MEGAGEN

CLINICAL INSIGHTS

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MegaGen Restorations with Cerec

Introduction

As MegaGen leads the way for Digital Dentistry, it is important to provide solutions to our MegaGen clinicians who have access to existing digital workflows. One such workflow uses Dentsply Sirona's CEREC Implant Solution for Chairside Implant Restorations for either one piece screw-retained implant crowns, or custom abutment and cement retained implant restorations.

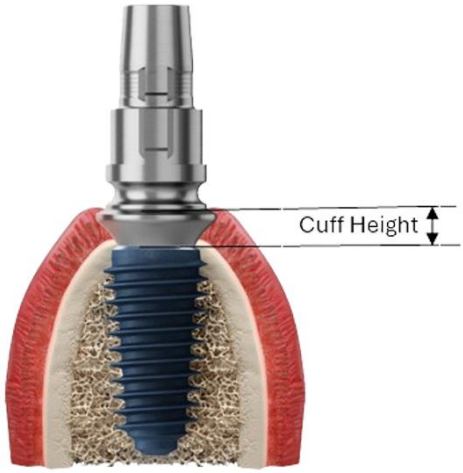
The following information will guide you through the Scan, Design, and Production process utilizing MegaGen AnyRidge Scan Post (C-Type) with the Dentsply CEREC system. This step-by-step instructional manual details the procedures and processes involved in creating custom chairside implant restorations with the MegaGen C-Type Scan body. The MegaGen C-Type Scan Posts are designed for intraoral scanning utilizing the CEREC system from Dentsply Sirona (CEREC Primescan or Omnicam with Software Version 5.2.X recommended). This Digital Impression method precisely transmits prosthetic information relating to the exact clinical position of the implant. The MegaGen Scan Post are available for AnyRidge, Blue Diamond Narrow and Regular connections, the AnyOne Implant System workflow using the CEREC System for Implant restorations. The featured case will help to enhance one's understanding of this novel chairside technique for the restoration of MegaGen Implants in a step-by-step demonstration. The MegaGen Scan posts for CEREC (C-Type) are available in multiple profile diameters and cuff heights to accommodate specific requirements that a clinician may have in the majority of chairside cases for single implant restorations. Although several options exist for more advanced designs (complex restorative requirements and multiple units), this article will cover the basic design process for the vast majority of cases that present. The following figure represents the catalog of C-Type Scan posts available from MegaGen.

C-type

System		Profile Diameter	Cuff Height (mm)	Connection	Ref.C
AnyRidge		Ø3.9	0.5	S	ARICSS3405T
			1		ARICSS3410T
			2		ARICSS3420T
		Ø4.3	0.5		ARICSS3805T
			1		ARICSS3810T
			2		ARICSS3820T
		Ø5.5	0.5	L	ARICSL4505T
			1		ARICSL4510T
			2		ARICSL4520T
BLUE DIAMOND	NC	Ø3.9	0.5	S	AROCSS3405NT
			1		AROCSS3410NT
			2		AROCSS3420NT
		Ø4.3	0.5		AROCSS3805NT
			1		AROCSS3810NT
			2		AROCSS3820NT
	RC	Ø3.9	0.5	S	AROCSS3405RT
			1		AROCSS3410RT
			2		AROCSS3420RT
		Ø4.3	0.5		AROCSS3805RT
			1		AROCSS3810RT
			2		AROCSS3820RT
		Ø5.5	0.5	L	AROCSL4505RT
			1		AROCSL4510RT
			2		AROCSL4520RT
AnyOne Internal		Ø3.9	0.5	S	AOICSS3405T
			1		AOICSS3410T
			2		AOICSS3420T
		Ø4.3	0.5		AOICSS3805T
			1		AOICSS3810T
			2		AOICSS3820T
		Ø5.5	0.5	L	AOICSL4505T
			1		AOICSL4510T
			2		AOICSL4520T

NOTE: The Profile Diameter and Cuff Height should be properly selected by the clinician and is specific to the clinical situation. Verification of proper seat using intraoral radiograph helps to confirm a properly selected Scan post and proper seat for digital scanning. For example, larger diameter teeth such as molars could benefit from larger profile diameters. Similarly, taller cuff heights are available to suit the specific clinical needs when an implant is sub crestal or an implant is placed deeper. When selecting the ZrGen ti-base for each case you will need to consider the gingival height to select the appropriate cuff height.

Choosing the Cuff Height: The cuff height is the amount of room from the top of the implant to the bottom of the restoration (see below). In some cases, bone profiling may be necessary to achieve the appropriate emergence profile for the ti-base.



This article is not intended to teach the principals of proper emergence profile or clinical guidelines for selection of prosthetic components but rather teaches the digital workflow. It is recommended that the clinician understand basic principles of emergence profile, prosthetic contours, and restorative guidelines prior to designing cases chairside. **IMPORTANT NOTE: it is critically important to pay attention to selection of Scan body and Ti base for each case. Current software does now allow for digital manipulation of cuff height for the FX line. It is recommended that the clinician pay particular attention to the details of the Scan body being utilized, as it forces the clinician to utilize the corresponding ti-base (similar profile diameter and cuff height). If a clinician scans the patient with a Scan post with 0.5 mm cuff height, but seats the restoration with a ti-base of 1.0 cuff height, then the final restoration will be high in occlusion by 0.5 mm.

Once the proper Scan post is seated properly with radiographic confirmation, the clinician will be required to attach a disposable scan body (gray or white) to the scan post. Each C-Type Scan post is either a Small or Large and the corresponding S or L scan body should be selected. Each Scan post has a male Anti rotational notch and the objective is to properly line up the corresponding female notch within the scan body to the scan post using visual inspection (See image below).

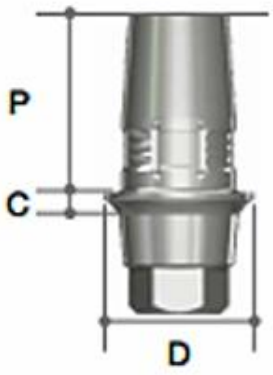
Scanpost with antirotational notch

Scanbody available in Gray (Primescan and Omnicam Compatible) or White (Bluecam Technology) in both Small and Large sizes to match the corresponding Scanpost.

Notch is not properly aligned

Properly Seated Scanbody on Scanpost

The image below shares the catalog of CEREC ti-bases available from MegaGen. The C Type Ti-base is luted to the milled custom abutment or milled custom screw retained crown by CEREC.



C-type

System		Profile Diameter	Cuff Height (mm)	Post Height	Connection	Ref.C
AnyRidge		Ø3.9	0.5	4.7	S	ARCS3405L
			1			ARCS3410L
			2			ARCS3420L
		Ø4.3	0.5			ARCS3805L
			1			ARCS3810L
			2			ARCS3820L
		Ø5.5	0.5		L	ARCL4505L
			1			ARCL4510L
			2			ARCL4520L
BLUE DIAMOND	NC	Ø3.9	0.5	4.7	S	AROCSN3405T
			1.0			AROCSN3410T
			2.0			AROCSN3420T
		Ø4.3	0.5			AROCSN3805T
			1.0			AROCSN3810T
			2.0			AROCSN3820T
	RC	Ø3.9	0.5		S	AROCSR3405T
			1.0			AROCSR3410T
			2.0			AROCSR3420T
		Ø4.3	0.5			AROCSR3805T
			1.0			AROCSR3810T
			2.0			AROCSR3820T
		Ø5.5	0.5		L	AROCLR4505T
			1.0			AROCLR4510T
			2.0			AROCLR4520T
AnyOne Internal		Ø3.9	0.5	4.7	S	AOCS3405T
			1			AOCS3410T
			2			AOCS3420T
		Ø4.3	0.5			AOCS3805T
			1			AOCS3810T
			2			AOCS3820T
		Ø5.5	0.5		L	AOCL4505T
			1			AOCL4510T
			2			AOCL4520T

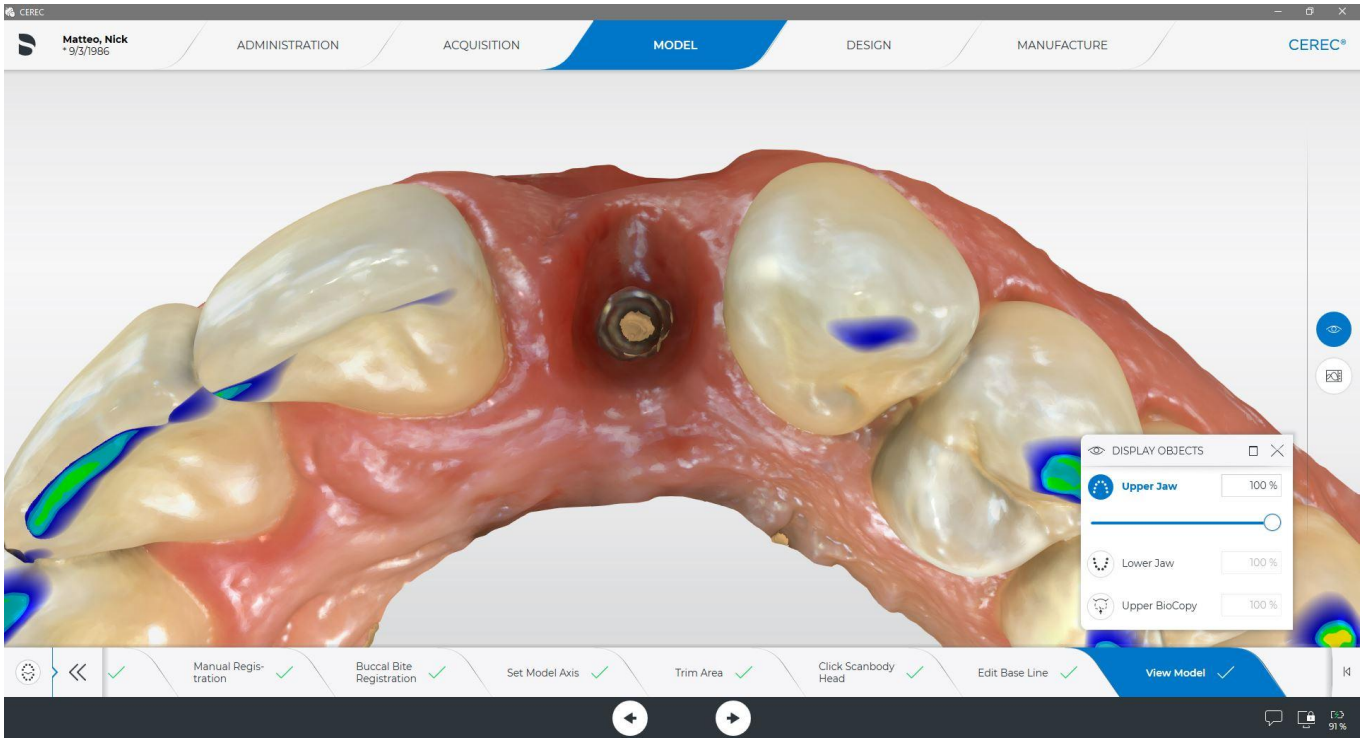
System	Diameter	Cuff Height	Post Type	Reference Code	Software	Scan Body and Block
AnyRidge	3.9	0.5	Small	ARICSS3405T	FX 3.4	Small
		1		ARICSS3410T	FX 3.4	
		2		ARICSS3420T	FX 3.4	
	4.3	0.5		ARICSS3805T	FX 3.8	
		1		ARICSS3810T	FX 3.8	
		2		ARICSS3820T	FX 3.8	
	5.5	0.5	Large	ARICSL4505T	FX 4.5	Large
		1		ARICSL4510T	FX 4.5	
		2		ARICSL4520T	FX 4.5	
Blue Diamond NC	3.9	0.5	Small	AROCSS3405NT	FX 3.4	Small
		1		AROCSS3410NT	FX 3.4	
		2		AROCSS3420NT	FX 3.4	
	4.3	0.5		AROCSS3805NT	FX 3.8	
		1		AROCSS3810NT	FX 3.8	
		2		AROCSS3820NT	FX 3.8	
Blue Diamond RC	3.9	0.5		AROCSS3405RT	FX 3.4	
		1		AROCSS3410RT	FX 3.4	
		2		AROCSS3420RT	FX 3.4	
	4.3	0.5		AROCSS3805RT	FX 3.8	
		1		AROCSS3810RT	FX 3.8	
		2		AROCSS3820RT	FX 3.8	
	5.5	0.5	Large	AROCSL4505RT	FX 4.5	Large
		1		AROCSL4510RT	FX 4.5	
		2		AROCSL4520RT	FX 4.5	
AnyOne	3.9	0.5	Small	AOICSS3405T	FX 3.4	Small
		1		AOICSS3410T	FX 3.4	
		2		AOICSS3420T	FX 3.4	
	4.3	0.5		AOICSS3805T	FX 3.8	
		1		AOICSS3810T	FX 3.8	
		2		AOICSS3820T	FX 3.8	
	5.5	0.5	Large	AOICSL4505T	FX 4.5	Large
		1		AOICSL4510T	FX 4.5	
		2		AOICSL4520T	FX 4.5	

Administration Options: The first step in setting up the case for CEREC Implant Digital Workflow is proper selection of implant parameters in the administratie screen of the CEREC software. MegaGen's C-Type scan abutments are compatible with Dentsply Sirona CEREC Xive Library (FX line in the administrative screen).

1) Restoration Type
    a. Screw-Retained Crown
    b. Multi Layered Abutment
2) Design Mode
    a. Biogeneric Individual
3) Material
    a. IPS E.Max Cad
4) Mill Device
    a. Specify your mill
5) Scan Body Type
    a. Scanpost
6) Ti-Base Manufacturer
    a. Dentsply Sirona & Others (Select the FX line)
7) Ti-Base
    a. Please refer to page chart below for sizes

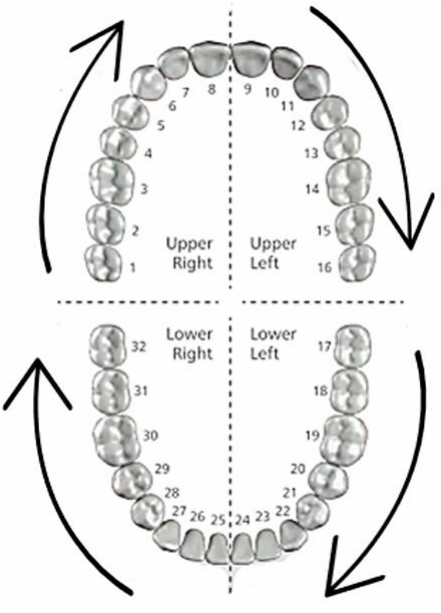
Scanning Protocol

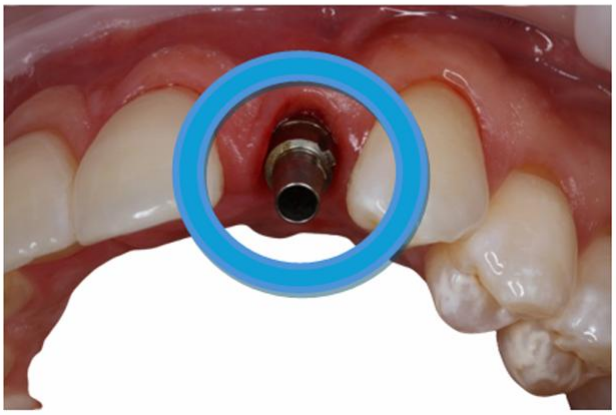
Once the proper parameters are established in the Administrative Phase of the CEREC 5.2.X software, the clinician is ready to scan intraorally. Proper isolation methods are recommended to ensure clean scans free of saliva and incidental imaging of the tongue and cheek tissues. Once the implant temporary or healing abutment is removed, it is critical to capture the tissue impression prior to any clinical collapse of the tissue within the main scan folder.



Intraoral scan of tissue for #10

Next, the clinician is required to scan the opposing arch and then the bite. With these images captured, the clinician can now select the proper scan body. Place the Scan Post on the driver; note the prosthetic notch on the side wall of Scan post and seat the scan post with the anti-rotational notch facing proximal surface. Confirm proper selection and seat radiographically. It is recommended to have the anti-rotational notch in the scan body facing the proximal surface so that the sprue does not end up on the contact of the final prosthetic.

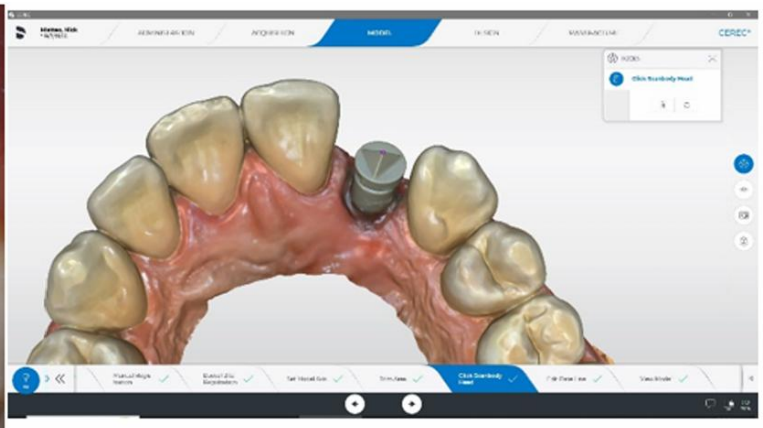




Typically, the sprue is place 90° clockwise from the position of the anti-rotational notch based on the specific milling strategy of the CEREC system. Placing the notch on the facial or lingual may result in a final milled restoration with a sprue on the contact point. If this occurs, one can still finish the case, but may run the risk of having a less-than-ideal interproximal contact as the sprue must be removed manually in the final finishing of the milled restoration.

Once the scan post is confirmed to be accurately seated, then the clinician can attach the corresponding scan body and line up the male and female components for a passive fit. With the proper assembly of the scan body onto the scan post, the clinician can capture the final image catalog in the acquisition phase of the CEREC 5.2.X software.

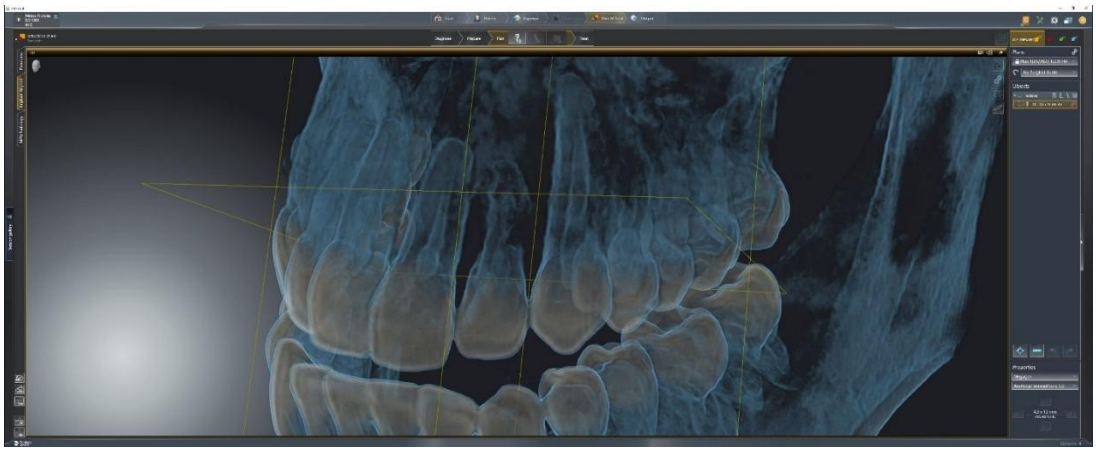
Seated implant Scan post and Scan body fully seated



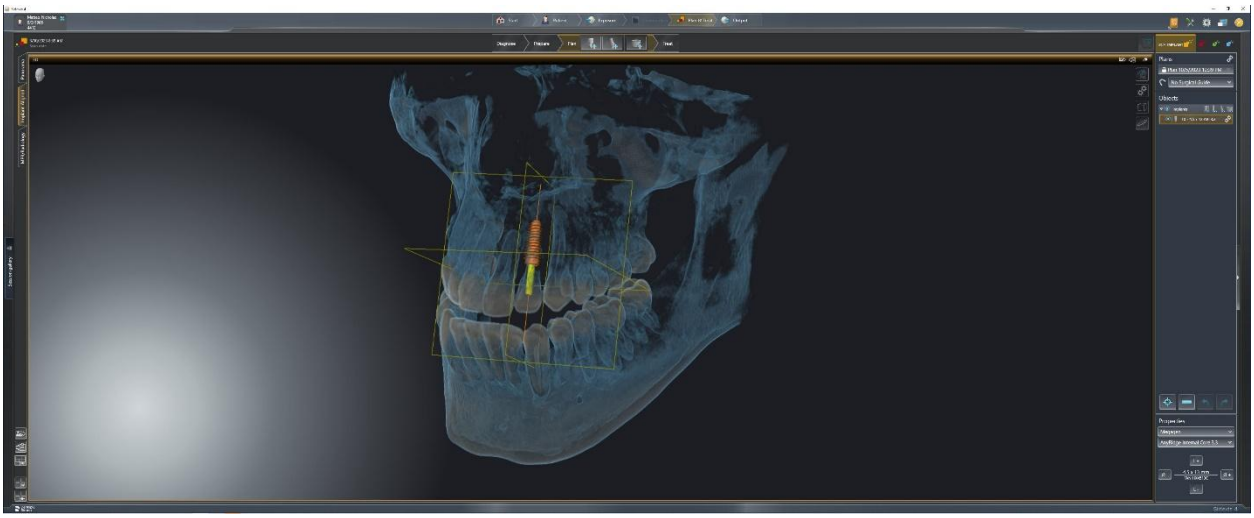
Intraoral Scan with CEREC Primescan in 5.2.X Software - Axial View

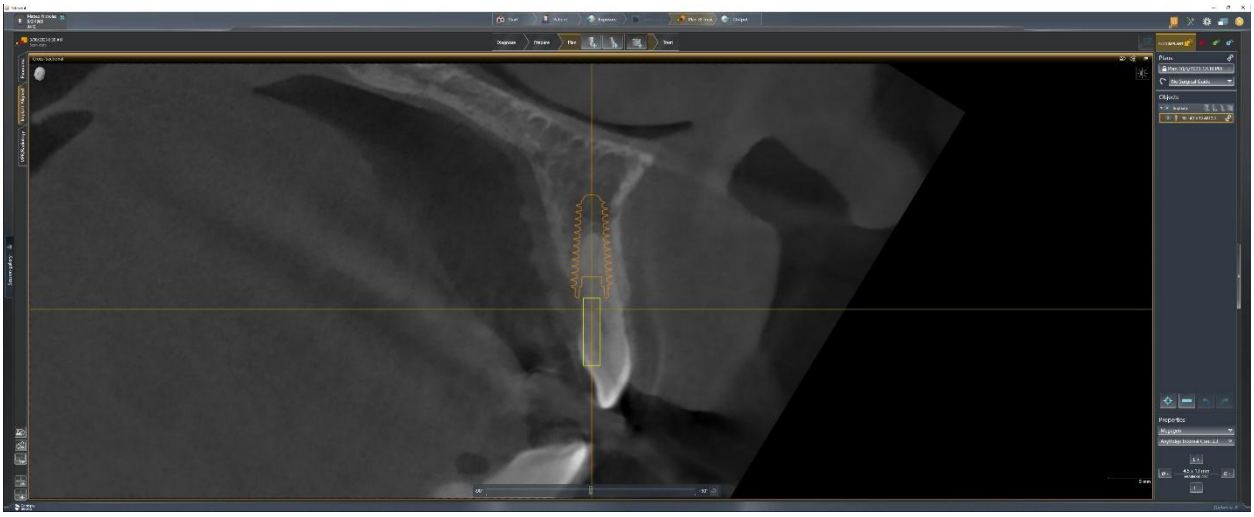
CASE STUDY:

Patient presented with non-restorable external root resorption.

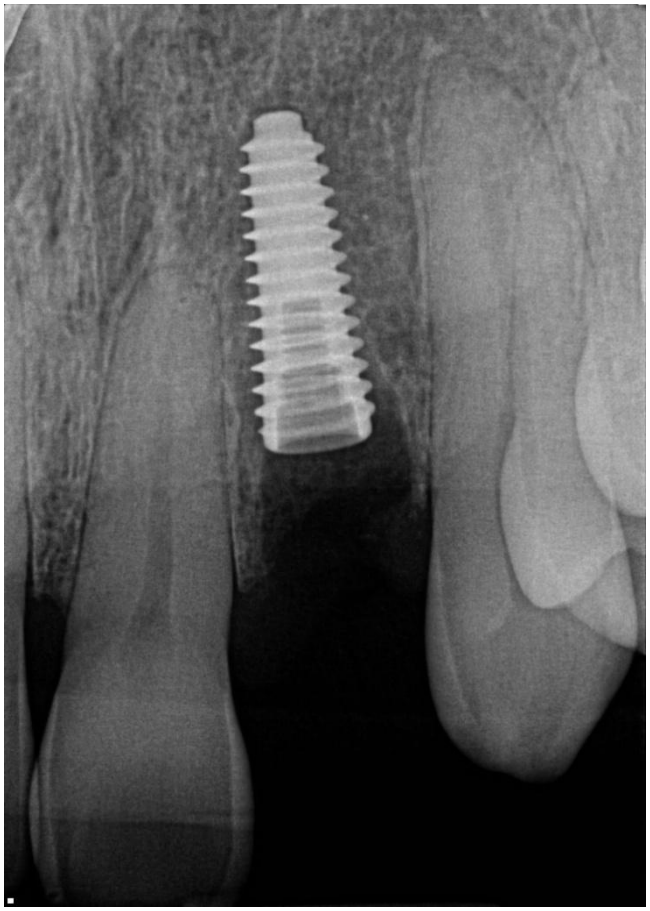


An immediate implant was planned using CBCT.





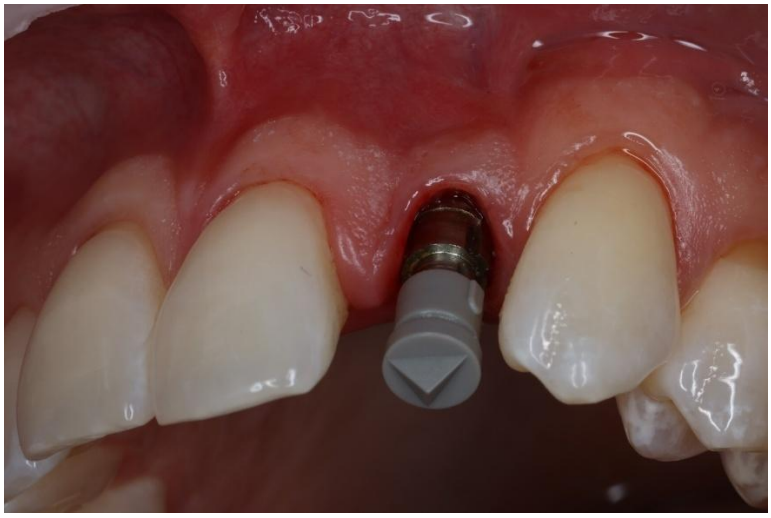
Immediate Implant placement post op Xray:



Removal of custom healing abutment and isolation for digital intraoral scan MegaGen Anyridge Implant #10

Placement of AnyRidge Implant Scan body with Anti-rotational Notch facing Distal

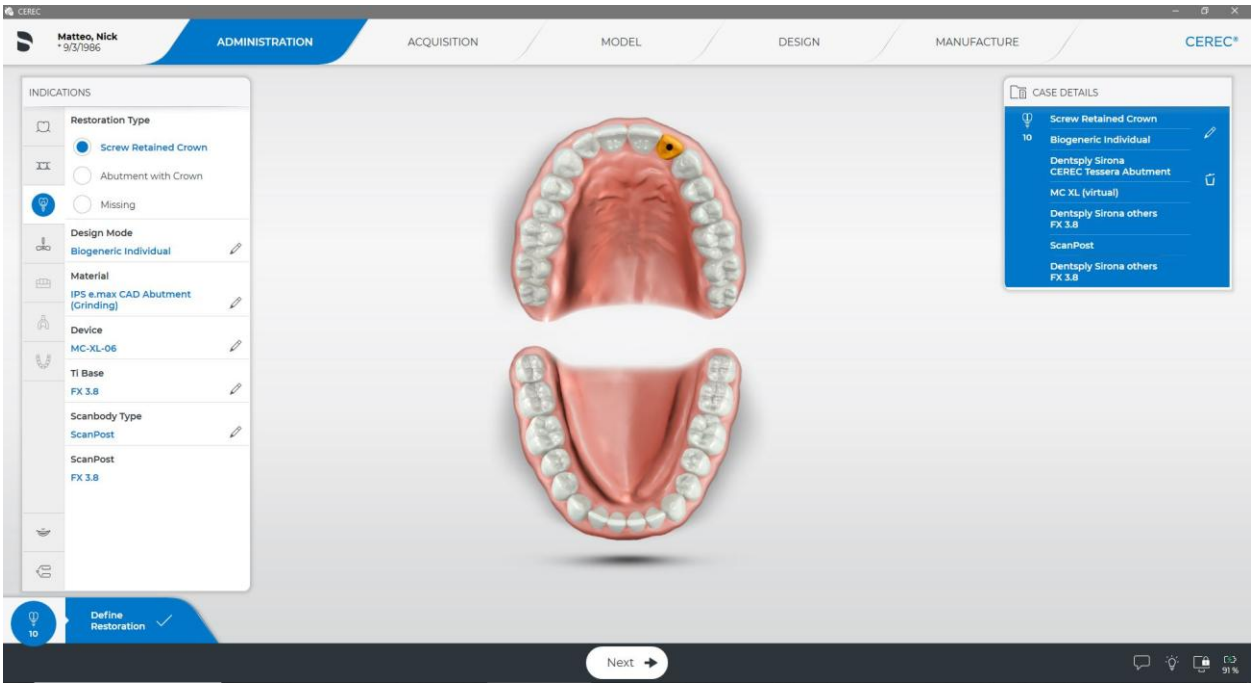
Scan body aligned properly



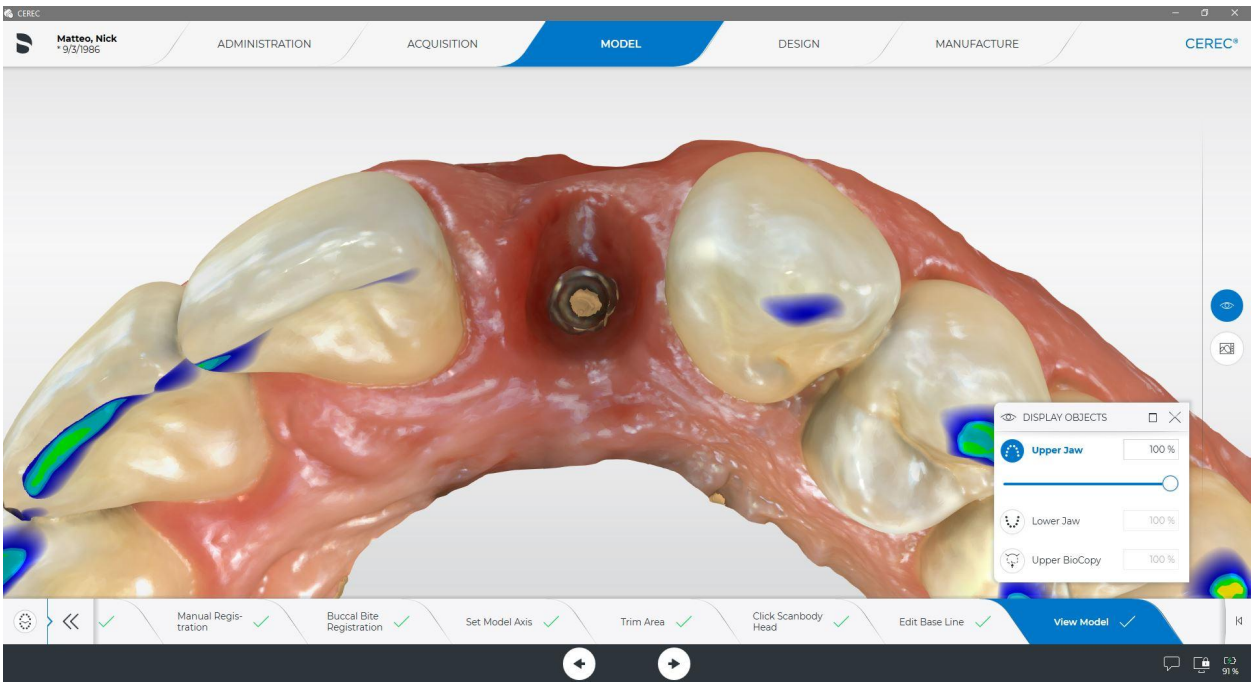
Scan body Fully Seated

Scan and Design Phase

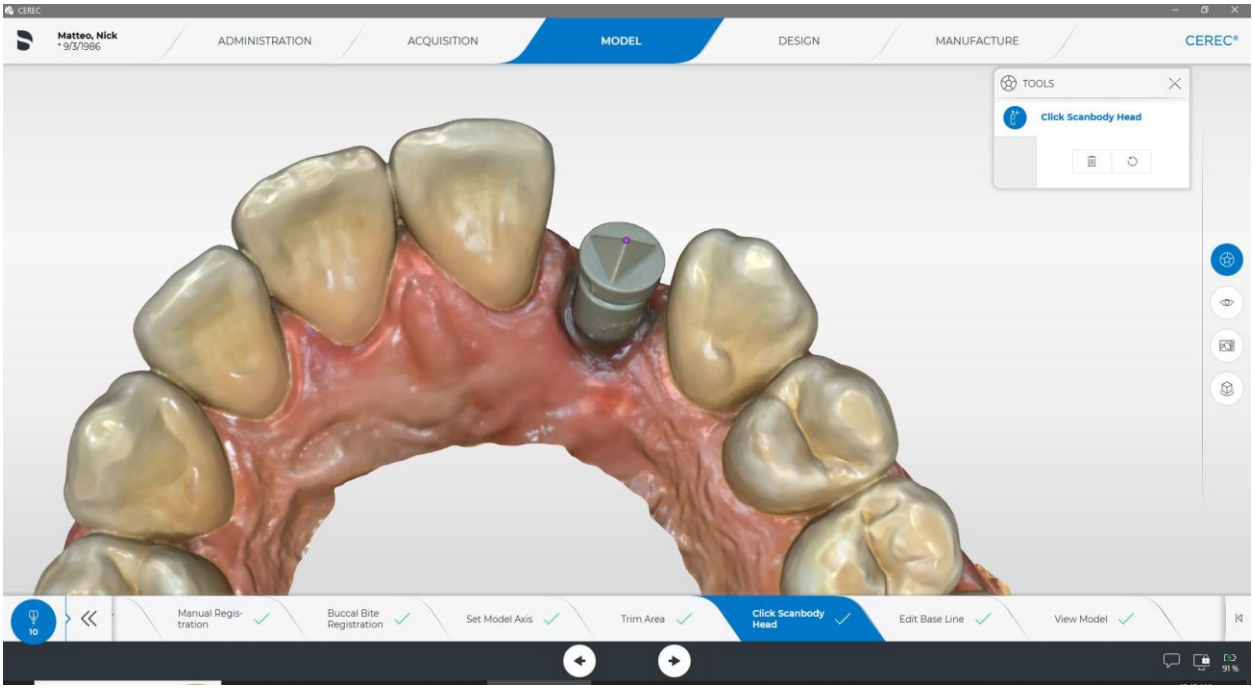
Administrative Screen with proper selection of Implant at site #10 for MegaGen AnyRidge using Scan post 4.3 (FX 3.8) – See Chart above



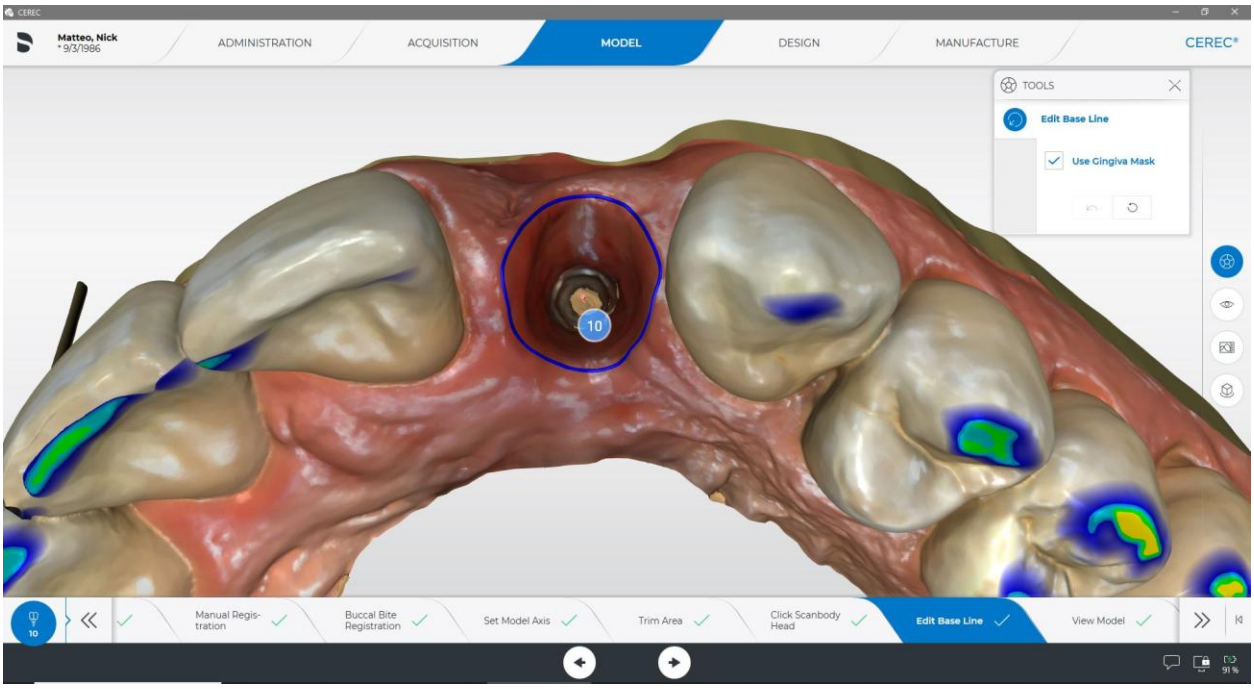
Soft Tissue Captured with CEREC Primescan Software 5.2.X



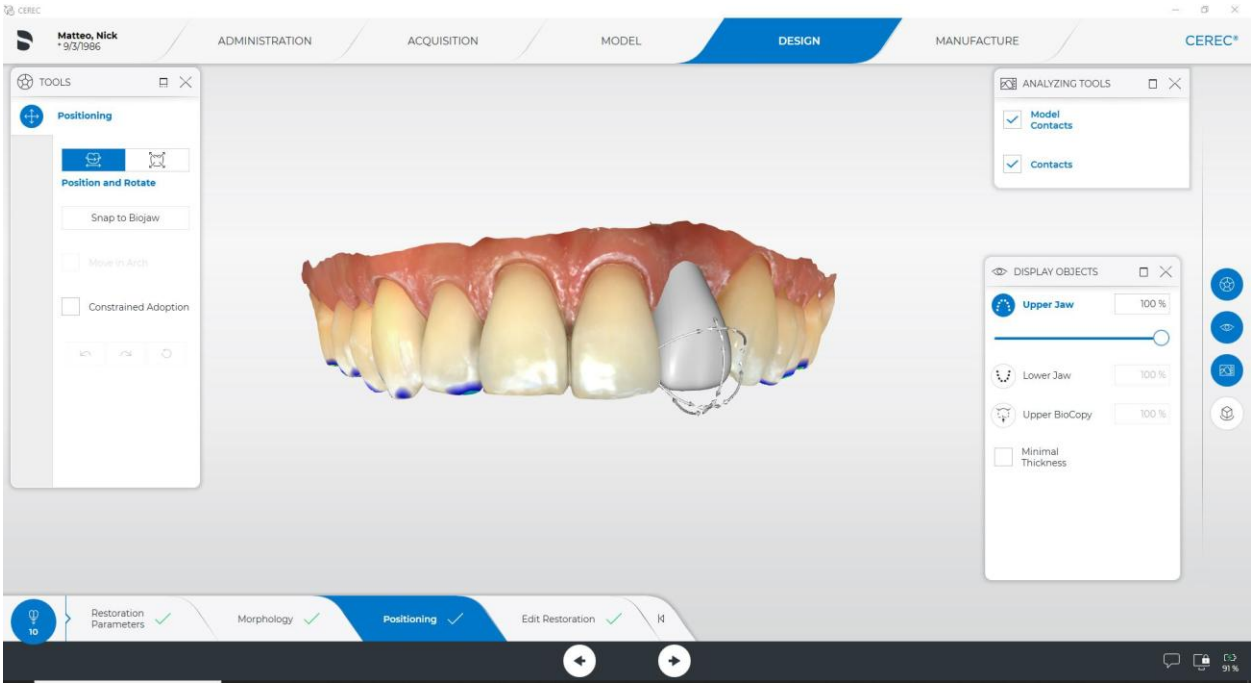
MegaGen Scan body scanned with CEREC



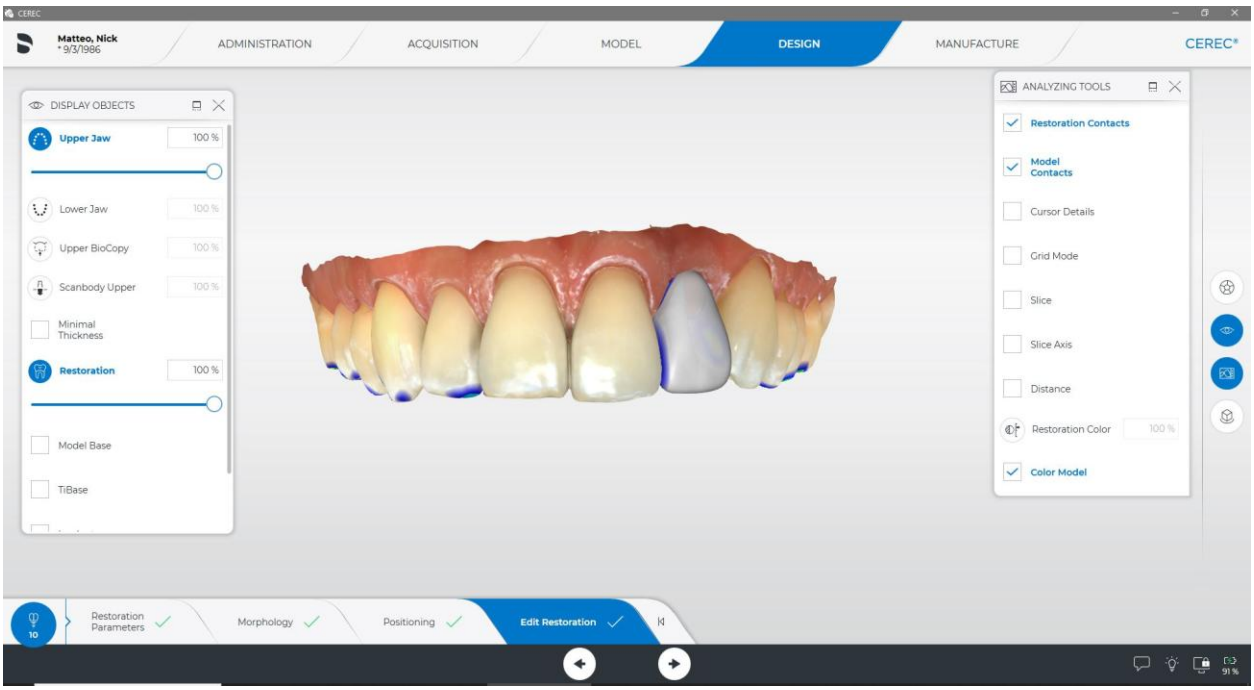
Prosthetic margin outlined within software to assist software in design following existing soft tissue emergence created with provisional. Follow basic principles of design in CEREC software. The first step is to draw a margin of tissue emergence. One can also use default margin in clinical situations where tissue has not been trained to proper contour with healing abutment or temporary.

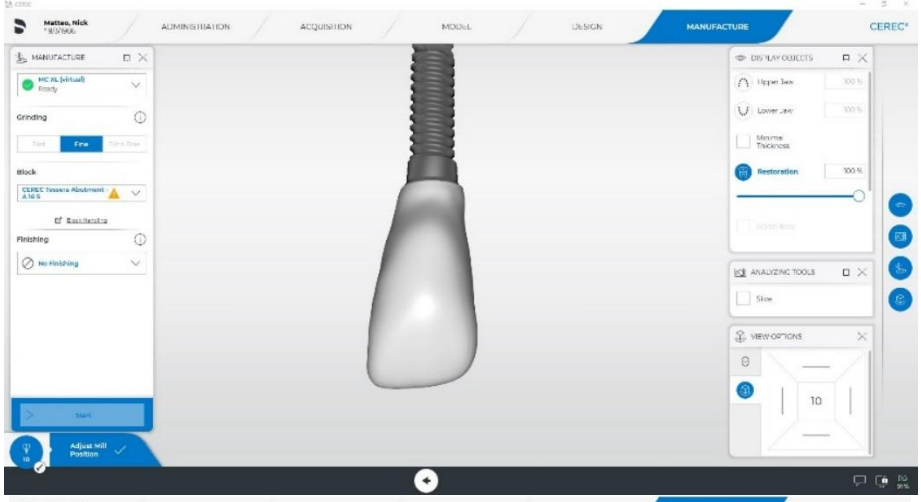


Initial positioning tool for improved proposal from software



Initial proposal by CEREC software 5.2.X. Clinician will have access to further customize design using standard CEREC software editing tools.

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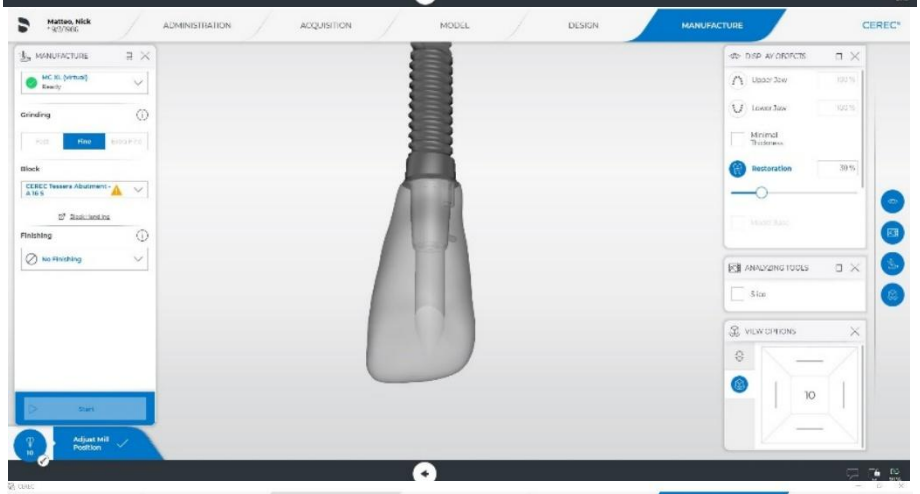
ACQUISITION
MODEL
DESIGN
MANUFACTURE
CEREC
MANUFACTURE
Grinding
Block
Finishing
No Finishing
Start
Adjust Mill Position
DISPLAY OBJECTS
Upper Jaw
Lower Jaw
Minimal Thickness
Restoration
ANALYZING TOOLS
Slice
VIEW OPTIONS
10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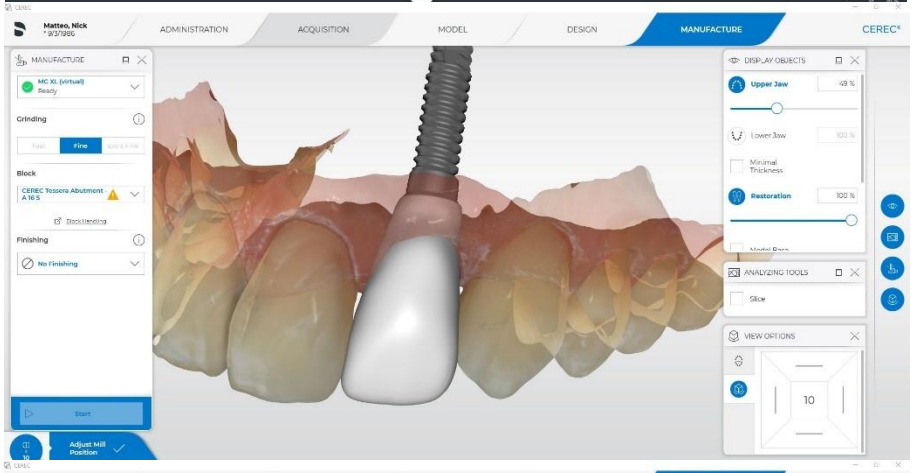
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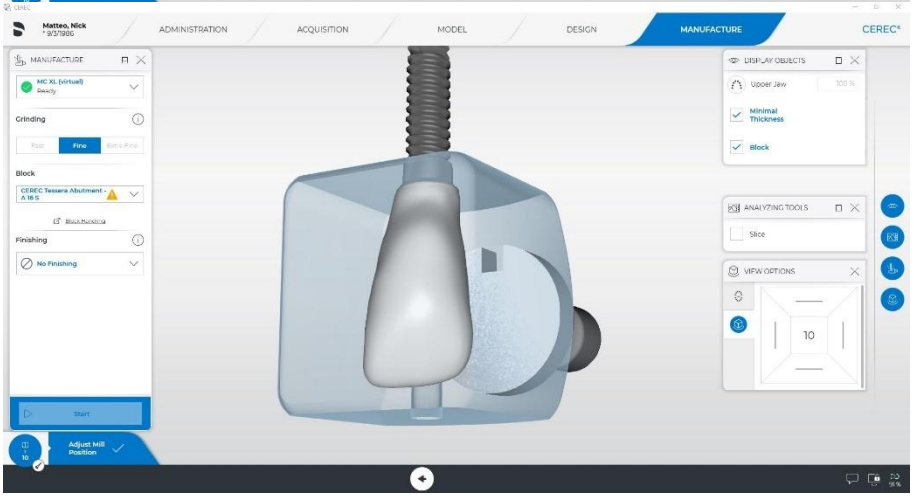
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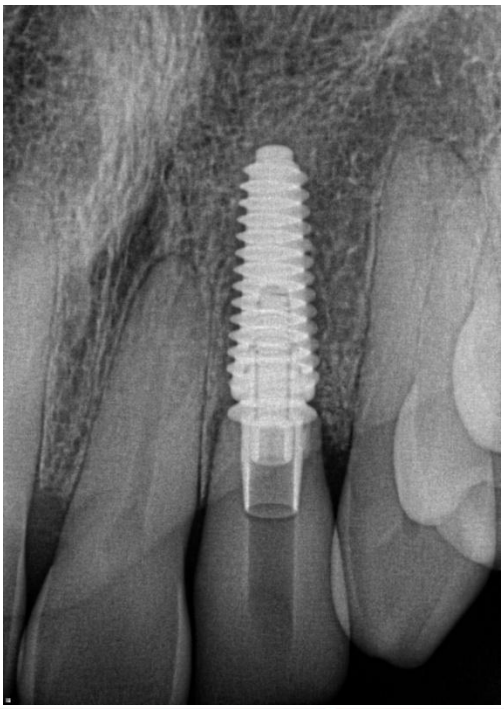
10

Final CEREC Screw-Retained Implant restoration



Please feel free to reach out with any questions kayla.nale@megagenamerica.com