dental wings
A Straumann Group Brand

SUPPORT

Create Implant Libraries - Instructions

Contents

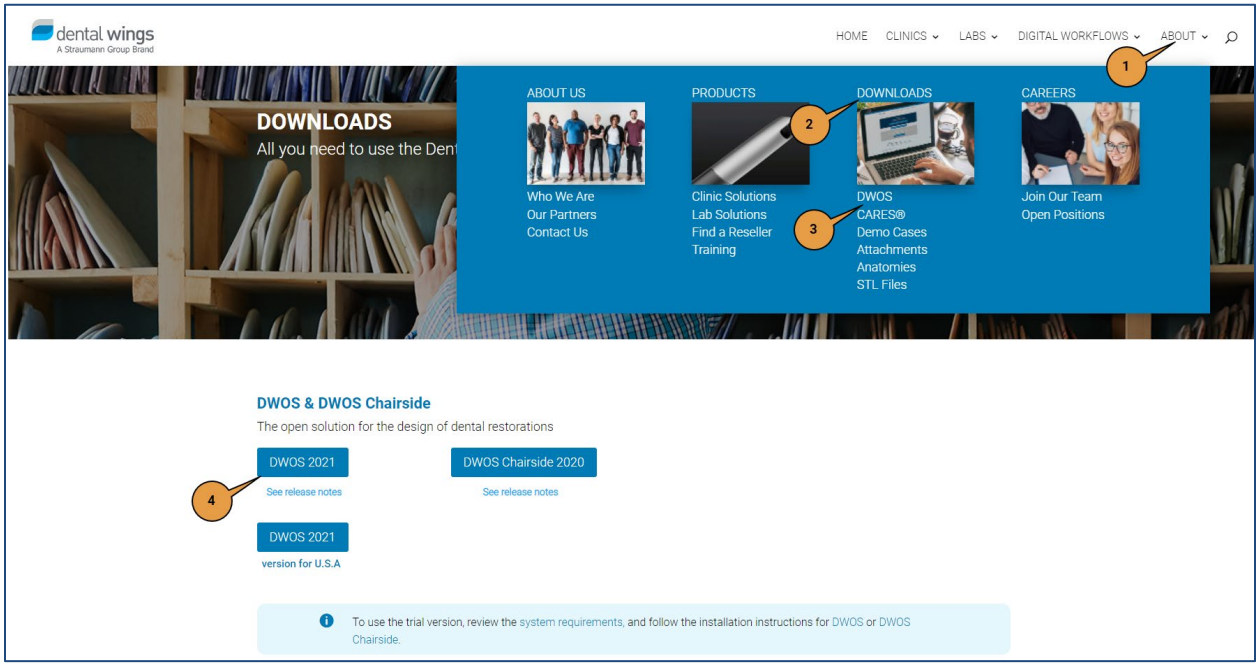
What's this?

This document is intended for implant manufacturers who wish to make their products compatible with Dental Wings applications (DWOS CAD, Easy, and Chairside). It describes:

- How to download our software and obtain a license key
- How to create STL files for all components of an implant kit
- How to create .ipflib files in the software

1 How to install the software and get a license

You can find the download link and installation manual for our CAD software at https://dentalwings.com/downloads.



DWOS CAD, Chairside, and Easy use the same library of implants.

During install, you'll be prompted to generate and email us a license request (.req) file. We will provide a 6-month license including the Crown & Bridge, Implants and Virtual Model Builder modules.

After the 6 months of demo license, you can contact your local Straumann office to get a full software license. This license is valid for one year and includes software updates, as well as support. You will be able to keep your library updated with newly added features and implants. After one year this license is subject to an annual software maintenance fee.

Should you have any questions or comments or need help to install our software please, feel free to contact us.

2 How we validate implant libraries

You can test your library using our CAD solutions, but we recommend sending us your library for validation (no fees apply). We then analyze the files, and suggest changes if needed.

When your implant library is ready, we can further test the implants with various demo cases.

Please note that our software does not come with any 3rd party libraries by default, except for the official Straumann library.

To expose you to our customers, we will list your company name among the manufacturers that provide implant libraries to Dental Wings CAD. Our customers can then choose the implant manufacturer that best fits their needs and add it to their DWOS app.

On your side, you can share the validated implant library for download on your website or through any other means you see fit.

Heads up!

We only validate the compatibility of the implant libraries with Dental Wings software solutions. We cannot validate the accuracy of the digital files provided by the implant manufacturer as compared to their physical parts. The implant manufacturer is the only party authorized to perform the physical testing of the implant kits.

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3 Mandatory components

An implant kit can include up to 12 different STL files. To create a working implant kit for the software, you must provide

- scanbody file
- implant interface file
- screw radius

According to Dental Wings guidelines, STL files must be aligned with the Y-axis and saved in binary format. There is no minimum count of triangles per file. An STL file can take up anywhere between 100 KB and 500 KB.

3.1 Scanbody

The scanbody is an easy-to-scan jig with an asymmetrical shape[1]. It is placed on top of the analog when scanning plaster models or in-mouth preparations. It is used by the software to detect the position and orientation (angular position around the implant axis) of the implant.

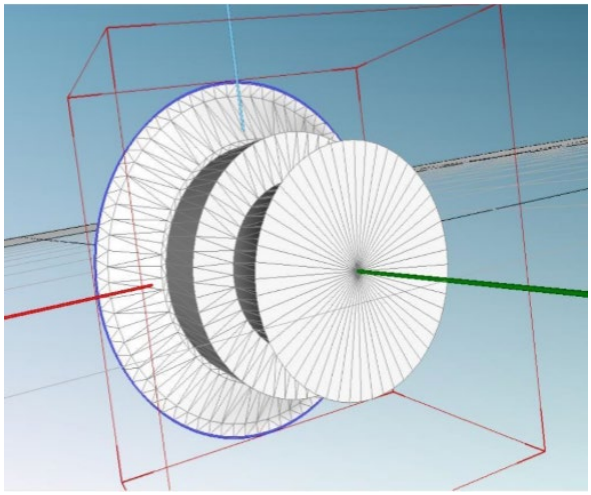
The scanbody file should only contain data that the software can detect during the scan. Any connection to the implant or any form of screw seat on the inside of this file should be removed. We can add more than one scanbody for an implant kit. For example, we can add a scanbody for lab scan and another one for the intraoral scan in the same implant kit.

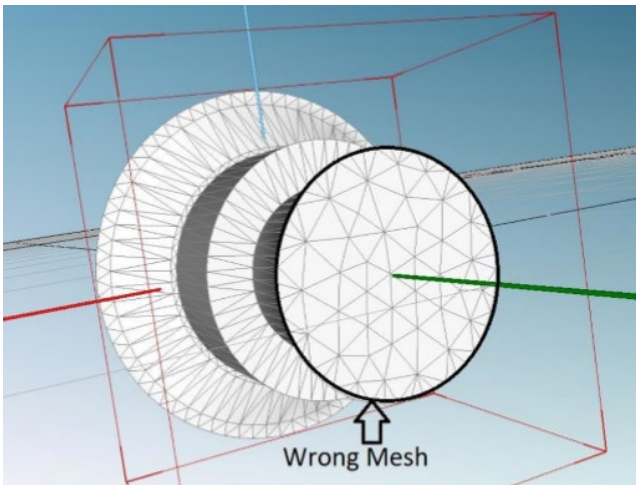
3.2 Implant Interface

The implant interface is the surface between the head of the implant and the bottom of the custom abutment. There are a few important points to consider:

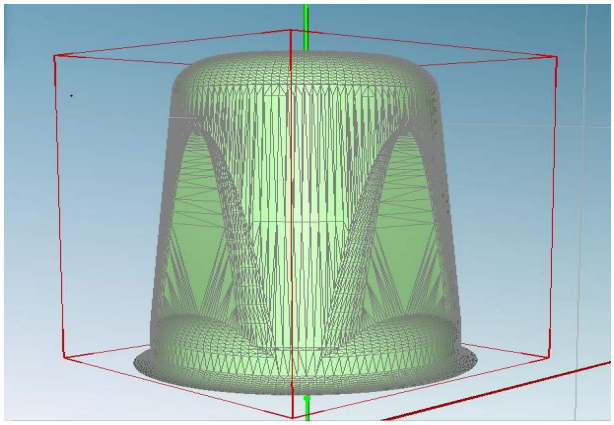
- The orientation of STL faces is important: the faces' normals must be pointing outwards and upwards.
- The surface must be a single merged element.
- The surface must have only one boundary.
- The triangles of the top face of the interface should all share a common central point as shown below.

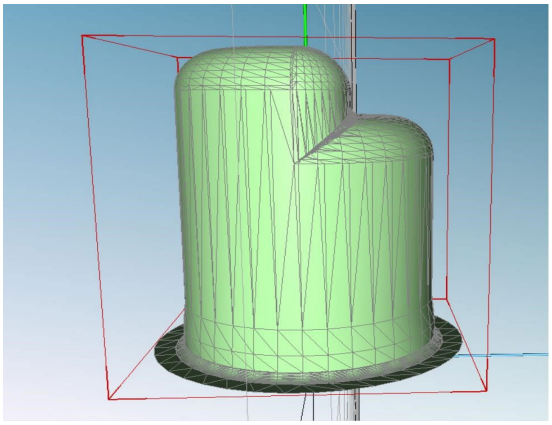
[1] The asymmetrical shape of the scan device helps the software identify the angular position of the implant.





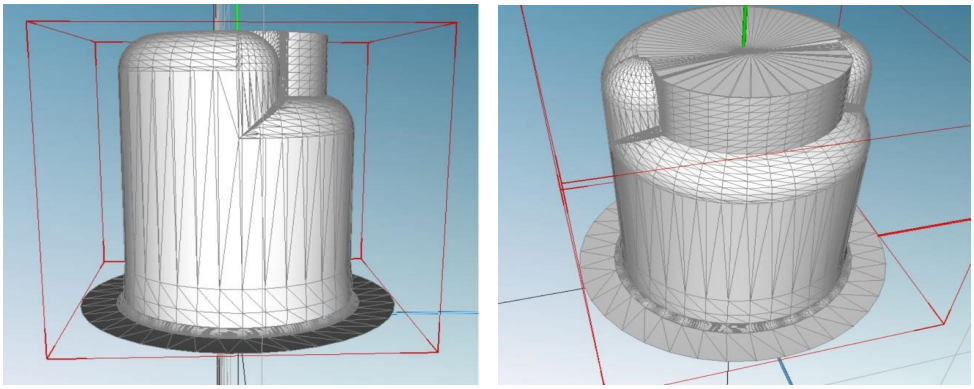
TiBase interface – Example 1



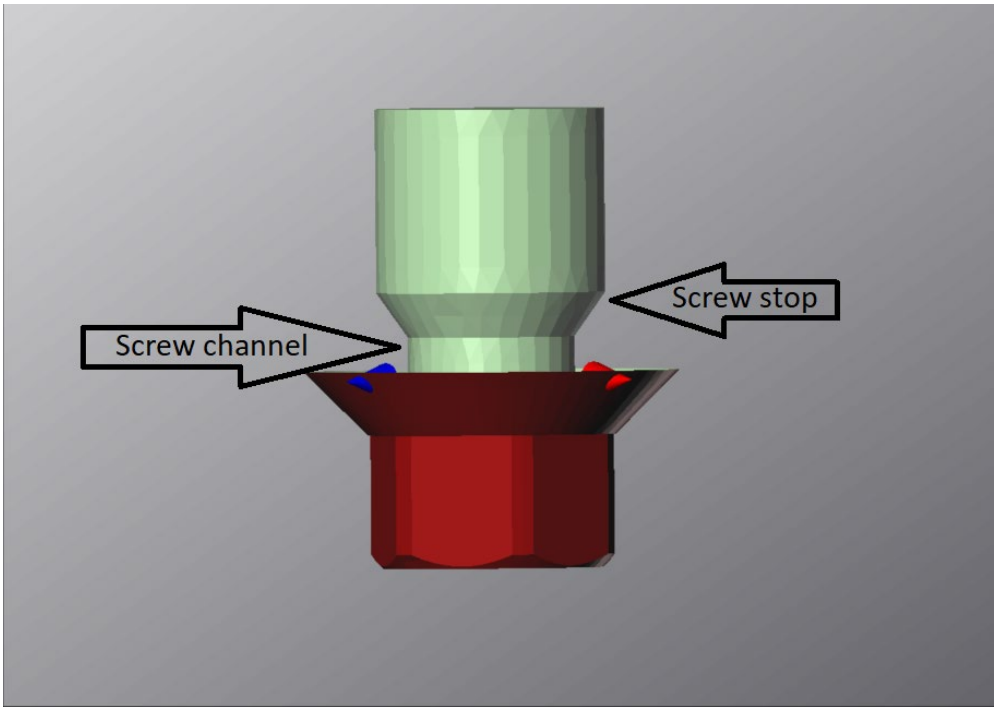


We don’t support this type of interface.

TiBase interface – Example 2



Implant kit interface - Example



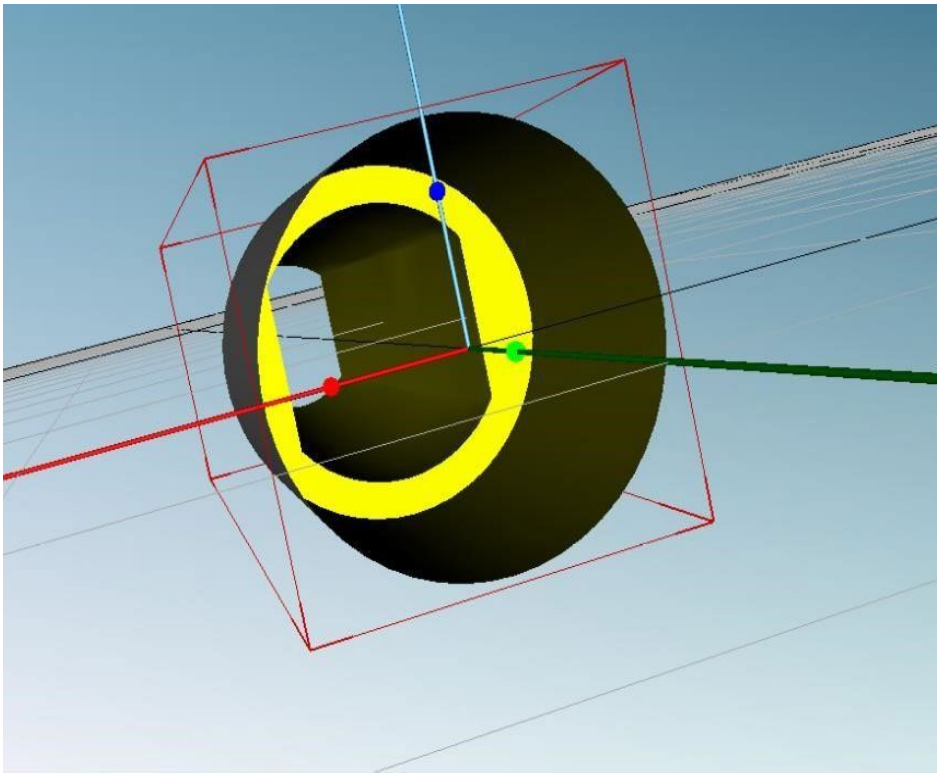
3.3 Screw radius

Do not confuse screw radius and screw diameter. Depending on the production method, the screw radius should be increased by ~0.05 mm to avoid too tight screw channels.

4. Optional components

4.1 Analog holder

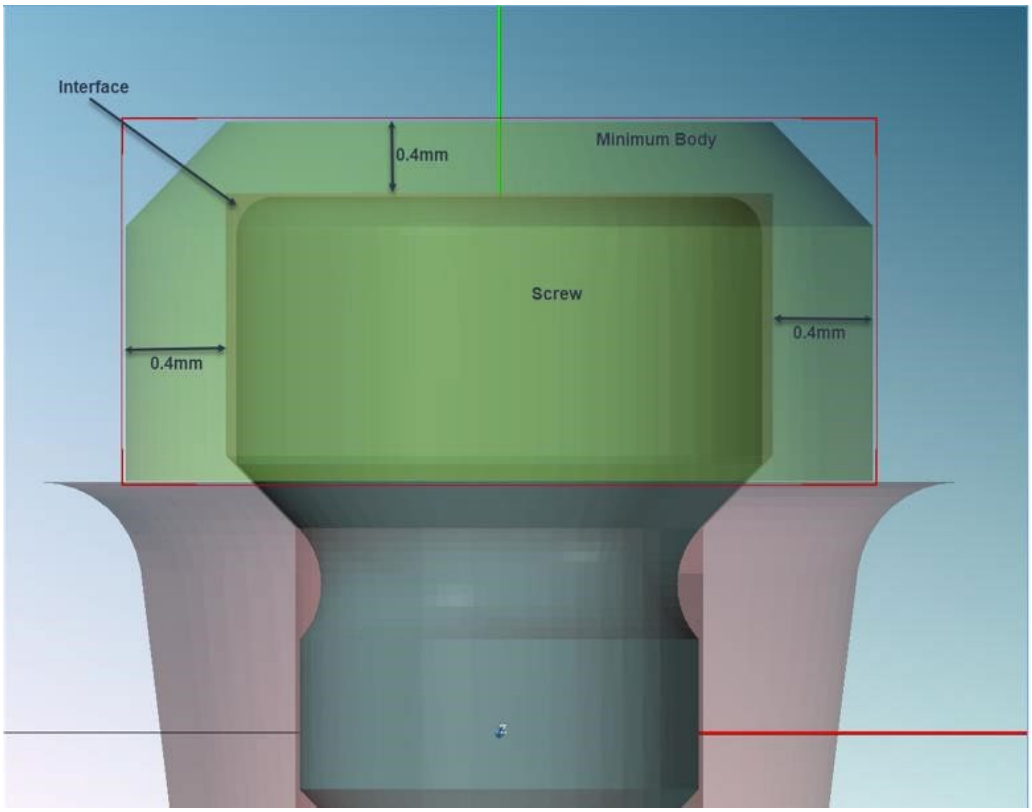
This STL file is used in the virtual model builder application to create space for the analog. The shapes vary with the type of analog (one piece, two pieces, etc.). The STL file must be open on both sides to allow the analog to be pushed in from the top or the bottom into a printed or milled model.



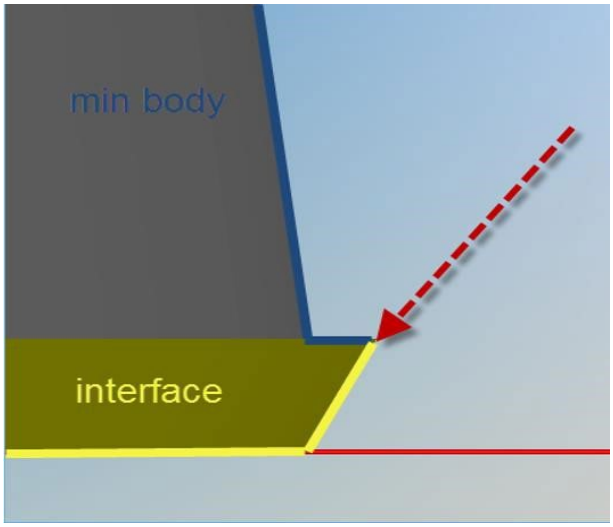
4.2 Minimum body

The minimum body STL file is optional but protects the interface and reinforces the design of a prosthesis with a specified minimum size. The STL file has one boundary at the bottom and fits exactly to the interface. The yellow and purple part

of the picture belong to the interface, the see-through part on top represents the minimum body.



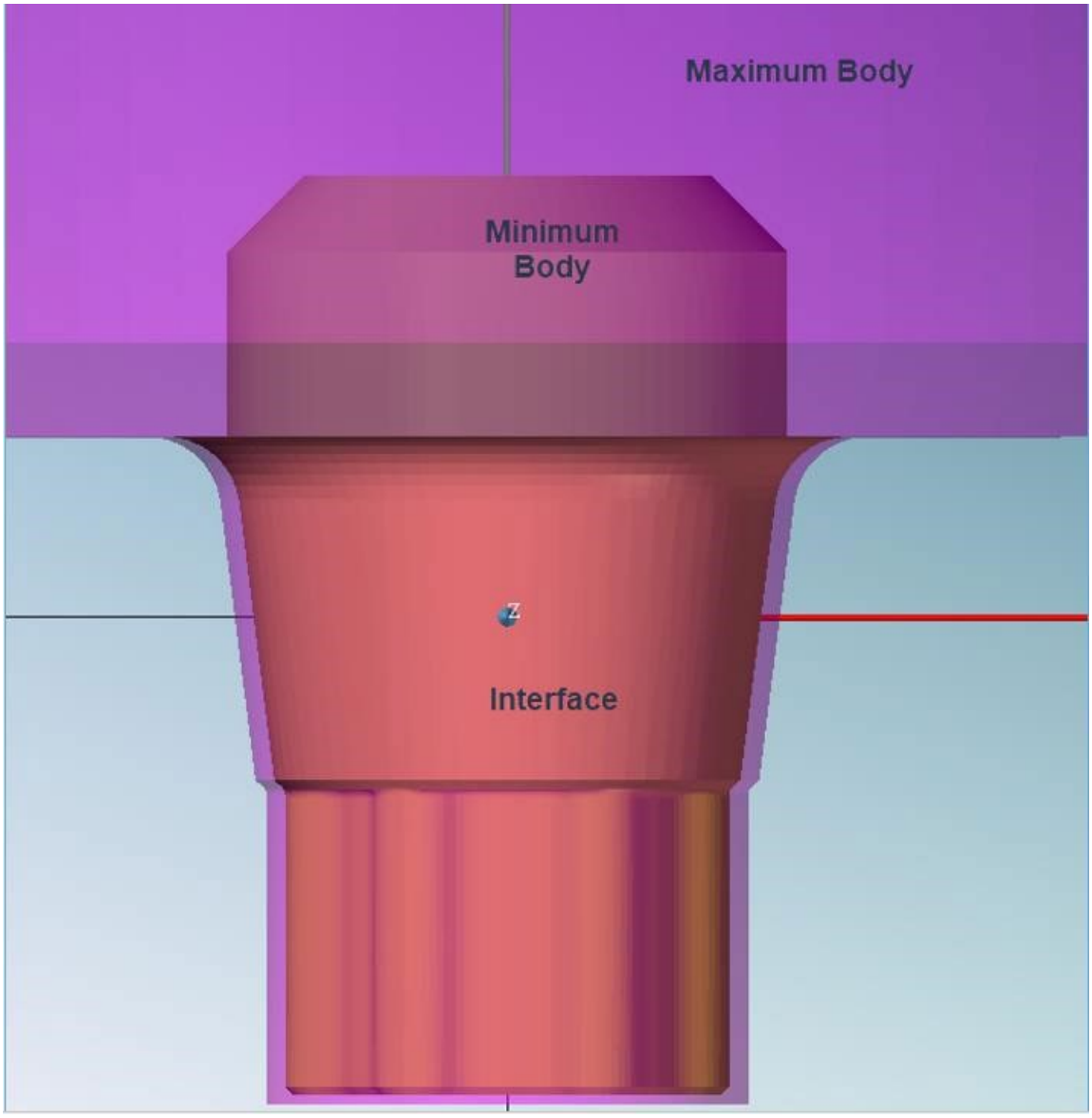
The border lines of the interface and the body must be at the same position.



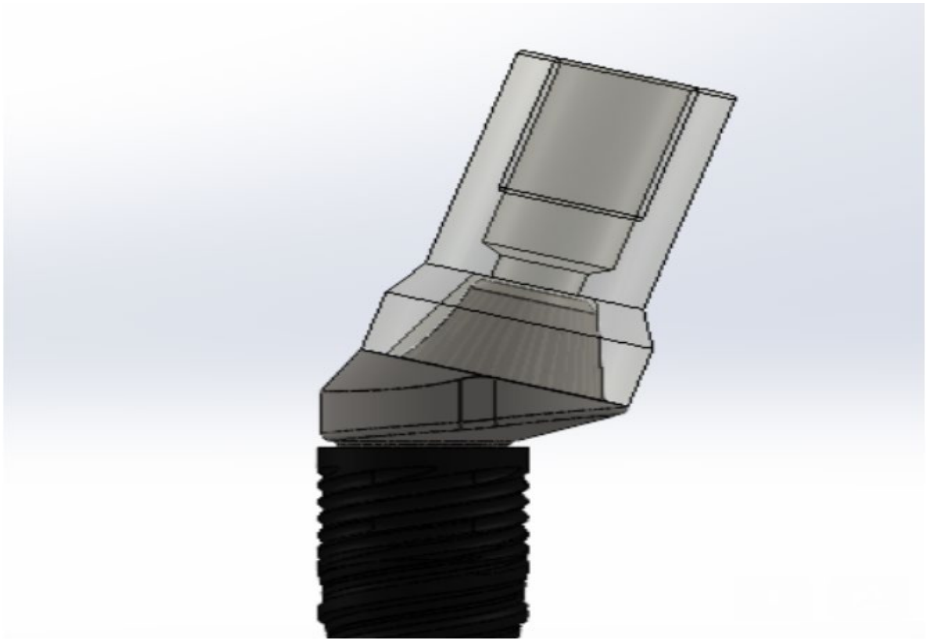
4.3 Maximum body

This STL file helps limit the size of the prosthesis. The maximum body contains the shape of the interface; it must be a closed surface without boundaries. You should also make sure the inside of the STL file is a vacuum.

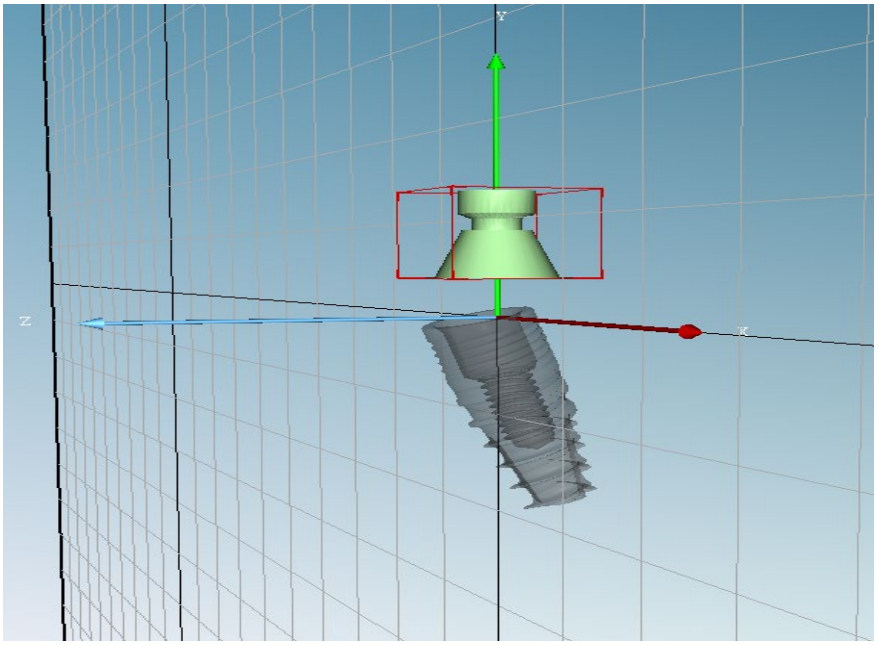
Maximum body contains interface and minimum body.



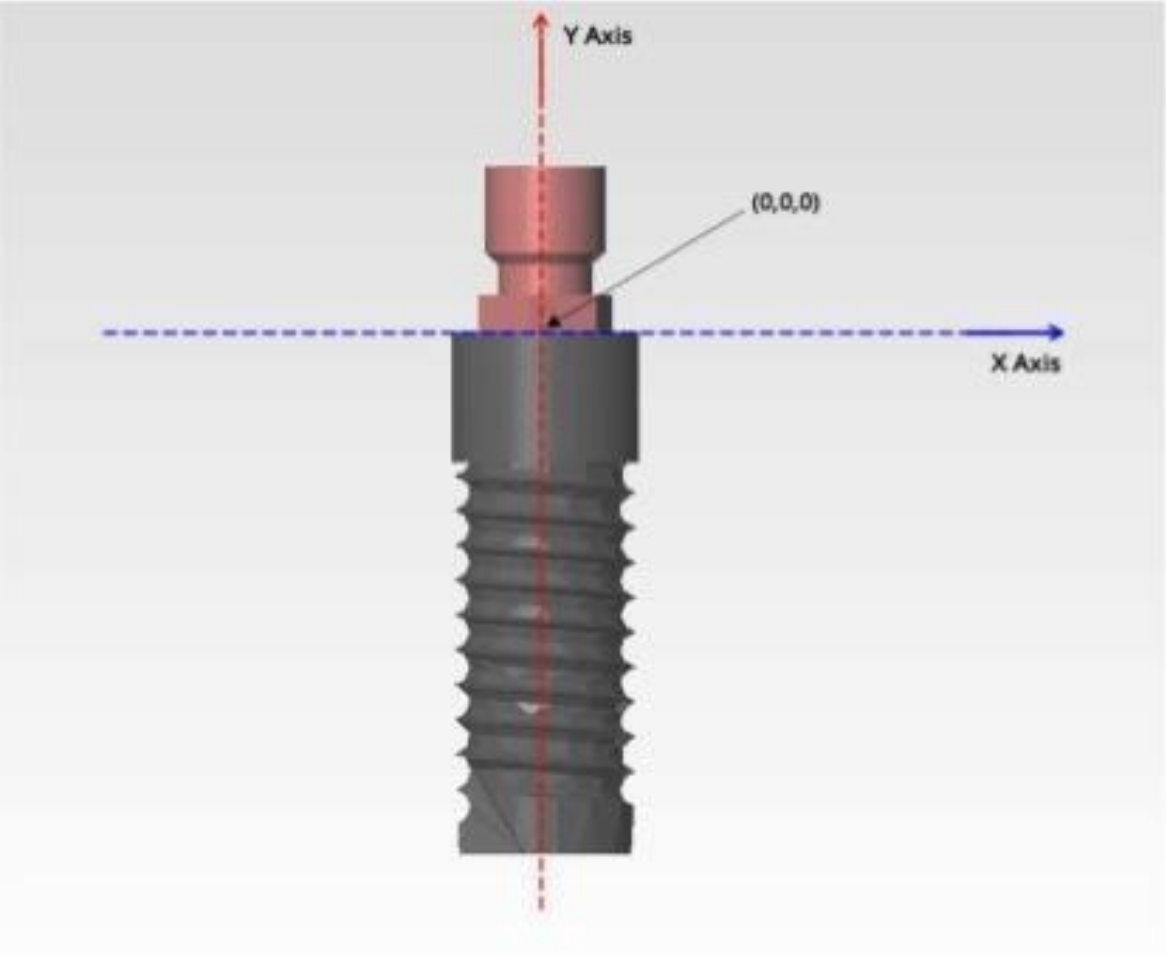
4.4 Multi-unit implant kit



Multi-unit implant kits consider the angled part as implant connection. In other words, the interface must be oriented and centered along the vertical axis, as the scanbody is screwed on the angled part and not directly on the implant.



Before creating the implant kit, STL files must be placed in the same referential coordinate system, along the vertical (Y) axis with the center of the head of the implant positioned at 0x0x0.



Once you have created all your STL files, you can create the implant kit.

We strongly recommend sending us the STL files to confirm compatibility. After our approval, you can create implant kits using our software.

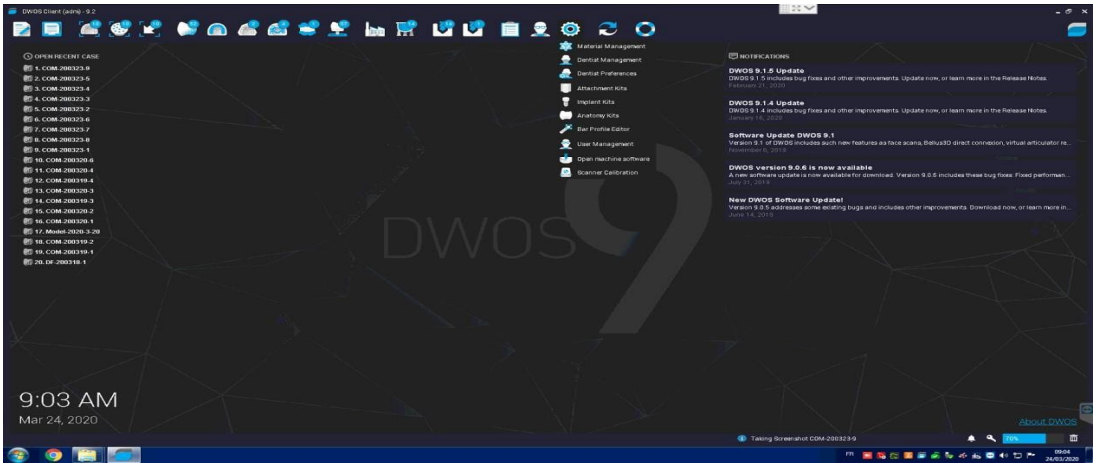
You can find the download link and installation manual for our software here: https://dentalwings.com/downloads/. Please note that DWOS CAD, Easy, and Chairside share implant kit libraries.

When installation is complete, email us the license request (.req) file. You will receive a 6-month license for Crown & Bridge, Implants and Virtual Model Builder.

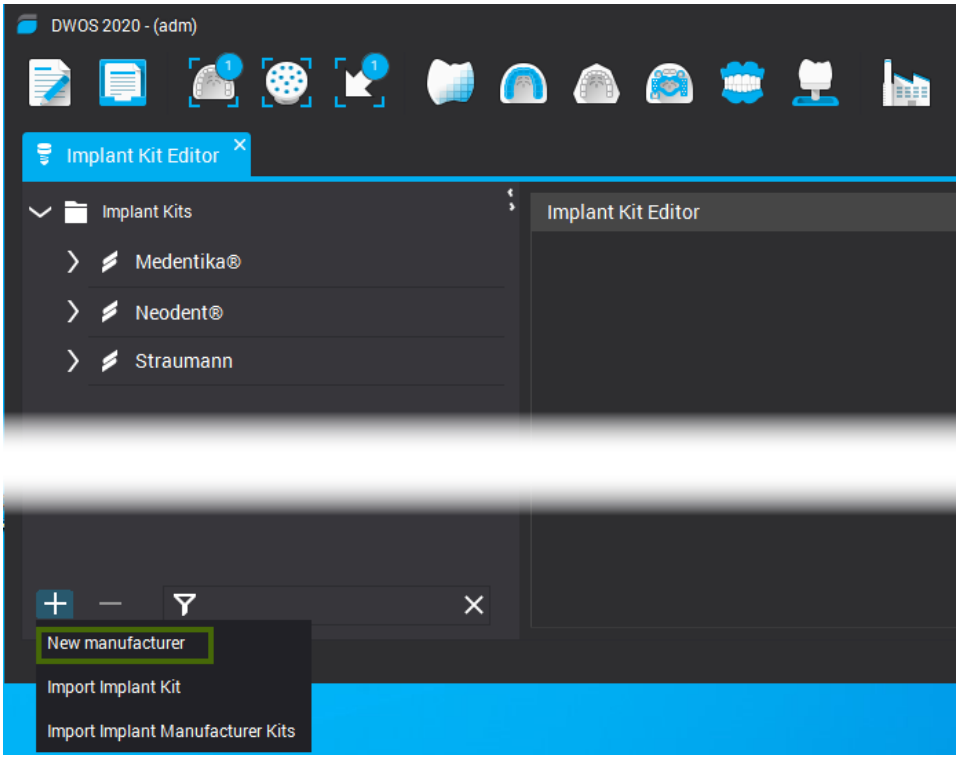
5. Creating the implant kit

5.1 Presets

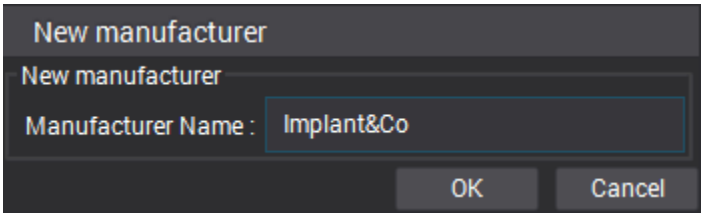
Click  and select **Implant Kits**.



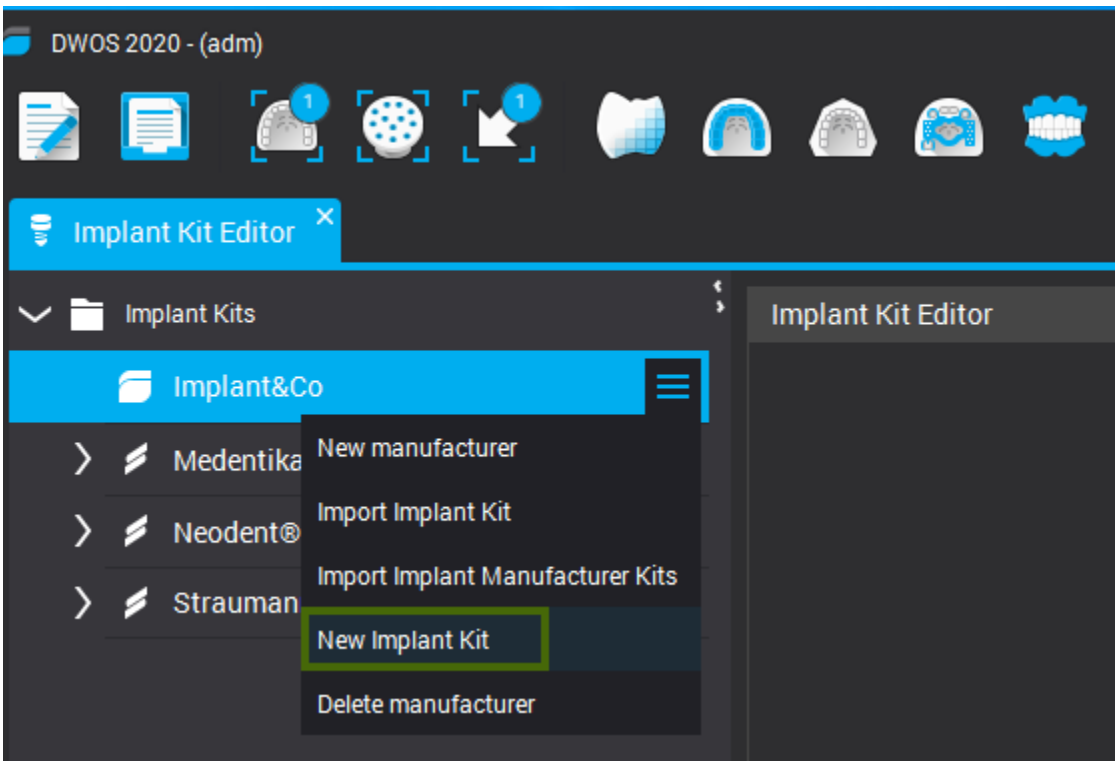
Click ⊞ (bottom left) and select **New Manufacturer**.



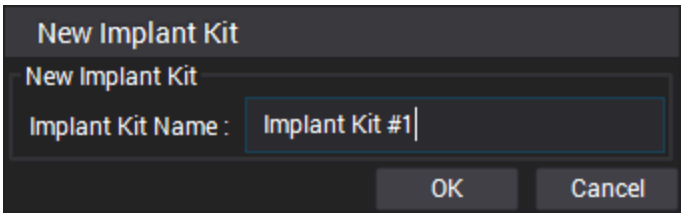
Enter the name of your brand and click **OK**.



Right-click the name of your brand in the list and select **New Implant Kit**.



Enter the name of the implant kit and click **OK**. Please do not use more than 42 characters for the name.

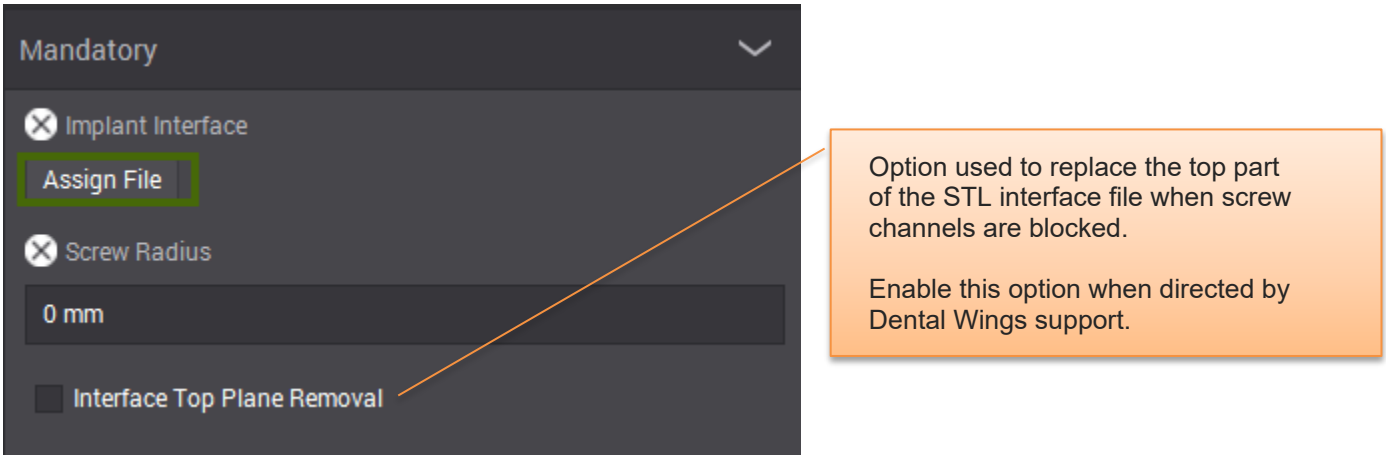


5.2 Mandatory components

⚠ Failure to upload mandatory files results in the invalidation of the implant kit.

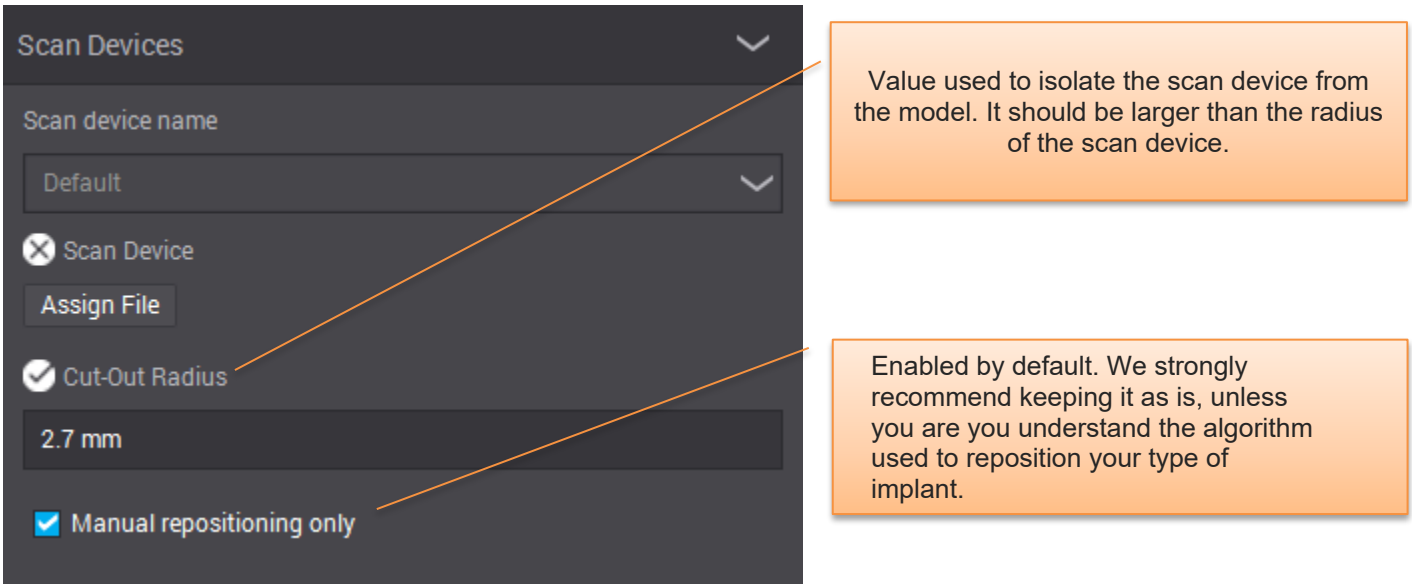
5.2.1 IMPLANT INTERFACE

Click **Assign File** to upload at least one STL file for the implant interface and specify the **Screw Radius**.



5.2.2 SCANBODY (SCAN DEVICE)

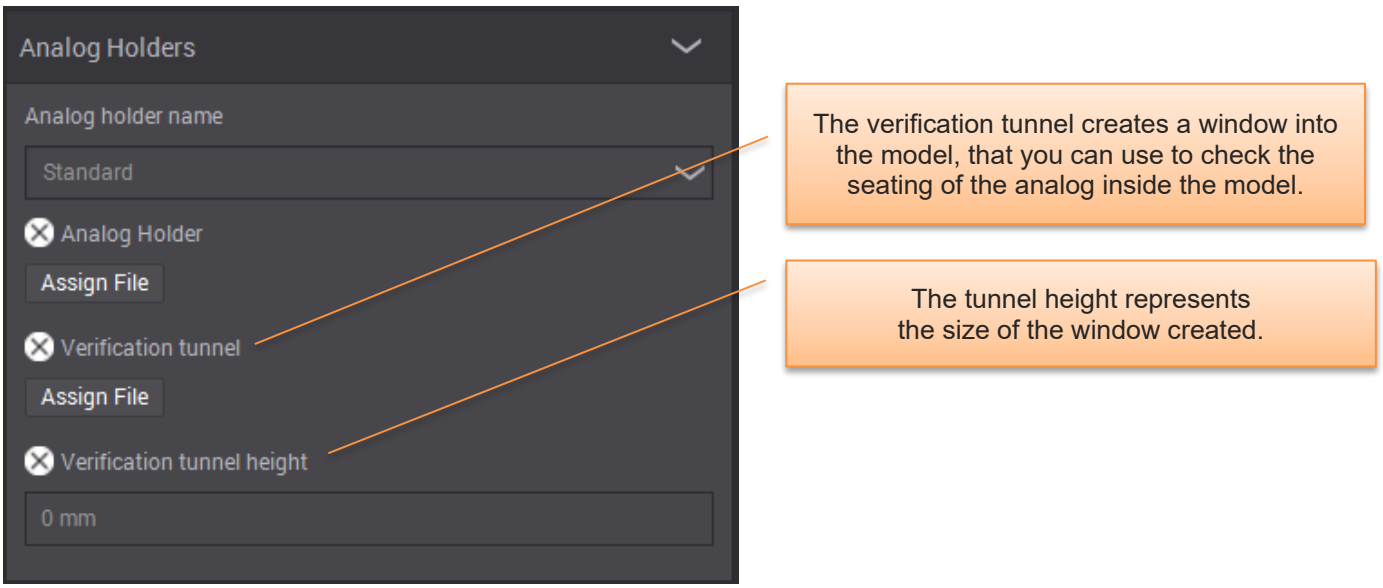
Click **Assign File** to upload at least one STL file for the scanbody, and specify the **Cut-Out Radius**.



5.3 Optional components

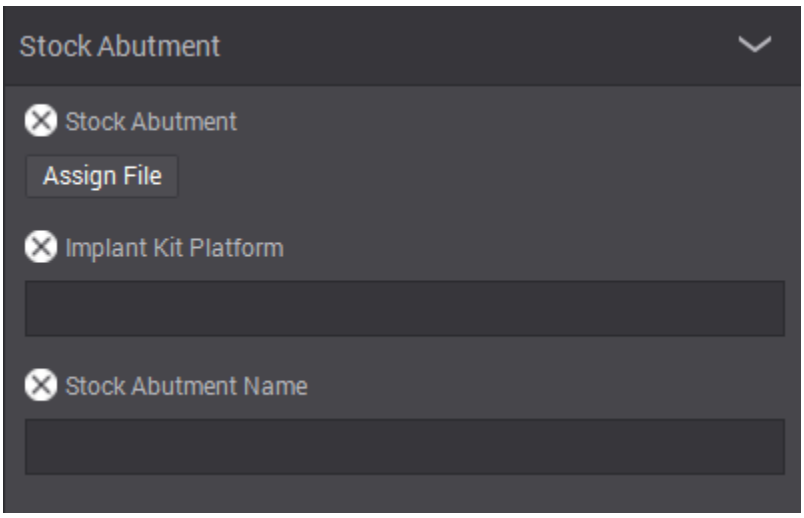
5.3.1 Analog holder for the Model Builder

You can add one or more files to define the analog holder and the verification tunnel.



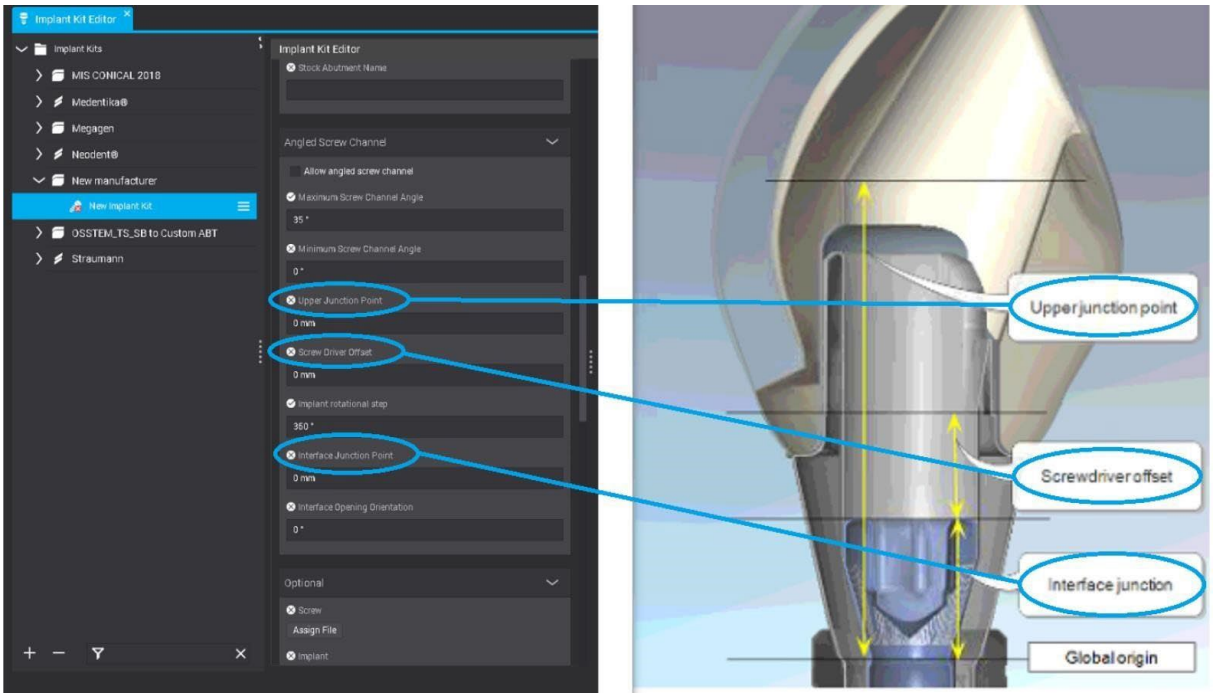
5.3.2 Stock abutment

The stock abutment category is currently a Straumann-specific option, but if you can add a stock abutment file for the display in **Implant Transfer** (see next section for details).



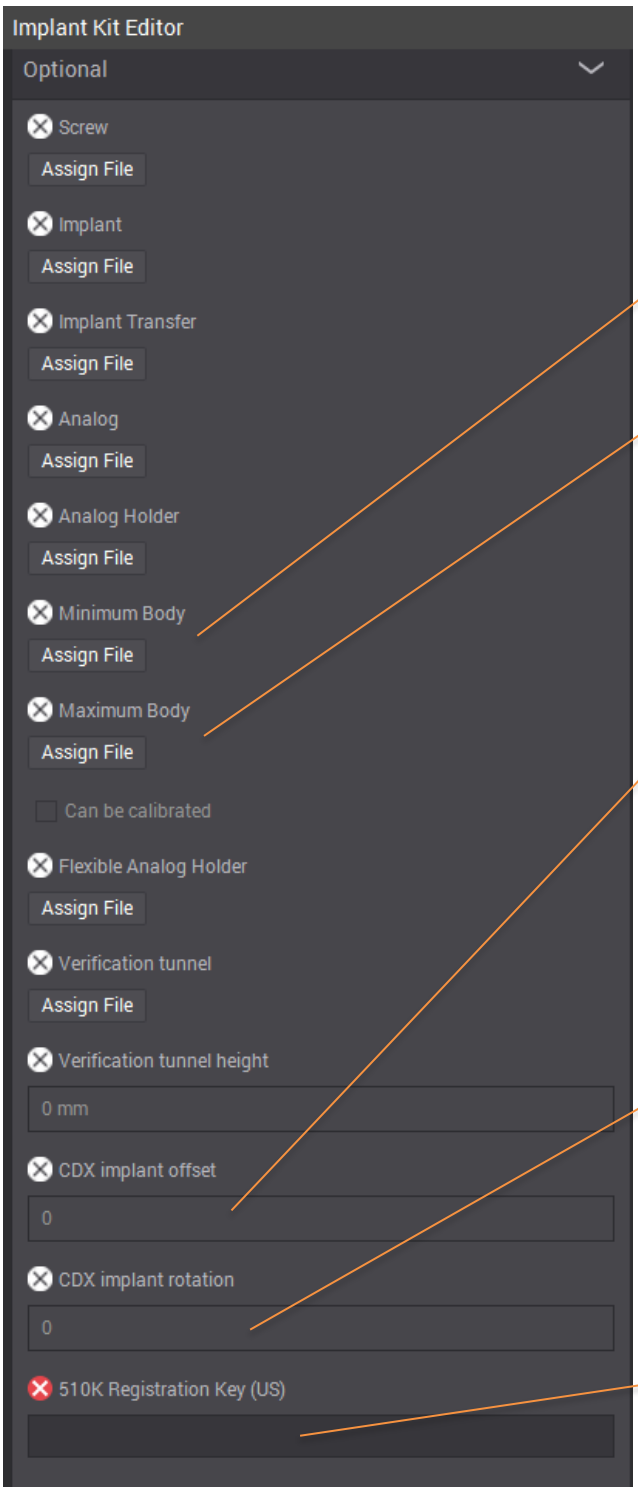
5.3.3 ANGLED SCREW CHANNEL

To enable this option, check **Allow angled screw channel**, and specify values for all parameters.



5.4 Other optional components

Optional files that you may upload are only used for display purposes, except for the minimum and maximum body files.



Minimum body - represents the minimum size of custom abutment and serves as a minimum thickness protection.

If not specified, the default minimum thickness is used.

Maximum body - limits size of the custom abutment. It applies for cases using a pre-milled interface cylinder.

CDX implant offset - fixes the position gap between the same implant seen in DWOS and coDiagnostiX, in the case of different reference systems.

Settings used to align implants from DWOS Synergy and coDiagnostiX. This can also be done manually within the Synergy workflow.

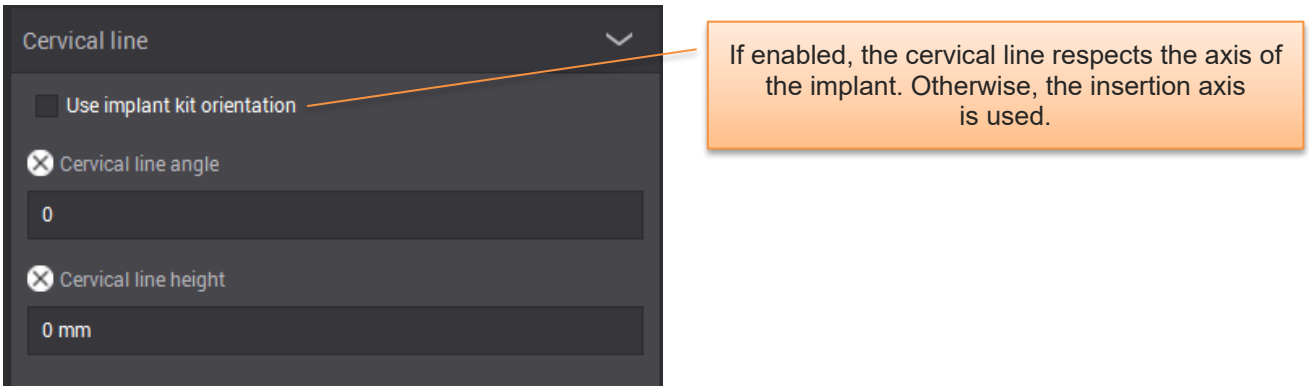
CDX implant rotation – fixes misalignment for asymmetrical implants.

You can add your 510K approval to the implant kit.

5.4.1 CERVICAL LINE

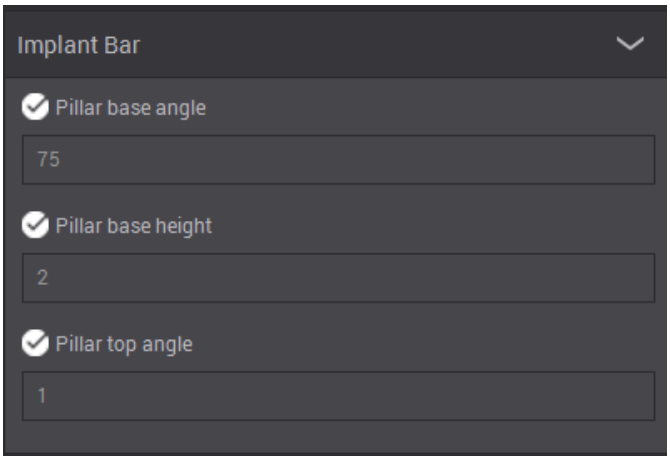
Specify these values used to generate a cervical line if the gingiva scan is not available. The same values can be customized later, when editing the margin line.

The cervical line angle and height are used to calculate the distance (in mm) added to the interface radius. Values from 0 to 90 are accepted. For instance, if you specify a 90° angle, the result is a circle of the same size as the interface. If you specify a 0° angle, the radius increases with the radical height, creating a 45° angle from the interface edge.



5.4.2 IMPLANT BAR

Specify these values used to generate bar pillars. The same values can also be customized later, when designing the bar.



6. Manufacturing output formats

6.1 STL / STL simple name

The origin (0x0x0) of the milling file is located at the center of the Bounding Box. The only difference is the naming format of the file

- STL includes laboratory name, order name, dentist and patient's name;
- STL simple name includes only the order name.

6.2 STL non-oriented

Milling files are stored by reference to the model scan. There is no reference to the implant interface.

6.3 DWOS generic pre-milled

In this format, the abutments are correctly positioned on the origin (0x0x0) of the selected library. Since the implant libraries are all aligned to Y, accordingly, the abutment is also aligned to Y. The pre-milled format is used only for the production of individual abutments. In addition, an XML file with the coordinates of the abutment is also available.

6.4 DWOS generic integral

This format is used for structures with multiple abutments in bridge composite (direct screw-retained bridges, etc.).

The origin (0x0x0) of the milling file is located at the center of the Bounding Box. The coordinates of the individual implants are exported to an XML file. In addition, a pol file is created for further processing in CAM processes. The pol file may contain, for example, the coordinates of the preparation margins.

6.5 ZENOTEC CAM v3.0 / v3.2 / v4.0 / Katana / Delcam / WorkNC® / MaykaDental® / Core3D®

This format matches the output of the CAM programs of the respective manufacturers.

6.6 ModelBuilder / Oriented / Milling / Zeno / Zimo

These options apply only to the Virtual Model Builder module.

7. Contact

You can email Dental Wings support to enable the export option for your implant libraries and manufacturer kits at ipflib@dental-wings.com.

For support on integrating implant libraries in coDiagnostiX, email them at codiagnostix.support@dental-wings.com (English or German).

Please note that a Teamviewer connection may be required.