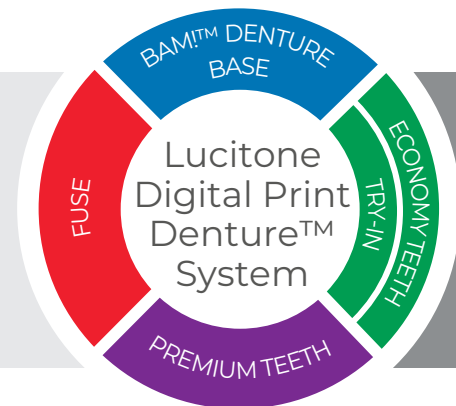




Illustrated Technique Guide

Design Guide for Partial Dentures in 3Shape



Technical Support
800-243-1942
ext. 54212



dsdigitaldentures@
dentsplysirona.com

Contents

1. Library Access
2. Design for Partial Dentures
3. Scanning and Model Analysis
4. Smile Composer
5. Anatomy Design
6. Supports
7. .STL File Creation
8. Print

Introduction

The 3Shape Dental System™ ¹ enables denture design and output for printing or milling. The purpose of this Illustrated Technique Guide is to assist the denture designer in using Dentsply Sirona digital denture materials in the 3Shape Dental System. This guide is not intended to replace the in-depth training provided by a 3Shape reseller.

Dentsply Sirona Denture Tooth Libraries and Materials Summary

Denture Tooth Libraries	Materials	Print	Mill	Carded
Digital HC Genios® Digital Genios®	• Lucitone Digital IPN™ 3D Premium Tooth	✓	N/A	N/A
	• Lucitone Digital Value™ 3D Economy Tooth and Trial Placement	✓	N/A	N/A
	• DS Multilayer PMMA Disc	N/A	✓	N/A
Digital HC Portrait® Digital Portrait®	• Lucitone Digital IPN™ Premium Tooth	✓	N/A	N/A
	• Lucitone Digital Value™ 3D Economy Tooth and Trial Placement	✓	N/A	N/A
	• DS Multilayer PMMA Disc	N/A	✓	N/A
IPN 3D™ Portrait Inspired	• IPN 3D™ Digital Denture Teeth	N/A	N/A	✓

IMPORTANT: Libraries with the HC designation are intended to be used for printing denture teeth with premium-level esthetics. The HC libraries have been optimized for esthetics following the Lucitone Digital IPN workflow.

Dentsply Sirona Digital Denture Materials








Lucitone Digital Print™ 3D Denture Base
Lucitone Digital Fit™ Denture Disc

Denture Base

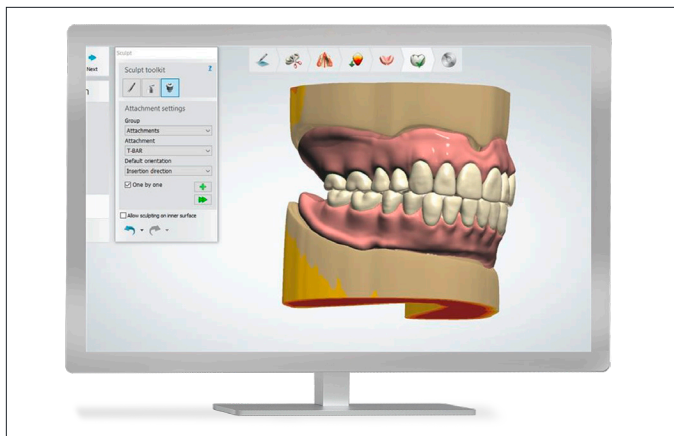
Lucitone Digital IPN™ 3D Premium Tooth
Lucitone Digital Value™ 3D Economy Tooth and Trial Placement

Denture Teeth

Lucitone Digital Fuse™ Step 1 - 3D Tooth Conditioning Agent
Lucitone Digital Fuse™ Step 2 - 3D Denture Bonding Resin
Lucitone Digital Fuse™ Step 3 Total - 3D Sealer

Fuse System

1.0 Library Access



Digital Genios, Digital HC Genios, Digital Portrait, and Digital HC Portrait

Libraries are dongle encrypted. To obtain access:

- Contact your Dentsply Sirona Sales Representative and provide your 3Shape dongle number.
- The Dentsply Sirona Sales Representative will communicate the activation fee and coordinate the library access.
- Following the activation, download the libraries from the 3Shape Download Center and perform a dongle update.

IPN 3D

- No dongle activation required.
- Download the library from the 3Shape Download Center and perform a dongle update.

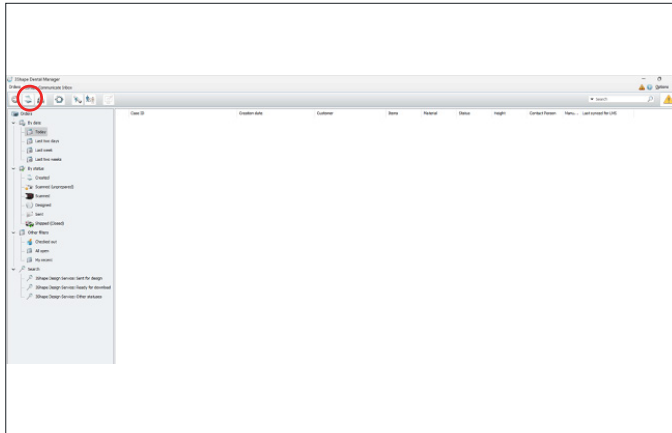
Dentsply Sirona DME File Import

After importing, review and adjust the Dentsply Sirona denture material DME files settings per the below table.

- DO NOT change the Fuse Space default setting. Modifying this setting may compromise tooth fit in the pocket.

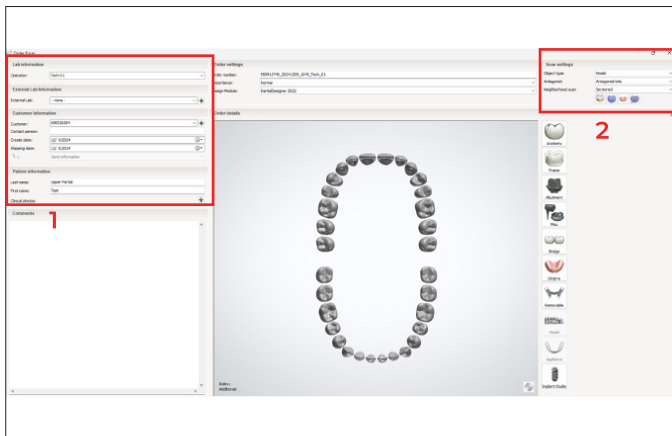
Setting	Step	Value	Print	Mill	Carded
Fuse Space	N/A (Default Setting)	0.17mm	✓	✓	✓
Maxillary Arch - Denture Base Thickness	Manually Adjust	Minimum 2.5mm	✓	✓	
Mandibular Arch - Denture Base Thickness	Manually Adjust	Minimum 3.5mm	✓	✓	

2.0 Design for Partial Dentures



Open 3Shape Dental Manager.

Select New Order Icon.



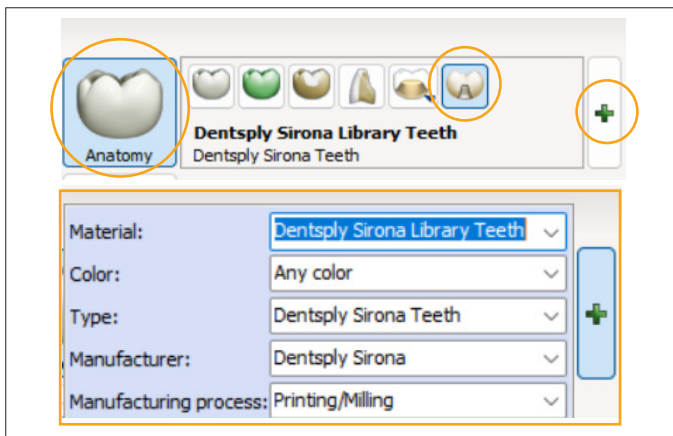
Order Form

Complete Order Form per laboratories instructions. [1]

Next, fill out Scan Settings. [2]



Select teeth to be replaced.

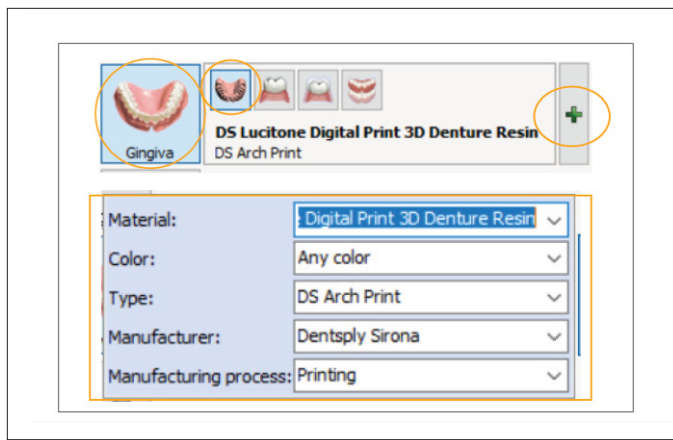


Select 'Anatomy' and then select 'Artificial Tooth Type'.

Click the Green Plus, scroll down and select **Dentsply Sirona Library Teeth**.

Populate the inputs using the drop-down menus:

Material	Dentsply Sirona Library Teeth
Color	Applicable Dentsply Sirona Shade
Type	Dentsply Sirona Teeth
Manufacturer	[Auto-populates dongle number]
Manufacturing Process	Printing/Milling

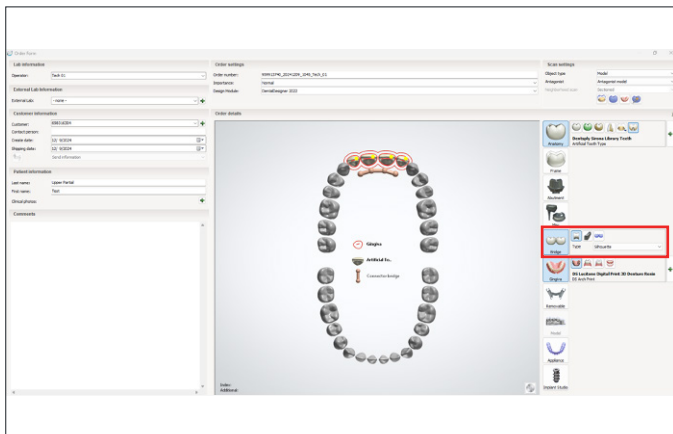


Select 'Gingiva' and then select 'Full Denture'.

Select green plus and select **DS Lucitone Digital Print 3D Denture Resin**.

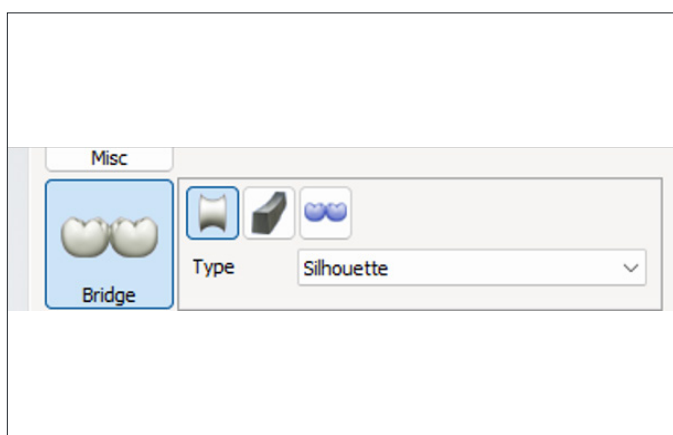
Populate the inputs using the drop-down menus:

Material	DS Lucitone Digital Print 3D Denture Resin
Color	Applicable Dentsply Sirona Shade
Type	DS Arch Print
Manufacturer	Dentsply Sirona
Manufacturing Process	Printing



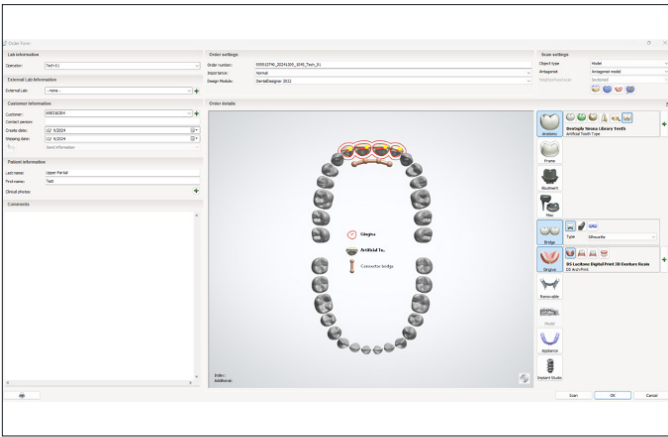
Highlight the teeth to join and then select 'Bridge'.

Repeat this process for subsequent segments.



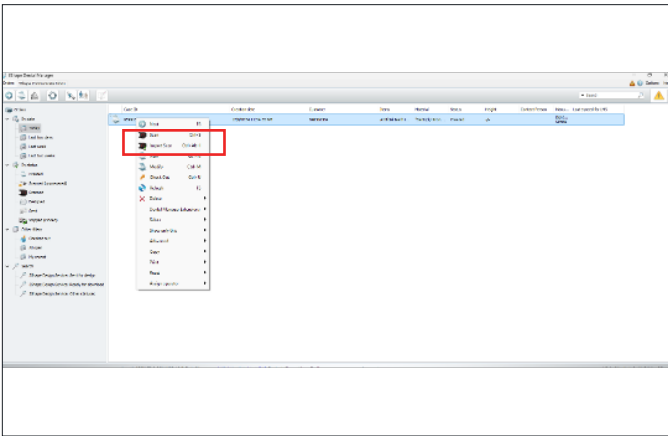
Select 'Bridge' and then 'Type' and change to **Silhouette**.

3.0 Scanning and Model Analysis

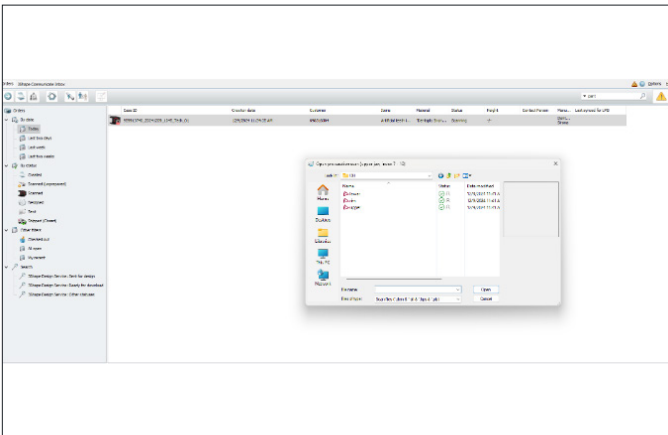


Scanning

Once order form is complete, select 'Scan' or 'OK' to proceed to scanning or importing scan data.



Right click on file and select 'Scan' or 'Import Scan'.

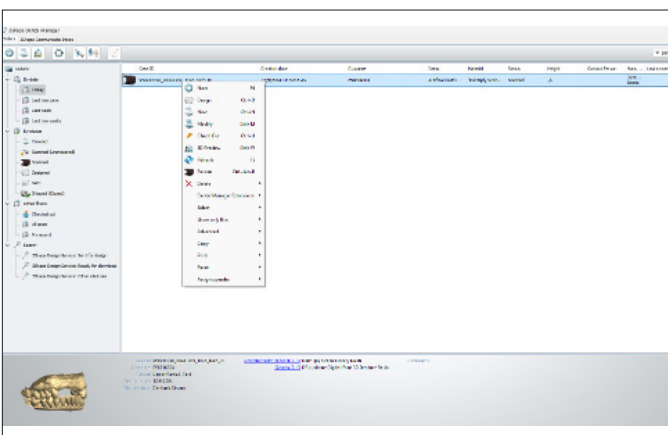


Follow prompts to import scans.

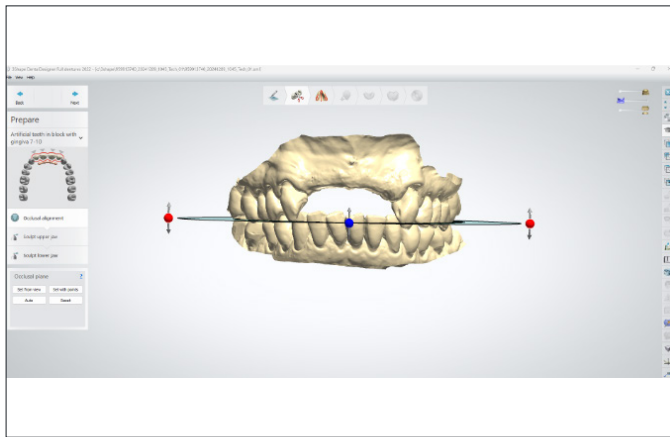
Tip: Bite Rim Scan

Many partial denture cases will not utilize a Bite Rim. In these instances, import:

- Pre-op scan
- IOS scan of with an existing partial denture
- Re-import either the upper jaw or lower jaw scan

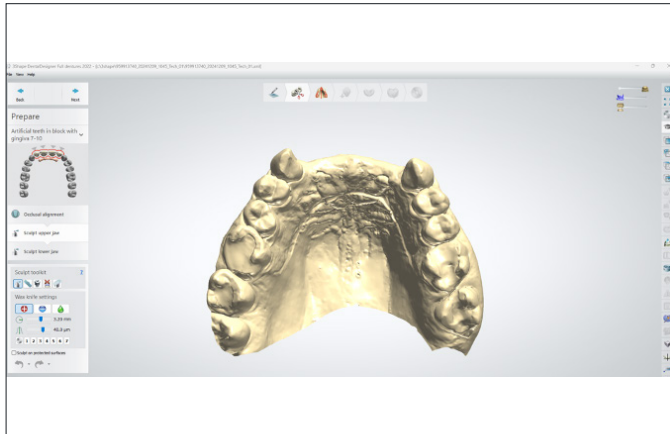


After scans have been uploaded in software right click and either select 'design' or 'next'.

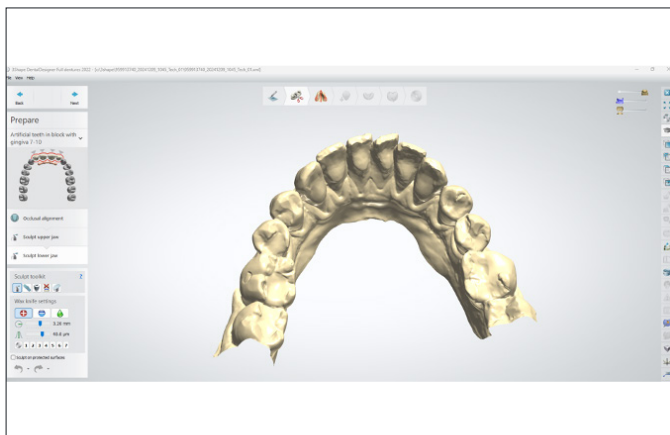


Set 'Occlusal Alignment' with using Set from view or Set with points.

Select 'Next' or 'Sculpt upper jaw'.

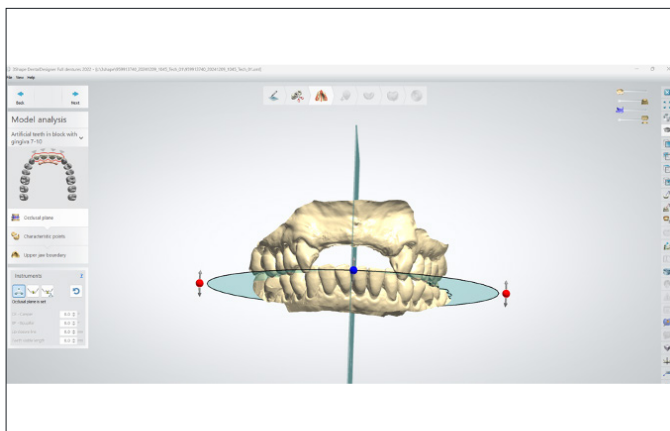


Use Sculpt toolkit and adjust model if needed.



Select 'Next' or 'Sculpt lower jaw', adjust model if needed.

Select 'Next'.

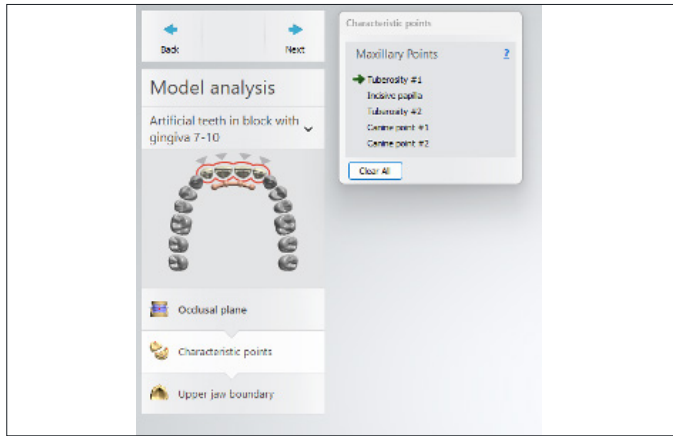


Model analysis

Occlusal plane

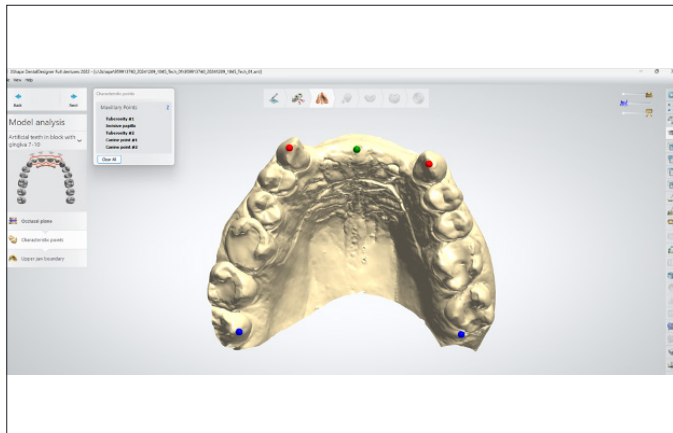
Select 3 points between the arches posterior, midline and then posterior on other side.

Select 'Next' or 'Characteristic point'.

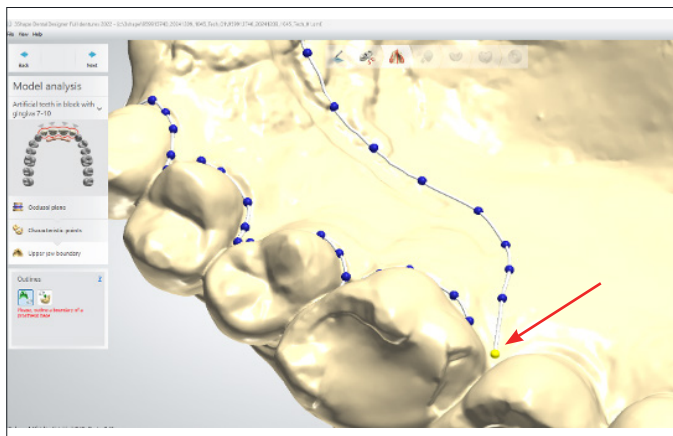


Select 'Maxillary Points'.

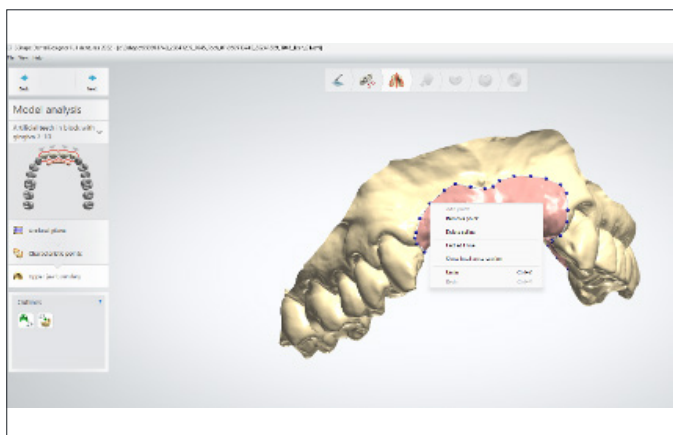
Since this is a partial denture, place points in the approximate area(s).



After placing Maxillary points, select 'Next' or 'Upper jaw boundary'.

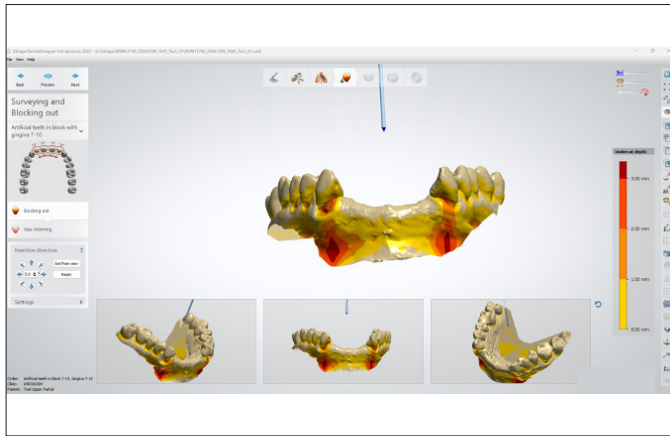


Select Outline tool. Using the pencil tool, place boundary for prosthesis base. The last point should be the first point, the point will turn yellow. This will complete the boundary.

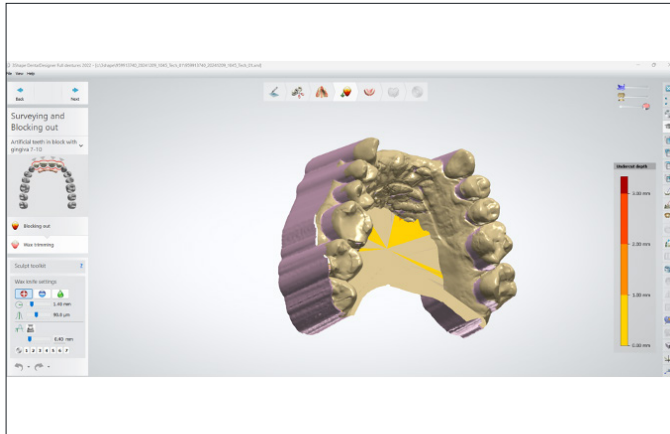


After the boundary is complete, the outline will be pink, at this point you can right click on a point and select an option to adjust the boundary.

Once you are satisfied with the boundary of appliance select 'Next'.

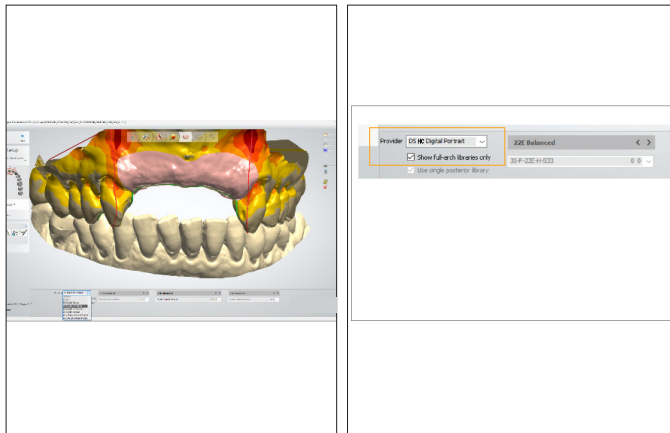


Surveying and Blocking out
Change Insertion direction as needed, then, select 'Wax Trimming' or 'Next'.



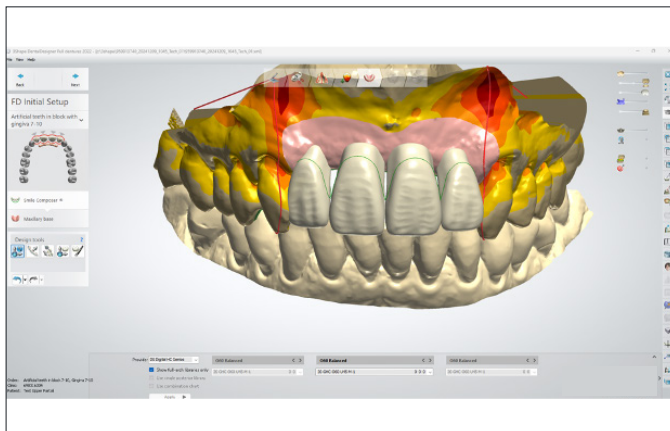
Sculpt toolkit
Remove or add wax as needed, then select 'Next'.

4.0 Smile Composer



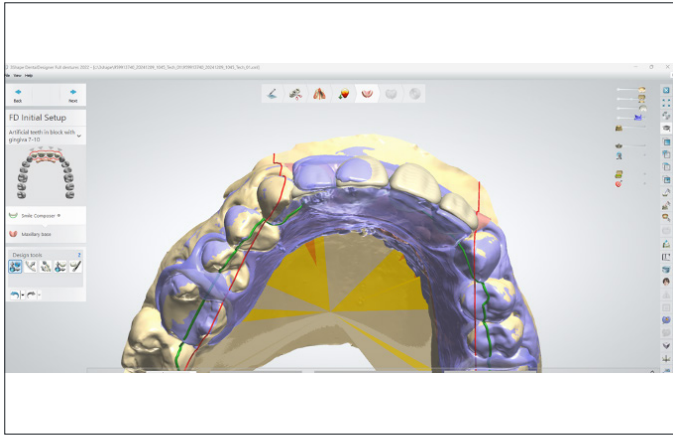
Select 'Provider', then select one of the DS Libraries: **DS Digital HC Genios**, **DS Digital Genios**, **DS Digital HC Portrait**, and **DS Digital Portrait**.

Next, check 'Show full-arch Libraries only'.



Once you have selected Libraries, select 'apply'.

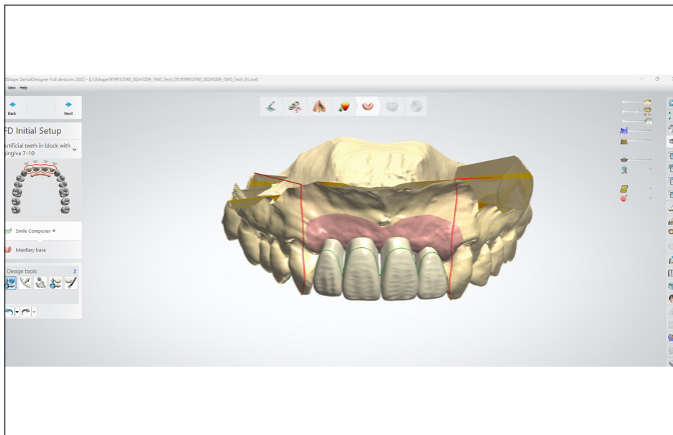
While in Smile Composer, use the Design tools to move and set teeth per laboratory's standard.



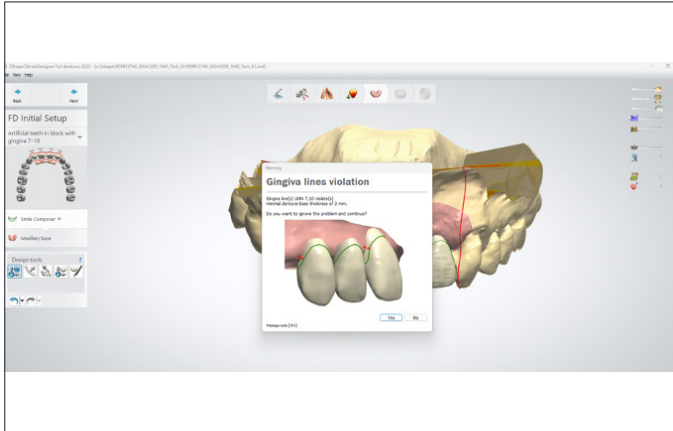
This case has a pre-op model that can be used to guide tooth placement.

Tip: Pre-Op Scan

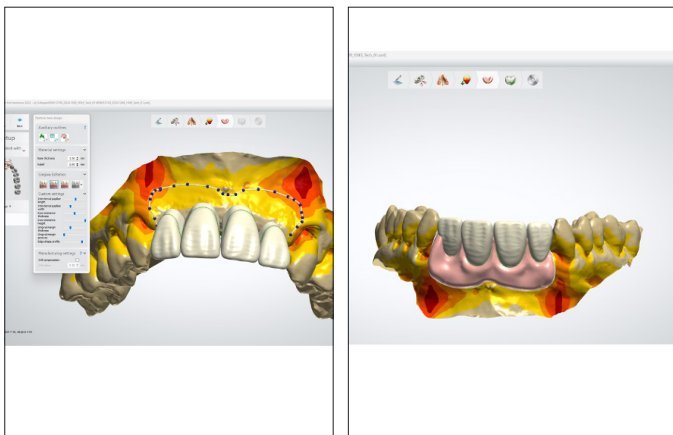
The Pre-Op scan is imported as the Bite Rim during the Import Scans step.



When finished with setup, select 'Next'.



Gingiva Lines Violation
Select 'Yes'.



Adjust points for boundary if needed.

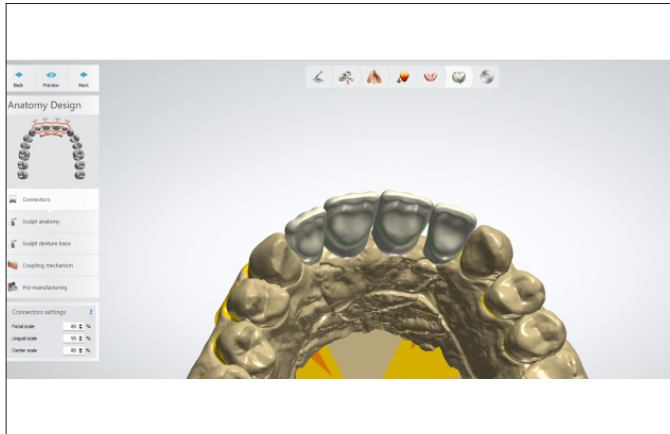
Material Settings

Base Thickness	2.5mm
Gingiva Esthetics	Adjust per Laboratories Standards

Select 'Preview'.

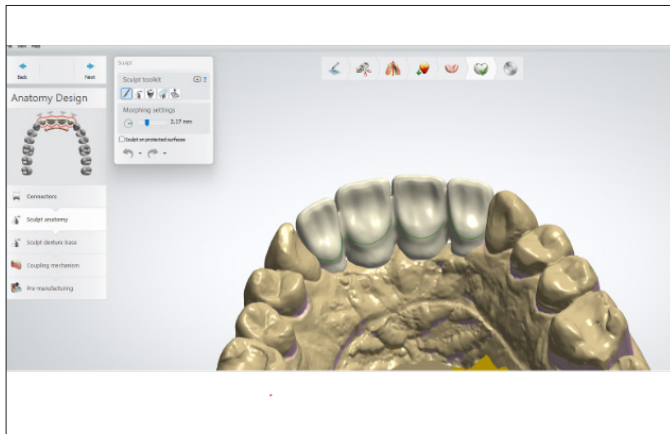
After Preview and the base is acceptable, select 'Next'.

5.0 Anatomy Design



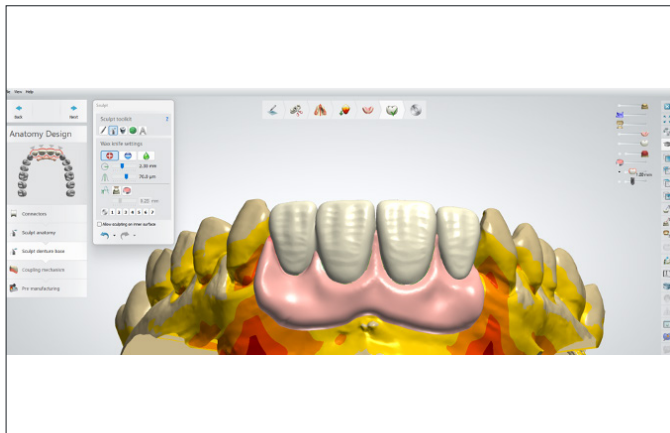
Connectors

Adjust the Connectors as necessary.



Sculpt anatomy

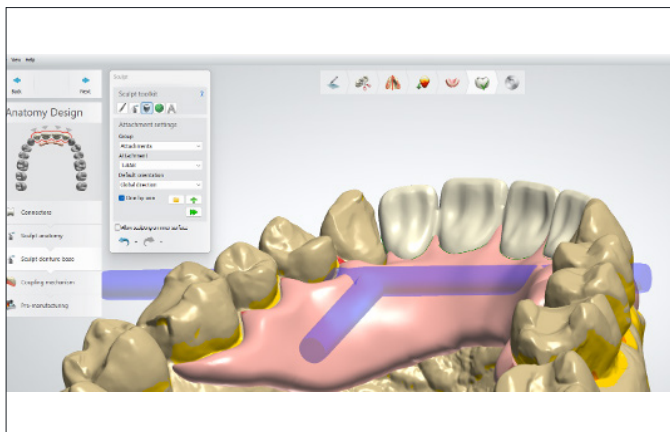
Sculpt/resize/adjust the teeth as necessary.



Sculpt denture base

Sculpt the denture base anatomy as necessary.

6.0 Supports

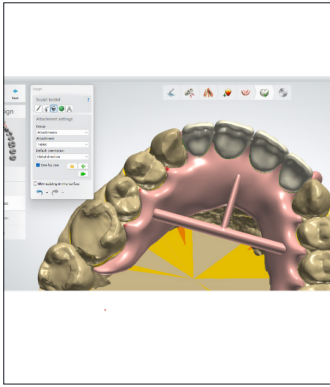


Select the following 'Attachment Settings':

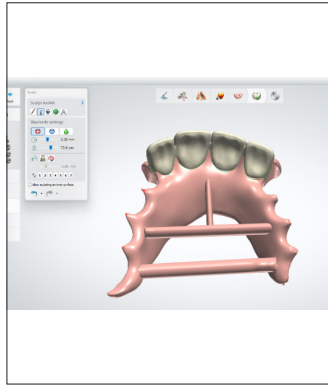
- Group: **Attachments**
- Attachment: **T-Bar or Support**
- Insertion direction: **Global direction**

Next, select the green plus to add one bar at a time. Once the position is correct select the green play icon to add one bar.

NOTE: See Digital Denture Design in 3Shape Dental System Printed and Milled Dentures ITC.

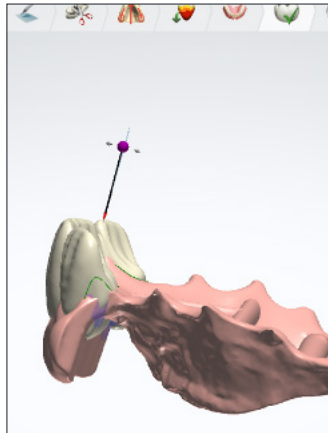
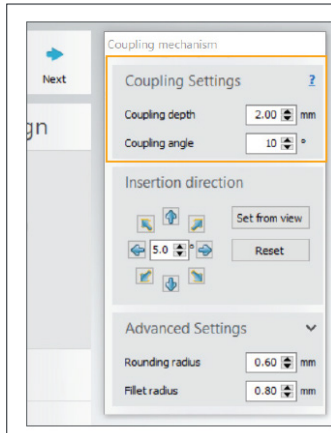


First Support



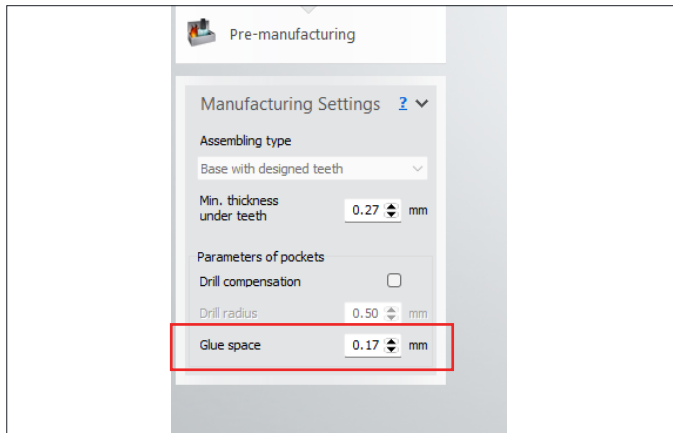
Second Support

The first support is a T-Bar between the bicuspids and the middle of the centrals and the second support is a Bar from molar to molar.



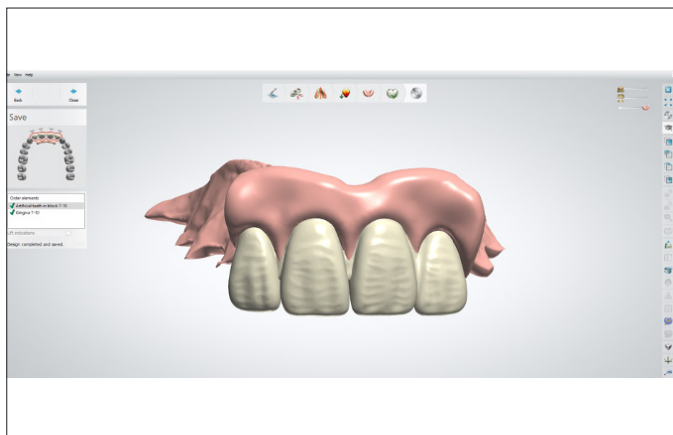
Select 'Next'.

Use the 'Coupling Settings' to adjust the tooth and gingiva coupling as needed.



Verify in the 'Manufacturing Settings' that the glue space is set to **0.17mm**.

Then, select 'Next'.



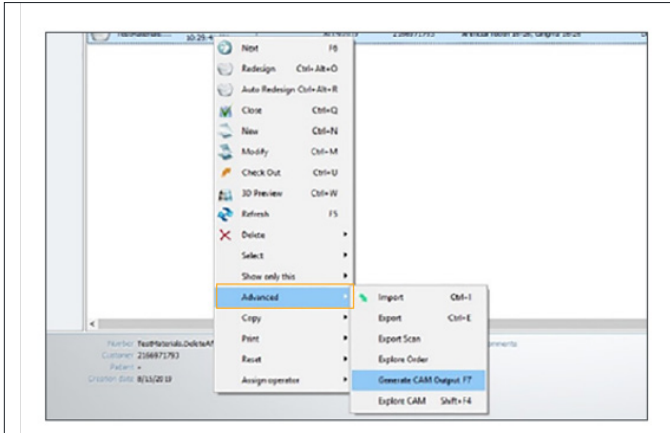
Save

Under 'Order elements', make sure the following are selected:

- Artificial teeth in block
- Gingiva

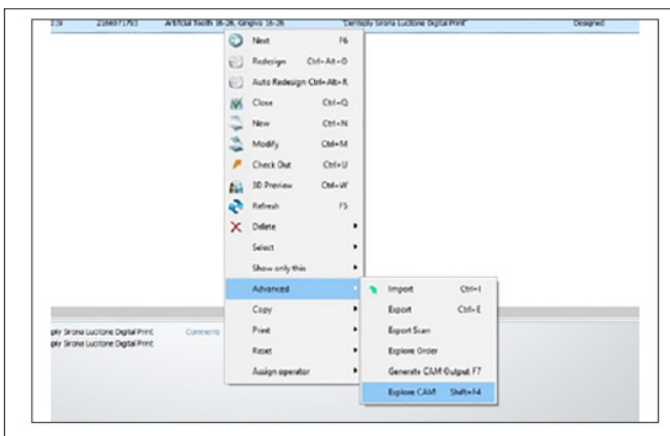
Then, select 'Close'.

7.0 .STL File Creation



In Dental Manager, select the job file to export and right click with the mouse.

Select 'Advanced' and then select 'Generate CAM Output'.



The files export to the 3Shape directory on your computer. Use "Explore CAM" to locate files.

From this director, the files are ready for upload to a mill or validated printer/CAM software.

8.0 Print

Follow the Print to Finish Illustrated Technique Guide for print angulations.

