

PLANMECA



Planmeca Emerald[®]
&
Planmeca Emerald[®] S
user's manual

EN

30040666

The manufacturer, assembler and importer are responsible for the safety, reliability and performance of the unit only if:

- installation, calibration, modification and repairs are carried out by qualified authorised personnel
- electrical installations are carried out according to the appropriate requirements such as IEC 60364
- equipment is used according to the operating instructions.

Planmecca pursues a policy of continual product development. Although every effort is made to produce up-to-date product documentation this publication should not be regarded as an infallible guide to current specifications. We reserve the right to make changes without prior notice.

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1 Introduction

1.1 Intended use

The Planmeca Emerald/Emerald S optical impression system is used to record the topographical characteristics of the dentition and/or full arch and preparation areas (including features such as implant scan locator fixtures, braces, brackets, etc.). In addition it can record the topographical characteristics of the oral anatomy (such as soft tissue, gingivae and palate).

The three dimensional model generated from the scan may be further used for study models, and for the design and manufacturing of dental restorations including implant supported prostheses and full and partial frameworks, and can be used to design and manufacture physical models of the teeth.

It may be used in conjunction with production of orthodontic appliances, retainer and accessories.

1.1.1 Contraindications

The device is not intended for use with indications other than those specifically mentioned.

The device is not intended to provide direct diagnosis or to replace the decision of the dentist, with regard to clinical acceptability of the manufactured restoration.

1.1.2 Clinical benefits

The use of the Planmeca Emerald / Emerald S impression system:

- reduces the need for traditional impression materials
- facilitates treatment planning
- facilitates perfection of design
- facilitates accuracy of the final restoration.

1.1.3 Patient target group

The Planmeca Emerald / Emerald S optical impression system is suitable for any patient whose general health is acceptable for dental treatment.

1.1.4 Inteded users

The Planmeca Emerald / Emerald S optical impression system is inteded for dentists, dental assistants, dental lab technicians, and other dental professionals that have received training on the system.

1.1.5 Inteded use environment

The Planmeca Emerald / Emerald S optical impression system is intended to be used in indoor environments only, such as dental offices, dental laboratories, and dental schools.

1.1.6 Side effects

No side effects have been identified for the Planmeca Emerald / Emerald S device.

1.2 Software and hardware upgrades

System software and hardware upgrades are initiated through Planmeca only. No software or hardware should be added to or deleted from the Planmeca systems without prior approval of Planmeca. Doing so may result in damage to the system and will void the product warranty.

2 Associated documentation

- Planmeca FIT CAD/CAM system user's manual
- Planmeca Romexis 6 user's manual
- Planmeca PlanMill 40 S user's manual
- Planmeca PlanMill 30 S user's manual

3 Symbols on product labels

The following symbols are used on various labels on the system. Affixed to the system are product identification labels that contain identification and safety information. The following images show each safety and warning label and describe where on the apparatus each can be found. Be certain to read all product labelling.

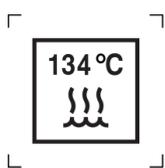
NOTE
If any of the labels are missing or illegible, please contact Planmeca After Sales for replacement labels.

NOTE
The labels may have changed since this manual was published.

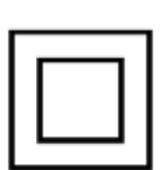
NOTE
Label examples are not shown in their actual size.

 Alternating current (Standard IEC 60417)

 Refer to instruction manual/booklet (Standard ISO 7010).

 Autoclavable at temperature specified.

 Fulfils the requirements of (EU) 2017/745.

 Class 2 electrical product

 Catalogue number (Standard ISO 7000)

 Dangerous Voltage ISO 3864-B.3.6

 Date of manufacture (Standard ISO 7000).

 Direct current



Disposable item. Do not reuse. (Standard ISO 7000).



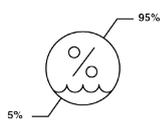
Fragile



General mandatory action



General warning (Standard ISO 7010).



Humidity limitation



Keep away from rain.



Laser information



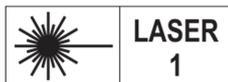
Laser warning



Lot number



Manufacturer (Standard ISO 7000).



Laser class 1 (Standard IEC 60825)



Class 1 laser product (Standard EN 60825-1: 2007)



Medical Device



OFF Power IEC 60417-5008.



ON Power IEC 60417-5007.

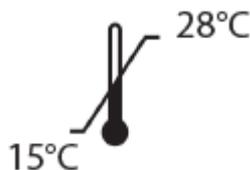


On/Off Power IEC 60417-5010.



Consult electronic instructions for use (Standard ISO 7000-1641).

Operating temperature limits



Separate collection for electrical and electronic equipment according to Directive 2012/19/EU (WEEE).

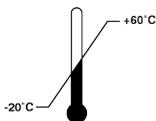


Serial number (Standard ISO 7000).



Standby IEC 60417-5010

Storage temperature limits



Type B applied part (Standard IEC 60417).



UL Laboratory Equipment Listing

4 Safety precautions

The user must read and comply with all safety, warning, and instructional labels on the Planmeca products.

Ensure your Planmeca products are properly maintained through periodic maintenance. If you suspect equipment malfunction or failure, discontinue using the products and contact Planmeca Technical Support immediately. Do not attempt to make any repairs on Planmeca products.

Warning denotes something that can cause personal injury to the patient or the user.

Caution denotes something that can cause damage to the equipment.



WARNING

Failure to adhere to all safety warnings may result in personal injury, equipment damage, or data loss.



WARNING

Do not use the Planmeca products for any purpose other than its intended and labelled use.



WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



WARNING

When connecting the Planmeca components, use only the cables supplied with the products. Failure to do so may result in increased electromagnetic emissions or reduced immunity to external electromagnetic emissions.



WARNING

Do not make any unauthorized repairs or modifications to the system software or hardware. This includes installing unauthorized software on the host computer system or altering or bypassing any safety switches or mechanisms. Changes or modifications not expressly approved by Planmeca could void the user's authority to operate the equipment.



WARNING

Do not install or operate the Planmeca products in an environment where an explosion hazard exists, e.g., high oxygen area.



WARNING

Do not attach any equipment or devices to the Planmeca products unless their use has been specifically authorized by Planmeca.



WARNING

The wireless components in the Planmeca products may be interfered with by other equipment, even if the other equipment is fully compliant with CISPR (International Special Committee on Radio Interference) emission requirements.



WARNING

When possible, electrical equipment should not be used when adjacent to other electrical equipment. If adjacent use is necessary, the equipment should be observed to verify normal operation in the configuration in which it will be used.

CAUTION

Comply with all applicable regulations when disposing of waste materials from the Planmeca products. To avoid cross-contamination, dispose of all potential biohazard waste materials in accordance with local procedures and guidelines.



WARNING

The Planmeca scanner is a high precision Class 2 laser scanning instrument. Always store the scanner in its holder when not in use. To prevent damage or misalignment, do not drop or strike the scanner. Follow all stated precautions when using the scanner.



WARNING

To prevent electrical shock and eye damage by laser radiation, do not open any sealed covers or connectors with user restricted access.



WARNING

In case of emergency unplug the scanner from the computer port and/or unplug the computer power cord from the wall or from the computer.



WARNING

The Planmeca scanner is designed to be used with the tip connected to the scanner. The connector pins on the scanner are energized when the tip is removed. To ensure safety of the user and patient, do not touch the pins when the tip is removed.

CAUTION

Medical electrical equipment requires special precautions regarding EMC (Electromagnetic Compatibility). The Planmeca products must be installed and placed into service according to the EMC information provided in the documentation that accompanies the Planmeca products.

CAUTION

Portable and mobile RF (Radio Frequency) communications equipment can affect medical electrical equipment.

**WARNING**

Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Planmeca Emerald, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result. The wireless components in the Planmeca products may be interfered with by other equipment, even if the other equipment is fully compliant with CISPR (International Special Committee on Radio Interference) emission requirements.

CAUTION

After using the scanner on a patient, clean the scanner according to the cleaning instructions found in section "Cleaning / preventive maintenance" on page 104.

CAUTION

Do not hold the scanner in a way that will cover the cooling vents.

CAUTION

Do not immerse the scanner base in liquid or expose the Planmeca products to conditions outside the operating conditions, see section "Planmeca Emerald and Emerald S scanners specification" on page 109. Clean the scanner according to the instructions in section "Cleaning / preventive maintenance" on page 104.

CAUTION

Do not stack the tips near or on any other metal instruments.

CAUTION

Ensure your Planmeca products are properly maintained, see section "Cleaning / preventive maintenance" on page 104.

CAUTION

If you suspect equipment malfunction or failure, discontinue using the Planmeca products and contact Planmeca Technical Support immediately. Do not attempt to make any repairs on the products.

CAUTION

Read and comply with all safety, warning, and instructional labels on the Planmeca products.

CAUTION

If the scanner has been operational for an extended period of time, the surface may become warm to the touch. If the temperature becomes too warm to the touch within a minute of use, turn it off and allow it to cool. The surface of the applied part (scanning tip) may reach temperatures of 43°C during normal operation. This is necessary to prevent fogging of the mirror and is safe for patient contact.

4.1 Reporting serious incidents

Serious incidents that have occurred in relation to the device must be reported to the manufacturer and the local competent authority.

4.2 Cyber security

Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks.

The following are things you can do to minimize security threats.

User name/password

For ease of use, your system has an automatic Windows login. To provide more safety, it is recommended that you disable the automatic Windows login and add a password to the screen saver. Passwords should be strong and changed every few months.

You do not need to set up a different account for each user unless that is your preference.

Physical security

For ease of use, your system has an automatic Windows login. If you do not use a user name and password, it is important to secure the laptop physically to ensure system safety.

- Laptop should be kept in a secure environment away from public access.
- Unauthorized people should not have access to the system.

Wireless networks

The system should only be connected to password protected networks. Open (unlocked) networks can make your system vulnerable.

4.2.1 System default settings - no user action required

The following items are setup to protect your system by default and should not be disabled or changed unless requested by Customer Support. This list is being provided for your information and does not require any action by the user.

- Windows firewall must be enabled and running with security levels blocking all requests for incoming connections. Exceptions can be allowed for predetermined, trusted applications.

NOTE

Customer Support will connect with your system when needed, but the initiation of this link will start on the user's end and with their permission. They will walk you through the process if/when it is needed.

- Windows firewall must be enabled, running, and kept up to date to allow detection and handling of malware threats.
- Automatic security update installation is enabled.
- If you want to encrypt your data, you can use TPM 2.0 (Trusted platform Module) with Windows Bit Locker encryption. This is built into Windows and is recommended for laptops which are portable and vulnerable to theft.

5 Getting started

To start using the Planmeca Romexis and the CAD/CAM module you need to:

- Start Planmeca Romexis (see section "Starting Planmeca Romexis" on page 11).
- Activate your Planmeca Romexis license.
- Log in to Planmeca Romexis

NOTE

For detailed instructions see [Planmeca Romexis 6 User's manual](#).

5.1 Starting Planmeca Romexis

Steps



1. Press the power button to start the laptop.
2. On your keyboard, press the **Windows** key to make the standard desktop appear if desired.
3. Once the desktop is visible, double-click the Planmeca Romexis icon on your desktop or on the Windows menu.



Romexis
App

The following message may appear from Windows: Do you want to allow the following program to make changes to this computer?

4. Click **Yes**.

This is a normal safety feature in Windows.

Results

The software opens to the Home screen.

What to do next

NOTE

To save electricity remember to turn off the system while not using the scanner.

5.2 Managing cases in Planmeca Romexis

5.2.1 Searching and managing patients and images

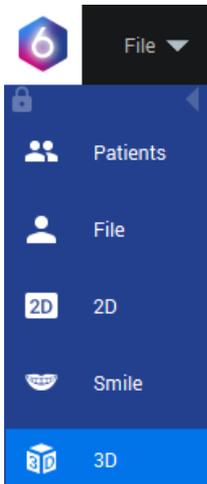
For detailed descriptions see Planmeca Romexis 6 User's manual sections:

- "Patients module"
- "Searching patients"
- "DICOM Query/Retrieve (optional)"

5.2.2 DICOM storage (optional)

With DICOM Full license images can be sent to a remote DICOM application, i.e. DICOM image archive PACS. DICOM Storage needs to be configured in the *Admin* module before the DICOM storage can be used, see section "Imaging - DICOM" in the Planmeca Romexis 6 Technical manual (30024964).

5.2.3 Viewing and opening cases in Planmeca Romexis 3D module

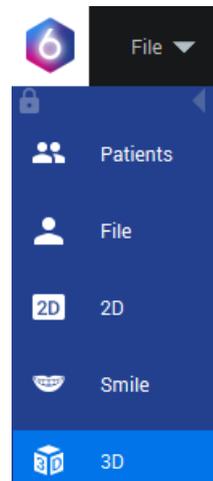


All scans and designed restorations will automatically appear in the 3D module volumes list.

To view and open scans and cases in Planmeca Romexis see section "Viewing CAD/CAM case in 3D module" in Planmeca Romexis 6 User's manual.

5.2.4 Combining model to 3D volume

A model can be combined to a 3D volume in Planmeca Romexis 3D module.



Opening 3D volume

See Planmeca Romexis 6 User's manual section "Opening images".

Importing intraoral scans to 3D volumes

See Planmeca Romexis 6 User's manual section "Importing 3D models".

6 Scanner setup

This section describes how to prepare the scanners for scanning.

Components

The scanner comes with the following components:

Planmeca Emerald S scanner

- Scanner tip x 3
- Scanner cable x 2
- Standalone holder
- Colour balancer
- Cover boot x 4 (in different colours)

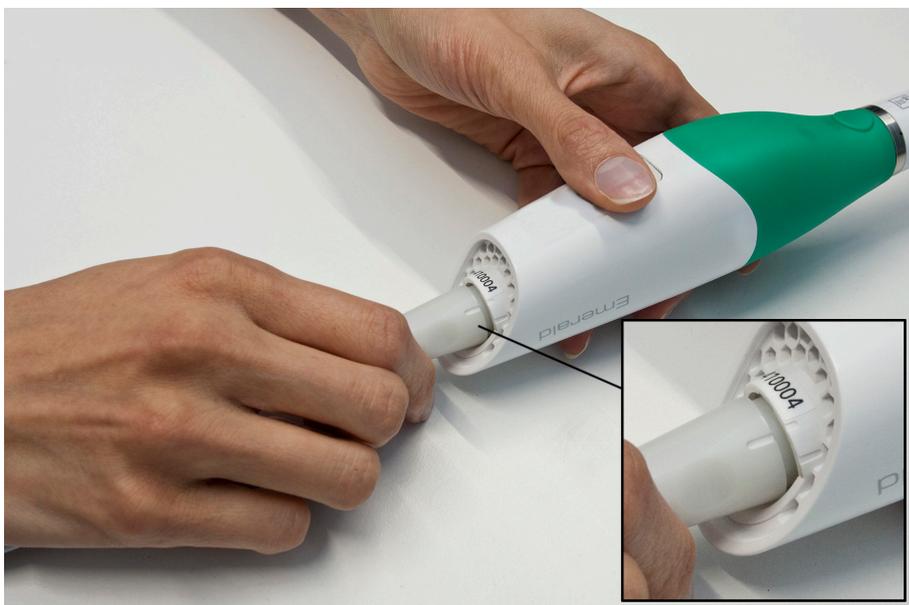
Planmeca Emerald scanner

- Scanner tip x 3
- Scanner cable
- Standalone holder
- Colour balancer

6.1 Connecting scanner cable

Steps

1. Align the notch on the cable with the small notch on the back of the scanner.



2. Push the cable in and turn clockwise until the notch on the cable is aligned with the larger notch.



NOTE

Keep the scanner connected to the cable at all times. Remove the cable from the scanner only when directed by customer support or when replacing the cable.

6.2 Plugging scanner into laptop

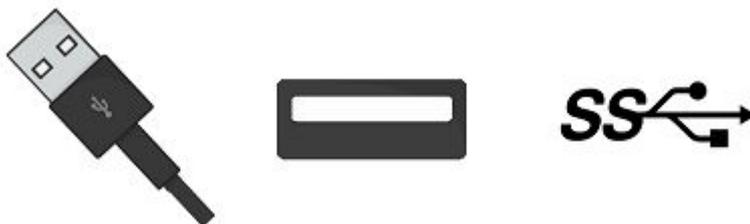
About this task

NOTE

Keep the scanner connected to the cable at all times. Remove the cable from the scanner only when directed by customer support or when replacing the cable.

Steps

1. Insert the USB cable into a USB 3 port on the laptop.
Refer to your laptop's user's manual to find the USB 3 port.



NOTE

Extension cables and USB hubs are not recommended. Use only cables provided by Planmeca.

What to do next

When the scanner is not in use disconnect the cable from the laptop by grabbing on the connector.

CAUTION

Do not pull on the cable itself to disconnect. Bending or twisting the cable may impact system usability.

You do not need to detach the USB device from Windows.

6.3 Scanner tips

Tip sizes

- Standard tip x 2



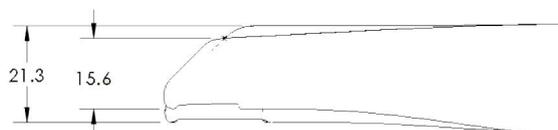
- SlimLine tip x 1 (optional)



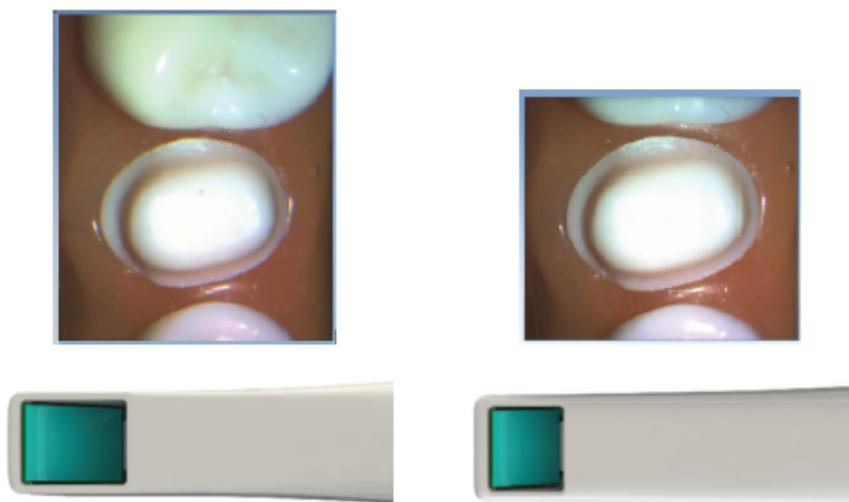
The SlimLine logo is on the tip and the S displays on screen when in use.



The SlimLine tip is 5.7mm thinner than the standard scanner tip.



With the SlimLine tip the field of view is 30% smaller compared to the standard tip.



6.3.1 Attaching / removing scanner tip



WARNING

The scanner is designed to be used with the tip connected to the scanner. The connector pins on the scanner are energized when the tip is removed. To ensure safety of the user and patient, do not touch the pins when the tip is removed.

The scanner comes with a removable tip.

When the scanner is not in use, place the non-functional protective scanner tip on the scanner (delivered with the scanner).

To detach the tip turn it towards the smaller notch on the scanner.



To reattach the tip, place the tip on the smaller notch on the scanner and turn it towards the larger notch on the tip until it locks in place.



TIP

The tip can be removed and disinfected while the next tip is being used. For cleaning instructions, see section "Tip infection control procedure" on page 104.

6.4 Scanner holder

The scanner comes with a standalone holder.



7 Relocating laptop and/or scanner

The laptop can be unplugged and moved as needed. The software does not need to be shut down.

CAUTION

Do not unplug the scanner cable while scanning.

NOTE

Do not use the scanner when the battery is low. If the computer has to shut down before the model is generated, you will lose your scans. Make sure the laptop is plugged in during scanning to keep the scanning from slowing down.

8 Planmeca Romexis CAD/CAM module overview

The Planmeca Romexis CAD/CAM module consists of individual tabs: *Scan*, *Margin*, *Analyse* and *Send*.

The tabs are dynamic: the choices you make on each tab affect the options available on the current and related tabs.

Some system configurations will restrict the use and access of individual tabs.

8.1 Creating and opening case

See your Planmeca Romexis user's manual for information about adding and editing patient files.

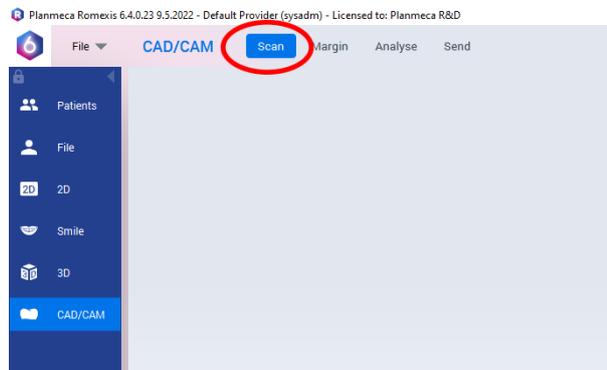
8.1.1 Starting new CAD/CAM case

About this task

To begin scanning:

Steps

1. Do one of the following:
 - Add a new patient.
 - Click on a patient to highlight it and click **Select Patient**.
2. Click the CAD/CAM module.
3. Click the **Scan view** button.



See "Scanning" on page 25 for more information.

8.1.2 Open existing CAD/CAM case

About this task

You can continue an existing scan as follows.

Steps

1. Click on a patient to highlight it and click **Select Patient**.
2. Double-click a **Model Case** to open it.

8.2 Moving/viewing 3D models

Use the mouse to zoom in or out, move, and rotate the model. The mouse cursor does not change on the Scan tab, but the functionality is the same.

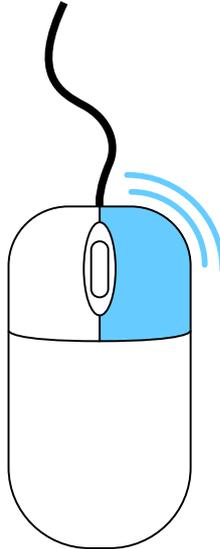
8.2.1 Rotating model

About this task

Follow these steps to rotate a model.

Steps

1. Click and hold down the right mouse button.



2. Drag the mouse horizontally, vertically, or diagonally to rotate the image. Drag in small increments for more control.
3. To stop rotating release the mouse button. Repeat as needed.

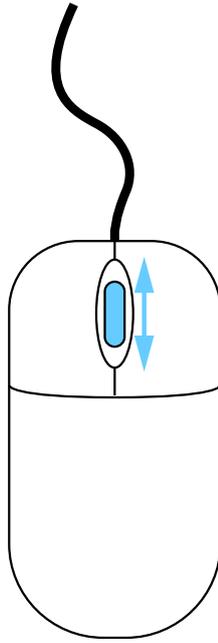
8.2.2 Changing model size

About this task

Use the scroll wheel on the mouse to zoom in and out on the model.

Steps

1. Position the pointer on your model.
 - To zoom in on the model: rotate the mouse wheel downward, toward your wrist.
 - To zoom out of the model: rotate the mouse wheel upward, away from your wrist.



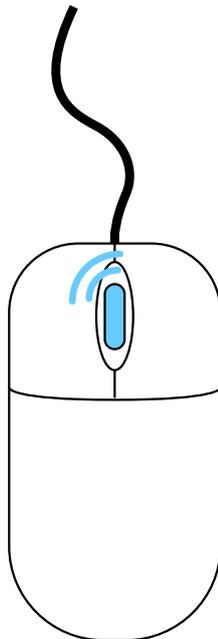
8.2.3 Moving model

About this task

The model can be moved on the screen without being rotated. Follow these steps to move model.

Steps

1. Position the pointer on the model.
2. Press and hold down the mouse wheel.
3. Drag the model to the desired location and release the mouse wheel.



8.3 Settings

8.3.1 Settings screens



Click the **Settings** button on the start screen or the **Settings** button on each tab. These screens contain preference settings that modify the default behavior of the software.

Click **Restore Factory Defaults** to revert a single tab to original settings or **Restore All Factory Defaults** to revert all settings.

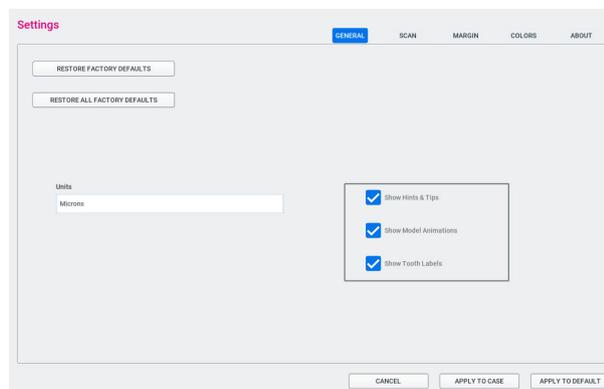
Click **Apply to Case** to save the changes for the currently open case or click **Apply to Default** to use these settings from now on.

Click **Cancel** to exit without saving.

NOTE

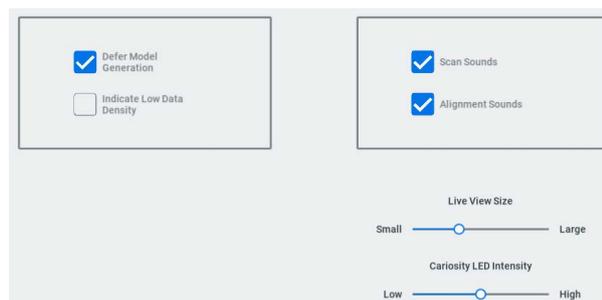
Clicking **Apply To Default** or **Restore Factory Defaults** will not affect individual cases that were customized.

8.3.2 General



- Click **Restore Factory Defaults** to revert the current tab to original settings.
- Click **Restore All Factory Defaults** to revert everything on all tabs to the original settings.
- **Units** - select the unit of measurement for numbers shown in the software.
- **Show Hints & Tips** - Hints and tips can be disabled for experienced users.
- **Show Model Animations** - Animations can be disabled for experienced users that want to skip that step.
- **Show Tooth Labels** - The floating tooth number label can be disabled.

8.3.3 Scan settings



- **Defer Model Generation** - With this active, all of the models will be generated all at once when the **Generate Model** button is clicked. With the generation deferred, you can scan everything you need without waiting for the models to process and can do that when you are finished scanning. When this is inactive, the models will be generated one at a time when you switch to a different scan layer/type.
- **Indicate Low Data Density** - With this active, the **Low Density** color overlay is displayed by default after the models are generated. This can always be turned ON/OFF with the icon. See "Low Data Density" on section "Top and bottom buttons pressed simultaneously" on page 28 for more information.
- **Scan Sounds** - Deactivate to remove the sound feedback while scanning. This sound can also be adjust via your laptop's volume control. To change the scanning music, go to **C:\Program Files\PlanCAD\bin\Windows_App\PlanCAD_Data\StreamingAssets\CustomMusic** and save your file there. It should be able to read .wav .mp3 or .ogg files, and if multiple are provided it will pick one at random.
- **Alignment Sounds** - Deactivate to remove the sound feedback for automatic alignment when scanning the buccal bite. This sound can also be adjust via your laptop's volume control.
- **Live View Size** - Adjust the size of the window which shows the scanner's current position. See "Scanning live view" on page 32 for more information.

8.3.4 Margin settings

Margin Line Size μm (10 - 100)

Margin Line Point Size μm (50 - 200)

- **Margin Line Size** - determines the thickness of the displayed line. Click in the field to change the value.
- **Margin Line Point Size** - determines the size of the dots on the margin line. Click in the field to change the value.

8.3.5 Colours

Click a color swatch to bring up the color picker.



8.3.6 About settings

Displays information about the software and the end user license agreement.

9 Scanning



WARNING

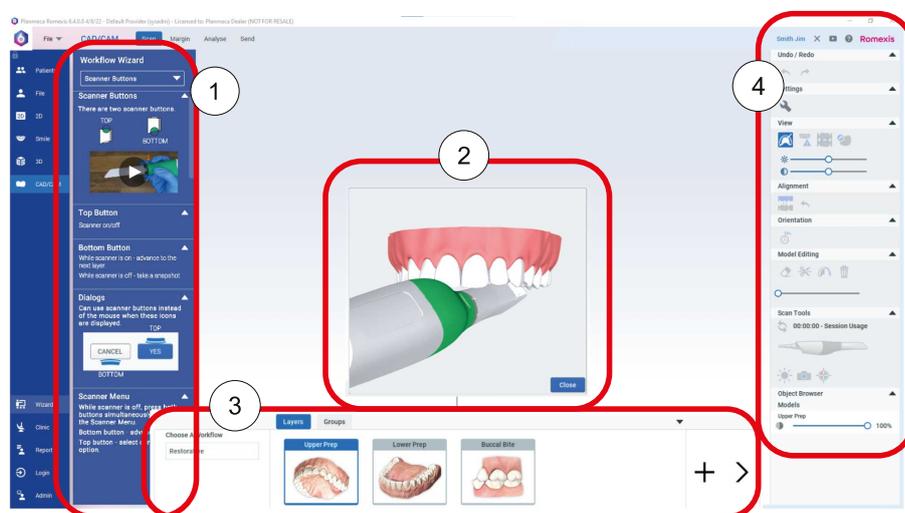
The scanner is a high precision Class 2 laser scanning instrument. Always store the scanner in its cradle when not in use.

To prevent damage or misalignment, do not drop or strike the scanner. Follow all stated precautions when using the scanner.

The scanner captures the restoration site with a laser system and delivers live images to the monitor. As you capture images, the system creates a 3D model, revealing any areas that need further scanning.

Ensure the power cord is being used on the laptop while scanning.

Scan tab layout



1 Workflow Wizard

By default, the Workflow Wizard is hidden. Click the Wizard button to reveal/hide the Workflow Wizard window.

Use the drop down list at the top to select the desired wizard.

2 Model animation

An animation of a suggested scan pattern appears when you open a new scanning layer. This can be turned OFF in Settings.

Start scanning or click the **Close** button to end the animation.

3 Model layers and groups

4 Scanning tools

9.1 Scanner status

Icons on the right side of the screen indicate the status of the scanner. The scanner is disconnected.



The scanner tip is disconnected.



The scanner is in heating stage 1.



The scanner is in heating stage 2.

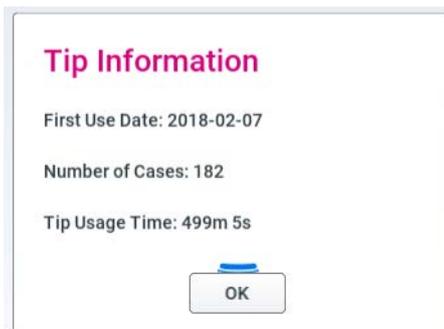


The scanner is ready for scanning or scanning is ongoing.



9.2 Tip information

Clicking on the scanner graphic shows the Tip Information.



9.3 Scanner icons



9.3.1 Sun icon



See "Model scanning" on page 32 for details.

9.3.2 Imaging mode

Activate Imaging Mode to use the scanner as an intraoral camera without adding information to the current model/layer.

When active, the icon is blue and **Imaging Mode: Camera** is displayed at the top of the screen.

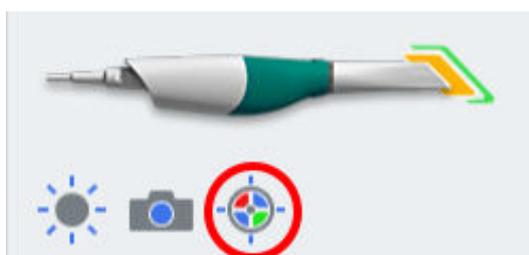
Click the bottom button while scanning to save a snapshot. See "Saving live view image" on page 36 for more information.



9.3.3 Colour balancing

About this task

Balance the color weekly or as needed. This is an optional step to optimize the color represented on screen. This does not affect the stone model nor the amount of data collected by the scanner.



Steps

1. While in the scanning screen, click the Color Balance symbol to optimize the color.



Insert scanner into color balance device to balance color.
Click Next to proceed.

Cancel

Next

This icon is only available when a Standard tip is connected.

2. Insert the scanner with sterilized Standard size tip into the device as shown.
3. Click **Next**.

Results

Another screen appears with the results.

What to do next

If there is a problem, try again. If problems continue, contact Customer Support.

If contamination occurs, clean with a germicide wipe. Do not autoclave. Store the Color Balancer in a plastic bag or keep a dust cover on it.

9.4 Button and motion controls

9.4.1 Top button

Use the **top** button to:

- Activate scanner
- Deactivate scanner
- You can use the button instead of a mouse click to activate a button when you see this icon.



9.4.2 Bottom button

Use the **bottom** button to:

- Switch scan layers
- While scanning (Live View is open), click to take a Snapshot. See "Saving live view image" on page 36 for more information.
- You can use the button instead of a mouse click to cancel an action when you see this icon.



9.4.3 Top and bottom buttons pressed simultaneously

About this task

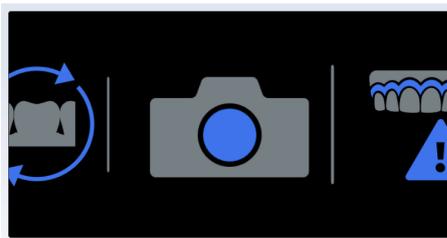
You can use the **top and bottom buttons simultaneously** to:

- Delete model
- Generate model
- Select colour/stone view
- Select data density

Steps

1. Press both buttons simultaneously while on the Layers tab.
A menu appears. Use the lower button to toggle between the options that appear.

2. Press the bottom button to scroll through the options.



Color/Stone Model Mode

Select to toggle between colour and stone views of the model. See "Colour model or stone model" on page 41 for more information.



Generate Mode

See "Eraser tool" on page 38 for more information.



Imaging Mode

See "Imaging mode" on page 27 for more information.



Low Data Density

See "Checking model for missing data" on page 41 for more information.



Delete Model

Select to delete the model.

3. Press the top button to select a menu item.
Press both buttons simultaneously to exit without making a selection.

9.5 Positioning scanner

Rest the tip of the scanner gently on the teeth during scanning to get the correct focal depth for the scans.



9.6 Basic scanning steps

About this task

Follow these instructions when scanning.

Steps

1. Add a new patient or select an existing patient.
2. Click CAD/CAM on the left menu.

- Click **Scan** at the top of the screen.

A Model Animation appears showing a recommended scan pattern. This can be turned OFF in Settings. See "Scan settings" on page 23 for more information. You do not have to follow the suggested pattern. Click **Close** on the animation or start scanning to close the animation.

- Optional: click the Wizard button to show/hide the Workflow Wizard.

- Click **Choose a Workflow** to select a set of scan layers.

See "Workflows" on page 30 for more information.

- Shield the site from strong extraneous light sources (dental lights, sunlight, etc.).

- Click the top button on the scanner to activate the laser.

The Live View displays the scanning view with live feedback. The system assumes that the first scan is taken from the occlusal and the model is orientated accordingly.

- Scan until the desired area is fully formed.

- Click the top button on the scanner to deactivate the laser.

- Evaluate the model.

Scan more if needed. See "Evaluating model" on page 36 for more information.

- Click the bottom scanner button or use the mouse to select the next scan type.

- Repeat the steps above.

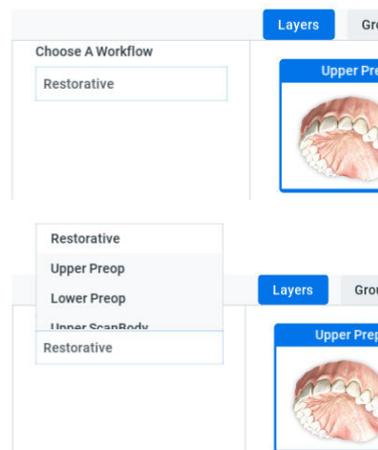
What to do next

Click the **Margin screen** when finished with scanning.

9.7 Workflows

Click **Choose a Workflow** to select a set of scan layers. The layers can be customized as needed. The selected workflow is simply a starting point. Each layer represents a type of scan you plan to take.

Choose a Workflow cannot be edited after scanning has started.



- Restorative - Upper Prep, Lower Prep, Buccal Bite
- Upper or Lower Preop - Upper or Lower Preop, Upper Prep, Lower Prep, Buccal Bite

- Upper or Lower Scanbody - Upper or Lower Scanbody, Upper Prep, Lower Prep, Buccal Bite
- Non-Restorative - Upper, Lower, Buccal Bite
- Open Bite - Upper, Lower, Open Bite

9.7.1 Editing layers

About this task

Scan layers represent each type of scan you plan to take. These are used to help you organize and label your scans.

Steps

1. Right-click on the desired scan layer.
A popup menu appears.
 - Add to Group - See "Scanning groups" on page 31 for more information.
 - Duplicate Layer
 - Rename/Edit Layer
 - Import Model
 - Export Model
 - Delete Layer
2. To add your own layer, click +.
3. Select a **Scan Type** from the popup list.

Upper options	Lower options	Buccal options
Upper Prep	Lower Prep	Buccal Bite
Upper Preop	Lower Preop	Open Bite
Upper ScanBody	Lower ScanBody	
Upper Waxup	Lower Waxup	

4. Enter the desired **Name** for the new layer.

9.8 Scanning groups

Scanning groups are created when models automatically align. The thumbnails of the aligned model are displayed in the group.



A new group can be manually creating by dragging and dropping one layer on top of another. The system attempts to align it automatically. If automatic alignment is unsuccessful, a manual alignment window appears. See "Manual alignment" on page 49 for more information.

Another option is to right-click on a layer and select **Add to Group**. A group must already exist before a layer can be added to it.

NOTE

You cannot click on or open Groups if no groups have been created yet.

9.9 Model scanning

The default setting for the scanner is for intraoral scanning. Click the sun icon below the scanner icon to switch to a dimmer setting when needed for models or anytime the live view is too bright.

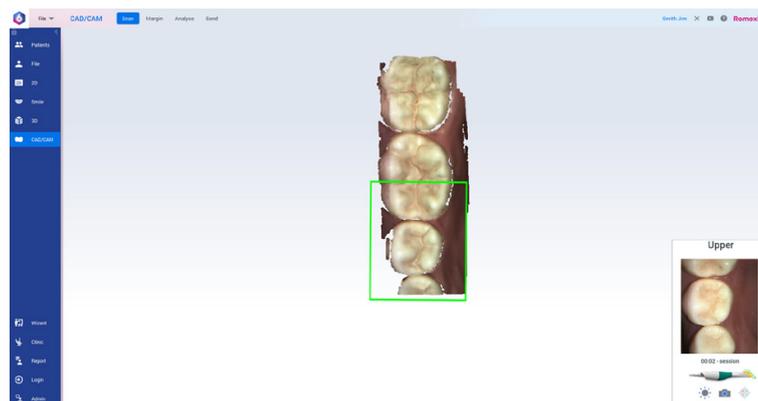
Default setting - sun icon represents brighter laser for intraoral use



Activate the dimmer setting for external scanning

**9.10 Scanning live view**

The system displays a model based upon the scan data. The Live View appears on the right and the model builds on the left. Watch the model building on the left to see what information has been captured and where you need to move the scanner.



Music plays to indicate that the system is capturing data. The system decreases the audio feedback if you have moved too far and the system needs data overlap.

To change the music, go to **C:\Program Files\PlanCAD\bin\Windows_App\PlanCAD_Data\StreamingAssets\Custom Music**.

Paste the desired music file (.wav, .mp3, or .ogg) into this folder. If multiple files are in this folder, the software will pick one at random.

Mute or adjust the volume on your laptop to change the volume of the audio feedback.

The Scanning Indicator box shows the current focus area and the outline colour changes according to the scanning status. The colour changes from green (scanning) to red (not scanning). When the Scanning Indicator turns red, the music volume decreases when the system is unable to stitch the current Live View to the model. Move the scanner back slightly to a previously captured area to establish the scanner's location and continue scanning.

The developing model rotates to match the Live View.

Click the top button on the scanner to stop scanning.

A raw data model is displayed.

9.10.1 Adjust live view size

About this task

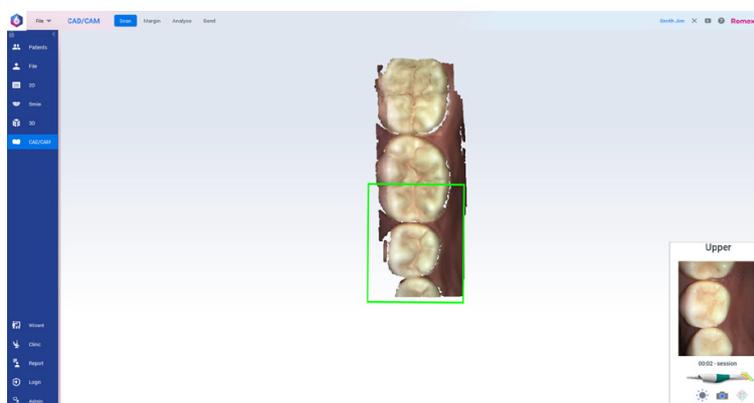
The Live View can be set to a range of sizes by default and can also be manually adjusted.

Steps

1. Click **Settings**.
2. Change the default slider to be anywhere from Small to Large shown below.

While scanning is active, you can click and drag the live view to manually adjust it.

Settings - Small



Medium



Large



Results

The new size is saved and will be used on all scans in this case.

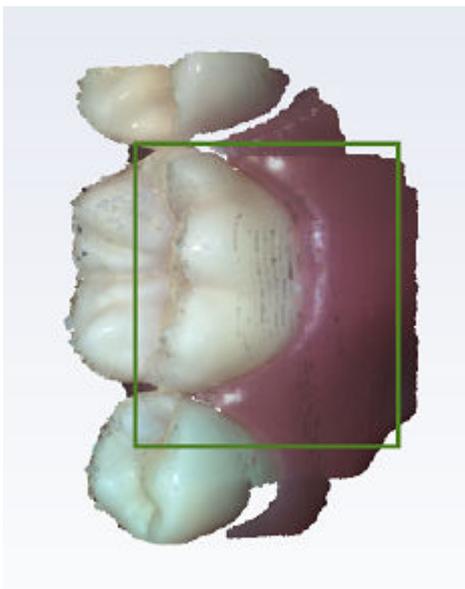
What to do next

To save the new size as a system default, click **Settings** and click **Apply to Default**.

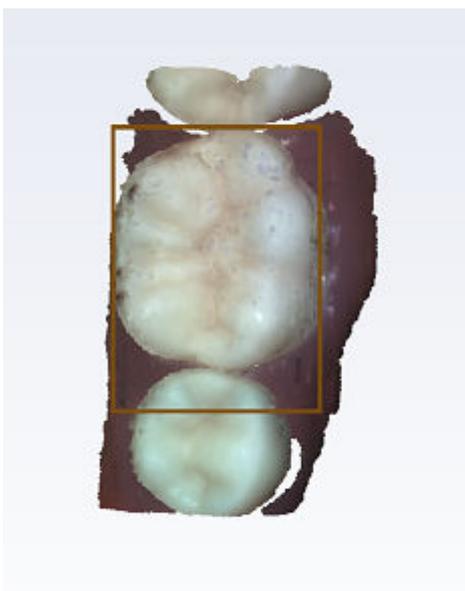
9.10.2 Checking scanning distance

The distance between the scanner and the surface being scanned is indicated with a coloured box on the building model. The colour of the outline changes based on how close or far the scanner is from the surface ranging from green (close) to orange and red (far).

- **Green** - close to the tip. The green colour indicates ideal focal distance. It means the scanning distance is correct and that the scanning is successful.



- **Yellow/Orange** - middle of the reading range.
- **Red** - end of the reading range (far away from tip).

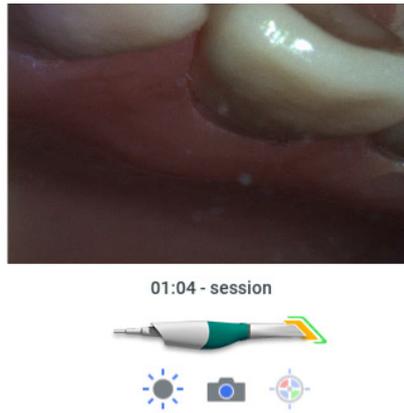


NOTE

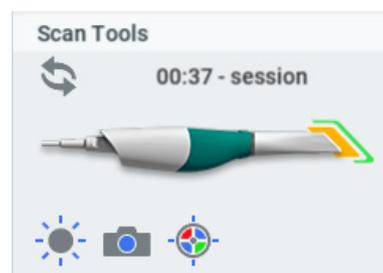
Any colour shown means the scanner is capturing data. The colours only correspond to the focal distance.

9.10.3 Session usage

A session timer is displayed above the scanner in the live view. The session duration is counted while the scanner is activated.



The session timer under Scan Tools shows how long you have been scanning on this case.



9.11 Saving live view image

About this task

Follow these instructions to take a snapshot of live view.

Steps

1. Click the bottom button until you hear the camera shutter sound.
This automatically saves an HD snapshot of the Live View and adds the picture to the patient's file. The file is saved in the patient's directory as a .png image. This allows you to easily share photos with your dental team or use them as a patient education tool.

The photos are available under **Patient Data** in the **File** module and under **Photo** in the **2D** module.

9.12 Evaluating model

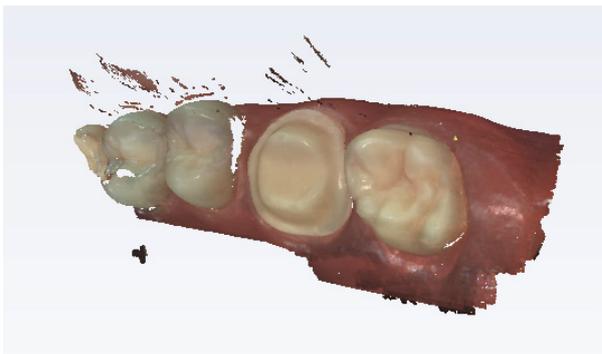
About this task

Follow these instructions to evaluate the model before generating it.

Steps

1. Rotate the model to look for low data areas in key areas: the preparation, interproximal contacts, etc.

In the example below, there is missing data on the interproximal area and extraneous data from a finger accidentally being scanned.



2. Fill in any required missing data by activating the scanner.

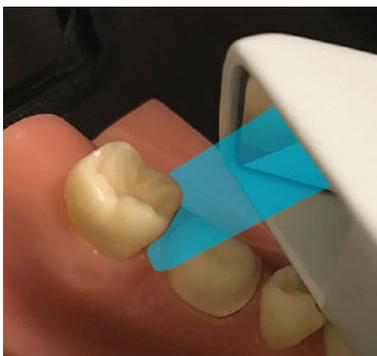
Distal tip

Rest the end of the scanner tip on the distal neighbor; rock the scanner to point the blue laser into the mesial interproximal area.



Mesial tip

Rest the neck of the scanner tip on the mesial neighbor, rock the scanner to point the blue laser into the distal interproximal area.



Scanner can be turned to a 90 degree angle if the position in the mouth allows it.

3. Fill in missing data where needed.

9.13 View controls

Right-click in main part of the **Scan** screen to use the **View Controls** menu and change the camera angle for the model. Select which angle you want to view the model from by clicking on the pop up menu. You can then rotate the model as usual for another angle.



9.14 Generating model

You have the option to generate all models at one time (deferred) or to generate them one at a time. Go to **Scan Settings** to change the default selection.

When the model generation is deferred, you can switch between the scan layers without waiting for the model to process. After you have gotten all of your desired scans, click the **Generate Model** button or press **M** on the keyboard to create the final models.

If you have deselected the Defer Model Generation option, each model will generate as you switch layers, click the **Generate Model button**, or press **M** on the keyboard.

The system will process any ungenerated models when you exit the Scan screen: exit the software, click Start, or click Margin.

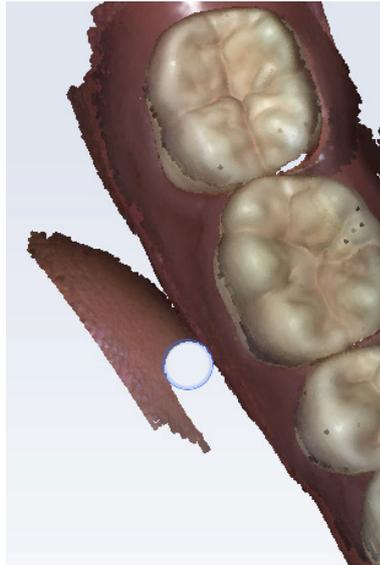
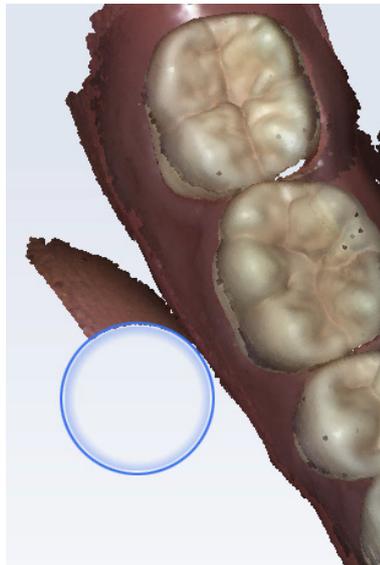
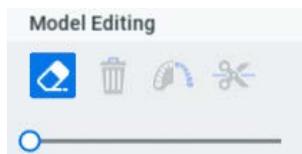
During the Generate Model process, extraneous data is removed and holes are filled in.

9.15 Eraser tool



Use the **Eraser Tool** to remove parts of the scanned model. This can be used to remove unnecessary data like extra teeth, tongue, cheek, etc.

Adjust the size of the erase circle using the slider. You can also zoom in or out on the model to affect the model/eraser proportion.

Eraser - small**Eraser - large****Eraser icon with slider**

Click the **Eraser** tool to deactivate it.

TIP

It is recommended that you not delete multiple teeth in a row. Large gaps in the model is not recommended.

9.16 Trimming model

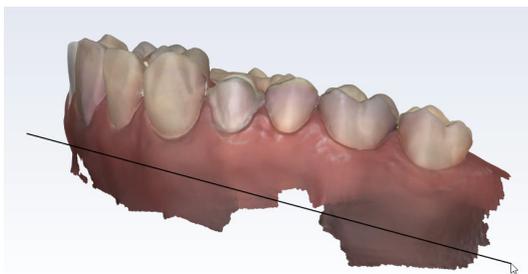
About this task



The **Trim Model** tool can be used to remove sections of the model using a straight cutting line instead of manually erasing.

Steps

1. Click and drag to draw the **Trim Model** line.



The system removes the data.



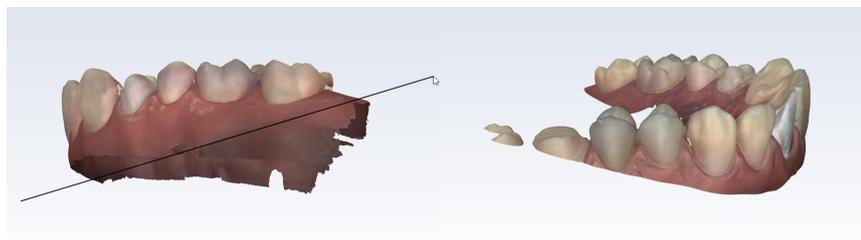
NOTE

If you are straightening out the base of the model, do **NOT** remove too much gingival tissue or you may have difficulty with aligning your models.

Ensure you have your model at an even angle before trimming. If you trim while the model is angled sharply, you could accidentally trim away good data on the other side of a full arch case.

Wrong - line drawn on angled model

Good data removed on the other side of the arch

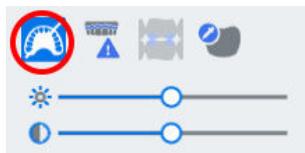


NOTE

Trim your models before adding them to a **Group**. If you trim them after they are aligned, that layer will be removed and need to be manually added back to the **Group**.

9.17 Colour model or stone model

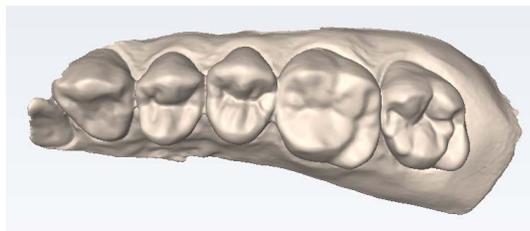
The default setting is for models to be viewed in **Color Model View**. Deactivate **Color Model View** to see the model all in one colour like a poured stone model. Use the sliders to adjust brightness and contrast if desired.



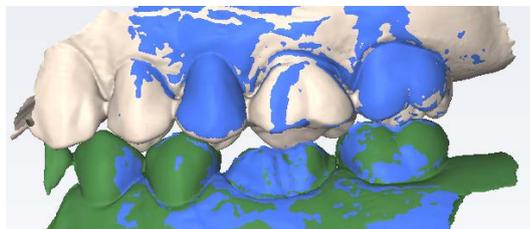
Color Model View



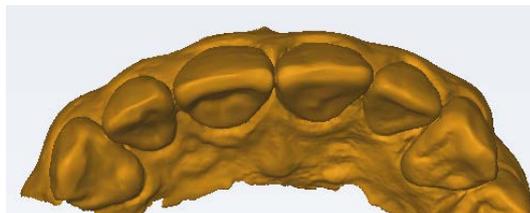
Stone Model - Upper



Stone Model - Upper beige, Lower green, Buccal blue



Stone Model - Pre-op



9.18 Checking model for missing data

About this task

Follow these instructions to evaluate the model for low data.

Steps



1. Click **Data density**.

The model refreshes with the dark blue and purple areas indicating the least data.

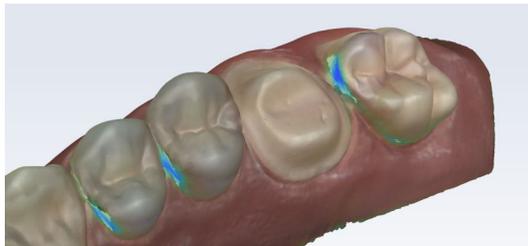
2. Rotate the model to analyse it.

Dark areas on your restoration site and interproximal contact areas should be rescanned.

3. Check if the key areas are missing data:

- Look for coloured areas on the prepared tooth, especially on the margin.
- The adjacent teeth should have good data on the interproximal contact area, occlusal surfaces, and of the lingual and buccal contours.
- Data below the height of contour is not as crucial on the adjacent teeth.

Colour model with Data Density activated



4. If areas lack detail, rescan the needed area.



What to do next

Click **Data Density** again to return to the normal view. Click **Margin** when finished with scanning.

9.19 Delete model

About this task

To delete model:

Steps



1. Click the **Delete Model** button to remove the model and start over.

9.20 Scanning upper and lower

About this task

When scanning upper and lower:

Steps

1. Start on the occlusal for both scans.
Ensure you have good data on the margin, occlusion, and interproximal contacts (for restoration scans).
Ensure there is enough buccal data to aid in alignment.

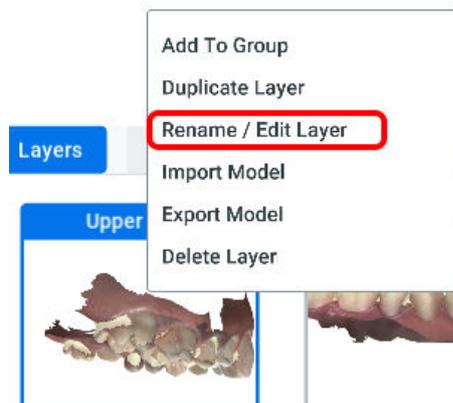
9.21 Editing scan layer

About this task

A scan layer can be edited to change the name and/or scan type. This can be helpful if you accidentally scan something under the wrong label.

Steps

1. Right-click on the layer you want to edit.



2. Click **Rename/Edit Layer**.

Edit Scan Model

Scan Type:

Name:

3. Change the **Scan Type** and/or the layer's **Name**.
4. Click **Save** to keep your changes or click **Cancel** to exit without saving.

9.22 Shade assist

Before you begin

Shade assist can be used for intraoral cases only.

About this task

Use shade assist as follows.

Steps

1. Click **Color Mode View** to activate it.
2. Hover over the dentition to see a shade pop-up.



3. Left click on the desired area to make an annotation showing the colour.
4. Click on the tooth to save the shade mark in that location.

Repeat as desired.

The shade information will not export with the models. This is used as reference only.

9.23 Scanning buccal bite

About this task

The buccal bite is scanned to align the upper and lower models. While scanning the buccal, the system attempts to automatically align the models and the **Upper** and **Lower** model will automatically appear in the model build view. Ensure your other models have enough gingival data to aid in alignment.

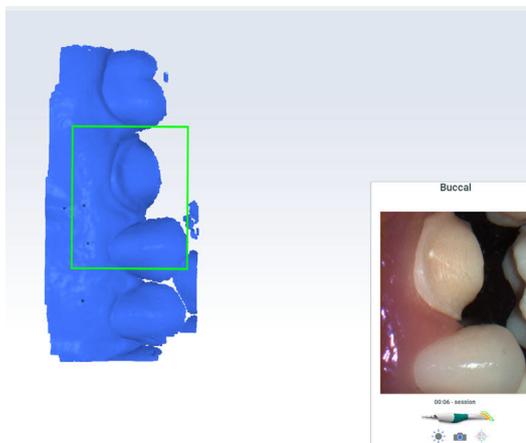
Follow these steps to proceed.

Steps

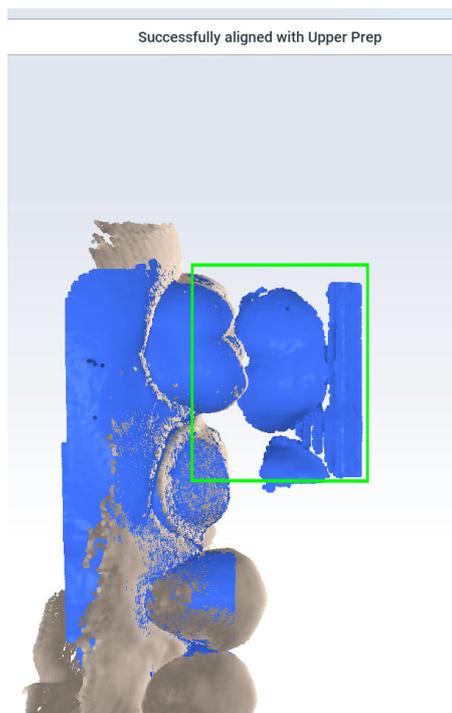
1. Click the **Buccal Bite** layer.
2. Press the articulated model down firmly or have the patient bite down firmly and tell them not to move while you are scanning.

If they shift during scanning, the alignment may be incorrect.

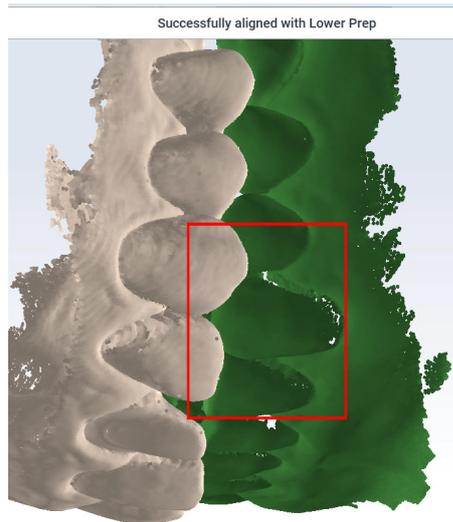
3. Start scanning at a 90° angle to the teeth.
 - 3.a. Focus the scanning on one arch/gumline until the model for that arch appears (with a notification noise), then go to the opposing arch and repeat.



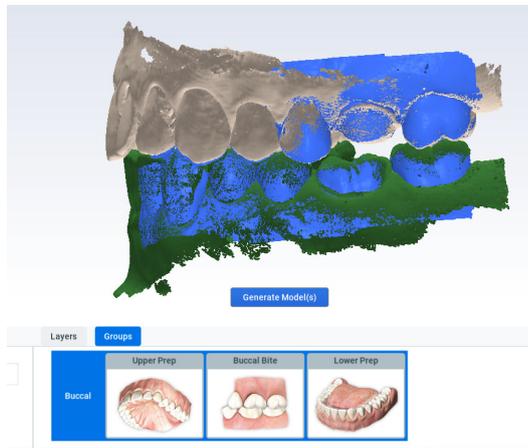
- 3.b. Scan the sides of the teeth that were captured in the upper and lower models.
Ensure some gingival data is captured.
First arch aligns.



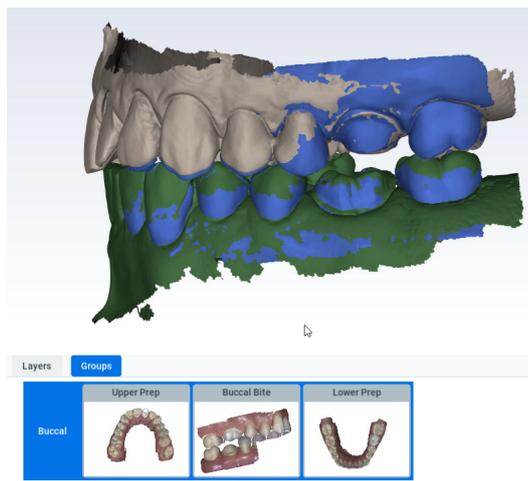
- 3.c. Move the scanner to scan the other arch.
Second arch aligns



When scanning is stopped, interim models appear in alignment.



When scanning is stopped, interim models appear in alignment.



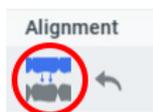
NOTE

If the models do not automatically appear for each arch, scan the desired teeth and then manually align them. See "Manual alignment" on page 49 for more information.

4. Click **Generate Models**.



5. If desired, click **Refine Alignment** (unavailable if the models are not aligned).



6. Click the icon on/off to view the two alignment options.
Leave the icon in whichever state you prefer. The status of the icon determines which alignment is exported.

9.23.1 Scanning bilateral buccal bite

About this task

Full mouth cases may require additional refinement and bite scans. You can add a second Buccal Bite layer to scan a second bite. Basic buccal bite workflow is as follows

Steps

1. Scan Buccal Bite.
2. Refine.
3. Verify alignment.
4. If needed, scan second Buccal Bite and refine.

9.24 Occlusal contact strength

About this task

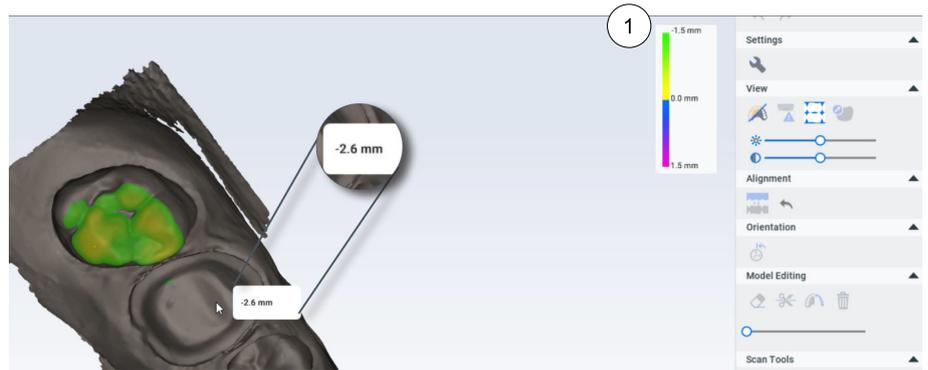
The Occlusal Contact heat map can be used to evaluate the alignment and preparation clearance.

Steps

1. Click on an aligned group.
See "Model alignment groups" on page 48 for more information.
2. Click **Occlusal Contact** under View.



3. A heat map legend displays and the occlusal contacts are highlighted.
3. Rotate the model to view the occlusal.
4. Use the legend to evaluate the colors and/or hover the mouse cursor over an area to see the contact strength.
Hover on areas of the preparation to see the amount of clearance to the opposing tooth.



1 Use the occlusal contacts legend to assist in bite intensity and clearance.

9.25 Model alignment groups

Groups are used to align models. You can create and export multiple groups if needed. If two or more models are aligned during scanning, a group is automatically created with the aligned models. When doing manual alignment, you will need to add to an existing group or create a new group.

NOTE

Additional scanning on a layer will cause any associated groups to be deleted.

9.25.1 Create new alignment group

About this task

To create a new alignment group:

Steps

1. Drag one scan layer onto another.

If the system cannot align them automatically, a manual alignment screen appears. See "Manual alignment" on page 49 for more information.

9.25.2 Buccalless bite alignment

About this task

You can create an alignment without scanning the buccal.

Steps

1. Scan the **Upper**.
2. Scan the **Lower**.
3. Drag the **Upper** layer onto the **Lower** layer to create a new group.

Results

The system creates an alignment based on occlusal contacts.

What to do next

If you are dissatisfied with the alignment, you can scan the buccal bite to create a new alignment.

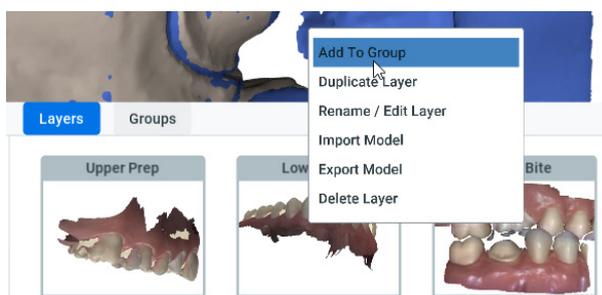
9.25.3 Add to group

About this task

If one or more models aligned during scanning, a group is created. To add to group follow the instructions below

Steps

1. On the **Layers** tab, right-click on the unaligned model's layer and select **Add to Group**.



The available groups are shown.

2. Click the desired group.

Results

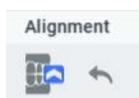
The software attempts to align the new model to the group. If it is unsuccessful, for example, if the upper arch aligned during the scanning of the buccal bite and lower arch did not, you will need to manually align the lower model (see section "Manual alignment" on page 49).

9.25.4 Manual alignment

About this task

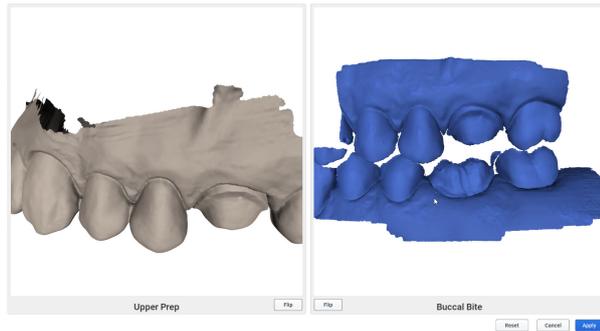
If automatic alignment is unsuccessful, a manual alignment must be done.

Steps

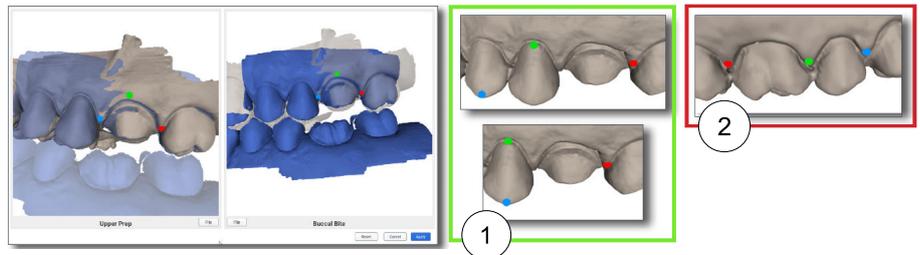


1. Click **Reset Alignment** to manually align a group.

A split screen appears with two models. Each model is displayed on either half of the screen.



2. If needed, rotate or **Flip** the models so that matching anatomy appears on each screen.
3. Click on a distinctive feature on the first model.
A red dot appears.
4. Click on the same distinctive feature on the second model.
A matching red dot appears.
5. Repeat these steps twice more (green and blue dots).
The system displays an alignment preview.



1 Correct - Dots form a triangle

2 Incorrect - Do not put the dots in a straight line.

6. Rotate the models to evaluate the alignment.
If the previewed alignment will fail, the **Apply** button is greyed out.
7. You can click and drag to move/adjust the points to improve the alignment or click **Reset** to start over.
8. Click **Apply** to save this alignment.

What to do next

If needed, click **Reset** to start over. Click **Cancel** to exit without saving the alignment.

9.26 Object browser

Use the sliders to change the opacity of any of the models in the group. This can be helpful when evaluating the alignment.

9.27 Scanning pre-op

About this task

Use **Scan Pre-op** when you want to scan a pre-operative tooth or a wax-up.

Steps

1. Select **Upper** or **Lower Pre-op** as your Workflow.
2. Click the **Pre-op** layer.
3. Scan the pre-operative tooth or wax-up and adjacent teeth.



4. Prepare the tooth.
5. Click the appropriate prep layer.
6. Scan the teeth.

9.28 Scan body workflow

About this task

Follow these instructions to use the **Scan Body** workflow.

Steps

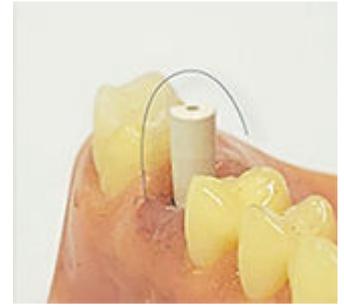
1. Select **Scan Body** workflow.
2. After removing the healing cap, the soft tissue (where implant is placed) is scanned in as the preparation model.



3. Scan the opposing and buccal bite.
4. Insert the scan body and scan it under the **Scan Body** scan layer.
5. Start the scanning at the gingival in order to capture enough data.

When possible, include teeth and tissue in the scans. Scan up the side, over the top of the scan body, and back down until you reach the gingival again. Scan the rest of the model with the scanner's normal scan pattern.

- Try and get as close as possible to the scan body, but do not put it inside of the tip.
- Use the larger tip size because of the bigger field of view to aid in alignment.

**TIP**

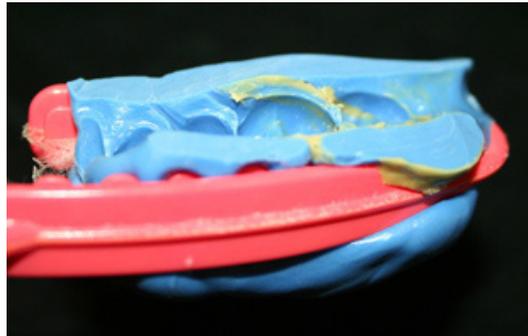
If you start scanning from the occlusal on a scan body, you may not capture enough data and it is difficult to create a good model. Start scanning from the gingival in order to start with good data.

6. Verify alignment.
7. Follow the normal procedure for exporting the case to your laboratory.

9.29 Scanning impressions

Before you begin

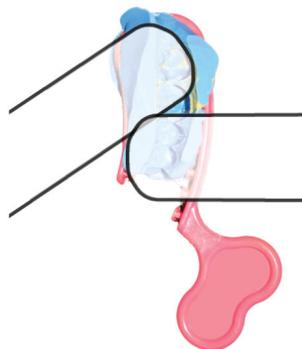
Remove the excess impression material so that the scanner can get closer for scanning.

**NOTE**

Any impression material can be used. The system does not require a particular color or type of material.

About this task

Due to the nature of impressions, the normal positioning of the scanner may not be able to capture all of the walls of the impression. You can also tilt the scanner up or down or turn the scanner perpendicular to the impression to achieve the necessary point of view.



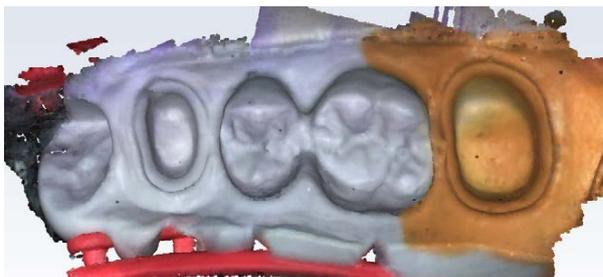
Be careful not to squeeze or otherwise distort the impression while scanning.

Steps

1. On the **Scan** screen, select the **Prep** layer.
2. Scan the impression.
3. Evaluate the model for low data.

NOTE

From the occlusal view, the impression can give the optical illusion of looking like a regular model.



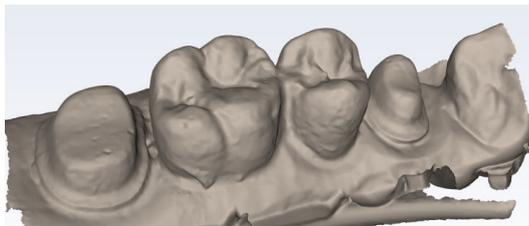
4. Rotate the model to see all of the impression. Be sure to check the contact areas on the adjacent teeth.



5. Take extra scans if there are areas that need additional scans, such as the interproximal areas.
6. Erase any extra data.



7. Click **Invert Impression** in the Model Editing section to invert the model into the normal view.

**TIP**

If the color of the impression material makes it difficult to visualize the model details, deactivate Color/Stone Mode.



9.30 Full arch scanning

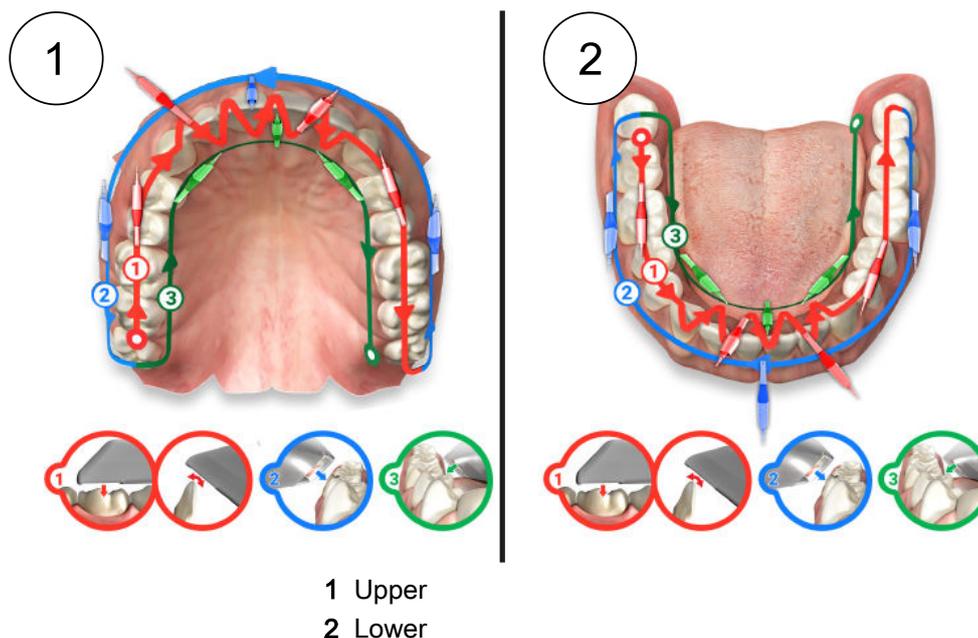
About this task

Follow these steps to perform full arch scanning.

Steps

1. Start on the distal of one side and scan the occlusal of the entire arch. On the anteriors, rotate back and forth from the lingual and facial.
2. Scan all of buccal.
3. Scan all of the lingual.
4. Evaluate the model and rescan areas with low data, if necessary.

5. To aid automatic alignment, start the scans on the opposing molars and continue to the buccal scan in the same quadrant.



9.31 Open bite scan

About this task

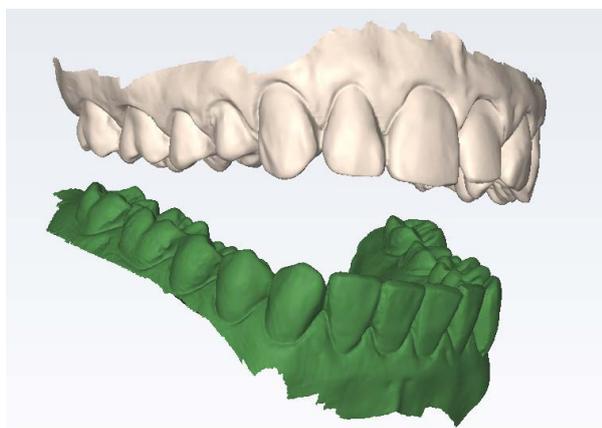
Open Bite is used for sending data to your lab for a night guard and other such appliances. Follow the instructions below to use the **Open Bite** workflow.

Steps

1. Select **Open Bite** as the workflow.
2. Scan the Upper and Lower arches following the normal procedure.
3. Have the patient bite on the bite registration appliance of your choice.
4. Select the **Buccal Bite** layer and scan the buccal bite with the bite partially open.

Results

The system attempts to align the models automatically. Manually align them if needed.



9.32 360° Scanning

You can scan the underside of an appliance to send to a laboratory. The example below is of a denture that has been scanned into the Upper scan mode. These pictures are of one model.



9.33 Import model

About this task

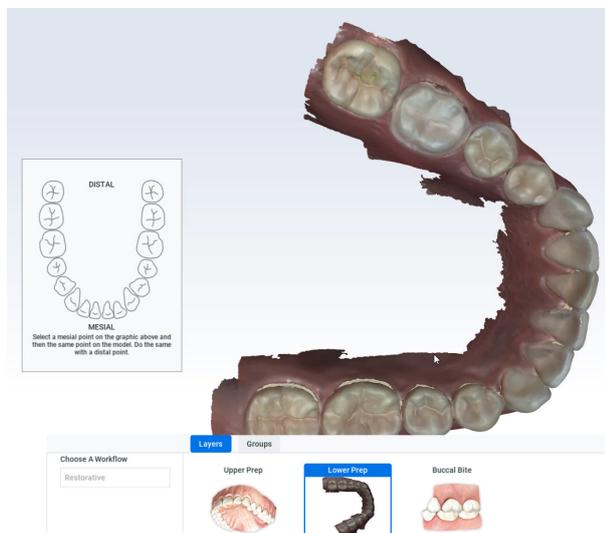
Follow these instructions to import a model.

Steps

1. Click on a scan layer to select it.
2. Right-click on the scan layer and select **Import Model**.
3. Navigate to the desired file on your computer.

You can import .ply, .stl, or .obj files.

The model is imported and an orientation graphic displays.



4. The model is imported and an orientation graphic displays.
5. Click a mesial tooth on the graphic and on the model.
6. Click a distal tooth on the graphic and on the model.
7. Trim the model if needed.

NOTE

You cannot add scans or use the Erase tool on imported models.

8. Repeat for all of the desired layers.

9.34 Export model

About this task

Follow these instructions to export a model.

Steps

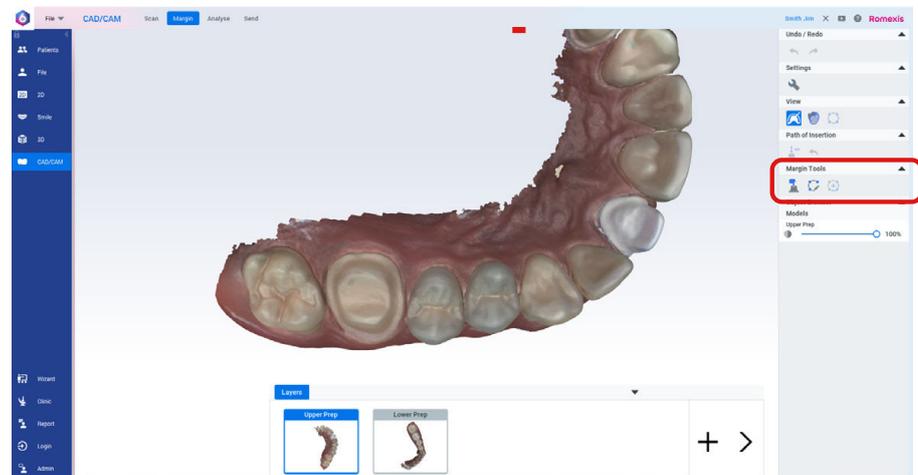
1. Click on a scan layer to select it.
2. Right-click on the scan layer and select **Export Model**.
3. Navigate to the desired folder on your computer.

You can export as .ply, .stl, or .obj file type.

10 Margin tab

The Margin tab contains tools for quickly and easily creating and modifying the margin.

There are two tool groups on the *Margin* tab.



- Draw Margin
- Add Segment

10.1 Draw margin

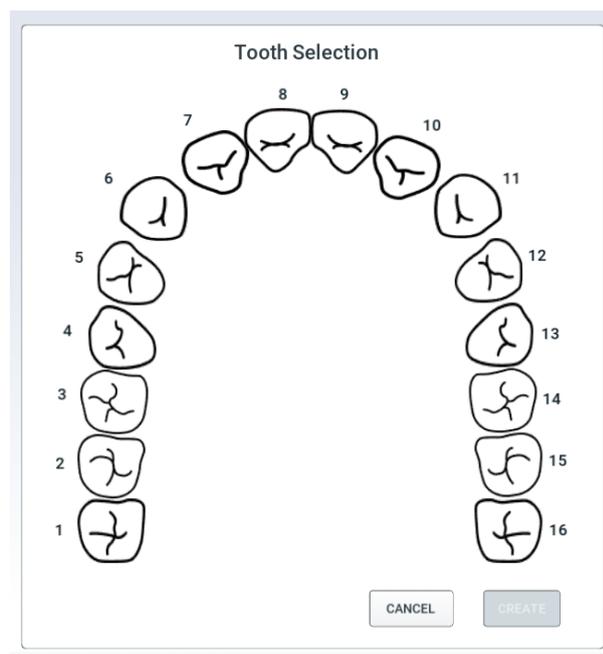
About this task

Follow these instructions to use the **Draw Margin** tool.

Steps

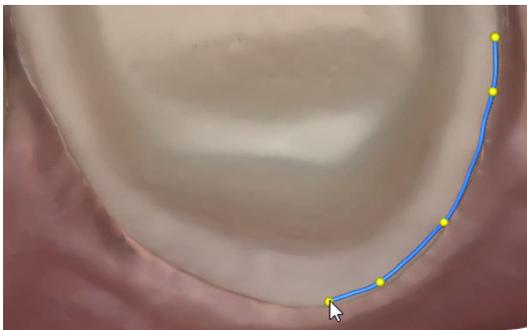
1. Click the **Draw Margin** tool.

The **Tooth Indicator** screen appears.



2. Click the desired tooth number.
3. Click **Create**.

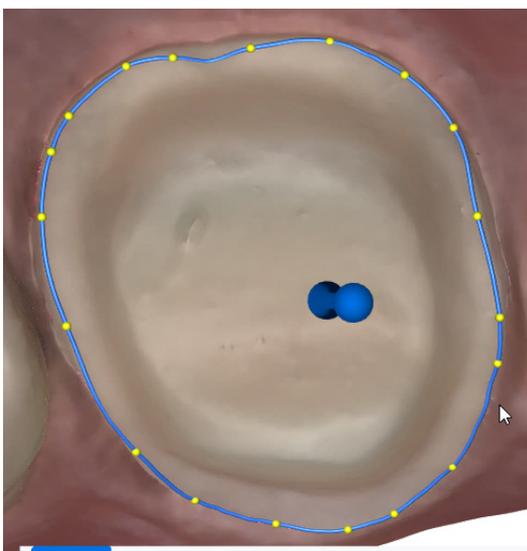
4. Zoom in and rotate the model until there is a good view of the margin.
5. Click on the margin.
A dot appears as the starting point.
6. Click along the margin in small increments.
The system creates a blue contour-following line between each click.



A hard to see margin or clicking in large increments may cause the system to lose track of the margin edge. This can be corrected after the margin is drawn.



7. Click the starting point to finish the margin.



The system automatically activates **Path of Insertion**.



8. Grab any yellow dot to drag the margin line to better location.
9. You can add yellow control points to any place of the margin line by left click.

What to do next

Repeat the steps above to draw another margin.

TIP

Deactivate Path of Insertion before drawing the next margin if the POI highlight is obscuring the margin.

10.2 Views

There are several ways to view the models to aid in drawing/evaluating the margin.

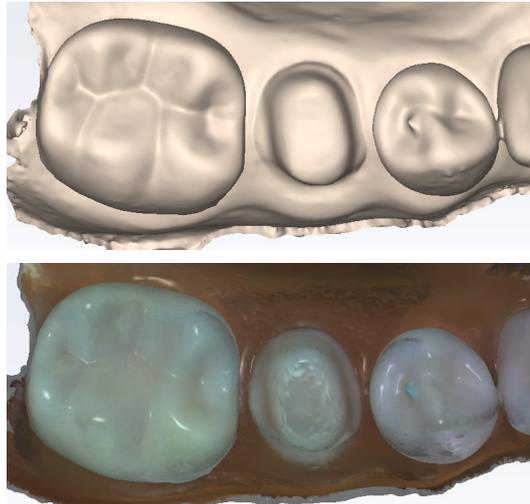
10.2.1 Color model view

NOTE

Color model view is for intraoral cases only.



Use **Color Model** to toggle between color view and stone view. This can aid in seeing the margin in some cases.

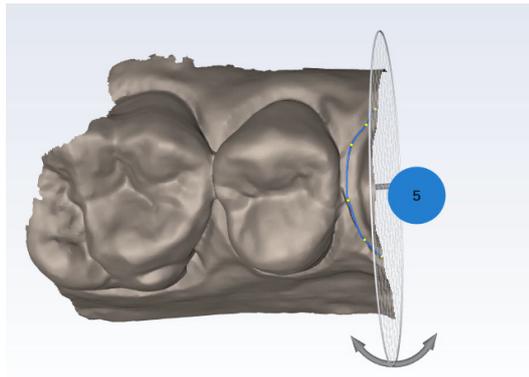
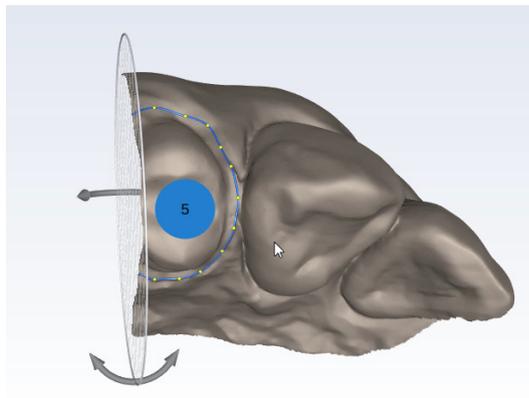
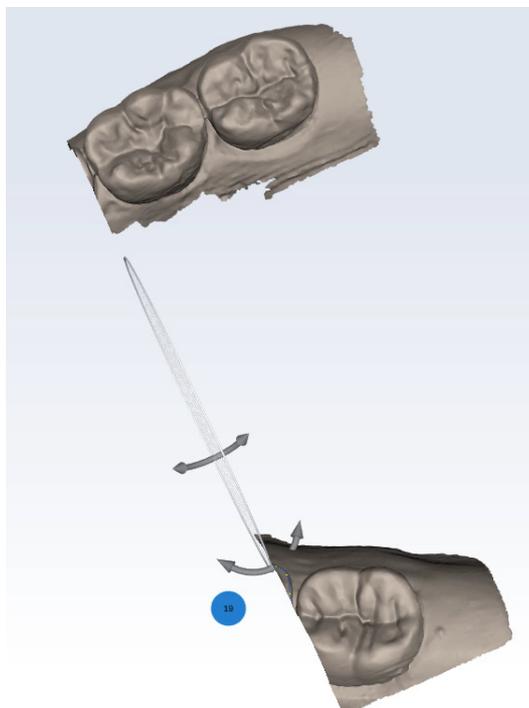


10.2.2 Slice plane

About this task



Slice Plane can be used to slice the model and enable you to evaluate/visualize the margin in a different way. The initial slice is in the middle of the model.

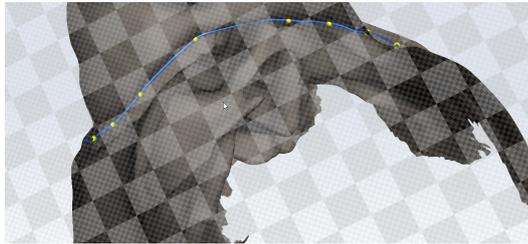
Quadrant slice 1**Quadrant slice 1 rotated to view other side****Full arch slice 1**

Follow these instructions to use the **Slice Plane** tool.

Steps

1. Rotate the model to view the slice from the other side.

2. Click and drag the slice to move it to the desired location on the model.
3. Click and drag on the directional arrows to change the angle of the slice.
4. Rotate and zoom as needed to view the desired area.



- Click the **Slice Plane** icon a second time to switch the axis of the slice.
- Click the **Slice Plane** icon a third time to switch the axis of the slice to horizontal.
- Click the **Slice Plane** icon a fourth time to deactivate it.

10.2.3 Show/hide margin



Click **Show/Hide Margin** to toggle the margin on/off.

10.2.4 Model opacity

Use the slider to change the opacity of a model.

10.3 Path of insertion

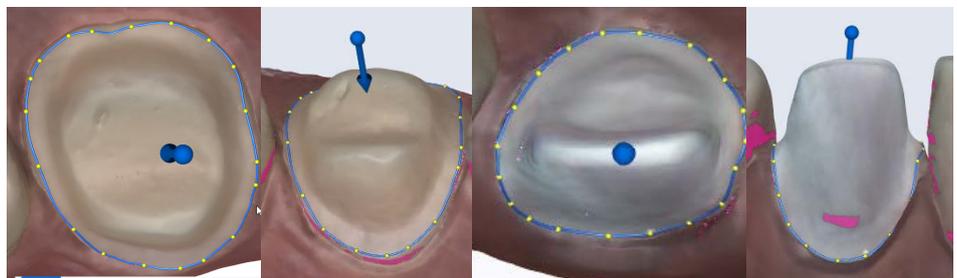
About this task

Path of Insertion is automatically activated when a margin is drawn. Follow these instructions to use the **Path of Insertion** tool.

Steps



1. Click **Path of Insertion** to toggle the view on/off.
2. When active, a directional arrow appears over the drawn margin showing the path of insertion.



3. Click and drag the arrow to adjust the path of insertion. Pink highlights show undercut areas.

Use this to evaluate your prep for possible fit issues.

NOTE

Path of Insertion information is not exported. This is for information purposes only.

4. If there are multiple preparations, click the tooth number to evaluate each prep.
5. Click the **Reset** icon to revert the path of insertion back to the original angle. This icon is only available when the **Path of Insertion** icon is active.

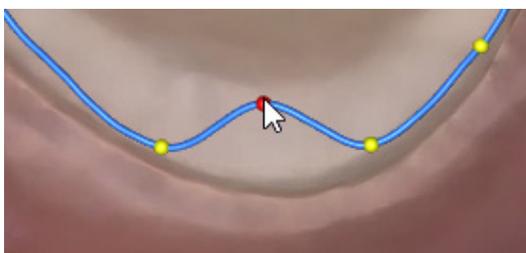
**What to do next**

Click **Path of Insertion** to deactivate it.

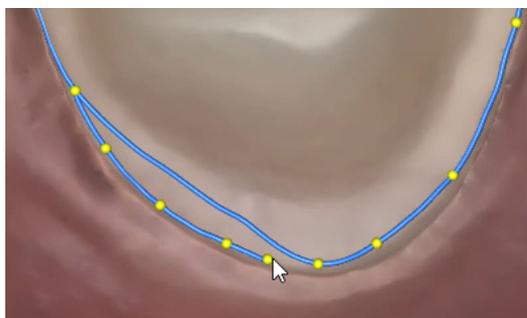
10.4 Editing margin

The margin is made up of control points with interconnecting lines. There are a variety of ways to edit the margin. These can be done in any order.

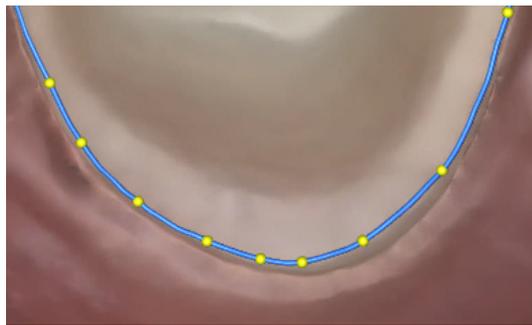
- Click and drag a control point to move it.



- Right-click on a control point and select:
 - **Delete Control Point** to remove a single dot.
 - **Delete Margin** to delete the entire margin.
 - **Edit Margin Info** to edit the tooth number.
- To add a new control point, click on the blue line. A new control point appears.
- Click **Add Segment** to redraw a section of the margin.
 - Click a control point on a portion of the margin that is good. This is your starting point.
 - Click in small increments to add new points across the gap.

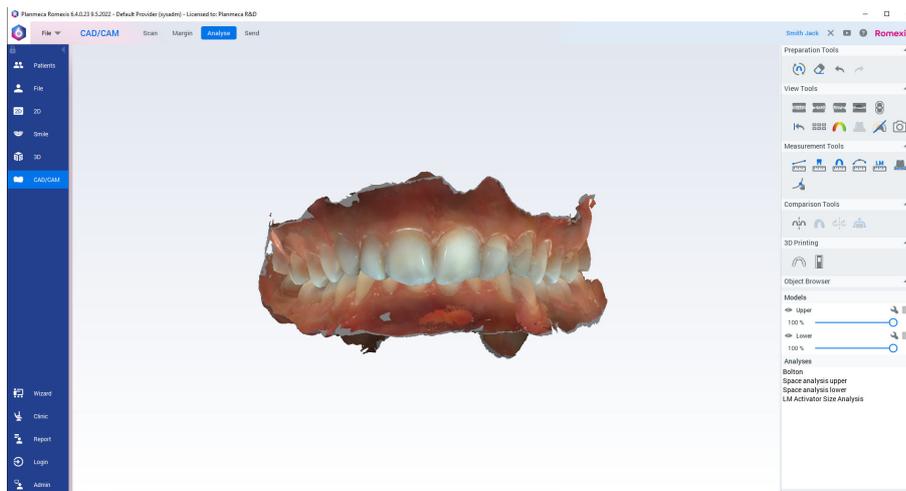


- Click another good point on the margin to complete the new line.

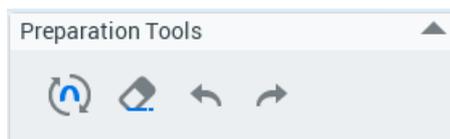


11 Analyse tab

When the scan is opened from the case list it appears in the *Analyse* tab.



11.1 Preparation tools



11.2 Defining occlusion plane



To orientate model the occlusal plane and midline must be defined.

After scanning or importing files into *CAD/CAM* module, a dialog for defining occlusion plane opens up automatically with the *3-point alignment* dialog where the lower model is hidden.



11.2.1 3-point alignment

About this task

Follow these instructions to define 3-point alignment.

Steps

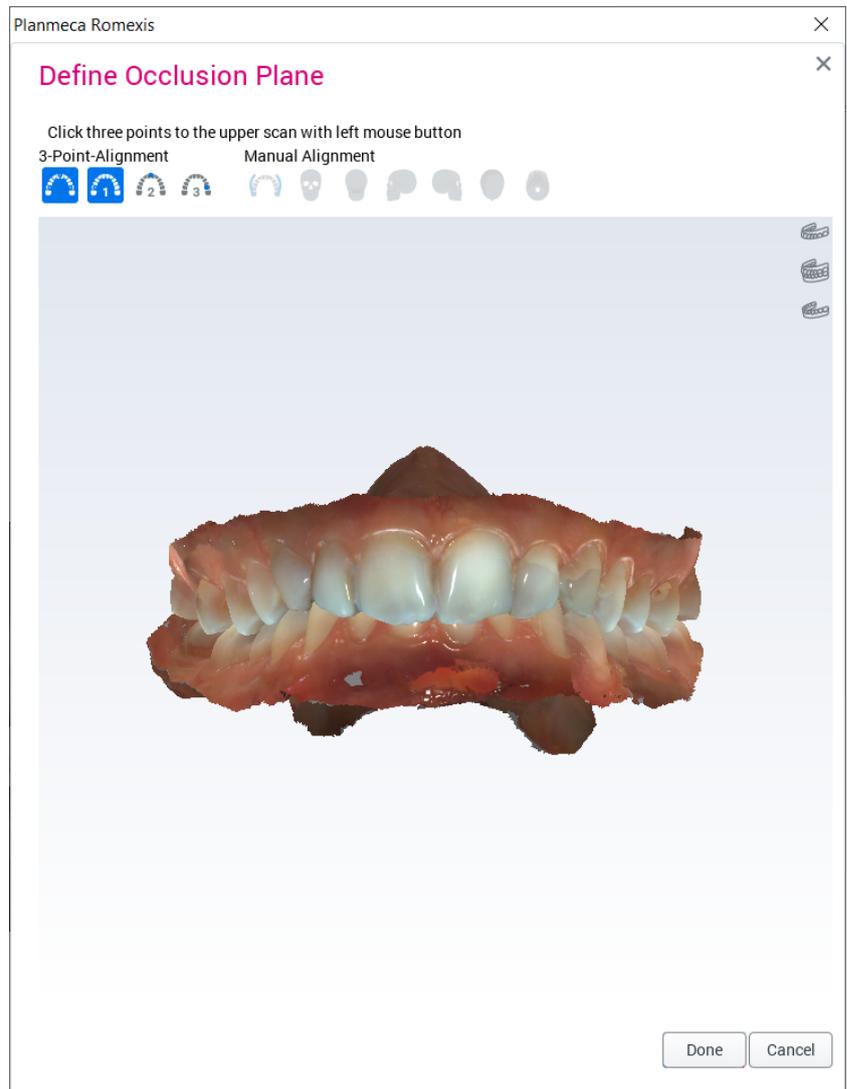
1. Indicate 3 points (right molar, midline and left molar) from the surface of the model by clicking on the model.

If you want to use the lower model in the definition, select it from the viewing buttons in the upper right corner of the dialog.



The models are automatically aligned.

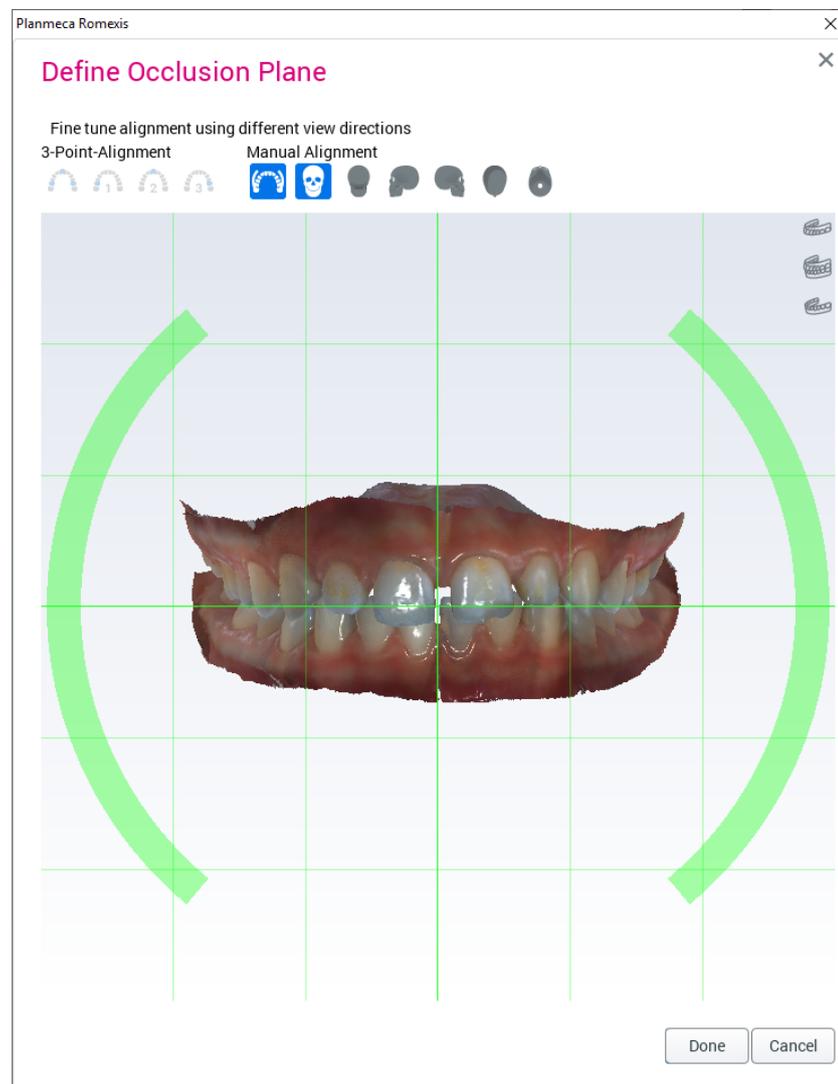
2. If necessary fine-tune the alignment manually, see section "Manual alignment" on page 68.
3. Finish the alignment and exit the dialog by clicking **Done**.



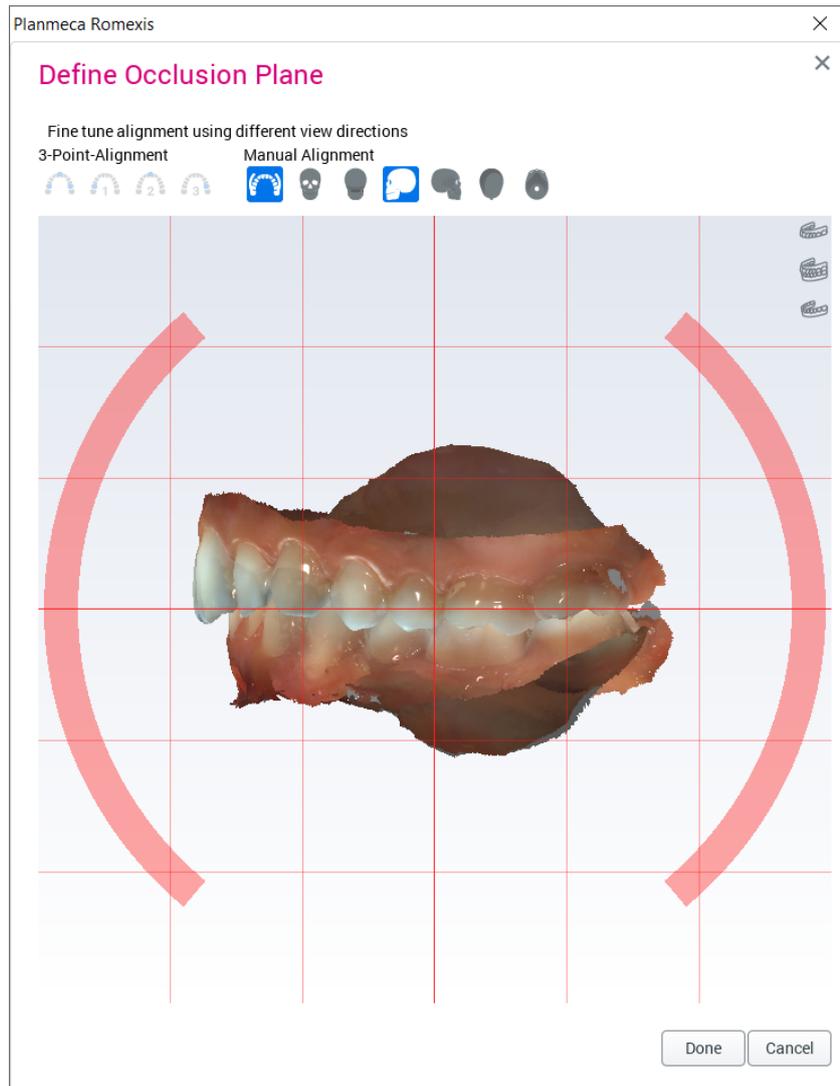
11.2.2 Manual alignment

If necessary, you can use manual alignment to fine-tune alignment after 3-point alignment.

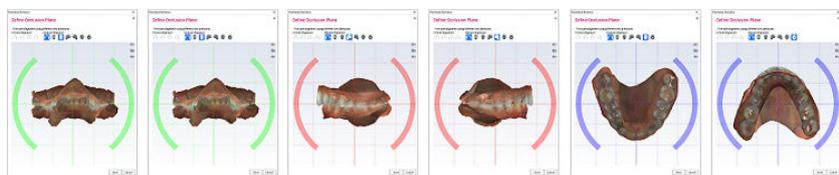
You can freely translate the models by dragging.



To rotate the models, drag from the arcs around the models.



To change viewing direction, use the buttons on the manual alignment toolbar.

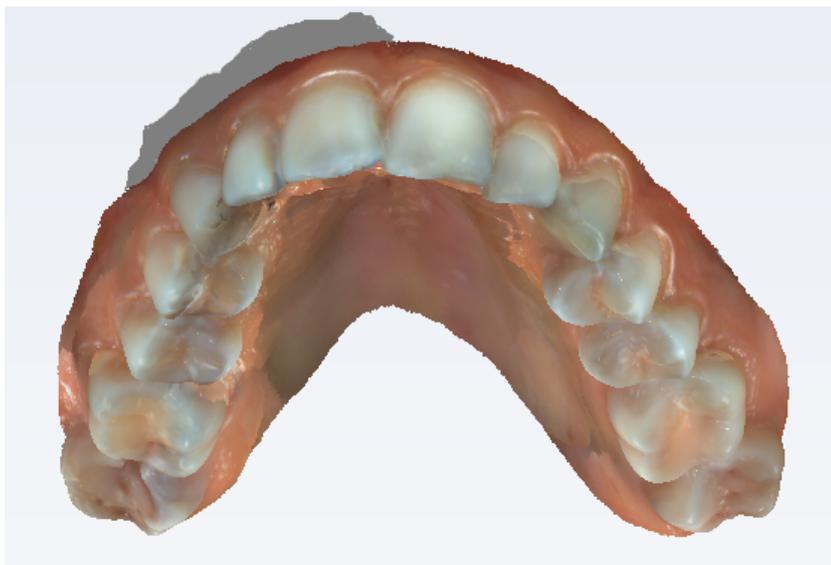


11.3 Trimming model

Paint ROI to trim



Select **Paint ROI to trim** and drag the tool on the model to remove any unwanted areas.

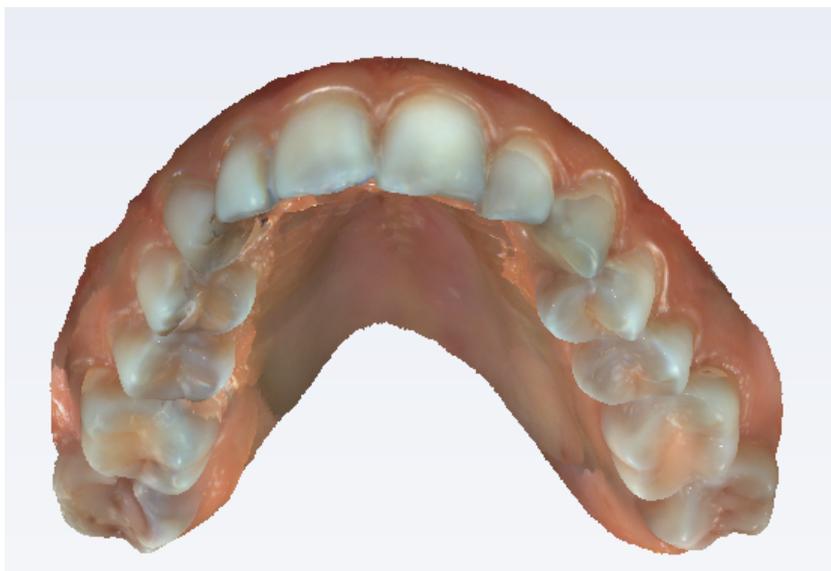


To change the brush size, hold down the **Ctrl** and **Shift** keys while scrolling the mouse wheel.

To increase the size of the trimming tool, zoom out.

To rotate models while trimming, hold down the **Alt** key while dragging.

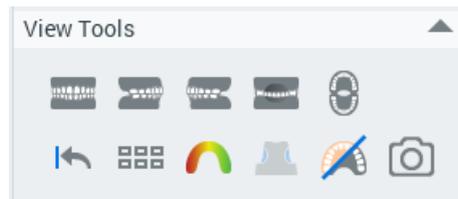
The surfaces behind the painted area(s) are automatically removed.



To undo/redo modifications, click the **Undo** and **Redo** buttons.



11.4 View tools



To view models from different directions, click the front, right, left, back and open mouth view buttons.



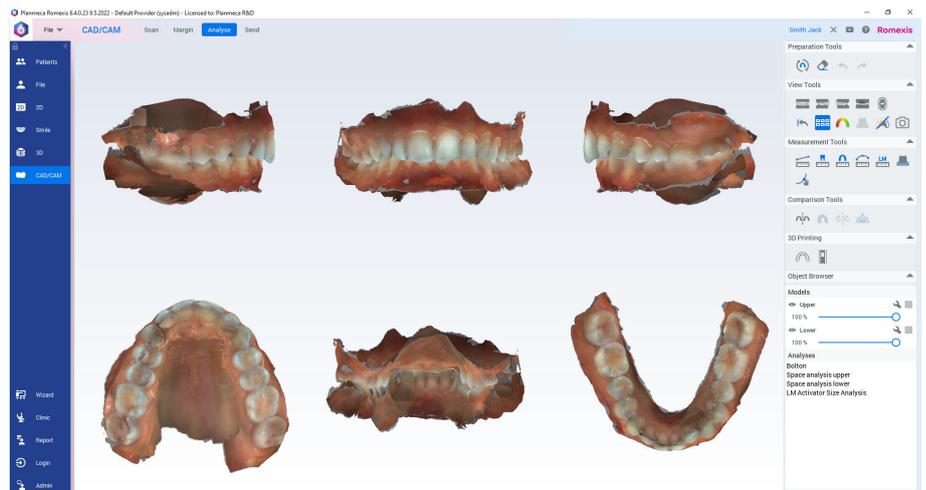
Reset view

Click this button to reset orientation to the state right after model orientation.



Multi-view

To visualize models from different directions and occlusal view at the same time click multiple views.



11.4.1 Calculate contact map



Calculate and show contact map

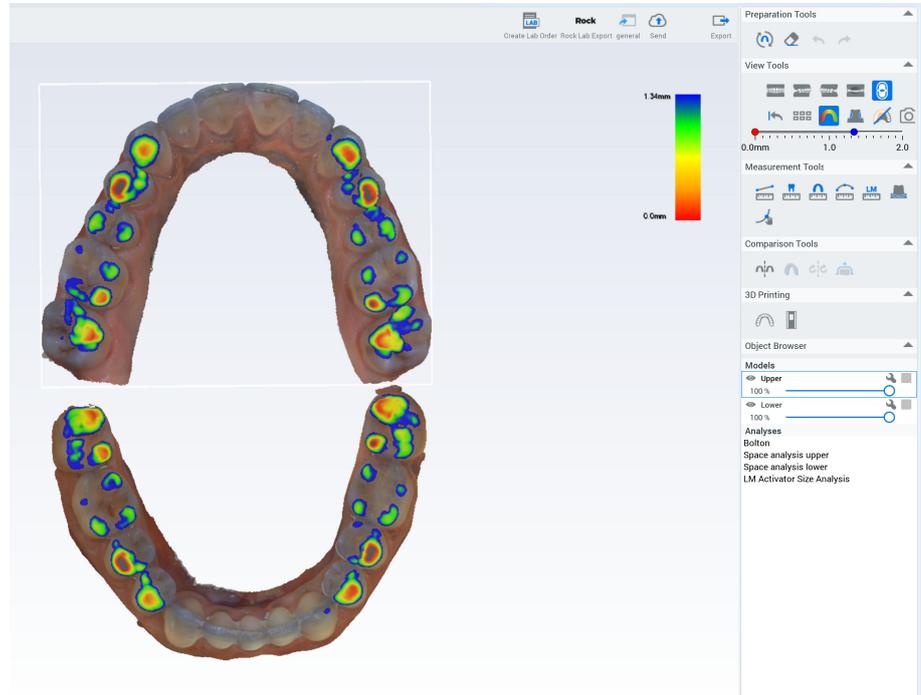
Click this tool to visualize distances between upper and lower models.

The color map scale can be adjusted from both ends.

To indicate contact and the distance under which all is visualized in red, drag the red dot.

To set the maximum distance visualized, drag the blue dot.

Model overlap is visualized in grey.



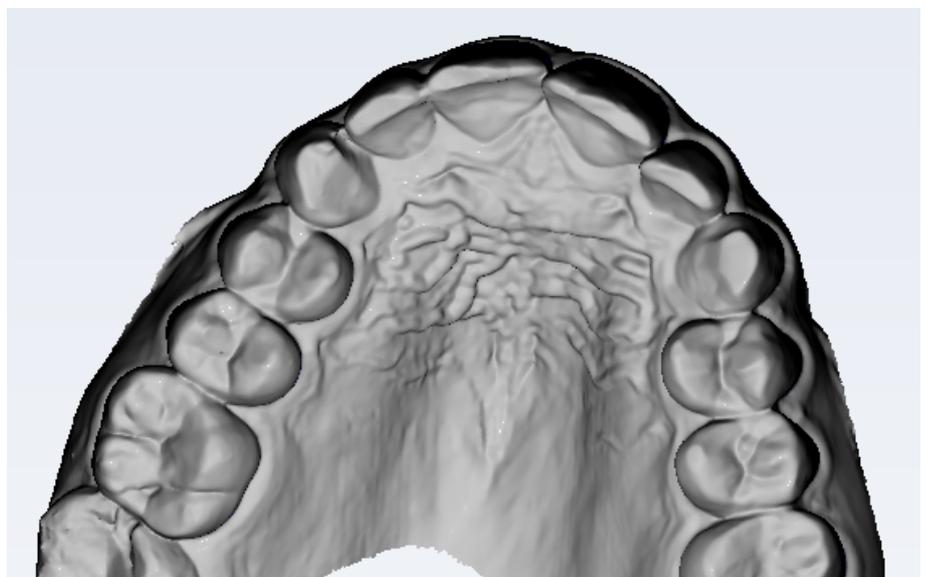
11.4.2 Calculate undercuts

About this task

Follow these instructions to calculate undercuts.

Steps

1. Select the surface model in the object browser.
2. Rotate the model to the desired insertion direction.

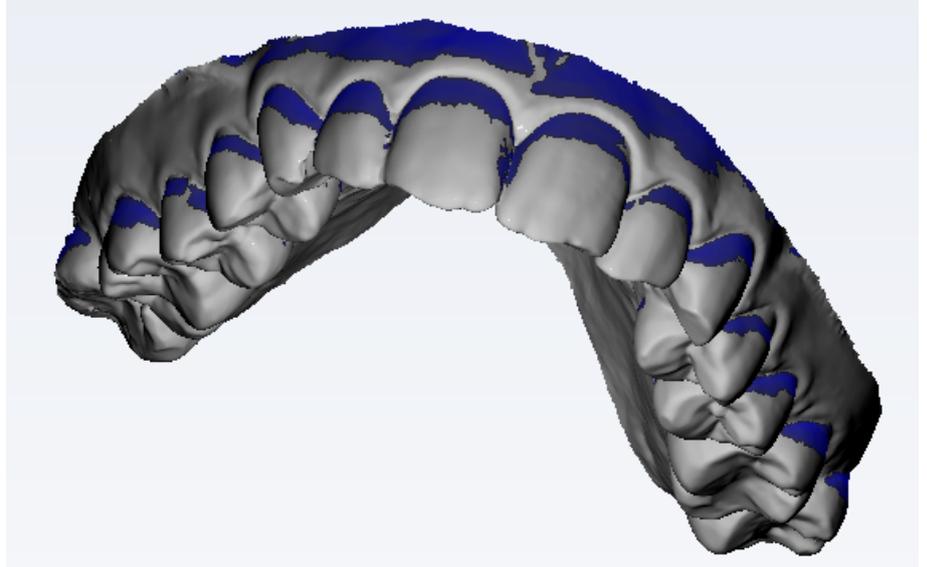


3. Click the **Calculate and show undercuts** button.



The undercut areas in the selected insertion direction are coloured in blue.

To change the insertion direction, deactivate the tool, re-orient the model and click the button again.



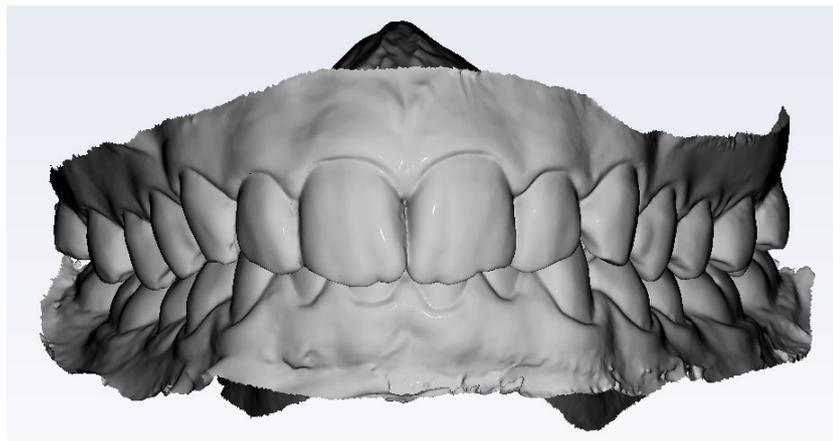
The colour of the surface model returns to normal when the tool is deactivated.

11.4.3 Colours



Use this tool to show/hide model colour.





11.4.4 Taking 2D quickshot

About this task

Follow these instructions to take a 2D quickshot.

Steps

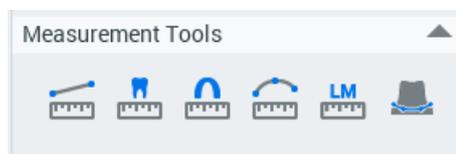


1. Click the **Quickshot** button.

Results

The quickshot is saved to 2D imaging module under *Photos*.

11.5 Measurement tools



11.5.1 Point-to-point measurement

About this task

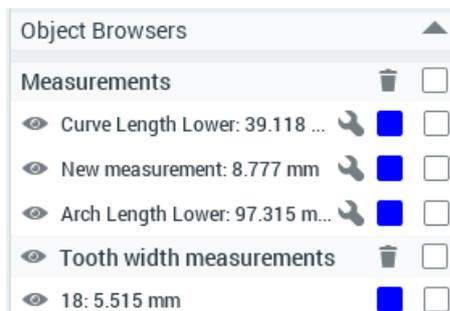
Use this tool to measure a distance from one point to another.

Steps



1. Activate the **Point-to-point** measurement tool.
2. Click on the model where you want the measurement to start.

- Click on the model where you want the measurement to end.
The 3D measurements are shown in the object browser under *Measurements*.



11.5.2 Tooth width measurement

About this task

Follow these instructions to take a tooth width measurement.

Steps



- Click the **Tooth width measurement** tool.

- Click on a numbered tooth on the chart.

In the upper jaw start from the posterior right side, in the lower jaw start from the posterior left side.

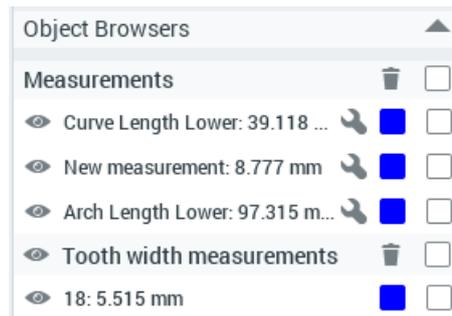
- Click on the distal and mesial side of the tooth.

The next tooth is automatically selected from the chart.

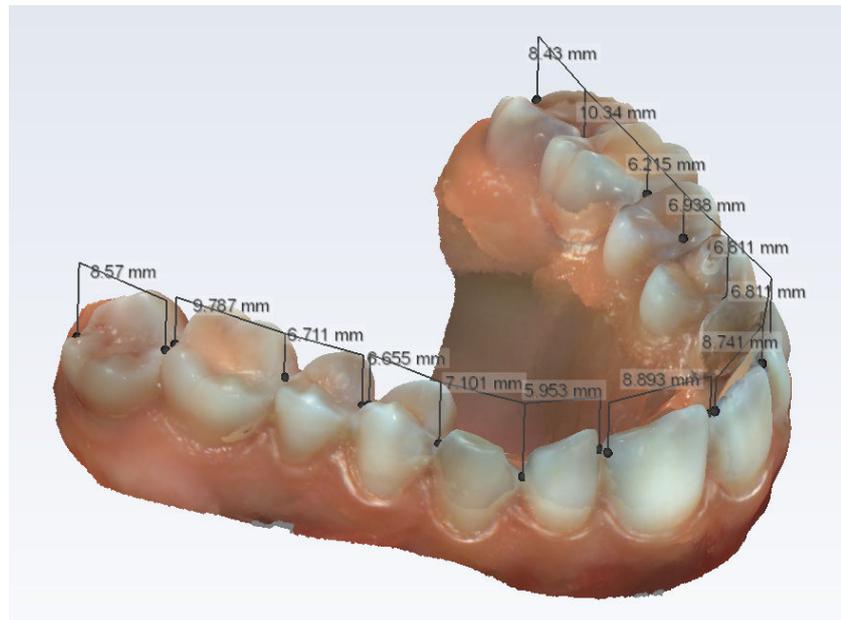
- To skip a tooth, click on another tooth on the chart.
- To re-measure a tooth, click on it on the chart.



The measurements are shown in the object browser under *Tooth width measurements*



The width measurements are calculated as a projection of the 3D points on the occlusal plane. The measurements are used in some of the analyses.



11.5.3 Arch length measurement

About this task

Arch length measurement is calculated as a projection of the 3D points on the occlusal plane. This measurement is used in some of the analyses.

NOTE

The first arch length measurement per jaw is used in the calculation of Space analysis. Measure arch lengths from distal of 5 to distal of 5 for the Space analysis to be calculated correctly.

To measure arch length:

Steps

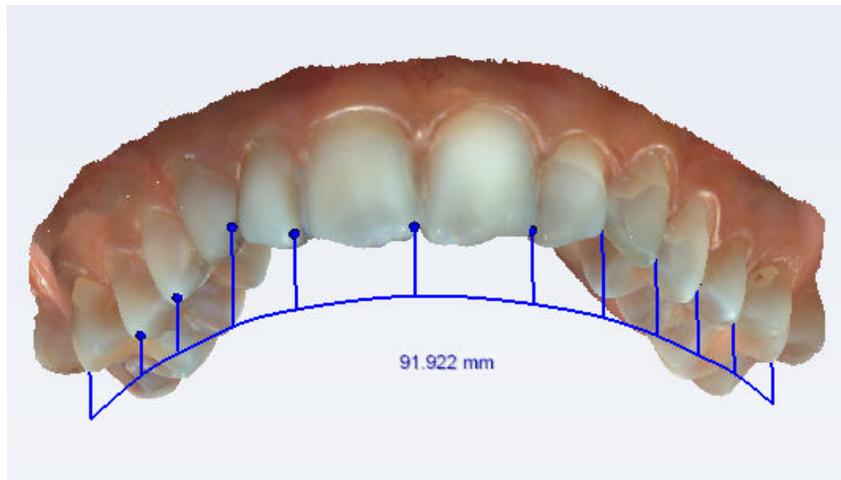
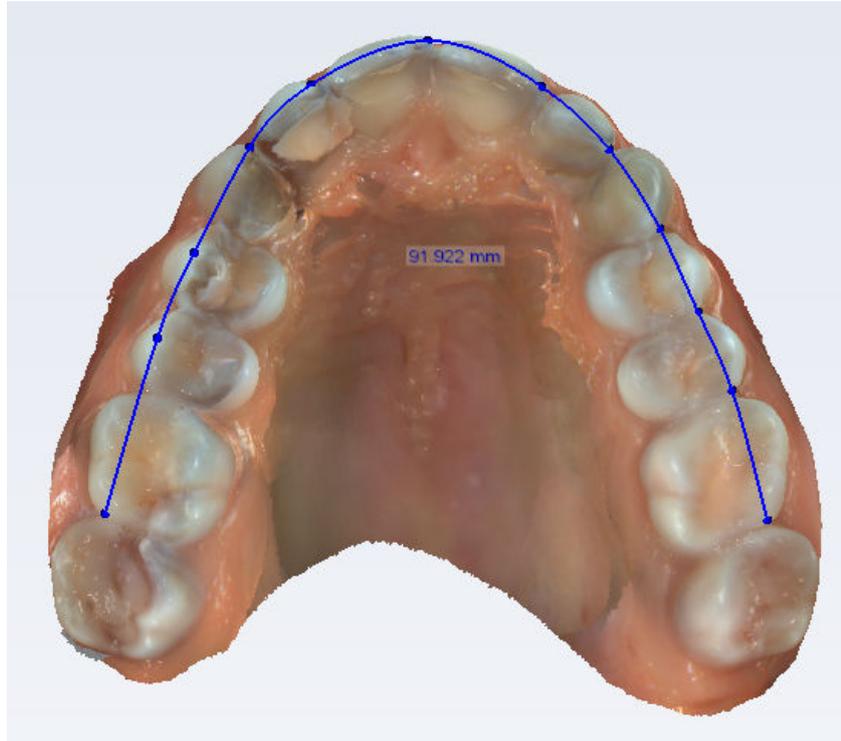
1. Activate the **Arch length measurement tool**.

The open bite view opens by default.



2. Add measurement points by clicking on the occlusal surface of the upper or lower arch.

To adjust the view, hold down the **Alt** key while dragging the model.



3. When enough measurement points have been added, complete the arch by deselecting the measurement tool or right-click on the model.

Results

The measurement appears in the object browser.

Measurements			<input type="checkbox"/>
	Arch Length Upper: 91.922 mm		<input checked="" type="checkbox"/>
	Margin line 17		<input type="checkbox"/>
	Margin line 14		<input type="checkbox"/>

What to do next

If necessary, you can fine-tune the measurement points by activating the **Drag measurement points** tool and dragging the points to correct locations.

11.5.4 Curve measurement**About this task**

Follow these instructions to measure curve.

Steps

1. Click the **Curve measurement** tool.
2. Click on the model to draw curve.
3. Add measurement points by clicking on the surface of the upper or lower arch.
To adjust the view, hold down the **Alt** key while dragging the model.
4. Finish the curve by right-clicking on the model or deselecting the measurement tool.

Results

The measurement is shown in the image and in the **Object browser**.

What to do next

To fine-tune the measurement points, select **Drag measurement points** tool and drag the points to correct locations.

11.5.5 LM-Activator arch length measurement**About this task**

The LM-Activator arch length measurement tool aids in the selection of the appropriate appliance model and size. The tool measures the distance across the incisors (from the mesial surface of the right canine to the mesial surface of the left canine) and indicates the estimated size of the appliance.

NOTE

Complete tooth width measurements are needed for the LM-Activator analysis. In case of missing frontal or lateral incisors mark the estimates of the widths of unerupted teeth. If necessary, see estimations for the widths of unerupted teeth.

**WARNING**

Disclaimer: In case of crowding or diastemas (e.g. in case of deciduous incisors) the size estimation may be inaccurate. Evaluate individually the extra space needed for the eruption of the permanent maxillary and mandibular lateral incisors and re-evaluate the size of the appliance. Also, in case of mixed dentition consider the expansion of the dental arches.

**WARNING**

Disclaimer: In case of tooth-size-discrepancy, the estimated size of the upper and lower jaw may be different. Evaluate individually to select or design the appropriate appliance.

TIP

You can use the Romexis Space analysis to evaluate crowding or diastemas in the anterior region and Bolton analysis to evaluate if patient has tooth-size-discrepancy.

**WARNING**

Disclaimer: Double-check that the impressions of all teeth are complete and e.g. the distal surface of the molars or second molars is not missing. Incomplete impressions may reduce the accuracy of estimations.

**WARNING**

Disclaimer: Fit the appliance on the patient and double-check that the teeth fit correctly in the appliance. If the patient's teeth are not guided towards the bottom of the slots but constrained by the ridges between the slots, treatment may not be successful. It is particularly important to check that the LM-Activator applies desired force on the canines.

NOTE

The LM-Activator appliance is intended to be used on one patient and then discarded. It may exceptionally be reprocessed (inspected, cleaned and high-level disinfected or sterilized) for use on another patient in case the appliance has been used on a same-day procedure (e.g. fitting the appliance) under the monitoring of health care professionals. If the appliance has been used by a patient at home, it shall not be reprocessed for use on another patient. See the Cleaning and reprocessing instructions for details.

NOTE

Please refer to LM-Activator documentation for more information.

Steps

1. Click the **LM-Activator** tool.

2. Read and confirm you have read the following statement.

i

LM Activator Arch length measurement

The Romexis software features used for the measurement and selection of the correct size of LM-Activator may be used only as an aid in planning the treatment of the patient and in orthodontic appliance selection and design. Before taking the LM-Activator orthodontic appliance into use by the patient, the treating health care professional shall be responsible for evaluating that the orthodontic appliance of correct size and fit for the specific patient purpose by testing and fitting the orthodontic appliance together with the patient. The health care professional is solely responsible and liable for the diagnosis, treatment, and evaluating whether treatment with any specific orthodontic appliance is fit for the specific patient, and for the outcome of any treatment. Planmeca, its distributors and the manufacturer of the LM Activator shall waive from any and all liabilities relating thereto.

The health care professional shall hold Planmeca, its distributors and the manufacturer harmless of any damage incurred due to any breach of the health care professional's liabilities defined herein or in any applicable agreement, terms of use, or instructions relating to the respective orthodontic appliance.

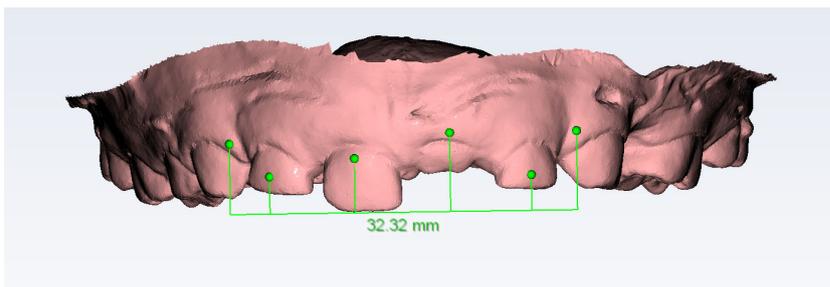
Please refer to manufacturer's instructions for use when applicable.

The front view of the model is automatically displayed.

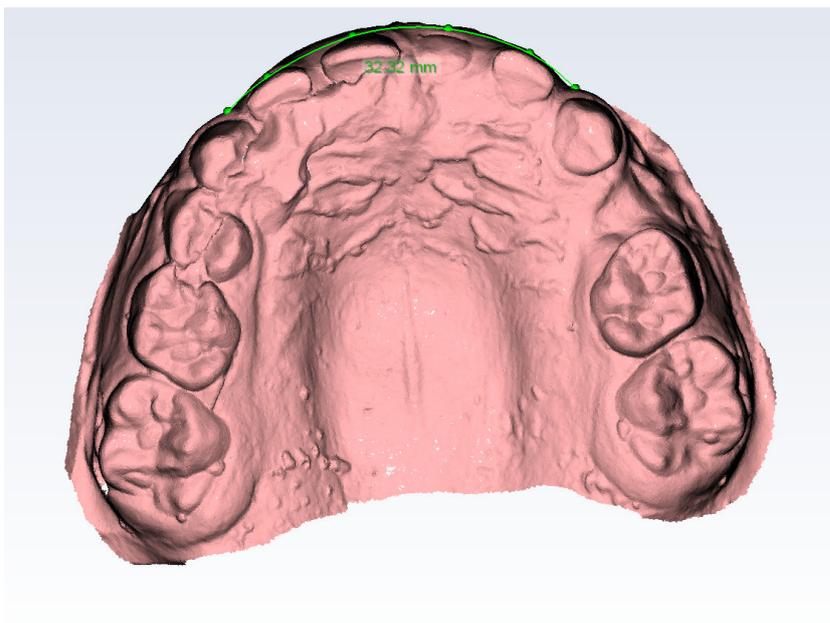
To zoom in the model, hold down the **Alt** key while scrolling the mouse wheel.

To adjust the view, hold down the **Alt** key while dragging the model.

3. Measure the arch length from the mesial surface of 13 to mesial surface of 23 by clicking on the vestibular surface of the crowns in between.



4. End the measurement by disabling the tool.
5. Verify the arch shape by rotating the model as illustrated.





If necessary, fine-tune the position of the points and the shape of the arch using the **Drag measurement points** tool.

6. Complete the measurement by deselecting the tool.
7. Repeat the process for lower teeth.

Results

The measurements appear in the object browser.

Measurements			<input type="checkbox"/>
	Upper LM-Act: 32.09 mm		<input checked="" type="checkbox"/>
	Arch Length Upper: 97.36 mm		<input checked="" type="checkbox"/>
	Lower LM-Act: 30.19 mm		<input checked="" type="checkbox"/>
	Arch Length Lower: 95.18 mm		<input checked="" type="checkbox"/>

Analyses	
Bolton	
Overall Ratio:	105.5 %
Anterior Ratio:	90.3 %
Space analysis upper	
A, Space available:	97.4 mm
B, Space required:	65.7 mm
A - B:	31.7 mm
Space analysis lower	
A, Space available:	95.2 mm
B, Space required:	67.9 mm
A - B:	27.3 mm
LM Activator Size Analysis	
▼ Upper	
LM-Activator 1 size:	40 S
Narrow LM-Activator 2 size:	45 S
Wide LM-Activator 2 size:	45 S
▼ Lower	
Narrow LM-Activator 2 size:	70 S
Wide LM-Activator 2 size:	70 S

11.5.6 Drawing tooth margin

About this task

Margin line can be used for drawing an outline for prepared teeth before sending the scan to a laboratory. The outline can be used to improve the fit off the prepared tooth.

Steps

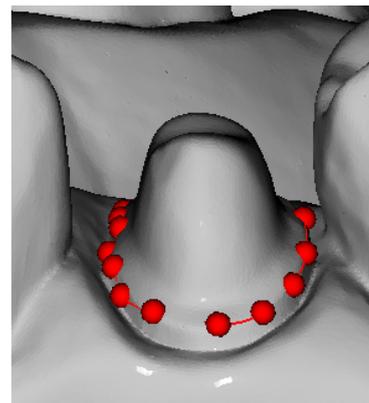
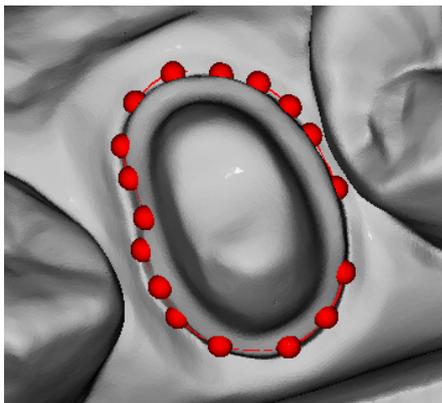


1. Click **Margin Line** tool.

2. On the tooth chart click on the tooth for which you want to draw a margin.

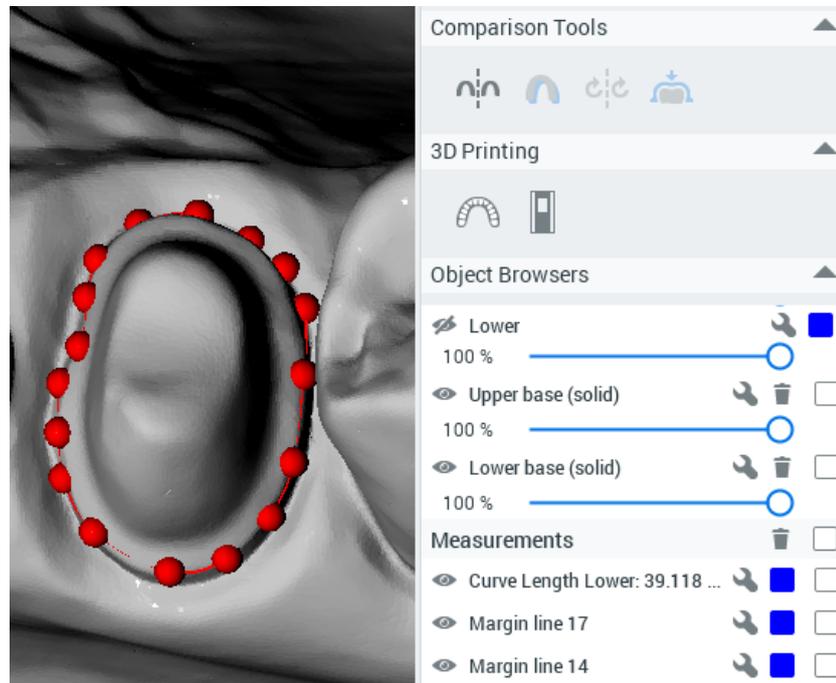


3. Click around the tooth to add points for a margin line.
At minimum three points are required.
A margin line is automatically drawn between the added margin points.



Results

When points have been added around the entire tooth and you click next to the first added point, the margin is completed, and it appears in the object browser.



To adjust the location of margin points, deselect the Margin Line tool, hold down the **Shift** key while dragging a point to a desired area.

To delete a margin, check the box of the margin in the object browser and click the trash can icon.

The default colour of the margin is red. To change the colour, click the red square next to the margin in the object browser and select the desired colour from the colour map.

To change the camera viewing angle, hold down the **Alt** key while dragging on the model.

11.5.7 Fine-tuning measurements

About this task

If necessary, the measurement points of all types of measurement (Point-to-point, Tooth width, Arch length, LM activator and Margin Lines) can be fine-tuned using the **Drag measurement points** tool.

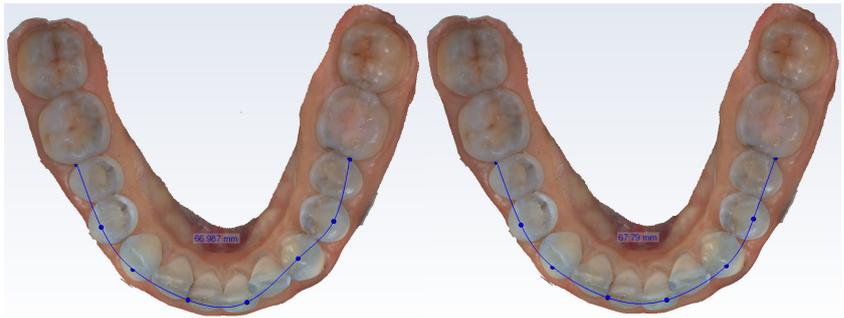
Follow these instructions to fine-tune measurements.

Steps



1. Select the **Drag measurement points** tool.

2. Drag the point(s) to correct locations.



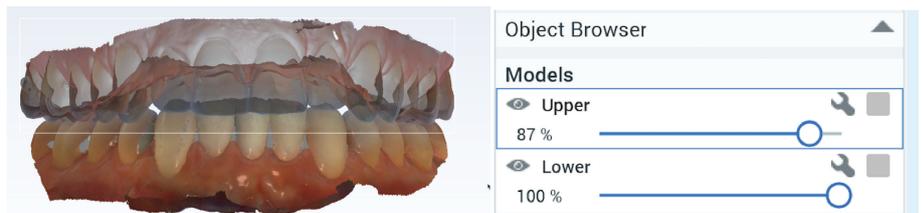
Results

The measurement is updated to the object browser and on the measurement label.

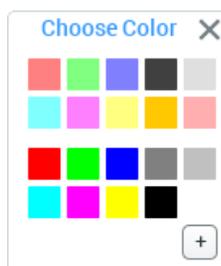
11.5.8 Editing models in object browser

In the object browser you can:

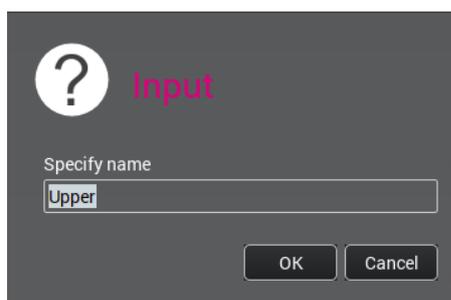
- Show/hide models by clicking this button. 
- Adjust transparency using the sliders. 



- Change model colour by clicking the square next to the model and choose colour.

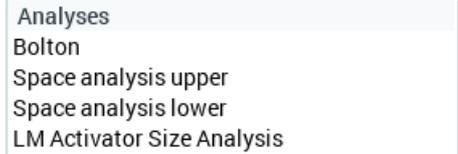


- Name the model by clicking the wrench icon and entering a suitable name. 



11.6 Analyses

The analyses are shown when all the necessary measurements are available. Otherwise they are shown in red.



Analyses
Bolton
Space analysis upper
Space analysis lower
LM Activator Size Analysis

Bolton

Tooth width measurements are used to obtain the Bolton analysis using the following formulae:

- Bolton overall = (sum of mesiodistal widths of 12 mandibular teeth) / (sum of mesiodistal widths of 12 maxillary teeth) * 100%
- Bolton anterior = (sum of mesiodistal widths of 6 mandibular teeth) / (sum of mesiodistal widths of 6 maxillary teeth) * 100%

Space analysis

To obtain tooth width and arch length measurements for space analysis use the following formulae:

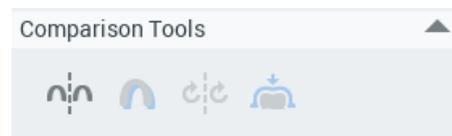
- Measure arch circumference from mesial of first molar to mesial of first molar = **space available**
- Measure the mesiodistal width of teeth from 5 to 5 and add together = **space required**:
- Reduce the space required from the space available = **arch length discrepancy**

NOTE

The first arch length measurement for upper and lower jaw is used in the calculation of Space analysis.

11.7 Comparison tools

The comparison tools can be used to compare the models from different time-points.



11.7.1 Side-by-side comparison

About this task

To compare scans of different time points (e.g. at the beginning and end of treatment):

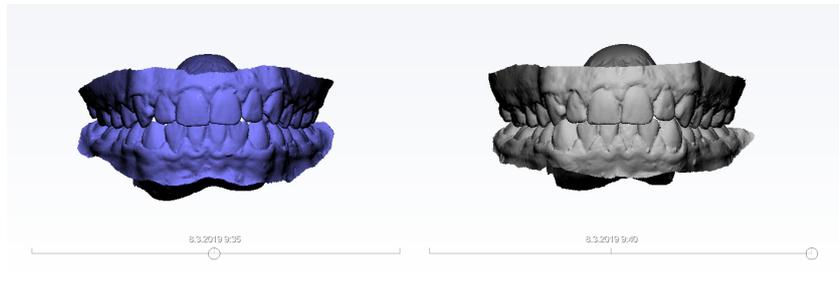
Steps



1. Click the **Side-by-side comparison** tool.

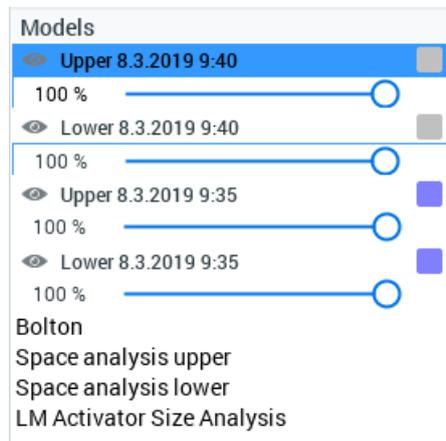
Results

The previous scans are loaded from database for comparison. All scans are shown as a notches on the timeline. To select a scan for comparison, click on the desired notch.



What to do next

You can adjust the colour and opacity of a model by selecting it in the object browser and dragging the slider.



To hide models from view, click the **Show/Hide** button.

11.7.2 Superimposition

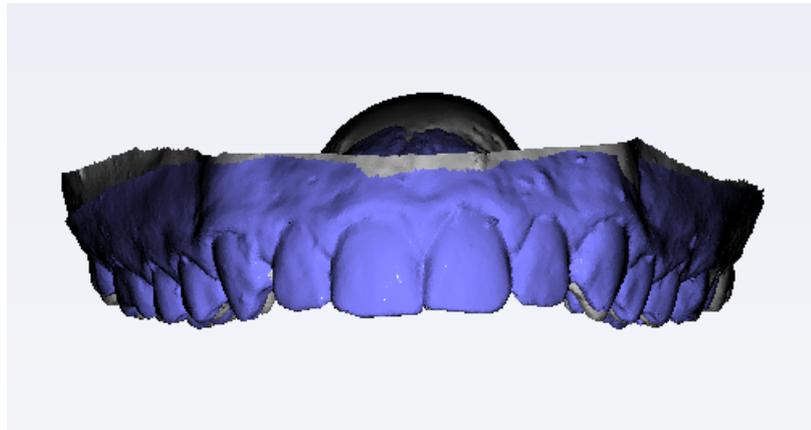
About this task

To switch the 3D view to superimposed view:

Steps



1. Click the **Superimpose** button.

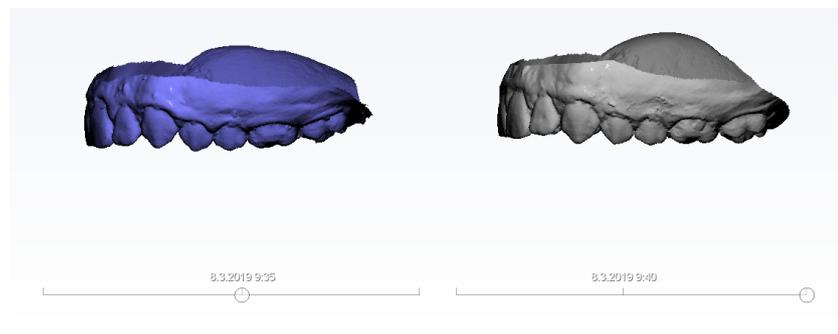


11.7.3 Sync camera



The **Sync camera** tool can be used in side-by-side view.

When the sync camera is switched on, the cameras on the left and right side of the 3D view are synced, i.e. when the right side view is rotated, the left side rotates accordingly and vice versa.



When the sync button is *not* selected, both views can be adjusted independently.

11.7.4 Fit surface models

About this task

Follow these instructions to fit surface models.

Steps



1. Select *Side-by-side*.

or



Superimposition comparison view

(see sections "Side-by-side comparison" on page 86 and "Superimposition" on page 87 for more information).



2. Start the fitting by clicking the **Fit surface models** button.

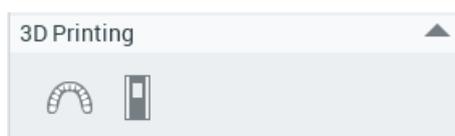
The fitting takes from a few seconds to a few minutes depending on the size of the data and how well the models fit together, etc.

3. Fine-tune the alignment by re-clicking the **Fit surface models** button.

The existing registration is used as a starting point.

The registrations are not stored into the database.

11.8 3D printing

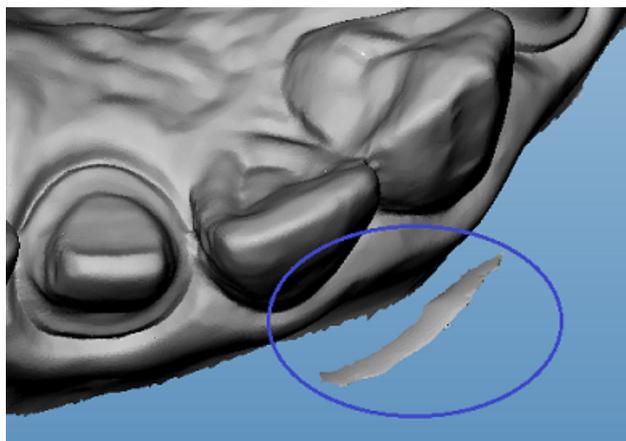


11.8.1 Creating 3D printable models

Before you begin

NOTE

Check the trimming to make sure no extra data is left outside the model.



About this task

Follow these instructions to create 3D printable models.

Steps



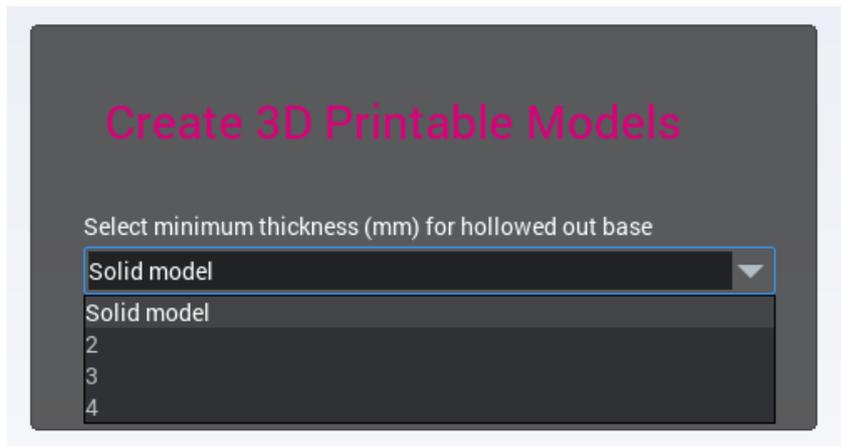
1. Click the **Generate a solid or hollowed-out model** button.

NOTE

The orientation of the model defines the orientation of the base so that the bottom of the base is orientated parallel to the occlusal surface of the model. The height of the model also defines the height of the base.

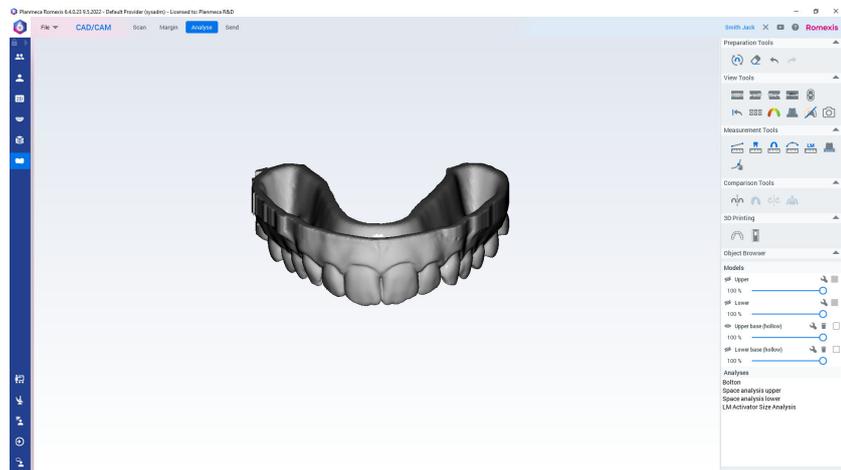
2. Proceed as applicable:
 - To create a solid model, simply click **OK** in the following dialogue.

- To create a hollowed-out base, select the suitable wall thickness from the drop-down menu and click **OK**.



Results

The models appear in the object browser as separate surface models.



11.8.2 Exporting 3D models with bases

About this task

The folder where the models are exported must be defined in the *Admin* module, for more information see Planmeca Romexis technical manual.

Steps



1. Click the **Export the selected base(s)** button.

Results

The models are exported as .stl files into the configured folder from where they can be sent to the 3D printer.

12 Send tab

12.1 Opening and inactivating cases in Case list

Opening cases

To open a CAD/CAM case in the Analyse tab, double-click the case folder or select *Open* from the right-click menu.

NOTE

Old CAD/CAM cases from PlanCAD Easy cannot be opened in Analyse tab.

Case list

Case Name	Scan Date	Selected
▶ CAD/CAM Case	2022-06-08 10:17	<input checked="" type="checkbox"/>
▶ CAD/CAM Case	2022-06-01 16:54	<input type="checkbox"/>

Currently open case is indicated in the case list with blue background.

▼ CAD/CAM Case (Currently Open)	2020-09-29 16:11	<input type="checkbox"/>
 Lower	2020-09-29 16:11	<input type="checkbox"/>
 Lower base (solid)	2021-10-26 18:51	<input type="checkbox"/>
 Lab Order Form	2022-01-04 11:36	<input type="checkbox"/>

Inactivating cases

Select the case folder and click *Inactivate* from the right-click menu.

Case list

Case Name	Scan Date	Selected
▶ CAD/CAM Case	2022-06-08 10:17	<input checked="" type="checkbox"/>
▶ CAD/CAM Case	2022-06-01 16:54	<input type="checkbox"/>

To inactivate a single STL file, select the file and click *Inactivate STL* from the right-click menu.

12.2 File

12.2.1 Importing 3D models

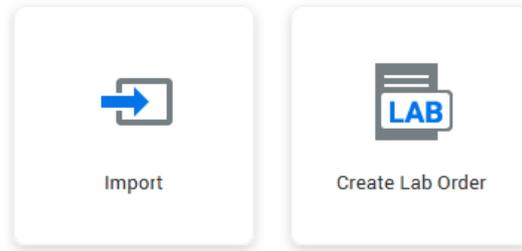
About this task

Follow these instructions to import 3D models.

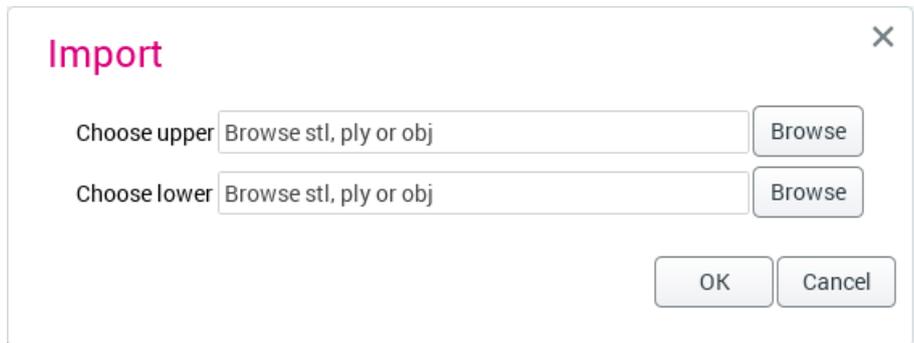
Steps

1. Click **Import** under **File**.

File



2. Click the **Browse** buttons to select the upper and lower models in *stl* or *ply* or *obj* format.



The imported models are automatically opened to *Analyse* tab.

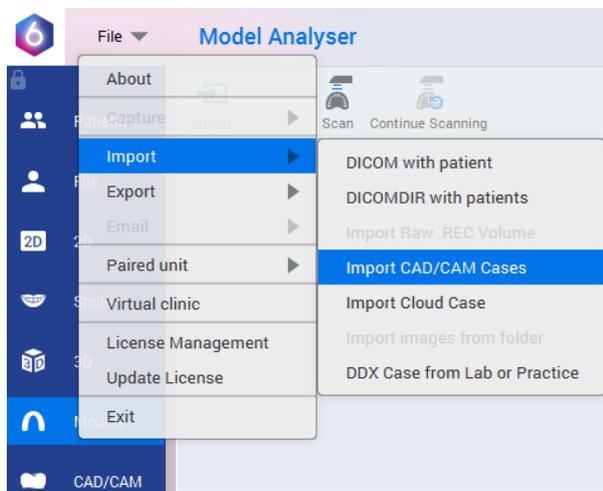
12.2.2 Importing CAD/CAM cases from Romexis 6.3 or older

About this task

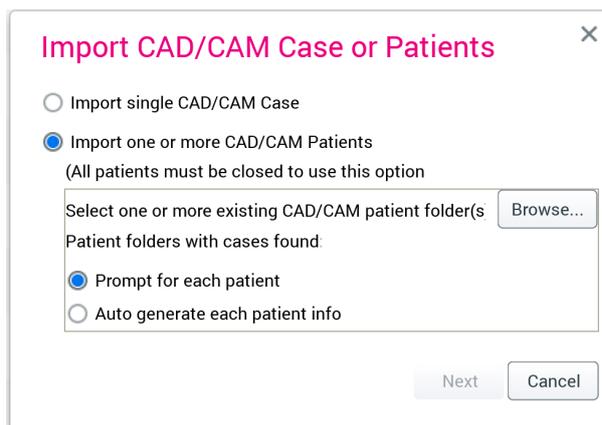
Follow the steps below to import one or several CAD/CAM cases with patient information.

Steps

1. Select **File > Import > Import CAD/CAM cases**.



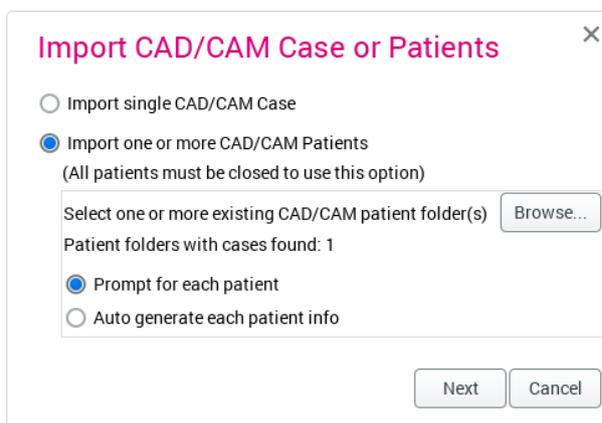
2. Select the **Import one or more CAD/CAM Patients** option.



NOTE

This option is possible only when no patient is open.

3. Click the **Browse** button.
4. Select the patient data folder and click **Open**.
5. Select patient import option.



6. Select from the following options:
 - **Prompt for each patient:** the patient information for each folder must be confirmed. The suggested information can be accepted and modified, and a new patient created based on that information or alternatively an existing patient from the patient list can be selected.
 - **Auto generate each patient info:** a new patient for each imported folder is automatically created.

- Click the **Next** button.

If 'Prompt for each patient' option was selected, select next either **Create new patient** or **Select an existing patient**. If a new patient is created the first name, last name and external ID can be modified in the dialog before clicking **Add patient**.

- Click the **Import** button.
- Click the **Done** button.

Results

The imported files appear in the **Setup** view of the Planmeca Chairside CAD/CAM window (see more in *Planmeca FIT CAD/CAM user's manual*).

12.2.3 Filling in lab order form

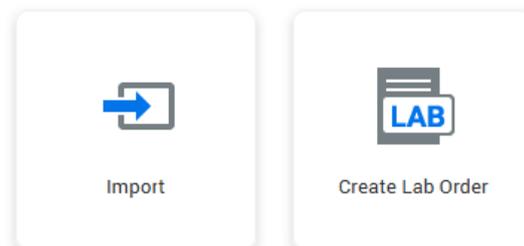
About this task

Follow these instructions to create an order form in PDF format.

Steps

- Select the case in **Case list**.
- Click **Create Lab Order** under **File**.

File



- Fill in information on the receiving lab, of the patient, and of the referring clinic.

To add a restoration, click **Add Restoration**.

Lab Order Form ×

Patient		Clinic	
Name	<input type="text" value="Jeff Moon"/>	Name	<input type="text" value="Clinic"/>
ID	<input type="text" value="112233"/>	Age	<input type="text" value="33"/>
Gender	<input type="text" value="Male"/>	Contact Email	<input type="text" value="clinic@clinic.com"/>
		Contact Name	<input type="text" value="Dr. Jane Doe"/>

Receiving Laboratory		Order Information	
Name	<input type="text" value="Laboratory"/>	Order date	<input type="text" value="Jun 8, 2022"/>
		Due date	<input type="text"/>

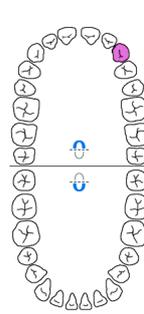
Comments

[Add Restoration](#)

Restorations	Comments

4. Select tooth, indication, material and shade.

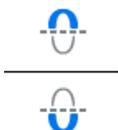
Add Restoration To Order ×

<p>Tooth selection</p> <p>23</p> 	<p>Indication</p> <ul style="list-style-type: none"> <input type="button" value="Crown"/> <input checked="" type="button" value="Coping"/> <input type="button" value="Pentec"/> <input type="button" value="Temporary"/> <input type="button" value="Bridge"/> <input type="button" value="Inlay/Onlay"/> <input type="button" value="Veneer"/> <input type="button" value="Implant crown"/> <input type="button" value="Abutment"/> <input type="button" value="Implant guide"/> <input type="button" value="Aligner"/> <input type="button" value="Denture"/> <input type="button" value="3D printed model"/> 	<p>Material</p> <ul style="list-style-type: none"> <input type="button" value="Ceramics"/> <input type="button" value="Glass ceramics"/> <input type="button" value="Zirconia"/> <input checked="" type="button" value="Composites"/> <input type="button" value="PMMA"/> <input type="button" value="NP metal"/> <input type="button" value="P metal"/> <input type="button" value="CrCo"/> <input type="button" value="Titanium"/> 	<p>Shades & Character</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>A1</td><td>B1</td><td>C1</td><td>D2</td></tr> <tr> <td>A2</td><td>B2</td><td>C2</td><td>D3</td></tr> <tr> <td>A3</td><td>B3</td><td>C3</td><td>D4</td></tr> <tr> <td>A3.5</td><td>B4</td><td>C4</td><td>D4</td></tr> <tr> <td>A4</td><td></td><td></td><td></td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>0M1</td><td>2L1.5</td><td>3L1.5</td><td>4L1.5</td></tr> <tr> <td>0M2</td><td>2L2.5</td><td>3L2.5</td><td>4L2.5</td></tr> <tr> <td>0M3</td><td>2M1</td><td>3M1</td><td>4M1</td></tr> <tr> <td></td><td>2M2</td><td>3M2</td><td>4M2</td></tr> <tr> <td>1M1</td><td>2M3</td><td>3M3</td><td>4M3</td></tr> <tr> <td>1M2</td><td>2R1.5</td><td>3R1.5</td><td>4R1.5</td></tr> <tr> <td></td><td>2R2.5</td><td>3R2.5</td><td>4R2.5</td></tr> </table> <p style="text-align: center;"><input type="button" value="Character"/></p>	A1	B1	C1	D2	A2	B2	C2	D3	A3	B3	C3	D4	A3.5	B4	C4	D4	A4				0M1	2L1.5	3L1.5	4L1.5	0M2	2L2.5	3L2.5	4L2.5	0M3	2M1	3M1	4M1		2M2	3M2	4M2	1M1	2M3	3M3	4M3	1M2	2R1.5	3R1.5	4R1.5		2R2.5	3R2.5	4R2.5
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1M2	2R1.5	3R1.5	4R1.5																																																
	2R2.5	3R2.5	4R2.5																																																

Comments

[Add Restoration](#)

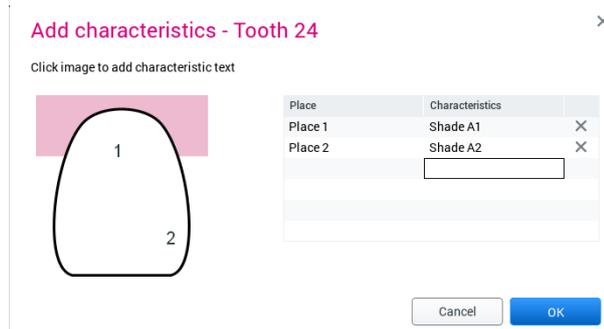
Restorations	Comments



To select the whole upper or lower jaw, select the correct jaw icon in the centre of the chart. Implant guide, Aligner, Denture, and 3D printed model are only available for full arch.

5. Click **Character**.

6. Click image and add characteristics.

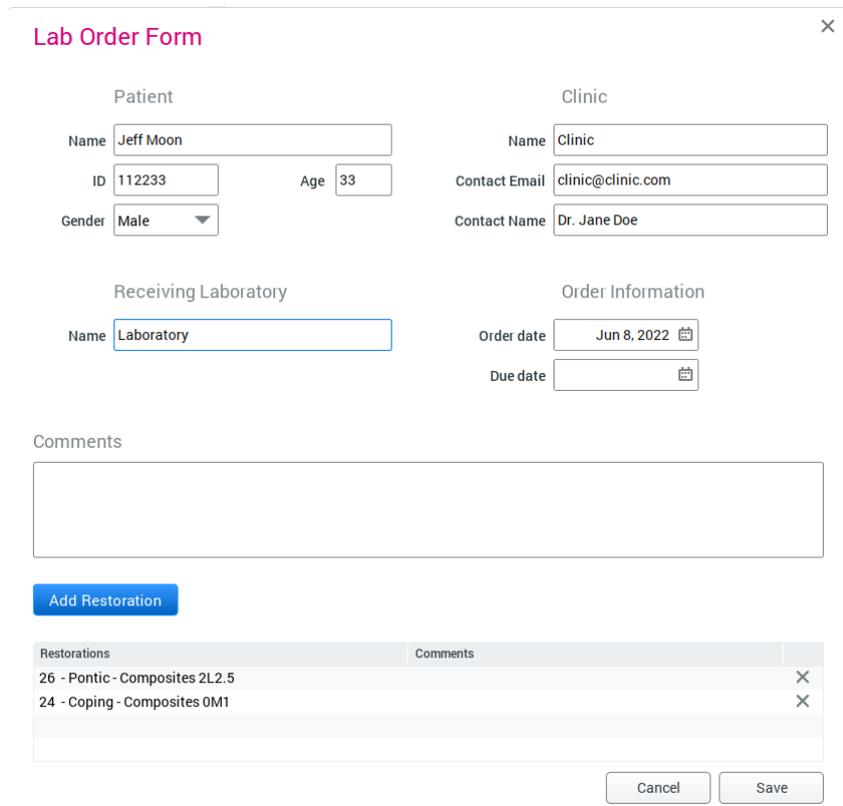


7. Click **OK** to close the characteristics window.

8. Click **Add Restoration**.

9. When finished with adding restorations, click **Ready**.

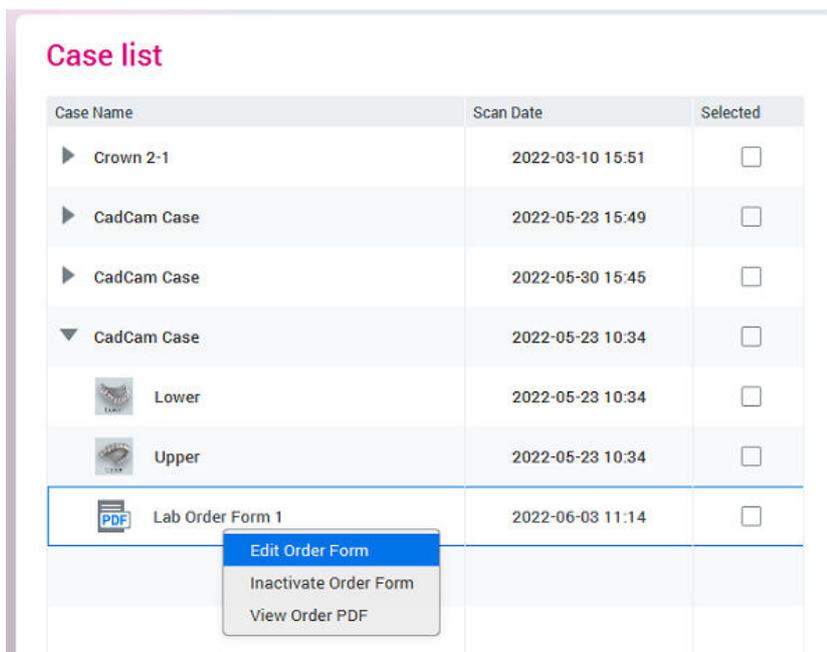
The restoration appears at the bottom of the window.



Results

Once a lab order has been created it can be inactivated, viewed as PDF or edited by right-clicking.

The form is stored in the **Cases** list.



To inactivate, edit or view the form, select applicable option from the right-click menu.

To export the form, see section "Sending lab order form" on page 98.

The form can also be accessed in the *File* module under *Attachments* from where it can be opened by double-clicking.

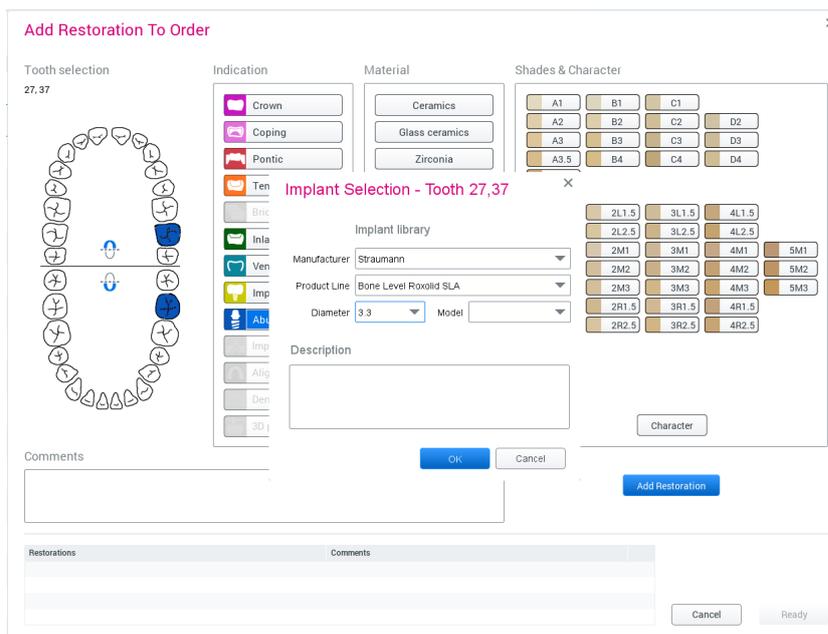
12.2.4 Adding abutments to lab order form

About this task

To define an underlying implant:

Steps

1. Select **Abutment** in the indication field and select suitable implant.



2. Click **OK** to save selections.

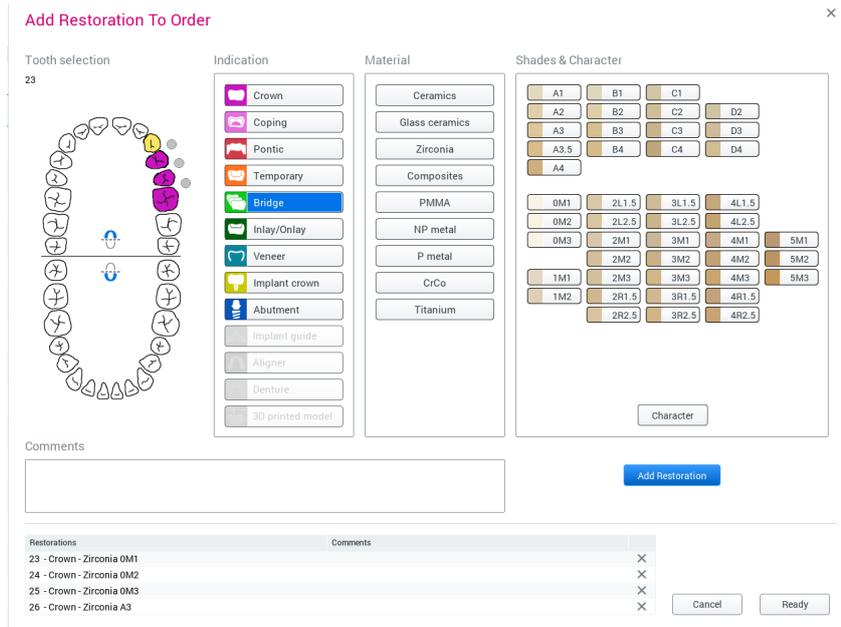
12.2.5 Adding bridges to lab order form

About this task

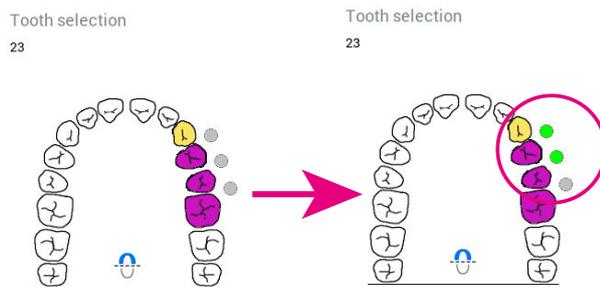
Follow these instructions to add bridges.

Steps

1. Add the necessary restorations before proceeding.
2. Select one tooth to be included in the bridge in the *Tooth selection* field.
3. Select **Bridge** as indication.



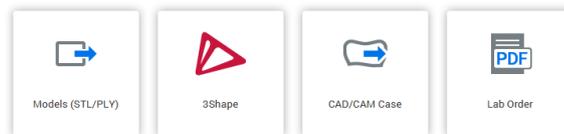
4. Create the bridge structure by clicking on the grey dots. The clicked dots turn green marking the location of the bridge.



12.2.6 Sending lab order form

The order and STL files can be sent to the lab either over Planmecha Romexis Cloud data transfer or exported under **Export** from the *Send* tab.

Export



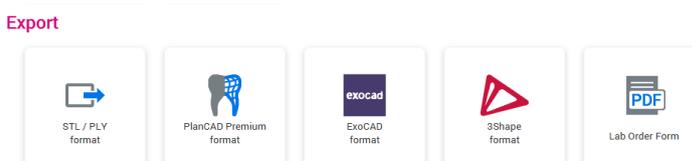
12.3 Export

About this task

The 3D models can be exported to local disk in `.stl` or `.ply` format, depending on the original data. The margin lines are exported in `.xyz` format and are only available when exporting in PlanCAD Premium, ExoCad or 3Shape formats.

Steps

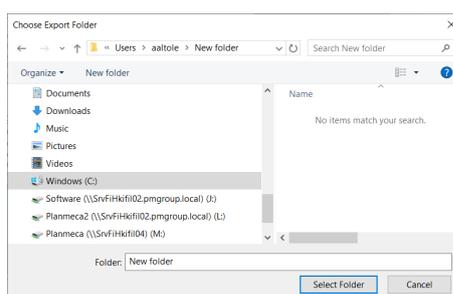
1. Select the case in **Case list**.
2. Select the desired option under **Export**.



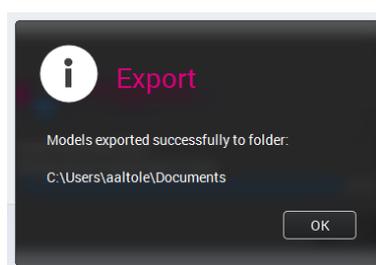
NOTE

CAD/CAM export to 3Shape Dental System 2015 in `.3oxz` format is compatible with 3Shape Dental System 2015 software revision 15.5.0.

3. Select the folder where to export the models.



When the export is complete the message indicating that the export was successful appears.



4. Click **OK**.

12.4 Send

12.4.1 Romexis Cloud

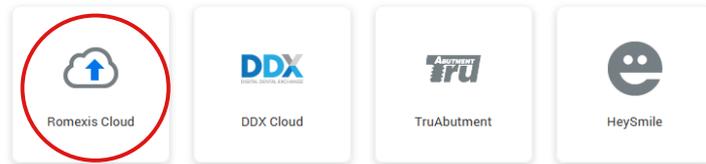
About this task

Follow these instructions to send models to Planmeca Romexis Cloud.

Steps

1. Select the case in **Case list**.
2. Click the **Romexis Cloud** button under **Send**.

Send



3. Fill the **To** field with the recipient's email address and add optional message to the **Comment** field.
4. Select Cloud case sending option.
5. Click the **Send** button.



For more information on the Planmecca Romexis Cloud management, see Romexis user's manual.

12.4.2 DDX Cloud

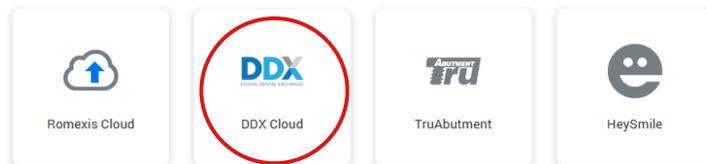
About this task

Use Digital Dental Exchange to send cases digitally.

Steps

1. Select the cases to export in **Case list**.
2. Click **DDX Cloud** under **Send**.

Send

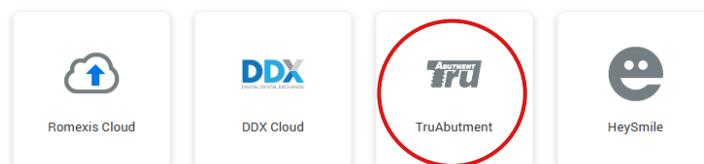


For more information see Romexis user's manual.

12.4.3 TruAbutment

Use the **TruAbutment** button to send a selected case and/or lab order form to TruAbutment Inc.

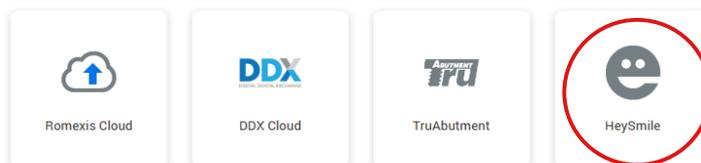
Send



12.4.4 HeySmile

Use the **HeySmile** button to export the selected case and open the HeySmile online platform.

Send



12.4.5 Sim to Care

About this task

Sim to Care (S2C) uses tooth surface models as an input allowing the user to virtually operate on them using virtual drills, explorers, etc.

On how to configure the Sim to care export see *Planmeca Romexis technical manual*.

Follow these instructions to send models.

Steps

1. Select the case to export in **Case list**.
2. Click **SimToCare** under **Send**.

Send



3. Enter a valid email address, a message and if desired, a due date.

TIP

By default, the due date is set to a month from the current date but can be changed by clicking the icon next to the date.

4. Click **OK**.

✕

Send models to SIMtoCARE

E-mail

Message

Due Date

The file transfer is shown by a progress bar.

Results

When the transfer is completed you receive a QR code from the Sim to Care server. You can take a picture of the code if needed.

NOTE

The code is not saved anywhere. Once the QR code dialog is closed you cannot retrieve the code from Romexis



In addition to the QR code a password is requested.

If necessary, you can re-send the models.

If the sending fails an error dialog appears.

12.5 Launch

12.5.1 Opening cases in Planmeca Romexis OrthoStudio

About this task

NOTE

Planmeca Romexis 3D Ortho Studio is available on license.

The Planmeca Romexis 3D Ortho Studio application is intended for preparation of digital dental models, dental model analysis, treatment planning in 3D and model series creation.

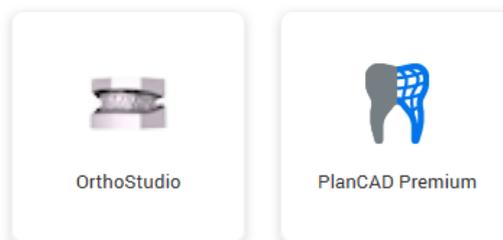
To launch a case in Planmeca Romexis OrthoStudio:

Steps

1. Select the case in **Case list**.

2. Click **OrthoStudio** button under **Launch**.

Launch



For detailed usage instructions, see Planmeca Romexis 3D OrthoStudio user's manual.

12.5.2 Opening cases in PlanCAD Premium

About this task

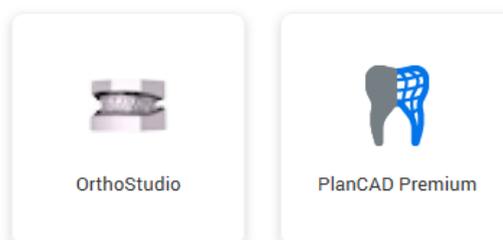
The Planmeca PlanCAD Premium is a dental design platform intended for dental technicians and dentists to design dental restorative prosthetic devices from digital optical impressions.

To launch a case in PlanCAD Premium dental design platform:

Steps

1. Select the case in **Case list**.
2. Click **PlanCAD Premium** button under **Launch**.

Launch



For detailed description on how to use the PlanCAD Premium software see the Planmeca PlanCAD Premium user's manual.

13 Cleaning / preventive maintenance

13.1 Tip infection control procedure

NOTE

For intraoral scanning systems only.



The following instructions are for the removable tip of the scanner, not for the entire scanner. See "Cleaning scanner base" on page 107 for cleaning the base of the scanner.



WARNING

It is of utmost importance to clean the scanner tip after every patient to ensure proper infection control.



WARNING

Do NOT autoclave tips with no temperature symbol.



WARNING

Do NOT place in ultrasonic cleaner.



WARNING

The scanning tips have been manufactured and tested for specific disinfection protocols. Operational, maintenance and replacement instructions should be followed for the product to perform as designed. Cleaning the scanner tip incorrectly may result in incomplete disinfection and/or permanent damage to the tip.



WARNING

DO NOT use chemical sterilant.



WARNING

DO NOT place in ultrasonic cleaner.



WARNING

Do NOT pouch with other instruments.



WARNING

Do NOT stack the tips near or on any other metal instruments.



WARNING

Excessive cycle times and excessively long sterilization cycles may prematurely reduce the life and function of the tip.

CAUTION

To prevent scratches, avoid brushing the mirror.

CAUTION

Autoclave baskets are not indicated for this cleaning procedure.

13.1.1 Cleaning after every patient**About this task**

Follow these instructions to clean scanner tips.

Steps

1. Remove the scanner tip from the scanner.
2. Soak the tip in warm tap water (40°-50°C [104°-122°F]) for 5 minutes.
3. Using a soft bristled brush, such as a soft drinking straw/bottle brush, rinse and brush the **external surface** of the tip under warm running water (3-3.5L/min. @ 30°-35°C [86°-95°F]) for a minimum of 15 seconds, with emphasis on the tip alignment indicator.

NOTE

A typical water tap should be able to produce a low rate of between 4-8 Lpm.

4. Rinse and brush around the edge and surrounding crevices of the mirror under running water for a minimum of 30 seconds

NOTE

To avoid scratching the mirror, be careful that only the bristles touch its surface.

The example picture is shown without running water for visibility purposes. Use the bristles of the small brush on all crevice edges of the mirror.



5. After brushing, rinse the mirror and surrounding crevice under running water for additional 10 seconds.
6. Wipe the mirror with an optical lens wipe.
 - If there is any visible debris remaining after performing the cleaning steps above repeat the process.
 - If there is any debris that cannot be removed or visible deterioration such as cracks or discolouration, the tip should be disposed of and replaced. Contact your local distributor to purchase replacement.

7. Place each scanner tip individually into an autoclave pouch.

NOTE

Autoclave baskets are not indicated for this cleaning procedure.

8. Place one to three pouches per tray or cassette.

NOTE

DO NOT stack tips on or around other metal instruments.



9. Select an autoclave cycle with a minimum sterilization temperature of 132° C (269° F) and that meets the exposure and dry time requirements stated below.

NOTE

Minimum time and temperature values listed reflect the specific discrete values used to validate the sterilization process for the device.

- Use distilled water in the autoclave or tip life may be dramatically reduced as a result. The high temperatures of the autoclave could cause the chlorine in tap water to corrode the tip contacts.
- For Pre-Vac autoclaves minimum sterilization time is 3 minutes.
- For Gravity autoclaves minimum sterilization time is 10 minutes.
- For any autoclave, use a minimum dry time of 30 minutes.

NOTE

Autoclave sterilization exposure times exceeding 10 minutes may damage the internal components and pin connector points.

10. Prior to scanning, visually confirm the scanning mirror and scanner connection points of the scanning tip are clean and dry.
11. To clean either surface, use an optical cloth or 2x2 gauze with a small amount of alcohol to gently remove residue.
12. Ensure each surface is dry before connecting it to the scanner.

13.1.2 Storage

About this task

Follow these instructions to store cleaned scanner tips.

Steps

1. Wipe water off the mirror using non-woven optical wipes.
2. Optional: Insert tip into a sterilization pouch.
3. Store for later use.

What to do next

Prior to scanning, visually confirm the scanning mirror and scanner connection points of the scanning tip are clean and dry. To clean either surface, use an optical cloth or 2x2 gauze with a small amount of alcohol to gently remove residue. Ensure each surface is dry before connecting it to the scanner.

13.2 Cleaning scanner base

About this task

NOTE

For intraoral scanning systems only.

NOTE

Before and after each use, clean all areas of the scanner.



WARNING

Before and after each use, follow these instructions to disinfect the scanner. Do not substitute any other cleaning solution or procedure. Never use any paint thinner, solvents, or harsh chemicals.

NOTE

Use only a non-woven sponge or pre-moistened germicidal cloths that have been saturated with a hospital grade disinfectant when cleaning the scanner.

Steps

1. Using a clean, non-woven sponge that has been saturated with a hospital-grade, TB-rated germicide or pre-moistened germicidal cloths, apply the germicide to the entire surface of the scanner base, scanner holder, mouse, mouse-pad, and any other surfaces that you touch that were not covered by a disposable barrier.

Do not spray the germicide directly on the items and do not submerge the scanner or mouse in the germicide.

Have a tip in place when wiping the scanner body down with the germicidal wipe to avoid the connection points and lens at the tip.
2. Follow the germicide manufacturer's instructions.

13.2.1 Cleaning/changing the scanner cover

About this task

The rubber sleeve of the scanner should be removed once a month for cleaning.

Follow these instructions when cleaning the rubber sleeve.

Steps

1. Start on the bottom of the sleeve and flip/roll it upwards.



2. Continue rolling to the top of the scanner until you can pull it off.



3. Clean the cover and base with germicide as instructed in section "Cleaning scanner base" on page 107 above.
4. Ensure the cover is right-side-out and slide it back onto the scanner.

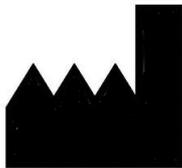


14 Technical specifications

14.1 Planmeca Emerald and Emerald S scanners specification



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00880 Helsinki, FINLAND
phone: +35 20 77950 500,
fax: +358 20 7795 555,
<https://www.planmeca.com/>



Electrical Ratings	5 Vdc 7,5 W 1,5 A (4 A if external supply)
Storage and transportation conditions	-20°C to 60°C (-4°F to 140°F)
Operating conditions	15 °C to 28 °C (59 °F to 82 °F) 5% - 95% non-condensing relative humidity
Maximum altitude	2,000 m (6,562 ft)
Dimensions	Scanner with tip 41 x 45 x 249 mm (1.6 x 1.8 x 9.8 in.)
	Scanner without tip 40,5 x 45 x 165 mm (1.6 x 1.8 x 6.5 in.)
	Scanner tip 24.6 x 24.6 x 88.6 mm (0.96 x 0.96 x 3.5 in.)
	Scanner holder 119 mm x 186 mm x 114 mm (4.7 x 7.3 x 4.5 in.)
Approximate weight	Scanner with tip and cable <i>Planmeca Emerald S:</i> 339 g (11.97 oz) <i>Planmeca Emerald:</i> 338 g (11.94 oz)
	Scanner base <i>Planmeca Emerald S:</i> 213 g (7.51 oz) <i>Planmeca Emerald:</i> 212 g (7.48 oz)
	Scanner tip - 17 g (0.60 oz)
	Scanner cable - 109 g (3.86 oz)
Applied parts	The scanning tip is the only applied part.
Patents	(EU) EP1579171; EP2076870 (Australia) 2004273957; 2003300135 (Canada) 2538162; 2511828 (Japan) 4913597; 5189287 (US) 7573583; 7342668; 7978892; 8532355
Cables	When connecting components, ensure you use only the cables provided with the system.

14.1.1 Applicable standards

Product safety



ANSI/AAMI ES60601
IEC 60601-1, 3rd Edition

EMC

IEC 60601-1-2
US FCC CFR 47, Part 15B

Laser product safety

IEC 60825-1, 2nd Edition

Packaging and environmental

ISTA Class 2A

Bio-compatibility

ISO 10993

European standards

93/42/EEC Medical Device Directive
EN 60601-1:2006 Safety of Medical Electrical equipment
EN 60601-1-2 Electromagnetic Compatibility
EN 60825-1 Safety of Laser Products
EN ISO 14971:2012 Risk Management
EN ISO 13485 Quality Management Systems
EN ISO 10993: Biological Evaluation of Medical Devices

Canadian standards

CAN/CSA C22.2 No. 60601
SOR-98-282 Canada Medical Device Regulations
ICES-001 ISM Radio Frequency Generators

US Food and Drug Administration

US FDA CFR 21 Part 1040.10 Laser Products
US FDA Laser Notice 50
CFR 21, Part 820
FDA Class II Special Controls for Computer Assisted Design and Manufacturing of Dental Restorations

International standards

ISO 14971:2007
ISO 13485:2003

14.1.2 Approvals (all systems)

North America

Product Safety Mark (NRTL) - UL C/US

International

CB Scheme Product Safety Test Certificate (UL) CB Scheme EMC Test Certificate (INTERTEK) CE Mark (TUV)

Quality System Certifications



ISO 13485 Registered Firm

Complies with FDA performance standards for laser products, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This ISM device complies with Canadian ICES-001. (Cet appareil ISM est conforme à la norme NMB-001 du Canada.)



WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

14.1.3 Optical specifications

CAUTION

Using controls, making adjustments, or performing procedures in a manner other than is specified in this documentation may result in hazardous radiation exposure.

Laser class ^a	Class 2
Output	6.2 mW
Wavelength range	400 - 700 nm
Beam divergence	10 degrees

^{a)} Laser product classified to standard IEC/EN 60825- 1:2007-03 Ed. 2.0

The scanner's laser projection system utilizes a divergent beam powered by a non-accessible laser source with a maximum power output of 200 mW. The scanner incorporates design features that prevent exposure to any hazardous levels of laser radiation in normal operation modes and in any reasonable fault conditions.

14.1.4 External components and connectors



When connecting external components to the system, attach only devices that have an appropriate NRTL mark for compliance with IEC 60601-1 or IEC 60950.

Connectors for attaching external devices conduct low voltages. Avoid touching the connector pins.

14.1.5 UL listing



UL Medical Equipment Listing

MEDICAL - GENERAL MEDICAL EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH ANSI/AAMI ES60601-1 (2005)

CAN/CSA C22.2 No. 60601-1:2008

EN 60601-1 (2006)

IEC 60601-1-2

IEC 60825-1

30SD

14.2 Planmeca CAD/CAM chairside computer specification

To ensure the correct functionality of the CAD/CAM chairside equipment, Planmeca recommends laptop models whose specifications you find by opening the QR Code below.

Planmeca dealer purchases, configures and delivers fully functional computer with Planmeca Romexis CAD/CAM software installed. All specifications are subject to change without notice.



15 EMC information

Guidance and manufacturer's declaration – electromagnetic emission

The scanner is intended for use in the electromagnetic environment specified below. The customer or the user of the scanner should assure that it is used in such an environment.

Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Planmeca Emerald scanner uses RF energy only for its internal function. Therefore its RF emissions are very low and not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Planmeca Emerald scanner is suitable for use in all establishments, other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonics emission IEC 61000-3-2	Not applicable	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Not applicable	

Guidance and manufacturer's declaration – electromagnetic immunity

The scanner is intended for use in the electromagnetic environment specified below. The customer or the user of the scanner should assure that it is used in such an environment.

Planmeca Emerald / Emerald S

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Planmeca Emerald: +/- 6 kV Contact +/- 8 kV Air Planmeca Emerald S: +/- 8 kV Contact +/- 15 kV Air	Planmeca Emerald: +/- 8 kV Contact +/- 15 kV Air Planmeca Emerald S: +/- 8 kV Contact +/- 15 kV Air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	+/- 2kV for power supply lines +/- 1kV for input/ output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	+/- 1 kV differential mode 2 kV common mode	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.

Planmeca Emerald / Emerald S

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Voltage dips, short interruptions and variations on power supply input lines IEC 61000-4-11	0% UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% UT; 1 cycle 70% UT; 25 cycles Single phase: at 0° 0% UT; 250 cycle	Not applicable	Main power quality should be that of a typical commercial or hospital environment. If the user of the BSVD-1000 system requires continued operation during power mains interruptions, it is recommended that the scanner be powered from an uninterruptible power supply (UPS) or a battery.
Power frequency (50/60Hz) Magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note:UT is the A.C. mains voltage prior to application of the test level.			
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz 6 V m) in ISM bands between 0.15 MHz and 80 MHz	Not applicable	Portable and mobile RF communications equipment should be used no closer to any part of the Planmeca Emerald scanner, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

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Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
Radiated RF IEC 61000-4-3	3 V/m 80.0 MHz to 2.5 GHz	3 V/m Proximity fields met the minimum requirement of section 8.10 of IEC 60601-1-2	<p>Recommended separation distance</p> $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3\sqrt{P} \text{ 800 MHz to 2.5. GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey should be less than the compliance level in each frequency range.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Note 1) At 80 MHz and 800 MHz, the higher frequency range applies.			
Note 2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
<p>a. Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the EUT is used exceeds the applicable RF compliance level above, the EUT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the EUT.</p> <p>b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V / m.</p>			
<p>Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the Planmeca Emerald scanner.</p>			

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Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment -guidance
<p>CAUTION Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the scanner, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.</p>			
<p>The Planmeca Emerald scanner is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the Planmeca Emerald scanner can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Planmeca Emerald scanner as recommended below, according to the maximum output power of the communications equipment.</p>			
Rated maximum output power (W) of transmitter	Separation distance (m) according to frequency of transmitter		
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2.5 GHz $d = 1.2 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.33
10	3.8	3.8	7.3
100	12	12	23
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.</p> <p>Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.</p>			

16 FAQ

- Which USB port do I plug my scanner in?
- How do I know if my scanner is connected?
- How do I prevent my scanner from overheating even though I'm not scanning?
- Why is my image fogging while scanning intraorally?
- My scanner is plugged in but does not show as connected. Several scenarios presented below.
- The colour seems off on my scanner.
- My scanner seems to have slowed down.
- My scanner connection keeps dropping.
- Why does the tip flash on and off when connected?
- A strange spider web/chicken wire graphic appears when I try to scan.
- I'm having trouble scanning Scan Bodies.
- I'm having trouble saving cases
- How do I change the tooth number or preparation type on an existing margin?

Which USB port do I plug my scanner in?

Always make sure it's plugged into the USB 3.0 port labelled as such.



How do I know if my scanner is connected?

Icons in the lower-left corner of the screen indicate the status of the scanner.

- Disconnected



- Tip Disconnected



- Heating - Stage 1



- Heating - Stage 2



- Ready



How do I prevent my scanner from overheating even though I'm not scanning?

Unplug the scanner when you are not scanning. The controls for the heating & cooling are only activated when the software is in the scan page.

Why is my image fogging while scanning intraorally?

It is always advisable to let the tip heat for approx. 30-45 seconds until you see the orange & green status indicators on the front of the tip image.



Ready

The colour seems off on my scanner

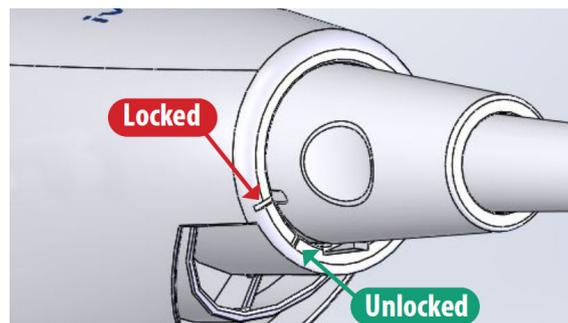
Colour Balancing should be done monthly or as needed. This is an optional step to optimize the colour represented on screen. This does not affect the stone model nor the amount of data collected by the scanner. See "Colour balancing" on page 27 for more information.

My scanner seems to have slowed down

- Is your laptop plugged in?
Ensure the AC power adapter for the laptop is plugged in and that the laptop shows charging and not running on battery. The laptop should always be plugged in during scanning.
- Is the laptop connected to an external monitor?
Disconnect the external monitor, it is using up too much of the graphics card resources during scanning.

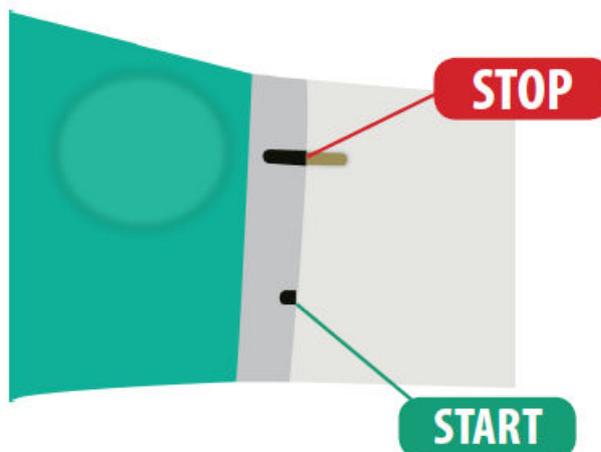
My scanner connection keeps dropping.

Check that the cable is inserted into the scanner correctly. Make sure it is locked in place and cannot be pulled out without releasing the lock. Also ensure it is fully inserted into the USB port.



Why does the tip flash on and off when connected?

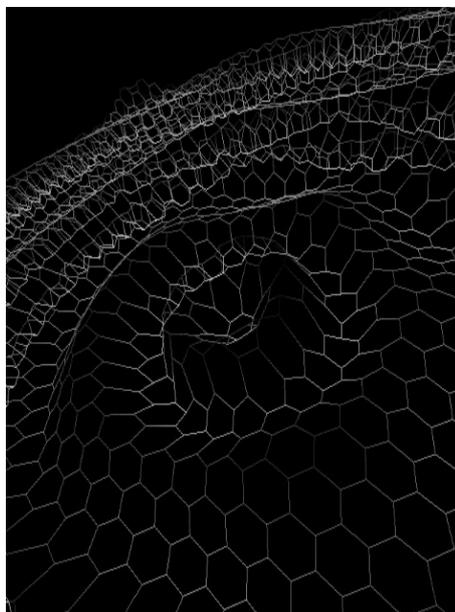
1. Check to see if the tip and scanner marking points are fully lined up.



2. Make sure the contacts on the rear of the tip are clean and dry.
3. Reseat the tip and test.
4. In addition, try another tip and see if it connects okay.

A strange spider web/chicken wire graphic appears when I try to scan

This occurs if the scanner has not initialized correctly. Unplug the scanner and plug back in.



I'm having trouble scanning Scan Bodies

- Try to get as close as possible to the scan body, but do not put it inside of the tip.
- Use the larger tip size because of the bigger field of view to aid in alignment

Scan pattern:

1. Start the scanning at the gingival in order to capture enough data. When possible, include teeth and tissue in the scans.
2. Scan up the side, over the top of the scan body, and back down until you reach the gingival again.
3. Scan the rest of the model with the normal scan pattern. If you start scanning from the occlusal on a scan body, you will not capture enough data and it is difficult to create a good model.

Start scanning from the gingival in order to start with good data.



Having trouble saving cases

It is highly recommended by Planmeca that any computers connected to a Romexis Server be hard-wired. This will ensure reliability, faster saving and a more robust infrastructure. If wireless networks are used it can lead to data loss, slow saving, or even data corruption.

How do I change the tooth number on an existing margin?

1. Right-click on a margin point and select **Edit Margin Info**.
2. Change the **Tooth Number** information.

Same arch models are not automatically aligning

When scanning an Prep and Pre-op, the models should automatically align. Try stopping and restarting the scan of the second model.

I'm having trouble with Manual Alignment.

Try using Refine Alignment or resetting the alignment and doing the manual alignment again.

17 System warnings

Hardware compatibility warning

Not all hardware is compatible with the scanning software. You will get an error message if you attempt to use the scanner with an incompatible laptop.

Windows update warning

Dialog box appears if a windows update is being installed in the background. Scanning is not recommended during Windows updates.

Low disk space warning

Dialog box appears if the amount of available disk space is below the recommended amount. If this happens, the user should back up their files and delete unnecessary files to increase space.

18 Saving screen shots

For communicating with associates or Planmeca you may wish to save an image of the screen.



To take and save a screen shot:

On your keyboard, press the **Windows** and **Print Screen** (or Prt Scr) keys.

The computer takes a screen shot and saves it in the folder *Libraries > Pictures > Screenshots*.

The screen shots are automatically numbered. You can rename them if desired.

If you are using a third party laptop, please refer to that computer's user manual on how to take and retrieve screenshots.

19 Disposal

CAUTION

Comply with all applicable regulations when disposing of waste materials from Planmeca products.



In order to reduce the environmental load over the product's entire life cycle, Planmeca products are designed to be as safe as possible to manufacture, use and dispose of.

Parts which can be recycled should always be taken to the appropriate processing centres, after hazardous waste has been removed. Disposal of obsolete devices is the responsibility of the possessor.

All parts and components containing hazardous materials, such as oil and heavy metals, must be disposed of in accordance with local and national waste legislation and instructions issued by the environmental authorities. The risks involved and the necessary precautions must be taken into account when handling waste products. For more detailed information, consult your Planmeca representative.

Batteries must be disposed of following the requirements of Directive 2006/66/EEC and in accordance with waste legislation and instructions issued by the environmental authorities.

This product must NOT be disposed of with other waste. It is the user's responsibility to dispose of their electrical and electronic waste equipment by handing it over to an approved reprocessor, or by returning it to Planmeca for reprocessing. For more information on where you can send your waste equipment for recycling, please contact your local city office or Planmeca.

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