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—* Caution: US Federal law restricts the E4D scanner to sale by or on the order of a dentist.



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How to use the mouse



Select position pointer on item and click left button to select



Rotate Model press and hold the right button, then drag



Zoom Model rotate the wheel button to change the size of the model on the screen





Move Model
up/down, left/right:
press and hold the wheel button, then drag.


Home Screen

1





Click  on any tab to save and return to the Home screen.

Click  to view/edit the settings for the current tab.

Click  on any tab to view online Help. Click **Sky** or **E4D Studio** to import a case.

Add New Patient:

- 1 Click **Add.** 
- 2 Type patient **Name.**
- 3 Click **Enter.** 

Select Existing Patient:

- 1 Select patient from the list.
- Existing restorations appear on the right.

Start New Restoration:

- 1 Click **Start New Restoration.**



Setup screen appears.

Open Existing Restoration:

- 1 Select the existing restoration from the list.
- 2 Click **Open Existing Restoration.**



Setup screen appears. Select desired tab.

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Setup Screen

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Select:

- 1 **Tooth**
- 2 **Restoration Type**
- 3 **Occlusal Data Type**
- 4 **Library**
- 5 **Material**
- 6 **Shade**

Single Restoration

- 8 Click the **Scan** tab.

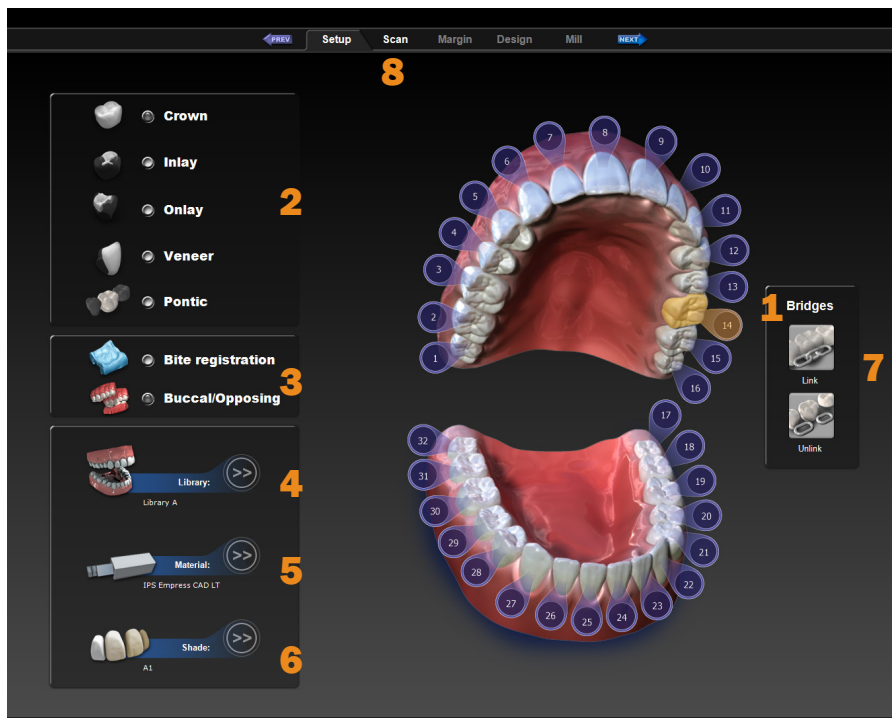
Multiple Restorations:

Repeat the steps for each tooth.

Bridge

- 7 Link the restorations to create a bridge.

* See Block Selection on page 3 for more information.



Block Selection

Restoration → Material ↓		Anterior - full crown	Anterior - veneer	Posterior - full crown	Inlay/ Onlay	Implant	Bridges
3M	Paradigm MZ100					Provisional Only	
	Lava Ultimate						
Ivoclar Vivadent	IPS Empress CAD HT						
	IPS Empress CAD LT						
	IPS Empress CAD Multi						
	IPS e.max CAD HT						Anteriors Only
	IPS e.max CAD LT						Anteriors Only
	IPS e.max CAD Impulse						
	Telio CAD						Provisional Only
	Zirlux FC2						
D4D	Burn Out Blocks (BOB)	For cast or pressed indications only.					

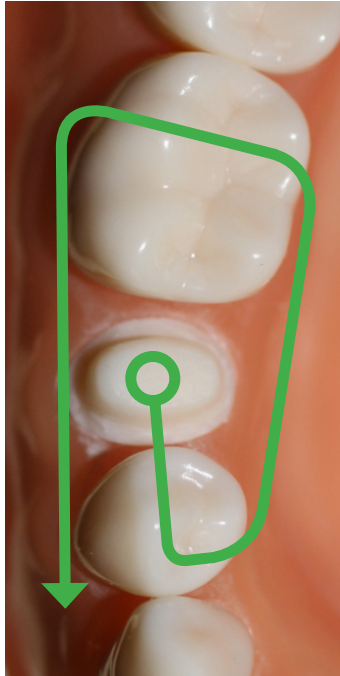
Primary indication
 Secondary indication
 With manufacturer caution

* The block selection chart provides general direction on what block or category of block is recommended for different types of restorations. Please understand that the clinical situations and parameters (preparation, occlusion, patient compliance) are all factors in the success of the final restoration regardless of the material.

Scanning

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Begin at the location of the circle in the diagram below. Move in a smooth continuous motion following the pattern. Use small rotations at the corners of the diagram. As you go down the buccal and lingual sides, the wand can be held at close to 90°.



Scanning Pattern



Scanned Model

* The Live View has color gradients that indicate distance from the model. You see green close to the scanner and red as the image gets further away. Any color shown means the wand IS capturing data. The colors only correspond to the focal distance.

1 Scan Prep.

2 Rotate and evaluate the model using Data Density View.



3 Take more scans to fill in any low data areas (dark blue/purple) on the prep and interproximal areas.

4 Eraser if needed.

5 If an Impression was scanned of the prep or Pre-op, click **Impression Mode** which inverts the scans to look like a traditional model.



Scan Occlusal Data (See next page)

Scanning Occlusal Data

The proposal's occlusion can be evaluated and designed using:

- Bite registration
- Buccal bite and opposing dentition
- Pre-op a waxup or existing anatomy before preparation

Scan Pre-op



- 1 Click **Pre-op**.
- 2 Scan the pre-operative tooth or wax-up with the same scanning techniques used for the prepared anterior or posterior tooth.
- 3 Prepare the tooth.
- 4 Scan the prep, click **Prep**.

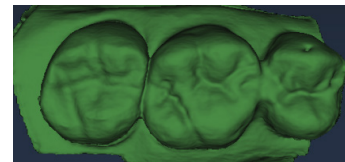


Scan Bite Registration



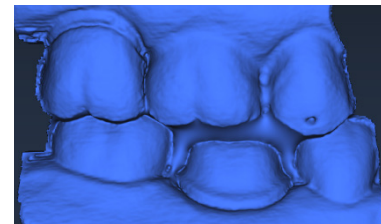
- 1 Click **Bite**.
- 2 Capture occlusal details (90%) of proximal dentition for template alignment.
- 3 Use **Eraser Brush** to remove excess data.
- 4 Click **Bite Selection** and drag to highlight the areas of the opposing dentition in the impression material.

Scan Opposing



- 1 Click **Opposing**.
- 2 Starting with an occlusal view, scan the occlusal and buccal surfaces of the opposing dentition. Include the same number of teeth as the preparation model. Ensure there is good cusp tip data on both the lingual and buccal sides.
- 3 Roll to the buccal and scan the buccal side of the opposing dentition. Include gingival data; do not stop halfway down the tooth.
- 4 Use **Trim Model** to trim away excess data.

Scan Buccal Bite



- 1 Click **Buccal Bite**.
- 2 Press the articulated model down firmly or have the patient bite down firmly and tell them not to move. If the teeth shift during scanning, the alignment may be incorrect.
- 3 Scan at a 90° angle to the teeth. Scan the sides of the teeth that were captured in the preparation and opposing models. Ensure some gingival data is captured.

Orientation

—* See the User Manual for instructions on centering the preparation and using multiple orientations.

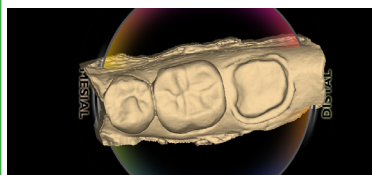
Orientation activates automatically when the Margin tab is selected for the first time.

Orientation is a critical part of the entire design process. The position of the model affects the position of the library tooth before Autogenesis™ is applied. If the scanner was positioned properly on the first scan, only small adjustments should be needed.

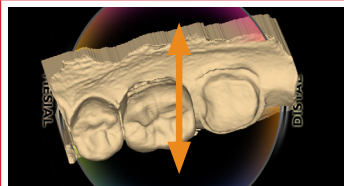
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To adjust the model, use the LEFT mouse button.

- 1 From the **Occlusal** – ensure you are looking straight down at the occlusal plane of the teeth (not tilted to the lingual or buccal).

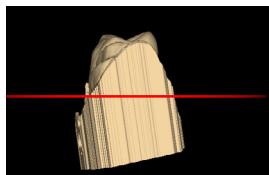


Good

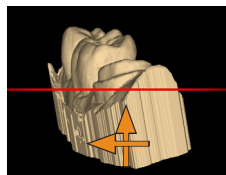


Poor

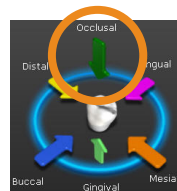
- 2 From the **Distal** – Evaluate the cusp heights of the proximals. Align the buccal cusps and axial walls according to the Curve of Spee.



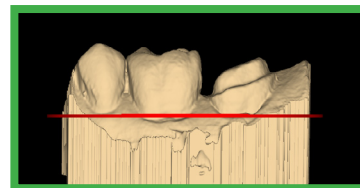
Good



Poor



- 3 From the **Buccal** - ensure the marginal ridges of the proximals are parallel to the red line.



- 4 Click **Orientation** to accept the current position.

—* Orientation can be adjusted multiple times as needed for design by activating Orientation again.

Margin Tab

7

- 1 Set Orientation (see previous page)
- 2 Draw the margin using **Trace**, **Lasso**, or **Paint**. Trace is the most popular selection.
- 3 Edit the margin using **Move Margin** or **Add Segments**.

* **Preview Library** appears after the margin has been edited and the editing tools deselected. Click to use the library tooth as an aid to verify and adjust Orientation.



Crown

Partial

Click the **Design** tab.

- 1 Designate a **Selection Area**.
- 2 Click **Design** tab.

Margin Aids



Show Features highlights areas with high contours. This often aids in finding the margin.



View ICE Preparation toggles between model view and ICEverything view. Use only in intraorally scanned cases with equigingival or subgingival margin areas.



Toggle Margin to show or hide the margin.

Trace



- 1 Click **Trace**.
- 2 Click along the margin in small increments. The system creates straight lines between each click; a blue dot marks the starting point. Connect to the starting point to finish the margin.


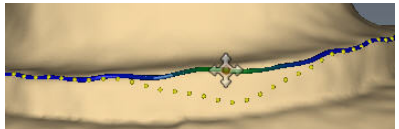


Show Features is recommended as an aid in finding the edge of the margin, it is not necessary for using the Trace tool.


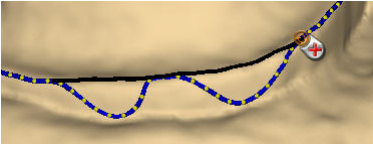
Editing Margins

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Move Margin



- 1 When using Trace, **Move Margin** is activated by default. Click to activate if necessary.  
- 2 Position the pointer on the margin line; click and hold down the mouse button.
- 3 Drag the margin into position and release the mouse button. The system automatically redraws the margin. Repeat as needed.

Add Segments

- 1 Click **Add Segments**. 
- 2 Start and end by clicking on a good part of the margin. Click to add a new line across the gap. Use multiple clicks to create a curve if necessary. 

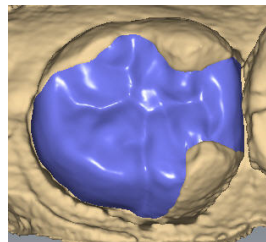
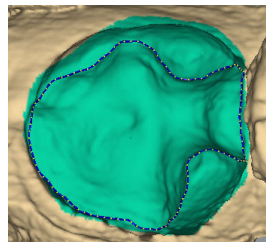
Selection Area (for inlays and onlays)

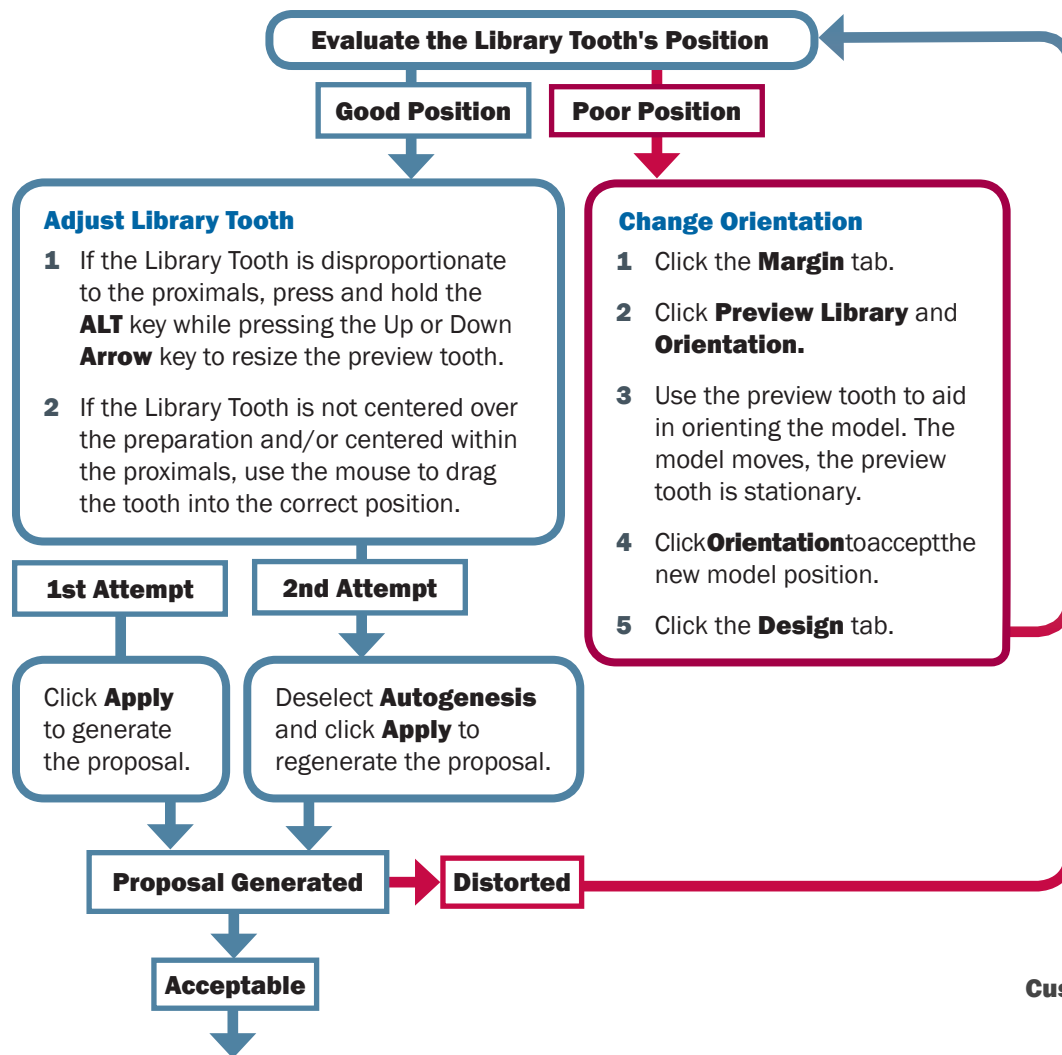
With the Selection Area tool, you define the area where the computer will place the restoration. This is important on partial restorations. When the margin is drawn, a reminder appears. If a Selection Area is not designated, Autogenesis™ will create a proposal, but it may not be correct. A Selection Area can be defined after the proposal has been generated, but the library needs to be reapplied.

- 1 Click **Selection Area**. 
- 2 Click **Add to Selection**. 
- 3 Use the mouse to draw a line around the entire tooth, down to the gums. The selected area is highlighted.

- 4 Click the **Design** tab.

Autogenesis applies the library tooth to the selected area.





Global Positioning

Adjust the overall position of the tooth in relation to the proximals using Incremental Tools.

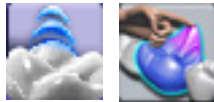


- 1 Alignment (**Move**)
- 2 Rotation (**Rotate**)
- 3 Height (**Expand**)

Esthetic Adjustments

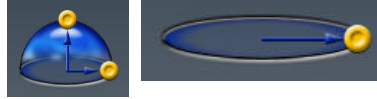
Go to Freeform Change Tools. Evaluate the following and adjust if needed. Rubber Tooth is recommended for these changes.

- 1 Material Thickness
- 2 Contours
- 3 Marginal Ridges
- 4 Embrasures



Design Tab

Area of Influence and Intensity - The Area of Influence and Intensity option appears with many of the Freeform Change Tools and can be used to adjust the depth and/or width of the affected area along with the amount of change.



Occlusal Contacts

- 1 To display the bite registration or opposing dentition, click **View Bite Registration** once to make it appear and a second time to make it translucent then click **View Contacts**.
- 2 Use **Contact Refinement** or **Rubber Tooth** and **Slice Plane** to adjust the contacts.



Popular goal: white/brown/black

Your office preference:

Bite Registration _____ Buccal Bite _____

- 3 Click **View Bite Registration** until it is deactivated.

Proximal Contacts

1 Click **View Contacts**.



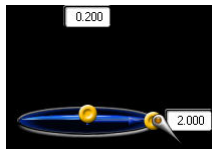
2 Click **Hide Model**.



Popular goal: 50 microns (Aqua blue color)

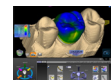
Your office preference: _____

3 For large changes, use **Expand** under Incremental Change Tools to increase or decrease. For smaller changes, use **Smooth** if the contact is too heavy and use **Dropper** if it's too light. Change the Area of Influence and Intensity to be broad and shallow.



Material Thickness

1 Click **View Material Thickness**.



2 Use **Rubber Tooth** to adjust the thickness. Adjust the Area of Influence to be smaller for pit changes and larger for axial walls.

Goals:

Axial Walls = Green

Occlusal Surface = Dark Green/Blue

3 Click **View Bite Registration** and **View Contacts** to ensure occlusal contacts are still in desired range.

Click the **Mill** tab.

Mill Tab

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- 1 Look for orange or red shading (thin material) on the proposal. Return to the Design tab to increase the material thickness to remove these colors.

Yes

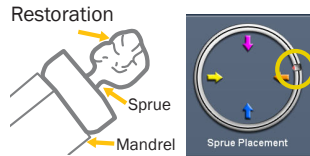
Sprue location good?

No

- 3 Select the **Block** size from the list. If there are no block sizes listed, try a different sprue location or click Settings and select a different material.

- 4** Click **Sim** and select **Standard**.

- 5 Click **Gingival** to view the model from below.



- 2** To change the location of the sprue, click and drag the placement indicator (circled in yellow) along the circle that represents the exterior of the restoration or click one of the arrows.

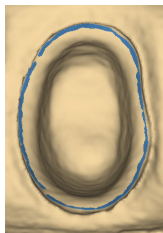
Try a Detailed
Simulation.

If blue is still visible on the axial walls, return to the Design tab and increase the spacer.

Repeat the Sim.

Repeat steps until satisfied with the Sim.

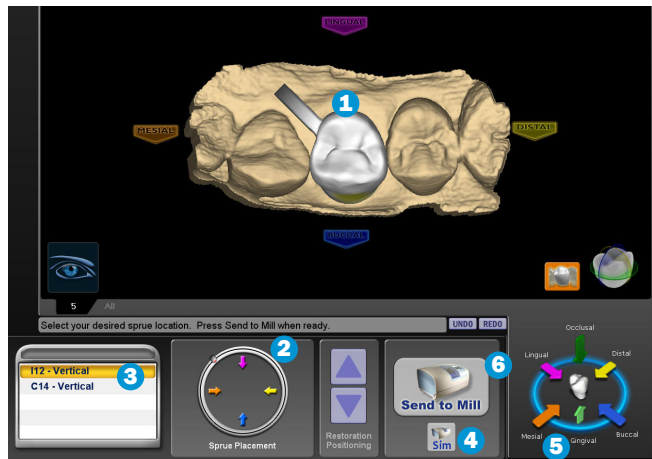
Yes



Is the blue visible anywhere other than the margin?

No

- 6** Click **Send to Mill**.



—* After the restoration is milled, remove the sprue and clean thoroughly with toothbrush and water, ultrasonic, or steam clean.

Log on to our website www.e4d.com for these additional resources:

- Resources tab - log in to ECO Community*
 - **Online Training Videos**
 - **Chairside Chats** - practical "how to" presentation updated weekly
 - **Online community and forum**
 - **User Manual**
 - **Exercise Workbook**
 - **Quick Reference Guides**

**To register for the ECO Community and access these resources, go to www.e4d.com/eco*

- Education tab
 - **Intermediate and advanced course descriptions**
 - **Course planner and calendar**
 - **Links to online registration**

Online Help is available in the software by clicking 

Contact Customer Support

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fax: 972.479.1106

email: customersupport@e4d.com