

Design Guide for Partials in 3Shape

Laboratory Technique Guide

Introduction

Kennedy Class I

Patient presents with existing traditional RPD exhibiting worn posterior acrylic teeth, staining, and rocking due to lack of relines. The patient opted for a new prosthesis, rather than a repair. Given the possible near future desire for implant therapy, the patient opted for an all-acrylic partial. Conventional PVA impressions and bite registration were submitted to the laboratory, digitized, and an all acrylic partial was designed. The laboratory designed both monoblock as well as two piece, base and tooth, as separate files for printing.

Kennedy Class II

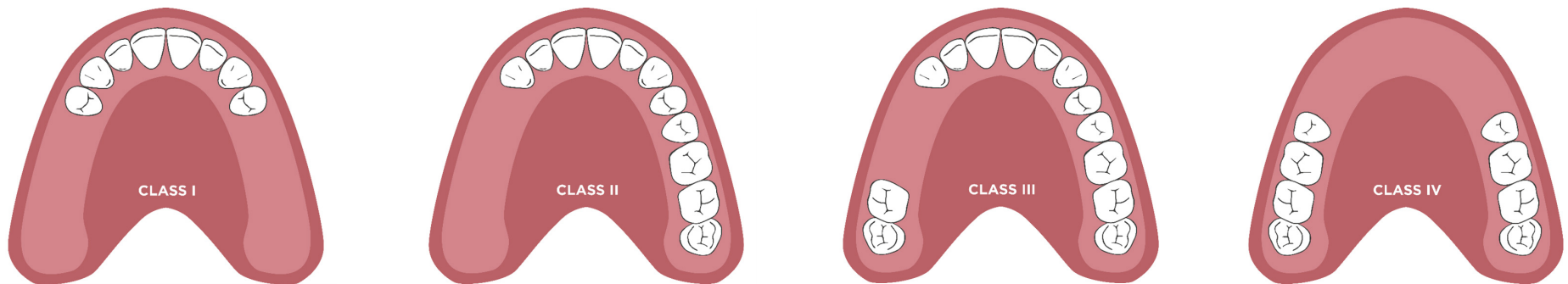
Patient presents with missing posterior teeth and desires a function and esthetic prosthesis. Due to financial reasons, patient opted for an all acrylic 'flipper'. Conventional PVA impressions and bite registration were submitted to the laboratory, digitized, and an all acrylic partial was designed. The laboratory designed both monoblock as well as two piece, base and tooth, as separate files for printing.

Kennedy Class III

Patient presents with three missing posterior teeth with the chief complaint of chewing efficiency. This will be the patient's first RPD, and the patient may lose more teeth in the area in the future, so the doctor and patient decided the best option is to fabricated an all-acrylic partial. Conventional PVA impressions and bite registration were submitted to the laboratory, digitized, and an all acrylic partial was designed. The laboratory designed both monoblock as well as two piece, base and tooth, as separate files for printing.

Kennedy Class IV

Patient presents missing the 4 mandibular incisors and desires a functional and esthetic solution. Due to significant bone loss of the area, a traditional flange partial denture design is discussed with the patient as the best option. With given finances constraints, an all acrylic partial denture is chosen as the final option. Conventional PVA impressions and bite registration were submitted to the laboratory, digitized, and an all acrylic partial was designed. The laboratory designed both monoblock as well as two piece, base and tooth, as separate files for printing.



Order Form

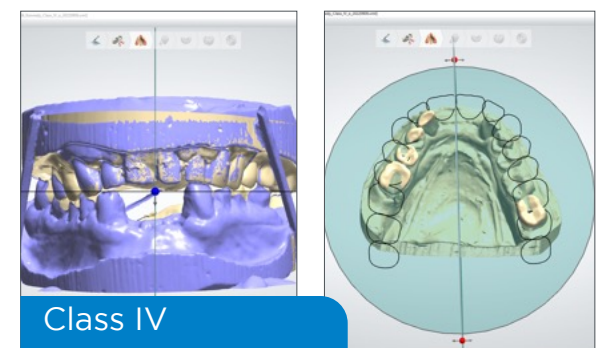
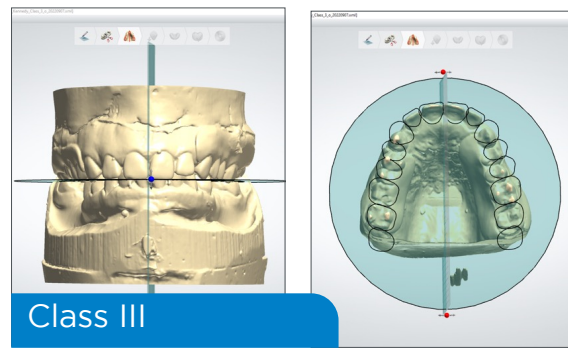
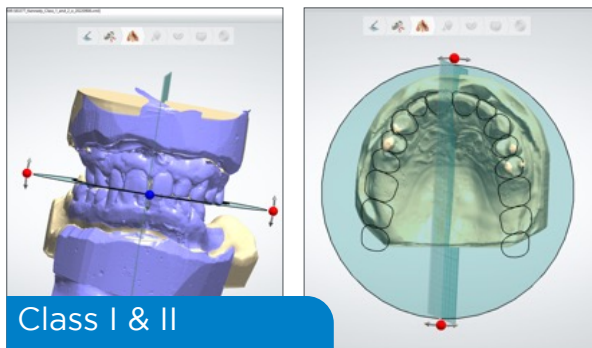
Complete the order form

- Select missing teeth then anatomy
- Select artificial teeth
- Select Dentsply Sirona library teeth
- Select teeth to be bridged
- Select Gingiva and change to DS Lucitone Digital Print 3D Denture Resin
- Under type select DS arch print
- Select any other missing teeth and repeat step above



Model analysis

Select points and adjust occlusal plate as necessary.



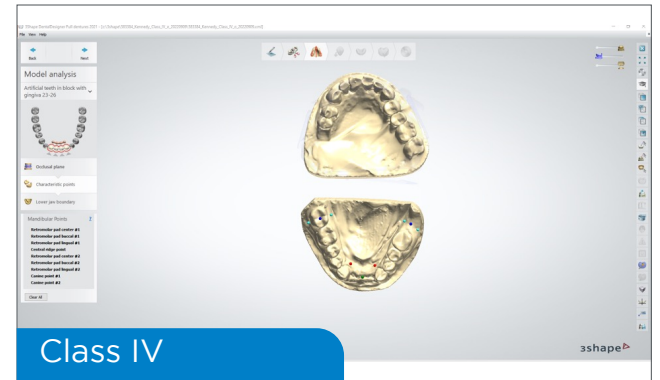
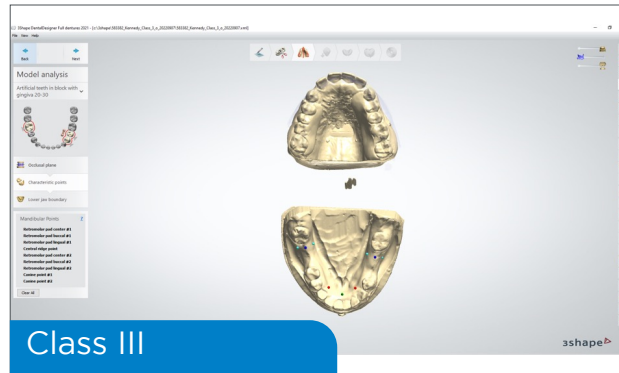
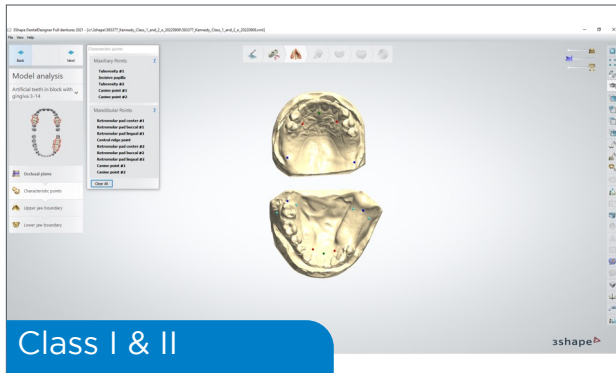
Select Characteristic Points

Maxillary Point

- Tuberosity #1
- Incisive papilla
- Tuberosity #2
- Canine point #1
- Canine point

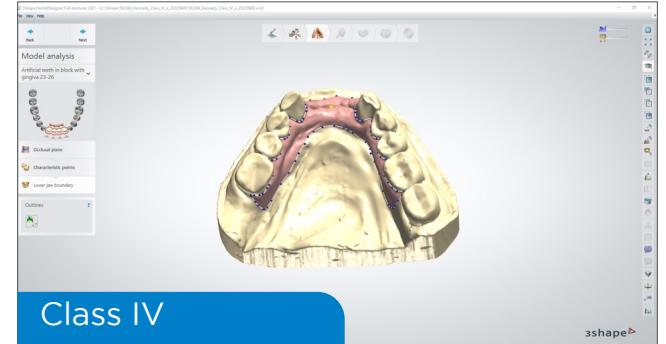
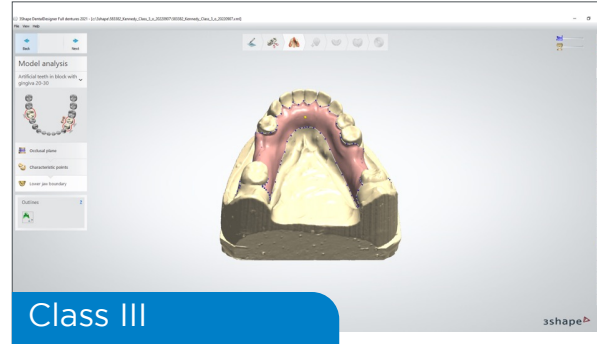
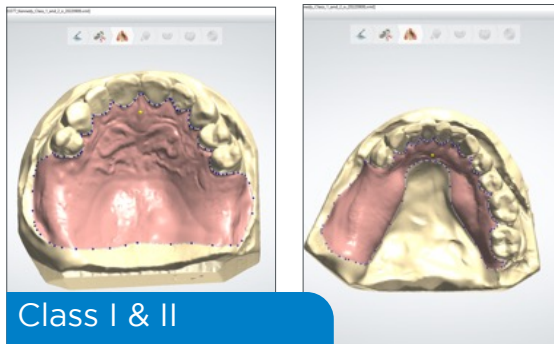
Mandibular Points

- Retromolar pad center #1
- Retromolar pad buccal #1
- Retromolar pad lingual #1
- Central ridge point
- Retromolar pad center #2
- Retromolar pad buccal #2
- Retromolar pad lingual #2
- Canine point #1
- Canine point #2



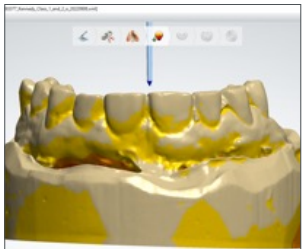
Upper & Lower Jaw Boundary

Select outline tool and draw your outline of denture base.

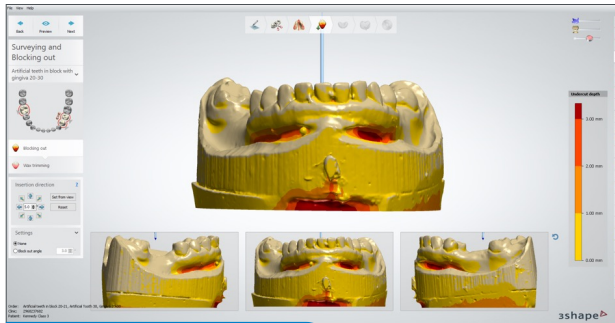
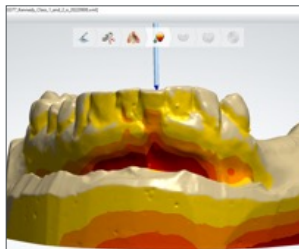


Surveying & Blocking Out

Blocking out
Adjust path of insertion as necessary.



Class I & II



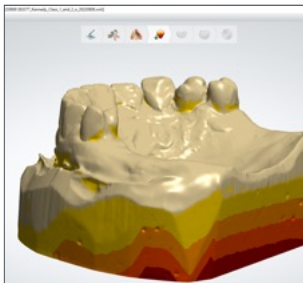
Class III



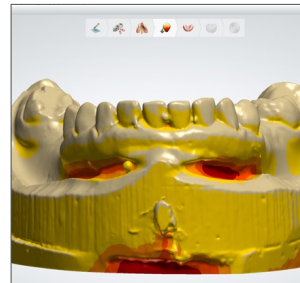
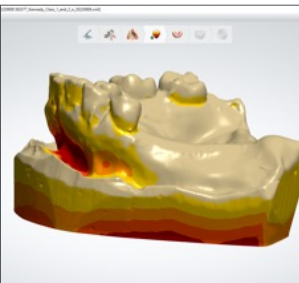
Class IV

Wax Trimming

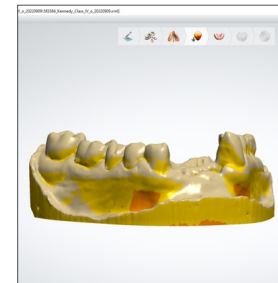
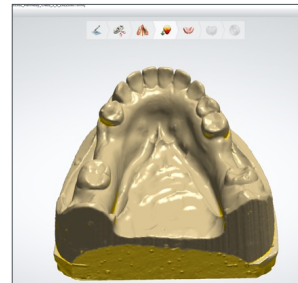
Apply blockout wax as needed.



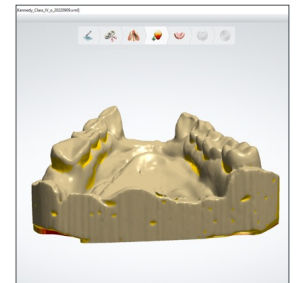
Class I & II



Class III



Class IV



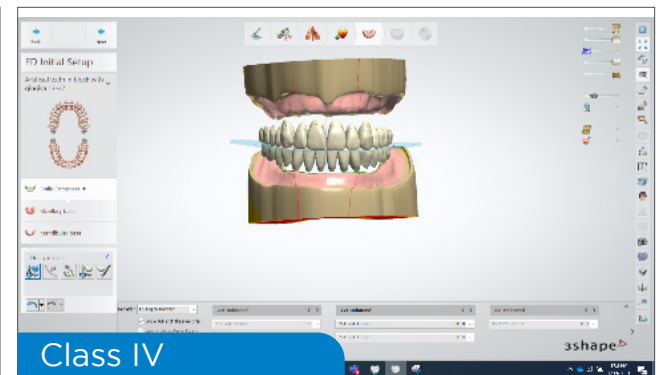
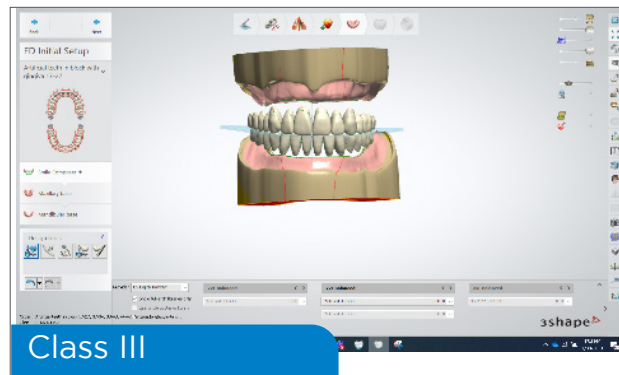
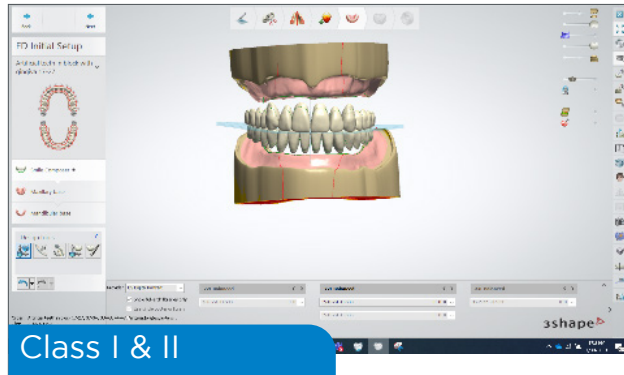
FD Initial Setup

3Shape Smile Composer® “FD Initial Setup” page shown.

NOTE: Hover over the icons for icon description.

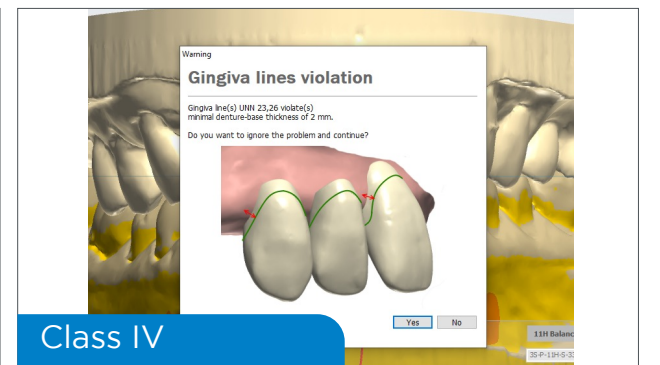
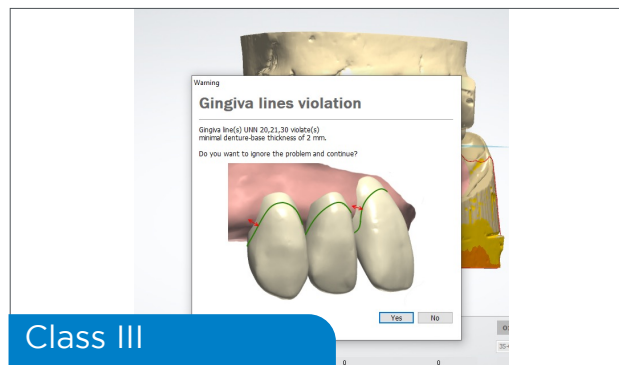
Select the applicable tooth library from the “Provider” drop-down menu: DS Digital HC Genios, DS Digital Genios, DS Digital HC Portrait, and DS Digital Portrait. Select “Show full-arch libraries only.”

IMPORTANT: Libraries with the Highly Characterized (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.



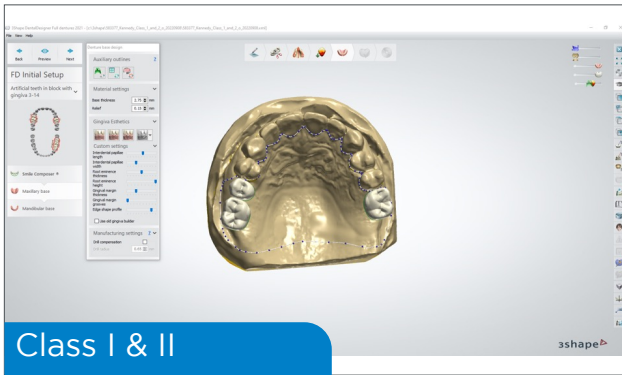
Gingiva Lines Violation

Select Yes.



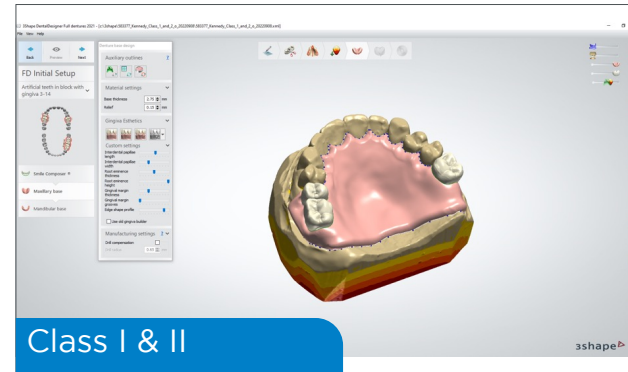
Maxillary Base

Gingiva Esthetics
Select “Delicate,” “Natural,” or “Intense.”



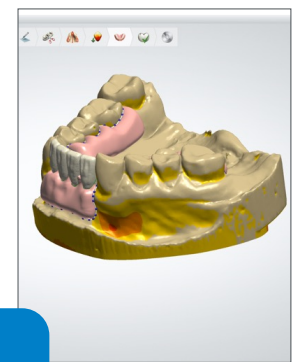
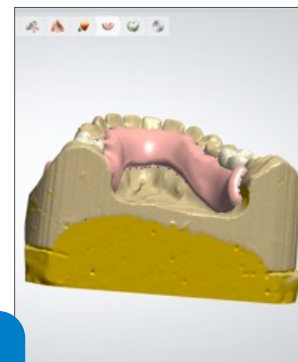
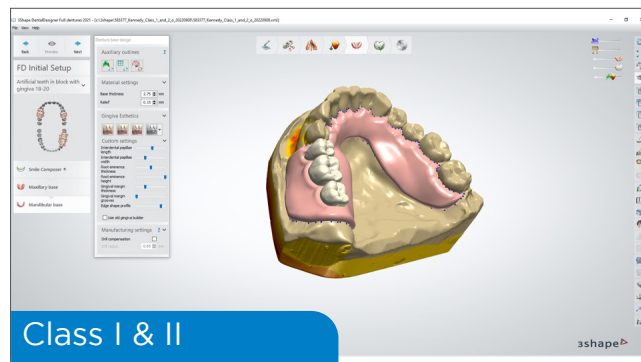
Select Preview

Review and confirm “FD Initial Setup” selections.



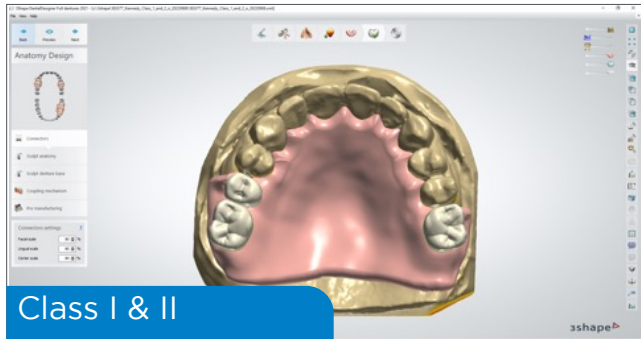
Mandibular Base

Gingiva Esthetics
Select “Delicate,” “Natural,” or “Intense.”

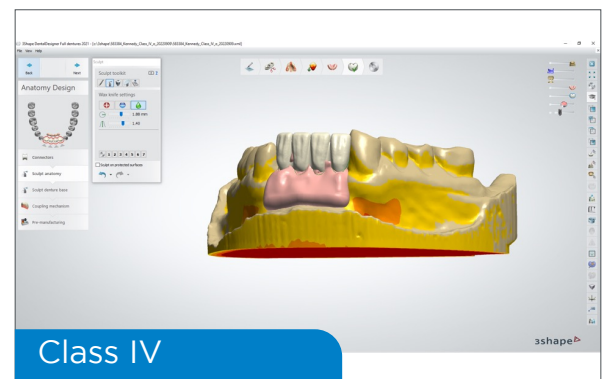
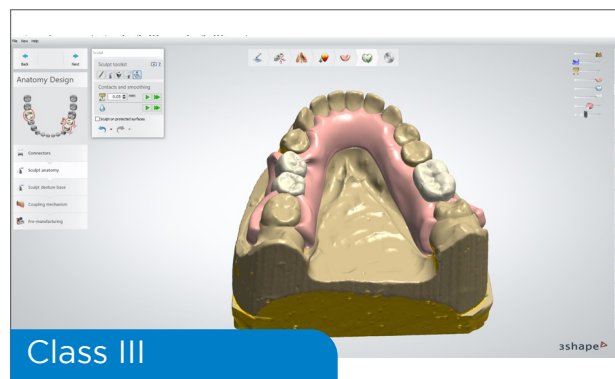
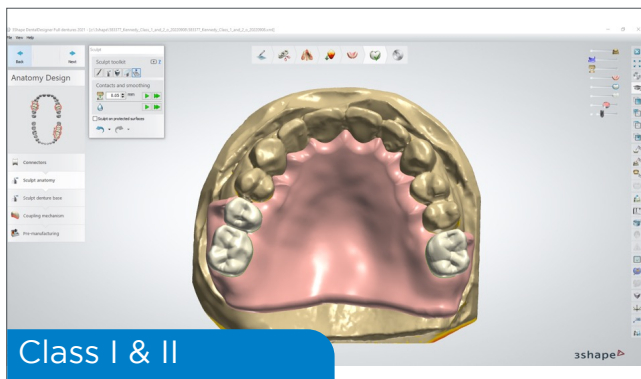


Anatomy Design

Connectors
Adjust the Connectors as necessary.



Sculpt/resize/adjust teeth as necessary



Sculpt Denture Base

Use sculpt toolkit to make necessary adjustments, use the attachments icon to add support bars and select next.

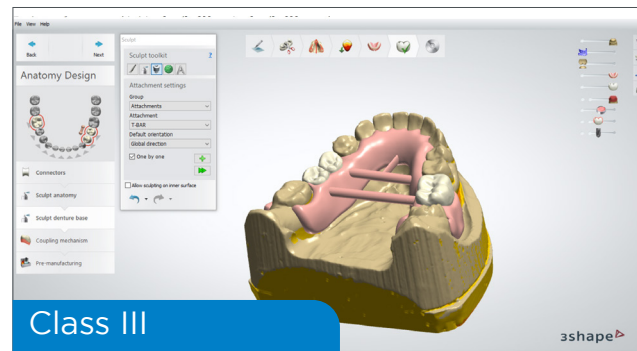
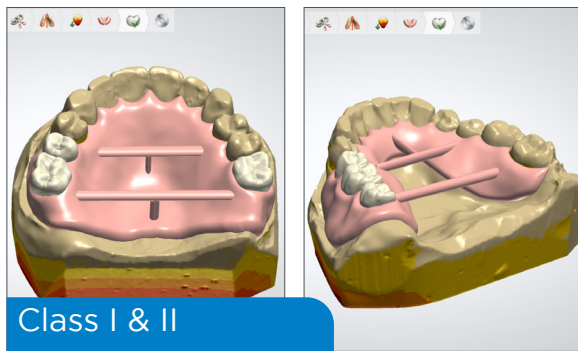
Sculpt the denture base anatomy as necessary. T-bar support structures are a requirement for each denture base design. Two T bars are required for maxillary base.

Under the “Sculpt Toolkit,” select “Attachment.”

Select the following “Attachment Settings”:

- Group = Attachments
- Attachment = T-BAR_3Shape
- Default orientation = View direction

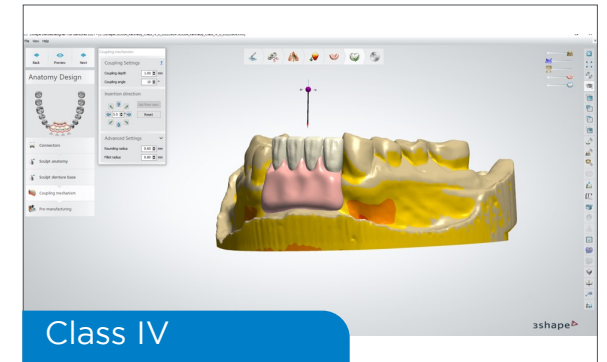
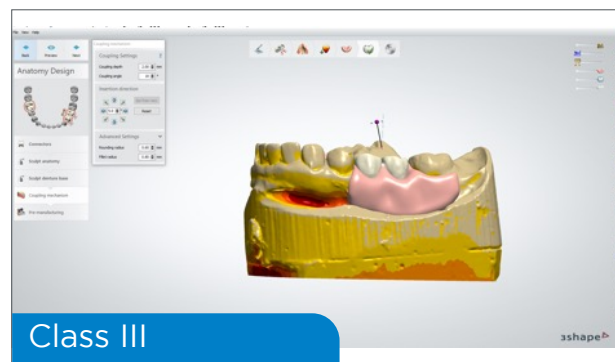
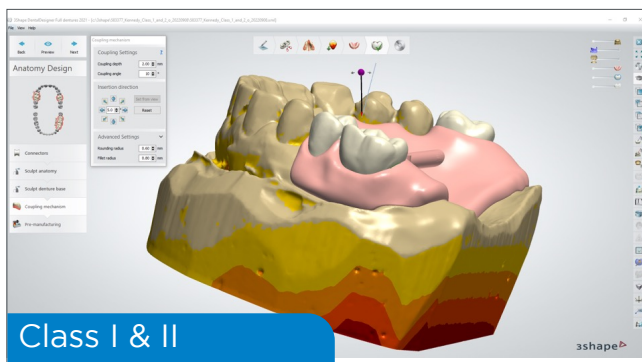
Place the bar between the first and second premolars and 3mm below the gingival line. Select the green arrow icon to place the T-bars.



Coupling Mechanism

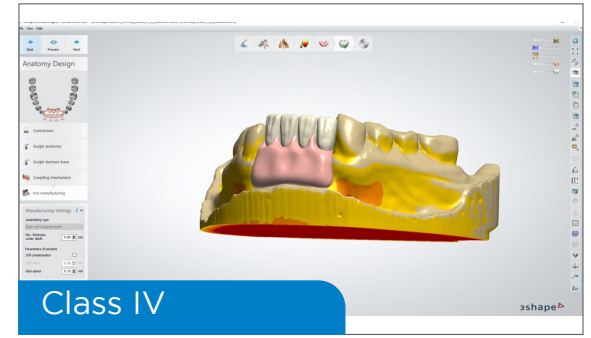
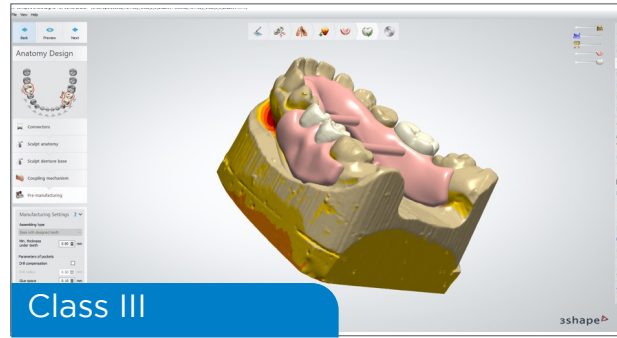
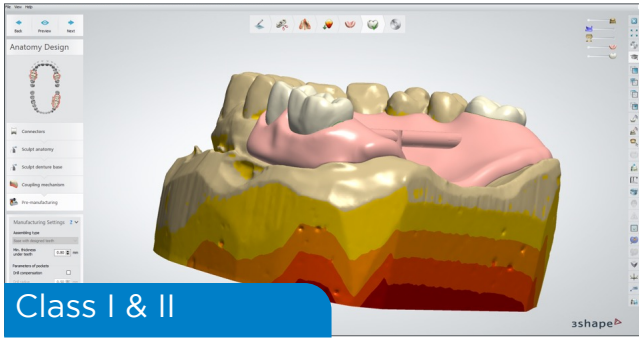
Correct if need be and select next.

Select “Next.” Use the “Coupling Settings” to adjust the tooth and gingiva coupling as necessary. Verify in the “Manufacturing Settings” that the glue space is set to 0.17mm.



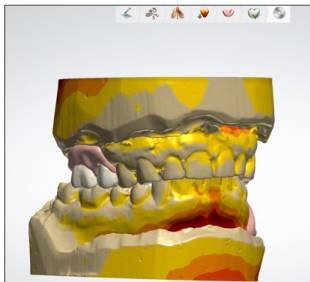
Pre-Manufacturing

Select next.

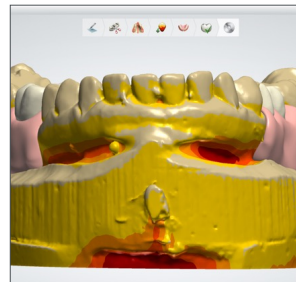
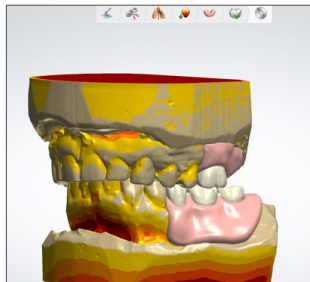


Save & Close

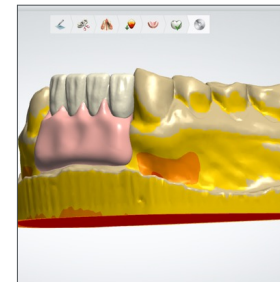
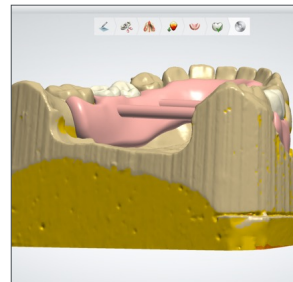
Files are now ready to be sent to the printer.



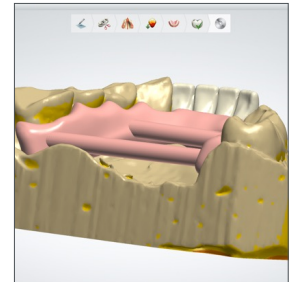
Class I & II



Class III



Class IV



Partial denture cases for Design Guide were completed in collaboration with Roe Dental Lab.

Visit the www.dentsplysirona.com/lucitonecurriculum for more information.

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