

Digital Model Based Guided Surgery, version 2

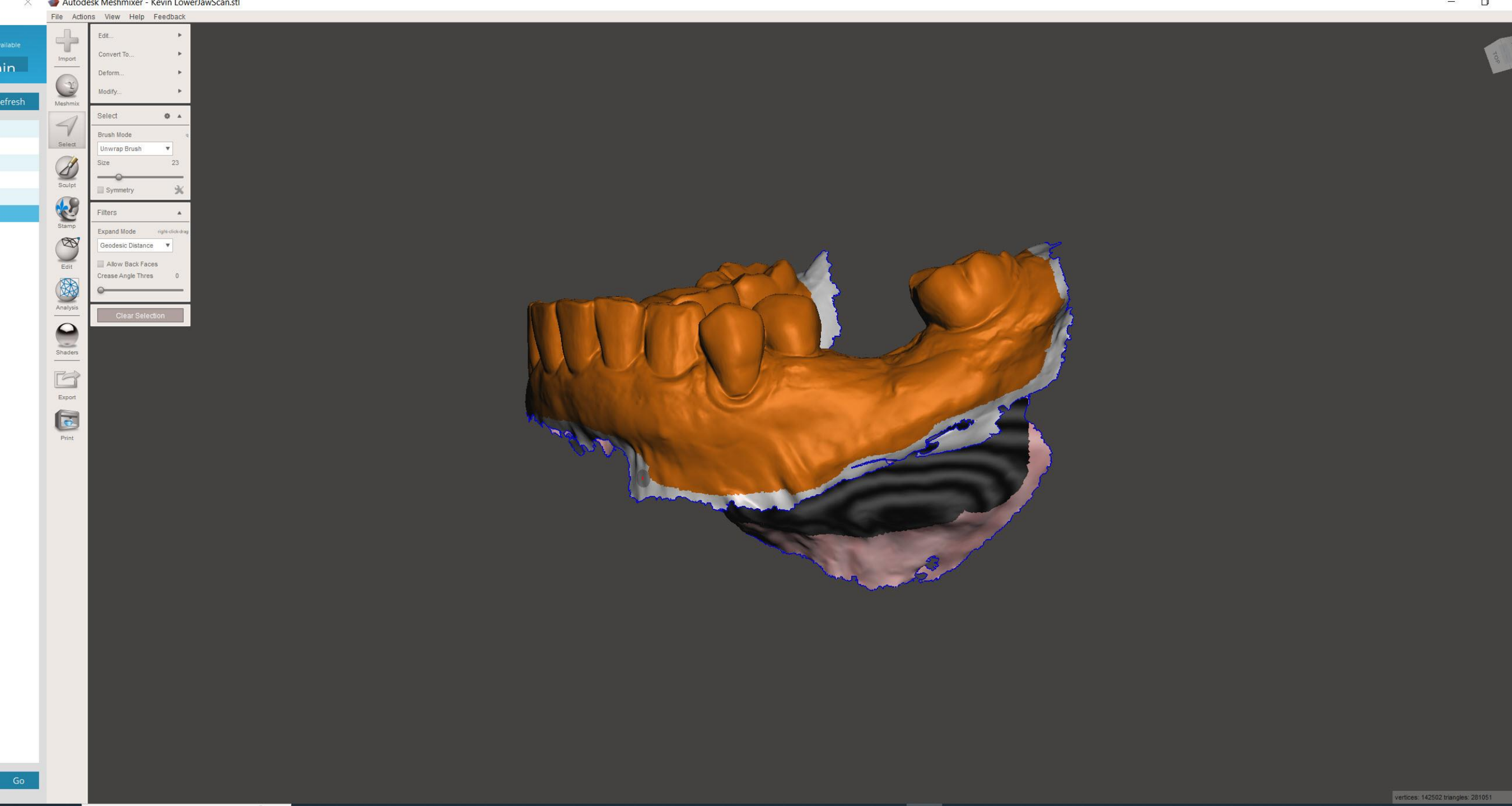
Step by step workflow

Digital Model Based Guided Surgery, version 2

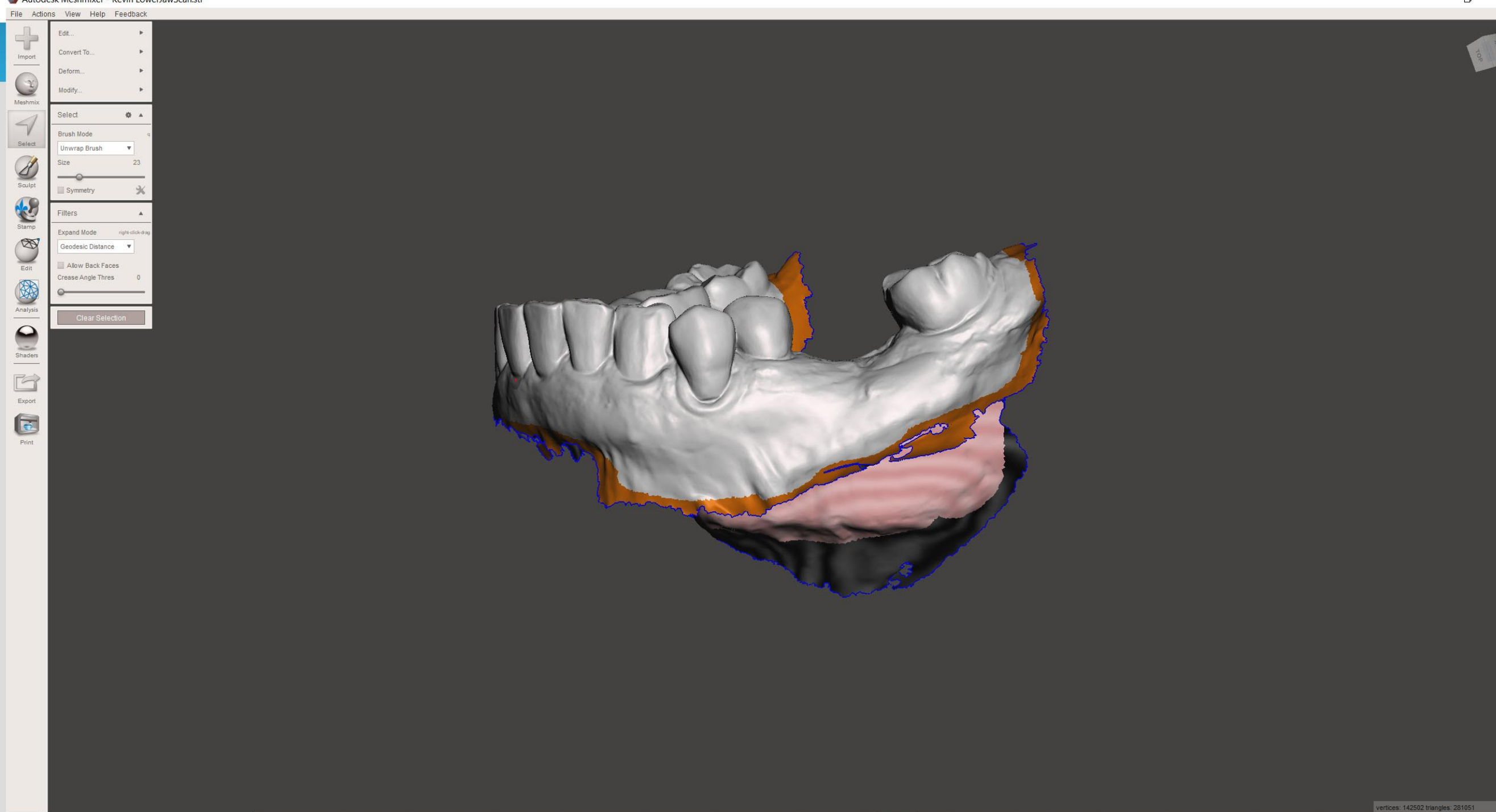
All STL parts are freely downloadable at;

www.Digitalmodelbasedgs.com

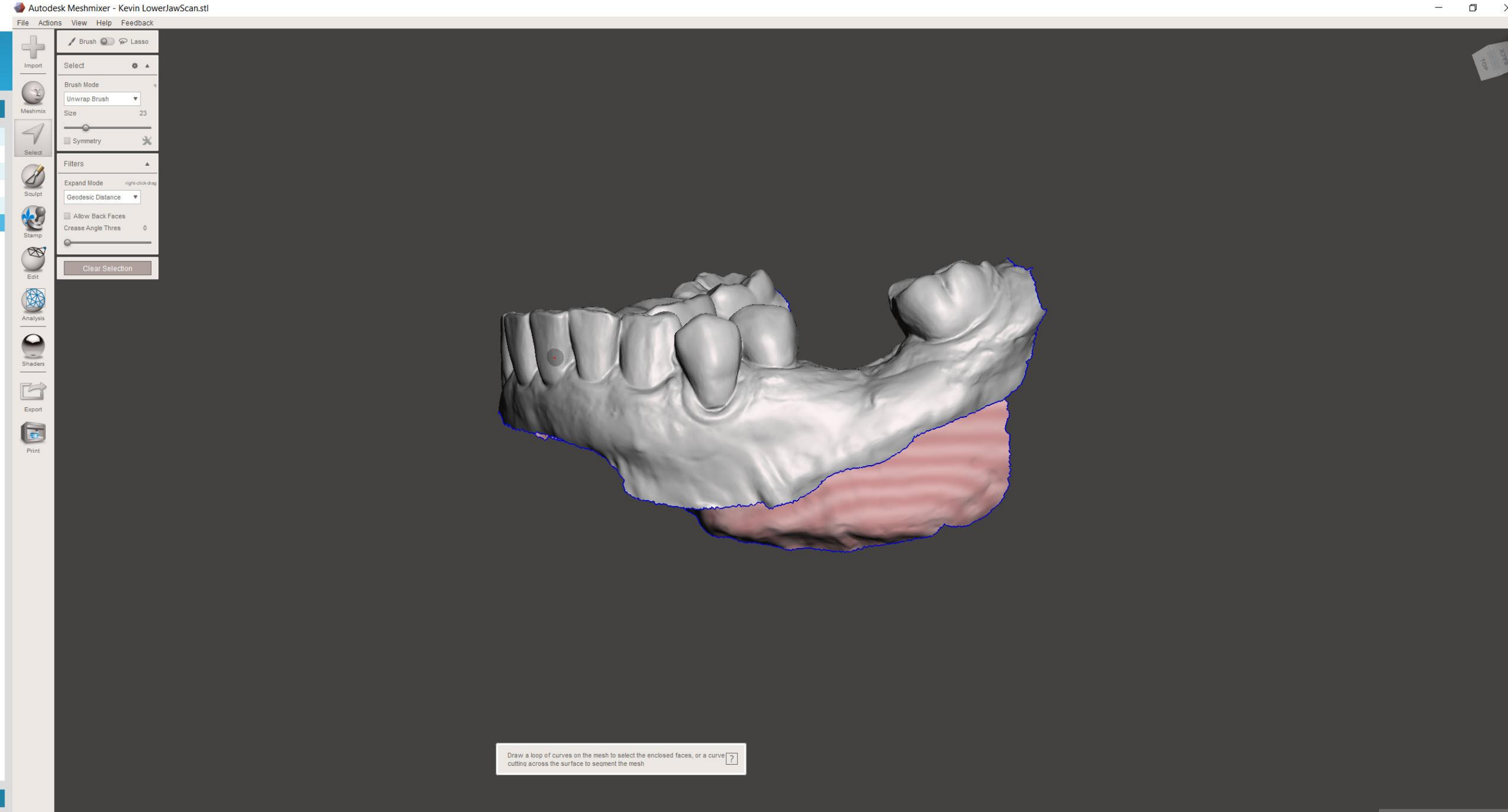




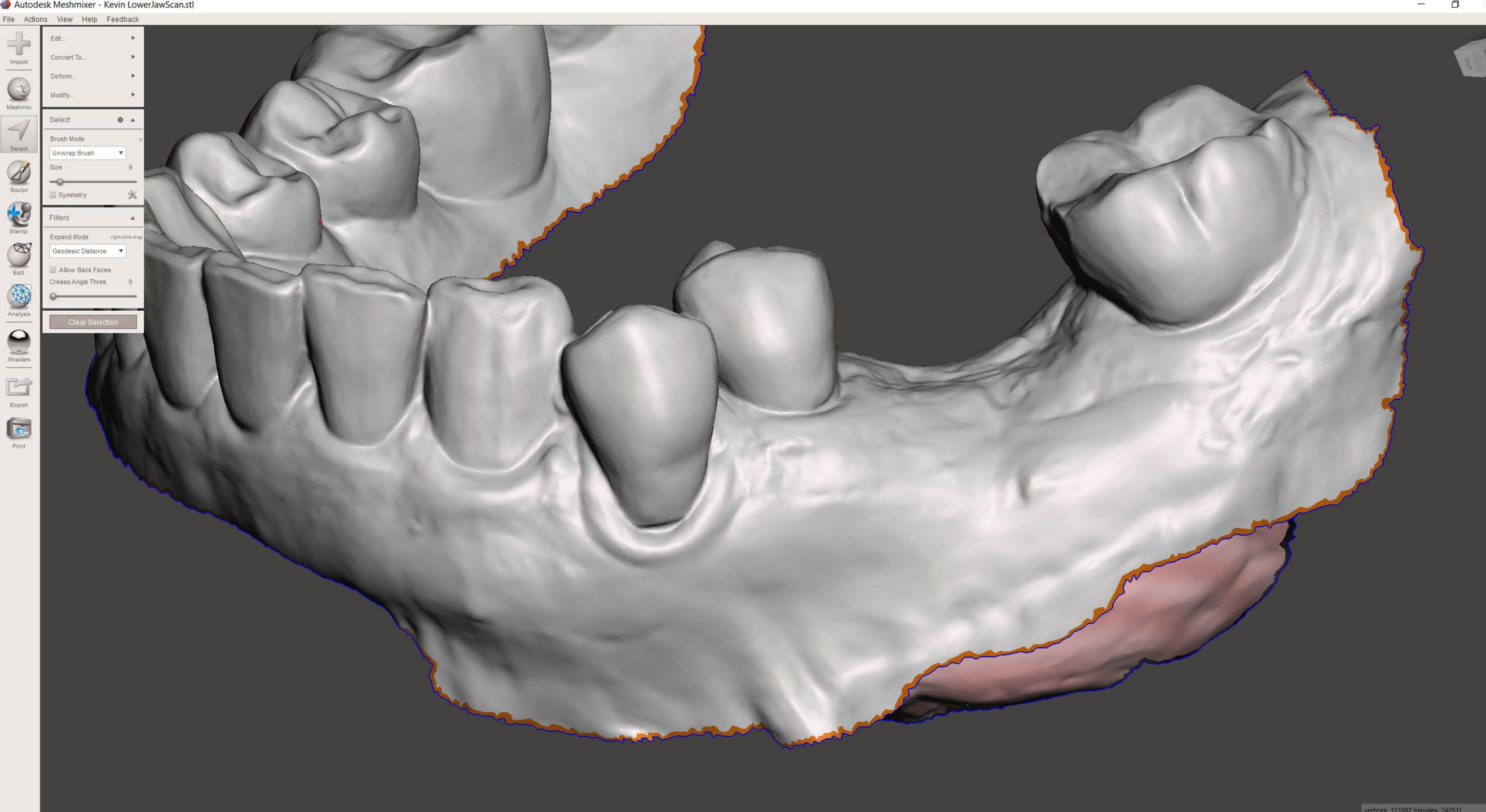
“S” select



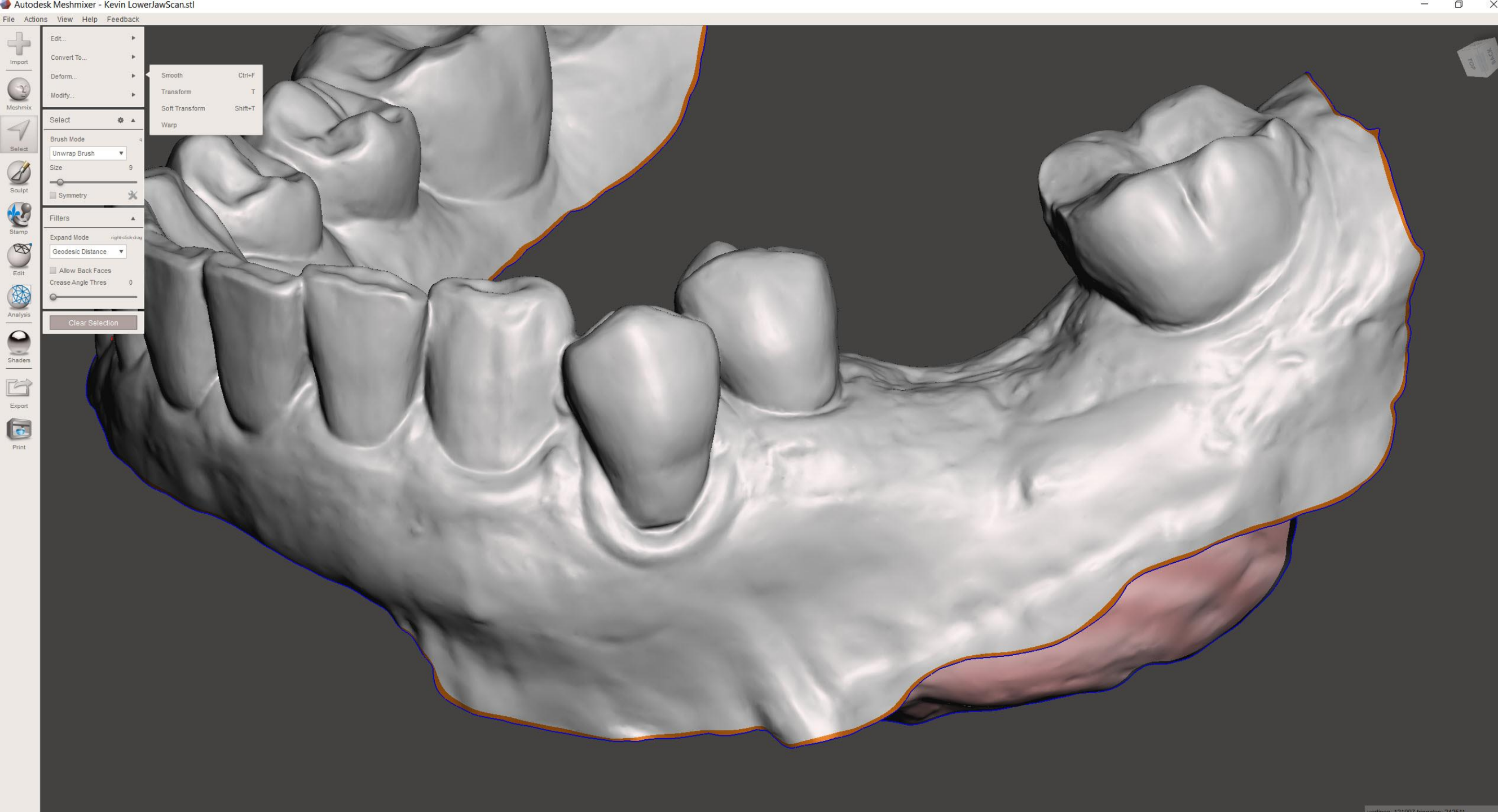
“I” inverse



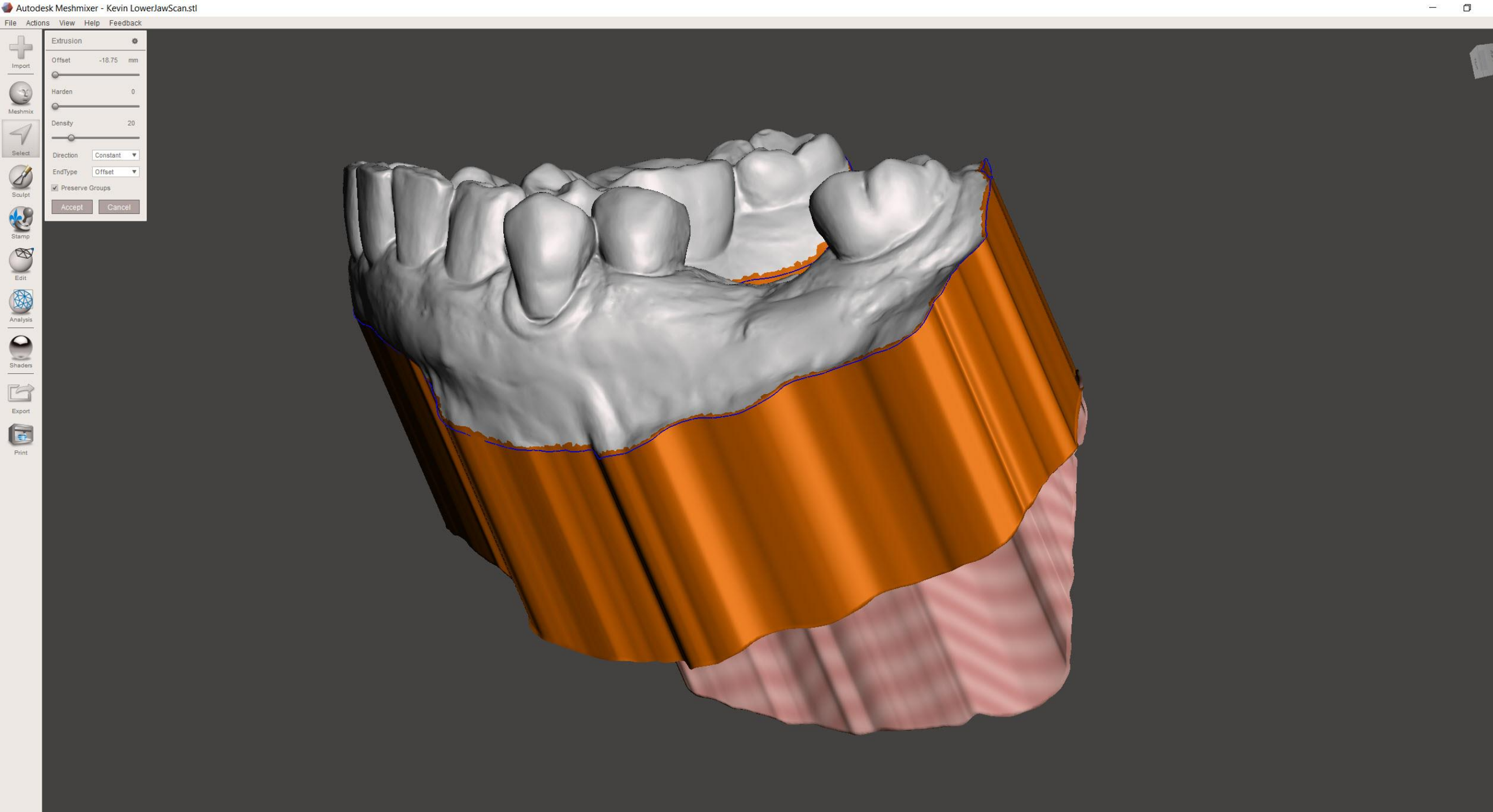
“D” delete



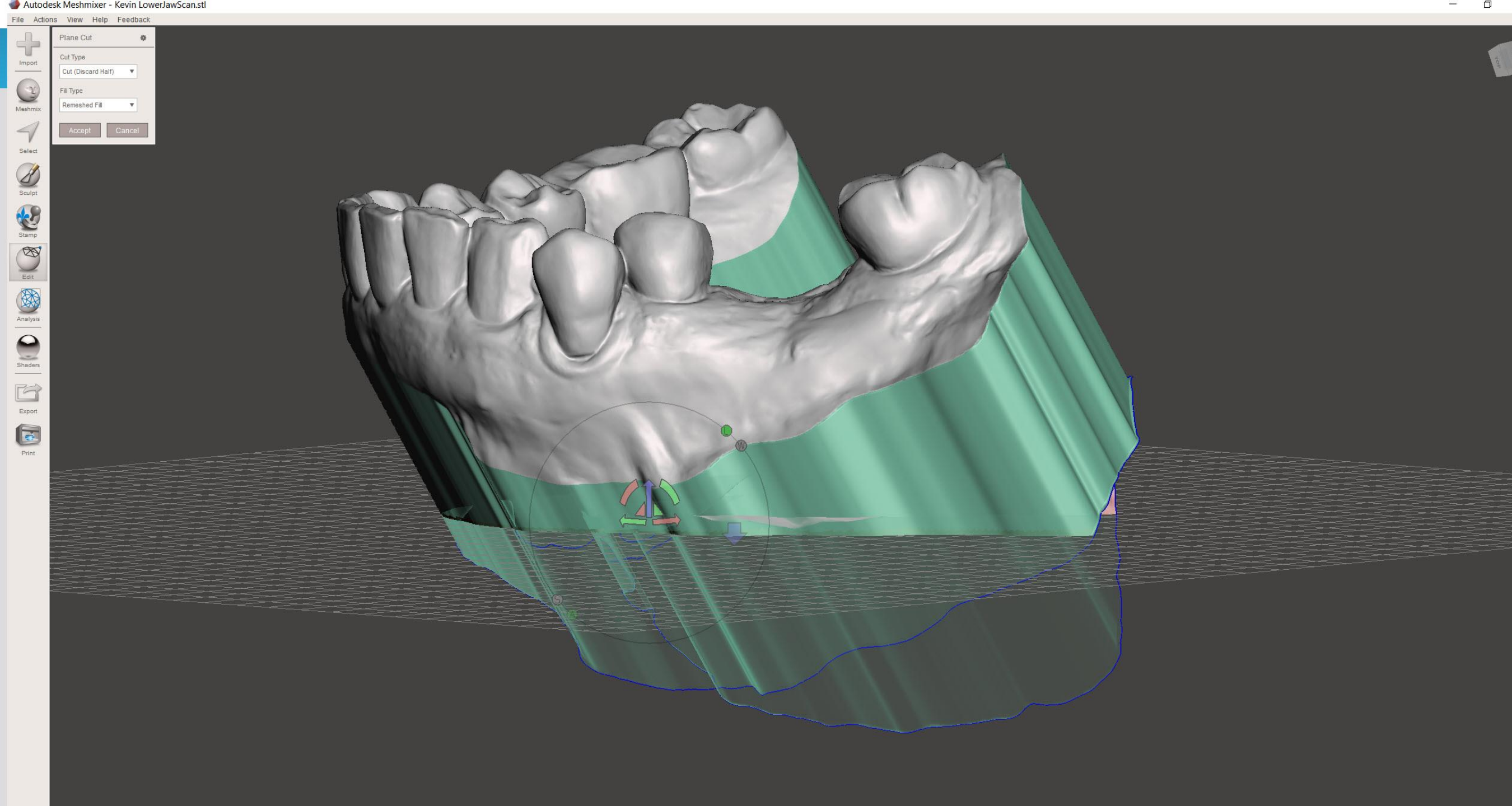
“S” select the border only.
Make the select tool very small



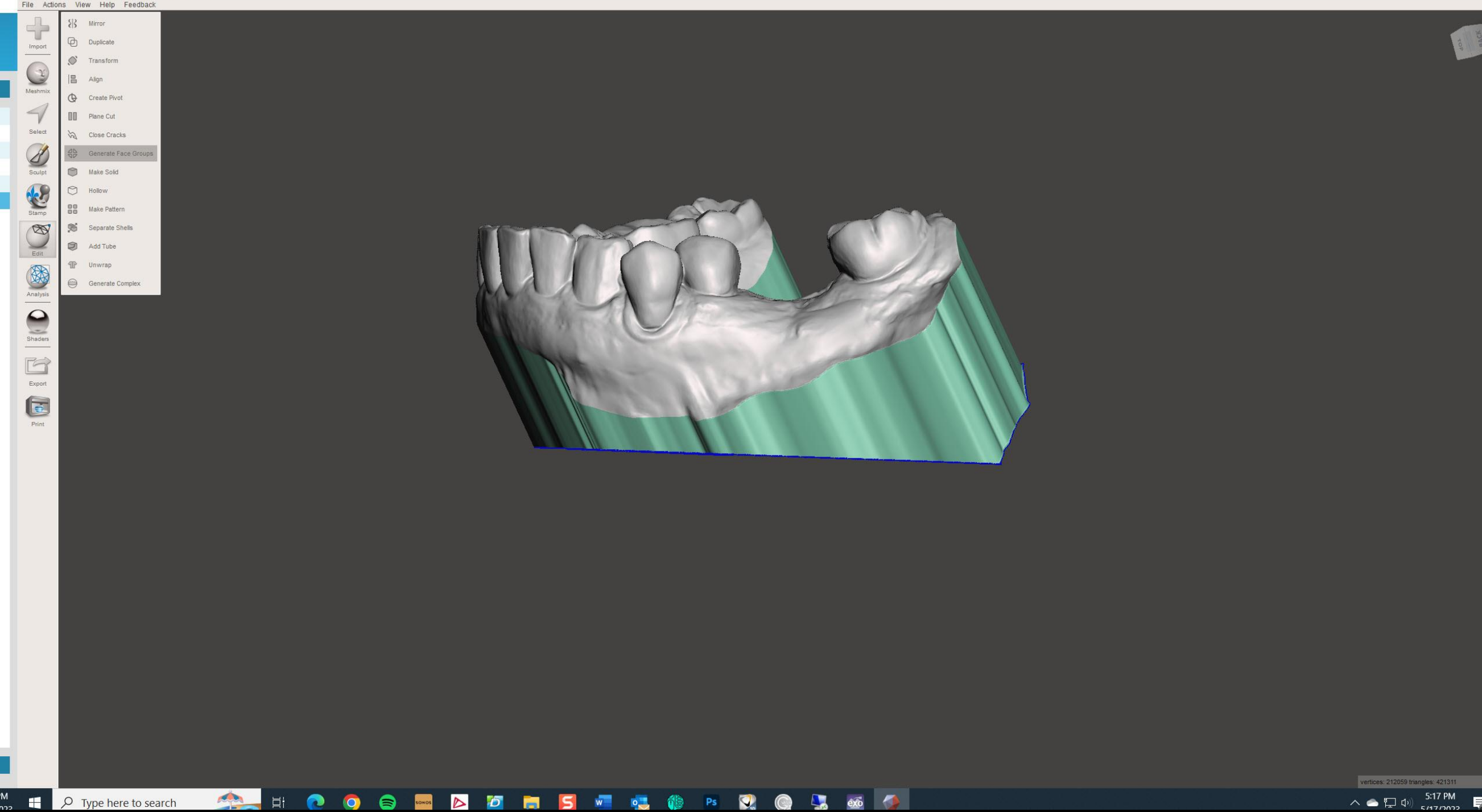
“O” Optimize
“B” Border



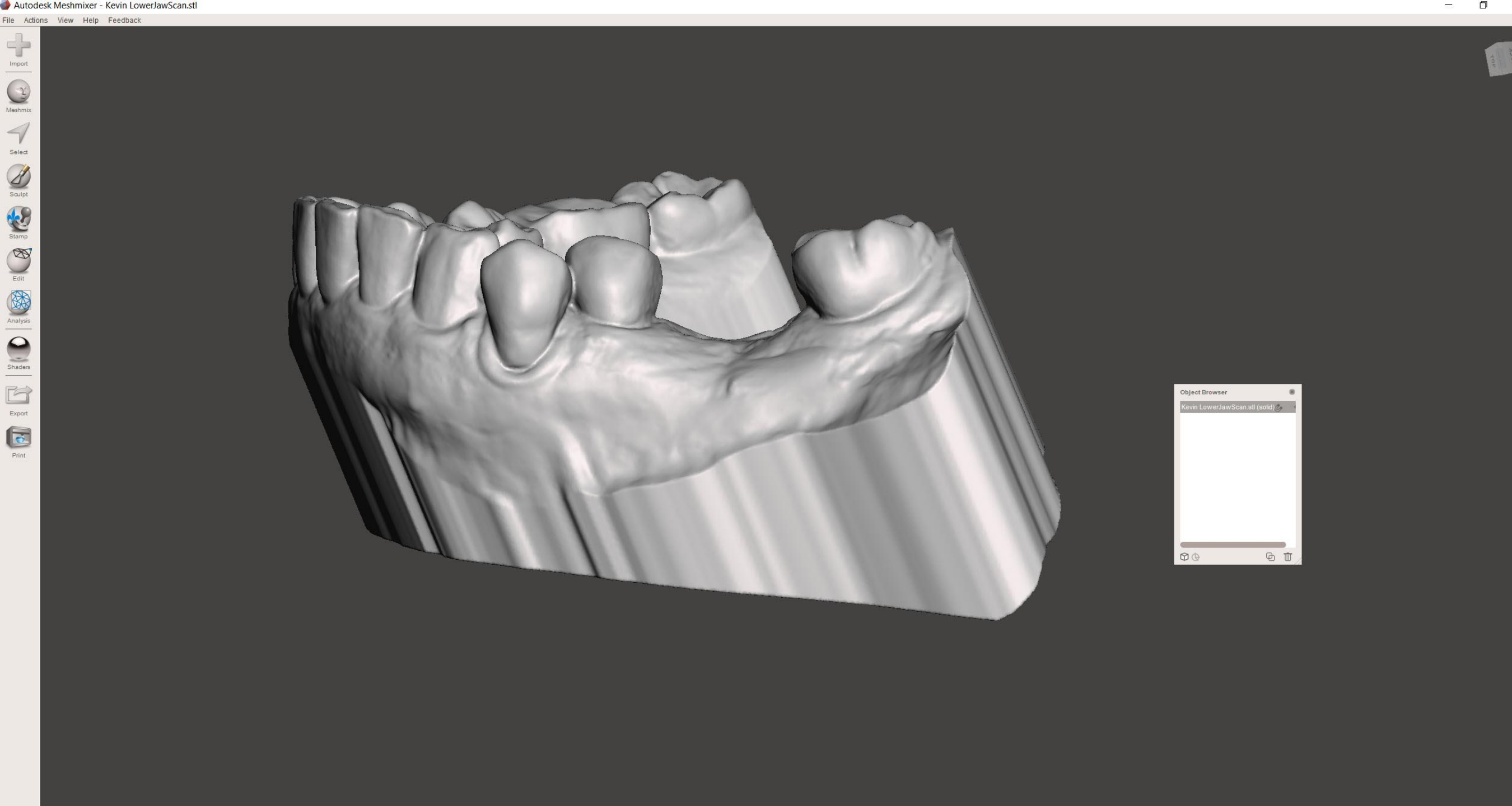
“D” Extrude
Direction
constant.
Offset - 20



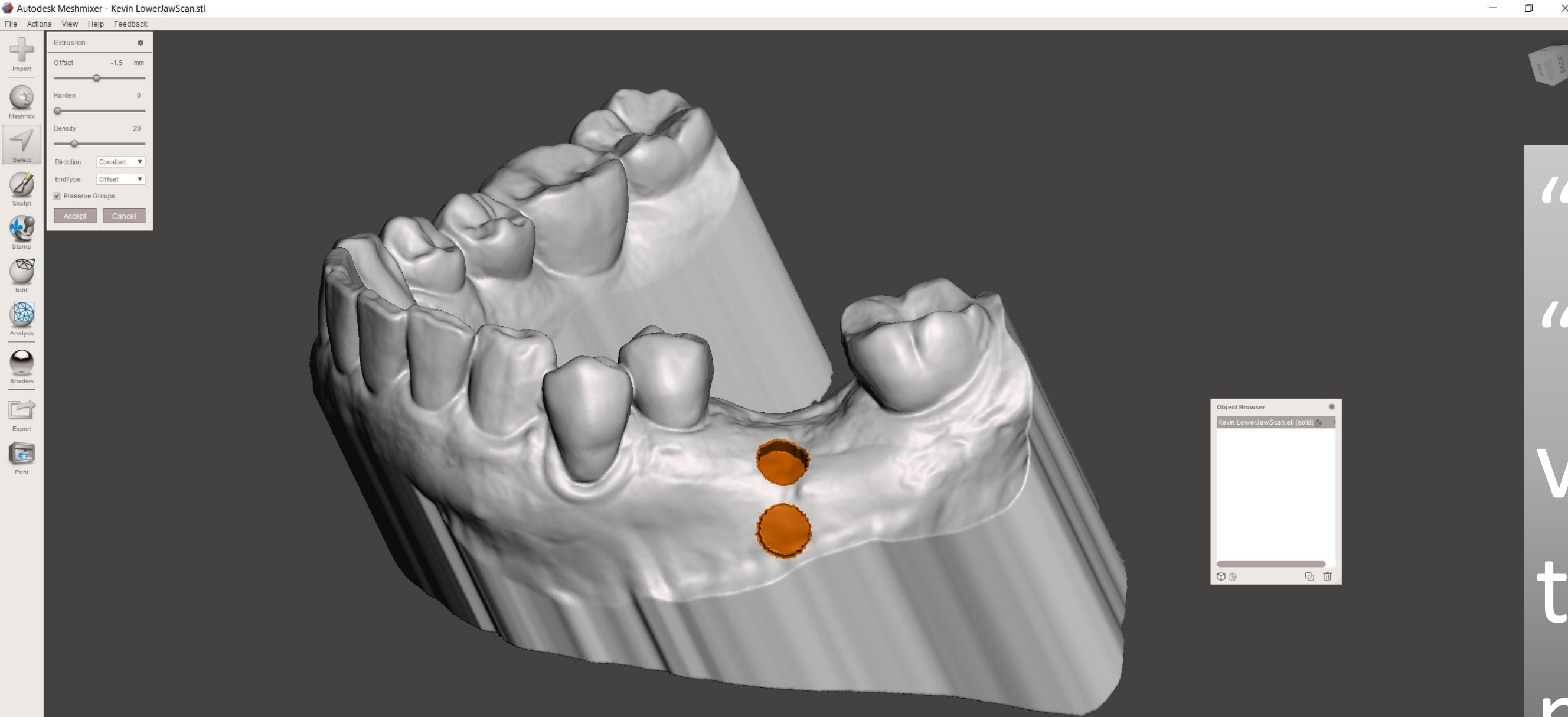
Edit, plane cut



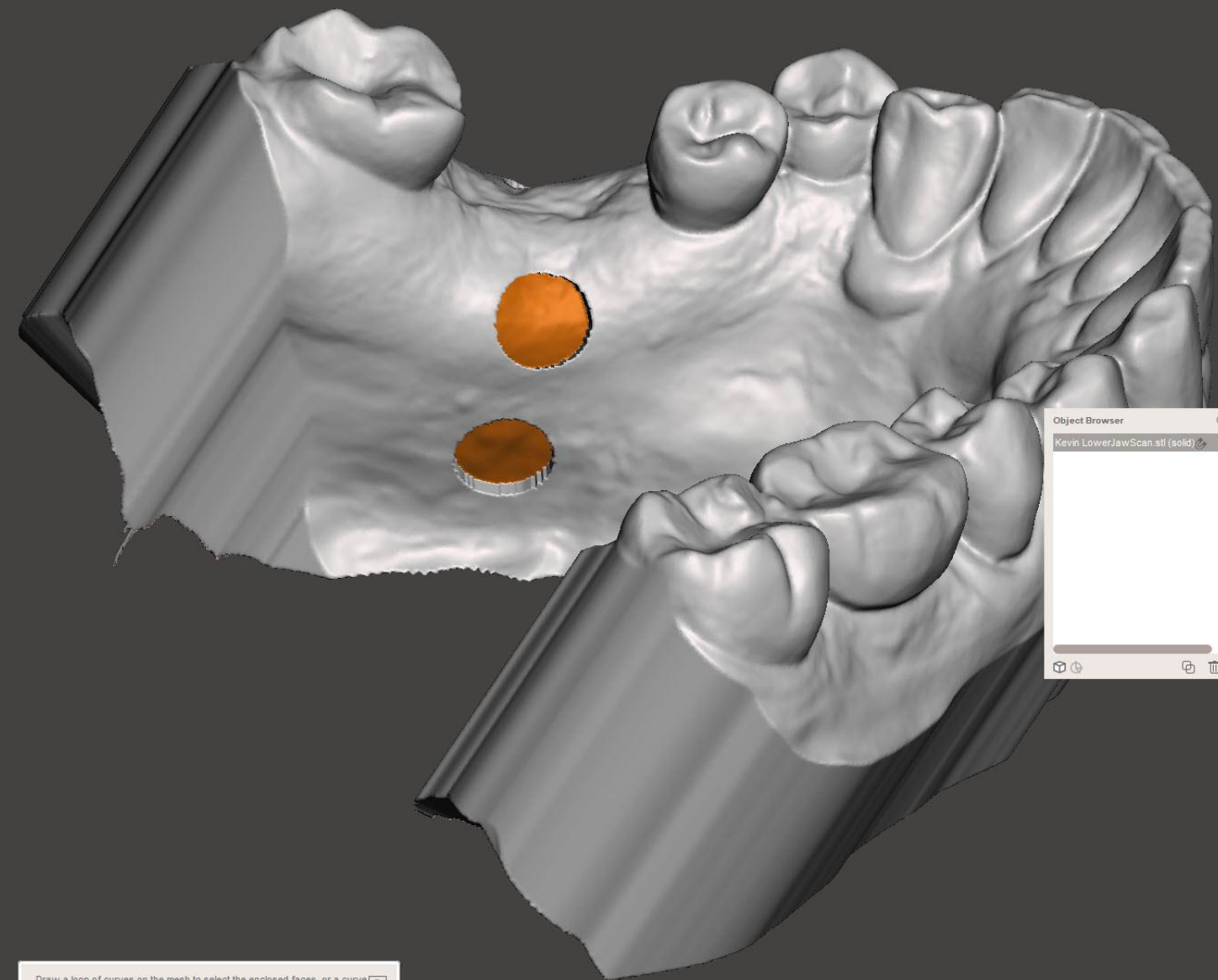
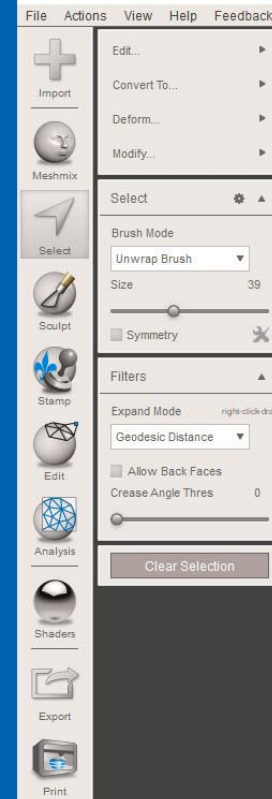
Edit, make solid.
Accurate. Set
solid accuracy
and mesh
density at 350



Export and
safe solid
file

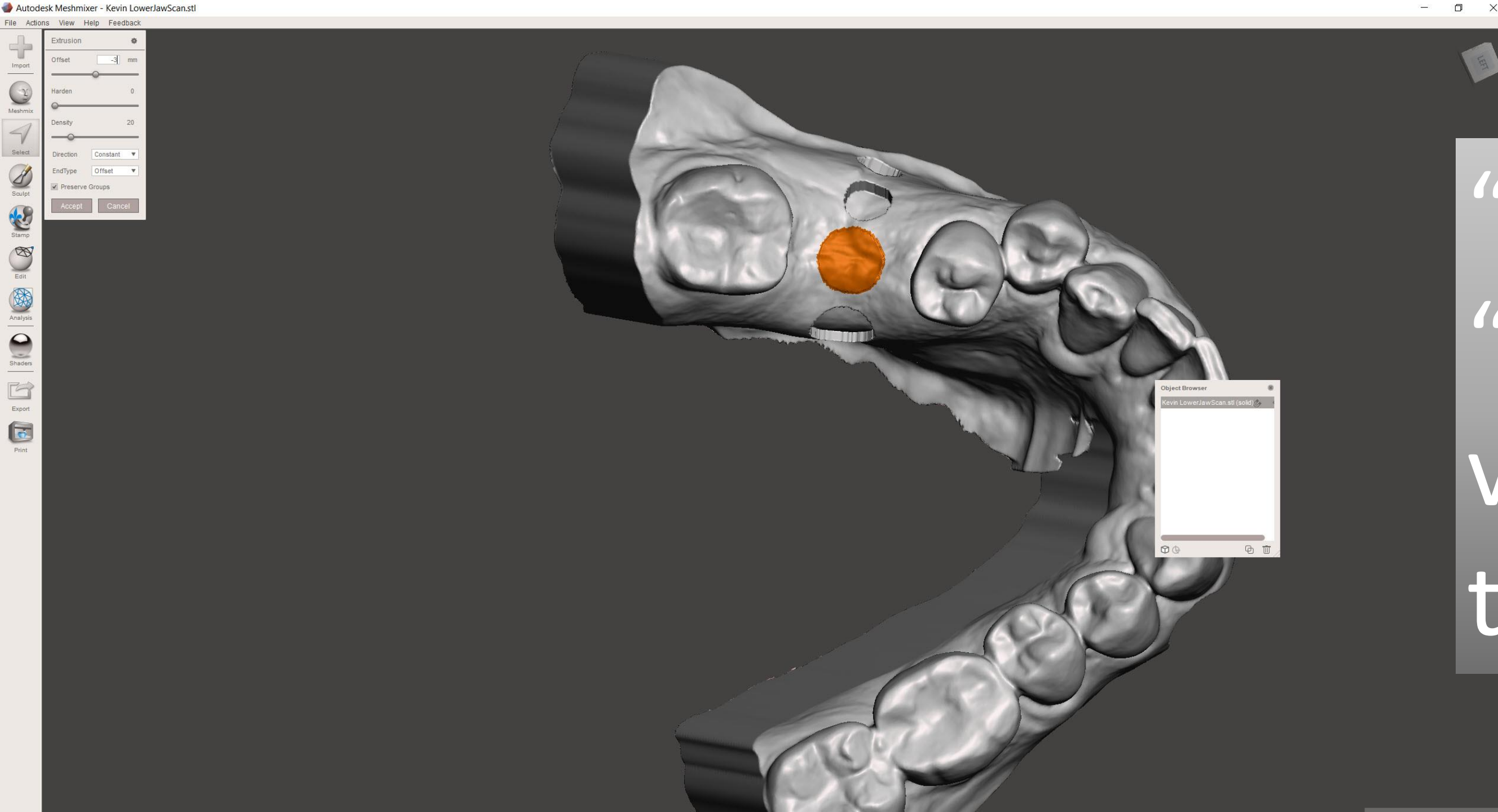


“S” select
“D” extrude negative
value for tissue
thickness, 5
measurements are used

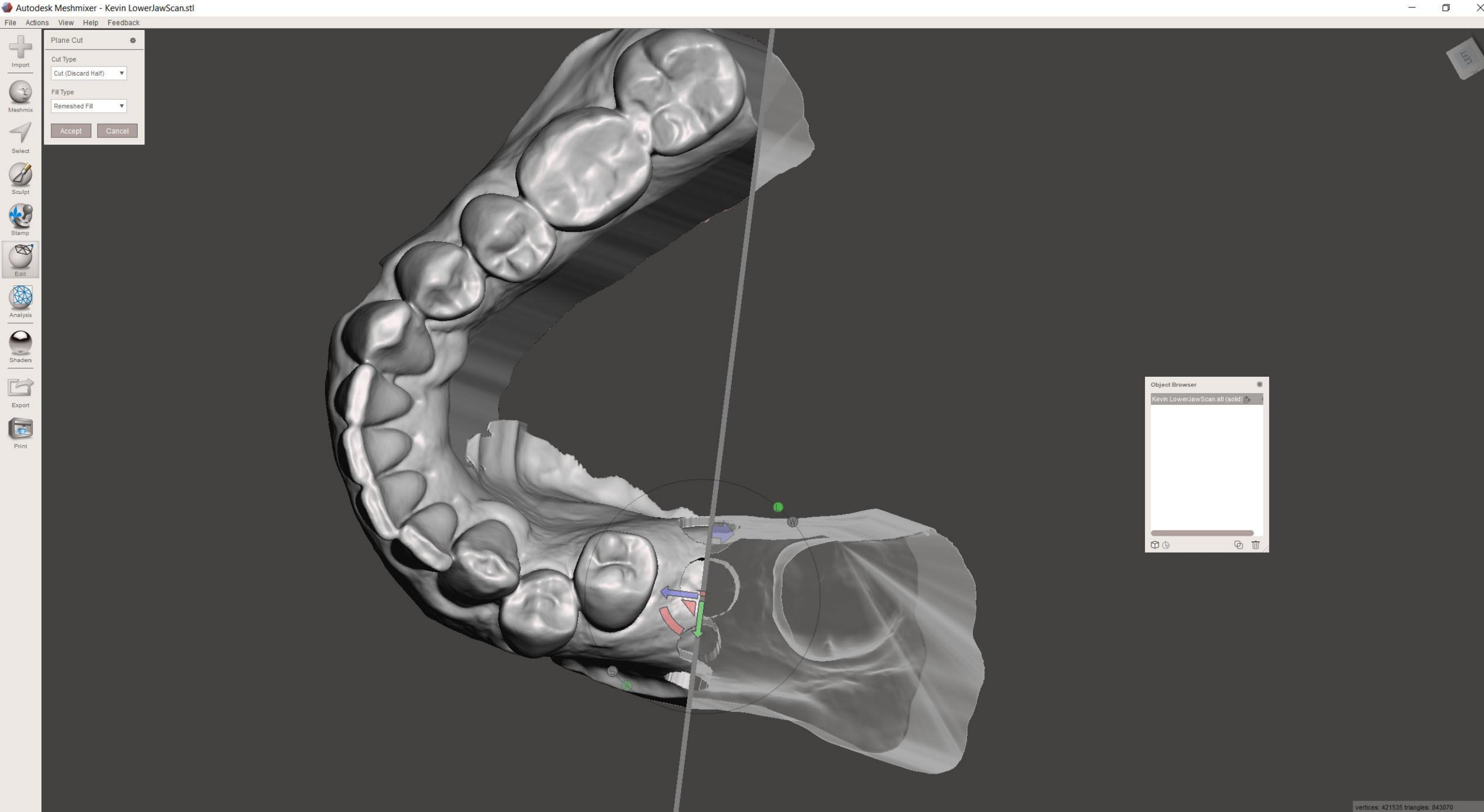


Draw a loop of curves on the mesh to select the enclosed faces, or a curve cutting across the surface to segment the mesh

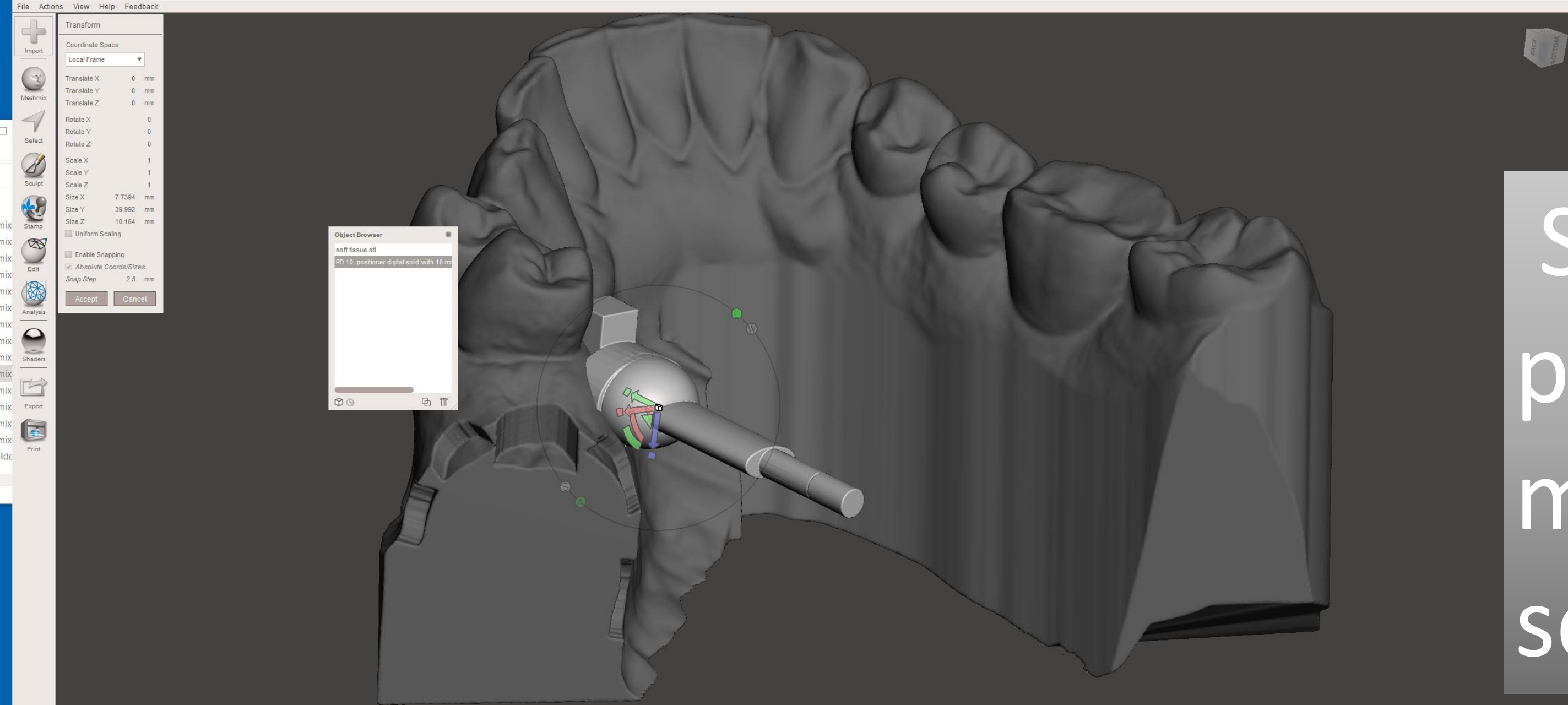
“S” select
“D” extrude native
value for tissue
thickness



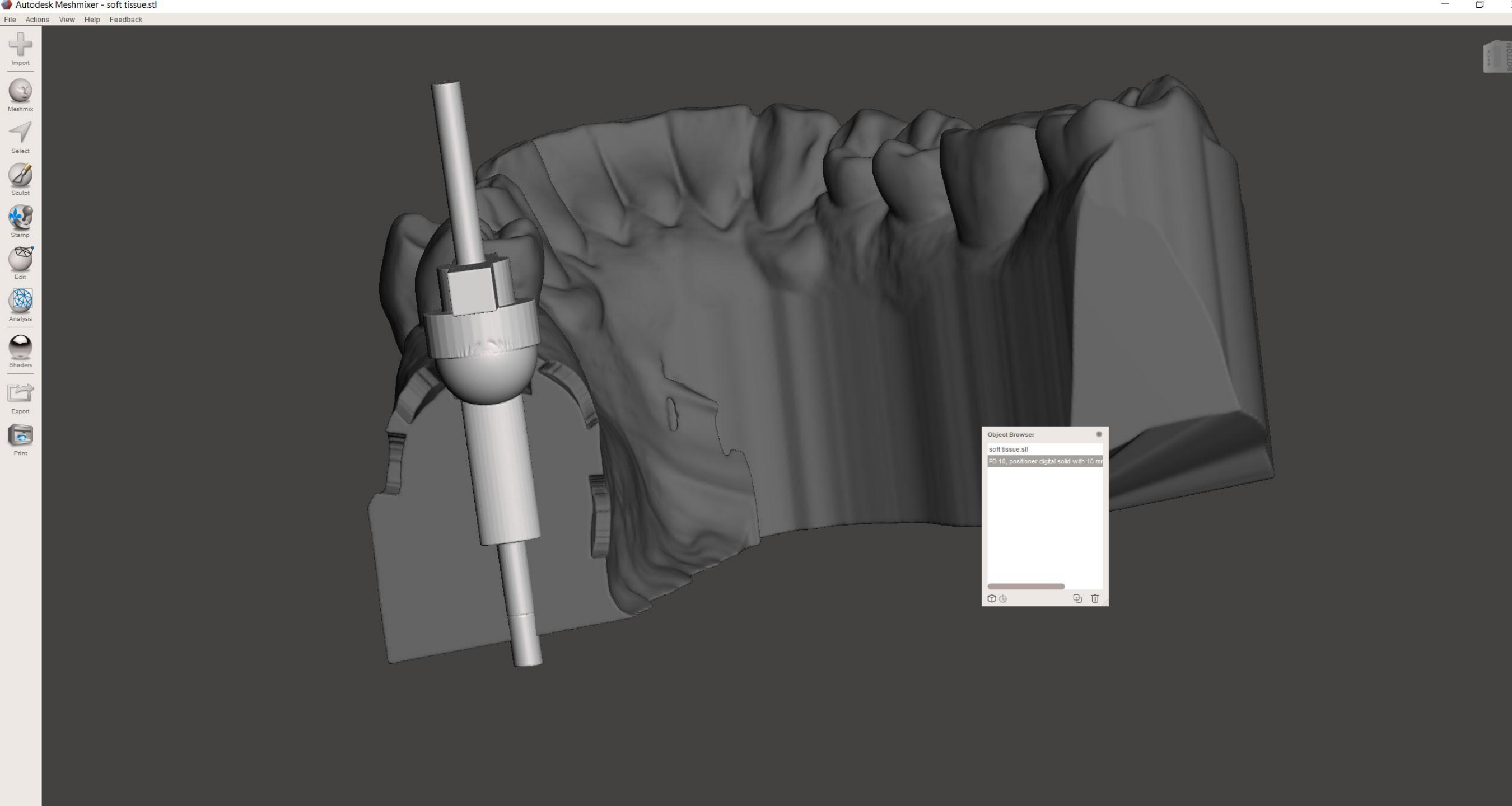
“S” select
“D” extrude negative
value for tissue
thickness



Edit, plane
cut

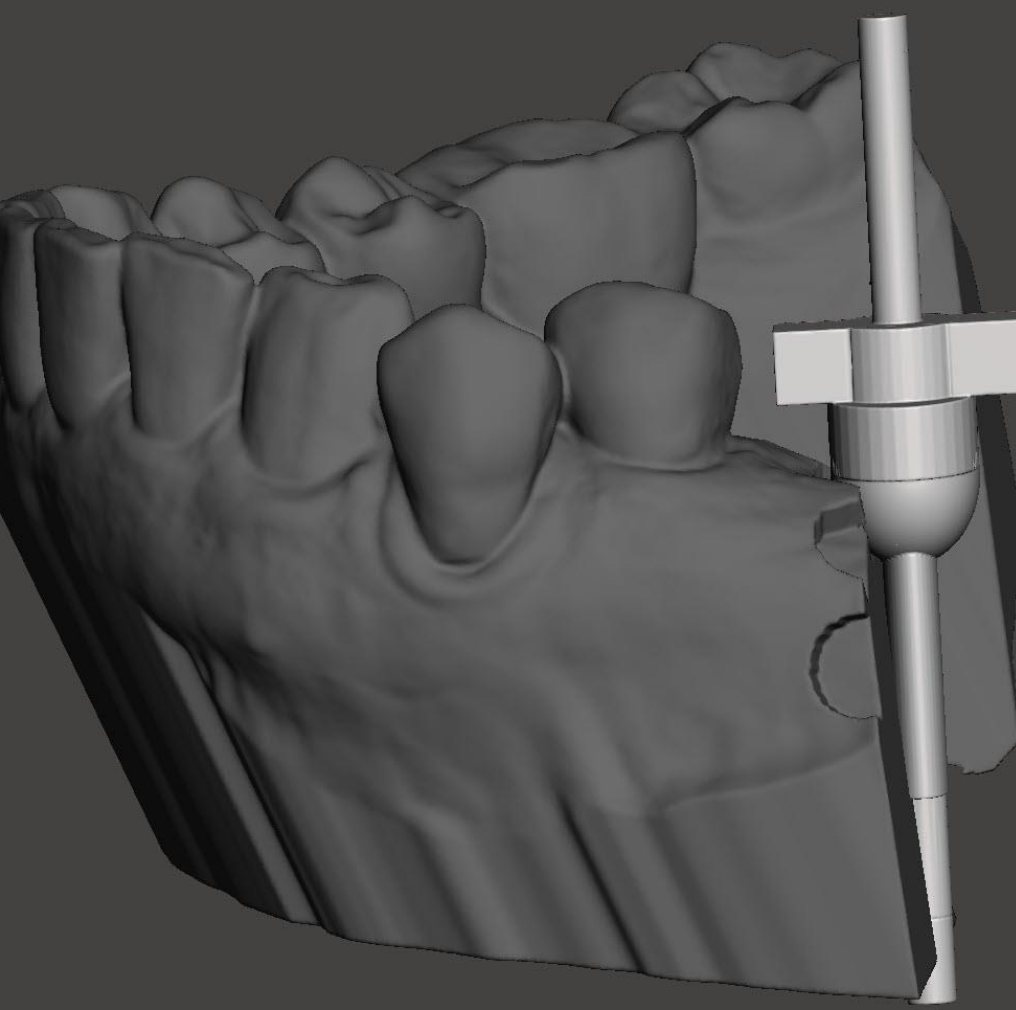


Select Digital
positioner with 10
mm bar, slide into
screen and append



“T”, Transform

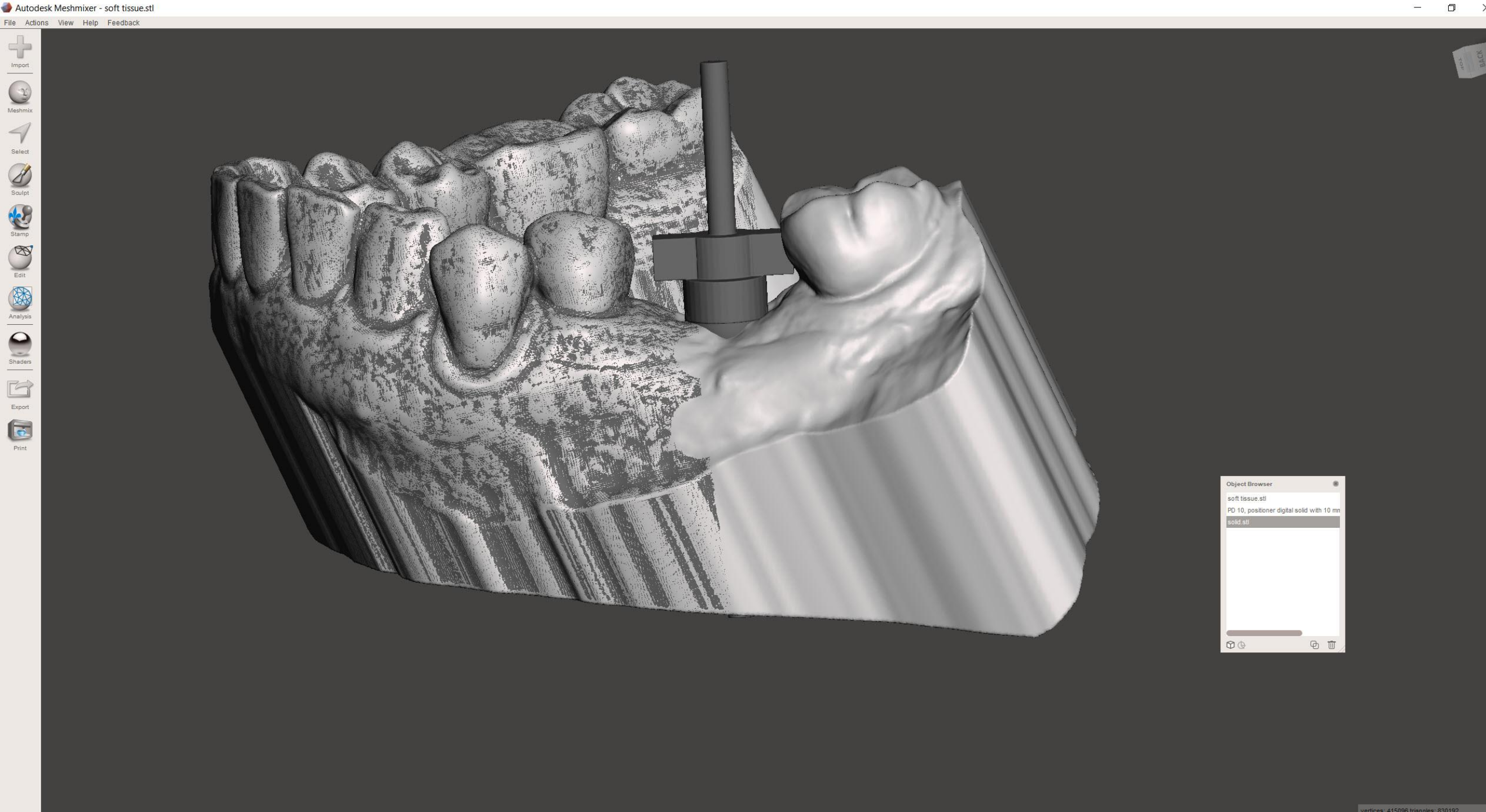
- +
- Import
- Meshmix
- Select
- Sculpt
- Stamp
- Edit
- Analysis
- Shaders
- Export
- Print



Object Browser

- soft tissue.stl
- PD 10, postioner digital solid with 10 mm

Navigation icons: back, forward, home, delete



Select Solid file,
slide into screen
and append

+

Import

Meshmix

Select

Sculpt

Stamp

Edit

Analysis

Shaders

Export

Print

Transform

Coordinate Space

Local Frame

Translate X

0 mm

Translate Y

0 mm

Translate Z

0 mm

Rotate X

0

Rotate Y

0

Rotate Z

0

Scale X

1

Scale Y

1

Scale Z

1

Size X

7.7394 mm

Size Y

39.992 mm

Size Z

10.164 mm

Uniform Scaling

Enable Snapping

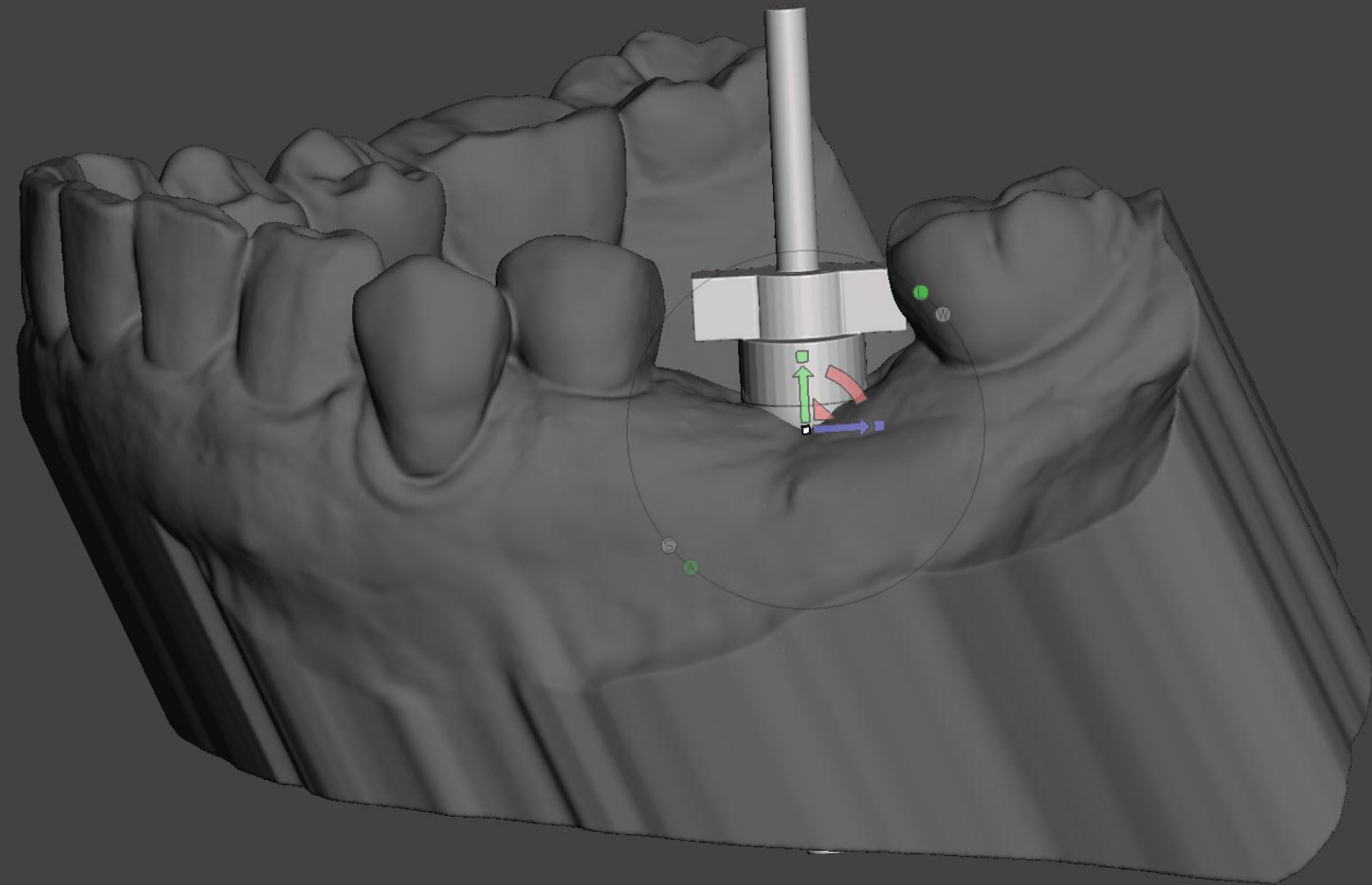
Absolute Coords/Sizes

Snap Step

2.5 mm

Accept

Cancel



Object Browser

soft tissue.stl

PD_10_positioner digital solid with 10 mm

solid.stl

Use the manipulator to transform the mesh.


Import


Meshmix


Select


Sculpt


Stamp


Edit


Analysis


Shaders


Export


Print

Transform

Coordinate Space
Local Frame

Translate X -0.404 mm
Translate Y 0.7723 mm
Translate Z -0.168 mm

Rotate X -0.424
Rotate Y 0.2313
Rotate Z 2.1107

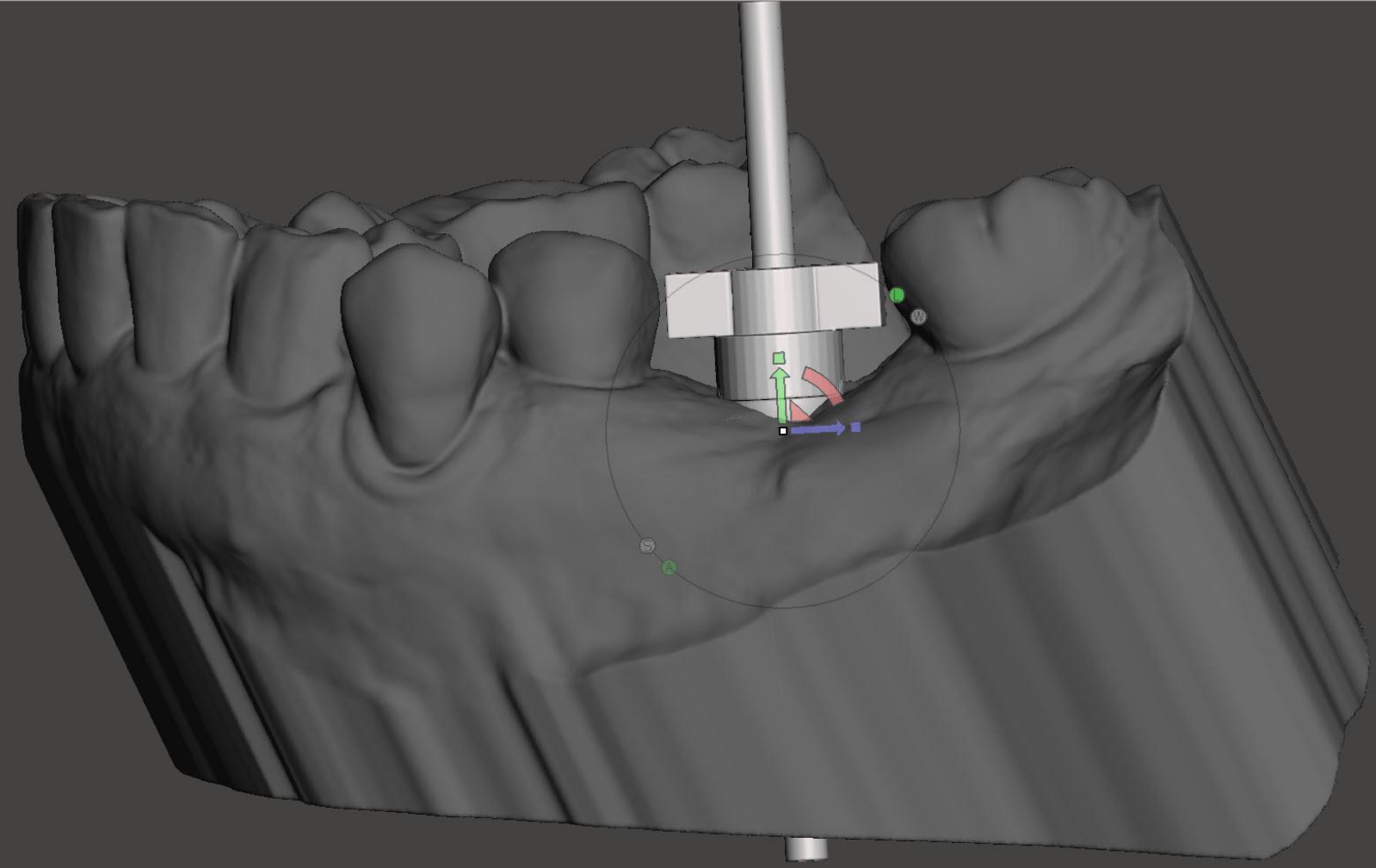
Scale X 1
Scale Y 1
Scale Z 1

Size X 7.7394 mm
Size Y 39.992 mm
Size Z 10.164 mm

☐ Uniform Scaling

☐ Enable Snapping
☒ Absolute Coords/Sizes
Snap Step 2.5 mm

Accept Cancel



Object Browser

soft tissue.stl
PD 10_positioner digital solid with 10 mm
solid.stl





OVERLAY2.1

Overlay2 is digital tracing paper for your computer!

What Overlay2 does

I run a photo studio in London, and I was looking for software that would enable me to make a semi-transparent floating window on my computer. I wanted to be able to open any image to use as a floating positioning guide over the actual image that I'm shooting.

I use Adobe Lightroom for image capture, and I wanted to be able to float the art-director's layout over my photo in Lightroom, to check that my shot was a good fit. Sometimes I wanted to put another element of a composite over my image to check position and perspective, or I wanted to have an image visible over my Lightroom capture so I could match it.

I couldn't find any software to do this, so I wrote it myself: Overlay2 for Mac and Windows is the result. It works with any other Mac or Windows software.

Use it over video capture or editing software, or 3D modelling software for a reference, positioning guide, preview or test. Or use it to display an image permanently on your screen, or to compare two images.

[Download free trial...](#)

[Buy Mac or Windows version](#)

[OVERLAY2 Manual](#)



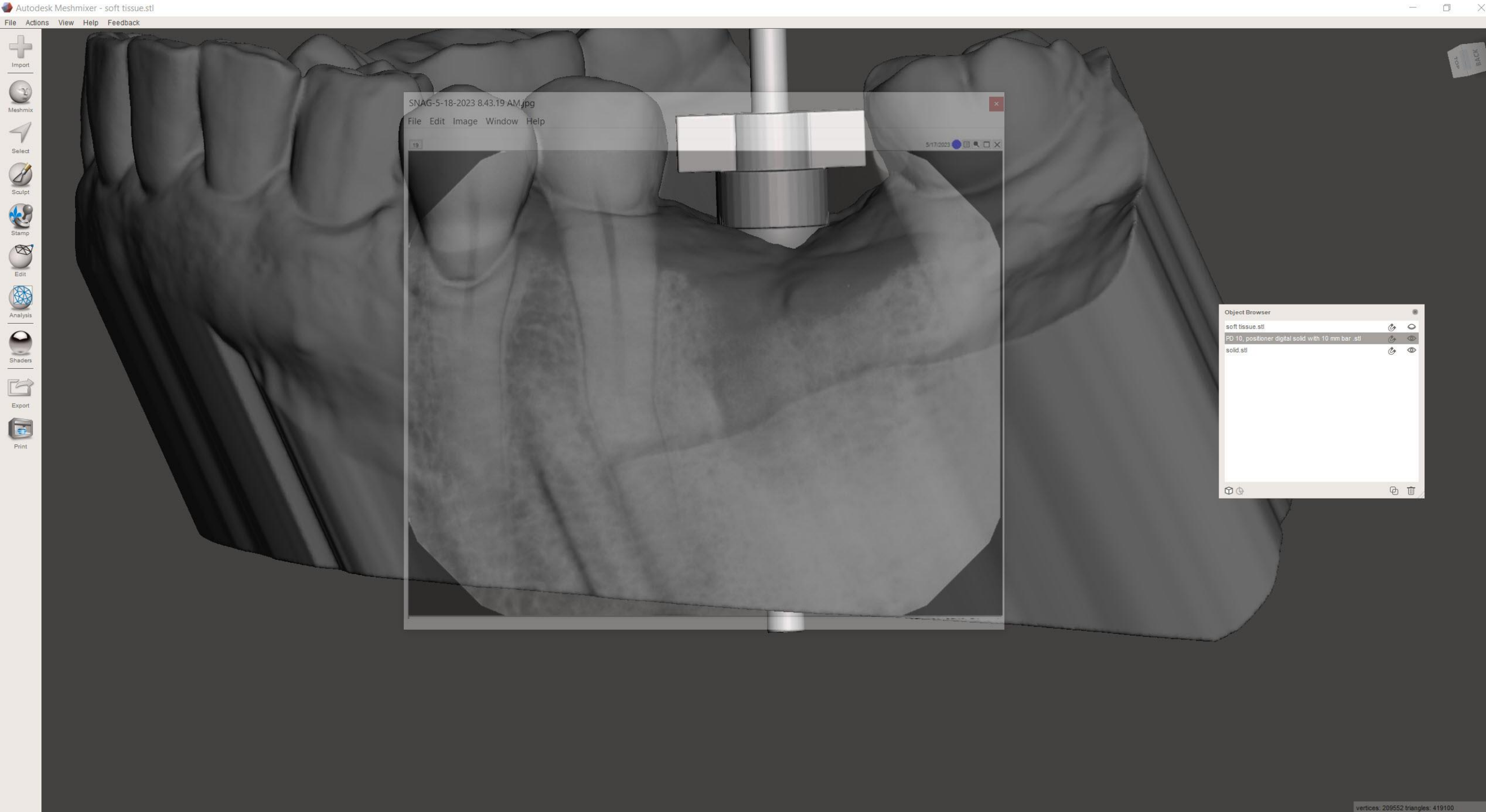
Working in Adobe Lightroom

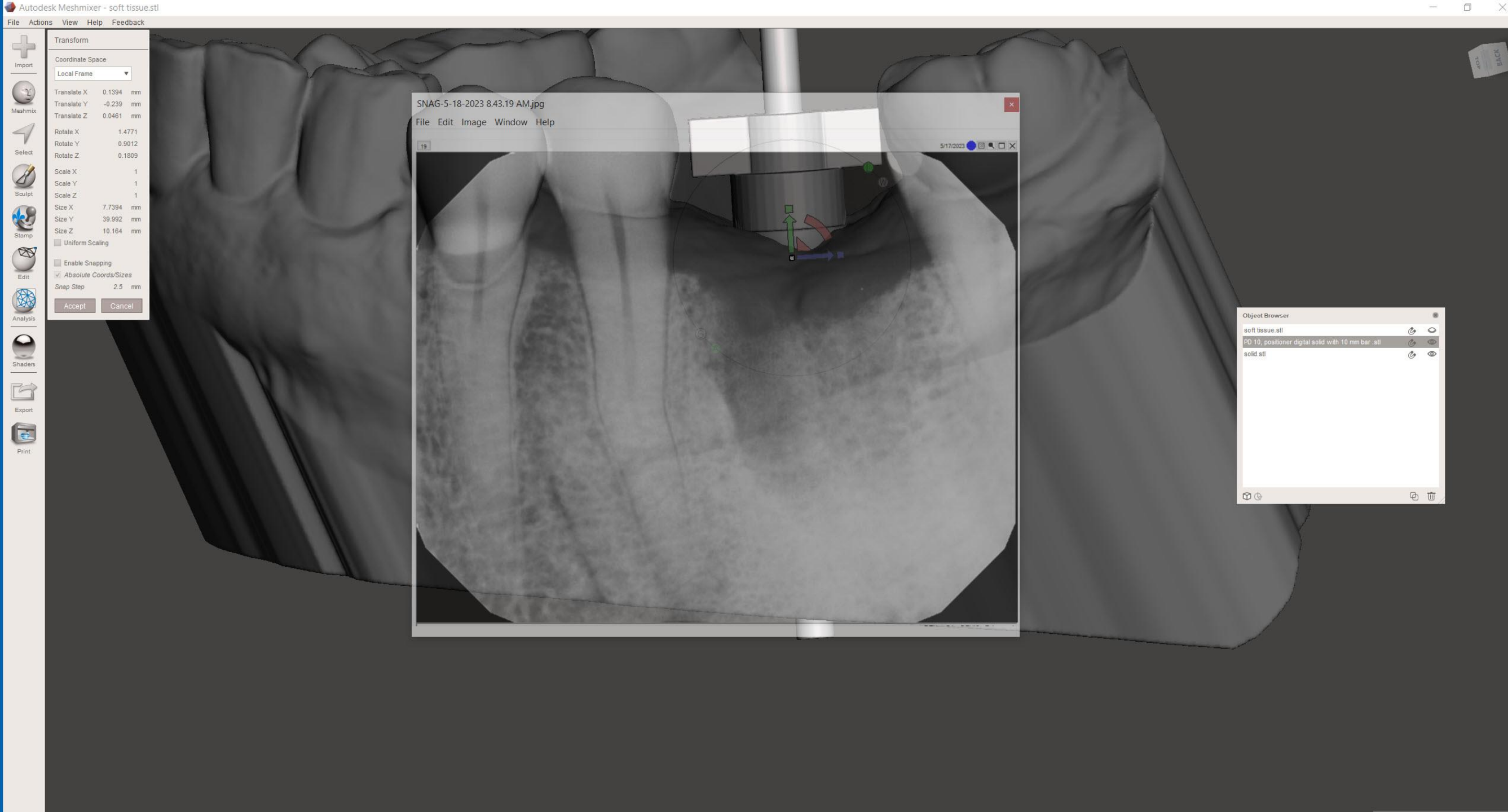


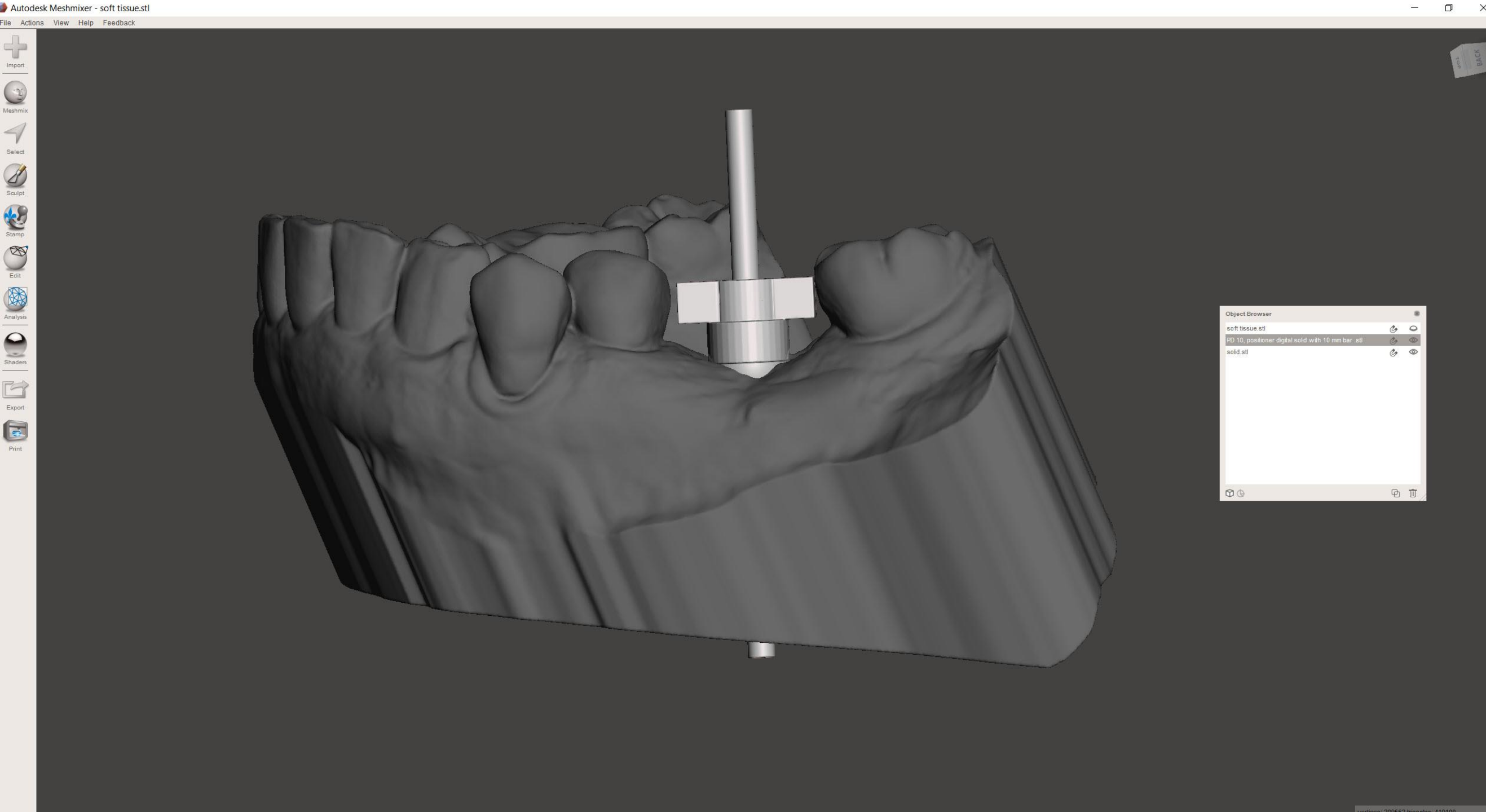
Open layout in OVERLAY2



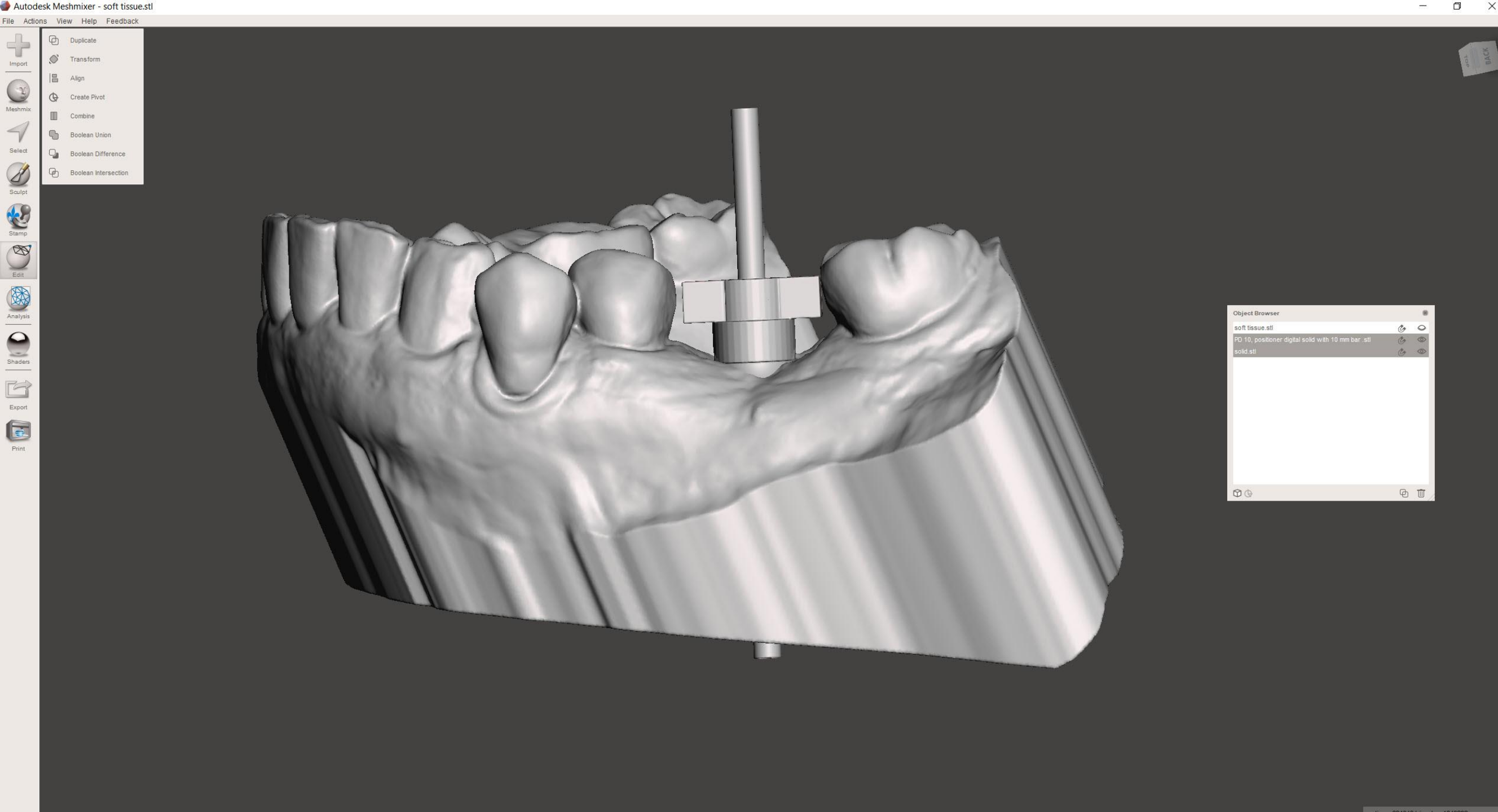
Reposition layout in OVERLAY2



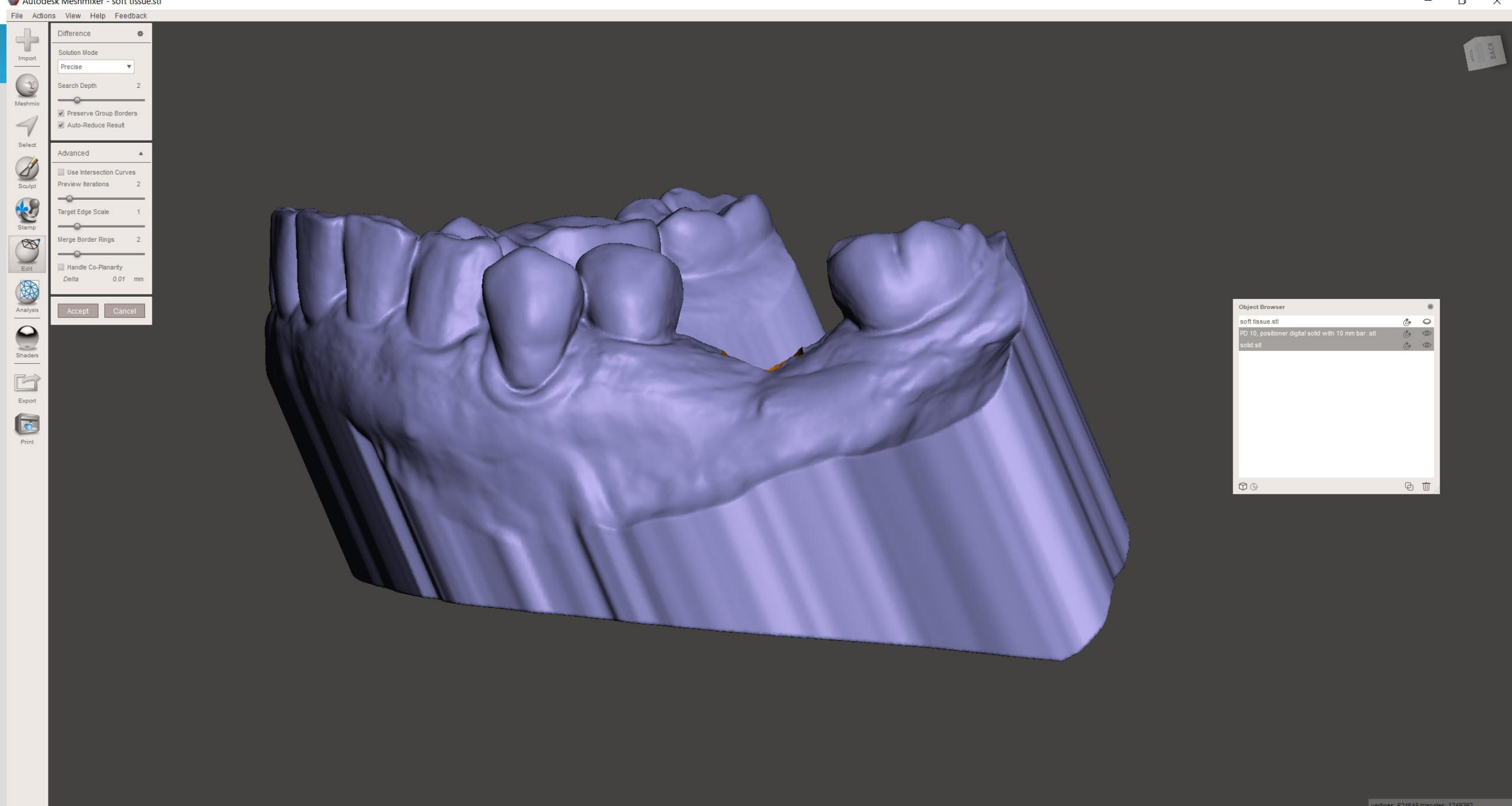


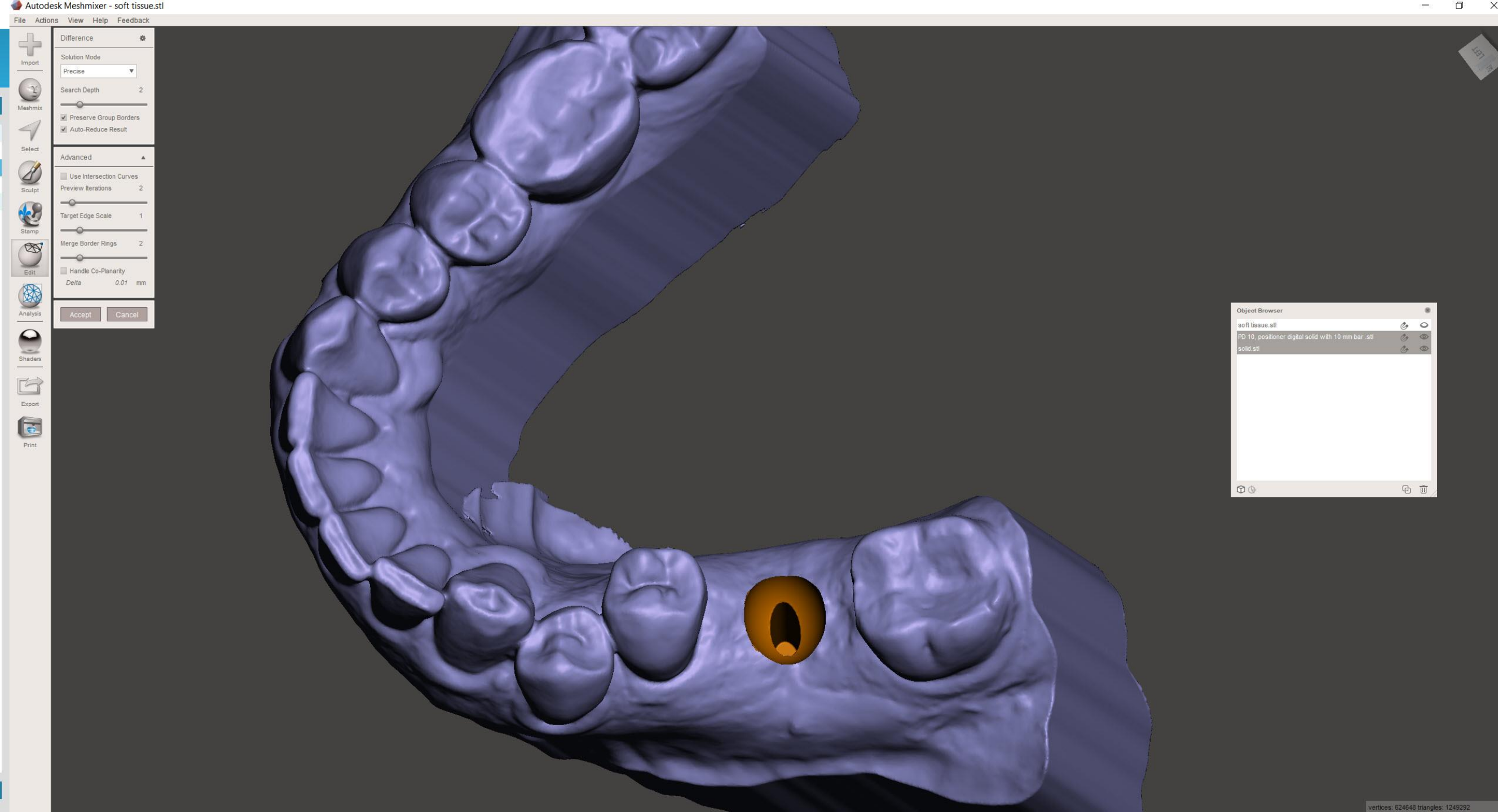


Select PD 10 mm
bar, edit , make
solid, precise



Select Solid file, “
Shift” and select PD
10 mm bar.
Boolean difference





ActionsViewHelpFeedback

+

Import

Meshmix

Select

Sculpt

Stamp

Edit

Analysis

Shaders

Export

Print

Mirror

Duplicate

Transform

Align

Create Pivot

Plane Cut

Close Cracks

Generate Face Groups

Make Solid

Hollow

Make Pattern

Separate Shells

Add Tube

Unwrap

Generate Complex

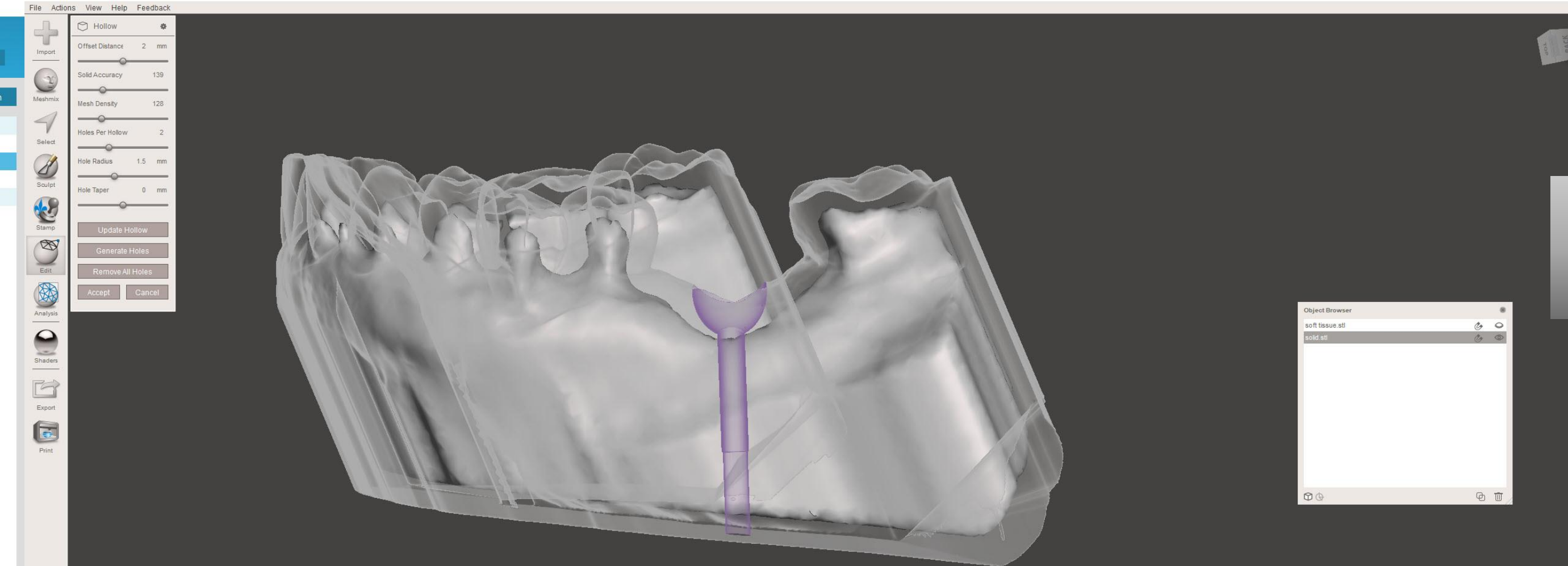
A 3D model of a dental arch, likely a maxilla or mandible, rendered in a light gray, semi-transparent material. The model shows several teeth with detailed crowns and roots. A prominent, dark, circular hole is visible in the center of the arch, possibly representing a missing tooth or a surgical opening. The model is set against a dark gray background.

Object Browser

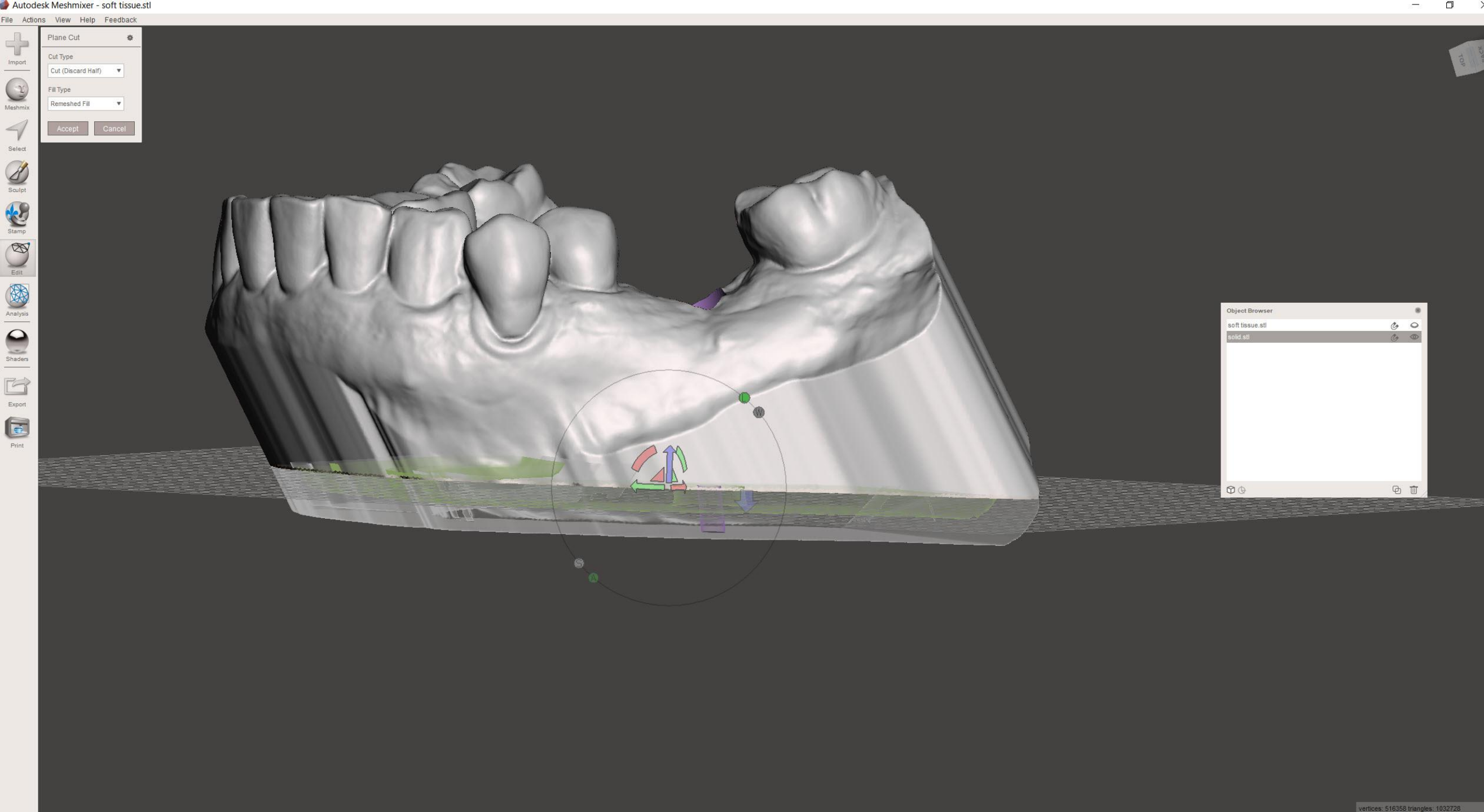
soft tissue.stl

solid.stl

vertices: 499699 triangles: 999402



Edit, make hollow



Edit, plane cut



Export and name
file

Block out deep undercuts with “ Model Bloc” from TAK industries

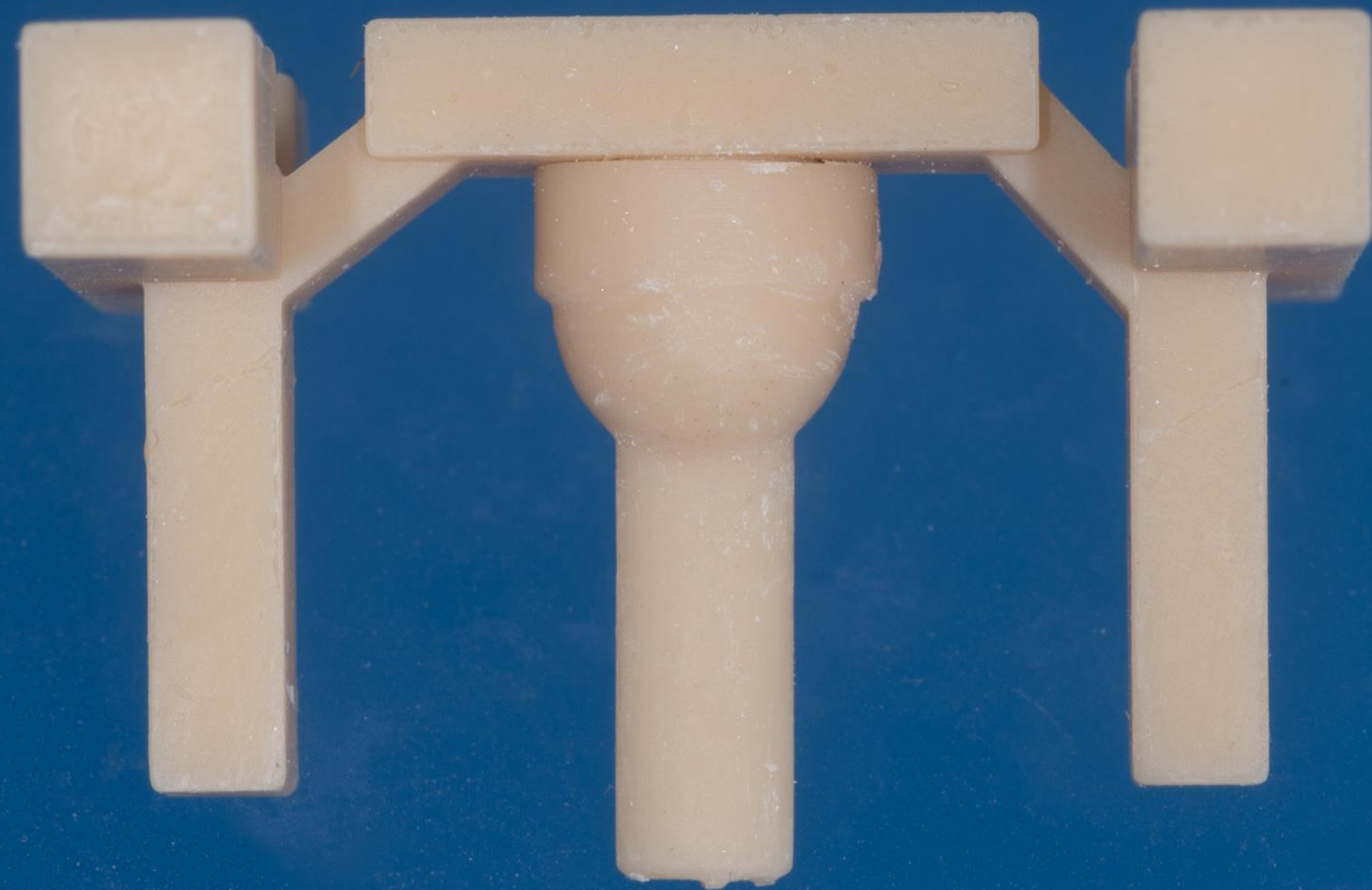


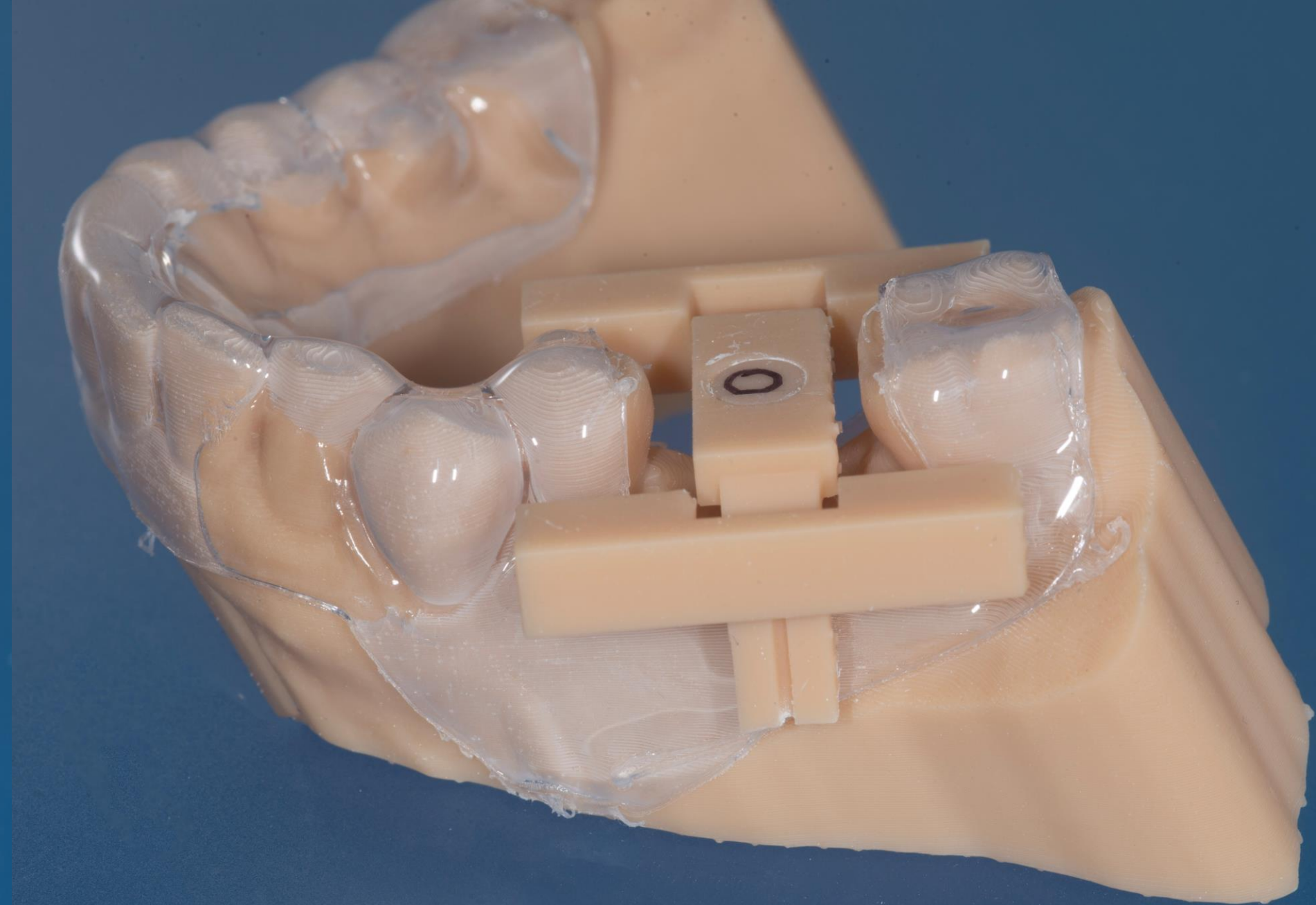
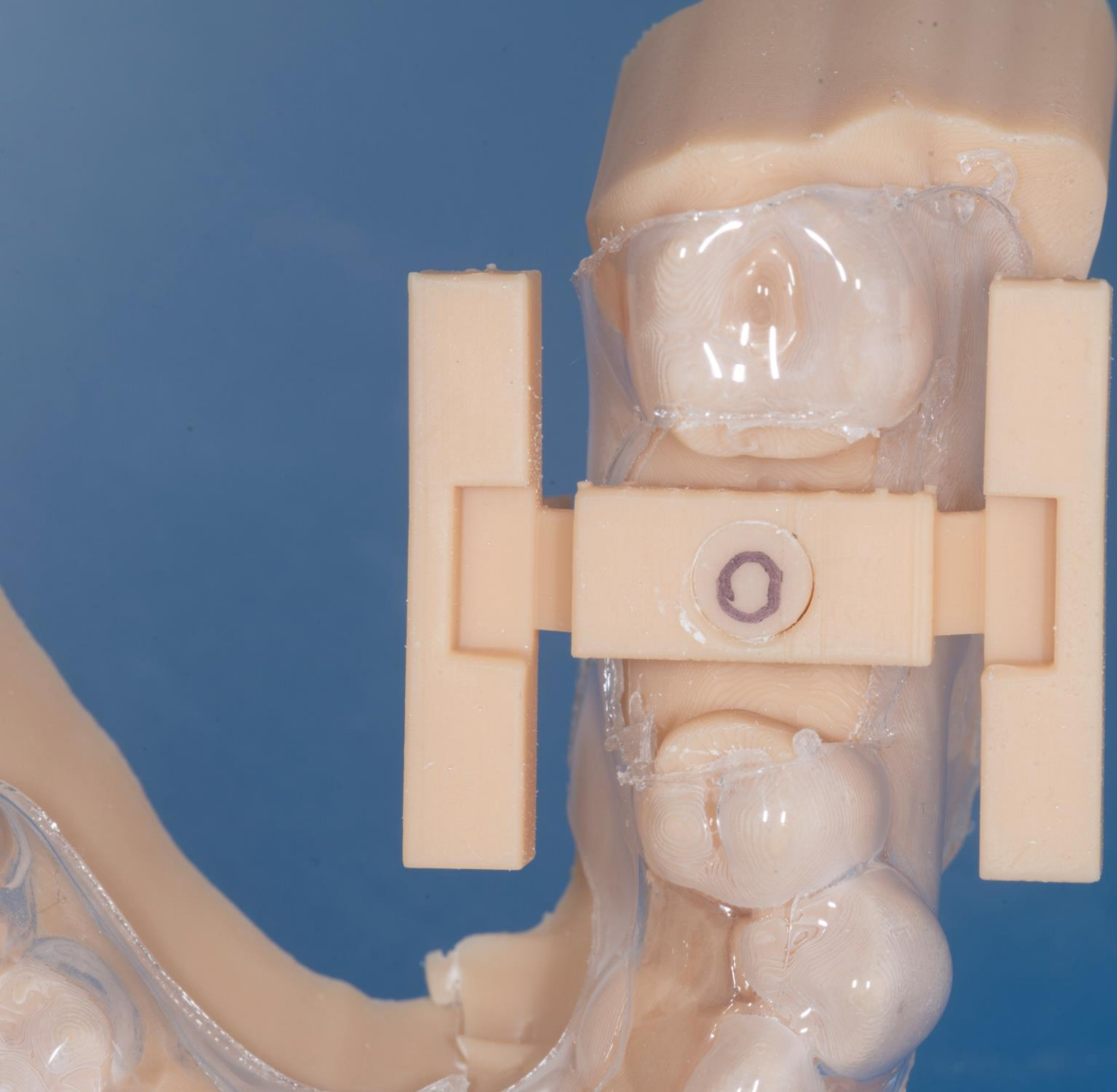
Use a 1 mm soft and 0.5 mm hard together. The soft bleaching material touching the teeth and the hard bonding accepting material on top



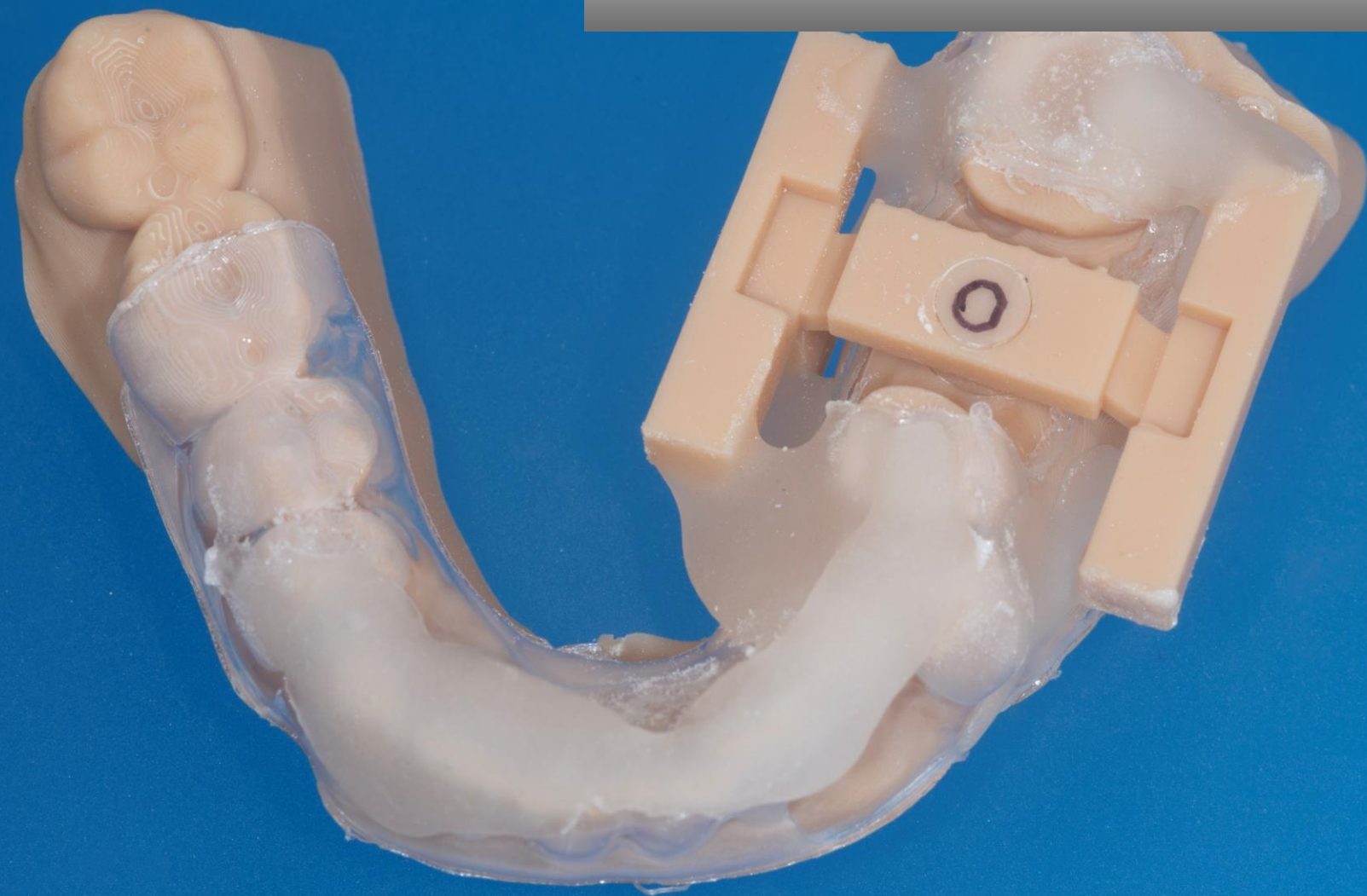
Cut with heated knife

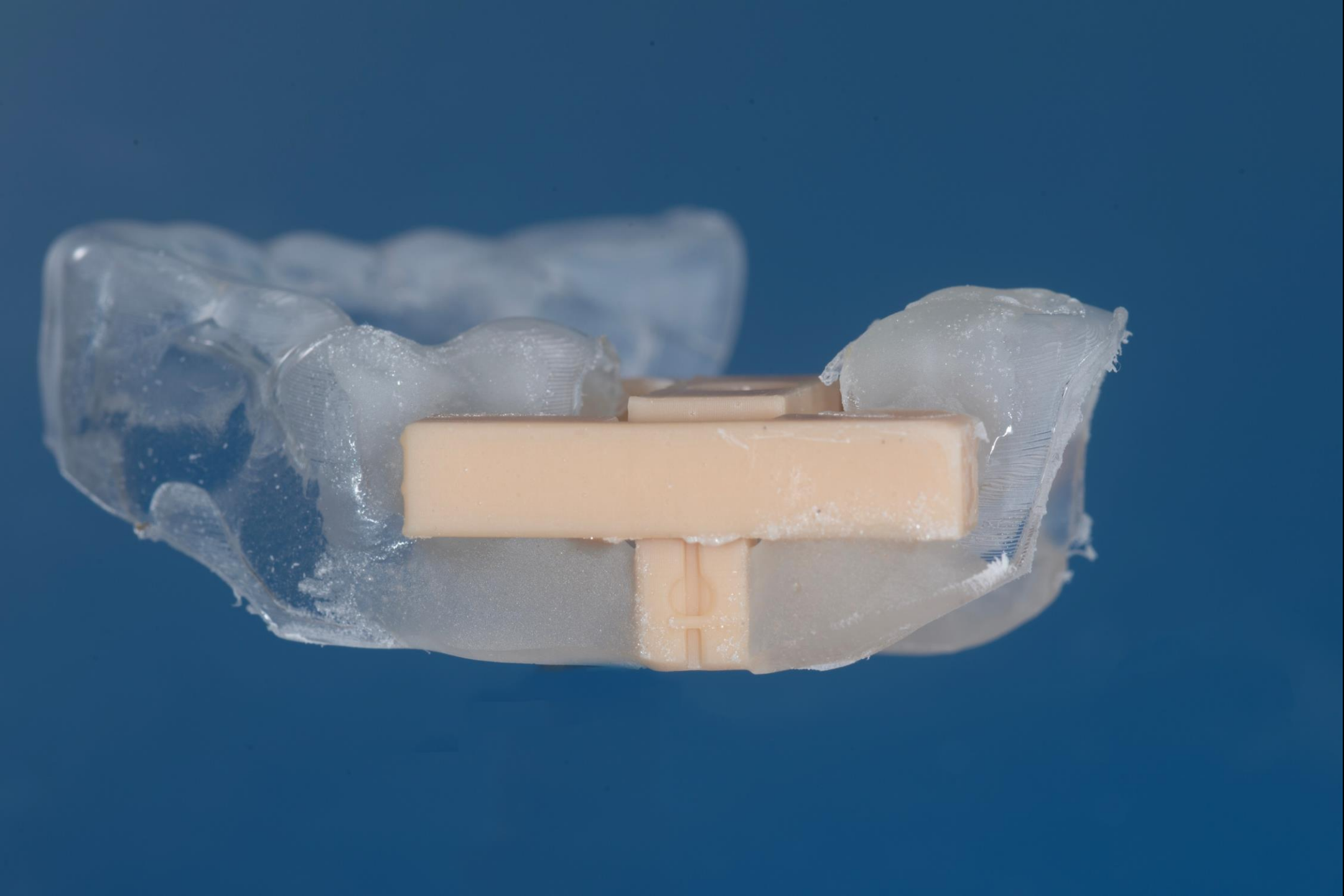
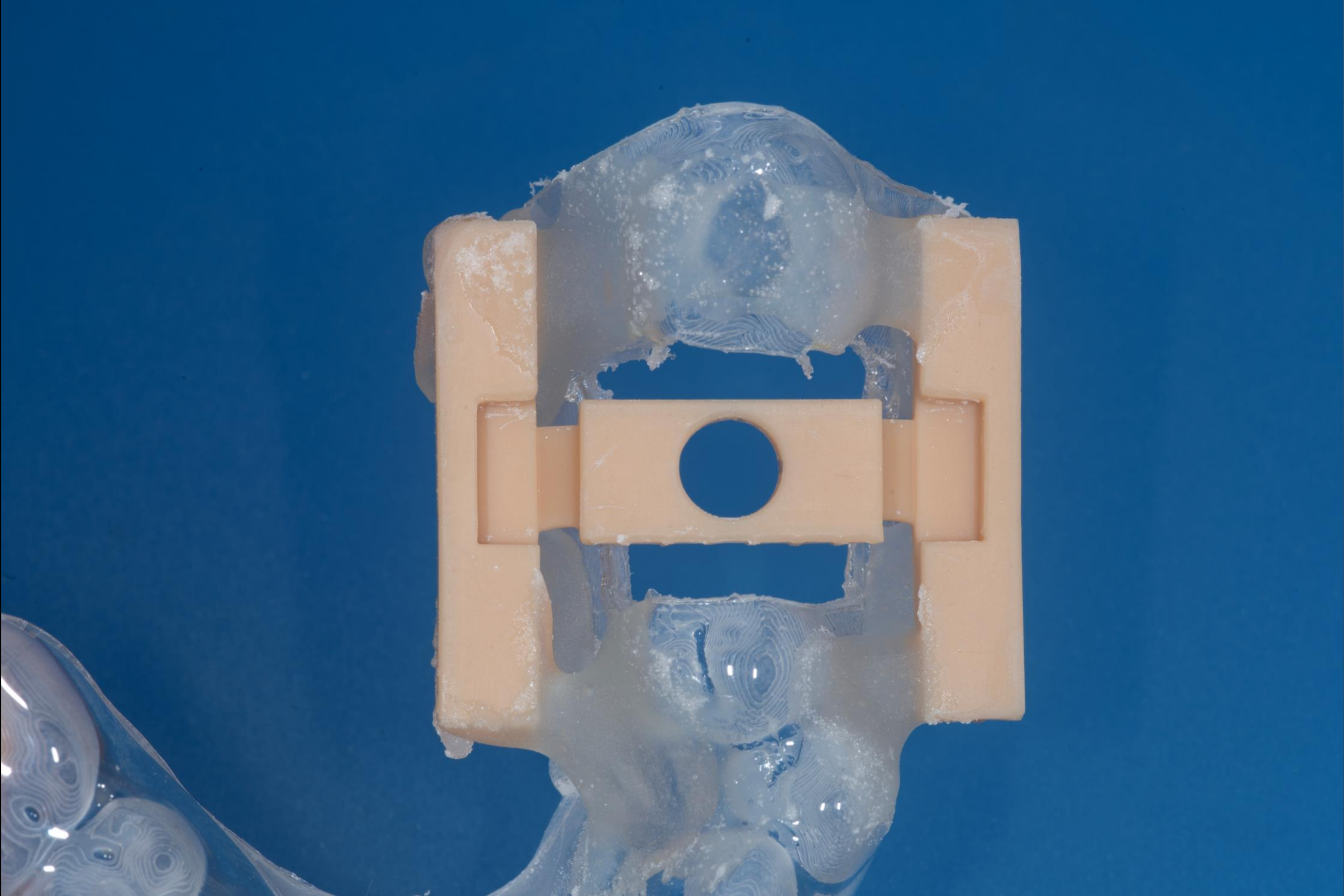


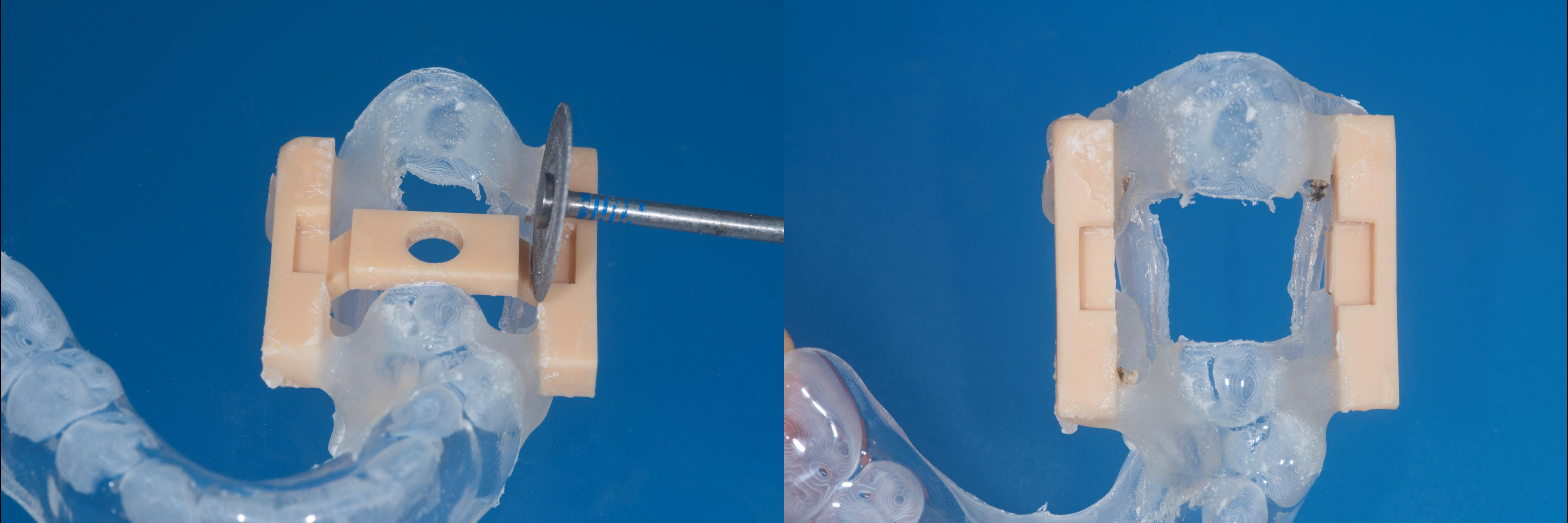




Attach and reinforce with fast set ortho acrylic





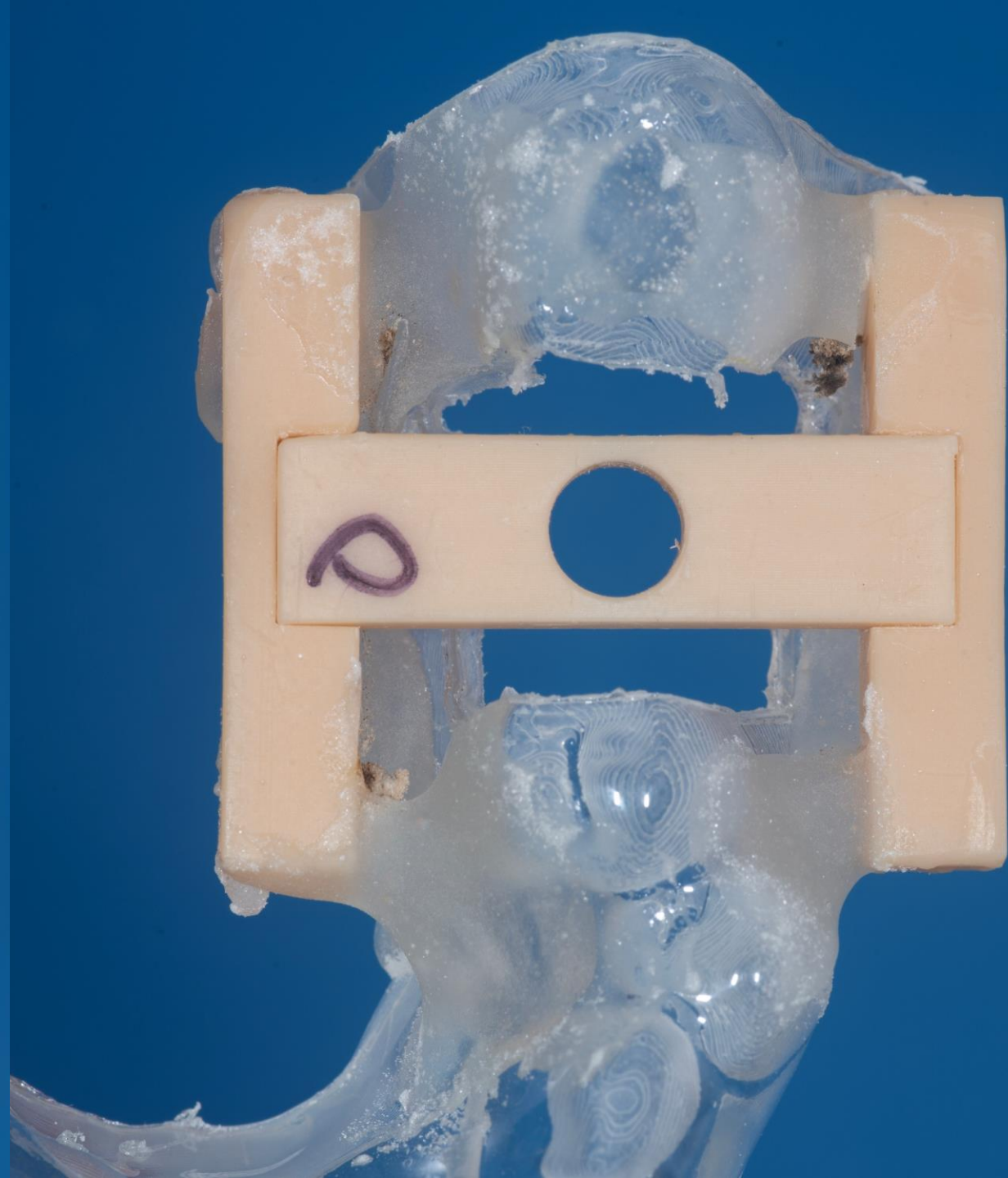
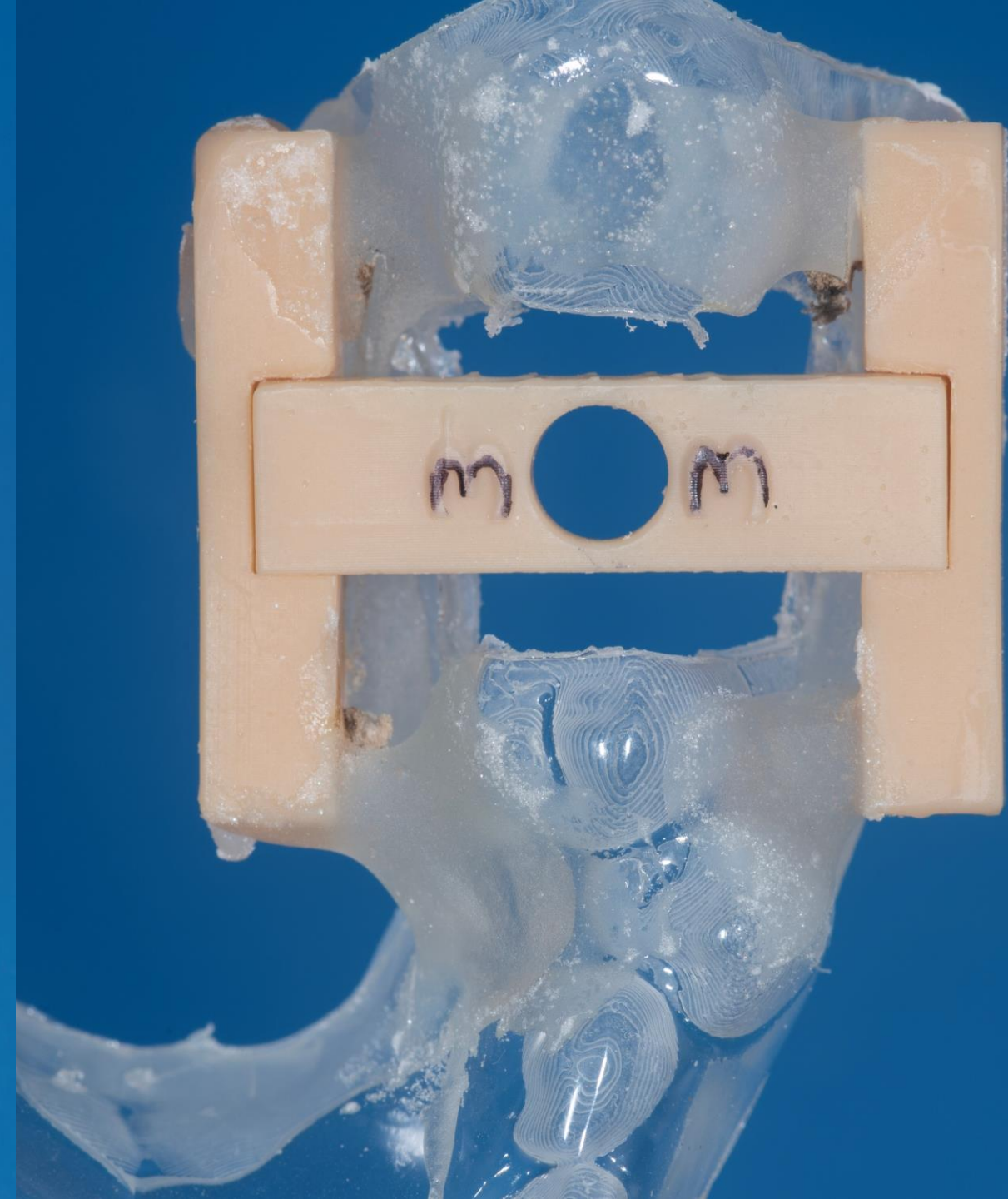
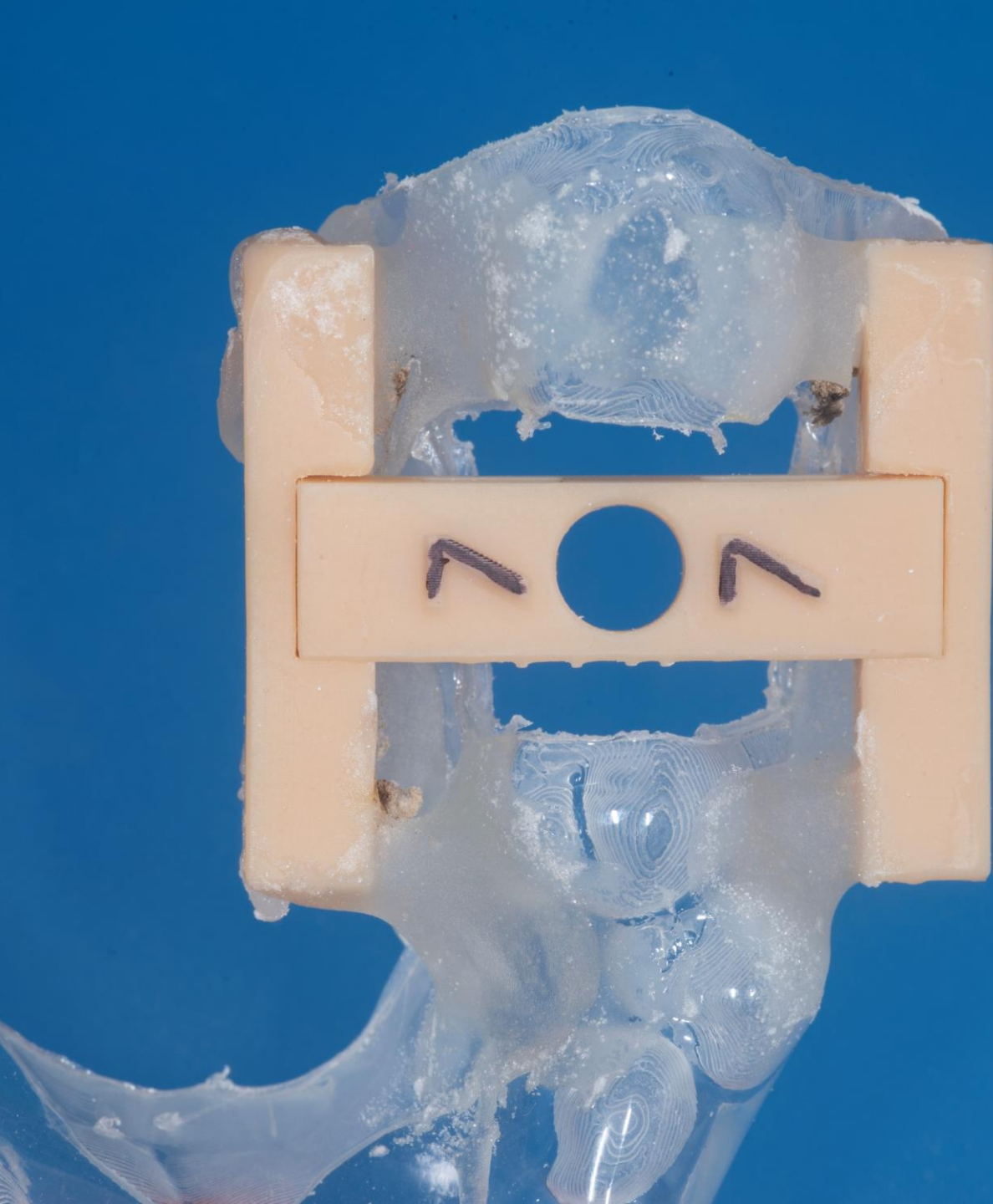


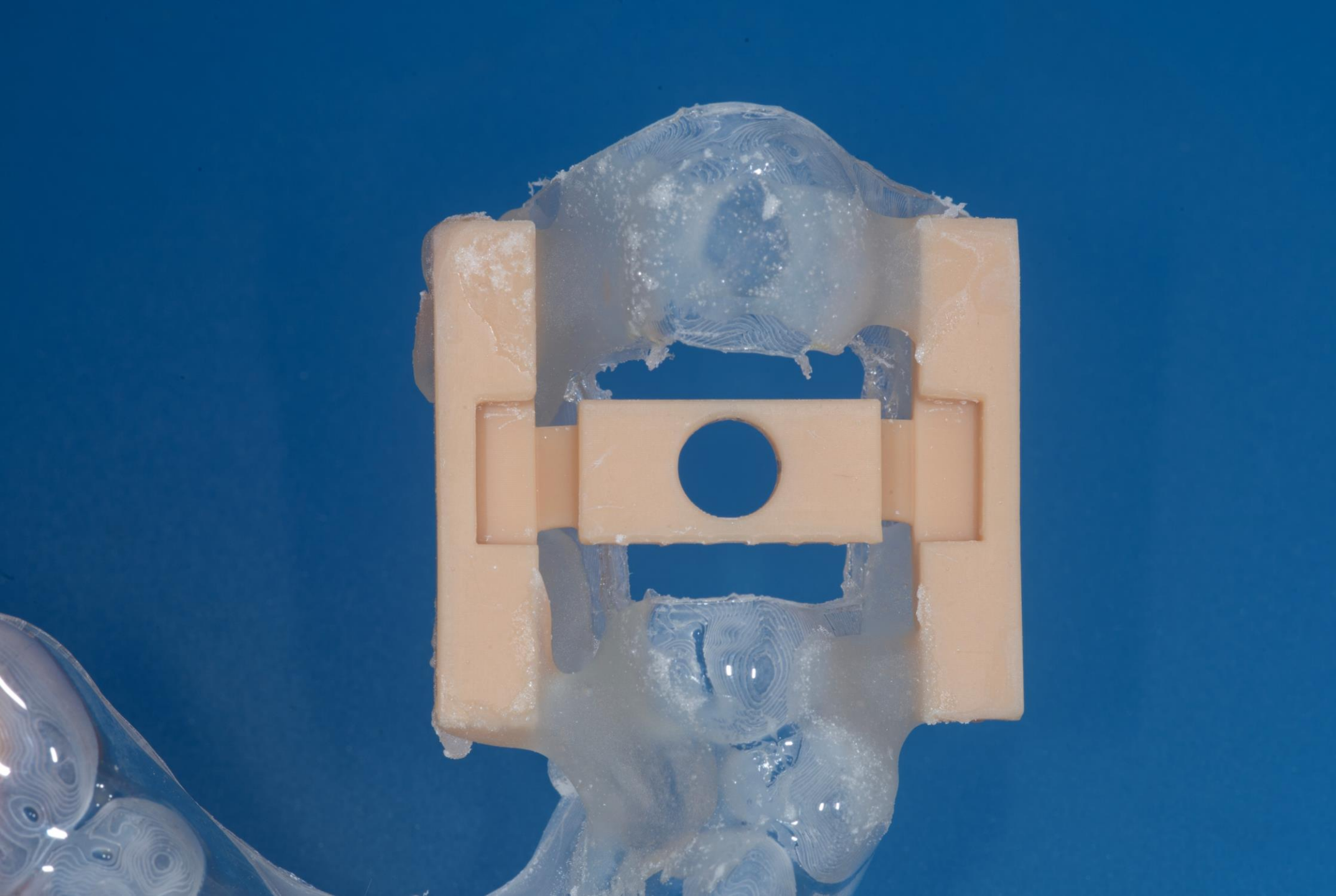
Why rotation blocks ?

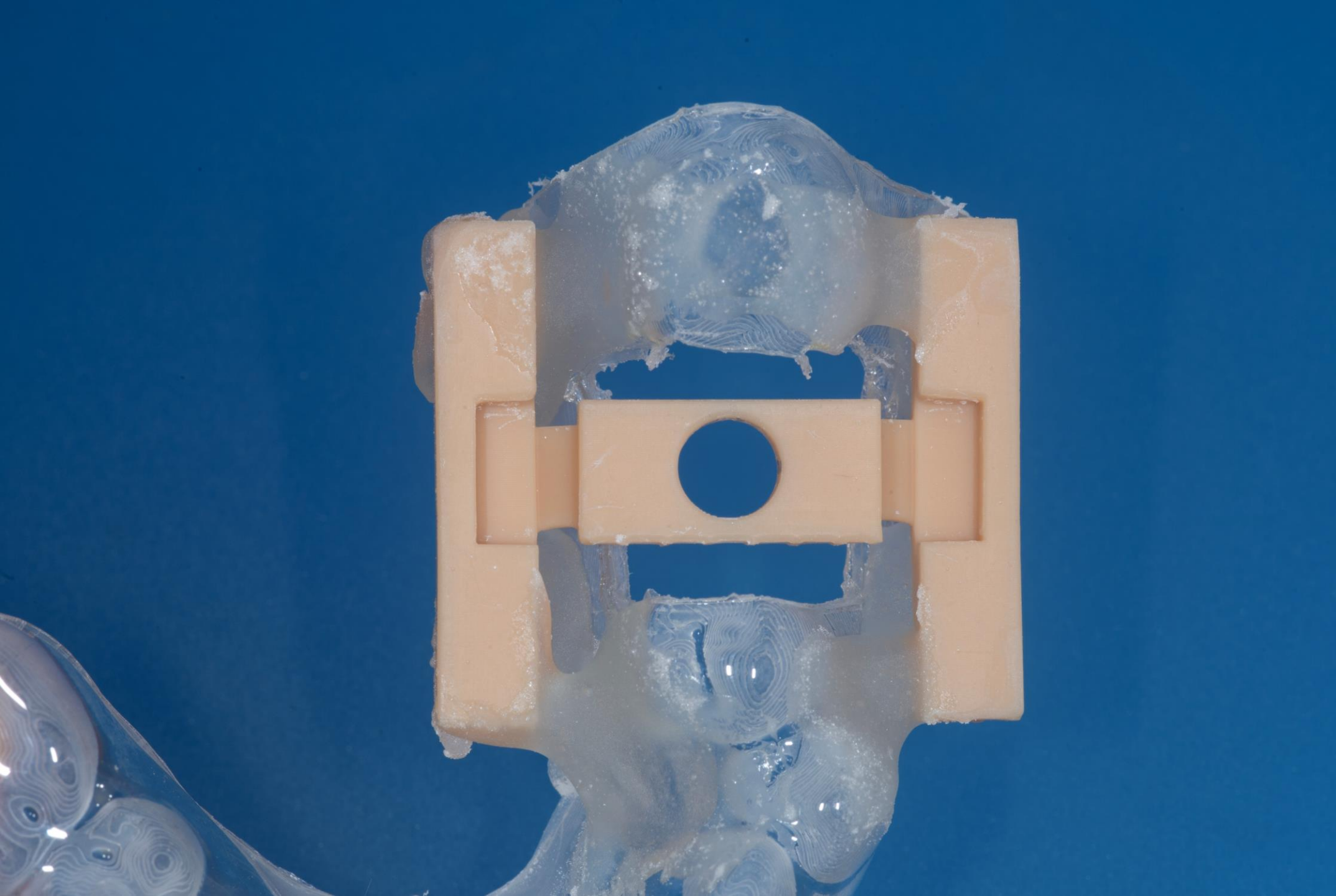
Since the mesio-distal position is an estimation there is a need to allow modification if needed.

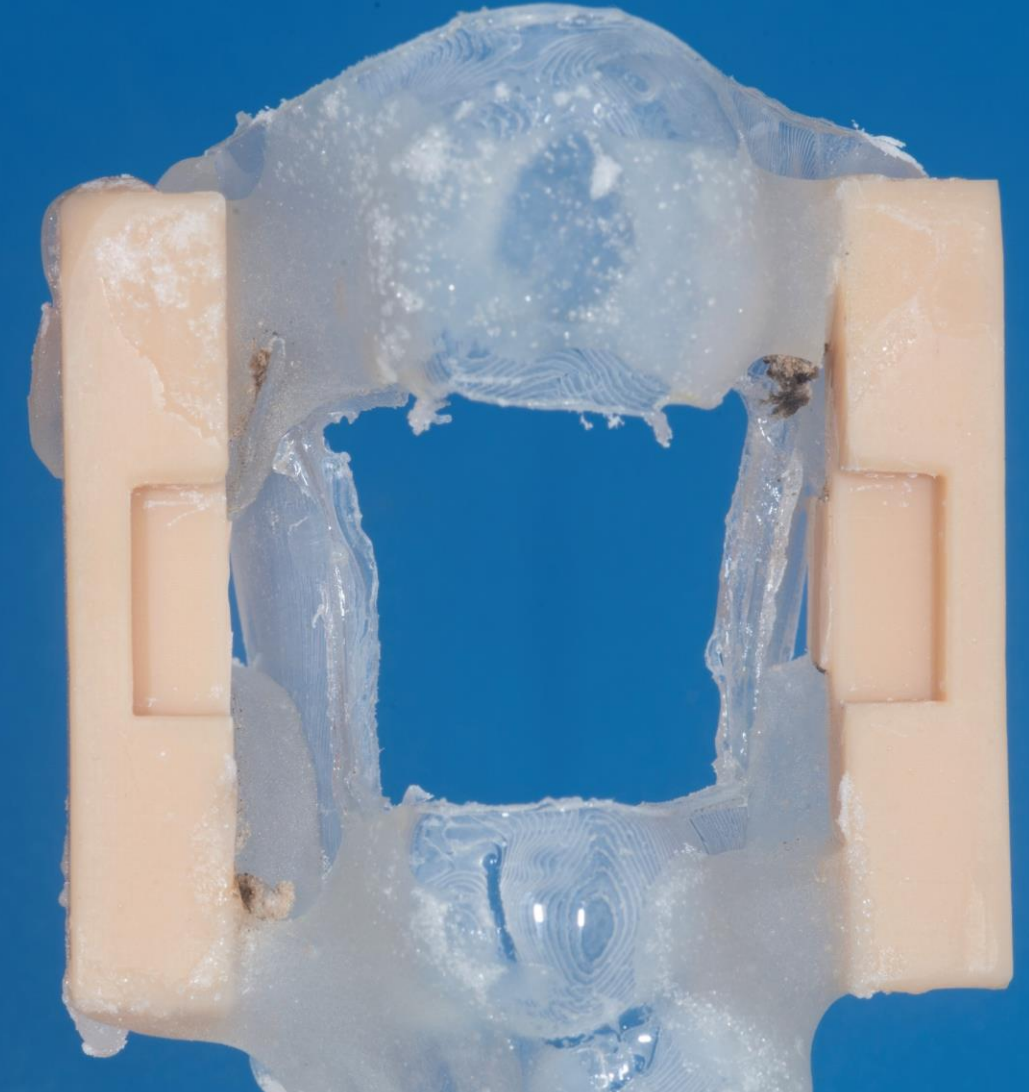
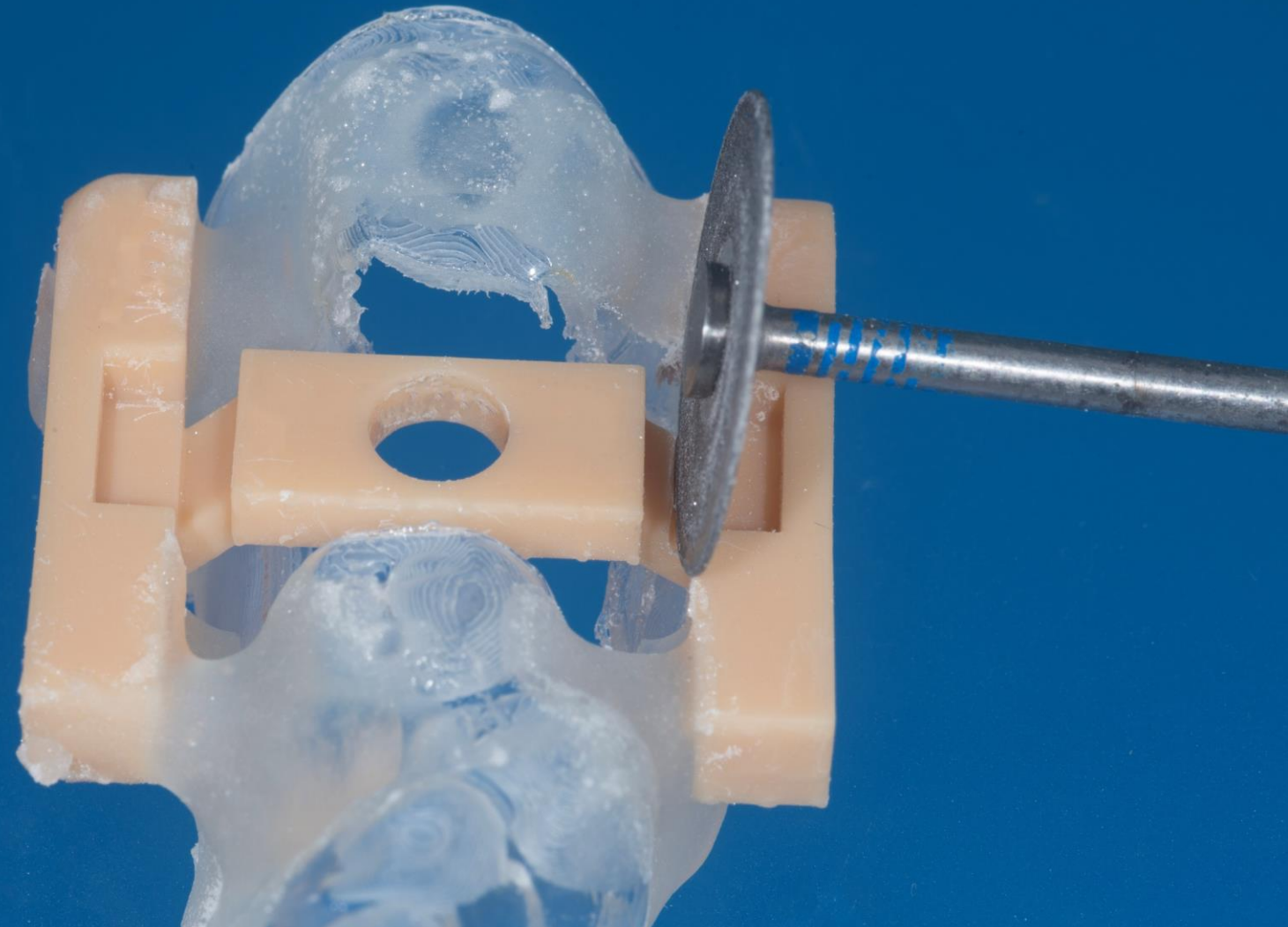
Most of the time the 0-degree setup is just fine.

Just in case. There is a 3- and 7-degree rotation block. Allowing to change only the mesio-distal rotation while keeping the other values intact.



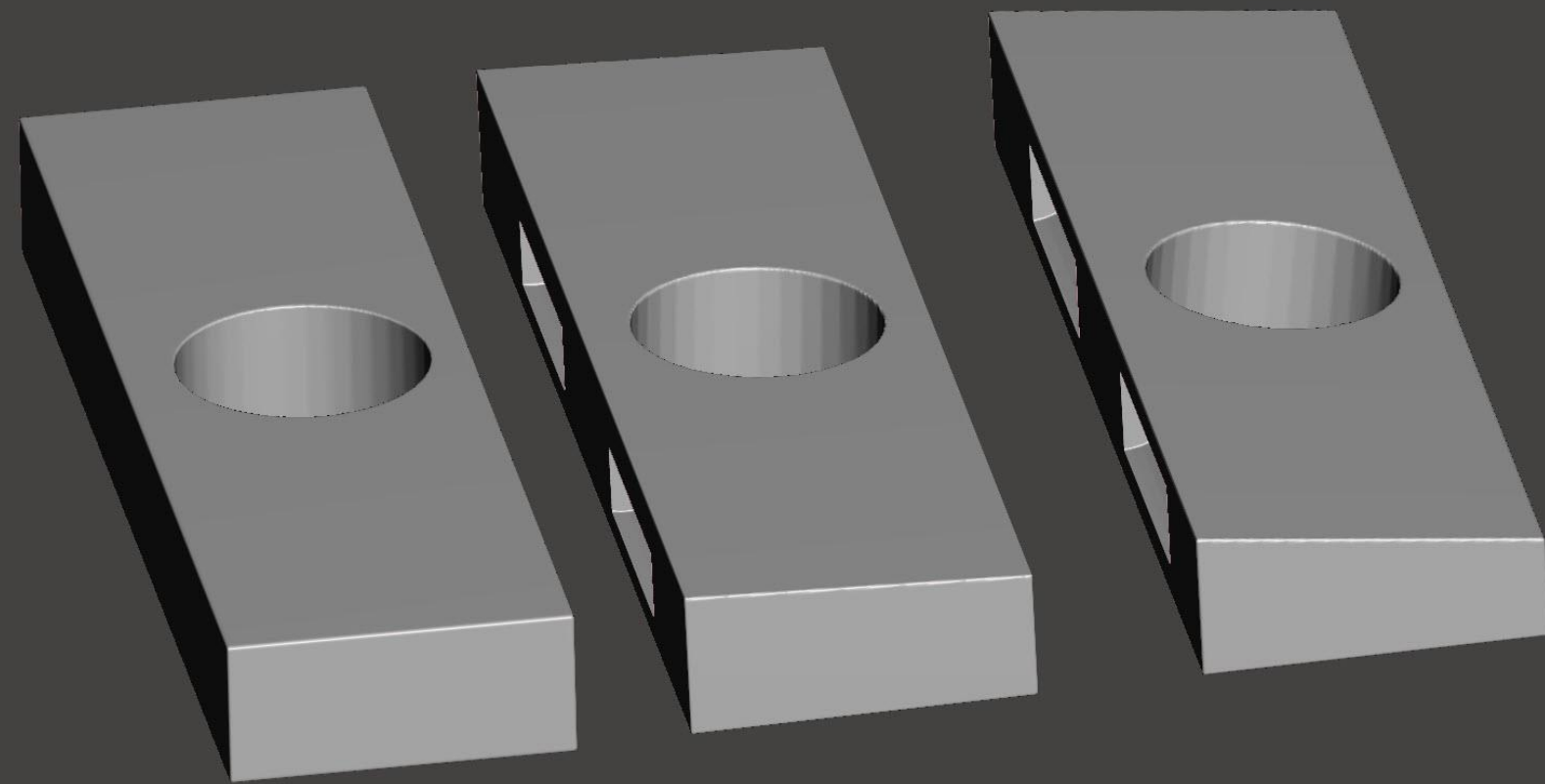






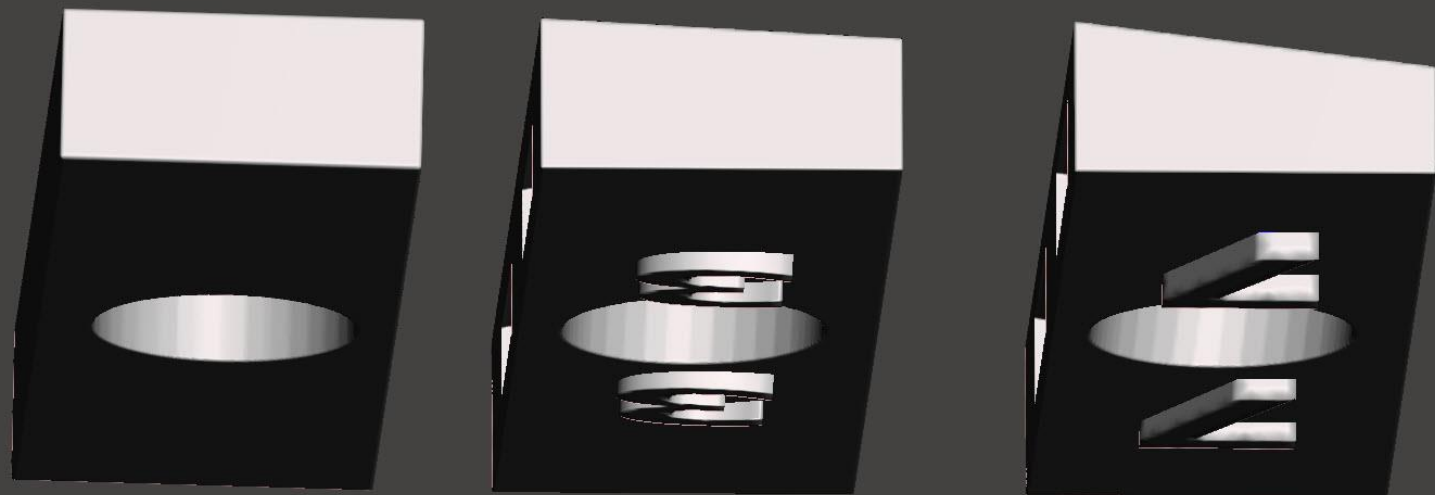
If rotational correction required cut out central part and replace with 3- or 7-degree rotation block

-  Duplicate
-  Transform
-  Align
-  Create Pivot
-  Combine



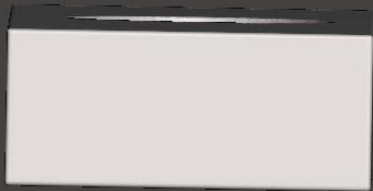
-  Duplicate
-  Transform
-  Align
-  Create Pivot
-  Combine

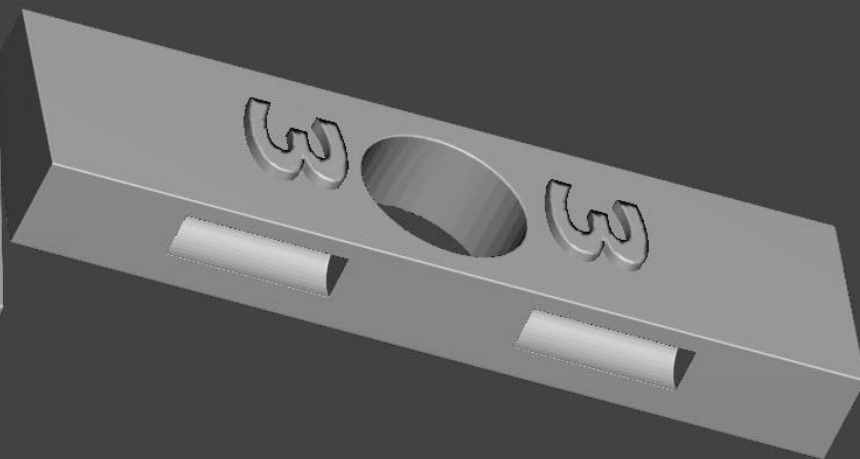
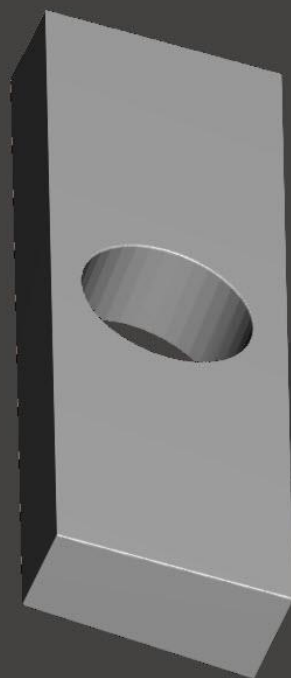
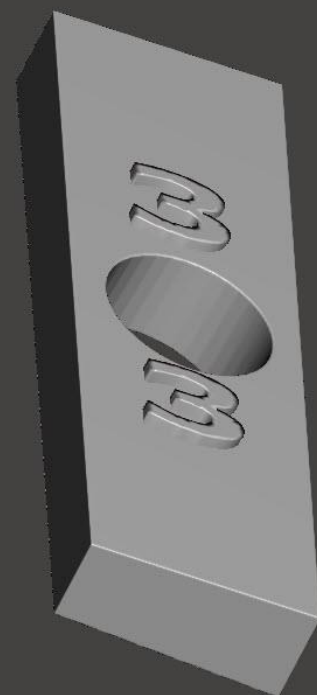
FRONT

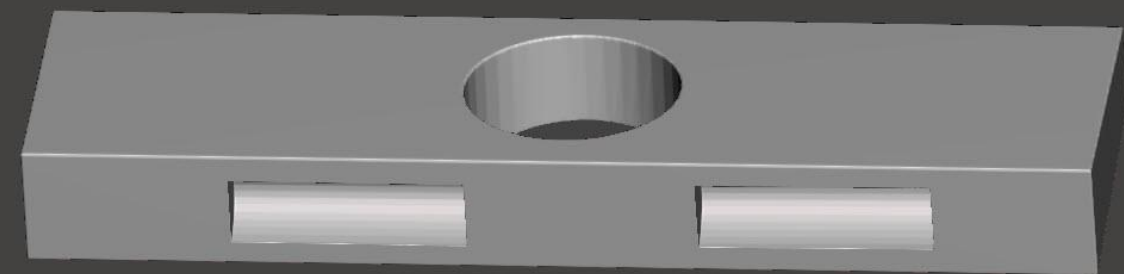
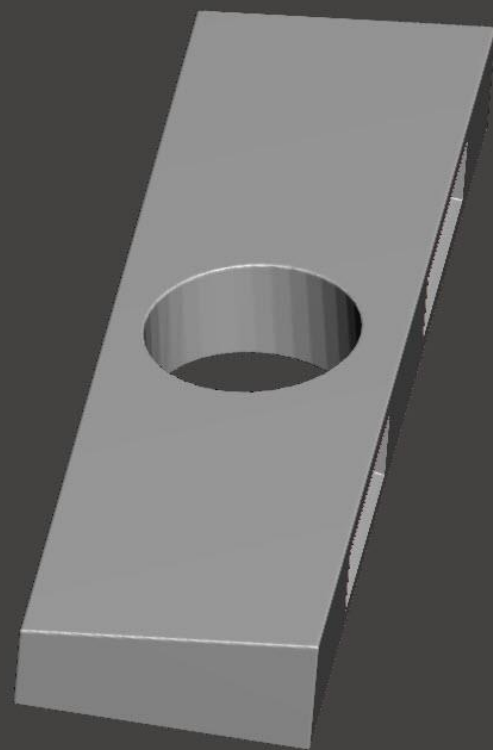
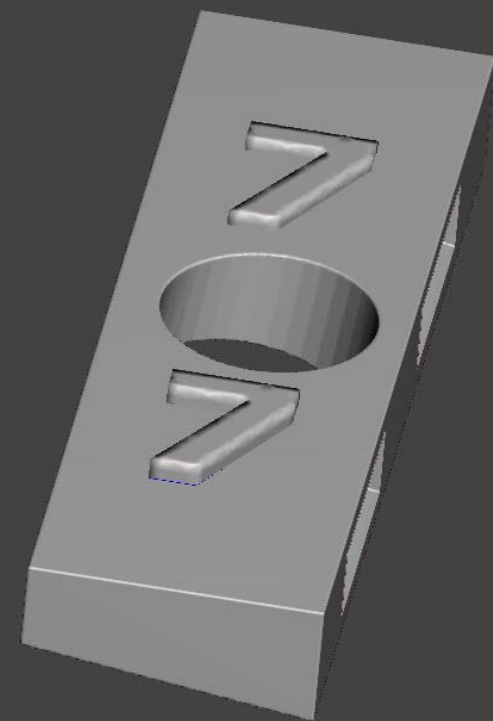


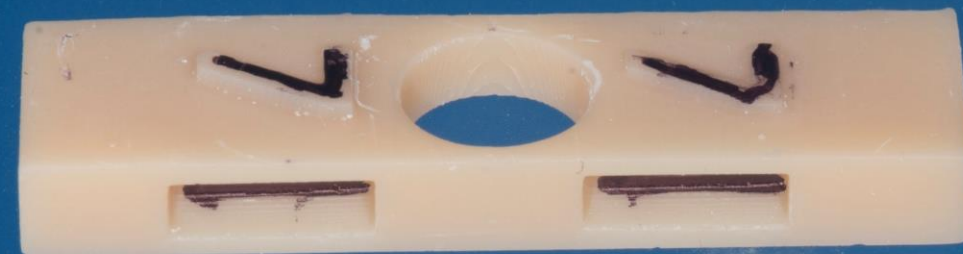
-  Duplicate
-  Transform
-  Align
-  Create Pivot
-  Combine

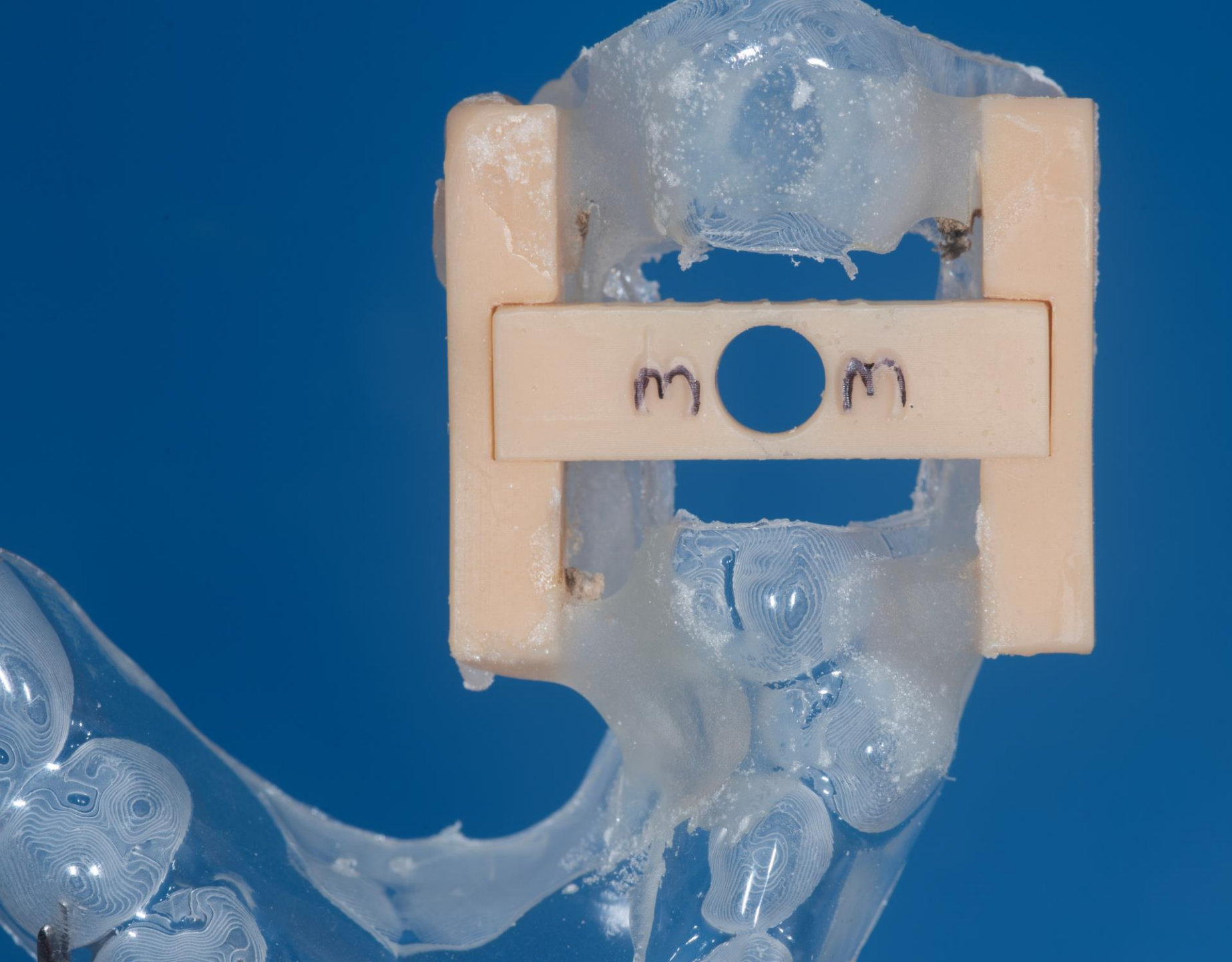
FRONT















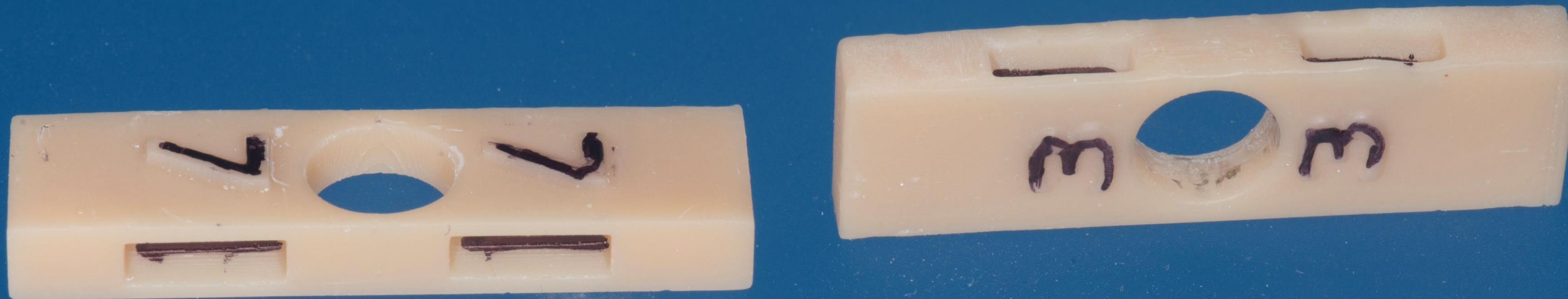
7-degree rotational correction toward mesial



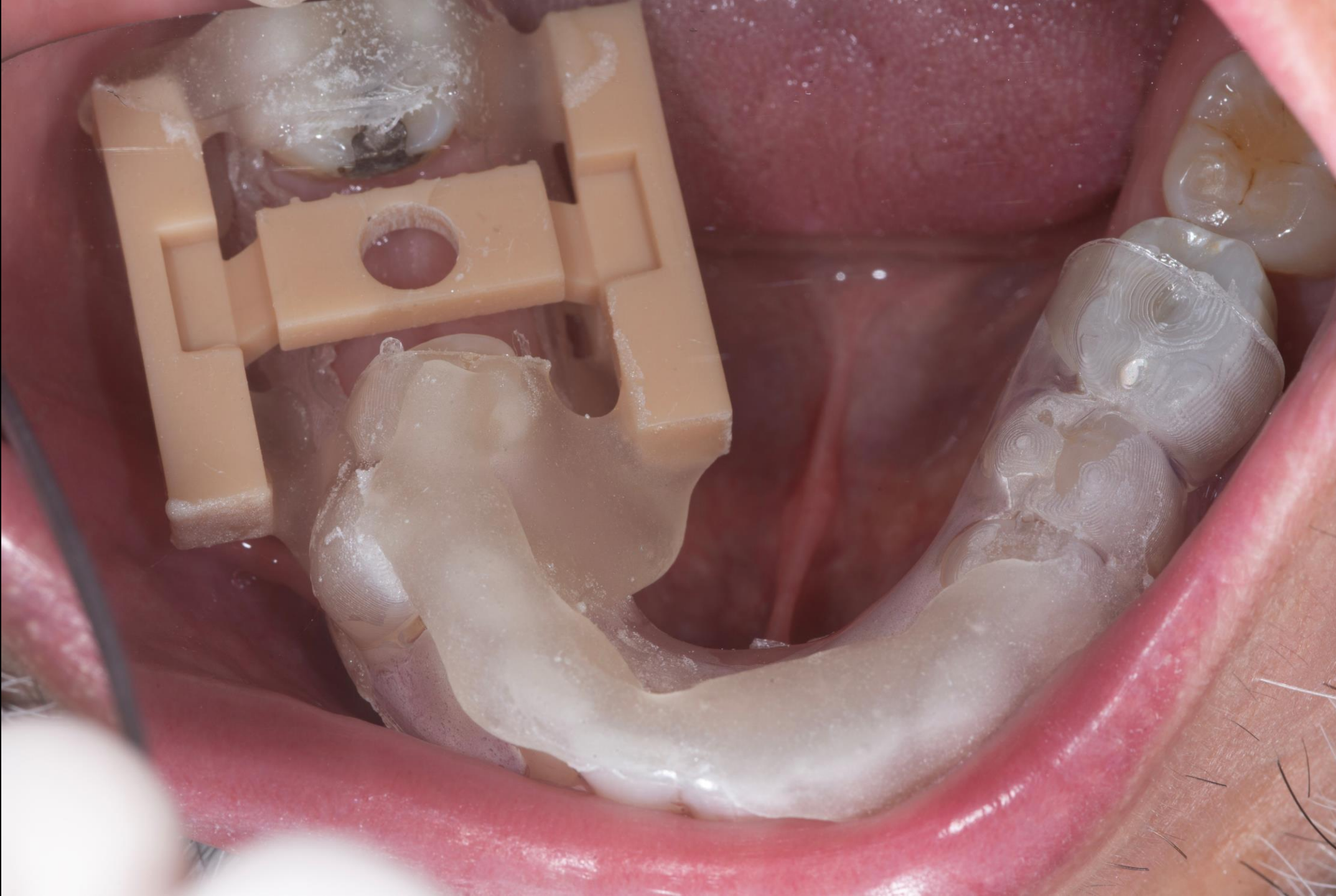
7-degree rotational correction toward distal

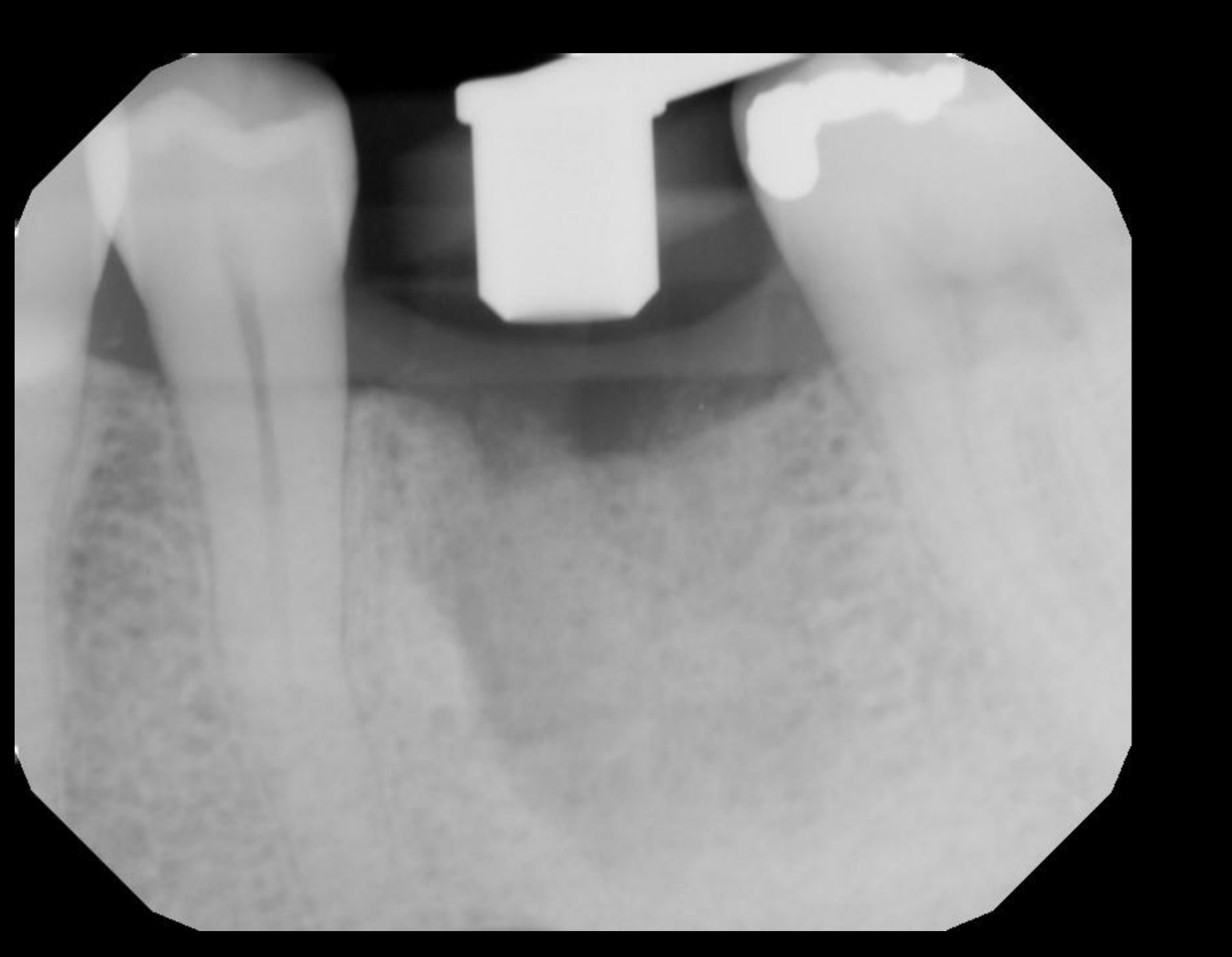
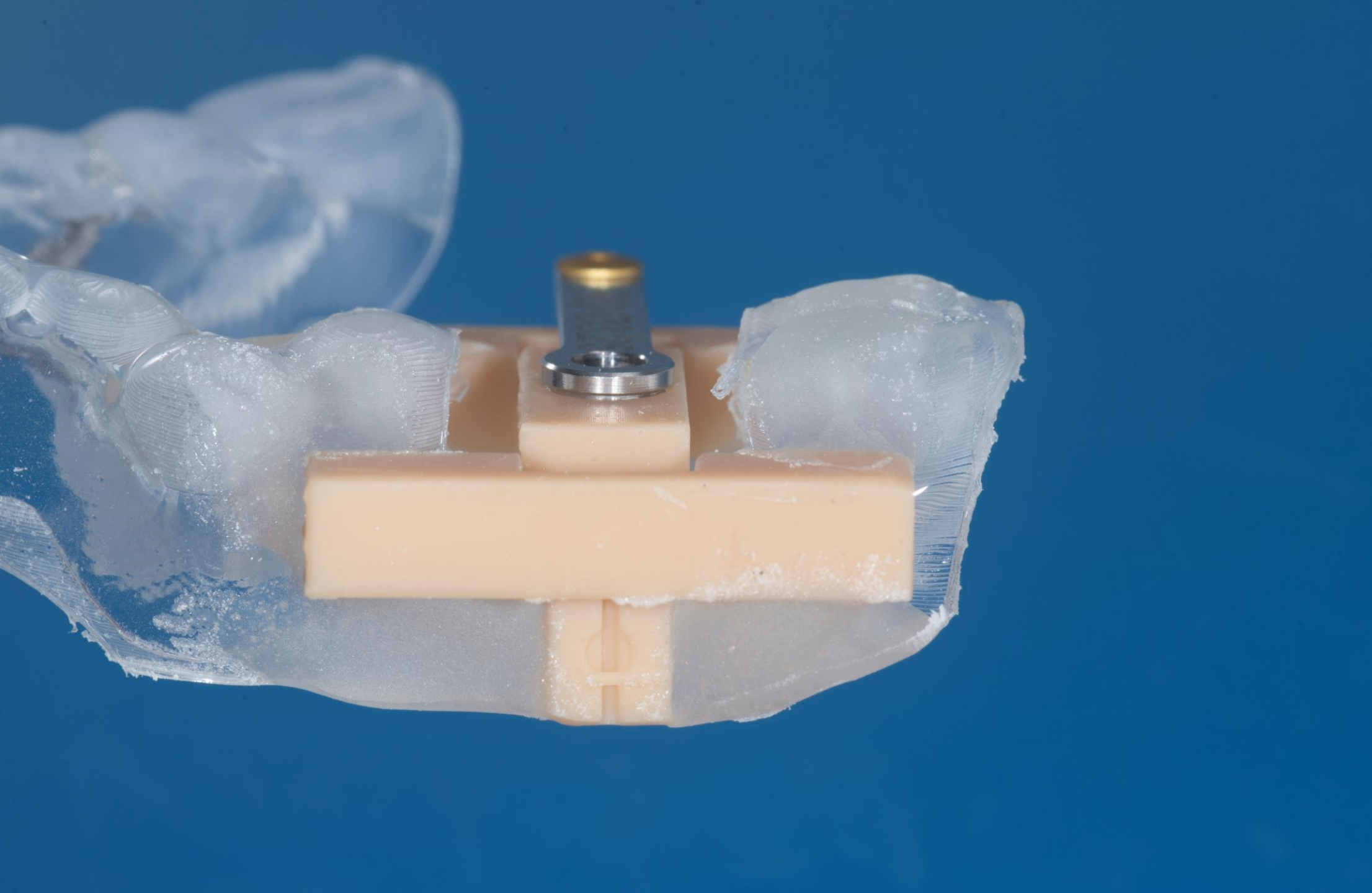
Rotation block direction of adjustment changes by rotating block 180 degrees

Marking on side indicated direction of the rotational correction









The prolongation is 9 mm + 1 mm for the drill guide so 10 mm total
2.4/2.8 drill set at 20 (drill length) – 1,5 (green stop) = 8.5 mm
osteotomy

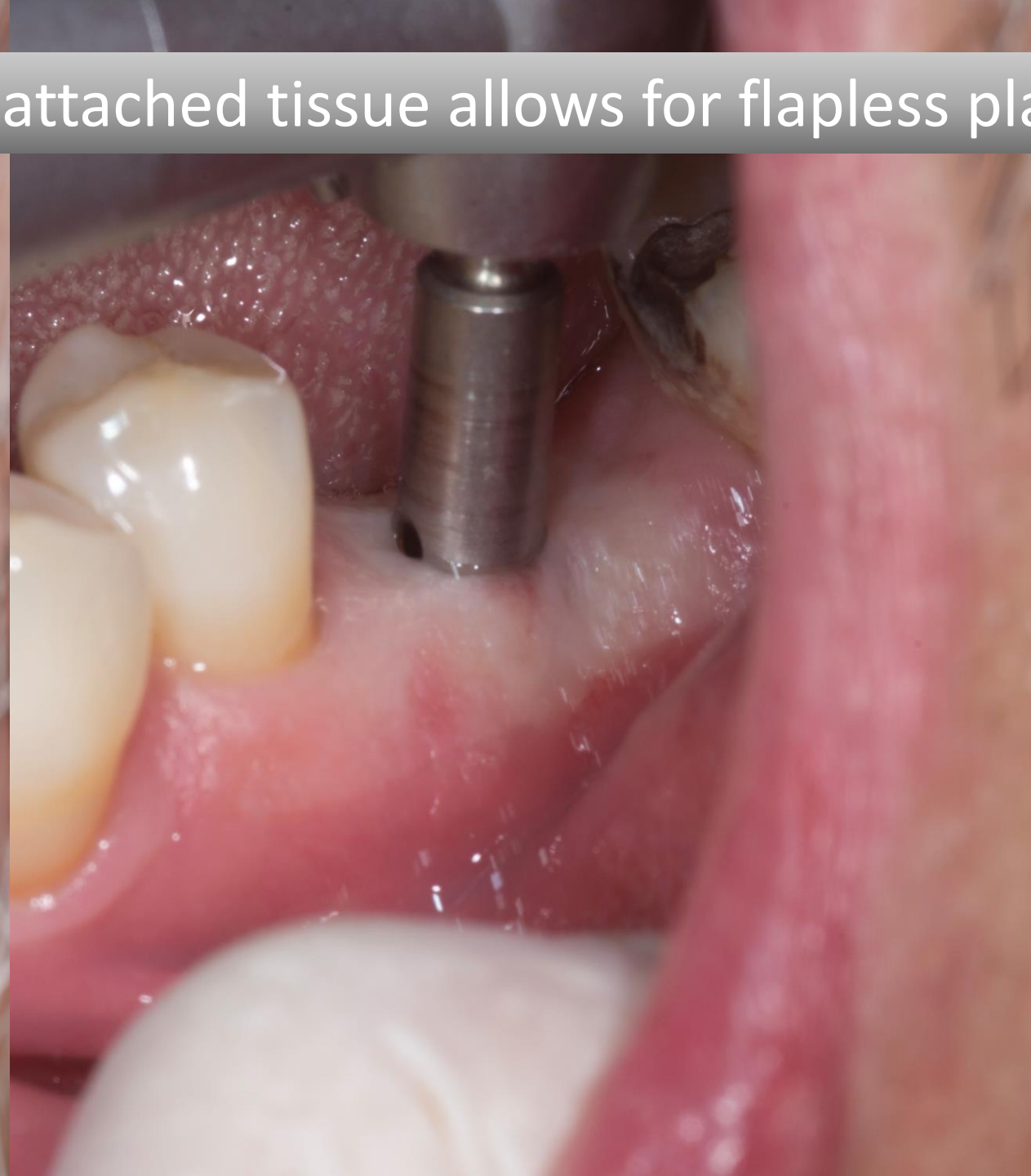


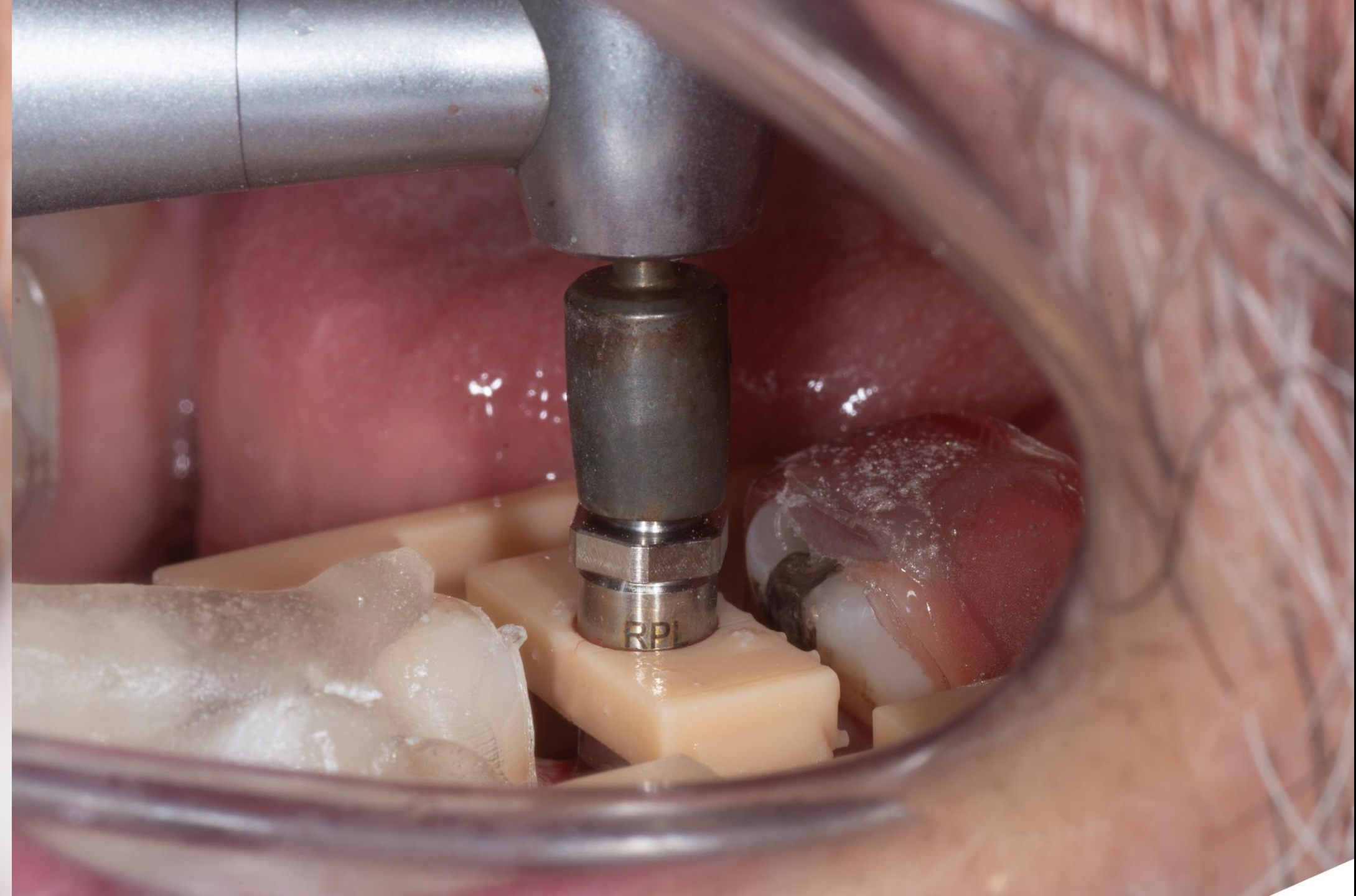
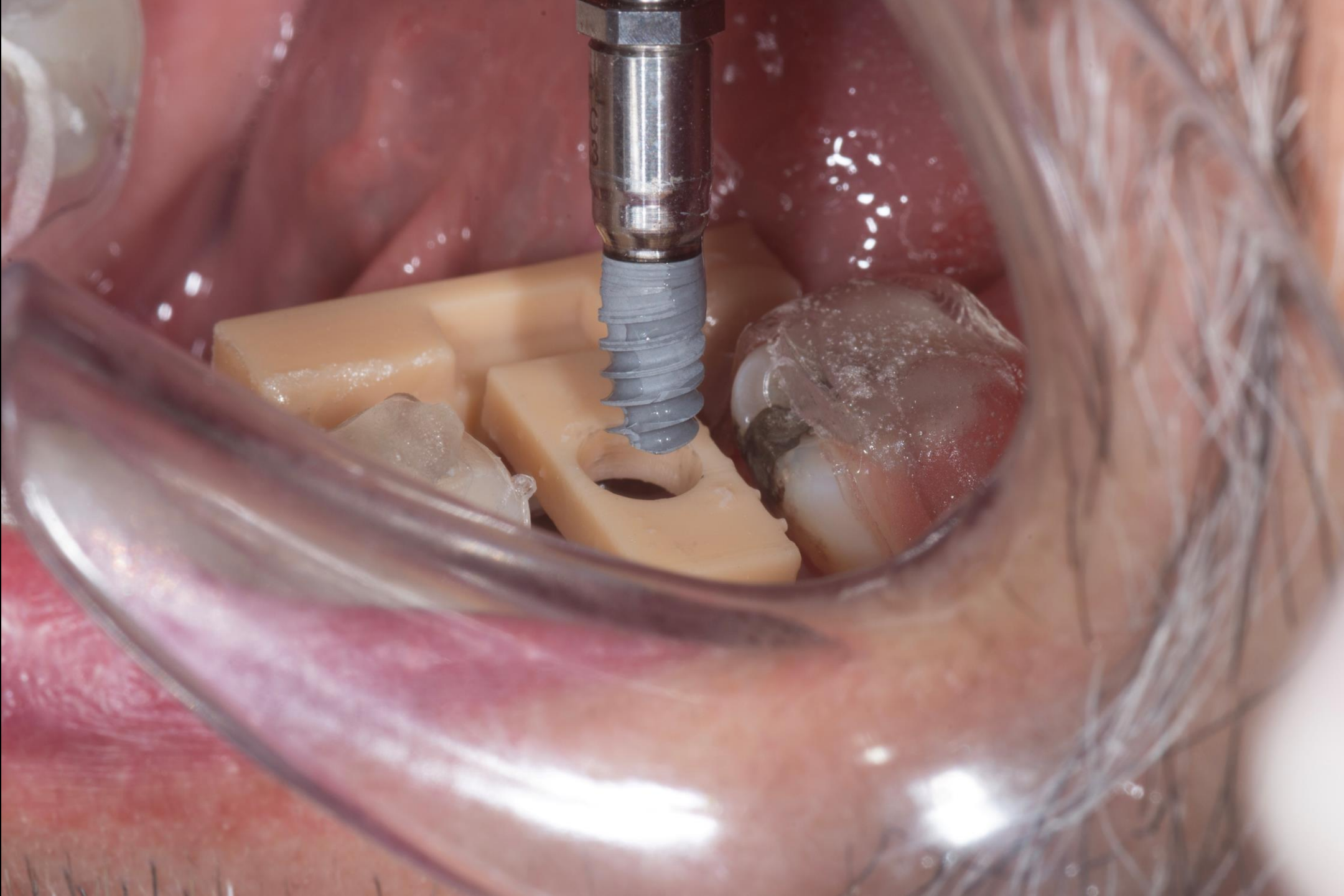


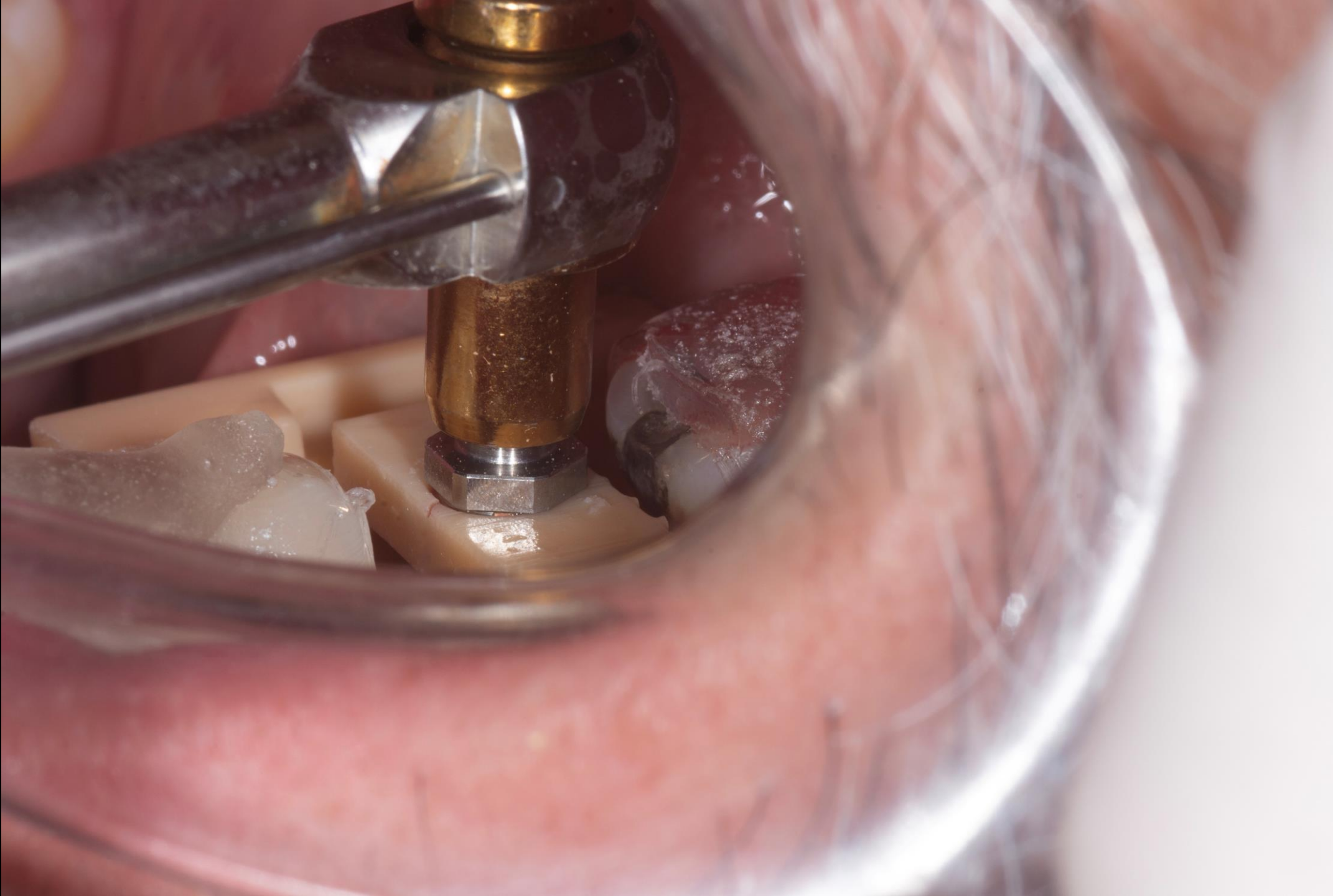


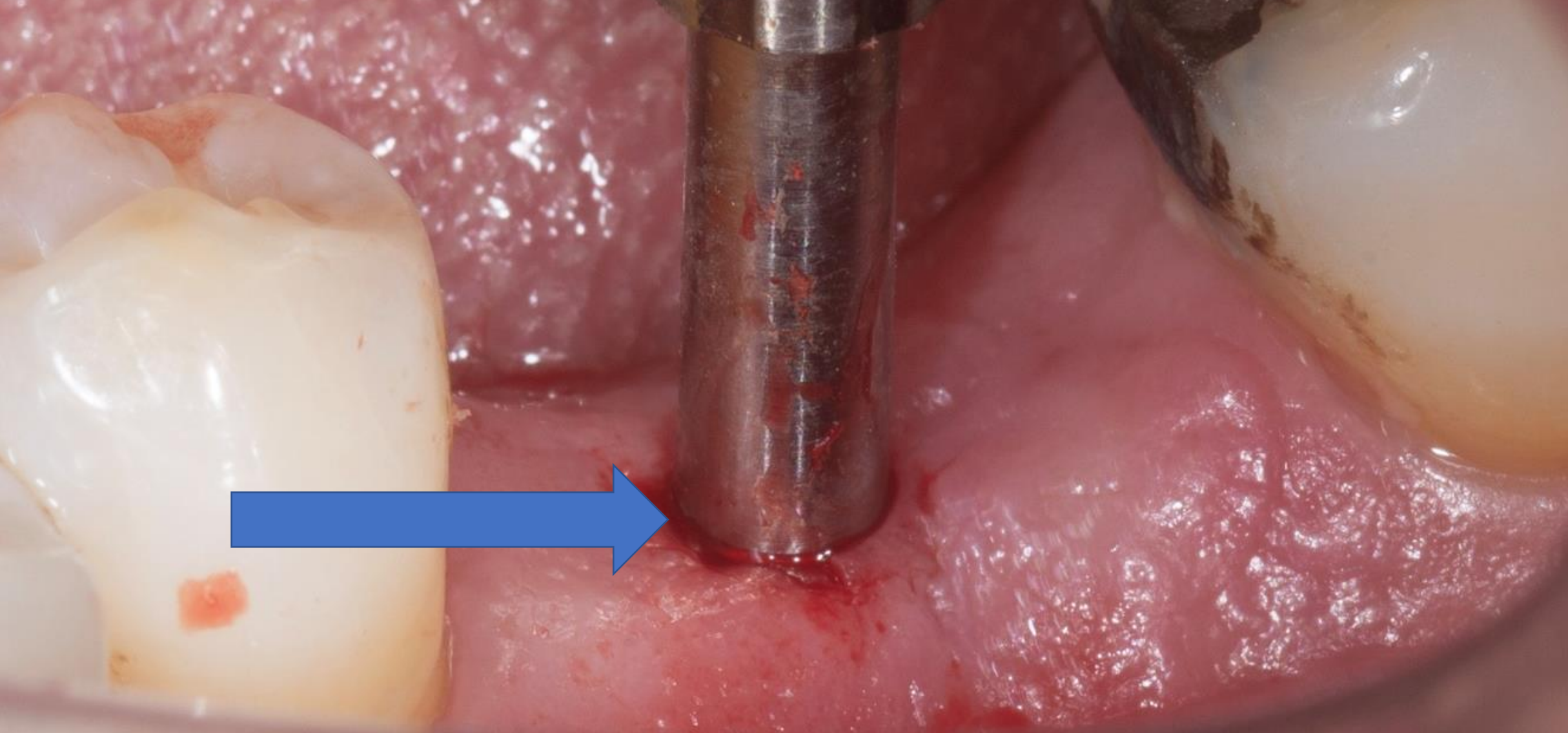
Relatively soft bone so 2.4/2.8 is final drill since use of aggressive cutting implant

Adequate buccal attached tissue allows for flapless placement

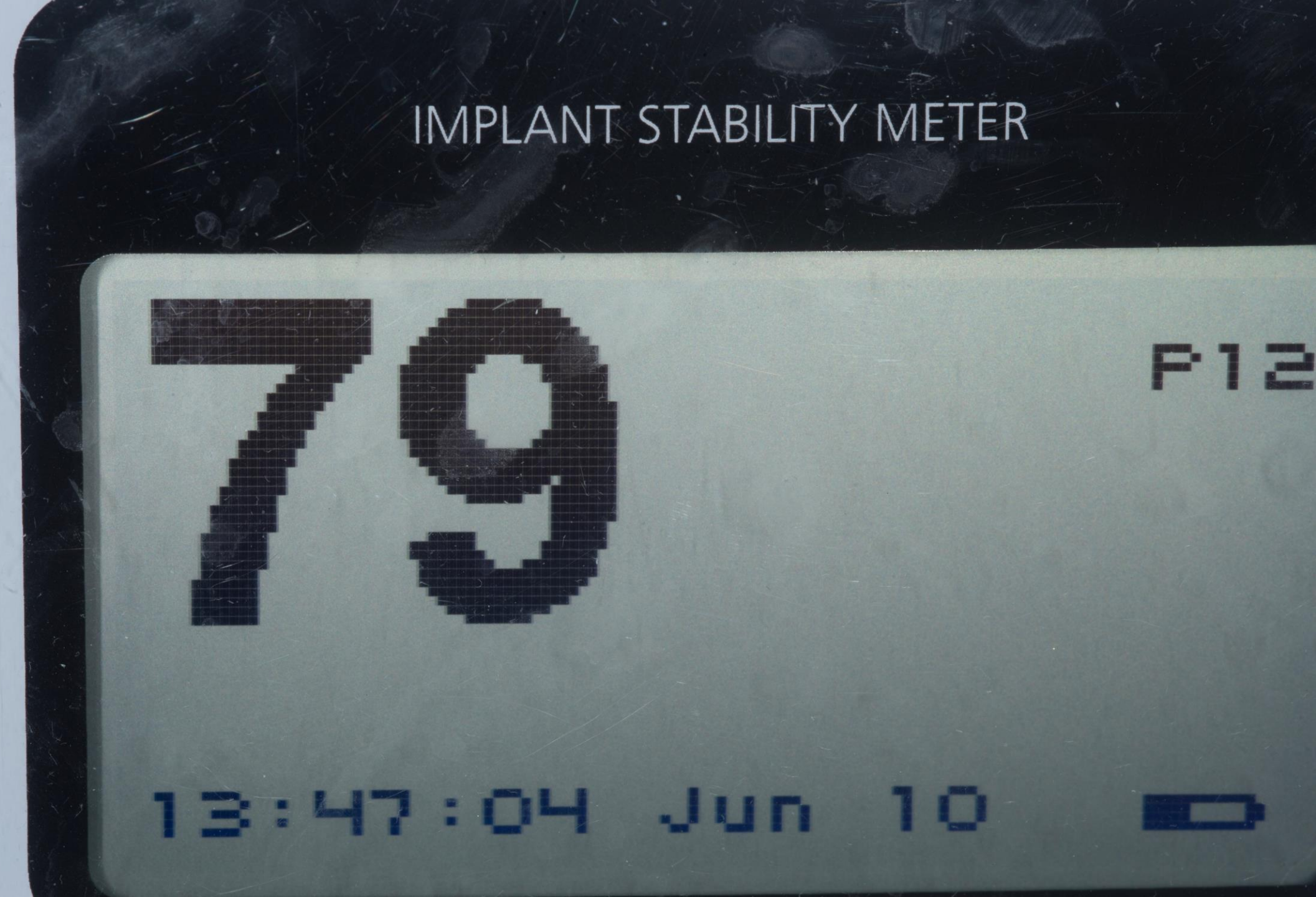








Confirm 3 mm tissue thickness from top of implant, 3 mm line on driver







Guided bone mill to remove excess bone which would impede healing abutment seating

