

Atlantis® Conus Abutments Overdenture Workflow using Lucitone Digital Print



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Fixture level impression – open tray technique
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4. Appointment Four
Final Delivery

Introduction

Expand the possibilities with our fully digital validated workflow for printed, friction-retained removable restorations with conometric retention: Lucitone Digital Print Dentures with Atlantis Conus Abutments. Together, Lucitone Digital Print and Atlantis Conus Abutments provide patients with a best-in-class removeable prosthesis for optimal hygiene but with the stability, comfort and palate-free option desired from fixed restorations.

Workflow Overview

Appointment One

- Fixture level impression – open tray technique

Laboratory Step One

Bite Rim

Appointment Two

- Baseplate and bite rim / records

Laboratory Step Two

Scanning of the adjusted Bite Rim and Records

Appointment Three

- Try-In Assessment

Laboratory Step Three

Return Monolithic Try-In denture to Lab to scan the adjustments

Appointment Four

- Final Delivery. Conus case delivered with all necessary components

Chairside Materials



Caulk®
Tray Adhesive



Aquasil® Ultra+
Smart Wetting®
Impression Material
RIGID Fast Set



Aquasil® Ultra+
Smart Wetting®
Impression Material
LV Fast Set

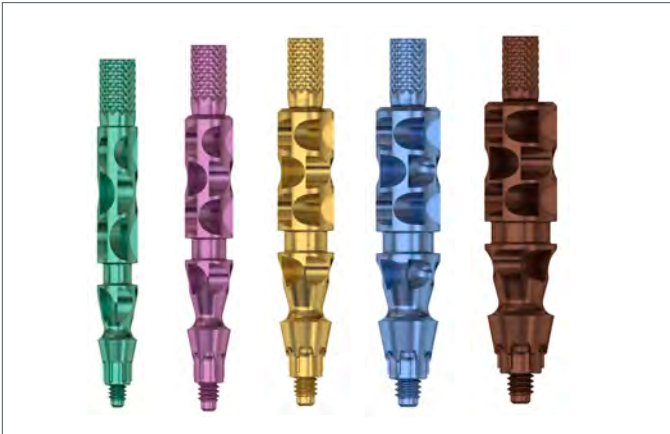


Aquasil® Ultra+
Smart Wetting®
Impression Material
XLV Fast Set



Regisil® 2x™
Vinyl Polysiloxane
Bite Registration Paste

1.0 Appointment One - *Fixture level impression - open tray technique*



Impression copings* – purchased through Dentsply Sirona for specific implant size and diameter.

Sizes:

- Green - XS - (3,0)
- Purple - S - (3,6)
- Yellow - M - (4,2)
- Blue - L - (4,8)
- Brown - XL - (5,4)

*All major implant system.....



Custom Tray

A custom tray can be printed from an IOS scan or scan of a model from a preliminary impression of the patient when healing abutments are in place.

The benefits of a printed custom tray are:

- Precise fit
- Strength
- Can be archived for future use



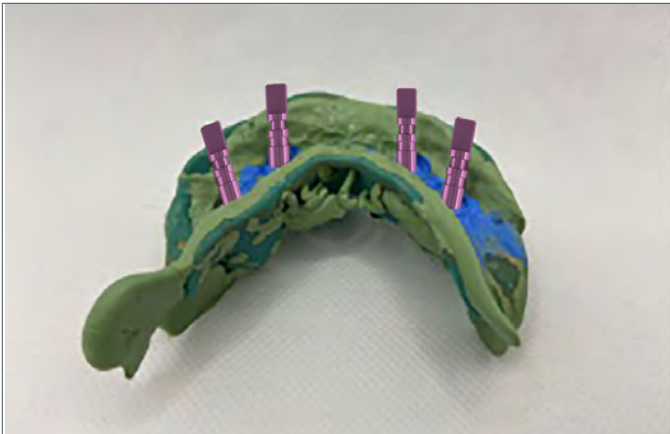
The doctor will use a light body impression material injected around the impression copings and soft tissue. At the same time the assistant will add a heavy body impression material to the custom tray.

The doctor will immediately begin to clean up the impression material around the impression coping to ensure the copings are visible while keeping impression stable.

Note: The same can be achieved with a digital scan of the arch with implant scan bodies. All anatomical landmarks need captured in the scan since this scan will become the final scan for the denture diagnostic design and final design.



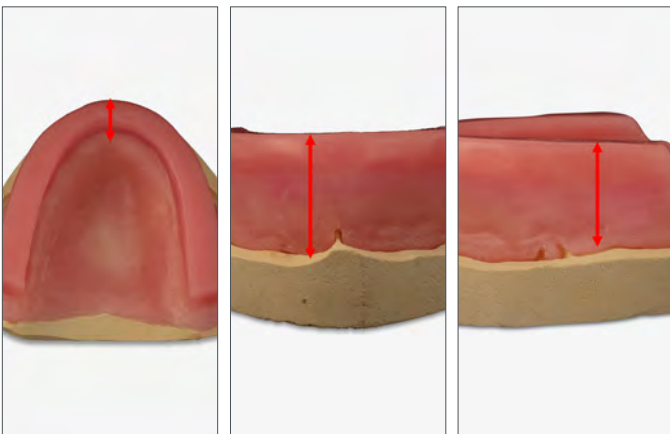
The correct lab analogs (also referred to as implant replicas) are chosen.



The lab analog will be added into the custom tray impression. Shown are the Astra EV 3.6.



Soft tissue is added around implant sites prior to pouring stone. (Follow manufacturer's recommendations for cure times.) A final impression is poured. Unscrew the impression copings from the model and separate the two.



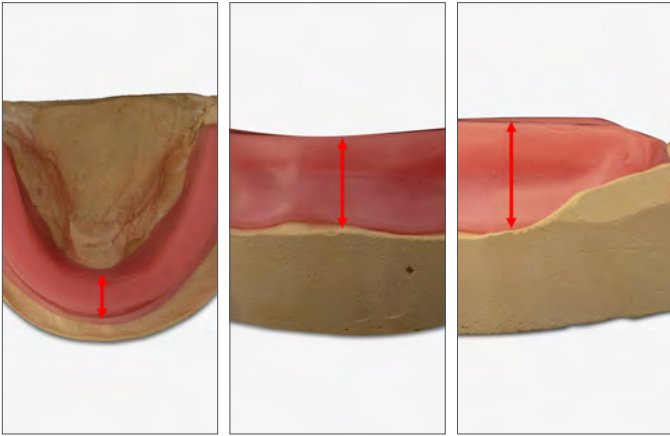
Wax Rim Fabrication

Next, the lab fabricates the stabilized baseplate(s) with occlusal wax rim(s) per the following parameters:

Maxillary Arch

- Width of the incisal edge: **3-4mm**.
- Height of the facial: **22mm** at the deepest section of the peripheral roll (usually on either side of the papilla).
- Height of the posterior rim: **18mm** around the location of the first molar.

The baseplate is now ready for use as a final impression tray.



Mandibular Arch

- Width of the incisal edge: **3-4mm**.
- Height of the facial: **18mm** around the deepest section of the peripheral roll.
- Height of the posterior rim: **18mm** around the location of the first molar.

Adjustment of the mandibular rim to extend $\frac{2}{3}$ of the way up the retromolar pad area posteriorly.

The baseplate is now ready for use as a final impression tray.



Notch the posterior of the bite rim for registration. The bite rim is sent back to the doctor.

Note:

-The rim can be made from the digital model.

If Encode healing abutments were used, and the patient is currently wearing a denture, a temp wash impression can be taken and used for the scanning process to achieve the edentulous record for the model. Be sure and pick up the detail of the Encode abutments within the reline wash. Once scanned, the 3Shape lab software creates the intaglio surface needed for the edentulous model. The current denture serves as the bite record.

2.0 Appointment Two - *Baseplate and bite rim / records appointment*



Assess & Adjust the Wax Rims

Prior to the placement in the patient's mouth, follow proper disinfection protocols. Place the maxillary/mandibular baseplate with the wax rim in the patient's mouth - one arch at a time.

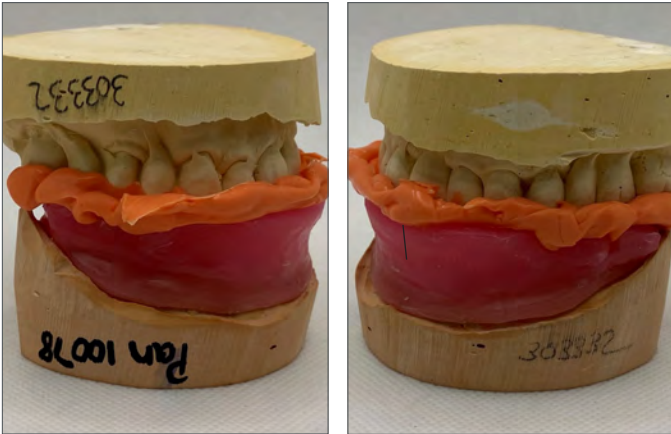


IMPORTANT: The doctor will remove the healing abutments when evaluating the bite rim.



Adjust the following:

- Vertical Dimension of Occlusion (VDO)
- Buccal thickness
- Mark midline
- High smile line if the case is on the Maxilla
- Make a registration of the bite
- Take any additional photos
- Take an impression of the opposing arch if the case is opposing natural dentition



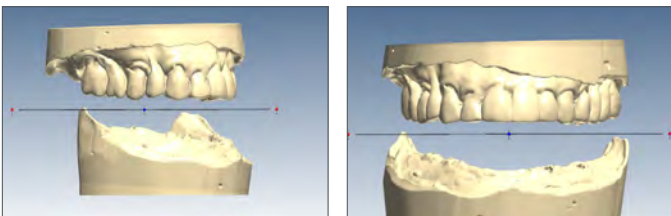
Base Plate and Rim Bite

The opposing impression is poured, and a model fabricated. Since this process is digital articulation is not needed.



The lab will scan the following:

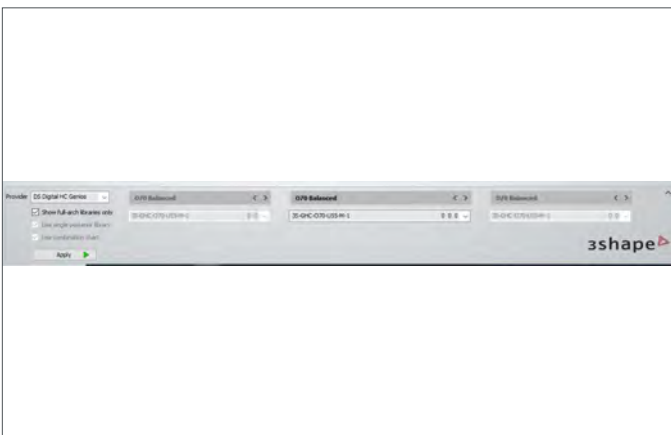
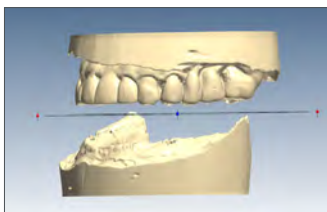
- Adjusted bite rim with record markings
- Opposing arch
- Arches in articulation



CAD Design

After the scans are complete, the lab will do an initial design of the denture to produce a monolithic Try-In.

...or the digital scan will be used as the same

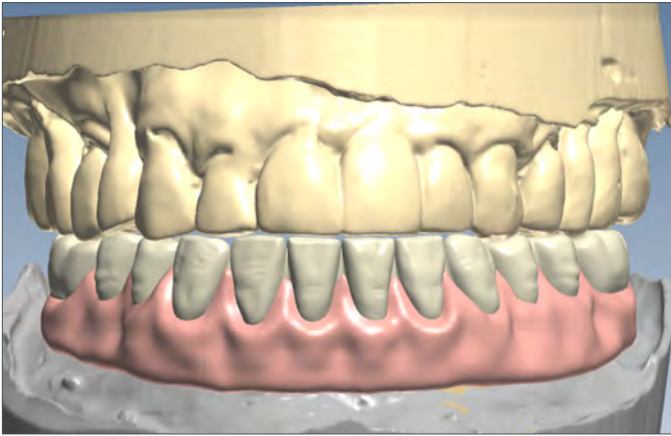


Select the appropriate Dentsply Sirona CAD tooth library. Tooth selection are:

- Digital Genios, Digital HC Genios, Digital Portrait, and Digital HC Portrait.

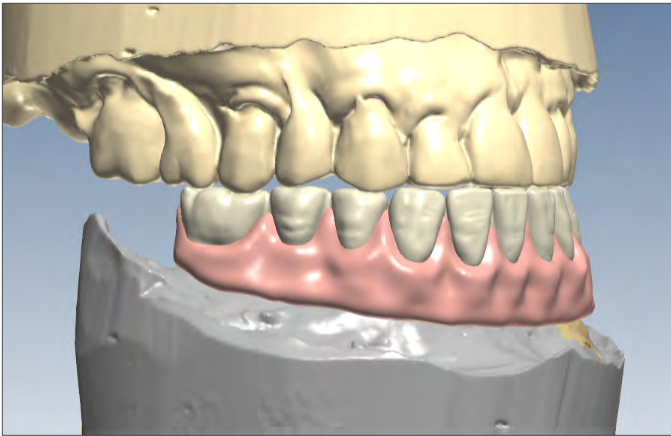
Libraries are dongle encrypted. To obtain access:

- 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.

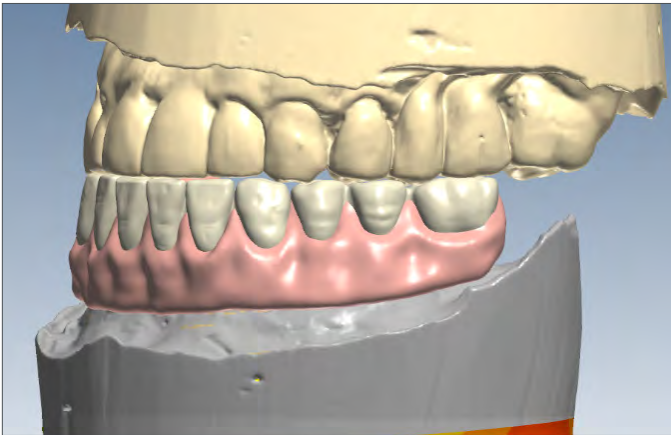


Verify the occlusion by checking all views.

Facial View.



Patient right.



Patient left.



3Shape designs the Denture Base, Teeth, and Try-In. Creating a separate CAM file for each item.

The design may be changed later due to the adjustments at the Clinical Appointment 3 (the assessment of the Try-In.)



Lab Material

Lucitone Digital Value™ 3D Economy Tooth & Trial Placement

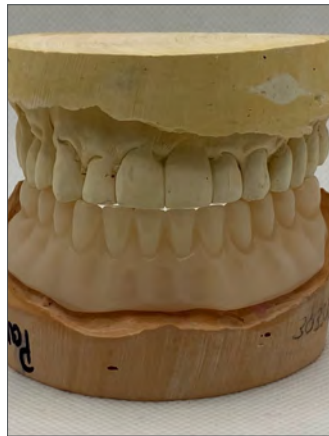
Lucitone Digital Value 3D Economy Tooth & Trial Placement is used as a Try-In material for evaluation prior to fabrication of the final restoration and is intended for printing entry tier full arch and tooth segments. Designed for 3D printing accuracy with speed.



Once designs are completed the .stl files are sent to the printer.

For specific instructions on how to set up your validated printer, click on the appropriate link below:

- Carbon Print to Finish - <https://tinyurl.com/2kdatfbx>
- Asiga Print to Finish - <https://rb.gy/ojgsrw>



Clean, cure and finish the Try-In to send back to the Clinician.

See the **Clean, Curing, and Finishing** sections of the Illustrated Technique Guides for detailed instructions.

- Carbon Print to Finish - <https://tinyurl.com/2kdatfbx>
- Asiga Print to Finish - <https://rb.gy/ojgsrw>

3.0 Appointment Three - *Try-In assessment*



IMPORTANT: The doctor will remove the healing abutments when evaluating the Try-In.

Utilize the Try-In Clinical Checklist (See 5.0 Resources)



Ensure the adjustment areas are clearly marked on the Try-In arch(es).



Use a carbide bur to adjust the Try-In arch(es) and then clean the arch(es) to remove the debris. Reinsert the Try-In arch(es) to check for proper occlusion. Repeat the adjustment steps as necessary to achieve proper occlusion.



Return the adjusted Try-In to the lab to design the Conus abutments and print the final denture.



The Atlantis Lab FLO's are added to the model and scanned.



The Try-In showing any adjustments is scanned.



The soft tissue model is scanned. All scans are sent to Atlantis for Conus abutment design.

Enter your order in Atlantis WebOrder
www.atlantisweborder.com

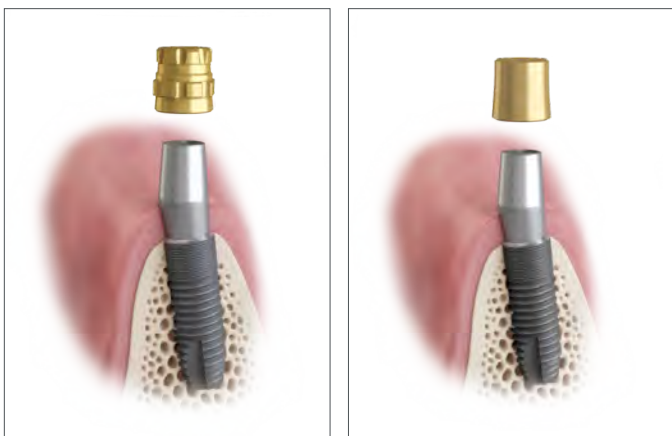


Atlantis® Conus Abutment – overdenture
 Atlantis WebOrder Items page

- Select implant type
- Select restoration type “Conus overdenture 5°”
- Select material titanium
- Indicate what type of SynCone cap* you wish to order (with or without retention)
- Indicate if you wish to order a polymerization sleeve

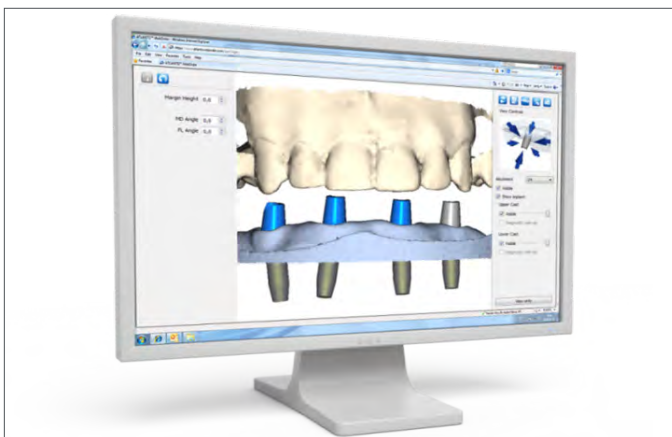
NOTE: Click “apply to all” if you wish to have the same selection applied for all abutments

*If doing a Lucitone Digital Print Overdenture a SynCone cap with retention is required.

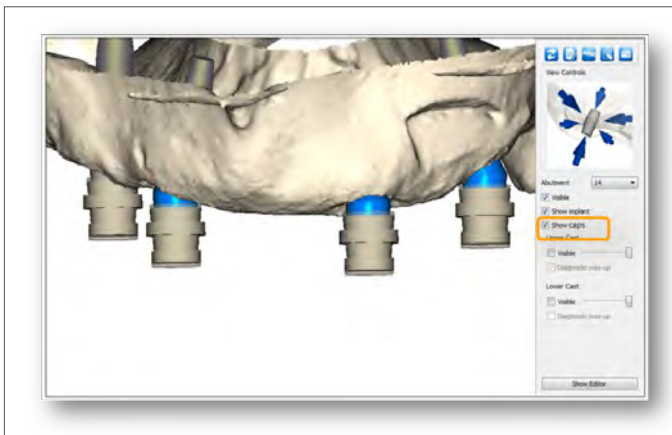


Atlantis® Conus Abutment

- Available in titanium
- Designed to fit SynCone 5° caps
- The SynCone cap comes with two exterior designs:
 - With retention for seating into an all-acrylic prosthesis
 - Without retention for precise seating into a metal-framework



Case models are scanned and generated into 3D imaging that is then used for the individual design of the abutments Atlantis VAD (Virtual Abutment Design) software.

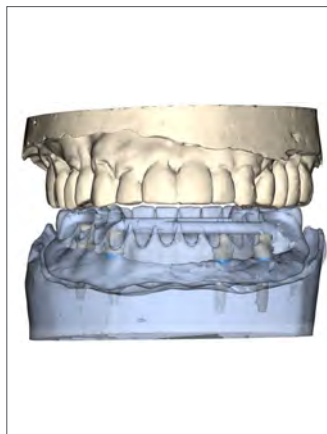
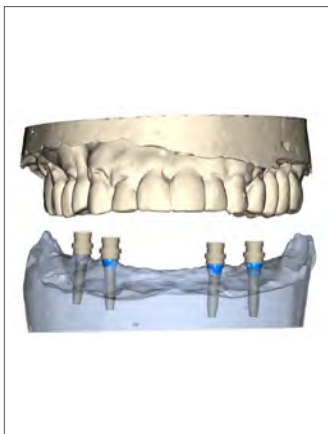


Display the SynCone caps in Atlantis Editor and control the height. Recommended space between the SynCone cap and the occlusal plan, is 5 mm.



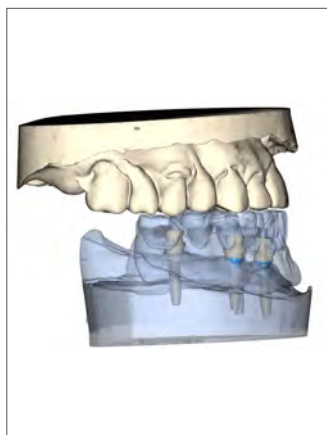
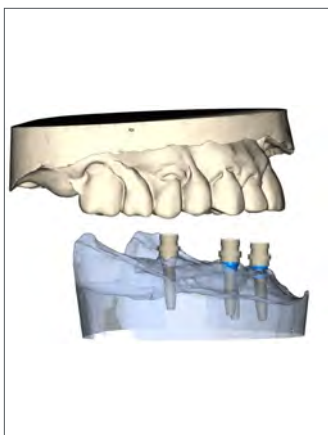
Make sure to measure the clearance between the SynCone cap and the occlusal plane:

- Recommended space 5 mm.
- SynCone cap with retention, height 5 mm. Max height 5.5 mm due to tolerances.



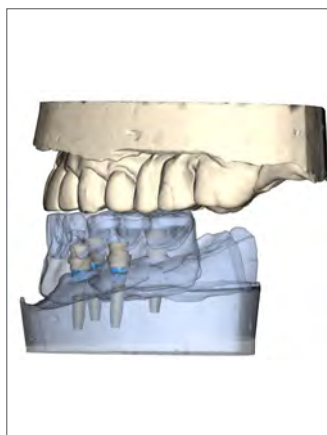
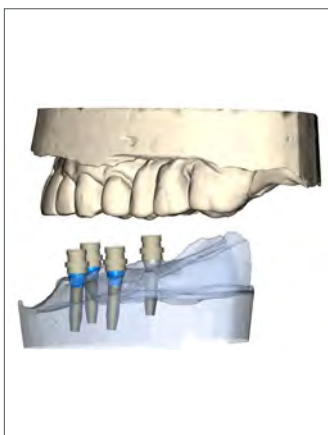
Once Atlantis designs the Conus abutments, you will receive email reminders to check or approve the design. The Atlantis viewer file allows the technician to visualize both the Monolithic Try-In and the designed Conus abutments simultaneously.

Facial View.

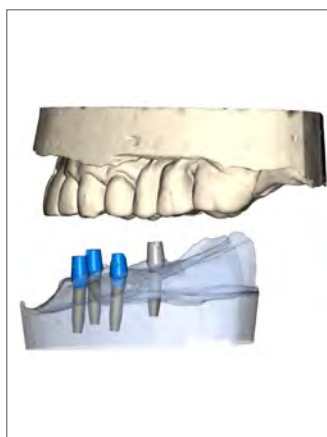
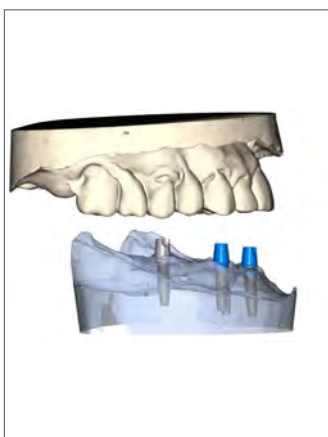


Be sure to verify clearance from all views.

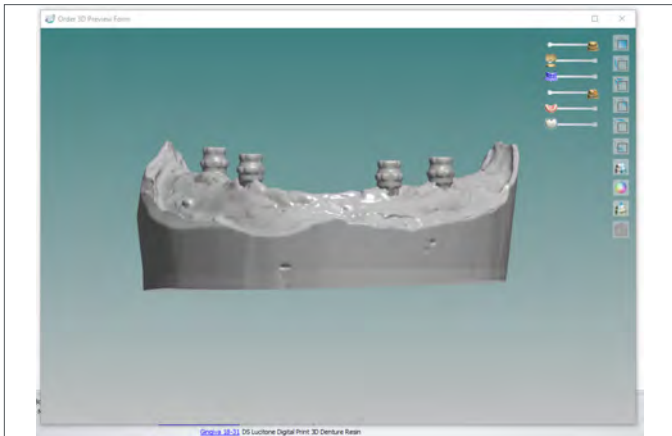
Patient right.



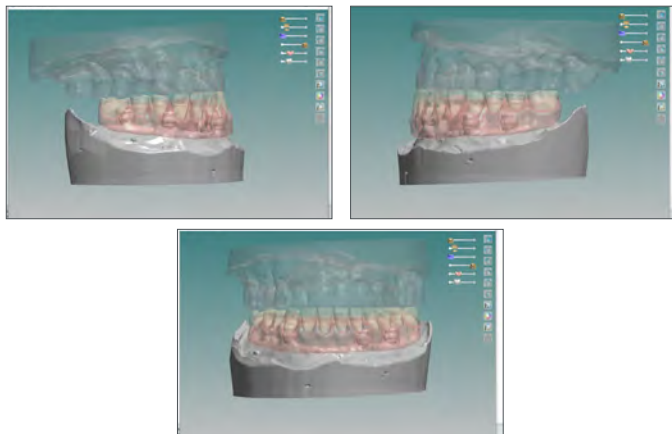
Patient left.



After approving the Conus abutment designs, the abutments are sent to production.



When the Lab receives the Atlantis Conus abutments for the overdenture they will place them on the model to scan and design the final denture.



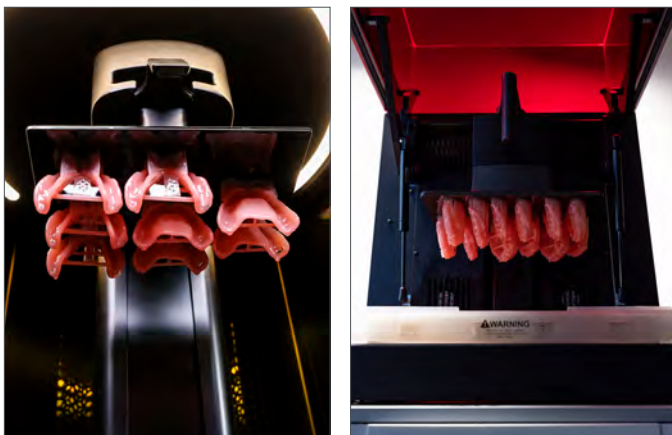
The denture is designed using 3Shape software. Verify clearance of the SynCone caps in the 3Shape software.



Lab Material

Lucitone Digital Print™ 3D Denture Base

Lucitone Digital Print 3D Denture Base is the next generation of the successful Lucitone® denture base family - optimized for 3D printing accuracy and speed.



Print Lucitone Digital Denture

Once Clinician and technician agree upon the denture design the .stl can be sent to the printer. Select the correct shade of Lucitone Digital Print resin to print the denture base.

For specific instructions on how to set up your validated printer, click on the appropriate link below:

- Carbon Print to Finish - <https://tinyurl.com/2kdatfbx>
- Asiga Print to Finish - <https://rb.gy/ojgrsw>



Lab Material

Lucitone Digital IPN™ 3D Premium Tooth

Lucitone Digital IPN has the superior wear resistance of traditional IPN denture teeth and premium-level esthetics. Available in 16 A-D*, plus two bleach shades. Designed for the speed and accuracy of 3D printing.

*The A1-D4 designations correspond to the VITA classical A1-D4® shade guide which is meant to be a guide, not a match. VITA classical A1-D4 is a registered trademark of VITA Zahnfabrik H. Rauter GmbH & Co.



Load the tooth arch(es) or segment files. Select the correct shade of Lucitone Digital IPN 3D Premium Tooth resin to print the teeth.

For specific instructions on how to set up your validated printer, click on the appropriate link below:

- Carbon Print to Finish - <https://tinyurl.com/2kdatfbx>
- Asiga Print to Finish - <https://rb.gy/ojgsrw>



Lab Material

Lucitone Digital Fuse™ Step 2 3D Denture Bonding Resin

Lucitone Digital Fuse Step 2 is utilized as an aid in bonding IPN 3D, DS Multilayer PMMA or Lucitone Digital Value denture teeth to a Lucitone Digital Print 3D Denture Base.

Lucitone Digital Fuse™ Step 3 Total 3D Sealer

Developed for use with Lucitone Digital IPN, Step 3 Total is a light-cured sealant that produces a smooth, glossy surface finish on the denture. It can also be used with Lucitone Digital Value, DS Multilayer PMMA, and IPN 3D Denture Teeth.

Lucitone Digital Fuse™ Step 3 3D Sealer

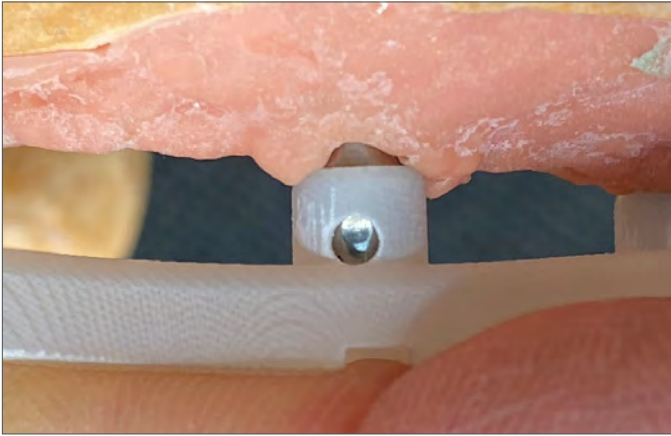
Lucitone Digital Fuse Step 3 is a light-cured sealant that produces a smooth, glossy surface finish on the denture.

The teeth are fused into the base. See the **Clean, Fusing, Curing, and Finishing** sections of the Illustrated Technique Guides for detailed instructions.

The Conus Denture is prepared for Pick up.

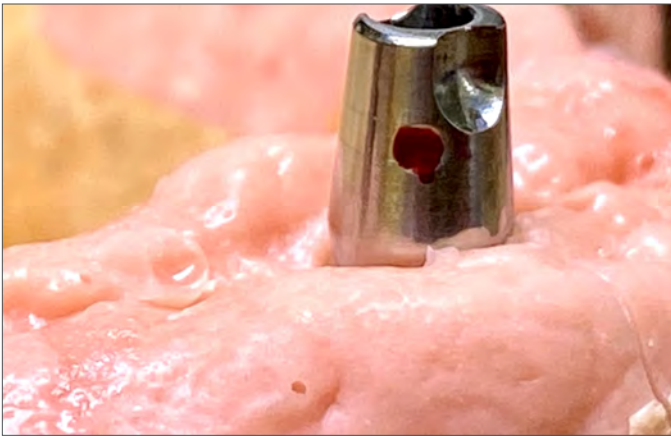
- Carbon Print to Finish - <https://tinyurl.com/2kdatfbx>
- Asiga Print to Finish - <https://rb.gy/ojgsrw>





The Atlantis Conus abutments will ship to the lab along with the Atlantis insertion guide.

The Atlantis insertion guide is placed over the Atlantis Conus abutments. The guide should fit passively and reveal the dimple through the window.



In this instance the lab placed a red dot on the dimple to aid with visual confirmation.



Check all abutment placements for correct position.



The Atlantis Conus Case is delivered with all the necessary components.

Components:

- Lucitone Digital Print 3D Denture
- Atlantis Conus Abutments
- Syncon Caps
- Polysleeves
- Lucitone Digital Value 3D Economy Tooth & Trial Placement - Try-In
- Nightguard (Optional)
- Atlantis Insertion guide

4.0 Appointment Four - *Final Delivery*



All Atlantis® Conus Abutment, overdenture are delivered with an mandatory Atlantis® Insertion Guide – for easier insertion

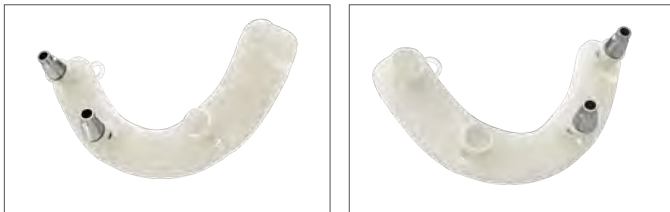
In order to get the corresponding abutment into the correct position, the Atlantis Conus Abutment include two new features: a “notch” and a “dimple” on the core surface.

- The notch acts a rotational key to the Atlantis Insertion Guide.
- The dimple works with a sight window in the guide as a visual confirmation that the abutment has been placed in the correct tooth position.



Place a Conus abutment into the guide and turn it until it sinks or “locks” into the correct position. Once the abutment is keyed into the guide, then check if the dimple on the abutment is aligned with the window in the guide. If the dimple is visible in the window, the abutment is properly placed.

If two abutments get swapped, or an abutment is improperly rotated, the dimples won’t appear in the guide windows.

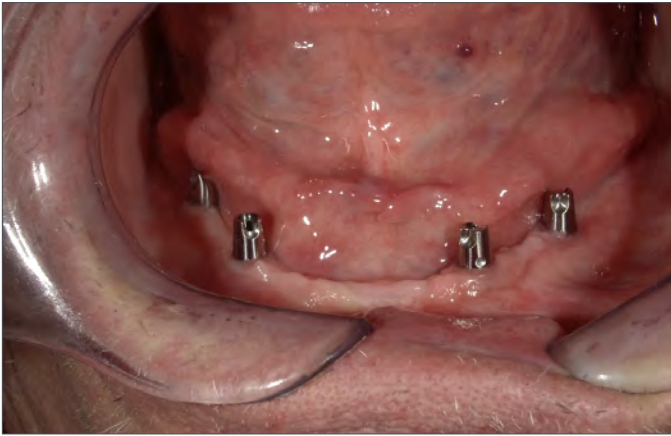


In some cases, it may be difficult or impossible to use the guide to place all abutments simultaneously due to non-parallel implant installation. In this case it may be easier to use the guide to place one or two abutments at a time, starting with the abutments that have the largest implant angle correction.

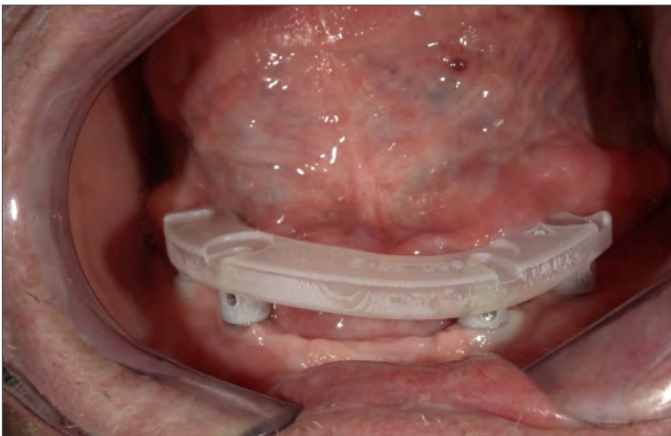


One at a time, replace each healing abutment with an Atlantis Conus abutment.





Shown are all four abutments placed prior to insertion guide verification and screw tightening.

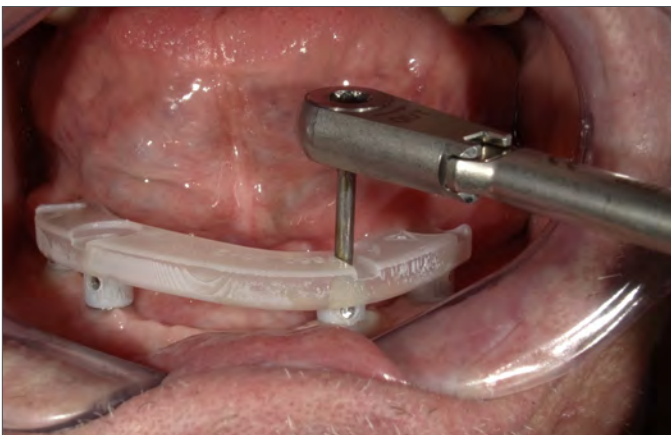


The insertion guide is used to confirm the correct orientation of all Atlantis Conus Abutments.

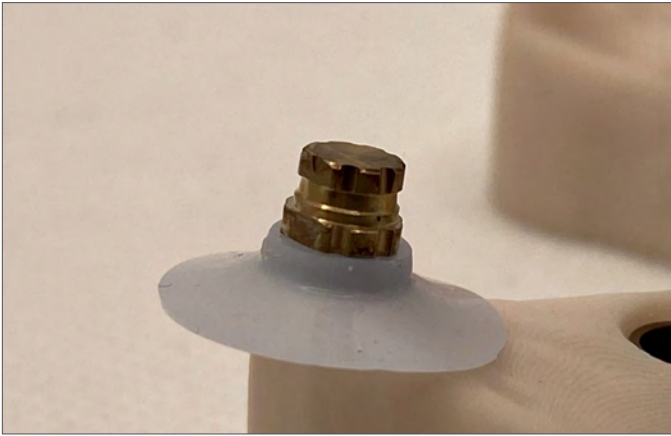


Tighten the abutment screw with light finger force. For the final tightening of the abutment screw use the appropriate recommended torque device per the implant manufacturer's specifications.

For more information regarding the Atlantis Insertion Guide, refer to: Handling procedure for Atlantis Abutment and/or Instruction for use.



Once placement is correct use the guide to torque final placement screws.



Sterilize the prefabricated SynCone caps with retention, according to the instructions for use.

Place the caps on the abutments by applying firm pressure as equal as possible. It is a best practice to do this on the model outside of the patient's mouth. Ensure the sleeve is all the way down to the base of the cap with the larger portion of the sleeve facing down. Then place the silicone sleeves to mask the undercuts.

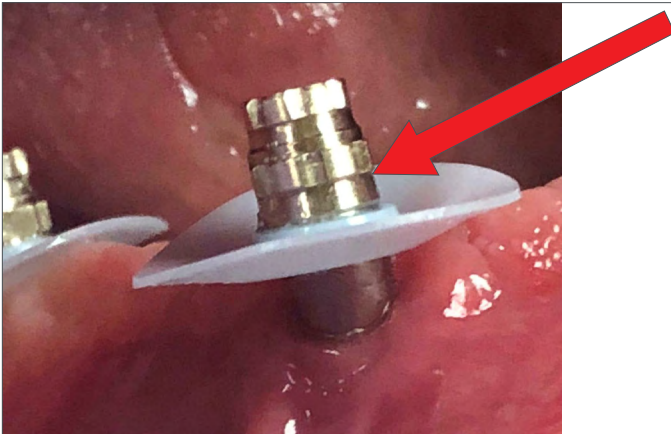


Remember to "Gap the Cap".

It is absolutely critical to have this 1mm space, no acrylic should meet this portion of the sleeve. It's purpose is to control retention.



Use the polymerization sleeve to ensure that 1 mm of the margin of the SynCone cap is exposed and not covered with acrylic.



Evaluate placement of the sleeve. The sleeve should be placed at this height.

The placement in the photo shown is **incorrect**.



The placement in the photo shown is **correct**.



Dentsply Sirona recommends the following pick-up materials for placing attachments for removable overdentures.

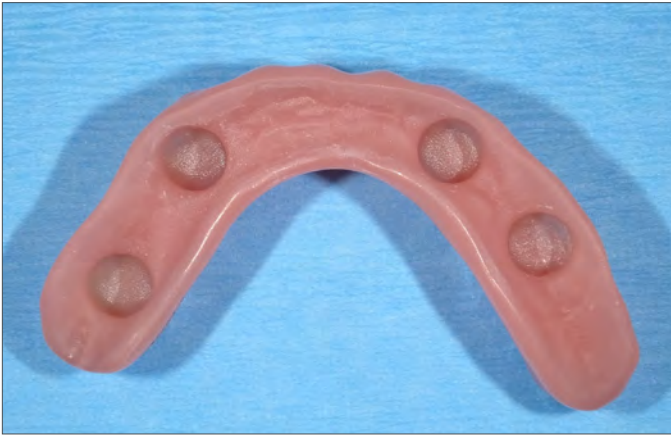
- EZ PickUp™ by Sterngold Dental†
- Quick Up® by Voco†
- Chairside® Attachment Processing Material by Zest†

†EZ PickUp™ by Sterngold Dental, Quick Up® by Voco and Chairside® Attachment Processing Material by Zest are not registered trademarks of Dentsply Sirona.



Apply pick-up material to prosthesis.

(The process shown utilizes Quick Up® by Voco. Follow the manufacturer's instructions for the validated pick-up material.)



Let air dry for 30 seconds.



Load prosthesis with pick-up material.



Fill each reservoir about $\frac{2}{3}$ full.



Seat restoration. Have patient lightly close. Self Cure - 2.5 minutes.



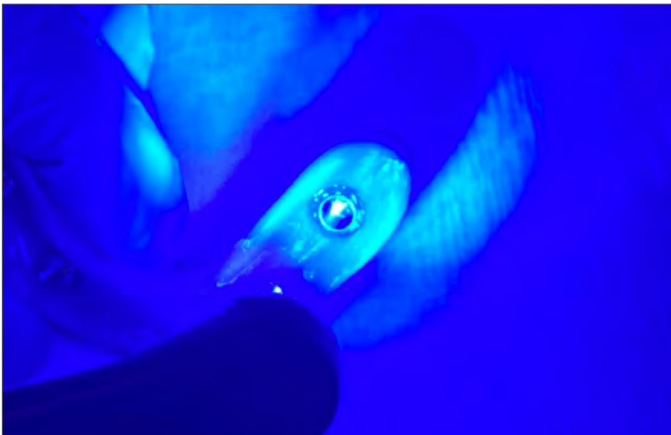
Remove restoration. Poly Sleeves easily peel away.



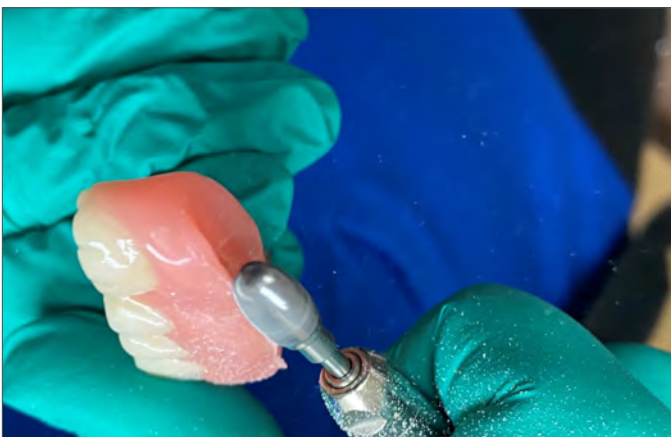
Clean the access holes and the internal aspect of the prosthesis around the caps and adjust with additional resin as needed.

IMPORTANT: Be careful to leave 1mm of the cap exposed. There should be no acrylic inside the caps!

Fill voids as necessary.



Cure per the manufacturer's instructions.



Remove the prosthesis from the oral cavity for finishing and polishing. Adjust the horizontal and vertical aspects of the flange to meet the esthetic requirements of the patient.



Completed Conus Mandibular Denture. Courtesy of May Dental Arts.

Conus denture cases for this Design Guide were completed in collaboration with Chris May of May Dental Lab.

5.0 Resources



Lucitone Digital Print Denture

Try-In Clinical Checklist *courtesy of Dr. Valerie McMillan, D.D.S.*

Patient Name: _____ Date: _____

Laboratory Name: _____ Case Number: _____

Overview

- The Try-In is an exact evaluation design of the final denture.
- Adjust and equilibrate the digital Try-In the same as a traditional final denture.
- Provide exacting adjustment instructions - expressed in millimeters of change.
- In addition to the checklist comments, if desired, write/express adjustment instructions in marker on the Try-In.

Step-By-Step Checklist

1. Insert the Try-In in the patient's mouth and adjust sharp spots or pressure areas.

2. Does the Try-In have good retention? YES ☐ NO ☐

If No, re-impression the Try-In for new scans.

Comments: _____

3. Is the Vertical Dimension of Occlusion (VDO) correct? YES ☐ NO ☐

If No, adjust occlusion and make a new record.

Comments: _____

4. Are there areas of over-extension? YES ☐ NO ☐

If Yes, grind away any over-extension and send to the laboratory to scan.

Comments: _____

5. Is the midline in position? YES ☐ NO ☐

If No, left or right - indicate adjustment +/- in mm.

Comments: _____

6. Is the lip support adequate? YES ☐ NO ☐

If No, indicate facial or lingual - indicate adjustment +/- in mm.

Evaluate the upper teeth on the wet/dry line of the lower lip. Evaluate "SH" sound for lower teeth.

Comments: _____

7. Is the incisal edge position correct? YES ☐ NO ☐

If No, determine if teeth are too high or low - indicate adjustment +/- in mm. Check "F" and "V" sounds.

Comments: _____

8. Is there a cant? YES ☐ NO ☐

If Yes, provide teeth adjustment, left or right - indicate adjustment +/- in mm.

Comments: _____

9. From the view of the facial, are the cervicals of anterior teeth in proper placement? YES ☐ NO ☐

If No, lengthen or shorten - indicate adjustment +/- in mm.

Comments: _____

10. Is there a preference for the anterior tooth arrangement? YES ☐ NO ☐

Comments: _____

11. Select final Lucitone Digital Print™ 3D Denture Base shade:

Original ☐ Original Opaque ☐ Light ☐ Light Reddish Pink ☐ Dark Reddish Pink ☐

12. Select final denture tooth shade: _____ (Select from 16 A-D*, BL1, BL3)

13. Select characterization:

Rugae ☐ Stipple ☐ None ☐ Other ☐ _____

Return this checklist with the Try-In for noted adjustments and final design.

The A1-D4 designations correspond to the VITA classical A1-D4 shade guide which is meant to be a guide, not a match.
VITA classical A1-D4 is a registered trademark of VITA Zahnfabrik H. Rauter GmbH & Co.

DP-0000455 Rev. 2 (06/2022)

Lucitone Digital Print Denture Rx Order Form

Date: _____

LAB INFORMATION

OFFICE INFORMATION

Dr.: _____

Phone #: _____

Email: _____

SHIPPING ADDRESS

Address 1: _____

Address 2: _____

City: _____ State: _____

Zip/Postal Code: _____ Country: _____

BILLING ADDRESS ☐ Same as above

Address 1: _____

Address 2: _____

City: _____ State: _____

Zip/Postal Code: _____ Country: _____

PATIENT INFORMATION

Name: _____

Age: _____ ☐ Male ☐ Female

Patient number/internal reference: _____

BRIEF TREATMENT DESCRIPTION (Please describe patient's classification)

PRODUCT

	Upper	Lower
Lucitone Digital Try-In	<input type="checkbox"/>	<input type="checkbox"/>
Lucitone Digital Print Denture	<input type="checkbox"/>	<input type="checkbox"/>

Select appropriate patient scenario and follow checklist to ensure laboratory has proper records:

Existing Denture Patient

- ☐ Existing denture with wash impression and bite registration
- ☐ Indicate any changes to the existing denture in notes section below
- ☐ Patient photos

New Denture Patient

- ☐ Final impressions
- ☐ Bite rims with stabilized baseplates
- ☐ Mark mid-line, mark distal of cuspids and verify lip support
- ☐ Patient photos

DENTURE SPECIFICATIONS

Tooth Brand

Lucitone Digital IPN™ ☐ IPN 3D™ ☐
DS Multilayer PMMA ☐ Lucitone Digital Value™ ☐

Occlusion

Balanced ☐
Lingualized ☐

Tooth Shade

16 A-D, BL1, BL3
Specify: _____

Base Shade

Original Light ☐ Original Opaque ☐
Light Reddish Pink ☐ Dark Reddish Pink ☐

WIDTH ON CURVE

_____mm
Distal Canine-to-Distal Canine Measurement. (This measurement will be used to select proper mould size, particularly for new denture patients.)

ADDITIONAL OPTIONS

	Upper	Lower	None
Stippling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rugae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Follow impression vestibule anatomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name engraving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____			

ORDER INFORMATION

Due Date: _____

CLINICIAN SIGNATURE

NOTES

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DP-0000627 Rev 03/23

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