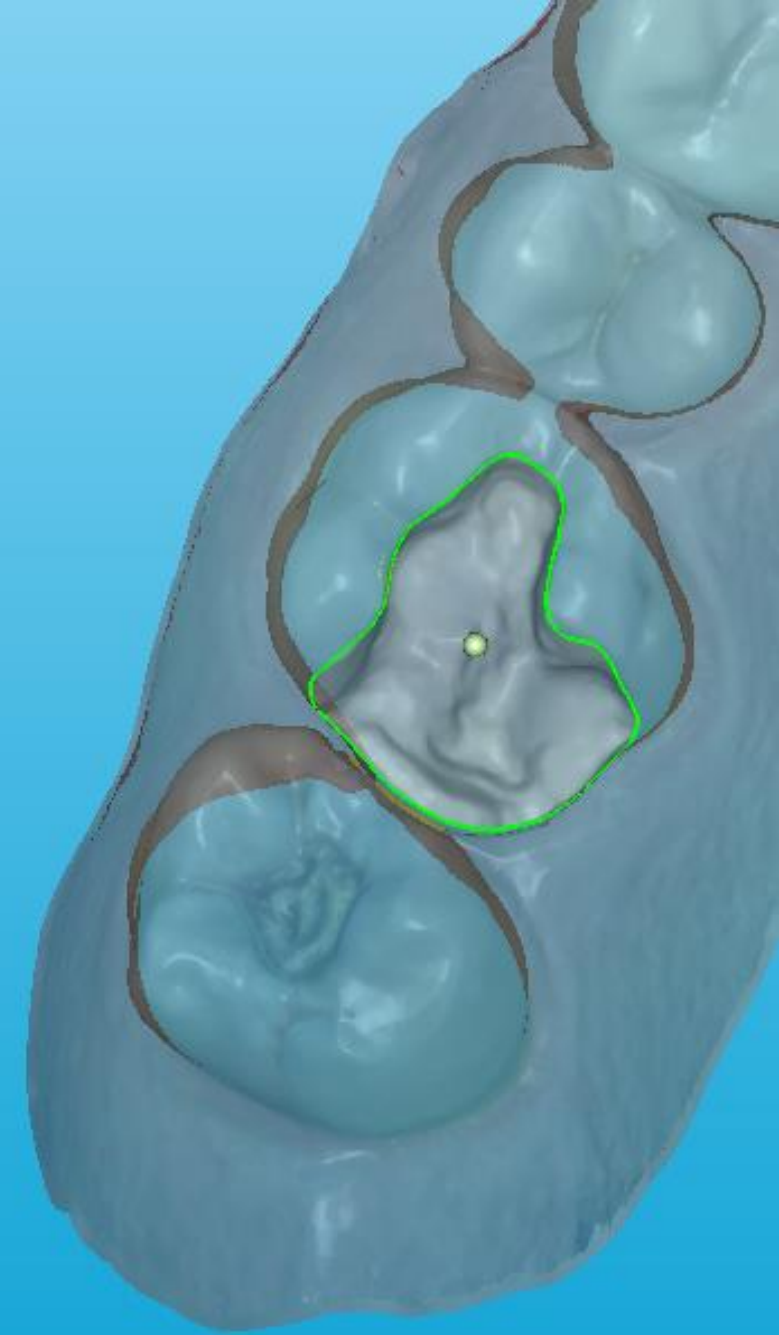
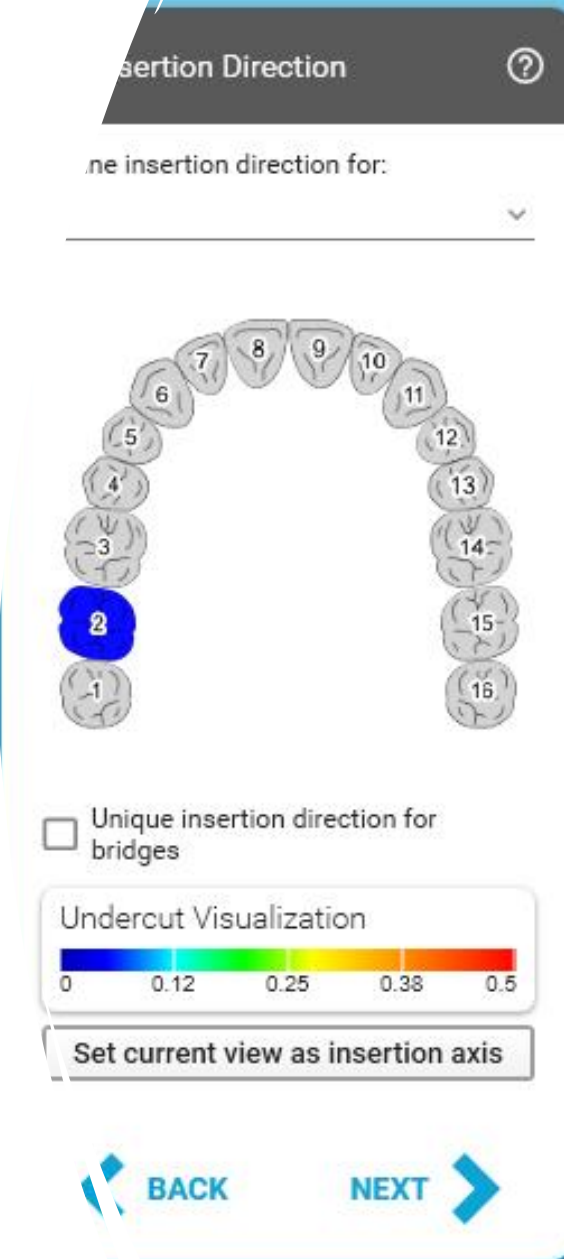
BACK NEXT



# Step 1. Margin Line Detection

# Step 2. Set Insertion Direction

---



# Step 3. Place model tooth

The image displays a software interface for placing a model tooth, consisting of four panels and a 3D model of a tooth arch.

**Panel 1 (Leftmost):** Titled "Place Model Tooth" and "Tooth 2". It includes an information icon and the text "Click and drag the tooth to change its position or shape." The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown), Tooth Library (dropdown set to "generic"), and Correct Mesial/Distal (dropdown with a swap icon).

**Panel 2:** Titled "Place Model Tooth" and "Tooth 2". It includes an information icon and the text "Click and drag the tooth to change its position or shape." The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Morph anatomy (dropdown set to "Morph anatomy"), Cut anatomy (dropdown set to "Cut anatomy"), No adaptation (dropdown set to "No adaptation"), Static/Dynamic toggle (set to "Dynamic"), No abrasion/Facets slider (set to "No abrasion"), Minimum Thickness (dropdown), Tooth Library (dropdown), and Correct Mesial/Distal (dropdown with a swap icon).

**Panel 3:** Titled "Place Model Tooth" and "Tooth 2". It includes an information icon and the text "Click and drag the tooth to change its position or shape." The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown set to "Respect normally"), Instant adaptation/Apply later toggle (set to "Instant adaptation"), Tooth Library (dropdown), and Correct Mesial/Distal (dropdown with a swap icon).

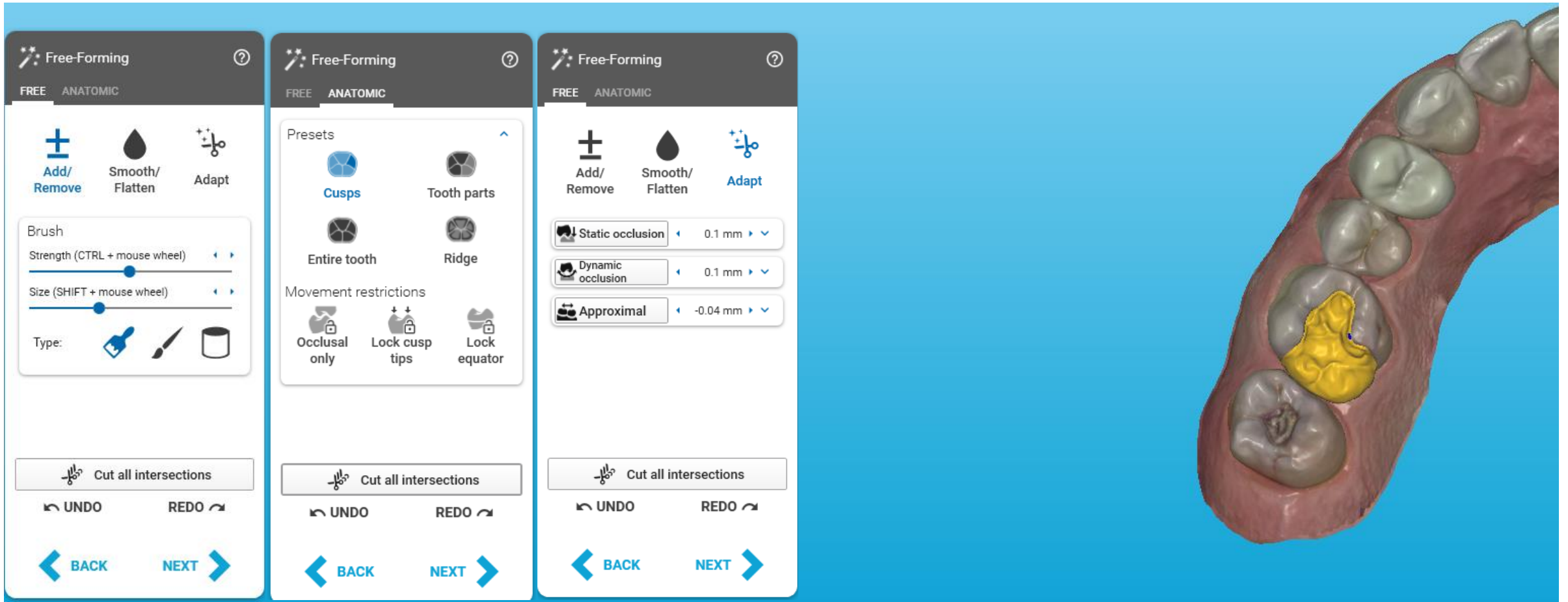
**Panel 4 (Rightmost):** Titled "Place Model Tooth" and "Tooth 2". It includes an information icon and the text "Click on 'mesial' adjacent tooth to improve automatic placement." The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown), Tooth Library (dropdown), Correct Mesial/Distal (dropdown with a swap icon), Mesial adjacent (dropdown set to "Mesial adjacent"), and Distal adjacent (dropdown set to "Distal adjacent").

Each panel has "UNDO" and "REDO" buttons at the bottom, and "BACK" and "NEXT" buttons at the bottom.

**3D Model:** A 3D model of a tooth arch is shown on the right. The teeth are colored in shades of blue, grey, and yellow. The word "Buccal" is written in cyan text to the left of the model, and "Lingual" is written in orange text to the right of the model.

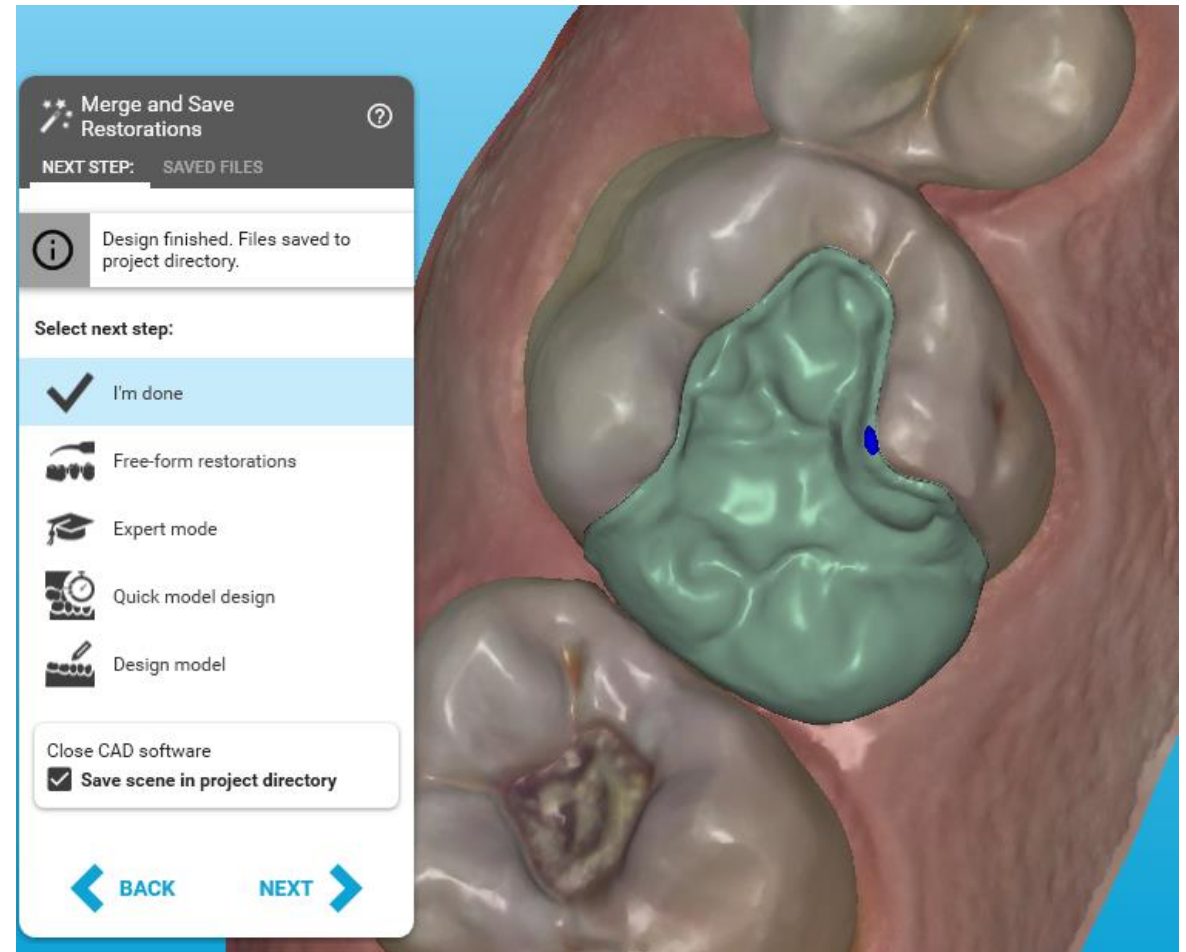
# Step 4. Free Forming

Tip: Perform anatomical movements prior to freeforming. Complete the restoration by cutting intersections and applying smoothing adjustments as necessary afterward.



The image displays three panels of the 'Free-Forming' tool interface, each with a 'FREE' and 'ANATOMIC' tab. The first panel on the left features a 'Brush' section with sliders for 'Strength (CTRL + mouse wheel)' and 'Size (SHIFT + mouse wheel)', and a 'Type' section with icons for a brush, a pencil, and a bucket. The second panel in the middle shows 'Presets' for 'Cusps', 'Tooth parts', 'Entire tooth', and 'Ridge', along with 'Movement restrictions' for 'Occlusal only', 'Lock cusp tips', and 'Lock equator'. The third panel on the right includes 'Occlusion' settings for 'Static occlusion' (0.1 mm), 'Dynamic occlusion' (0.1 mm), and 'Approximal' (-0.04 mm). All panels include 'Add/Remove', 'Smooth/Flatten', and 'Adapt' icons, a 'Cut all intersections' button, and 'UNDO' and 'REDO' buttons. Navigation arrows for 'BACK' and 'NEXT' are at the bottom of each panel. To the right of the panels is a 3D model of a tooth arch with a yellow restoration on a molar.

# Step 5. Merge and Save




# Select "Open," then choose "Open in folder," and proceed to fabrication.

cad-data > dentalproject > 249330689

Name	Date modified	Type	Size
.exoStartApp	7/17/2025 10:06 AM	File folder	
249330689.constructionInfo	7/17/2025 10:34 AM	CONSTRUCTION...	125 KB
249330689.dentalCAD	7/17/2025 10:35 AM	DENTALCAD File	135,534 KB
249330689.dentalCADscreenshot.png	7/17/2025 10:35 AM	PNG Image	2,261 KB
249330689.dentalProject	7/17/2025 10:16 AM	DENTALPROJECT ...	116 KB
249330689.matrix4	7/17/2025 10:06 AM	MATRIX4 File	1 KB
249330689.patientInfo	7/17/2025 10:06 AM	PATIENTINFO File	1 KB
249330689-17-inlay_cad.stl	7/17/2025 10:34 AM	Meshmixer Docu...	971 KB
249330689-iocamera-itero.matrix4	7/17/2025 10:06 AM	MATRIX4 File	1 KB
249330689-iocamera-itero.zip	7/17/2025 10:06 AM	Compressed (zipp...	31,103 KB
249330689-lowerjaw.ply	7/17/2025 2:06 PM	3D Object	19,449 KB
249330689-upperjaw.ply	7/17/2025 2:06 PM	3D Object	23,664 KB
249330689-upperjaw-situ.ply	7/17/2025 2:06 PM	3D Object	24,755 KB
gallery.jpg	6/24/2025 7:07 PM	JPG File	566 KB
gallery_penta_front_m.jpg	6/24/2025 7:07 PM	JPG File	509 KB
gallery_penta_lower_m.jpg	6/24/2025 7:07 PM	JPG File	434 KB
gallery_penta_patientleft_m.jpg	6/24/2025 7:07 PM	JPG File	370 KB
gallery_penta_patientright_m.jpg	6/24/2025 7:07 PM	JPG File	397 KB
gallery_penta_upper_m.jpg	6/24/2025 7:07 PM	JPG File	551 KB
import.log	7/17/2025 10:06 AM	Text Document	4 KB
itero_export_#249330689_v50.xml	7/17/2025 2:06 PM	Microsoft Edge H...	4 KB
itero_Rx_249330689.pdf	7/17/2025 2:06 PM	Microsoft Edge P...	294 KB
lower_jaw_with_ditch_#249330689_textur...	7/17/2025 2:06 PM	JPG File	1,912 KB
upper_jaw_pretreatment_#249330689_tex...	7/17/2025 2:06 PM	JPG File	2,653 KB
upper_jaw_with_ditch_#249330689_textur...	7/17/2025 2:06 PM	JPG File	2,695 KB

### Order details

3D preview    Media

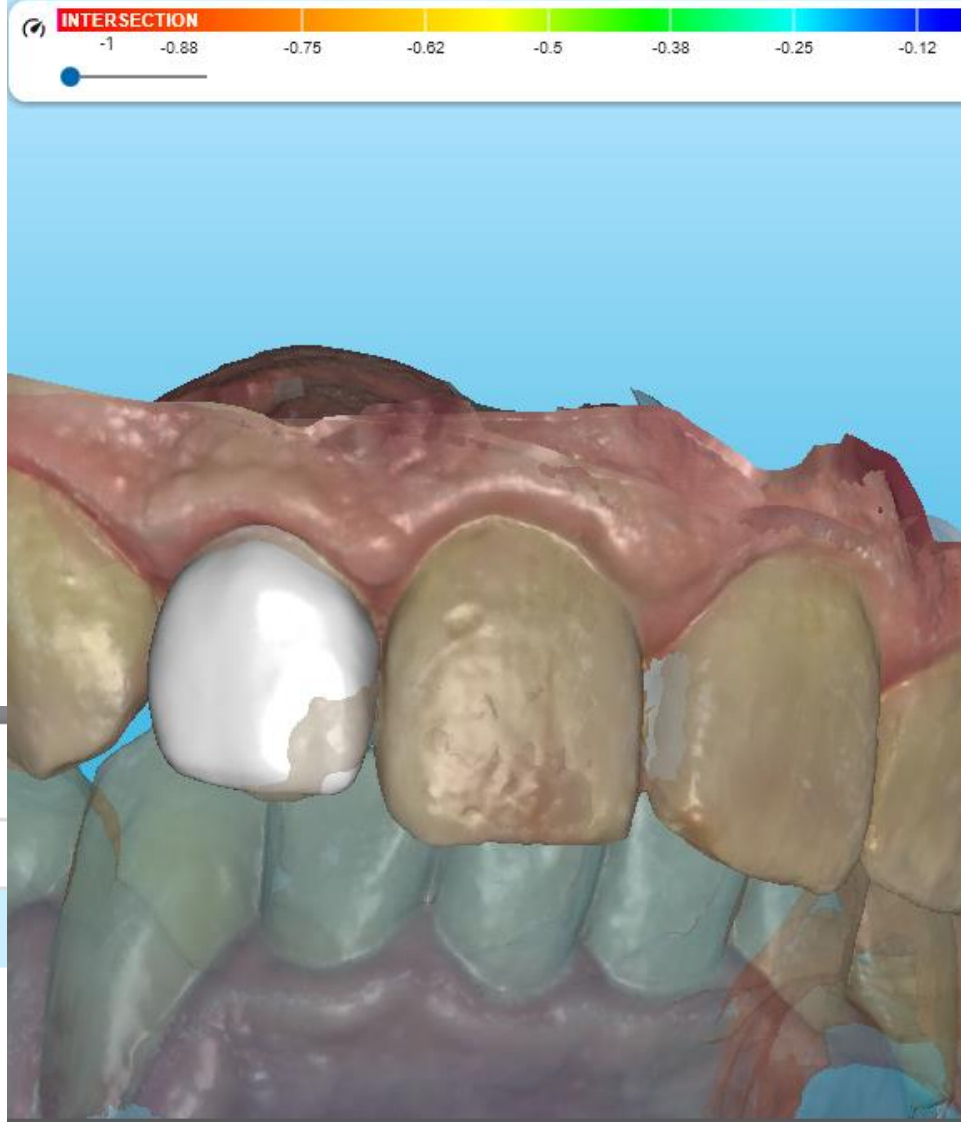


Scan    CAD

Patient: Kevin, McGratten  
Order ID: 249330689    Scan date: 24/06/2025

[Edit order details](#)    [Open in folder](#)

# Single Unit Veneers (3/4 crown)



## Orders

ID	Scan Date	Procedure	NIRI	Order Status
251770605	07/14/2025	Fixed Restorative	Yes	Completed
237375585	03/17/2025	Fixed Restorative	No	Completed
230336764	01/16/2025	Study Model/iRecord	Yes	Completed

View Rx    Viewer    Export    Export Gallery

iTero Scan Report    iTero Design Suite



Launch Design Suite

# Edit Order Details: Emax Settings and Parameters

## Generic/3D Print

### Crowns and copings

 **Anatomic crown**  **Eggshell crown (Provisional)**  **Overlay**


### Pontics and Mockup

 **Anatomic pontic**  **Eggshell pontic (Provisional)**  **Mockup**

### Inlays, onlays and veneers

 **Inlay/Onlay**  **Veneer**

### Removables and appliances

 **Bite splint**


### Residual dentition

 **Antagonist**  **Adjacent tooth**  **Omit in bridge**

### Additional Scans?


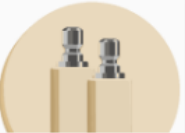
 **Pre-op model**



### Additional design steps in wizard?


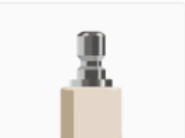
 **Copy or mirror**


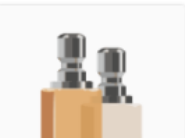
## Material


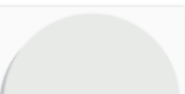
3/4-Axis

 **Acrylic/PMMA**  **Acrylic/PMMA Multilayer**

 **Composite**  **Feldspar**

 **Glass Ceramic**  **Hybrid Ceramic**

 **Lithium Disilicate**  **Lithium Silicate**


## Options & Parameters


 Minimal thickness 0.6 mm


 Gap width of cement 0.05 mm


 Border taper 0.4 mm


### Hide advanced parameters


 Beginning of cement gap 1 mm


 Add. spacing 0.02 mm


 Horizontal crown margin 0 mm


 Angled crown margin 0 mm


 Angle 0°

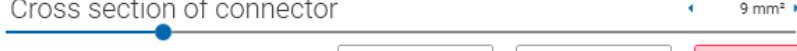
 Vertical crown margin 0 mm

 Don't block out 0 mm

 Milling diameter 1.2 mm

 Distance to antagonist 0.1 mm

 Distance to neighbor 0 mm

 Cross section of connector 9 mm<sup>2</sup>

OK  Cancel

# Edit Order Details: 3D Print: Settings and Parameters

## Generic/3D Print

### Crowns and copings

 **Anatomic crown**  **Eggshell crown (Provisional)**  **Overlay**

### Pontics and Mockup

 **Anatomic pontic**  **Eggshell pontic (Provisional)**  **Mockup**

### Inlays, onlays and veneers

 **Inlay/Onlay**  **Veneer**

### Removables and appliances


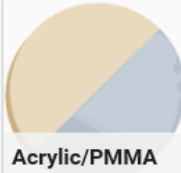
 **Bite splint**


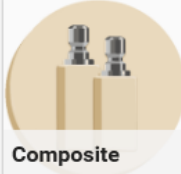
### Residual dentition


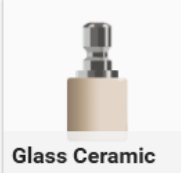
 **Antagonist**  **Adjacent tooth**  **Omit in bridge**

## Material

5-Axis / Laser / 3D Print

 **3D Print**  **Acrylic/PMMA**

 **Acrylic/PMMA Multilayer**  **Composite**

 **Feldspar**  **Glass Ceramic**

 **Hybrid Ceramic**  **Lithium Disilicate**

## Options & Parameters

 **Copy of miller**

Minimal thickness

Gap width of cement

Border taper

### Hide advanced parameters

Beginning of cement gap

Add. spacing

Horizontal crown margin

Angled crown margin

Angle

Vertical crown margin

Don't block out

Milling diameter

Distance to antagonist

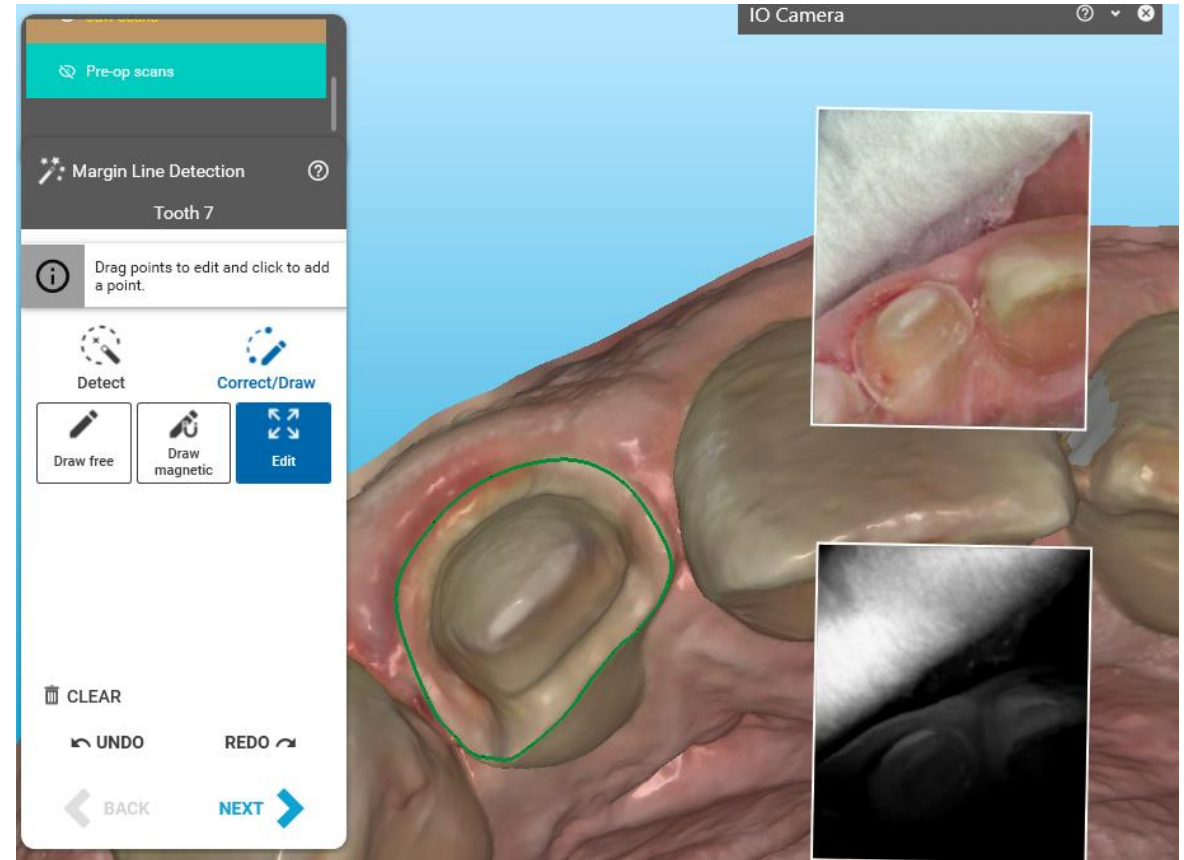
Distance to neighbor

Cross section of connector

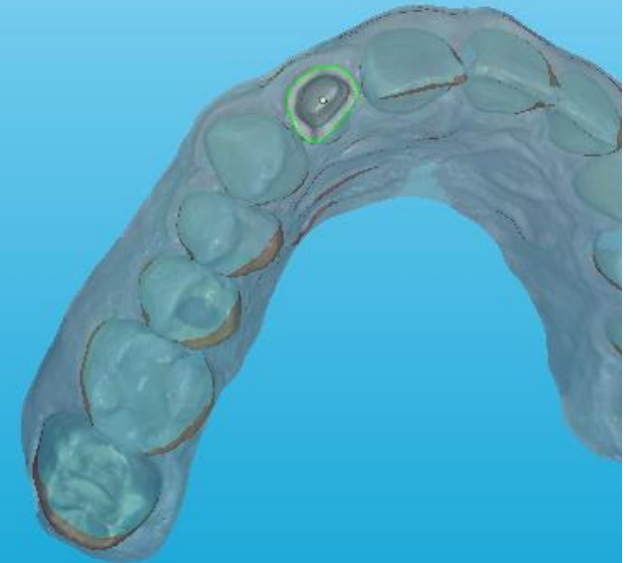
OK  Cancel

# Designing the Restoration

## Step 1. Mark Margins



# Step 2. Set Insertion Direction

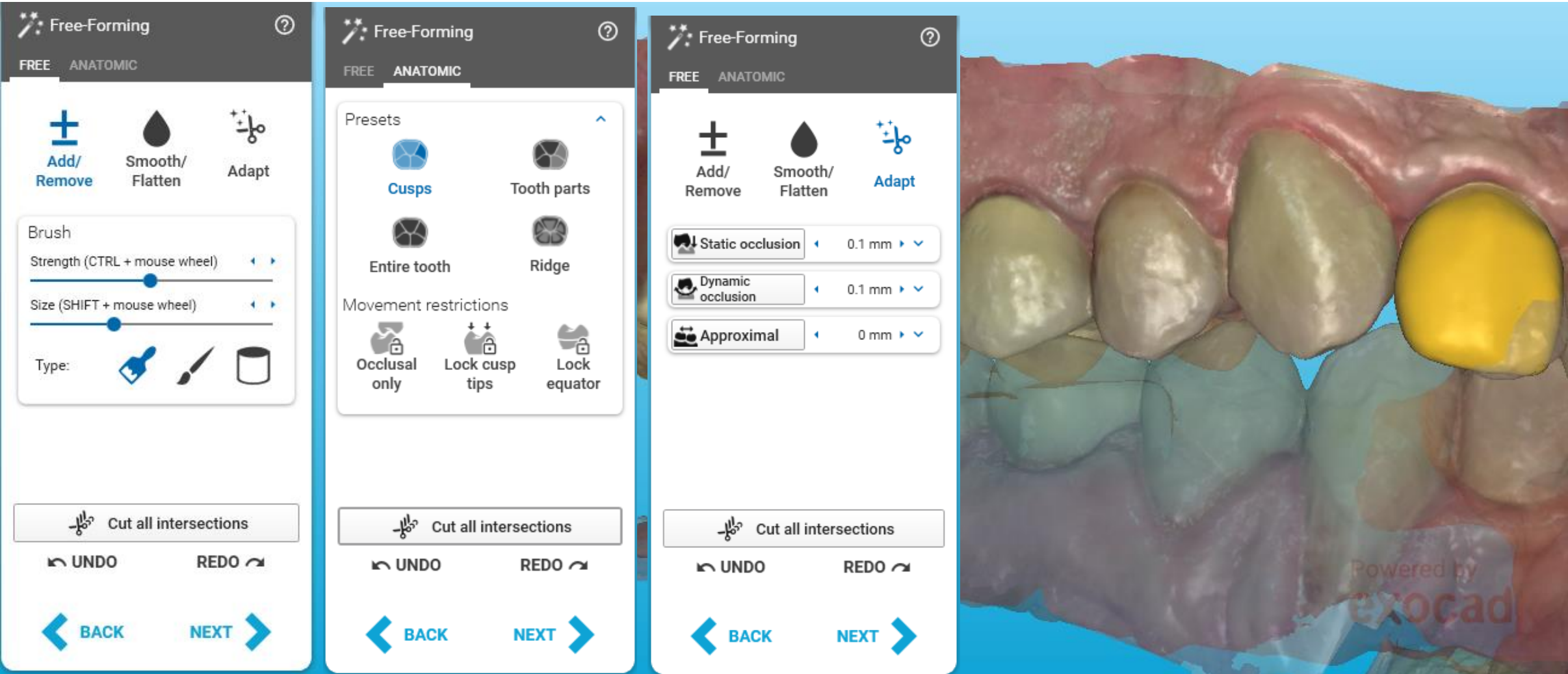


# Step 3. Place Tooth Model

Design Suite will propose a tooth, typically in a better position if a pretreatment scan is present. Adjust as needed.

The image displays the 'Place Model Tooth' software interface, showing four panels of settings for 'Tooth 7' and a 3D model of a tooth. The panels are arranged horizontally, each with a title bar and a help icon. The first panel on the left has a title bar with a question mark icon and the text 'Place Model Tooth' and 'Tooth 7'. Below the title bar is an information icon and the text 'Click on 'mesial' adjacent tooth to improve automatic placement.' The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown), Tooth Library (dropdown), Correct Mesial/Distal (dropdown with 'Mesial adjacent' selected), and buttons for UNDO, REDO, BACK, and NEXT. The second panel has a title bar with a question mark icon and the text 'Place Model Tooth' and 'Tooth 7'. Below the title bar is an information icon and the text 'Click and drag the tooth to change its position or shape.' The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Morph anatomy (dropdown with 'Morph anatomy' selected), Cut anatomy (checkbox), No adaptation (checkbox), Static (checkbox), Dynamic (checkbox), No abrasion (checkbox), Facets (checkbox), Minimum Thickness (dropdown), Tooth Library (dropdown), and Correct Mesial/Distal (dropdown). The third panel has a title bar with a question mark icon and the text 'Place Model Tooth' and 'Tooth 7'. Below the title bar is an information icon and the text 'Click and drag the tooth to change its position or shape.' The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown), Respect normally (checkbox), Tooth Library (dropdown with 'generic' selected), and Correct Mesial/Distal (dropdown). The fourth panel has a title bar with a question mark icon and the text 'Place Model Tooth' and 'Tooth 7'. Below the title bar is an information icon and the text 'Click on 'mesial' adjacent tooth to improve automatic placement.' The settings include: Position/Shape (dropdown), Adaptation to Antagonist (dropdown), Minimum Thickness (dropdown), Tooth Library (dropdown), Correct Mesial/Distal (dropdown with 'Mesial adjacent' selected), and Distal adjacent (dropdown). The 3D model on the right shows a tooth with a yellow highlight on the mesial side. The background is a light blue gradient. The Exocad logo is in the bottom right corner.

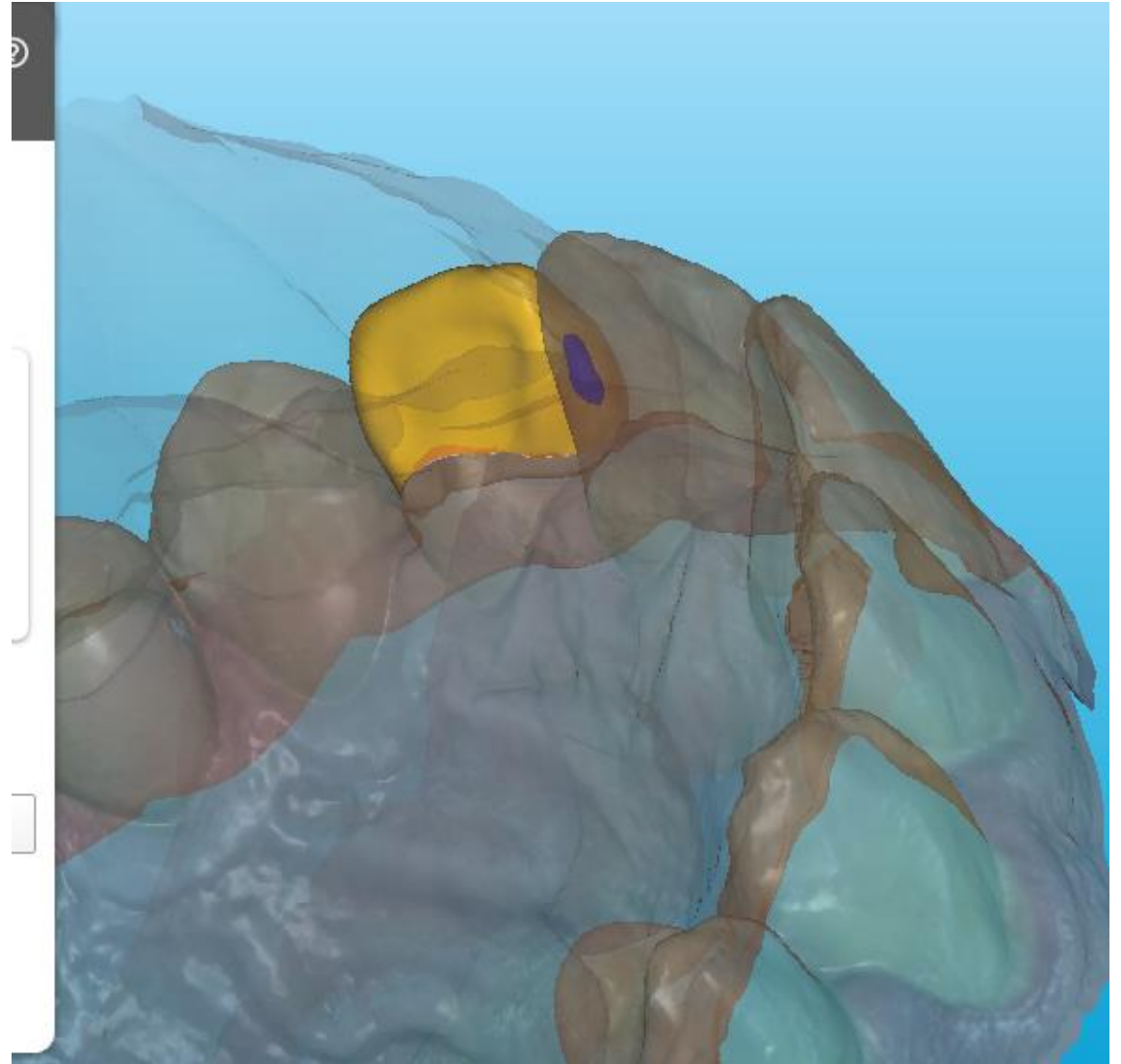
# Step 4. Freeforming



# Freeforming Tips:

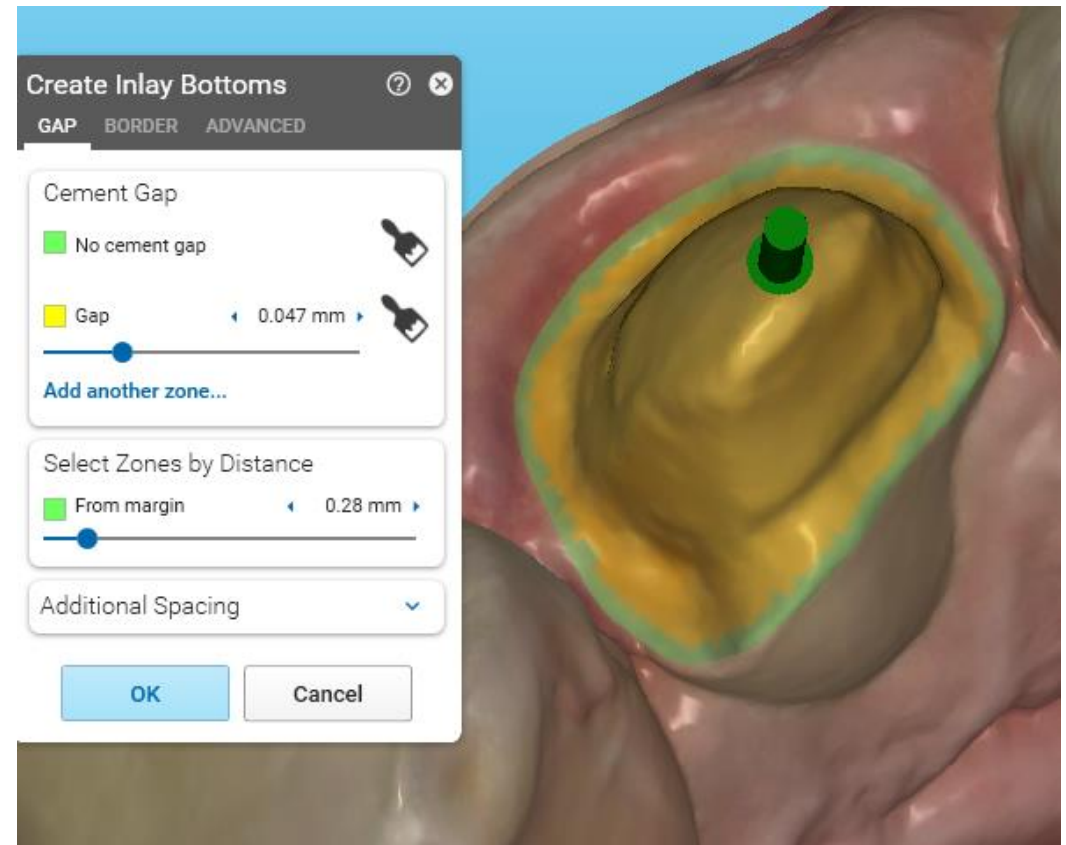
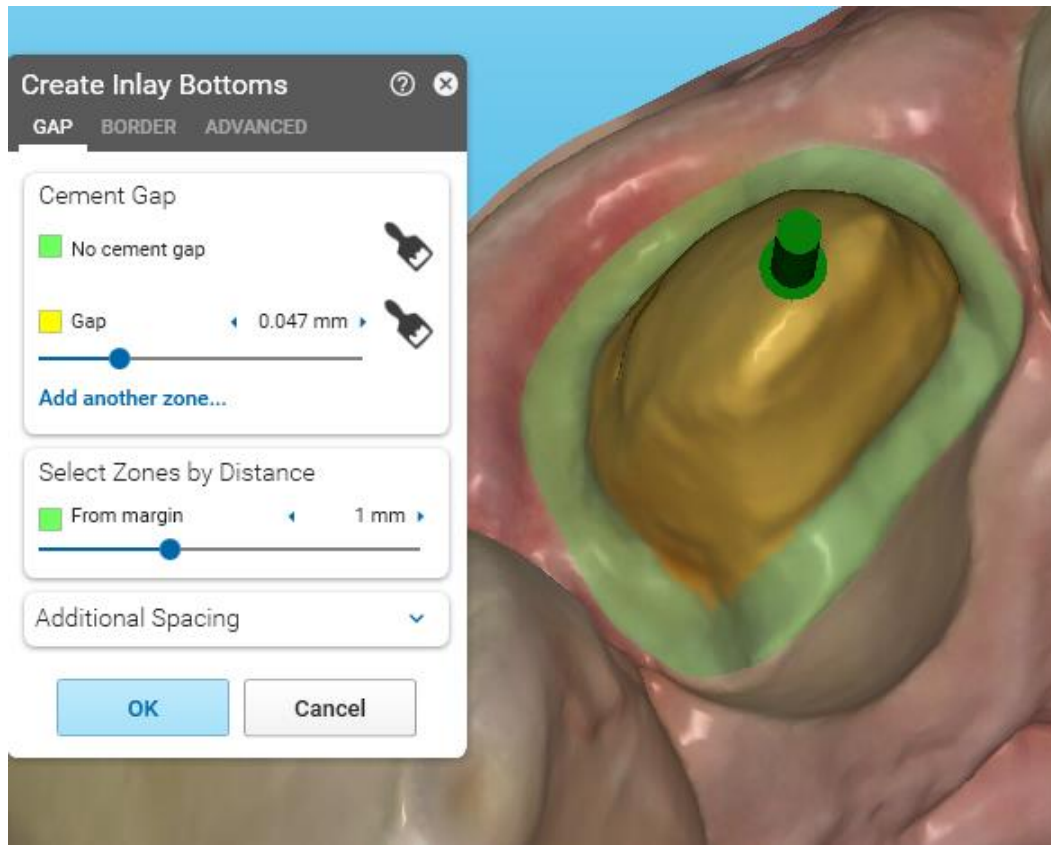
---

- Begin with anatomic movements, followed by free-form adjustments, and complete the process by adapting the tooth, making any necessary touch-ups after adaptation.
- Reduce the opacity of jaw scans when examining contacts for better clarity.

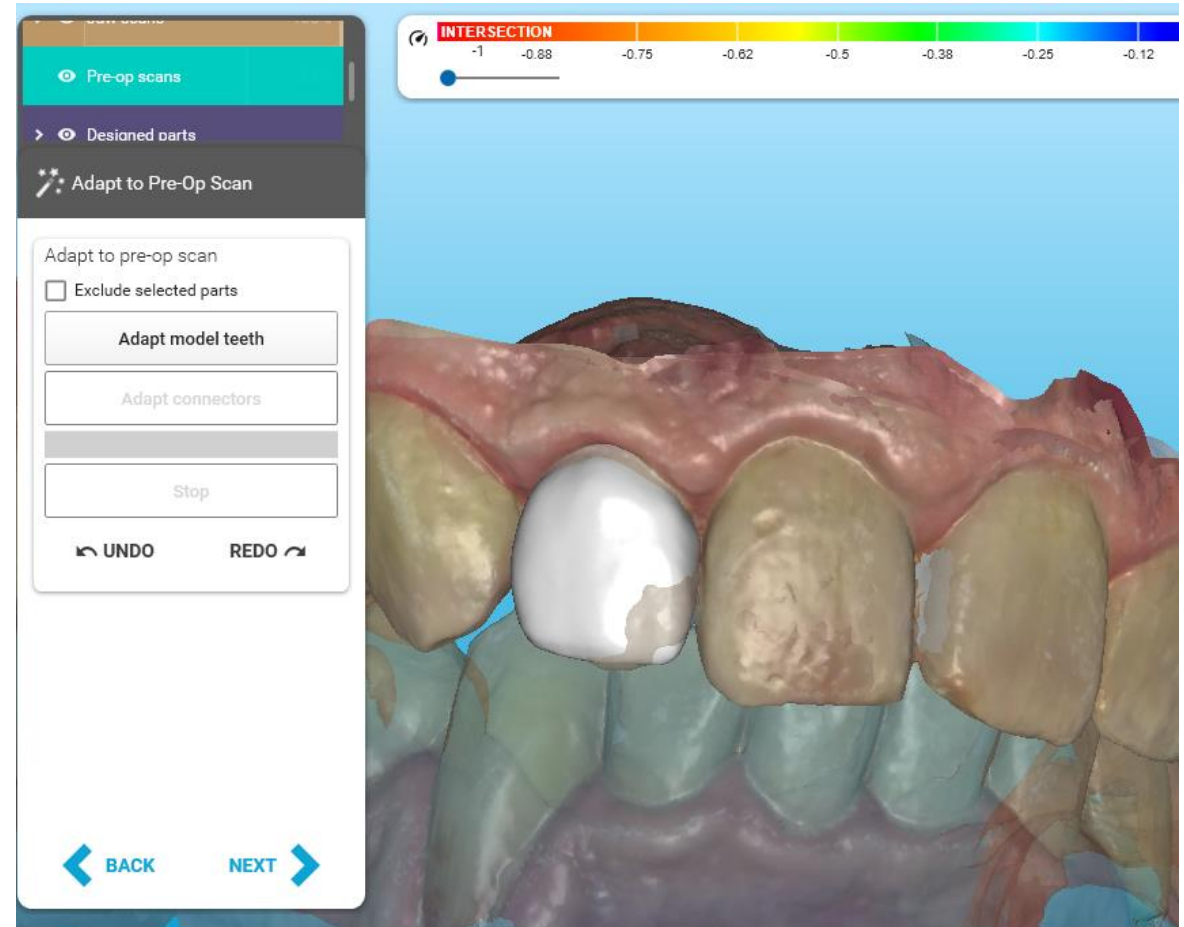


# Expert Mode: Bottoms

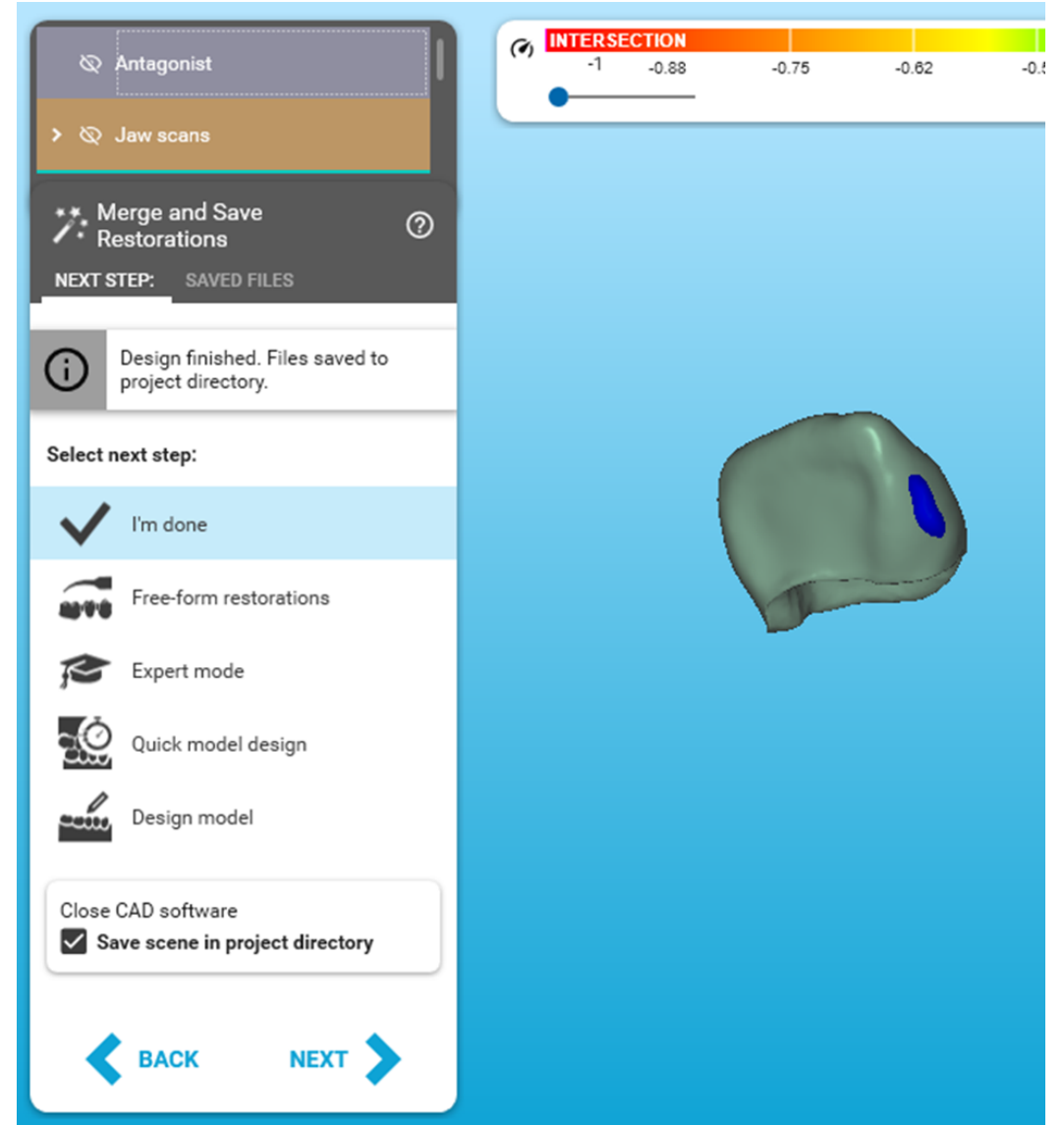
By default, Design Suite omits the bottoms because they can be preset in the options and parameters during the work order setup. If you need to modify the bottoms or adjust the margins, you can switch to expert mode to access more advanced tools.



# Step 5. Adapt to Pre-op (optional)



Step 6. Merge & Save >> Open in Explorer and proceed to fabrication.





# Designing Study Models

Design Suite

Powered by  
**exocad**

# Creating Solid Models Using Itero Design Suite

## iTero™ Design Suite


Review. Design. Produce.

Production software

No installed production device found.

### Order details

3D preview   Media



Scan   Model   CAD

Patient: Erik, Mendelsohn  
Order ID: 143410691   Scan date: 06/11/2023

Edit order details   Open in folder

### Design and model

#### Design

Material configuration for CAD

exocad Generic/3D Print Default

Design

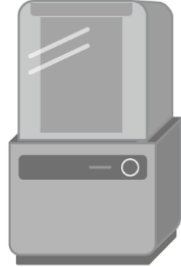
#### Model Creator

Material configuration for models

exocad Generic Default

Create model

### Production



Produce

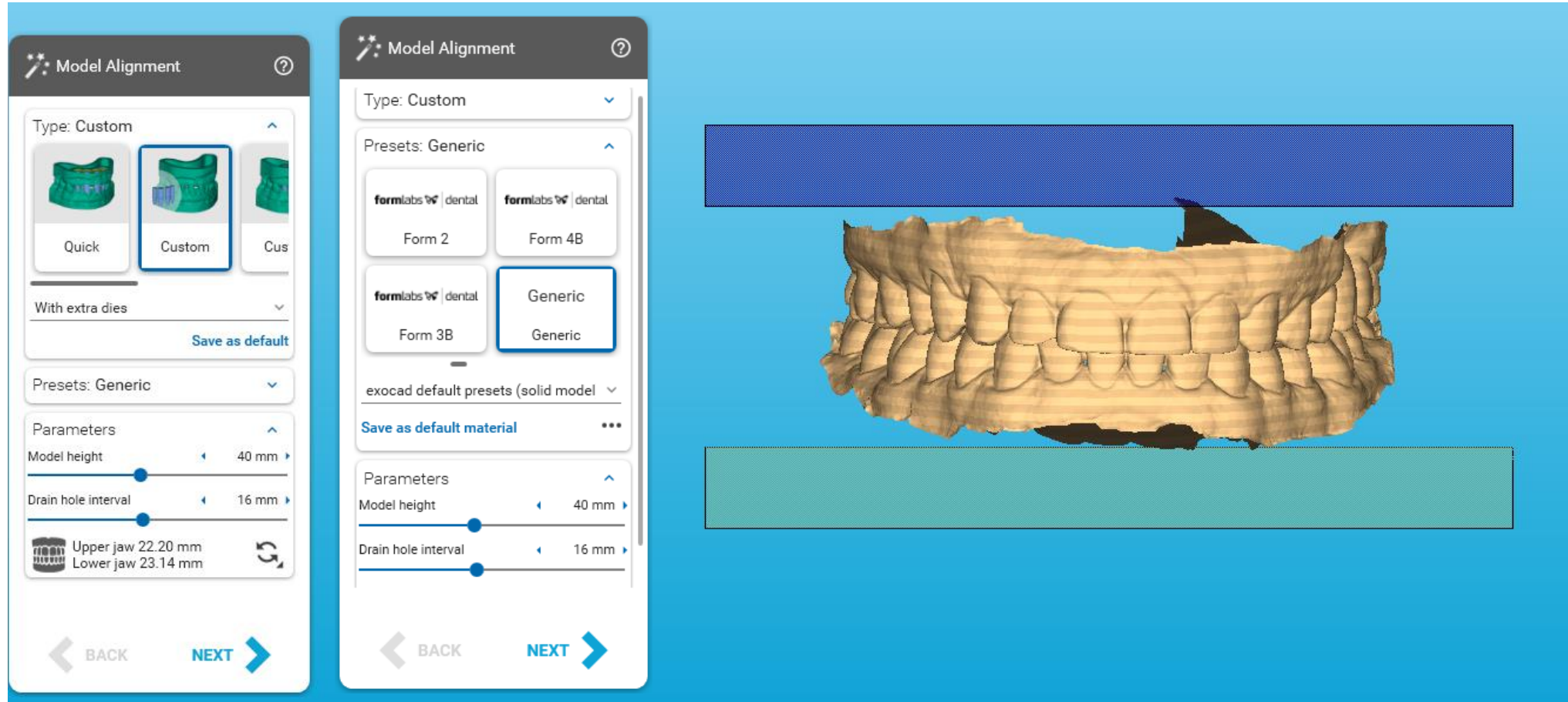
# Study Models/Whitening trays

---

- Use Custom>>for study models as this does not automatically add supports pins.
- Add attachments to make print removal easier.
- Remove the palate to improve the suction effect during fabrication in scan data edit or or add holes later in Chitubox.

# Study Model Settings

Choose Custom>>Exocad Generic>>Solid Defaults



# Edit Scan Data

- Trim any excess material that is not needed
- Cut out the palate if you are making whitening trays to improve suck down process. This also saves resin.



# Toggle Tooth Dies

Click.. Next, since we are not actually toggling any dies.

 Toggle Tooth Dies

Select teeth that should be detachable in the model (CTRL+click or SHIFT+click to toggle extra die):



A diagram of a dental arch with 32 numbered teeth. The teeth are arranged in a semi-circle, with the central incisors at the top. The numbering starts from the center and goes outwards to the sides, then down to the bottom and back up to the center. The numbers are: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32.

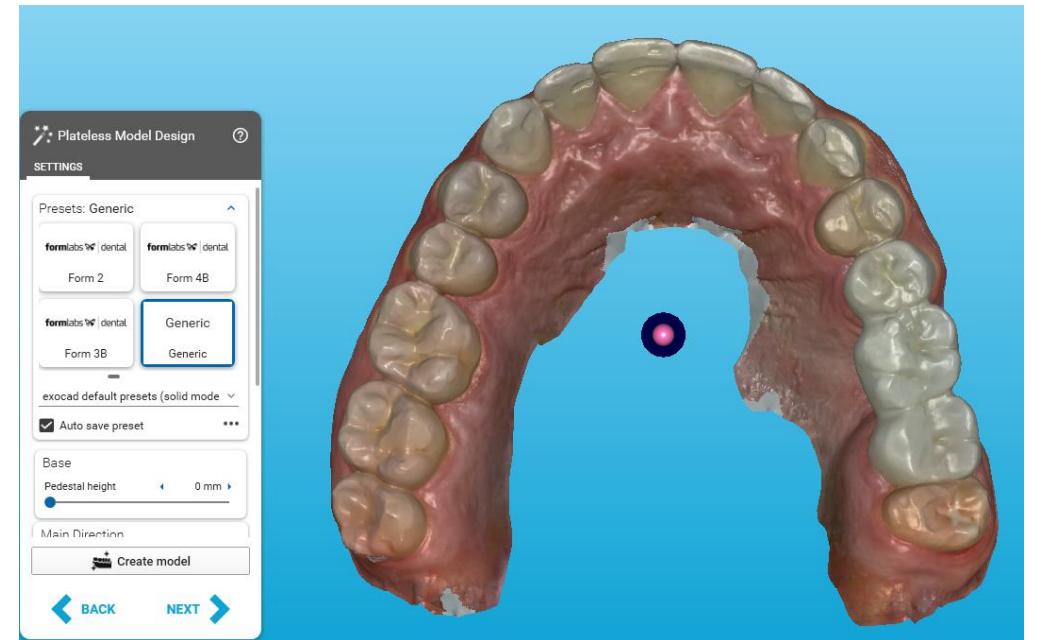
 BACK  NEXT



A 3D model of a human dental arch, showing the teeth and gums. The model is rendered in a realistic style with a blue background. The teeth are white and yellowish, and the gums are pinkish-red. The model is shown from a slightly elevated perspective, showing the front and sides of the arch.

# Plateless Model Design-

- Tip: Click next unless you change settings or orientation. If you do, click Create Model. Otherwise, it will automatically generate the model when you hit next.



# Attachments: Adding a 3D Print Chamfer and Drain holes

- Add a print chamfer in the back of the model to make it easier to remove the model from the build plate Add a print chamfer on the back of the model to make it easier to remove from the build plate with a metal spatula.
- Add drain holes around the edges of the model. This creates grip points for removal and prevents excessive suction in the initial layers of the print.
- Add Text if desired prior to hitting next.

Model Attachments

ATTACHMENTS TEXT

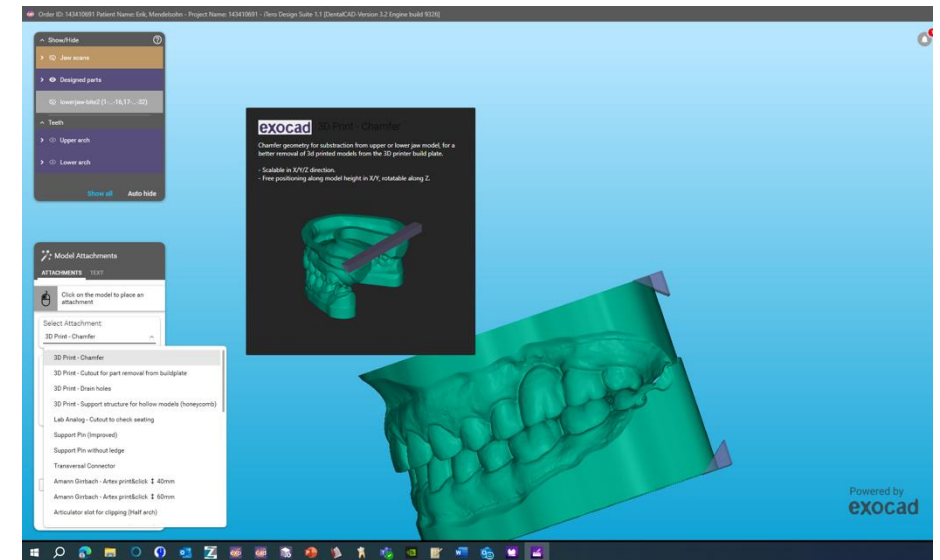
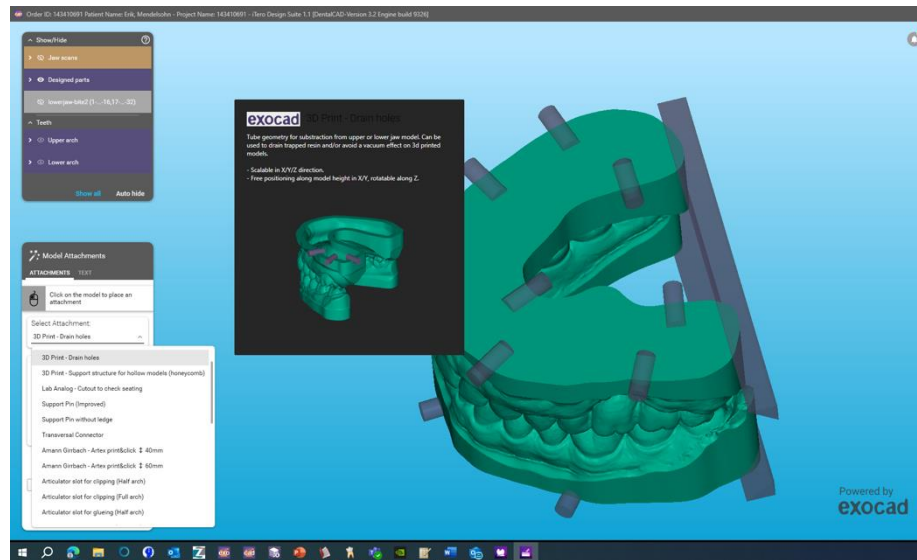
Click on the model to place an attachment

Select Attachment:  
3D Print - Support structure for hollow...

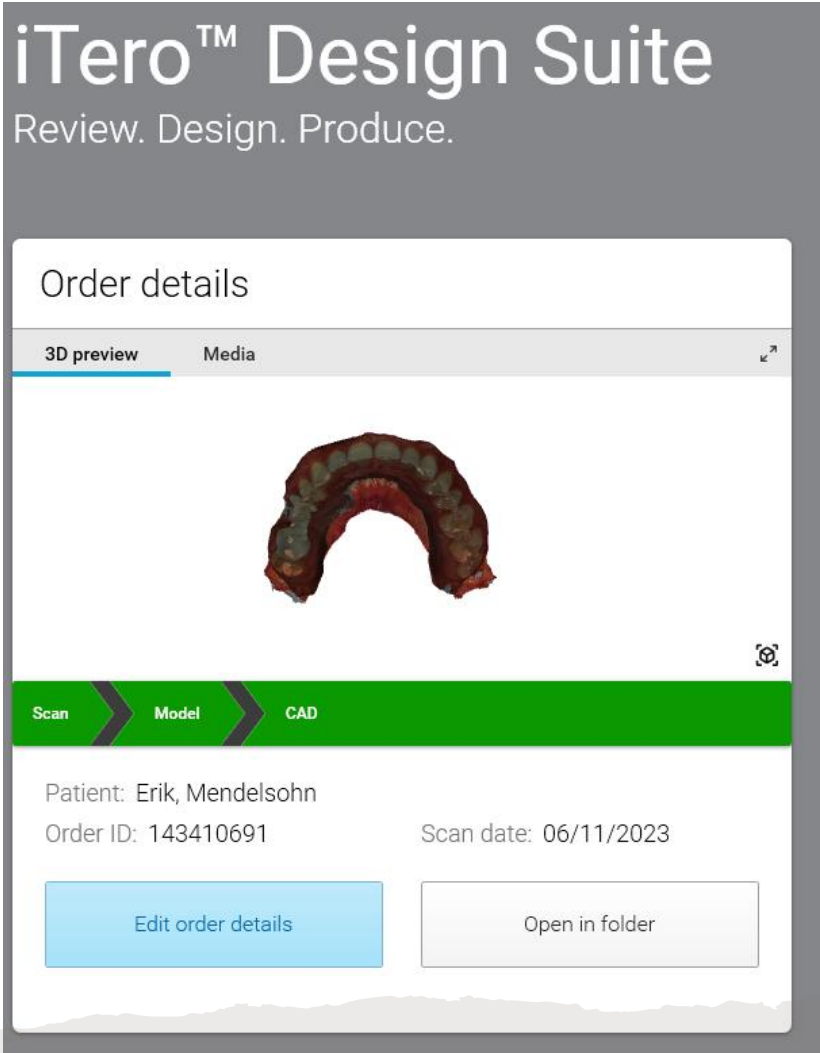
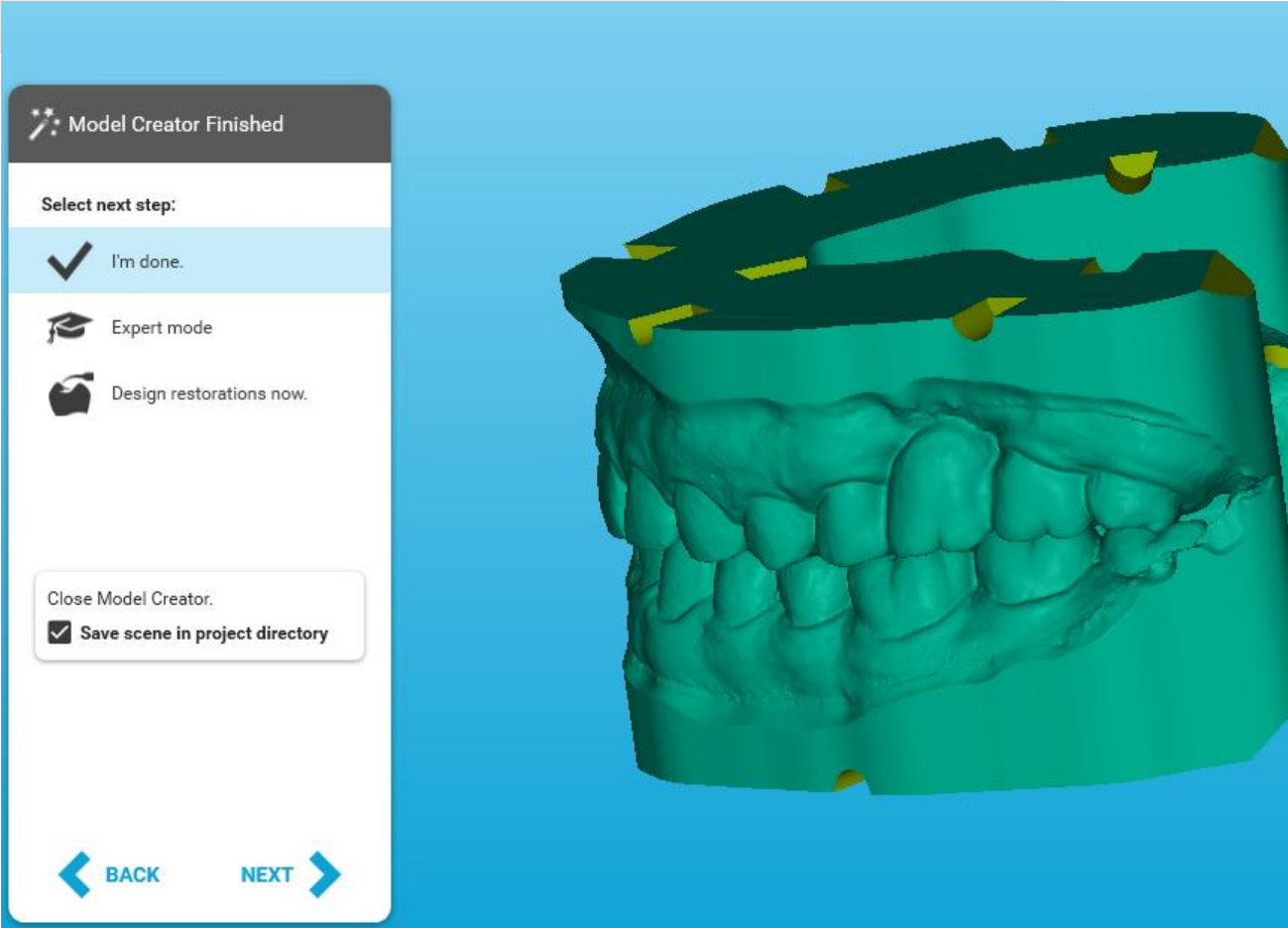
Scale 100 %

Delete all attachments

BACK NEXT

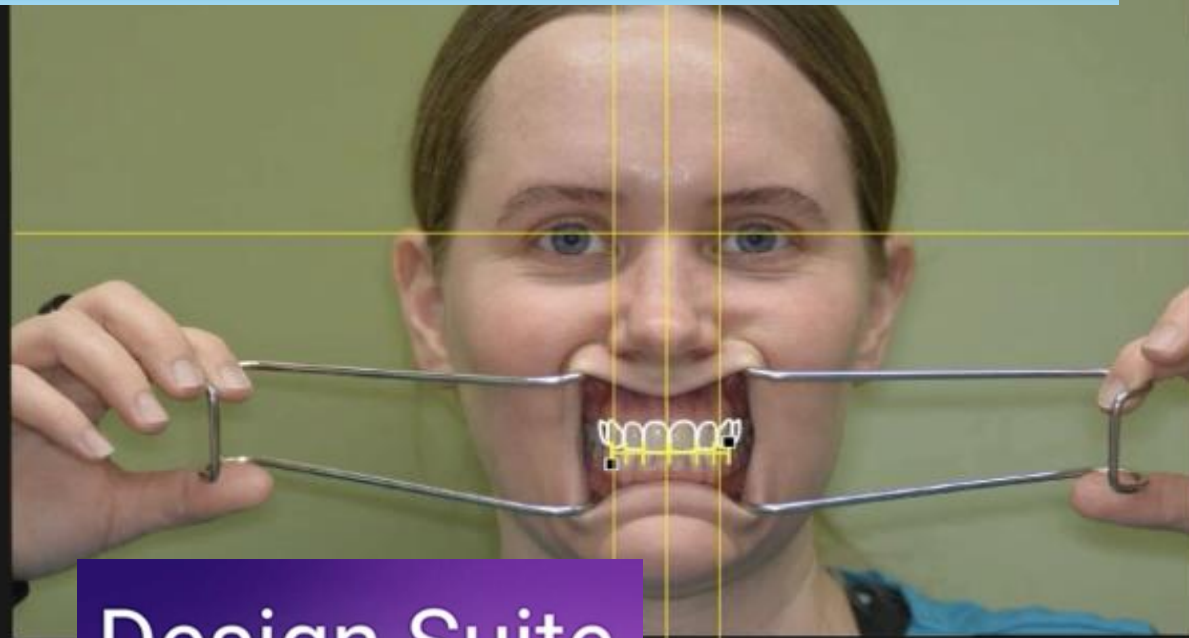


Click I'm Done and Open in Folder to Print.



# Design Suite Smile Mockups.

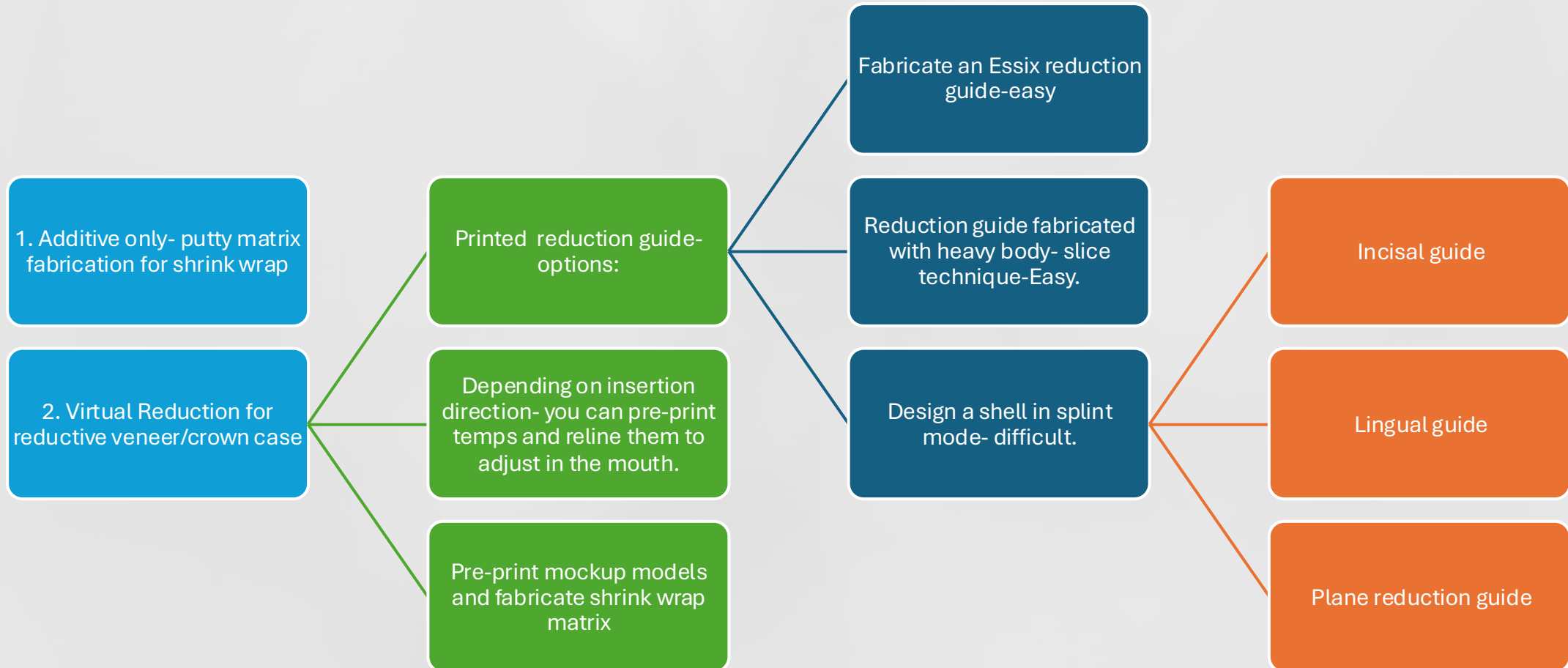
- File
- Upload
- Back
- Instant Smiles
- Veneers
- Smile Editing
- Braces
- Templates
- Smile Curve
- Proportion Guide
- Width:Height Ratio
- Reference Line



Design Suite



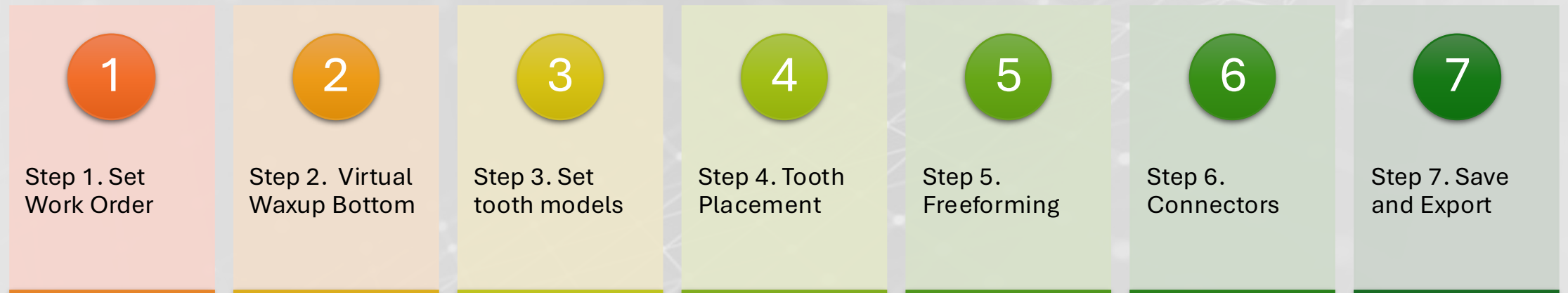
# Smile Mockup Options:



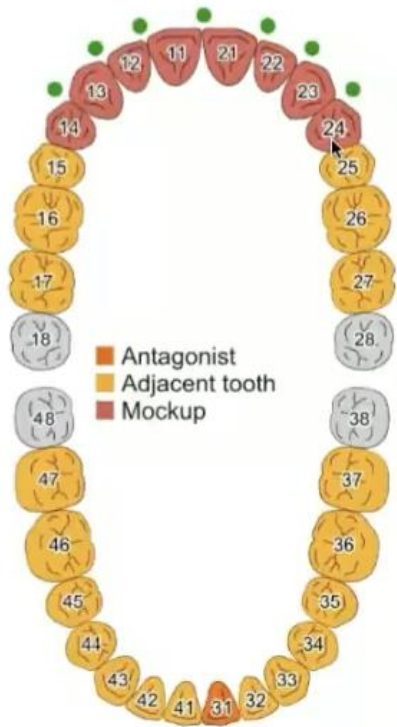
# DTS Pro Smile Design

AI Mockup Software  
used used for smile  
simulations and  
2-D digital planning.

# Preparation Case



# Step 1. Setting Work Order



## Generic/3D Print

### Crowns and copings



### Pontics and Mockup



### Inlays, onlays and veneers



### Removables and appliances



### Residual dentition



## Material

### 5-Axis / Laser / 3D Print



## Options & Parameters

Reset values to material default

### Material shade?



### Additional Scans?



### Virtual extraction?



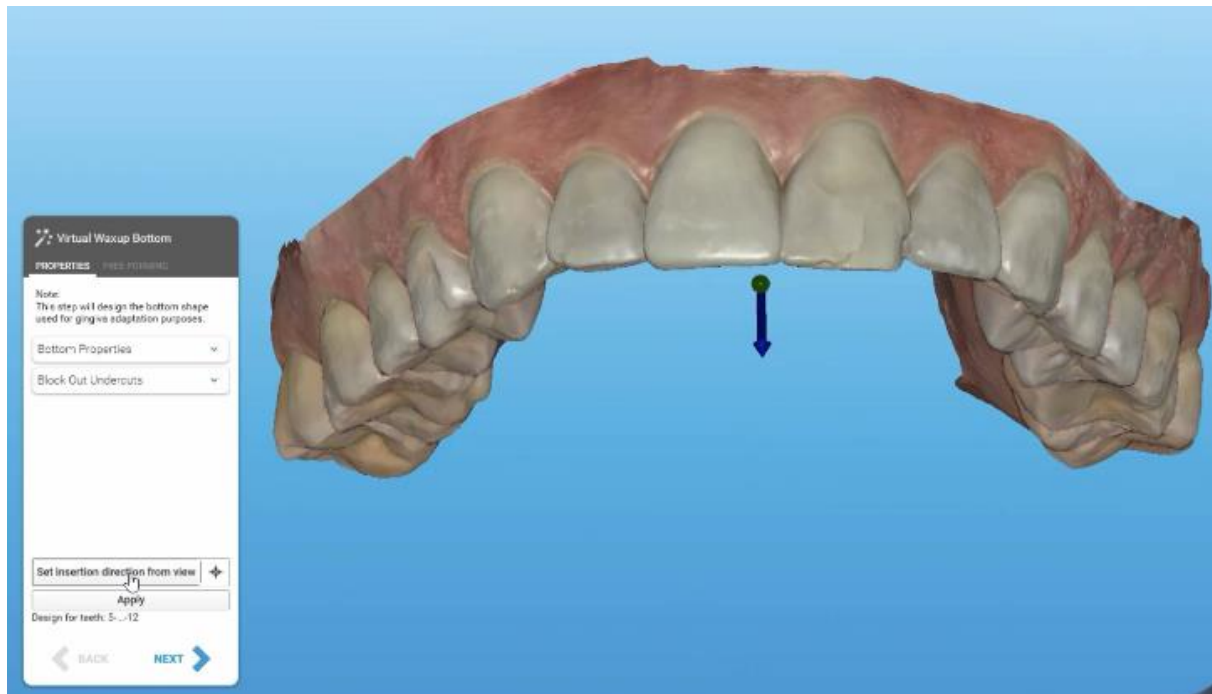
Minimal thickness 0.3 mm

Show advanced parameters

# Step 2. Virtual Waxup Bottom

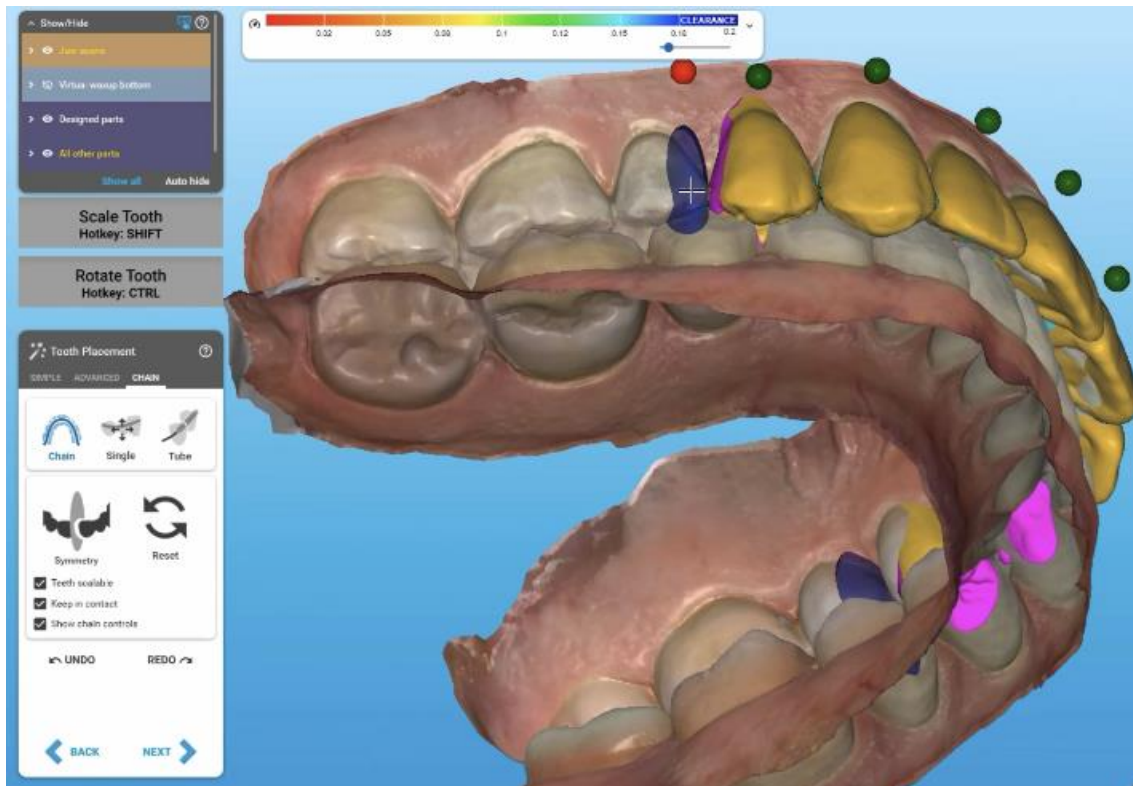
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- Adjust insertion direction to the facial this if doing veneers or occlusal if doing crowns/full mouth rehab
- More important if you are doing a snap on provisional and less important for traditional mockup models.



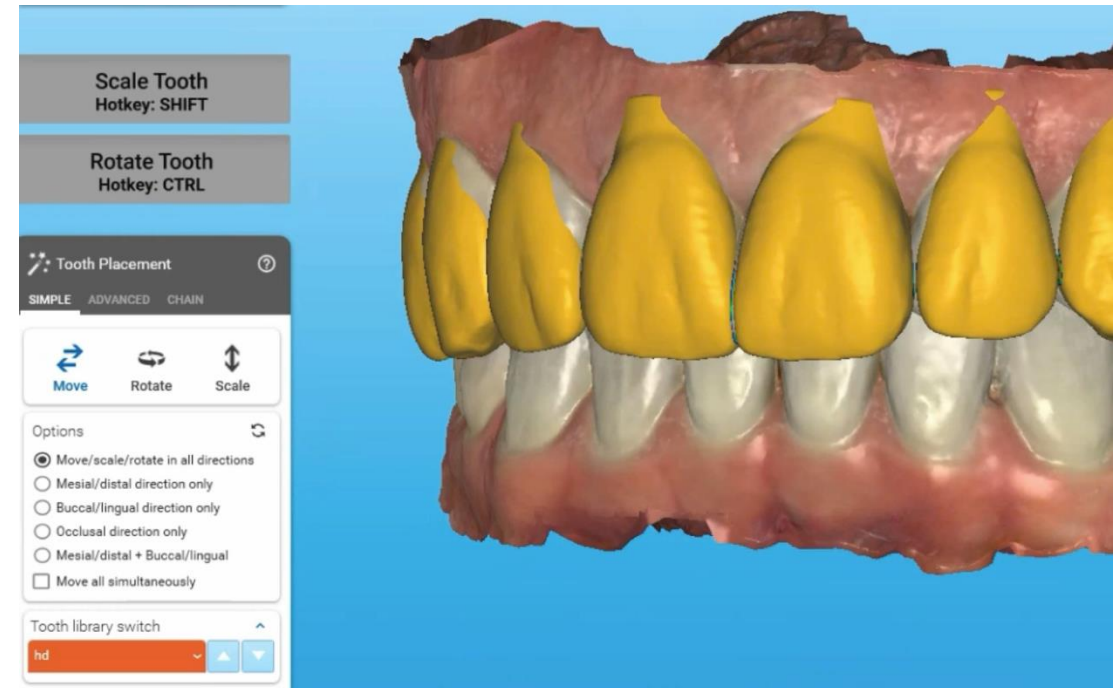
# Step 3. Place tooth models

- Initial basic arrangement of beginning with the back teeth so the software can accurately adjust the tooth library.



# Step 4. Tooth Placement

- Begin by positioning the circular discs to identify the most posterior tooth.
- Switch to facial view and operate in chain mode to position the anterior teeth using DTS Pro as a helper tool, then work backwards to set the posterior teeth.
- Use rotate tool prior to anatomic movements
- Utilize advanced tools for further refinement and consider individual tooth movements and modification.
- Get close, but there is still room for more modifications in Free-forming.
- Click>>Next



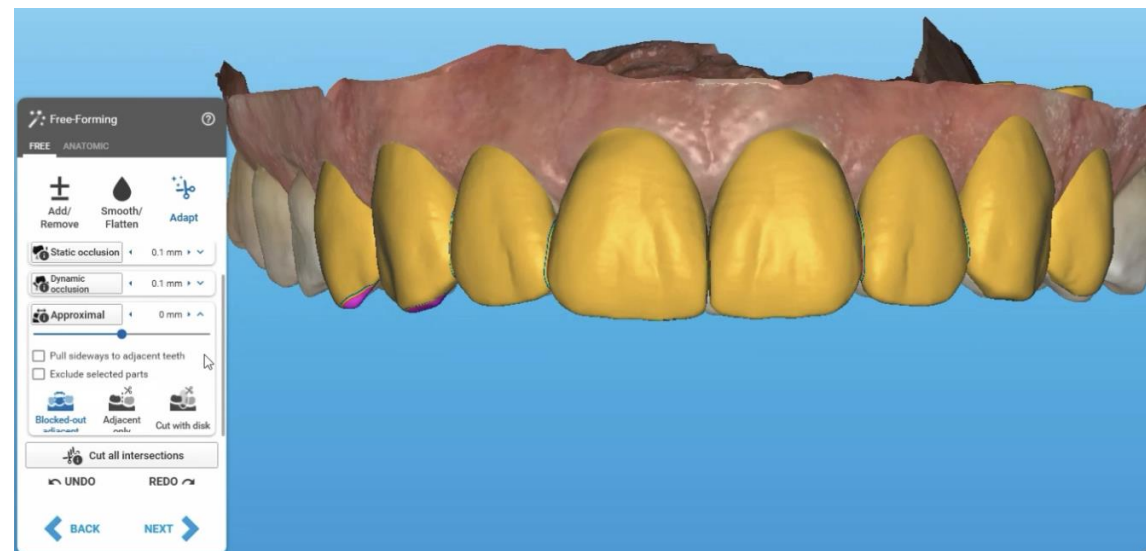
# Things to look for

1. Rotations
2. Buccolingual positions
3. Diastemas
4. Wear
5. Incisal Edge positions

# Step 5. Freeforming.

---

- Verify autocut intersections is turned off.
- Modify scan data can be used to virtually prepare teeth if there are areas that must be reduced to allow for adequate material thickness. Consider taking photo or screenshot of areas reduced, perhaps make lines to indicate areas reduced.
- Toggle Restorations on/off and compare to DTS prior to reduction.
- As you reduce tooth you will notice the restoration starts to overlay the tooth.
- Idealize occlusion canine guidance manually and do not allow the software to cut dynamic tooth movements. Verify by toggling dynamic contact on and off.



# Freeform Tools Tips:

- Start with anatomic to make bulk movements
- Use freeforming tools to add/remove material and adjust intersections.
- Use knife tool to enhance morphology.
- Adapt – static occlusion only do not hit dynamic or canines may be cut away.

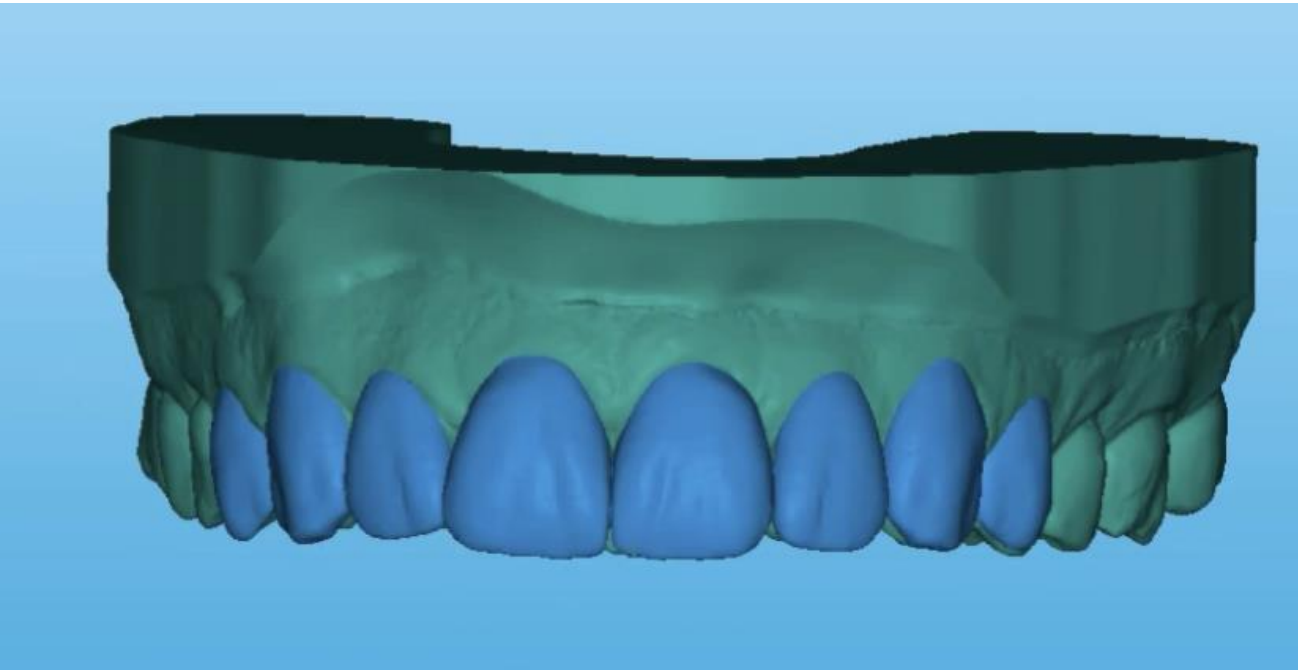
# Step 6. Connectors

- Fabricating a Snap-On Mockup is generally the only situation where this becomes necessary.
- Snap-On Mockups are not ideal when virtual preparation is required.
- Design Suite often uses larger connectors compared to Exocad, which may need manual adjustment. Printing without connectors or by joining teeth is possible, but this approach might lead to errors or printing difficulties.

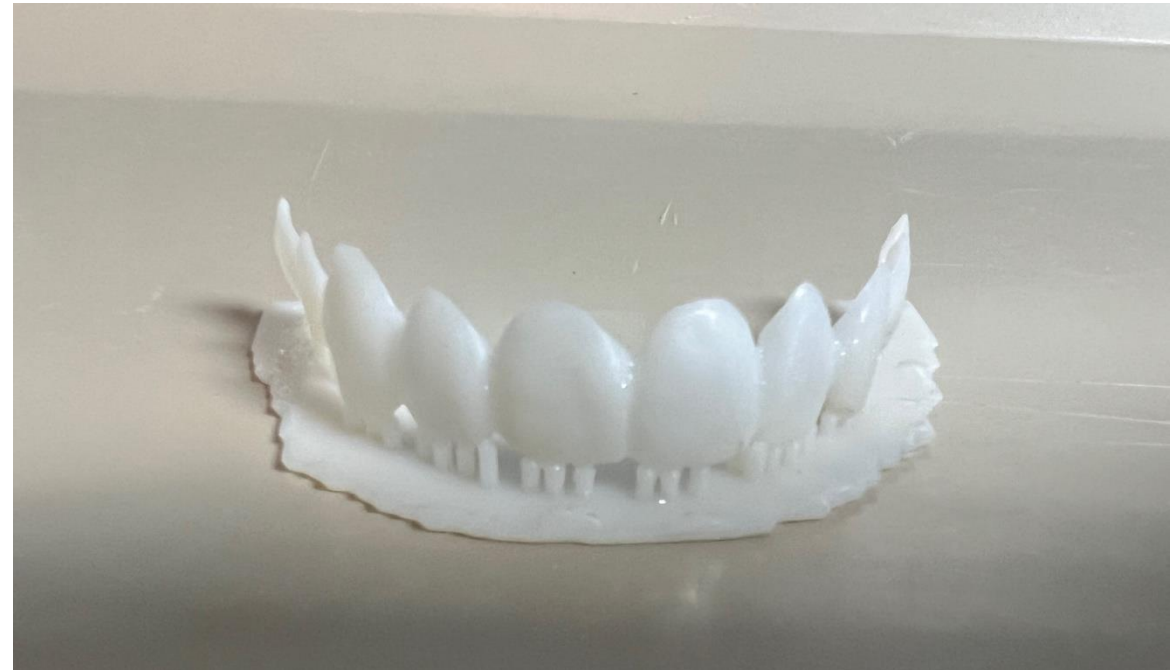


# Step 7. Merge, Save & Print

Putty Matrix Model



Direct Try-in



# Fabricate Siltek Putty Matrix & Reduction Guide

