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PALA® | DIGITAL DENTURES

Digital Impression Scanning

PALA®

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ScanIt Orthodontics

SOFTWARE SETTINGS

Prior to scanning the Pala digital denture impression, please make sure your software settings are set to provide STL files.

Control Panel

Open 3ShapeOrtho Control Panel.

Click on System Settings

System Settings

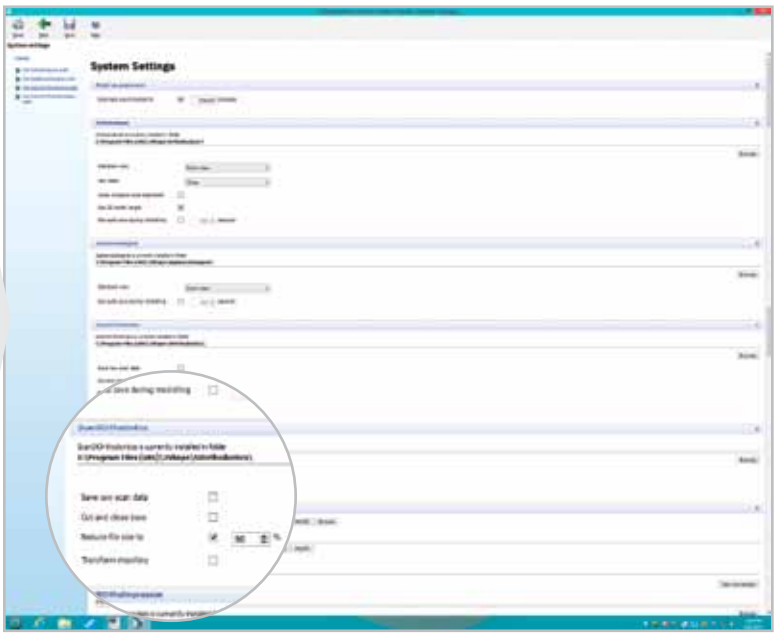
Scroll down to the ScanItOrthodontics (do not get confused with ScanItOrthoImpression) section.

Uncheck
“Save raw scan data”

Uncheck
“Cut and close base”

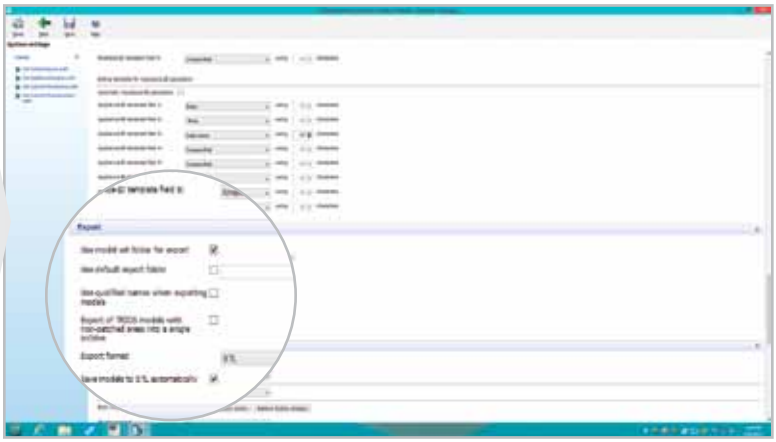
Check
“Reduce file size to”
and select 90%

Uncheck
“Transform Maxillary”



Export Format

Scroll down to the export section “Export Format” select “STL”



ScanIt Orthodontics

FILLING OUT PATIENT INFORMATION

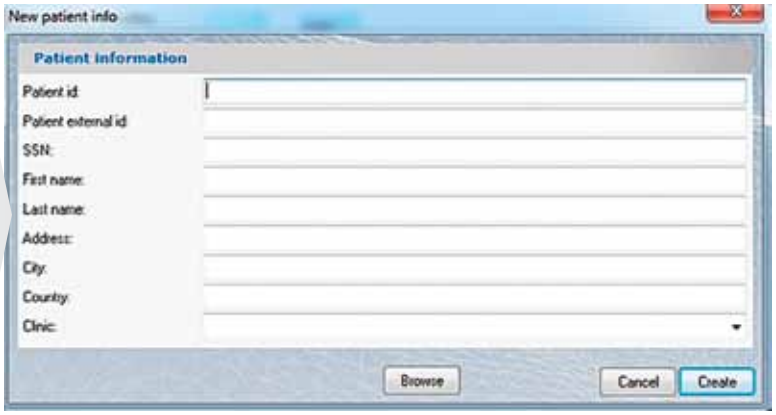
Scanning the impressions and the bite on the **3Shape ScanIt Orthodontics** requires some file naming standards and procedures. This section will explain how to name the cases being scanned and how to properly name the files to be ready for modeling.

Filling Out Patient Information

Once the 3Shape ScanIt Orthodontics program is open, click on the "New order" icon.

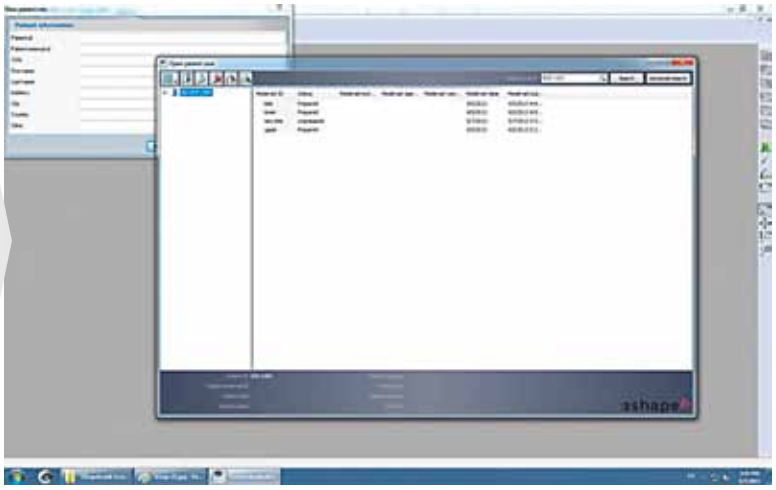
New Cases

For new cases, enter the order number, which can be obtained from the order form or from the Pala Digital Dentures website, as the "Patient ID" and click create. Example: 923-1100 case number as patient ID.



Existing Cases

For existing cases, click on the "Browse" button on the "New patient info" window, search for the existing case, and double click on the order number from the left column.



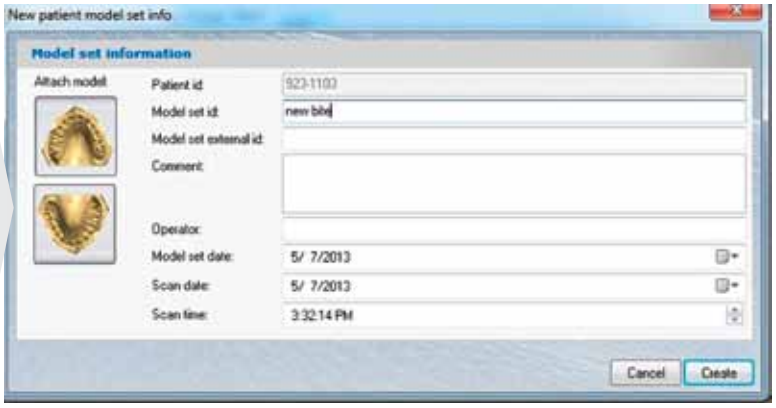
SELECTING THE OBJECTS TO SCAN

Selecting the Objects to Scan

Once the patient information is filled out, the "New patient model set info" window will appear. On this window, select whether upper or lower needs to be scanned.

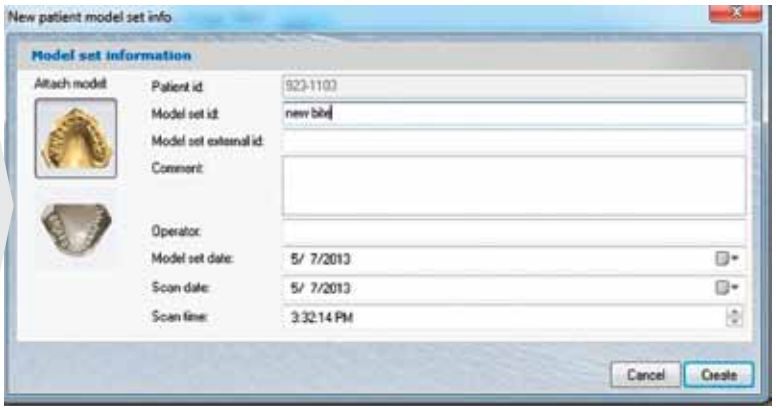
Complete Denture Case

On the "New patient model set info" screen, click and select both the maxillary and the mandibular models. The selected models will be highlighted in beige.



Single Arch Denture Case

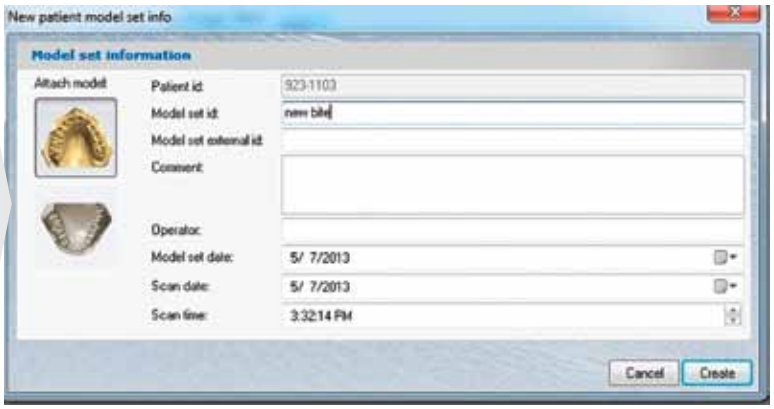
On the "New patient model set info" screen, click and select either the maxillary or the mandibular model. The selected model will be highlighted in beige.



Bite Scanning

Bite should be scanned as a maxillary impression.

On the "New patient model set info" screen, click and select just the maxillary. The selected model will be highlighted in beige. Enter the Model Set ID as "Bite" to identify the files after scanning.



Important: Bite Must Be Scanned as Maxillary

To obtain a good bite, bite impressions must be scanned as maxillary. Once you've scanned the maxillary and mandibular impressions, the system will ask you to place the bite. Click "Finish" and follow the steps on page 4.

SELECTING THE OBJECTS TO SCAN

Finalizing the Scan

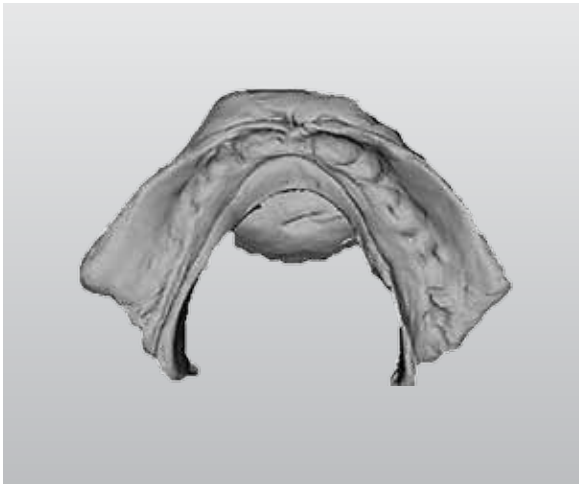
Prior to finalizing the scan, the software will ask you to perform a few steps such as plane setup and creating a virtual base. Please cancel and skip these steps and move straight to Finish the Process.

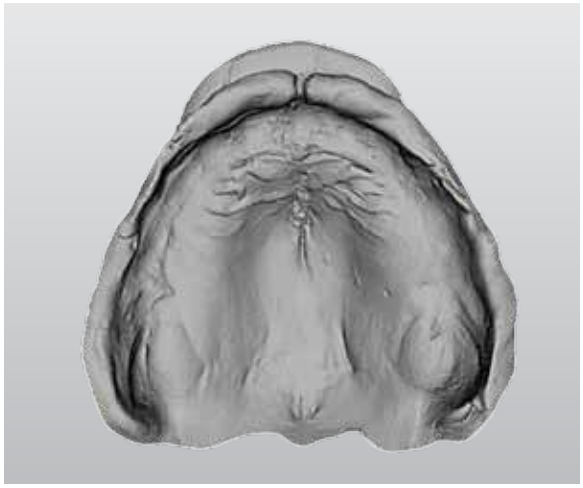
After scanning is complete, the ortho software will ask you to setup plane alignment, please click next and skip this part.

After skipping setup plane alignment, the software asks you to create a virtual base, please cancel out of this step.

Once completed, all models have been saved, please select Finish the Process.

Examples of Good Scans





FILE SAVING AND NAMING CONVENTION

Scanned files normally can be found under "/ProgramData/3Shape/OrthoData/Casenumber/". Inside the case scan folder you will find the maxillary, mandibular, and bite scan files.

Files must be renamed in order to correctly identify scan files for each case.

Maxillary Scan File

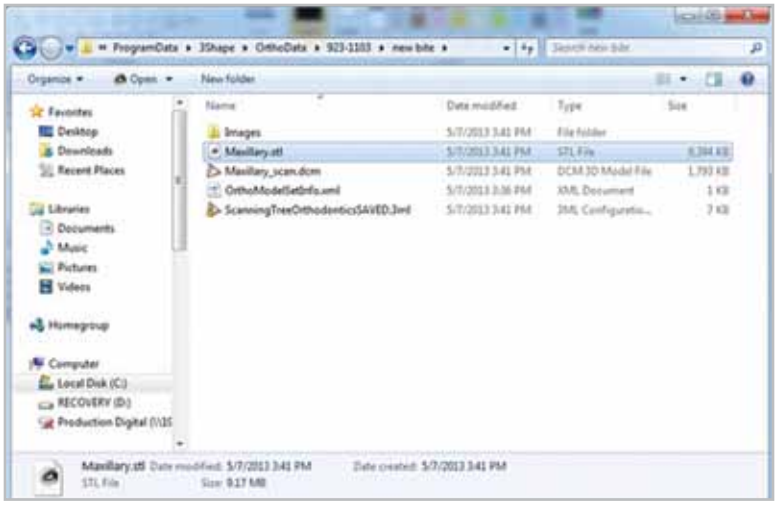
The maxillary scan filename will be "Maxillary.stl". This file must be renamed by adding the case number in front of the maxillary.stl. Example: "903-2251 Maxillary.stl".

Mandibular Scan File

The mandibular scan filename will be "Mandibular.stl". This file must be renamed by adding the case number in front of the mandibular.stl. Example: "903-2251 Mandibular.stl".

Bite Scan File

The bite scan filename will be "Maxillary.stl" and it will normally be under a sub folder since the bite is scanned as maxillary. This file must be renamed by adding the case number and adding the word bite. Example: "903-2251 bite.stl".



Note: Please save all 3 files with the same case number.

Scanning Preparation

PREPARING THE IMPRESSION

Verify that all parts are present. Clean and prepare the impressions and bite for scanning.

Preparing the impression before scanning is crucial to obtaining the best final denture results. Imperfections or errors at this stage will affect the final denture and its quality.

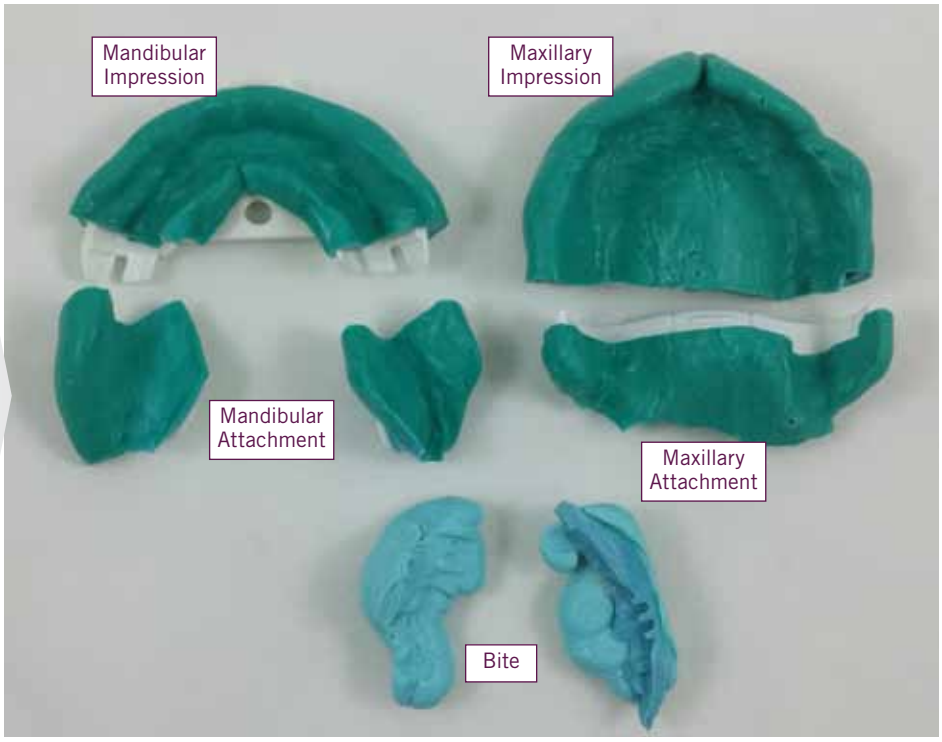
Required Impression Parts

Complete Denture Parts

1. Maxillary Impression
2. Maxillary Posterior Attachment
3. Mandibular Impression
4. Mandibular Left and Right Posterior Attachment
5. Bite

Single Arch Denture Parts

1. Maxillary or Mandibular Impression
2. Maxillary or Mandibular Posterior Attachment
3. Opposing Stone
4. Bite



- A complete denture requires the maxillary, mandibular, and bite.
- Single arch dentures require either the maxillary or mandibular, the opposing stone, and bite.
- It is also necessary to verify that the corresponding attachments are present.

Single Arch Cases

If the case is a single arch denture, identify whether it is a maxillary single arch, or mandibular single arch denture.

For a maxillary single arch denture, verify that the maxillary impression, maxillary posterior attachment, opposing stone model, and bite are present. For mandibular single arch denture, verify that the mandibular impression, mandibular posterior attachments, opposing stone model and bite are present.

Scanning Preparation

BITE SCAN PREPARATION

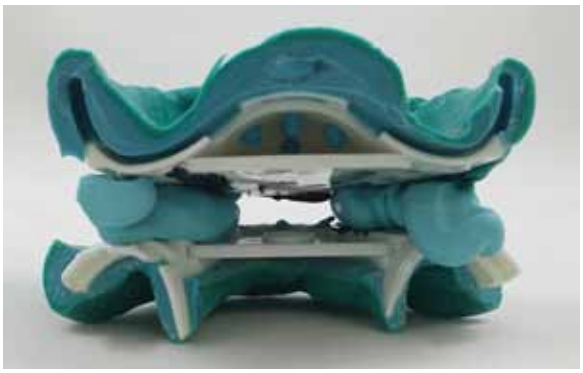
There are various checkpoints before the bite is ready for scanning.

Before we can start to scan, it is necessary to check and prepare the bite and impressions.

- Remove the center pin.
  - The center pin acts as a stop during the bite registration.
  - Having the center pin attached during bite scanning can create open bites, especially if the patient bit down hard during the bite registration process.
- Check the bite.
  - Remove the posterior attachments.
  - Once the posterior attachments are removed, make sure the trays are not touching each other.

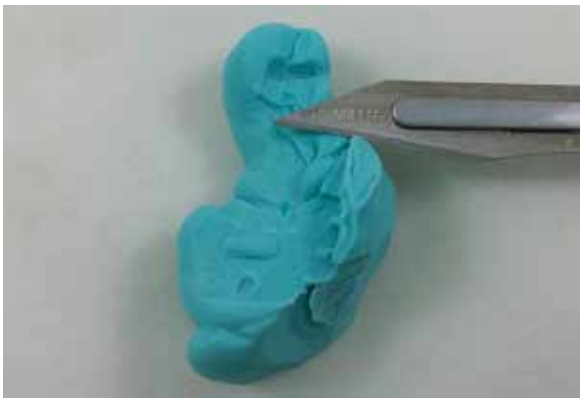
Bite Preparation

- Trays are not touching each other
- Center pin is removed
- Bite is stable
- No gaps between the tray and the bite material



Tip:

If pin plate cannot be removed due to the bite material covering the plate, then unscrew the pin so it does not interfere with the bite opening. If you cannot unscrew the pin, you might cut the pin.



Posteriors do not need to be attached at bite scan. They only need to be attached when the maxillary or mandibular is scanned.

Remove excess bite registration material and expose as much of the tray as possible without removing the border material.

If the Trays Are Touching

1. Separate the bite from the impression.
2. Clean the bite by cutting off the excess.
3. Grind the tray that is touching.
4. Put the bite back together, making sure that the bite and the trays are occluding correctly without any space between them.
5. Apply glue only on the posterior side walls of the bite. Make sure that the bite is completely occluding against the impression tray.

Note: Do not apply glue between the bite and the tray.

Scan the bite first. Scan takes about 3-7 minutes.

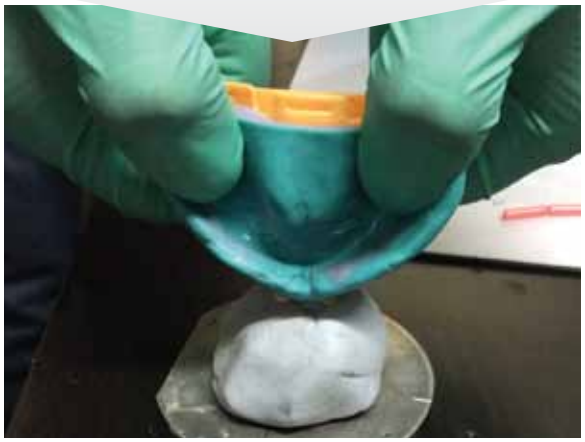
Scanning Preparation

SCANNING THE BITE

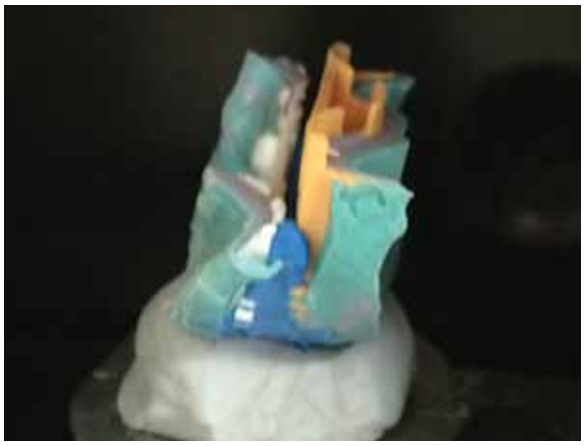
The Bite Scan should be done first.

- Fill out the necessary RX information prior to scanning (see page 2)
  – Select the boxes in the scanning software for the bite scan.

Push the front of the trays into the putty plate for scanning, it must be vertical.



Maxillary is facing the right and the Mandibular is facing left.



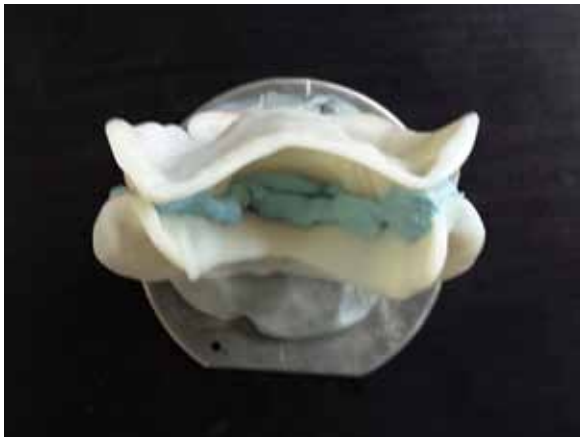
Scanning Preparation

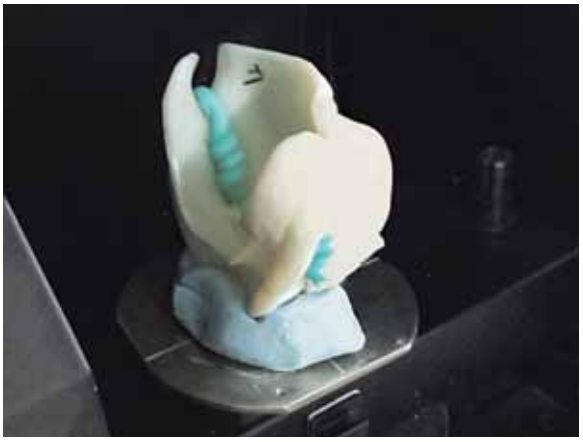
SCANNING THE BITE

Complete Arch Bite Scan Position and Try-in Scanning

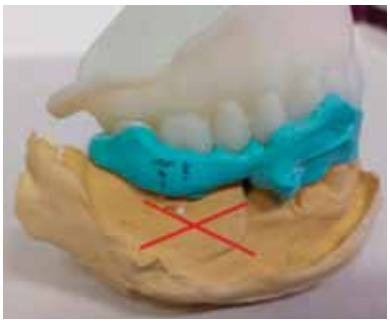
- The mandibular scan should be perpendicular to the scanning plate, raised with reusable putty about 1 inch from the scanning plate.
- The bite on the try-in is placed the same way as the bite on the impression, perpendicular to the scanning plate.
- Place so the intaglio surfaces either face the scanner side walls or the mandibular surface faces the operator and the maxillary intaglio surface faces the scanner.

Note: If your clinician is not using a scannable material, brush the impression or bite with powder to aid in scanning. It will help in eliminating shadows.



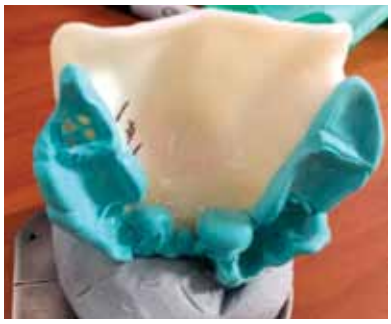


Single Arch Try-in Bite Scan Position



For single arch try-in with the a new bite, do not scan with the opposing stone. Only scan the try-in with bite registration.

If the bite became separated from the try-in, firmly seat the bite against the try-in (especially the posterior portion to avoid open bite) and very little amount of super glue between the bite and the try-in only on the side. This is to make sure that the bite is completely attached without gaps into the try-in. If the bite is not fully seated against the try-in, it will cause bite errors, resulting in open bite and bad occlusion.



The single arch bite scan position is similar to a complete denture case. The bite should be perpendicular to the scanning plate.

Note that the opposing stone must be scanned separately.

Scanning Preparation

MAXILLARY SCAN PREPARATION

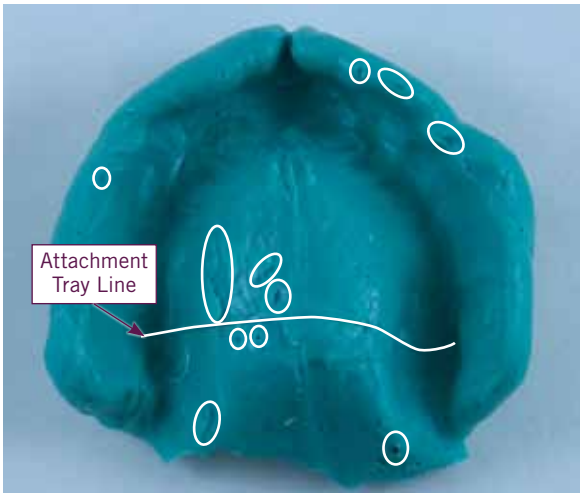
There are two major checkpoints for the maxillary impression preparation.

First, the surface should be free of holes and gaps caused by saliva during impression taking.

Second, the posterior attachment should be attached seamlessly to the impression. Any step or gap between the impression and the attachment will cause retention and discomfort when the denture is delivered.

Maxillary Scan Preparation

- Fill holes and other imperfections
- No steps or gaps when posterior attachment is attached
- All surfaces smooth and free of debris



Holes and Gaps on the Impression

Holes and gaps can be covered with lab putty, such as Pala Lab Putty, to the surface level.

Step Between the Impression and Posterior Attachment

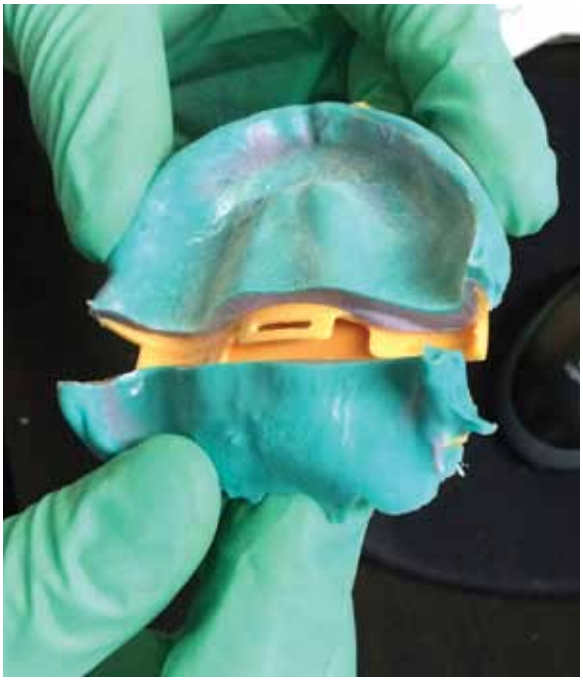
If there is a gap or step between the impression and the posterior attachment, clean away the excess or obstructing material, then place the attachment and impression together again. Repeat until no excess material obstructs a seamless attachment.

If necessary, use super glue on the outer side of the tray. Try to avoid the tissue side.

If there are still gaps between the impression and the attachment tray, apply super glue on the surface of the gum. Immediately remove any excess glue so only a minimal layer remains.

Note: When you are scanning the Maxillary you do not select anything in the scanning software.

For more details, please review ScanIt Orthdontics and how to fill in patient information on page 2.



Scanning Preparation

MANDIBULAR SCAN PREPARATION

Like the maxillary preparation, there are two major checkpoints for the mandibular impression preparation.

First, the surface should be free of holes and gaps caused by saliva during impression taking.

Second, the posterior attachments should be attached seamlessly to the impression. Any step or gap between the impression and the attachments will cause retention and discomfort when the denture is delivered.

Mandibular Scan Preparation

- Fill holes and other imperfections
- No steps or gaps when posterior attachments are attached
- All surfaces smooth and free of debris

Holes and Gaps on the Impression

Holes and gaps can be covered with lab putty, such as Pala Lab Putty, to the surface level.

Step Between the Impression and Posterior Attachment

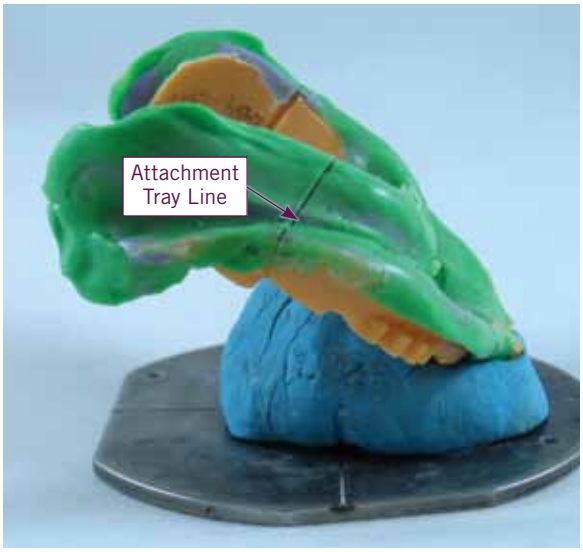
If there is a gap or step between the impression and the posterior attachment, clean away the excess or obstructing material, then place the attachment and impression together again. Repeat until no excess material obstructs a seamless attachment.

If necessary, use super glue on the outer side of the tray. Try to avoid the tissue side.

If there are still gaps between the impression and the attachment tray, apply super glue on the surface of the gum. Immediately remove any excess glue so only a minimal layer remains.

Note: When you are scanning the Mandibular you do not select anything in the scanning software.

For more details, please review ScanIt Orthdontics and how to fill in patient information on page 2.



Scanning Preparation

IMPRESSION SCAN POSITION

Impression scan positioning helps to obtain good scanning results. Improperly placed impressions can cause missing scanned areas which will require rescanning.

Maxillary Scan Position

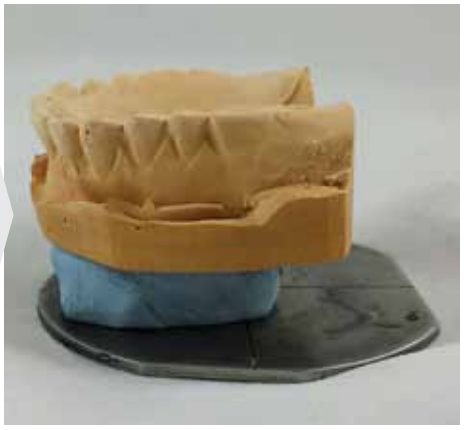
Maxillary palate should be inclined 20 to 45 degrees to the scanning plate, raised with reusable putty about 1 inch from the scanning plate.

Mandibular Scan Position

Mandibular scan should be inclined 20 to 45 degrees to the scanning plate, raised with reusable putty about 1 inch from the scanning plate.

Opposing Stone Scan Position

Parallel to the scanning plate, raised by 1 inch from the scanning plate, with the teeth side up.



Scanning Preparation

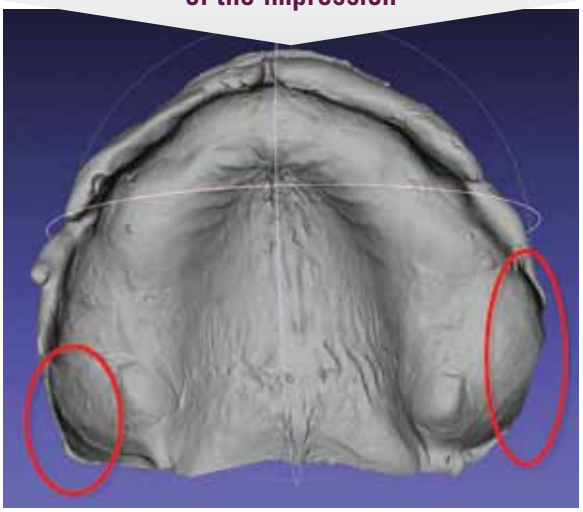
TIPS FOR PROPER SCANNING

When scanning, if there are "holes" in the scan, select rescan versus starting over with a new scan.

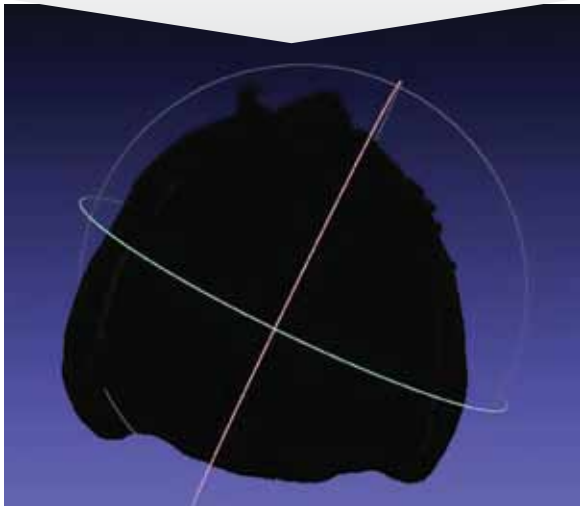
Scan the bite first prior to scanning the maxillary or the mandibular. This way you do not have to put the bite back together.

Examples of unacceptable scans that can not be processed:

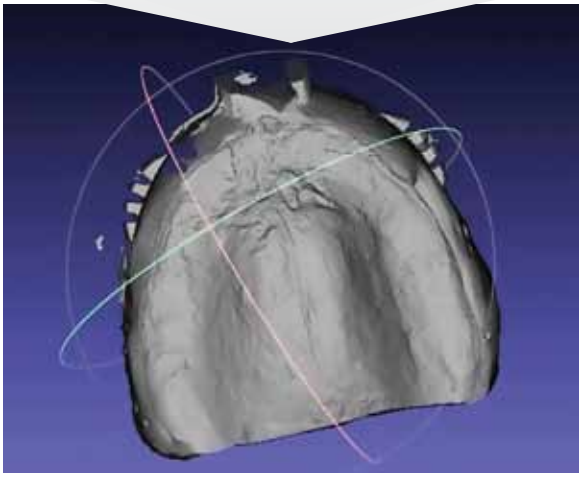
Missing part of the maxillary borders of the impression



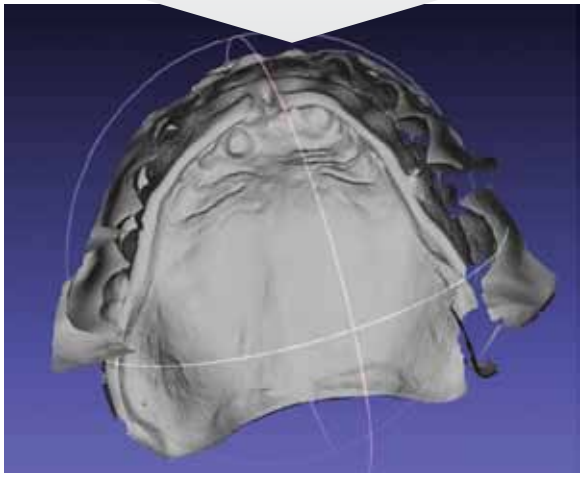
Missing surface of the impression



Impression scan or image is reversed. The software looks like it is trying to create a positive of the impression.



Scan of a Try-in with a new bite - Missing the Mandibular intaglio surface. Bite scan must show both maxillary and mandibular intaglio surface.



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