

1 Introduction

The Reference Print&Click Set (order no. 06-230960) enables the exact articulator mounting of 3D-printed dental models. The system supports the use of custom base plates, which are printed as part of the dental model and interface with the aluminium mounting blocks. In CADIAS® 3D, you can choose the optimal base plate design for your individual 3D-printing material and workflow. This ensures the best possible accuracy when mounting the 3D-printed models in the articulator. GAMMA Dental Software version 8.8 or later is required.

This package provides a selection of alternative base plates that you may use as basis for your own designs. These files are provided as STL meshes and as STEP files for CAD. Recommended guidelines for preparing the different base plate types for 3D-printing are laid out on the following pages.

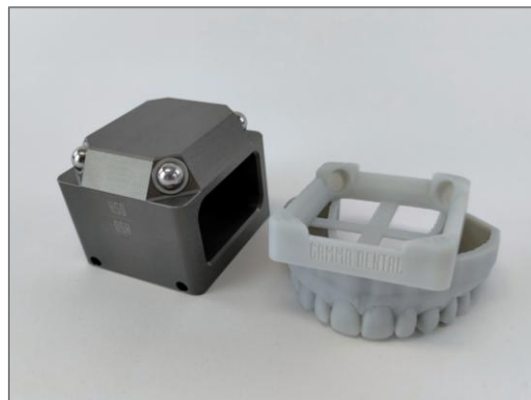


Figure 1: Reference Print&Click mounting block and 3D-printed model.

Selecting a custom base plate

On the 3D Model Printing pane of CADIAS® 3D, you can change the type of base plate to use via the **Settings** button, as shown in Figure 2. Choosing the option to use a custom base plate will bring up a dialog that allows you to import the corresponding mesh file.

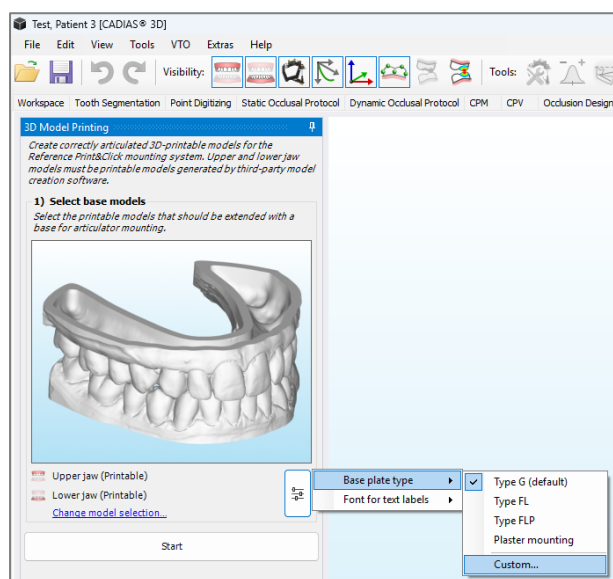


Figure 2: Selecting a custom base plate in the CADIAS® 3D software.

Expected base plate format

When designing your own custom base plate geometry, make sure to create a homogeneously triangulated mesh with the coordinate system as depicted in Figure 3. The relation of the coordinate origin to the mounting points must match that in the provided mesh files.

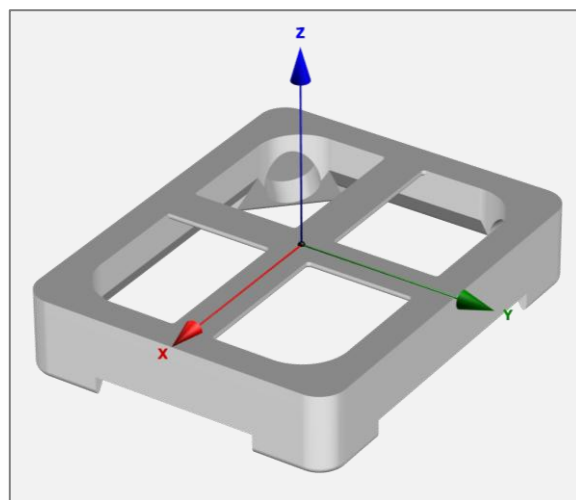


Figure 3: Expected coordinate system of custom base plate mesh files.

Watch the videos here:



**GAMMA Reference
Print&Click Set and Workflow**
(YouTube video)

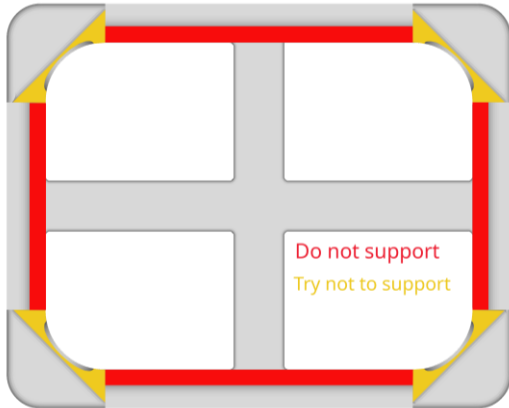


**GAMMA Dental Print&Click
changing baseplate**
(YouTube video)

2 Base Plate “Type G (default)”

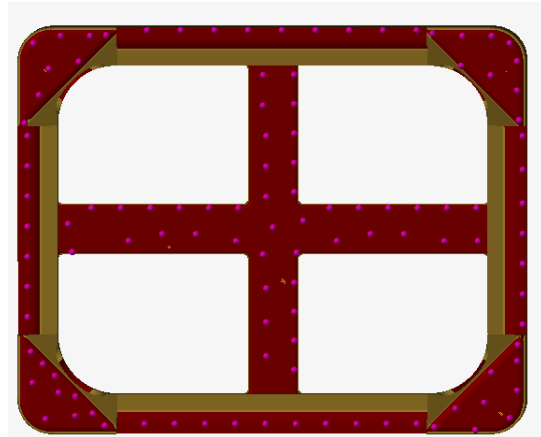
Contact Areas

The red and yellow areas indicate the contact surfaces where the base plate contacts the Print&Click mounting block. Do not add supports to the red areas and avoid supporting the yellow areas if possible.



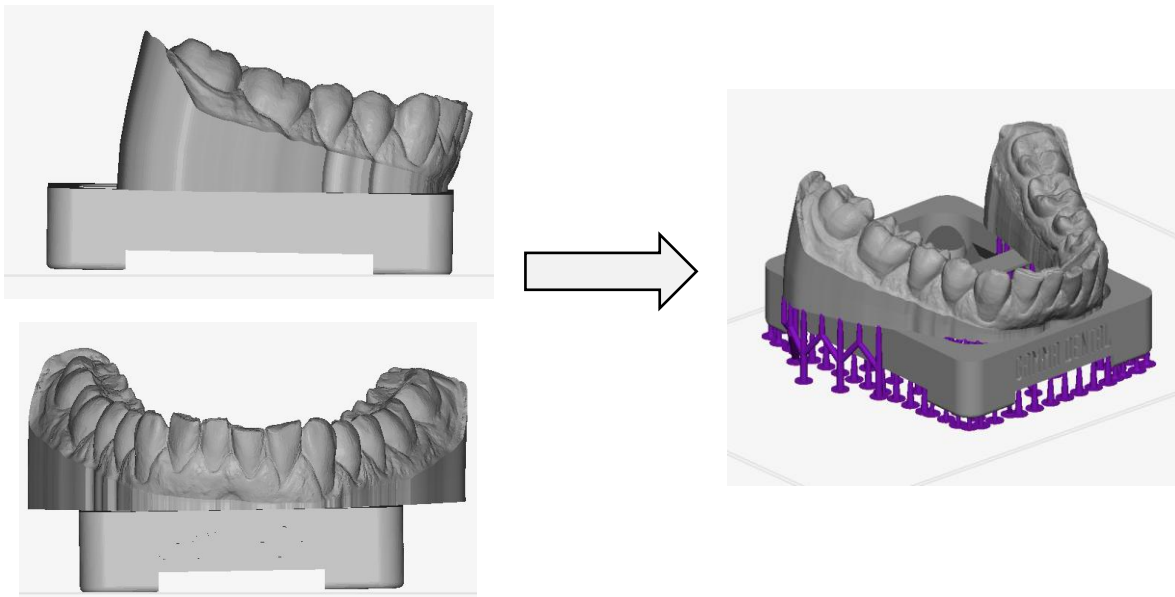
Support Placement

The recommended placement of the support structures is shown below.



Print Orientation

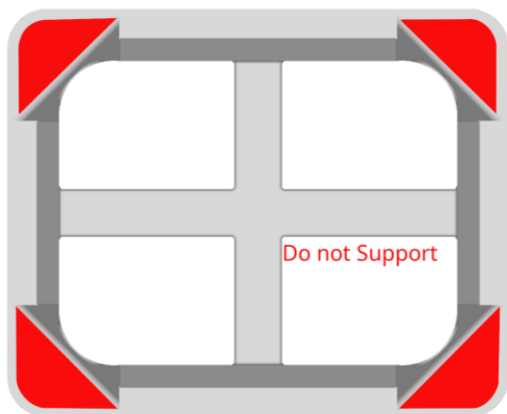
For this base plate, we recommend a tilt of a few degrees or more along the two horizontal axes to allow the red contact surfaces to be free of supports. In the example below, a tilt of 1° was used for both axes.



3 Base Plate “Type FL”

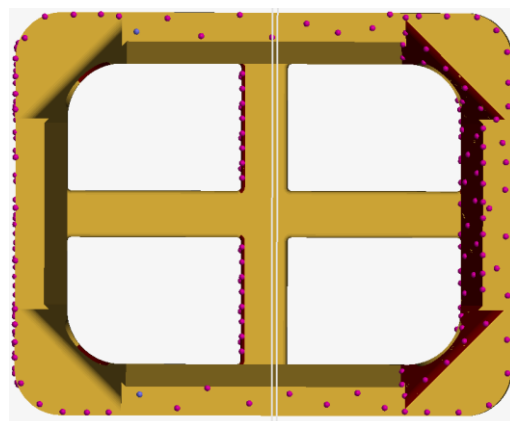
Contact Areas

The red and yellow areas indicate the contact surfaces where the base plate contacts the Print&Click mounting block. Do not add supports to the red areas.



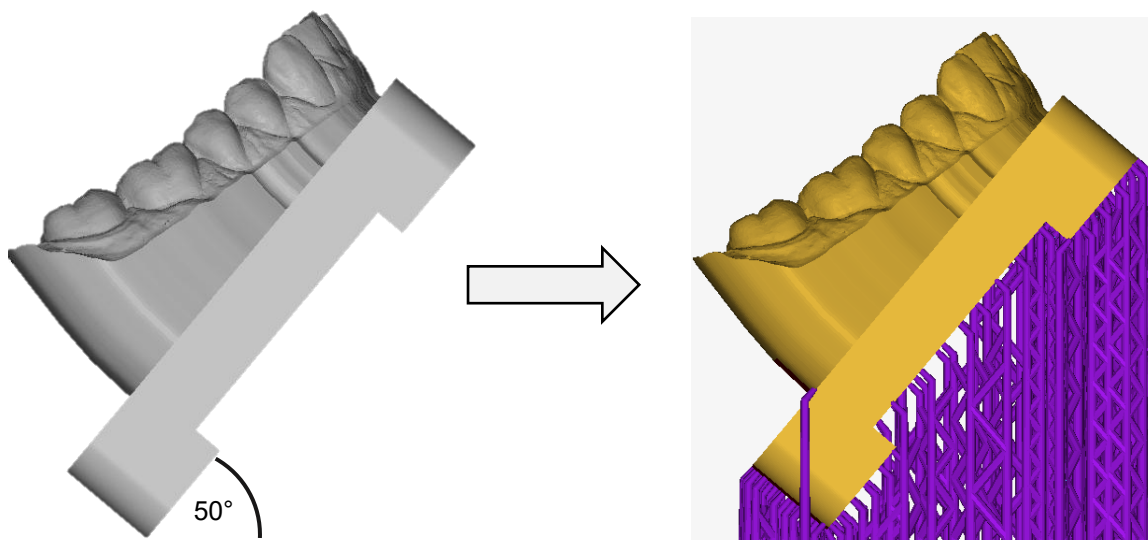
Support Placement

The recommended placement of the support structures is shown below.



Print Orientation

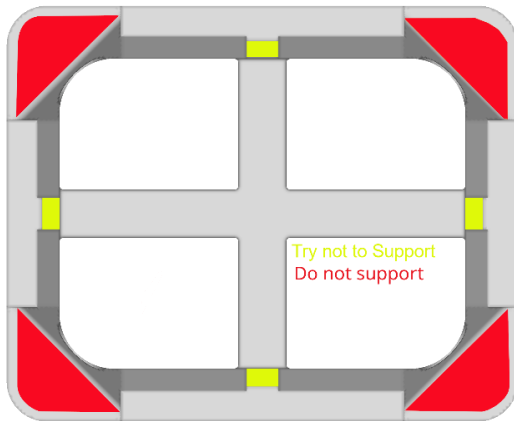
For this base plate, we recommend a tilt of 45° or more along the long axis to allow the red contact surfaces to be free of supports. In the example below, a tilt of 50° was used.



4 Base Plate “Type FLP”

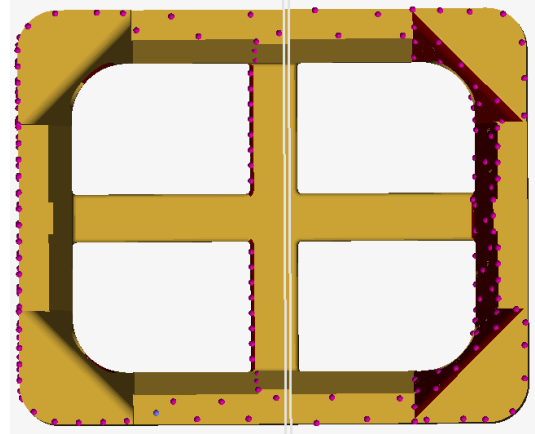
Contact Areas

The red and yellow areas indicate the contact surfaces where the base plate contacts the Print&Click mounting block. Do not add supports to the red areas and avoid supporting the yellow areas if possible.



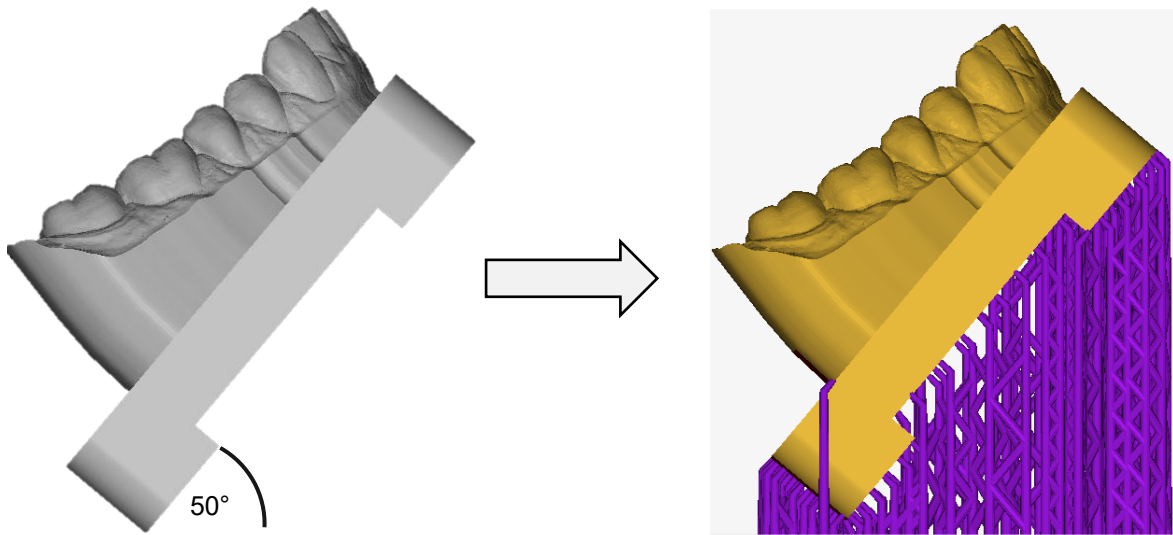
Support Placement

The recommended placement of the support structures is shown below. One of the yellow contact areas requires support due to the print orientation; these supports must be removed carefully to ensure that no protrusions remain.



Print Orientation

For this base plate, we recommend a tilt of 45° or more along the long axis to allow the red contact surfaces to be free of supports. In the example below, a tilt of 50° was used.



5 Base Plate “Plaster mounting”

The intermaxillary relation of upper and lower jaw is crucial to ensure correct static and dynamic occlusal contacts in the articulator. In Model Creator software, this relationship can be secured by attaching interlocking support pins that are then printed in two parts together with the upper and lower jaw models (Figure 4). If available, a centric registrate or another type of bite registration (wax plate, primobyte, etc.) may be used for the same purpose.

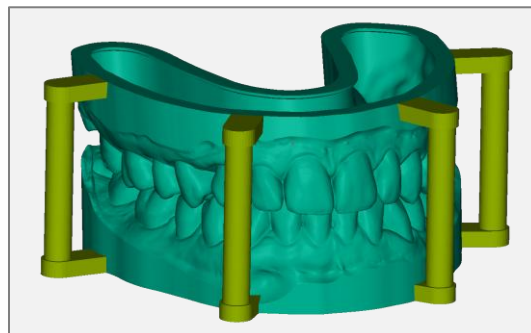


Figure 4: Interlocking support pins secure the relationship between upper and lower jaw model.

The special base plate for plaster mounting is intended to be used together with support pins or another form of bite registration.

Basis for articulator mounting is a single model mounted with the Reference Print&Click mounting system. The model with the base plate for plaster mounting can then be related to the Print&Click model using support pins or a bite registration and mounted conventionally (Figure 5). This ensures the desired intermaxillary relationship even if with low-fidelity 3D-printers.



Figure 5: The lower jaw is brought into position using the support pins and mounted with plaster.

To free up the remaining Print&Click mounting block, the same approach may also be used to mount the second model (Figure 6). The support pins can subsequently be removed from both models to allow for free movement in the articulator.



Figure 6: Likewise, the upper jaw is then mounted to the lower jaw.