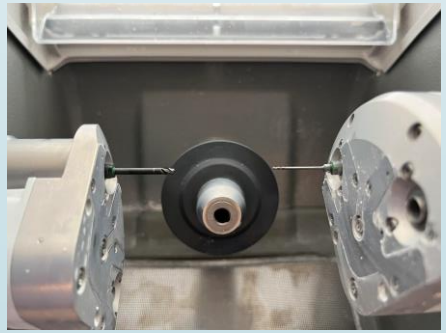
CADCAM: Zirconia

Robbins, Truong, Watanabe

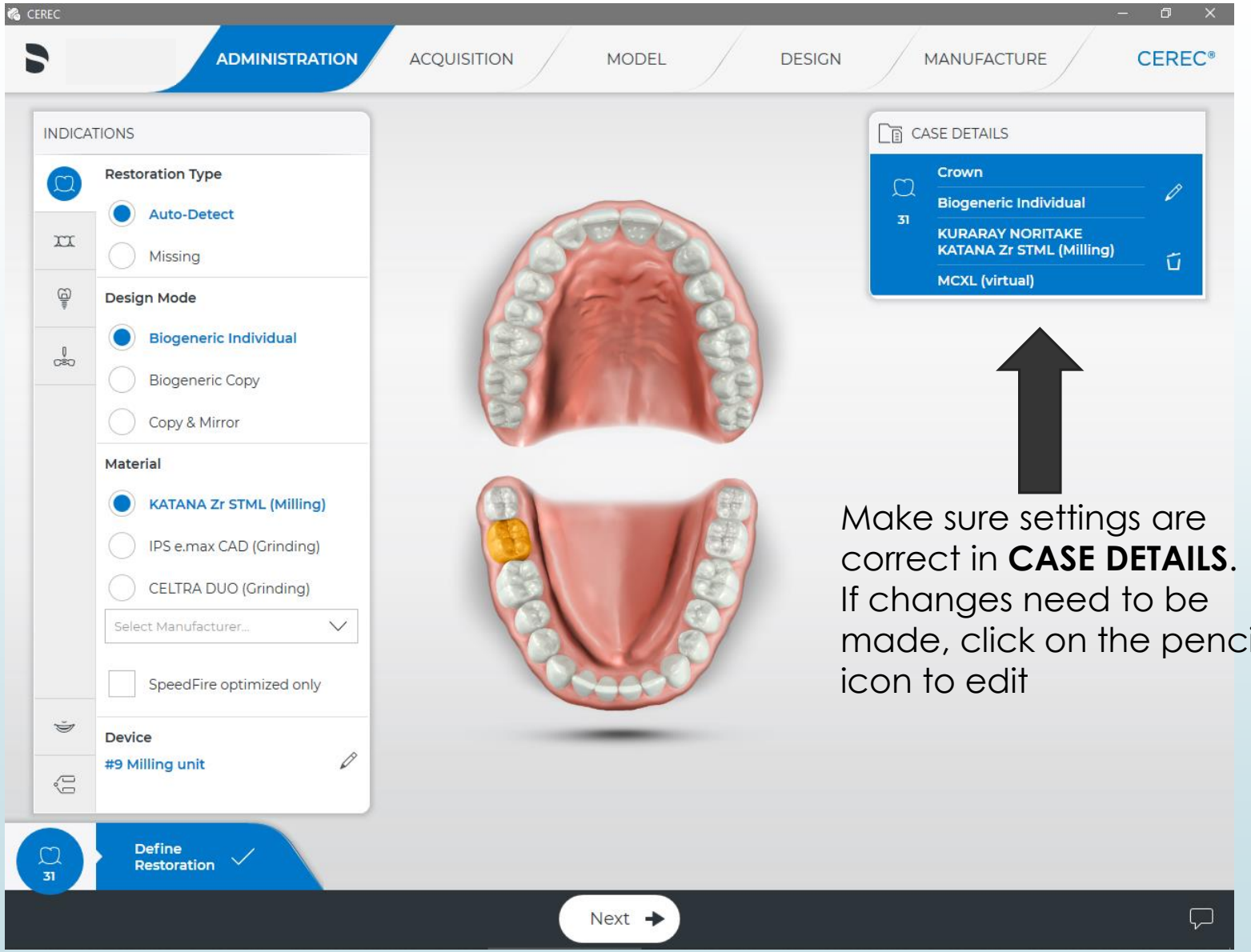
Administration Phase

Select:

- Restoration Type
  - **Auto-Detect**
- Design Mode
  - **Biogeneric individual**
- Material
  - **Katana Zr STML (MILLING)**



*Milling = carbide burs
Grinding = diamond burs



Make sure settings are correct in **CASE DETAILS**. If changes need to be made, click on the pencil icon to edit

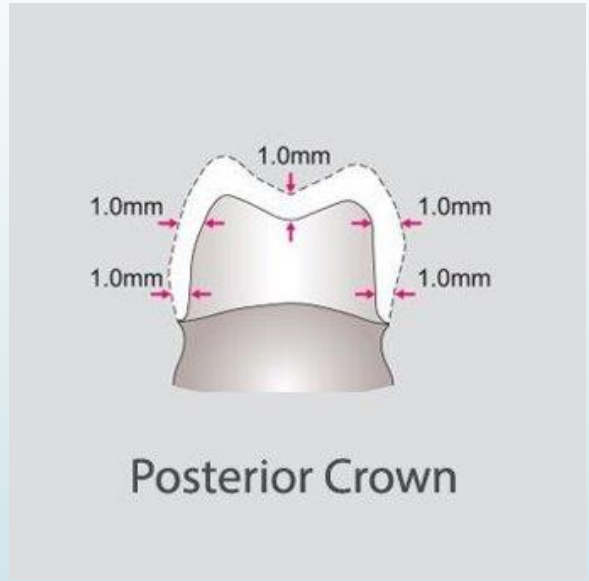
Preparation

Margin width: at least 1mm

- Margin Style - Rounded shoulder or chamfer

Axial reduction: at least 1mm with rounded internal angles

Occlusal reduction: at least 1mm reduction



•••••Cementation Considerations•••••

Rely-X Luting Plus Cement with Sandblasted Crown Intaglio

- Occlusal reduction is 1.2mm or more
- Wall height is 3mm
- Wall taper is less than 30°
- Mechanical resistance features incorporated

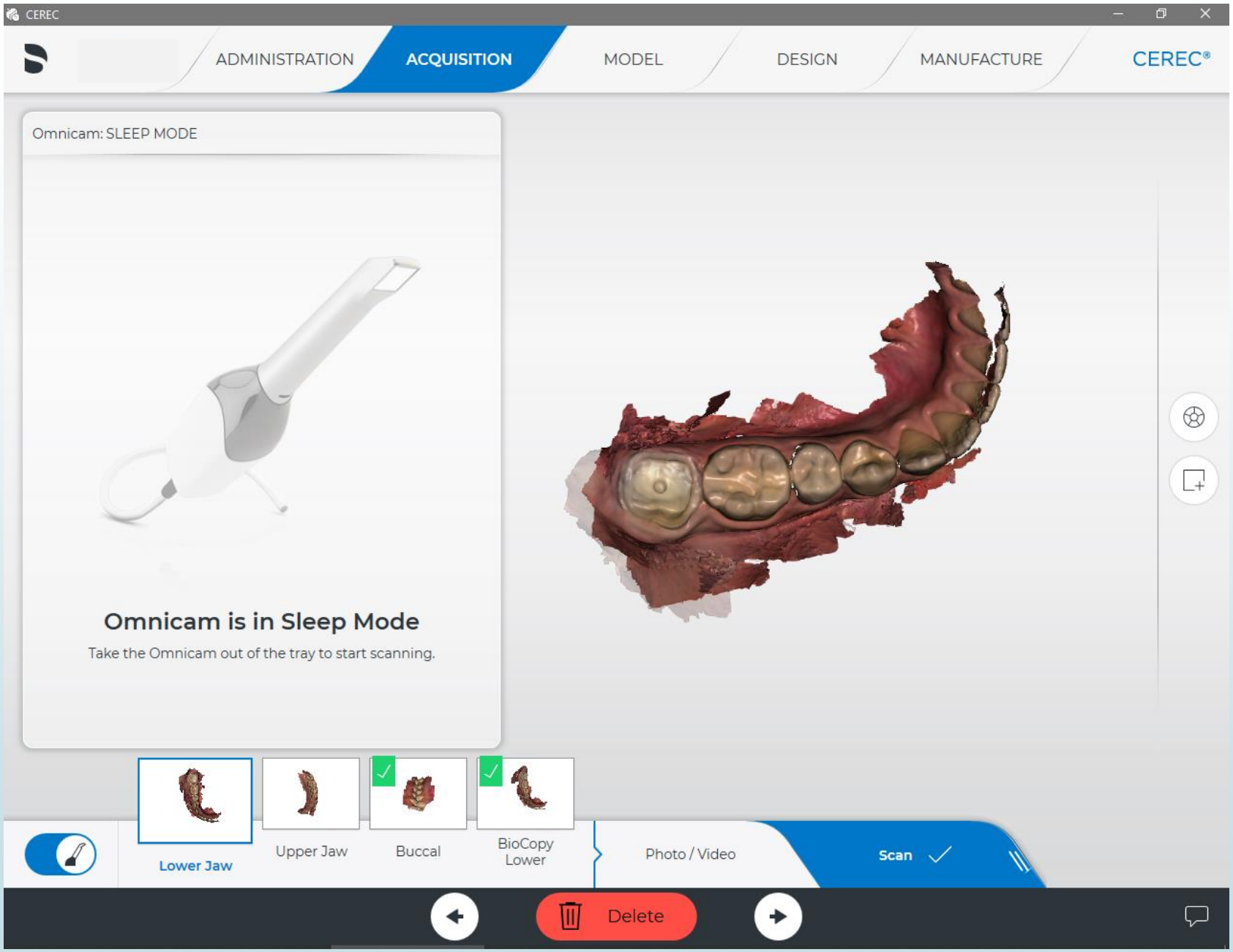
Multilink Adhesive Cement with Mondobond Plus and Sandblasted Crown Inaglio

- Occlusal reduction is less than1.2mm
- Wall height is less than 3mm
- Wall taper is more than 30°
- No mechanical resistance features incorporated

Acquisition Phase

Scan:

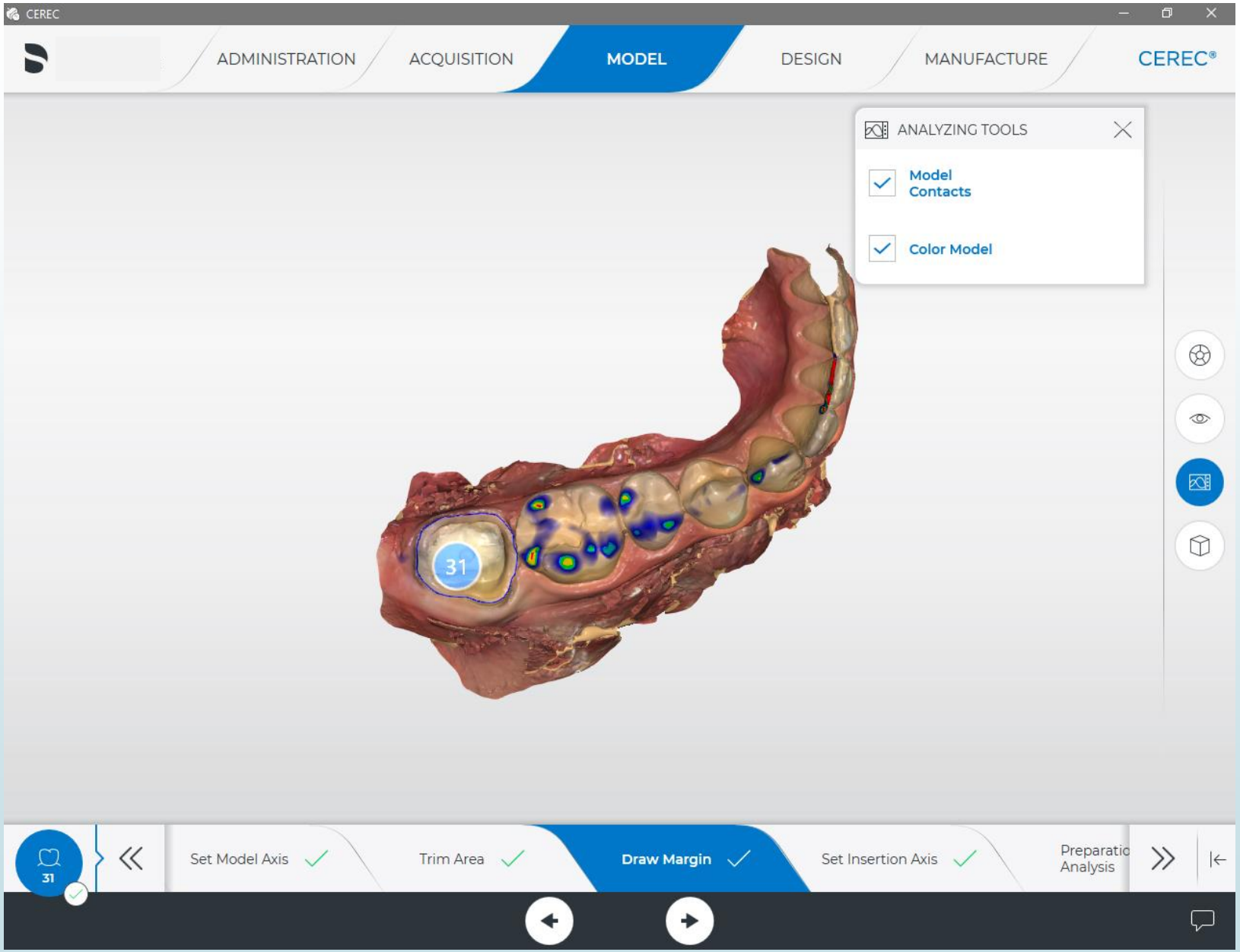
- Lower Jaw
- Upper Jaw
- Buccal Bite



Model Phase

Draw Margin:

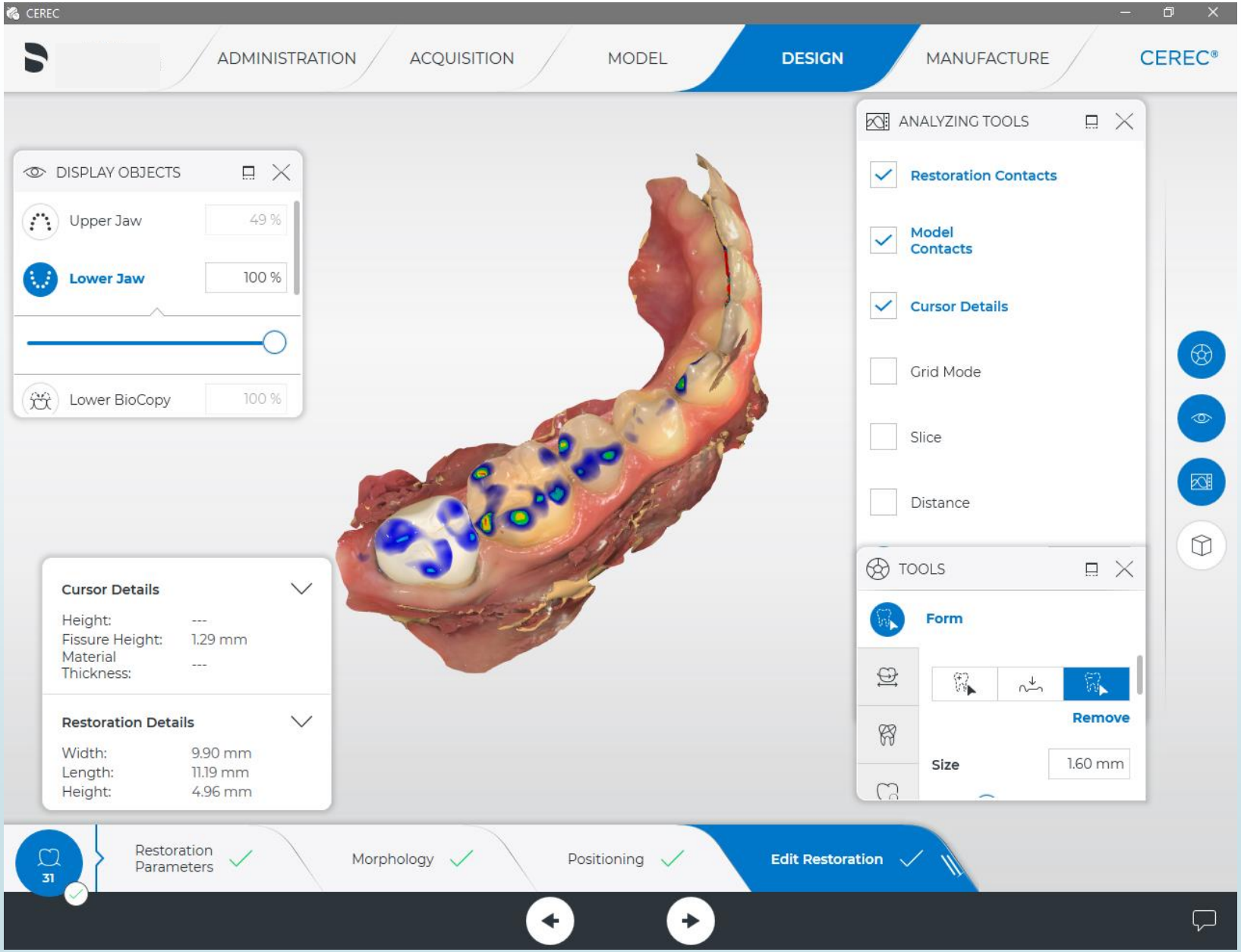
- Check and edit margin as needed



Design Phase

Turn on Minimal Thickness
- 1-1.2mm occlusal
- 1mm margin width

Contacts:
- Occlusal: light blue
- Interproximal: small green area

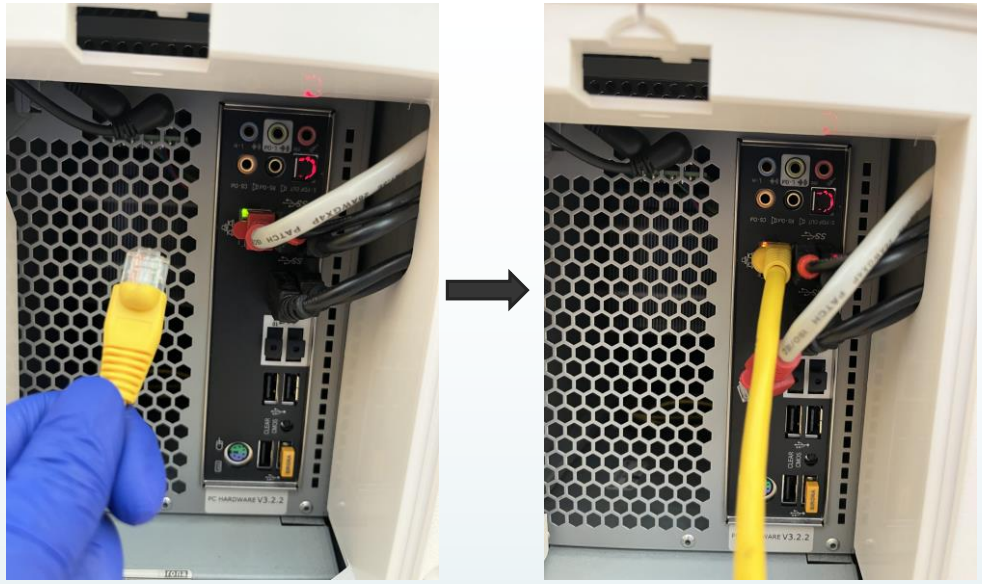


Zirconia Milling and Firing

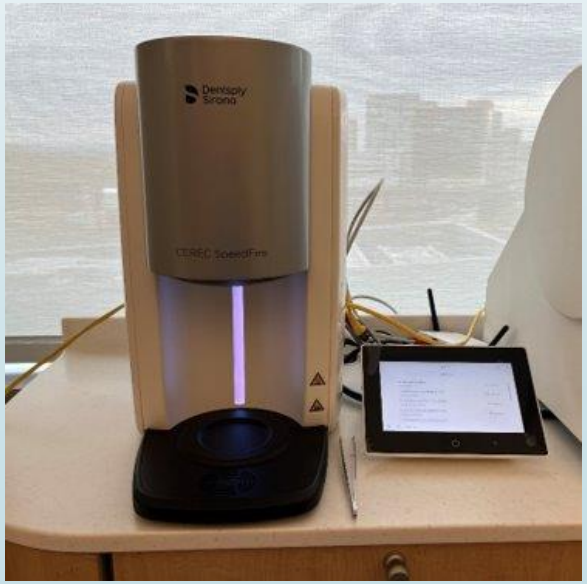
After Design phase, roll the CADCAM machine to **Operatory #1** ONLY and connect to:

1. **MC XL #2 Milling Unit** (digital screen and carbide burs) and
2. **CEREC SpeedFire Oven**.

*** Lithium Disilicate will contaminate zirconia so we cannot use the same milling machines or burs ***



Disconnect radio-connection wire (red) and plug in MC XL #2 Milling Unit wire(yellow)



Turn on CEREC SpeedFire Oven (switch located at the back of the oven)

Manufacture Phase

Select the following:

Milling Unit

- **Zirconia Only**

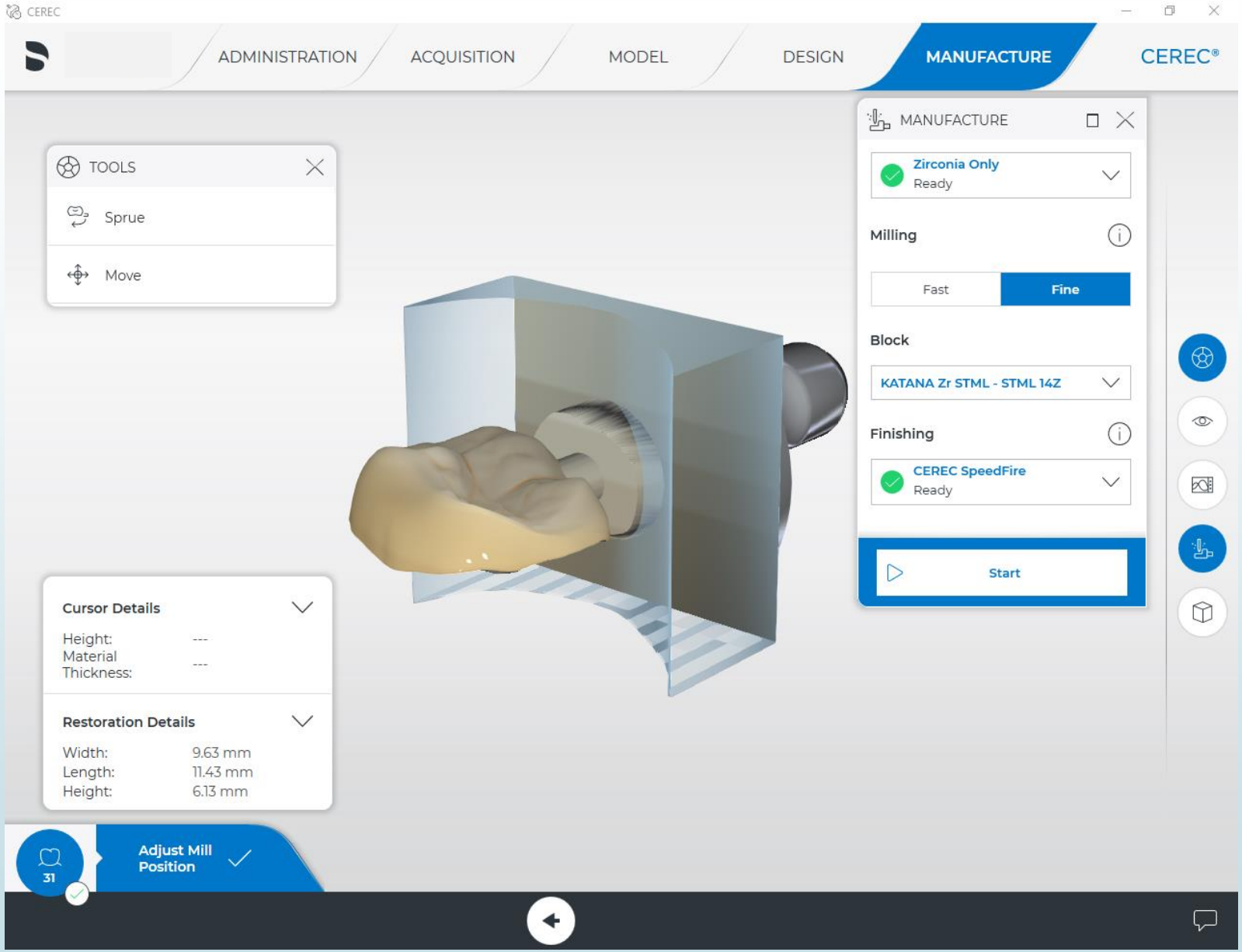
Block

- Katana Zr STML – STML **14Z**

Finishing

- **CEREC SpeedFire**

Then tap on Start.



MC XL #2 Milling Unit: Zirconia Only

Pen-scanner does not work with the QRL code on the Zirconia block.
Tap on the red X to manually enter in the code.

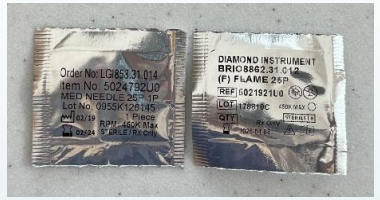
This number must match block in order to mill and sinter because the CEREC SpeedFire Oven can only work from data sent to it by the milling unit.

MC XL #2 Milling Unit: Zirconia Only

Load Zirconia block and tap on the green check

Milling process: ~16 minutes

Remove Sprue



Before firing, the crown is very weak. Remove sprue from block carefully with new and thin diamond bur.

Carefully remove and blend the sprue remanent with a fine diamond bur.

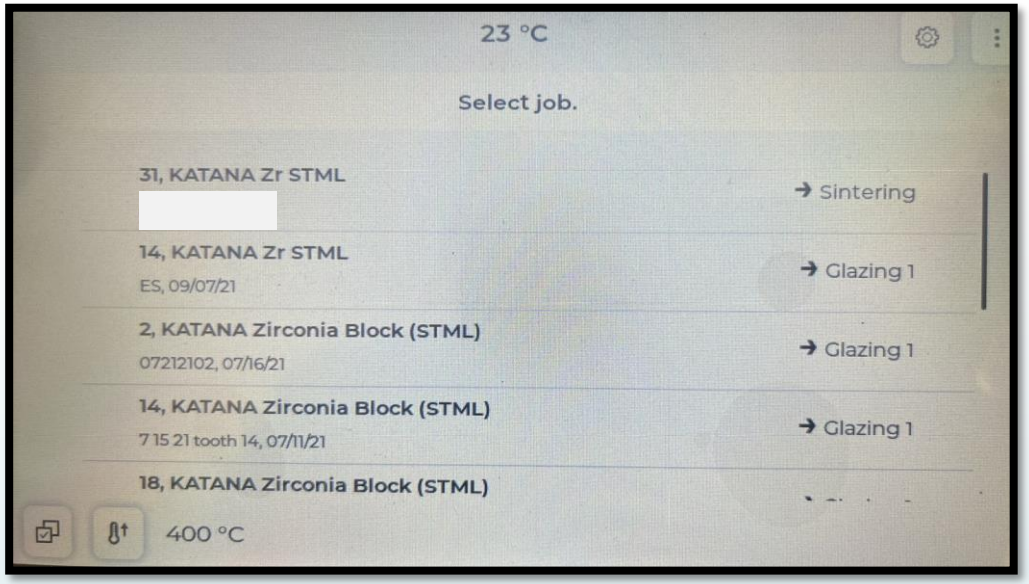
CEREC SpeedFire Oven

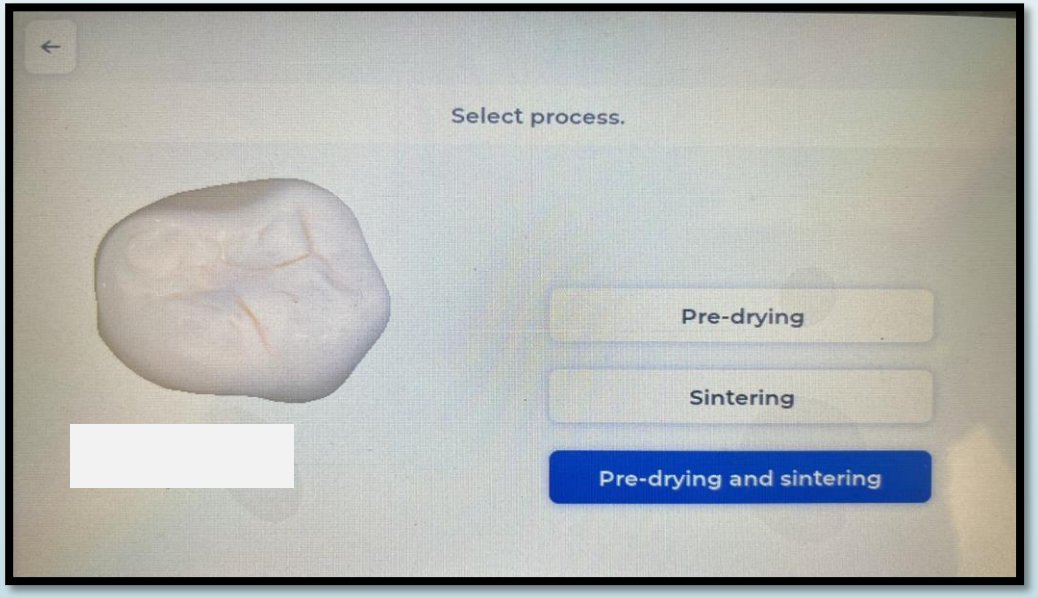
Select Job sent to furnace by the milling unit:

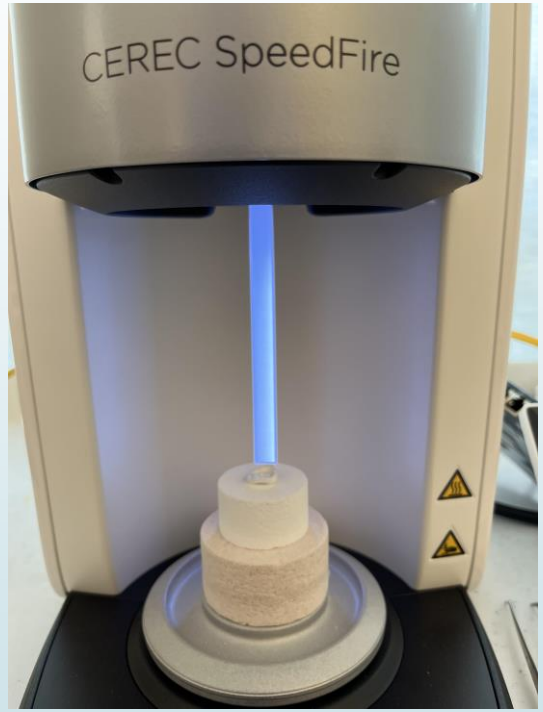
- Should be the top option
- Check name and date

Select Process:

- Pre-drying and sintering



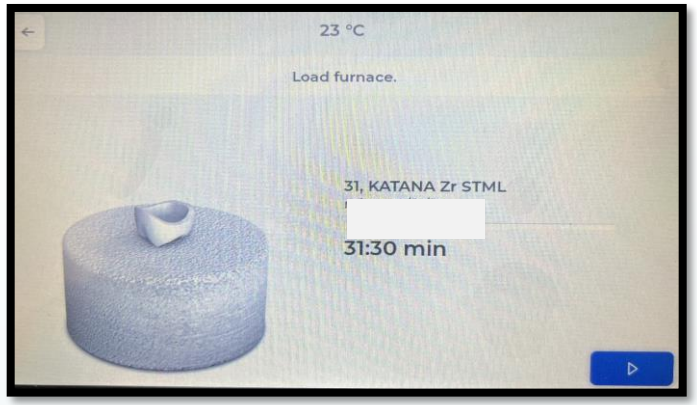


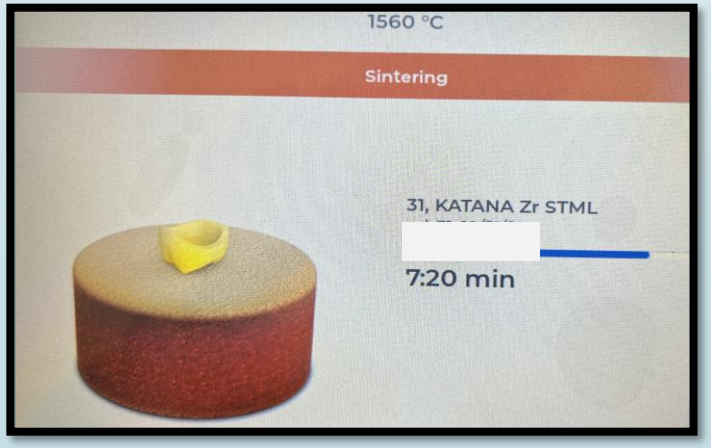


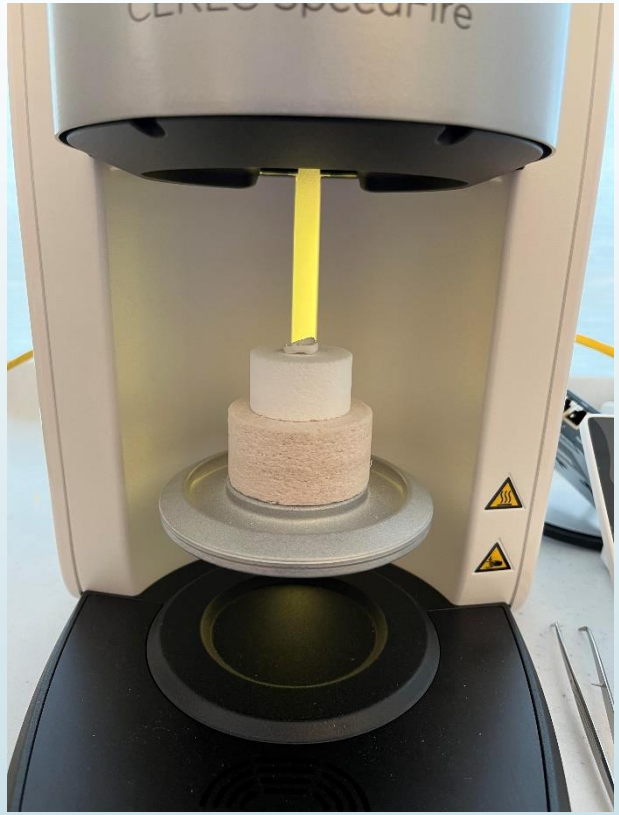
CEREC SpeedFire Oven

Place crown on platform with **margin facing up**.

Pre-drying and Sintering processes will take ~40 minutes



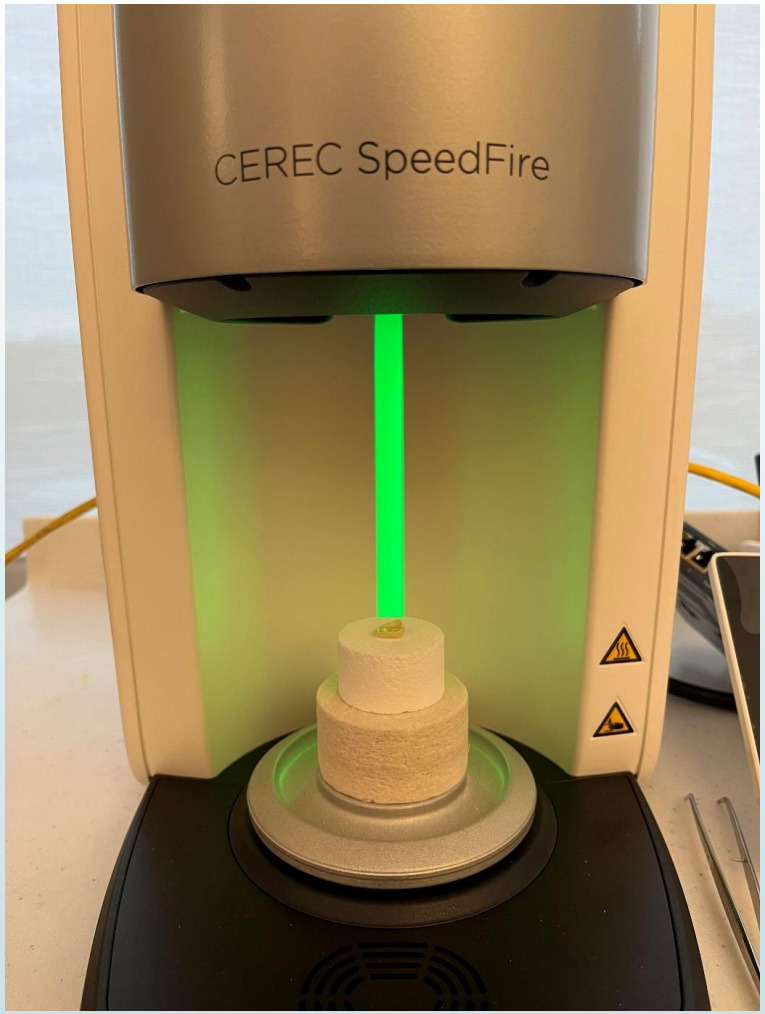




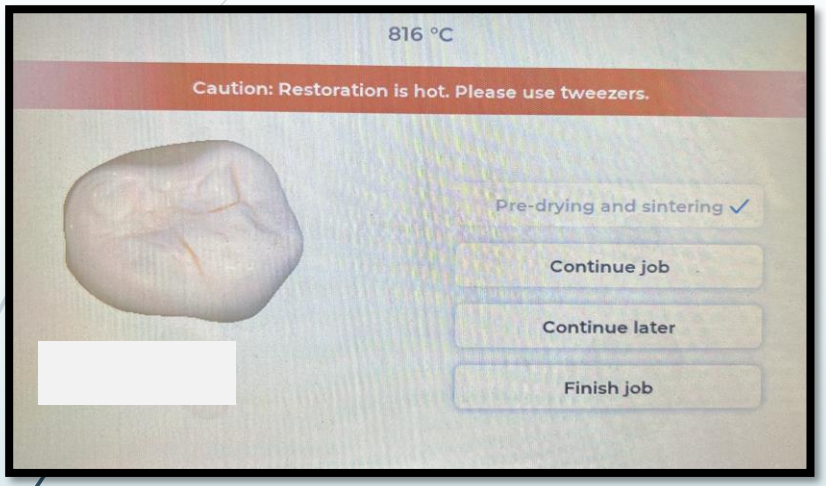
After Sintering

CAUTION -
Crown is very hot.

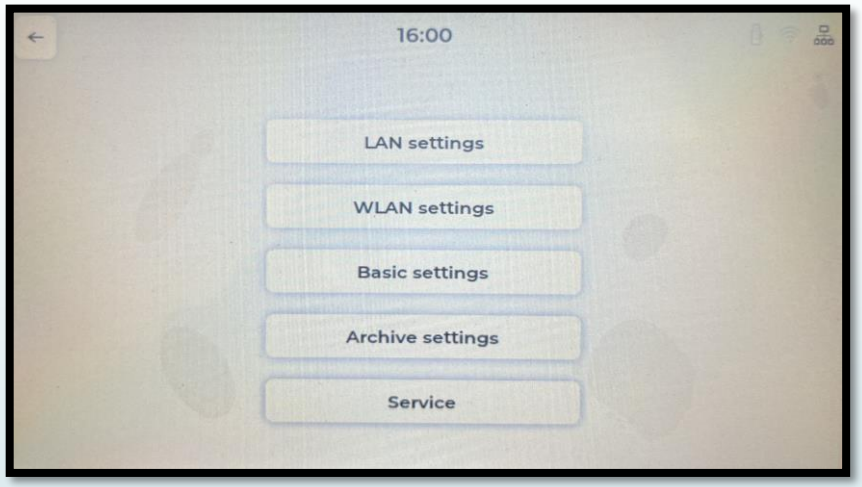
Use forceps to remove the crown from the platform to cool down for another ~5 minutes



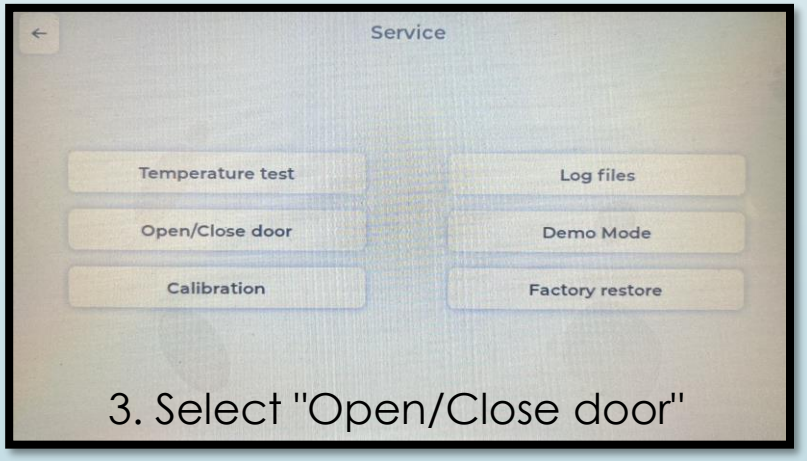
Turn Off SpeedFire Oven



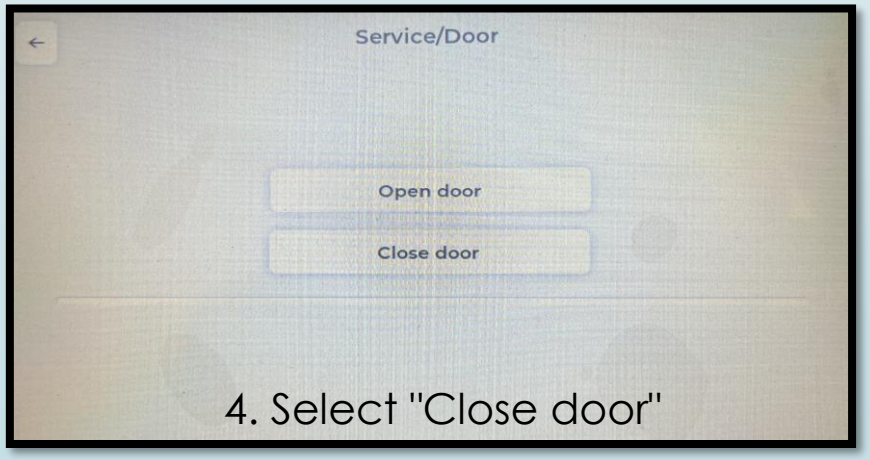
1. Select "Finish Job"



2. Select the "Setting Icon" and then "Service"



3. Select "Open/Close door"

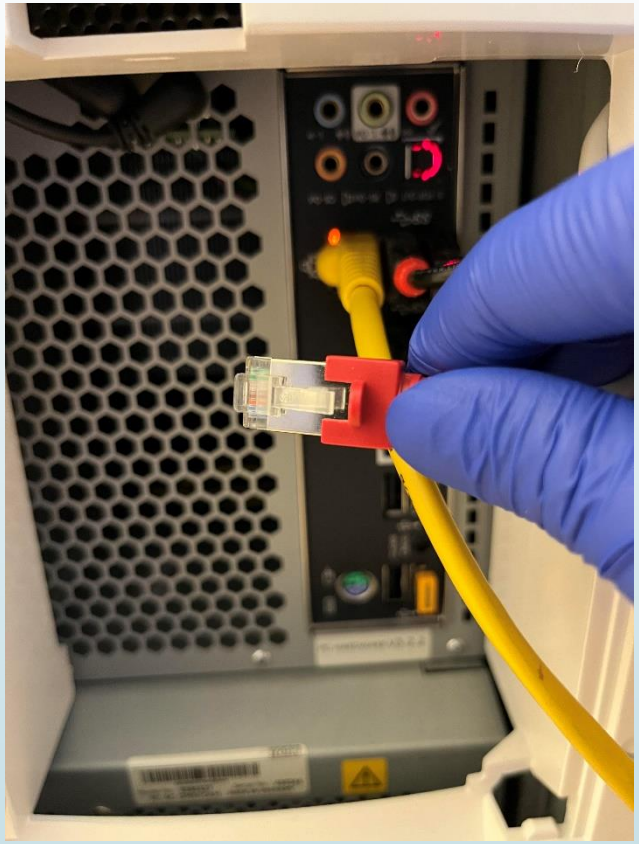


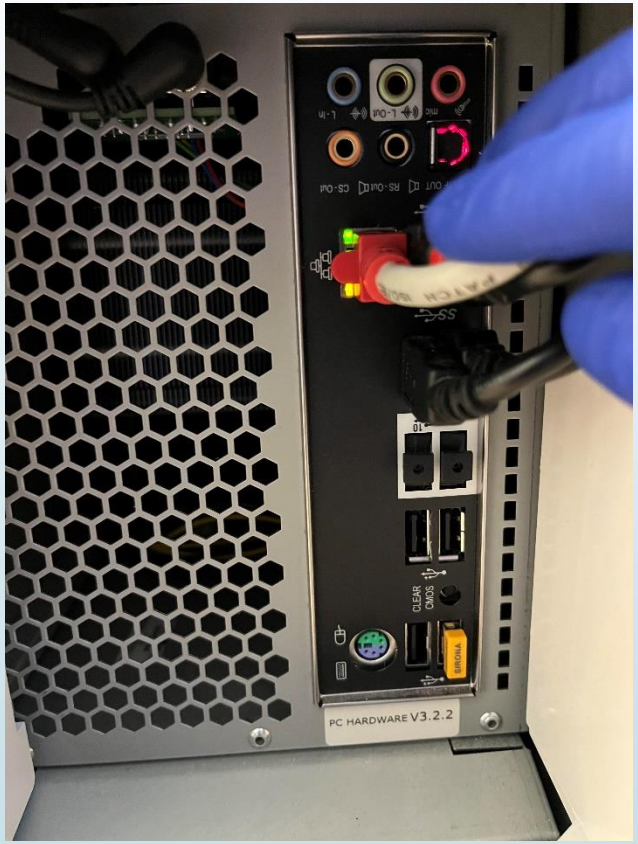
4. Select "Close door"

5. Turn off switch

Housekeeping

Reconnect radio-wire (red) so that the next Emax crown can be milled by radio connection.

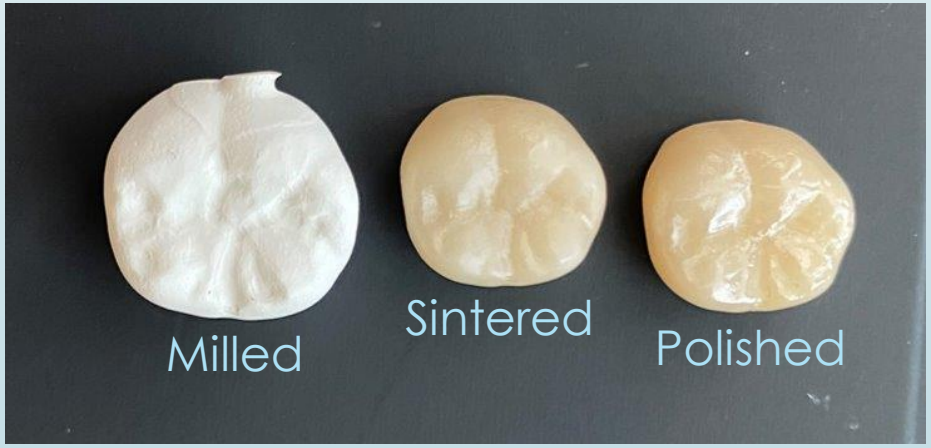




Polishing


OHSU SOD
Zirconia Finish & Polish
ZIRC19


2014
BRASSELER USA
DENTAL INSTRUMENTATION
800 - 841 - 4522
8956-D


Milled
Sintered
Polished

Cementation (After sandblasting the intalio of the crown with aluminum oxide)

Rely-X Luting Plus Cement

1. Clean tooth with oil-free pumice paste
2. Rinse and lightly dry. Leave tooth surface moist
3. Squeeze out and discard a peppercorn-size quantity of mixed paste
4. Apply a thin layer of cement to the inside surface of the restoration
5. Seat restoration with firm pressure
6. Tack light cure and remove excess cement
7. Set time is 5 minutes after placement in the mouth

Multilink Adhesive Cement Tooth

1. Etch enamel/composite with 37% phosphoric acid and rinse
2. Apply Multilink Primer A/B to the prep for 30 seconds, then lightly air dry

Restoration

1. Apply a thin coat of Monobond Plus with a microbrush to the intaglio of the crown (avoid pooling) for 60 seconds
2. Disperse any remaining excess with a strong stream of air
3. Apply Multilink adhesive cement

Seating

1. Seat restoration with firm pressure
2. Tack light cure and remove excess cement
3. Cure for 10 seconds on each surface for a total of 60 seconds

Case Example

Existing contacts marked prior to scanning for Bio-Reference. Previous restoration removed and tooth prepped to standard Zirconia parameters. Margins must be supra or exposed by packing cord for scanning. Zirconia crown milled, polished and cemented with Rely-x luting cement.