DWOS 7.0 Release Info

June 2017

Welcome to DWOS 7.0

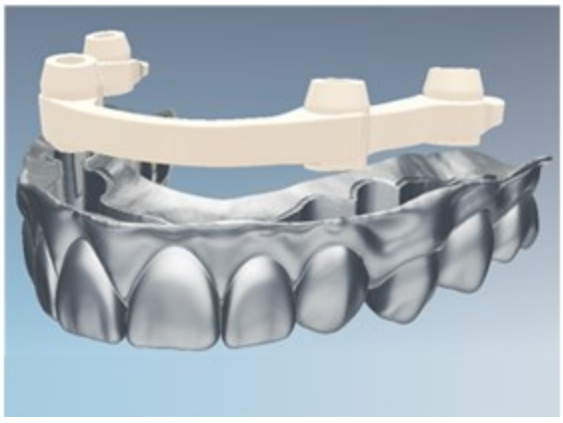
The DWOS 7 upgrade includes new features and improvements to increase both efficiency and productivity in digital dentistry:

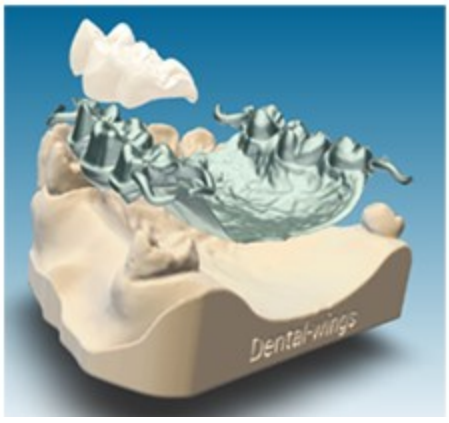
- **Pillarless wax-up:** The Pillarless wax-up enables creating a virtual teeth set-up without binding it to a margin.
- **Layers**: Easily create a layer of aesthetic elements atop the virtual setup, such as placing a full crown onto a telescopic coping.
- **Merge to partial**: Turn an anatomical reduced crown, with or without gingiva, into metal, by merging the elements directly into the partial framework design.
- **Superstructure**: Create a superstructure over an implant bar. Merge a partial framework to it or design a virtual teeth set-up as a removable denture over the implant bar.
- Other improvements were made to automatic proposition of occlusal contacts, to angled screw channel, to virtual waxing tools in high resolution. And the user interface was also enhanced with customizable background and station notifications, among others.
- Dental Wings also strive at maintaining and improving global stability of DWOS applications.

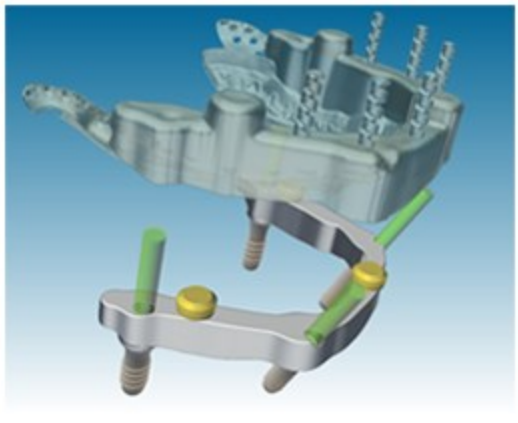
You will find in these pages the full release notes of the DWOS 7.0 and some instructions on how to use the new features.

You will also find some information about the new features and in the Online Help. To access, open your DWOS application and click on the Help icon in the main toolbar. Then you can navigate by using the Table of content, the Index or the Search tool. You will also find links to all new topics on the Home page.

These 3 advanced designs are examples of the new prosthetic possibilities available with the DWOS 7.0 upgrade.







Release Notes

New

Virtual Wax-up

- **Pillarless wax-up**: The pillarless wax-up is free from binding to a margin. Add a virtual wax-up directly on gingiva or over a structure such as superstructure or partial framework.
- **Layered wax-up**: Add an extra layer for an aesthetic element over a virtual wax-up, right from the CAD station.

Superstructure

- Build parametric superstructure over bar design; merge wax-up and/or partial to it.

User Interface (UI)

- Station notification: number of available cases for each station is displayed in main menu bar
- Toolbar in Crown & Bridge design station
- Customizable background of the 3D view
- Dynamic display of cloud of points during the scanning step
- Tool tips on display icons (scan and design stations)
- Production and Order Management: horizontal display (activate with option in User Preference)

Improved

Crown & Bridge / Implants / Bars

- Better occlusion on automatic proposition (computed by the Tooth-chain technology)
- More parameters to customize the screw channel of angle permissive implant kits
- Add/Remove material: The mesh of scan surfaces can be upgraded to high definition and can be edited more precisely with different tool shapes: curve, knife, flat
- Hole attachments can go through two layers: a custom abutment and the crown on top of it
- Straumann Order: Stock abutment exchange. Switch to other stock abutments with same platform during a CAD session.
- Import .obj and .ply files in the design station

DWOS Connect

- Improved performance for fetching and sending orders
- Improved responsiveness of local Inbox
- Possibility to retrieve the scan files in DWOS Inbox
- Approval protocol uses notification center

Bite Splint

- Add attachments or hole attachments

DWOS Synergy™

- DWOS user is notify when coDiagnostiX™ adds or removes an implant from the plan

Others

- Password validation without pressing Enter.
- Terminology: remove all occurrences of "waxing" to use "wax-up" consistently. Introduction of "diagnostic wax-up"
- Improve the 3D graphic engine to better support new mobile graphic card generation (compatible with *Surface* tablet and *Intel* HD card like Intel HD 520)
- Improved output for WorkNC SLM+Milling
- Improved translations for the following languages : French, German, Italian, Portuguese, Turkish, Chinese, Greek, Japanese, Korean and Polish.

Enhancements

- Import virtual articulator dialog remembers last location
- Partial Design: Fixed preview colors of undercut display in the survey model step
- Model Builder: merging of analog socket
- Atlantis workflow: implant positioning for dual arch cases
- Inverted attachment axis on upper jaw of dual arch cases
- Order management remote status
- Add *Matrix* attachment to bars
- Inbox: fixed *Edit Order* and *preview* issues
- Improved merging time of bars
- Merging of 360 dental band on upper arch of dual arch case
- DWOS Connect: Status update of split orders
- Responsiveness of Order management (replace 3D preview by screenshot)
- Manual contact point adjustment
- Automatic proposition of Synergy abutment without Tooth Chain
- Automatic proposition of Diagnostic pontic without Tooth Chain
- Axis groups after modifying an anatomy
- Merging of telescopic virtual wax-up
- Recompute of a Synergy abutment within a bridge

Pillarless Wax-up

This prosthesis type enables to add a wax-up to your case without having to bind it to a margin. The wax-up can be scanned (top and bottom) or created by the software, which is the *Virtual Wax-up*. Create them directly on gingiva or easily add and merge them to a structure such as a partial framework or a superstructure.

Most likely, the virtual *Pillarless wax-up* type will be used on a framework such as a partial or a superstructure. In those cases, the order can be created for the structure as described in these procedures.

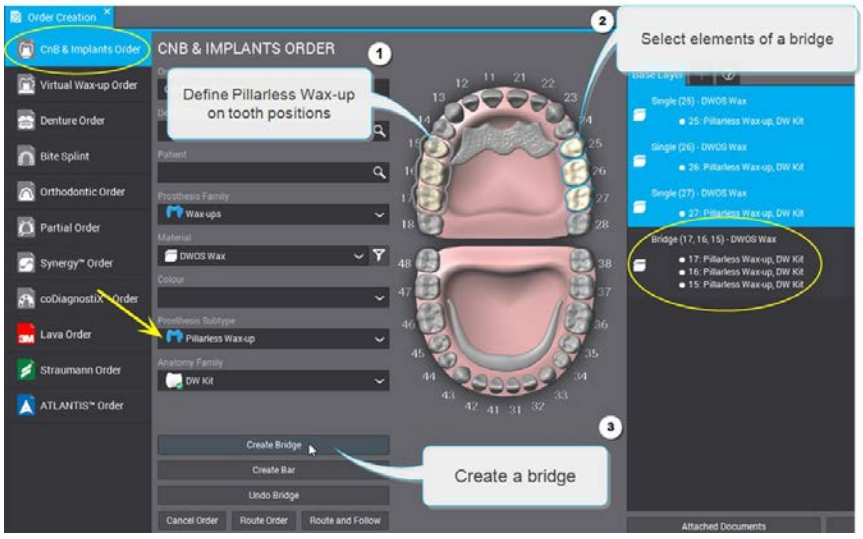
Learn by worflow > New in DWOS 7.0 > Virtual Wax-up on Superstructure

Learn by worflow > New in DWOS 7.0 > Virtual Wax-up on partial

Nevertheless, it is possible to create solely the Pillarless wax-up. The workflow would vary if you are creating a virtual wax-up or if you are scanning a wax-up.

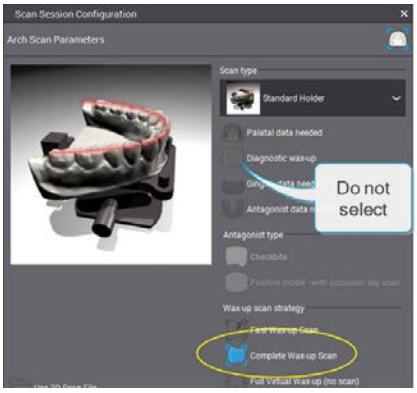
Scanned Wax-up

Order Creation

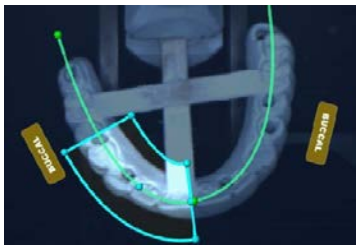


* If you do not see the prosthesis subtype in your drop-down menu, you must activate it in *Material Management > Element Available*

Scan

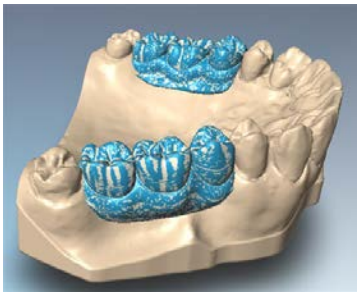


To perform a complete waxing scan, the waxing must be mounted on a stick or some kind of extension that can be held in the impression holder.



Refer to the procedure *: Complete wax-up scan*

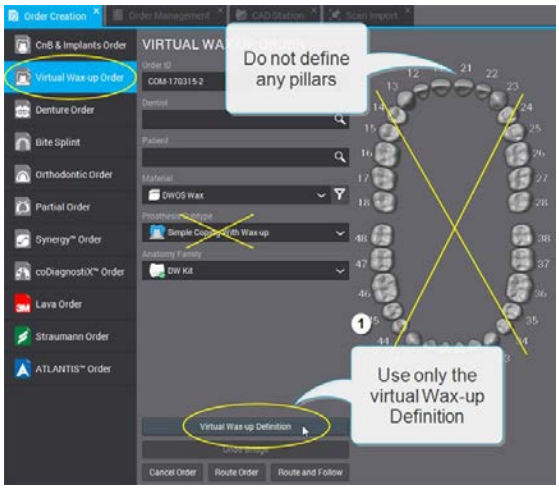
Design

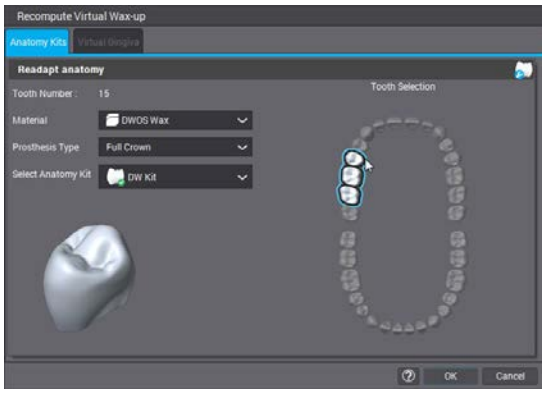


The scanned wax-up becomes the prosthesis. It can be used as is for diagnostic purposes.

Virtual Wax-up

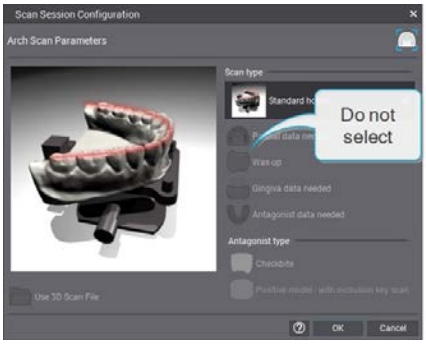
Order Creation





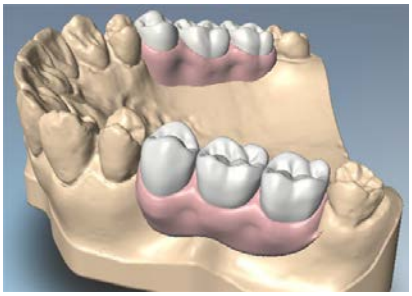
Define one virtual wax-up per bridge. There would be 2 (two) bridges in our example

Scan



Your scan session consists of scanning the arch and antagonist (optional).

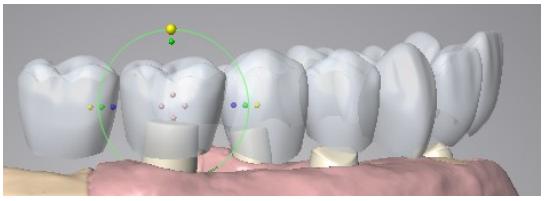
Design



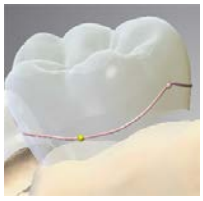
A virtual wax-up is computed on the model. The teeth set-up, the individual anatomies and the gingiva are fully editable.

Edit with the Virtual wax-up tools

Edit virtual wax-up



Edit virtual prosthesis



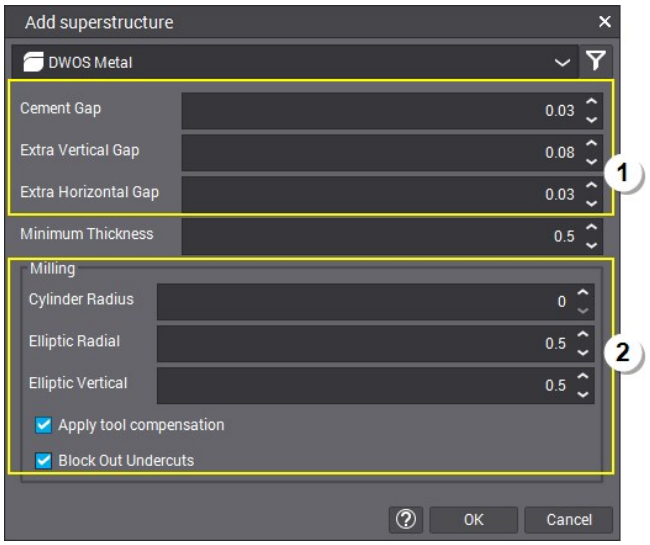
Edit virtual gingiva

Superstructures

The superstructure feature enable to easily create precise superstructure over milled bars that have been designed in the DWOS Crown & Bridge module.

1. Design a bar with a profile for removable prosthetics.
2. Once the design is completed and merged, right-click on the bar and select ***Add Superstructure***.

Add



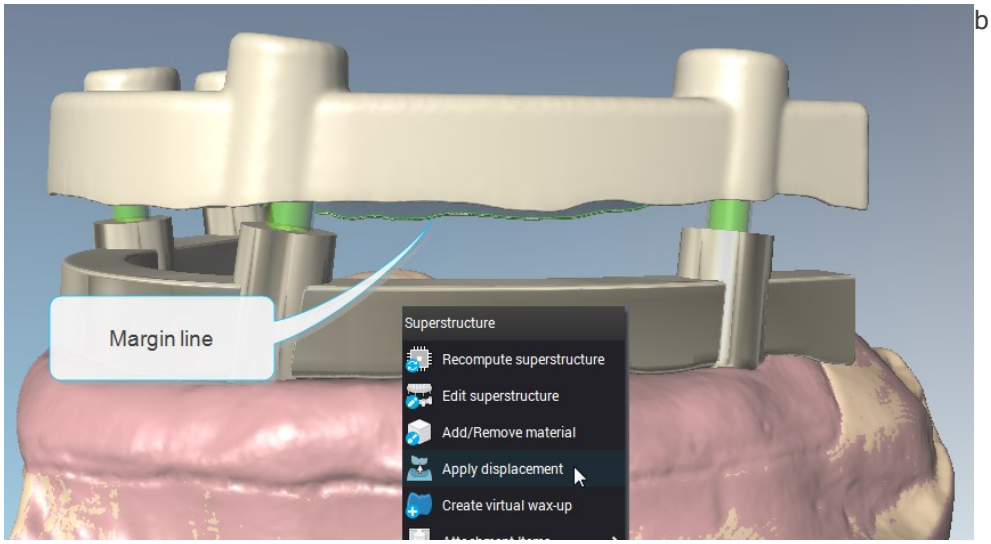
The Superstructure is computed from a uniform thickness of material. The Virtual die spacer parameters define the intrados (1).

To apply the Manufacturing parameters (2), activate ***Apply tool compensation***.

Edit

Right-click on superstructure > Edit superstructure

More editing options are available in the ***Edit*** window:



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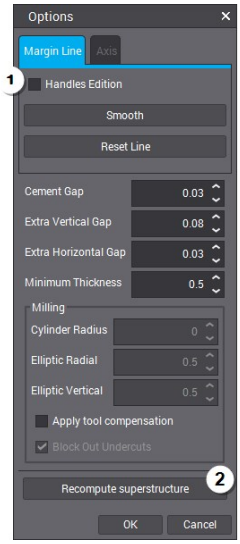
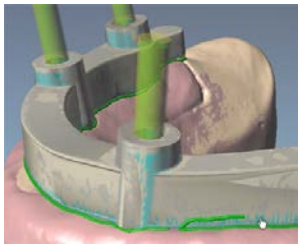


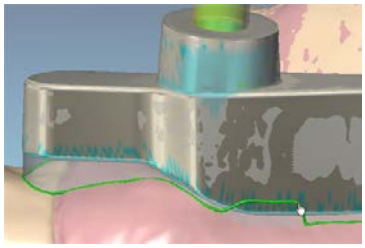
Margin Line

Modification to the contour line are drawn directly on the structure or by moving the handles.

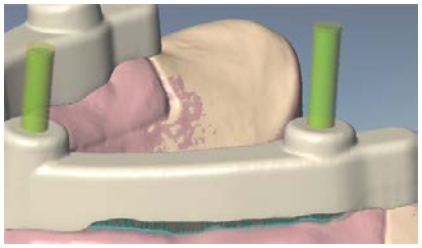
1. Modify the margin:
   - **Interractive:** with the mouse left-click down, draw a new line beside the current line.
   - **With handles**: Select Handles Edition (1).Move the dots by clicking and dragging them.Click and release a dot to delete it.Click on the line to add a dot.
2. Click ***Smooth***.
3. Click ***Recompute*** (2).
4. (To return to the original margin, click ***Reset*** and ***Recompute***.)



Drawing a new margin interactively,



Modifying a margin using the handles

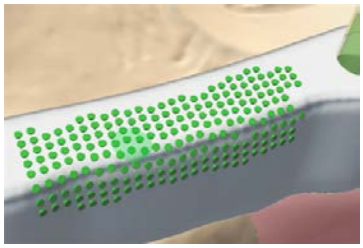


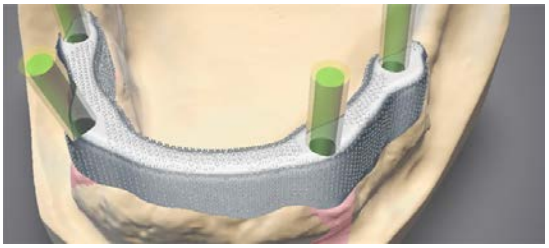
Superstructure after margin modification

On tooth-borne bridge

A superstructure can also be computed on a bridge seated on preparations. Once a bridge is merged your will find in the contextual menu ***Add superstructure***.

Add retention beads





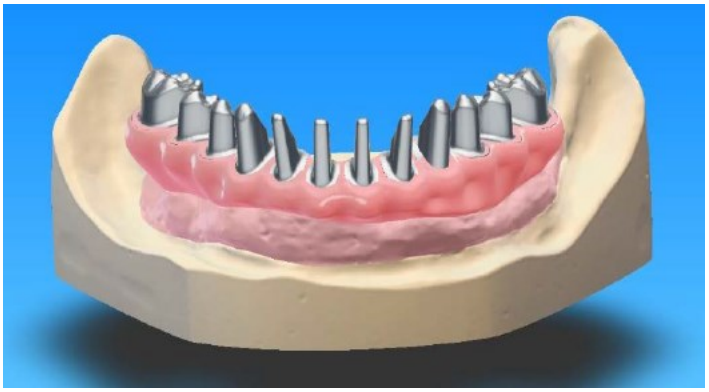
In the right- click menu of a superstructure, you will find ***Add Retention Beads***

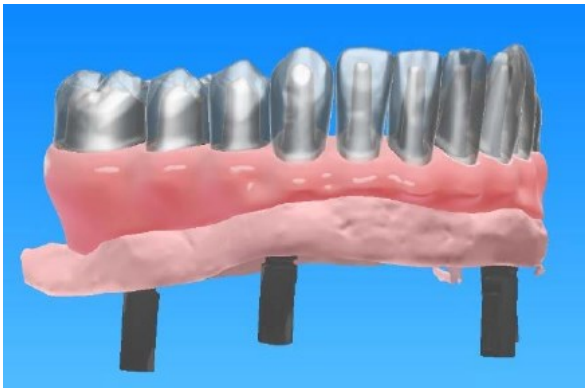
Partial merged to Superstructure / Virtual Wax-up on Superstructure

Refer to Online Help: Learn by workflow > New in DWOS 7.0

Add coping

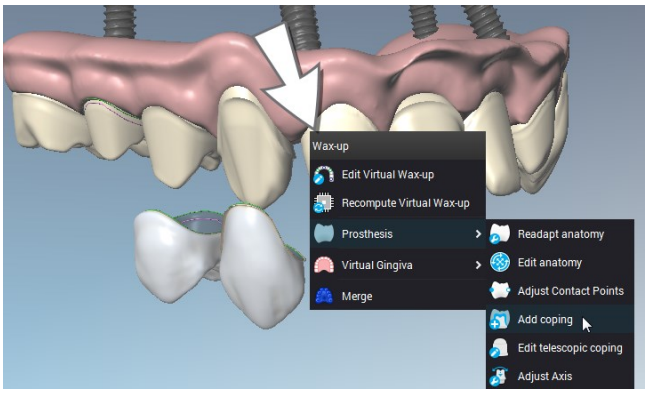
This feature is available on virtual wax-ups. it enables adding an aesthetic element on a second layer, right from the CAD station.





The prostheses of the wax-up should be computed as reduced or telescopic crowns. This is done either in the ***Create or Recompute Virtual Wax-up*** editor; or right-click on a wax-up tooth > Prosthesis > ***Recompute Overlay***.

1. Right-click on the virtual wax-up > Prosthesis > Add coping;
2. Choose a prosthesis type (choose ***Full crown*** for an aesthetic layer);
3. Choose a material – the copings will be exported as separate manufacturing files, so that they can be milled out of a different material than the bridge.



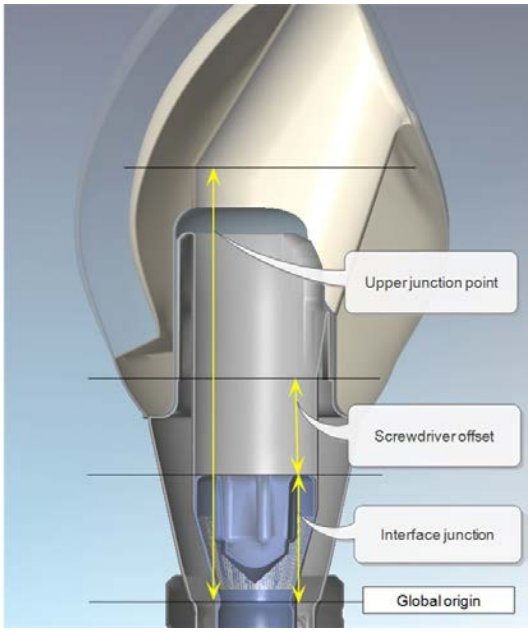
Tips and tricks For achieving a result similar to this example, compute the prostheses of the virtual wax-up as Telescopic copings, and in the Telescopic coping Editor, select the checkbox ***Project on Anatomy***. Also take note that the virtual gingiva in our example is computed from the shoulder of the telescopic coping.

Angled Screw Channel

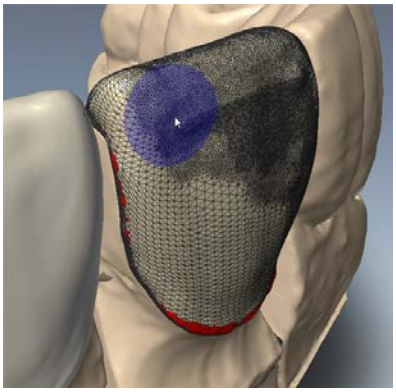
The screw channel for angle permissive implant kits can be adjusted in the ***Adjust Axis*** editor.

1. Angled screw channel permission is defined in the implant kit editor: the checkbox ***Allow angled screw abutments*** must be selected.
2. When permission is allowed, the menu for angled screw channel is displayed in the ***Adjust Axis*** editor.
3. Select the tooth number where an angle permissive implant is placed (1).
4. Keep the ***Angled abutment*** checkbox selected if required (2). Unlocked kits also allow to deactivate the option if having a straight screw channel is a better option for the current case.
5. Set the axis by dragging the dot on top of the channel cylinder (3).

The other parameters should be modified only by advanced users, who have in-depth knowledge of the implant kit in use.



High Resolution



This option is available on scans or on merged model only. When activated, it increase the level of detail of the surface, therefore it provides better control over the deformation and smoother results.

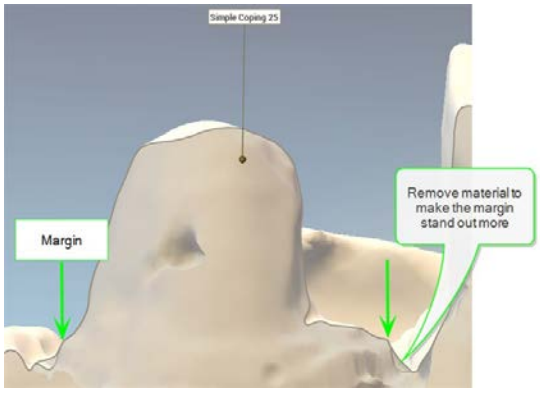
Brush Type

7 This menu offers different shapes for adding or removing the virtual wax. In addition to the *default* curved shape, the *knife* and *flat* types add some flexibility to this tool.

Ditching

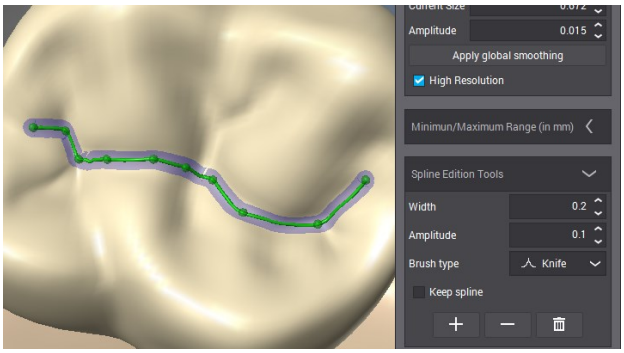
Combined with the ***High resolution*** mode, the ***Spline tool*** with different brushes is now best-suited for virtual ditching of preparations. Whether the scans come from an impression or an intraoral scan the preparation's emergence can be difficult to identify as such. By removing some surfaces below the line, you make it stand out more so that anyone involved in the design process will have the same reference.

1. Select ***High resolution*** mode
2. Open ***Spline Edition Tools***
3. Width and Amplitude: enter small values
4. Brush type: ***Knife***
5. Click the *remove* icon −



The Spline tool used for ditching

Other examples



Enhance tooth grooves

Select ***High resolution*** mode

Open ***Spline Edition Tools***

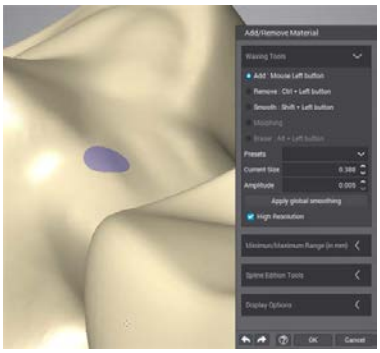
Width: enter small value

Amplitude: enter small value

Brush type: ***Knife***

Click the *remove* icon 

Use the Smooth tool



Smooth junction between connector and overlay

Select ***High resolution*** mode

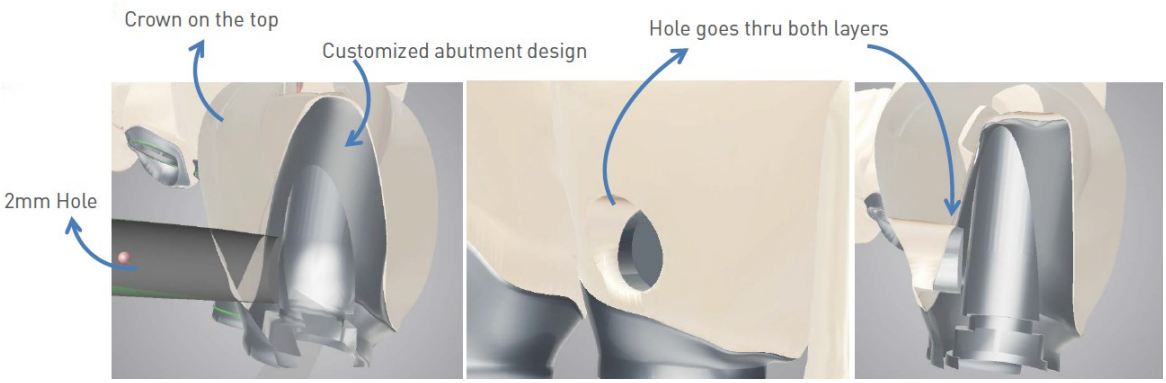
Use the ***Add*** tool

Fill the junction with material

Use the Smooth tool

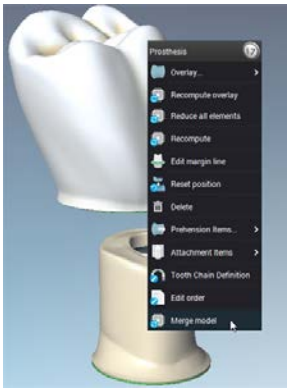
Hole attachments through multiple layers

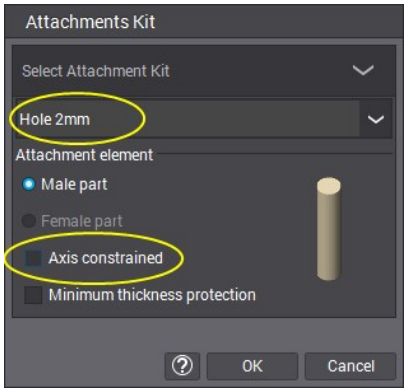
If you use the ***Add attachment item*** after having merge elements that are one on top the other, a hole attachment will pierce both layers. In this example, we have a custom abutment with a crown on a second layer.

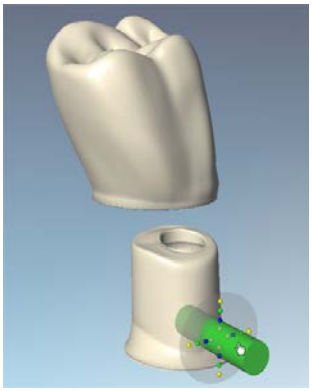


1. In the CAD station, complete the design of the custom abutment and the crown.
2. Merge both element by using the ***Exit*** button or by selecting ***Merge Model*** in the contextual menu of each element.
3. Right-click on either layer and select ***Attachment items > Add Attachment Item***.
4. Select the hole attachment of your choice (the available attachment in the drop-down menu are those of your attachment library). Scale and position it on the design.
5. When you exit the CAD station by using the exit icon a second time, the hole will be punched through both layers.

If you wish to remove the hole, unmerge one of the elements. Then when you merge again, you can right-click on the attachment to select ***Delete Attachment Item***.

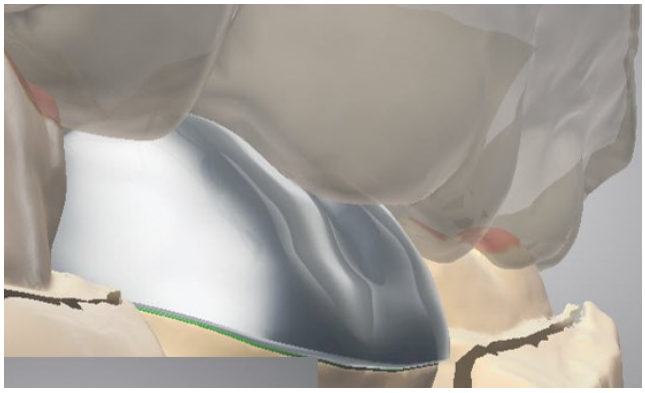






Tooth Chain Technology

The tooth chain technology is a global approach for computing prosthesis propositions that blend in smoothly with existing anatomies by adding up available data of context analysis and statistics. The improvements delivered in this release were focused on computing better occlusal contact on the initial proposal.



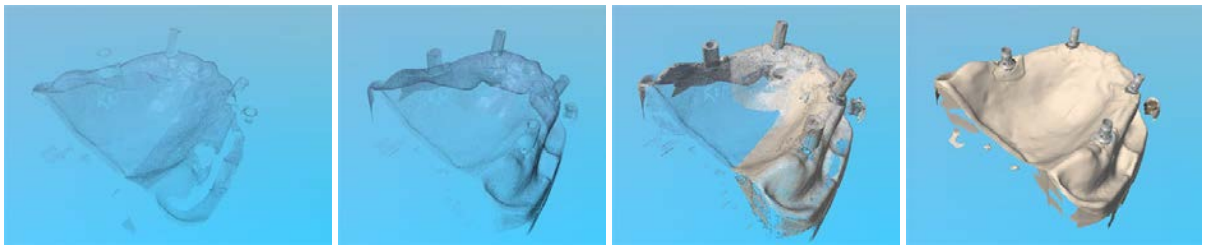
User Interface

Station Notifications

The main toolbar displays the total number of cases in each station. Thanks to its live update, you will always have an overview of your cases progression.

Dynamic display of scans

See the progression of your scans.

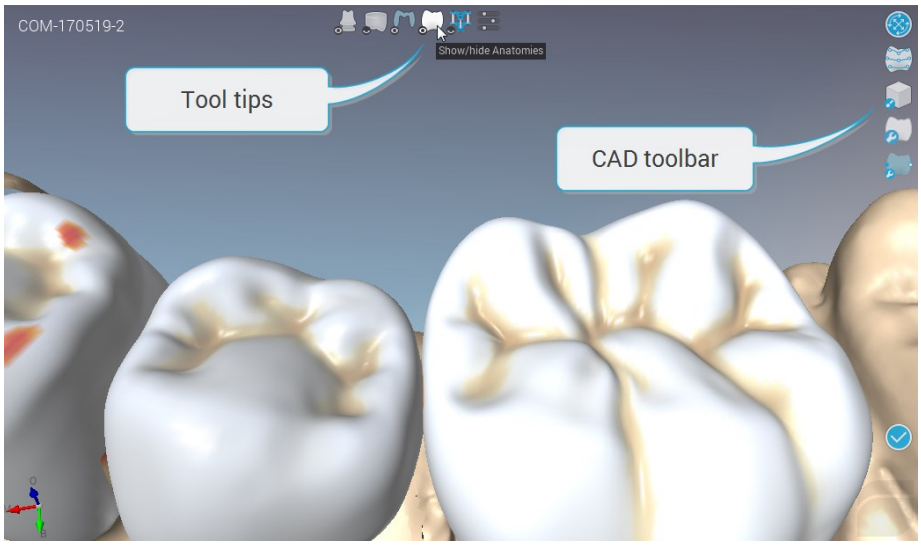


CAD Toolbar

Significantly reducing the number of click, this toolbar in the CAD station also guides the user through the design session by pointing out the main basic steps for designing anatomies. The same tools can still be found in the contextual menu, but they are now readily accessible in the toolbar on the right.

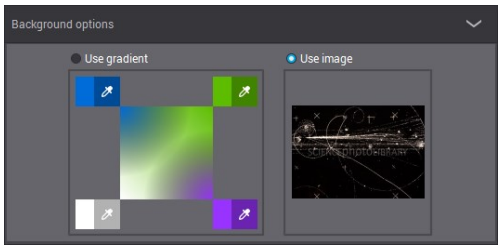
Tool tips on display icons

The display icons are found in the scan and the design stations. They are used to turn on and off the visibility of the different elements of a case. In DWOS 7.0, you can hover the icons with your mouse and a label will appear to identify which layer it controls .



Customizable Background

Customize the background of the 3D views in User preferences > Background options



Custom gradient

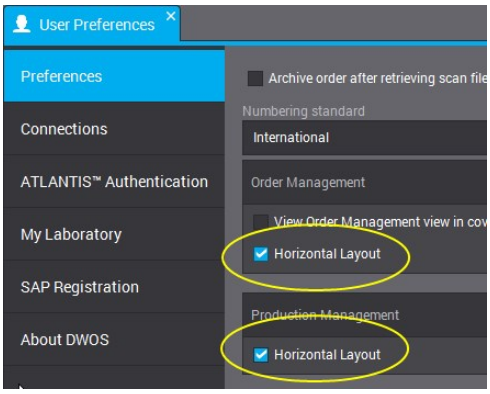
Create your own gradient from a 4-corner color definition

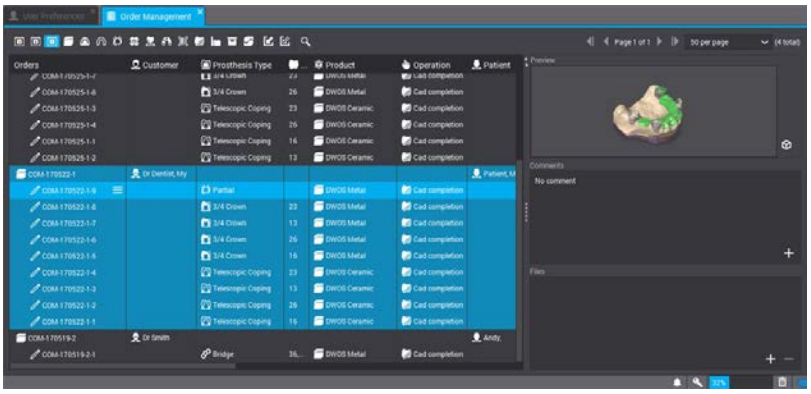
Use image

Click the image and browse to an image file.

Horizontal Display

Activate the option in the User Preferences and the order display is changed to have the preview and notes on the right. This allows to see a longer part of the list of cases.





New advanced workflows in DWOS 7.0

The advent of the pillarless wax-up has open a wide variety of restorative possibilities. Because of the ability to create a wax-up (virtually or from a scanned wax-up) without having to bind it to an abutment, you can add them directly on gingiva or on a structure such as a partial or a superstructure. Add to that the flexibility of the combined order (prosthetic element + partial framework) and the option to add layers on top of an element in the CAD session, you gain the flexibility required to achieve the following advanced restorations.

Step-by-step instructions are provided in the Online Help : Learn by workflow > New in DWOS 7.0

Virtual Wax-up on Partial

* Combined order with pillarless wax-up and partial
* Select Full virtual wax-up in Scan
* Design the anatomies and virtual gingiva; merge them together. Use ***Add to partial*** function.
* Design metal framework; everything is merged to one file upon exit.

Wax-up on Superstructure

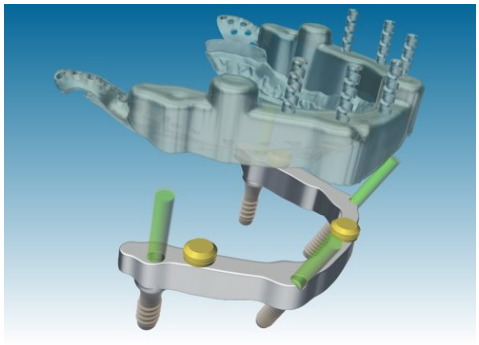
Virtual wax-up

* Order for implant bar (also possible on tooth-borne bridge)
* Design and merge bar; use ***Add Superstructure***
* Use ***Add wax-up***
* Design anatomies and virtual gingiva and merge
* Extract one file for the implant bar and one file with the superstructure merged to teeth set-up

Scanned Wax-up

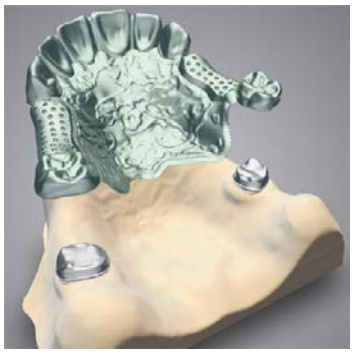
* Order for implant bar (also possible on tooth-borne-bridge) add one layer with pillarless wax-up
* Scan or import case and wax-up
* Design and merge bar; use ***Add Superstructure***
* Use ***Add Wax-up*** f on the bar
* Edit wax-up and merge to superstructure
* Extract one file for bar and one file for superstructure + teeth set-up

Partial Merged to Superstructure



* Combined order with implant bar and partial
* Scan case including palate if upper
* Desing and merge bar; use ***Add Superstructure*** function, merge
* Use ***Add to Partial*** function
* Design partial framework
* Partial is merged to superstructure upon exit

Partial on second layer



* Combined order with telescopic coping on base layer and crowns and partial on layer 1
* Scan case including palate if upper
* Design copings and crowns, merge
* On crown, use ***Add to Partial*** function
* Design metal framework; crowns are merged to it upon exit.