

Monolithic bridge on implant from a scanned waxing

With the DWOS *Custom abutment with waxing* feature

5Series, 3Series, 3Series+, 7Series
An implant CAD license is required

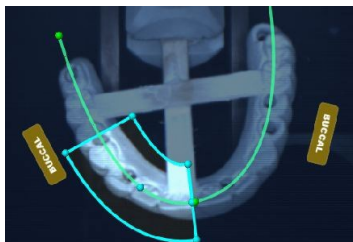
The Prettau-style monolithic bridge on implants is designed in DWOS with the Virtual Waxing feature. Built on a scanned model with analogs, an automatic proposition is computed for a teeth setup with a virtual gingiva. Both are fully editable. This type of bridge can also be created from a hand-made waxing by scanning the model with analogs, and scanning the waxing. This method is the Custom Abutment with Waxing.

The following procedures describes how to use the **Custom Abutment with waxing** feature in DWOS.

This procedure requires:

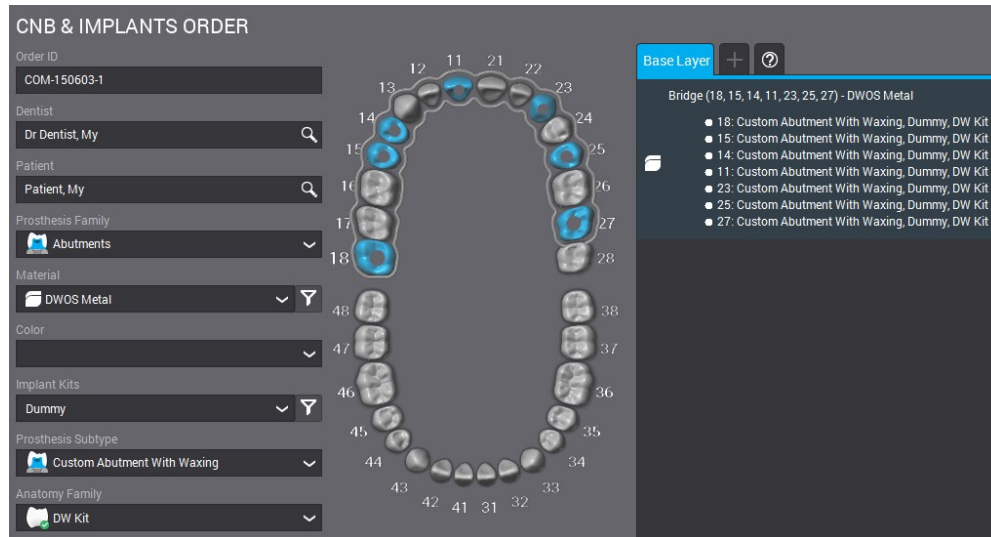
- A stone model with analogs.
- The scan devices to be mounted on these analogs (one **scan device**¹ for each model/type of implant is sufficient).
- The virtual implant kit in your Implant kit library. The kit must include the scan device. This can be verified in the Implant Kit Editor.
- A hand-made waxing

To perform a complete waxing scan, the waxing must be mounted on a stick or some kind of extension that can be held in the impression holder.



¹Also referred to as Scan jig, Scan body, Scan abutment, they are the part that must be mounted on the implants when performing a scan.

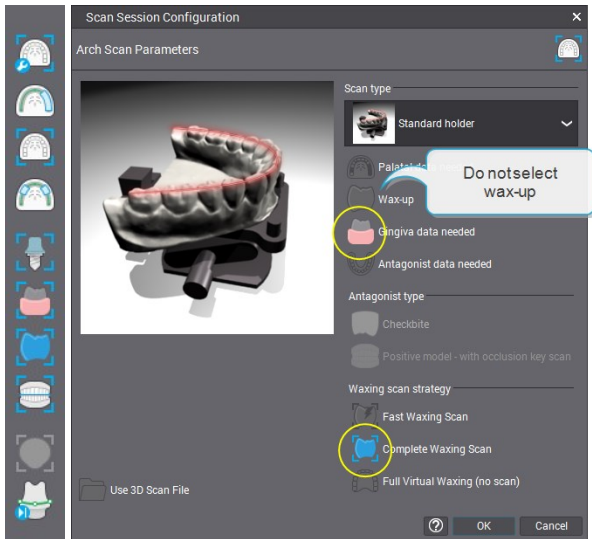
Order Creation



1. Create a new CnB & Implants Order
2. Prosthesis family: **Abutments**
3. Select the material of the monolithic bridge substructure
4. Select the implant kit of the first implant
5. Prosthesis subtype: **Custom abutment with waxing**¹
6. On the illustration, click on the tooth number of the first implant
 - If all the patient's implants are the same model/type, click on all tooth number where an implant was placed.
 - If there are different implants on the patient, change the Implant kit definition before clicking on another tooth number.
7. Reselect all abutments (they will appear circled by a blue line) and click the **Create bridge** button. The pane on the right shows the components of the bridge.
8. Route the order.

¹If you do not see the prosthesis type you are looking for in your drop-down menu, click the **Settings** icon from the top menu bar, select **Material Management**, select your chosen material in the left pane and the first group of settings **Elements available**, and make sure you check the **Custom abutment with waxing** box.

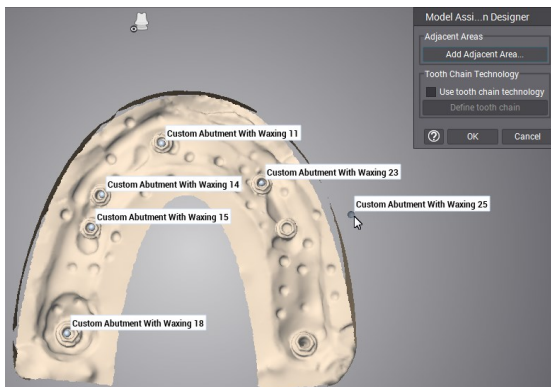
Scan



Scan model

1. *Scan session configuration* window: set as shown above.
2. Place the arch alone on the **standard holder** (no scan device, no gingiva, no waxing)
3. Place the holder in the scanner, close the door and click OK.
4. [Define the area](#) on the preview and validate to launch the scan.

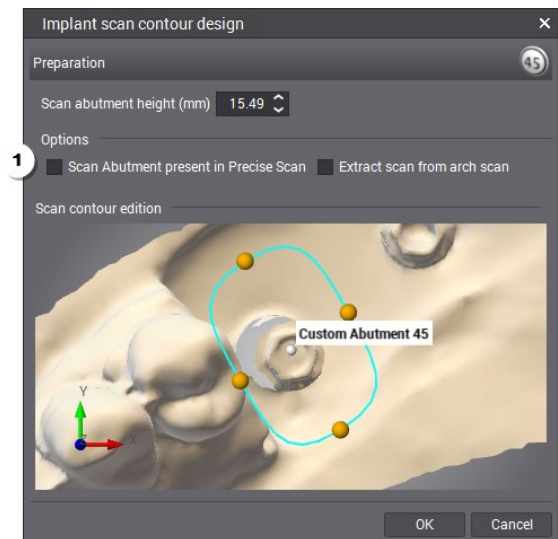
Assign locations



On the model scan, click on the implant corresponding to the number that is attached to the cursor.

Implant precise scan

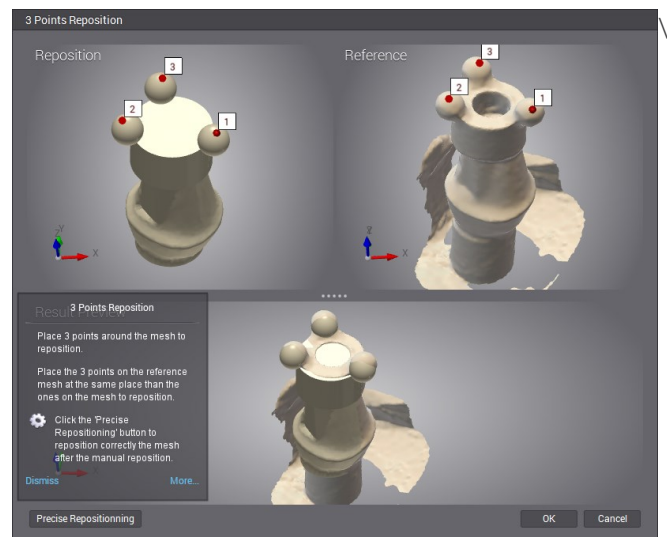
1. On the model scan right-click on an implant and select **Scan implant**.
2. **Scan Abutment present in Precise Scan** : must be unselected ¹.
3. Install the scan jig on that implant and click OK.



Implant repositioning

As soon as an implant scan is done, the 3-point repositioning window pops-up.

1. Place 3 points on the STL of the scan jig that appears on the left.
2. Place the 3 points on the same position of the scan result.
3. Click **Precise Repositioning** button.



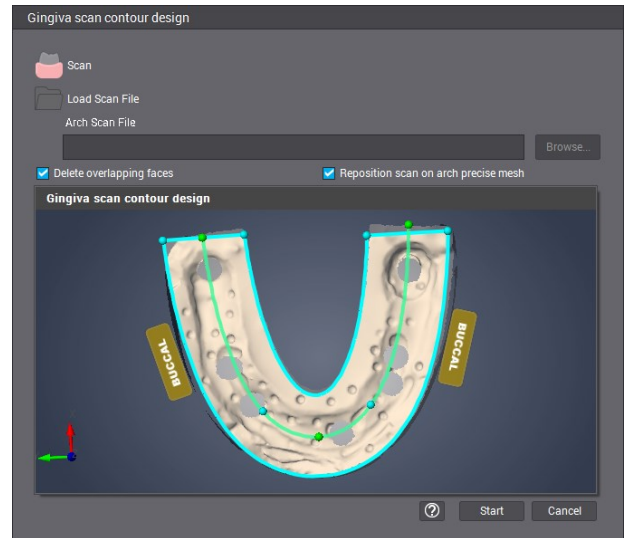
Initiate the second implant scan with right-click > **Scan implant**. Repeat *precise scan* and *repositioning* for each implant.

Gingiva scan



When the implant scans are completed, the *Gingiva scan contour design* window pop-up.

1. Remove all scan jigs from the model and put the gingiva in place.
2. Define the area to scan and click **Start**.



Waxing scan



When you click the waxing scan icon, a subworkflow is initiated with the scanning procedure. A new toolbar is provided to assist the scanning of the waxing.



Top

1. Follow the instructions in the pop-up window as to place the waxing in the impression holder, top side up.
2. Click OK.
3. Set the area on the preview.
4. Validate to launch the scan.

Bottom

1. Follow the instructions in the pop-up window as to flip the waxing around so that the bottom side faces up:
 - 5Series, 7Series: revolve the mobile part of the holder
 - 3Series, 3Series+: loosen the screw and manually turn the waxing upside-down. Refasten in place.
2. Click OK.
3. Set the area on the preview.
4. Validate to launch the scan.

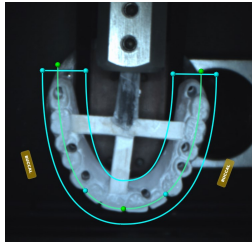


Figure 1: Top waxing scan

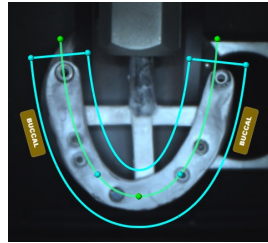
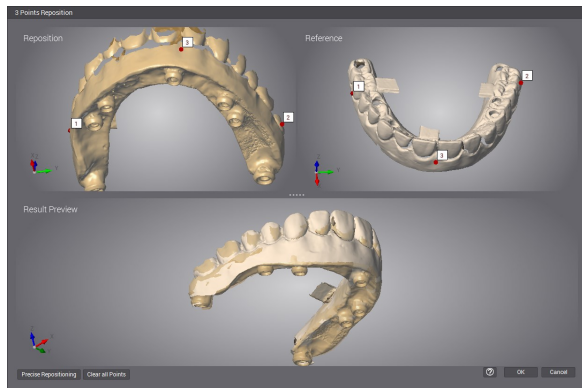


Figure 2: Bottom waxing scan

Reposition

After obtaining the waxing bottom scan result, you are asked to use the 3-point repositioning method to match the top scan with the bottom scan of the waxing.

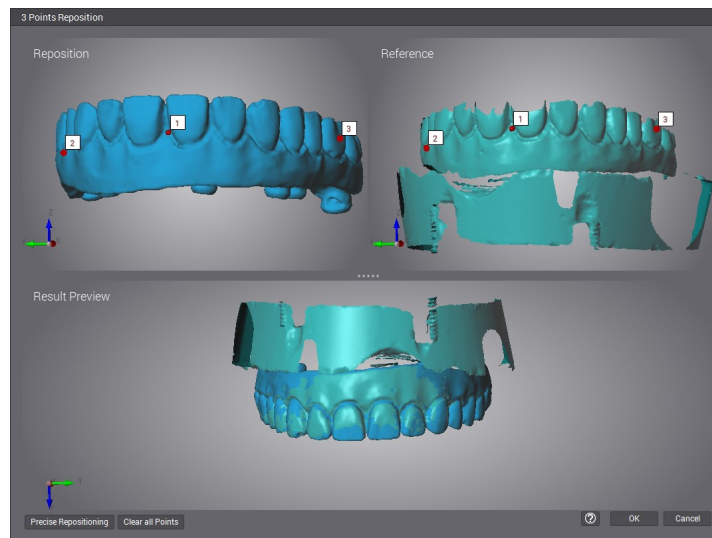


Reposition waxing



Once it is scanned and reconstructed, the waxing is displayed but it is not aligned with the model.

1. Click the **Start waxing repositioning scan** button.
2. Follow the instructions in the pop-up window as to place and secure the waxing on the model, and click OK.
3. An occlusion key scan is performed and displayed in green over the model.
4. Then right-click either on the occlusion key or on the waxing and select **Reposition waxing key on arch**.
5. Find corresponding areas to perform the 3-point-repositioning .
6. Only then, the waxing is displayed correctly on the model.

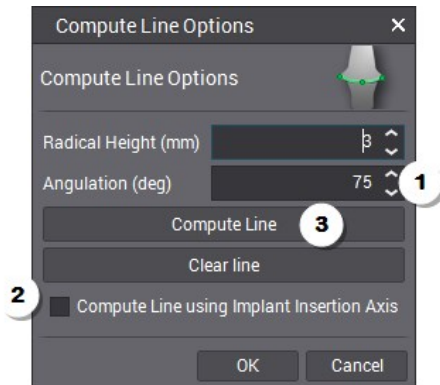


Edit margins



The margin editing in an implant case opens the *Compute Line Options* dialogue.

This line is actually the **emergence profile**.



The choice is yours to draw it on the gingiva or to compute an automatic line.

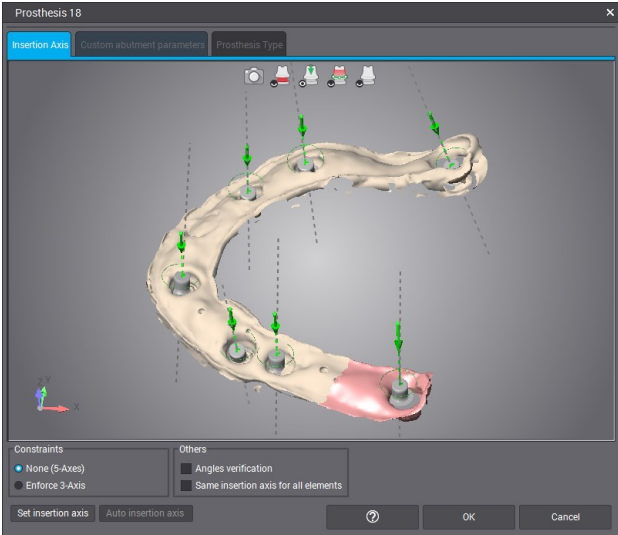
Manual

1. Click on the gingiva to place dots.
Move the dots by clicking and dragging them. Click and release a dot to delete it. Click on the line to add a dot.
2. Press "C" on the keyboard to close the contour.
3. Click OK to exit.

Automatic

1. Set a **Radical Height**, which is the distance from the implant's interface.
2. Set an angulation value 1
3. If you need the circle to be laterally aligned with the implant's axis select the check box 2. Otherwise, the insertion axis of the abutment is used.
4. Click the *Compute line* button 3.

Insertion axis and design parameters



There is no need to set an insertion axis because it is defined by the waxing. Just click OK to exit this window.

Clean the scans

Since the waxing needed to have an extensions to be gripped in the holder, there are inevitably scanned surfaces that should not be part of the restoration. Use the cleaning tools to remove them:

- 1. Right-click on the waxing.
- 2. Select **Remove scan faces**.
- 3. With the **3D Clipping tools**, tightly circle the area to delete.
- 4. Select **Clip and fill**.
- 5. Click OK to exit the Cleaning tools.
- 6. Right-click again on the waxing and select **Add/Remove material** if some smoothing is needed around the clipped area.

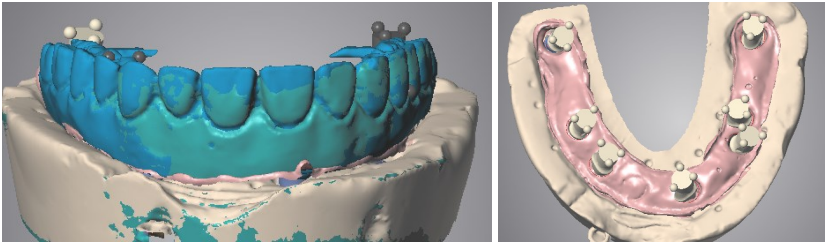
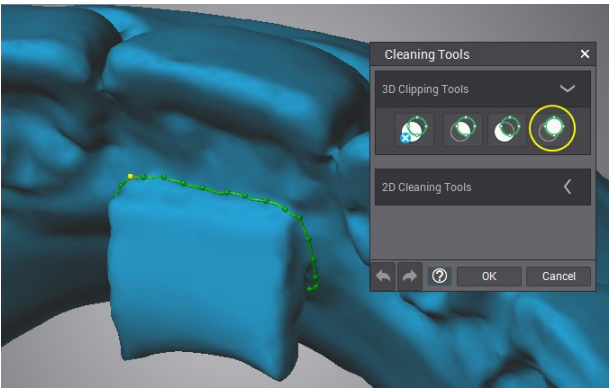


Figure 3: Completed scan session for a Custom abutment with waxing bridge

CAD

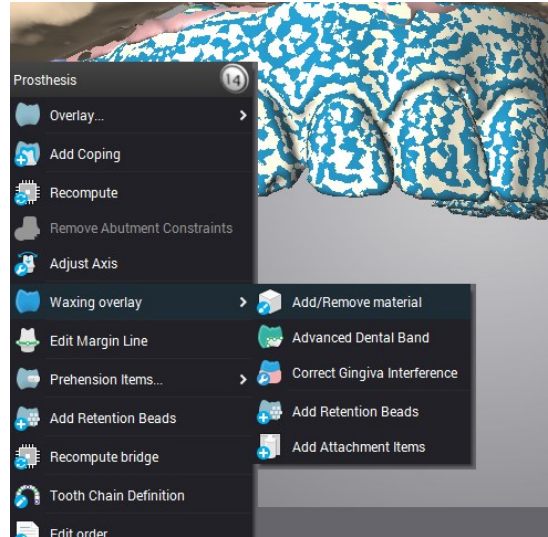
The prosthesis overlay is computed from the waxing. Several design tools are available on the waxing to customize the restoration.

Waxings

Compared to the wax-up, the waxing:

- Is more straightforward, as it requires no additional steps
- Allows you to reduce the waxing globally and add a dental band or retention beads
- Offers more flexibility than a bridge as the abutments are free to be positioned anywhere under the bridge, and they are not constrained by the margins.

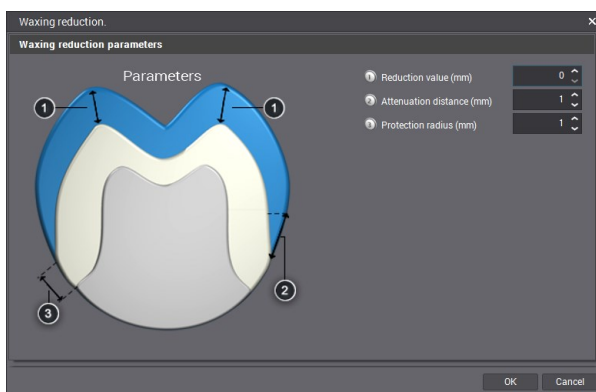
Some customization tools are available under *Waxing overlay* in the contextual menu.



Reduced Waxing

Right-click on a waxing (blue) > Reduce waxing

This feature allows creating a substructure prosthesis from a full contour waxing that was scanned.



The reduction becomes the overlay. You can do all operations that apply on overlays, such as:

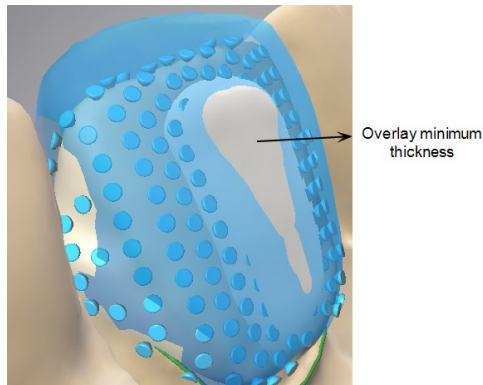
Add a manual or parametric dental band

The resulting dental band fills the space between the overlay and waxing.

Add retention beads

They can only be applied between the overlay and the original waxing size.

It can happen that the minimum thickness of the overlay exceeds the waxing. The software then blocks the beads in these regions.



Add attachments

Right-click > Add attachment item

Insert an attachment that is part of your attachment library.

To revert to the scanned waxing:

1. Right-click on the waxing
2. Select Reduce waxing > Delete

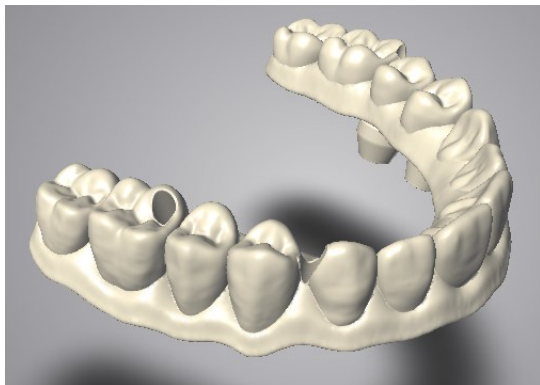


Figure 4: Bridge computed from scanned waxing and implants

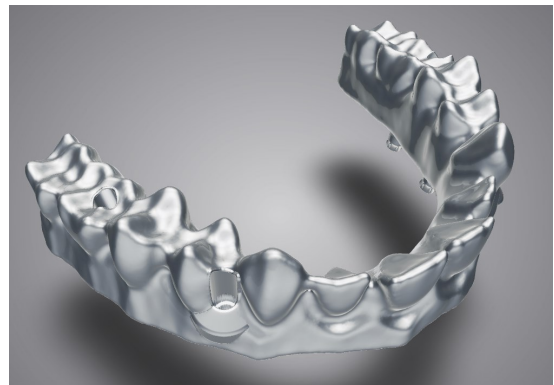


Figure 5: Reduced waxing bridge after merging