New as of: 08.2015

sirona
The Dental Company

inLab SW

Software Version 15.0

Operator's Manual

English

Table of contents

1 Introduction

1.1 Dear Customer,

Thank you for purchasing your inLab SW 15 software from Sirona.

In conjunction with the X5 inEos and inEos Blue scanners as well as the inLab MC XL and inLab MC X5 devices, this software enables you to produce computer-assisted dental restorations from various materials.

Improper use and handling can create hazards and cause damage. Therefore, please read and carefully follow this manual and the relevant operating instructions. Always keep them within easy reach.

In order to master the system safely, you should train on the exercise model using the described examples.

Also pay attention to the safety instructions to prevent personal injury and material damage.

Your
inLab team

1.2 Copyright and trademark

Copyright

The information contained in this manual may be changed without notice.

The software and all related documentation are protected by copyright. You must therefore handle it in the same way as any other protected material.

Anyone who copies this software to any medium for any purpose other than his own personal use without the written permission of Sirona Dental Systems will be liable to prosecution.

Trademarks

Microsoft® and Windows 7® are registered trademarks.

Windows™ is a trademark of Microsoft Corporation.

All other trademarks are the property of their respective holders.

Notes on 3rd party code libraries must be stored in license.pdf in the installation directory.

2 General data

Please read this document completely and follow the instructions exactly. You should always keep it within reach.

Original language of the present document: German

2.1 Certification

CE mark

CE

This product bears the CE mark in accordance with the provisions of the Council Directive 93/42/EEC of June 14, 1993 concerning medical devices (MDD).

2.2 General safety information

Only use original software

Only use original software or software which has been released by Sirona. To produce restorations and equipment, manipulated or non-released software components must not be used.

Software and software components must not be installed using incorrect data.

Please check that each installed component has been granted approval in its country. Contact your dealer for more information.

Restoration to be checked by trained personnel

Each restoration which is performed with this software must be checked for suitability by a trained person (e.g. dental technician or dentist).

For the USA only

CAUTION: According to US Federal Law, this product may be sold only to or by instruction of physicians, dentists, or licensed professionals.

2.3 Accessories

In order to ensure product safety, this device may be operated only with original Sirona accessories or third-party accessories expressly approved by Sirona. The user is responsible for any damage resulting from the use of non-approved accessories.

2.4 Structure of the manual

2.4.1 Identification of the danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in the present operating instructions. Such information is highlighted as follows:

⚠ DANGER

An imminent danger that could result in serious bodily injury or death.

⚠ WARNING

A possibly dangerous situation that could result in serious bodily injury or death.

⚠ CAUTION

A possibly dangerous situation that could result in slight bodily injury.

NOTICE

A possibly harmful situation which could lead to damage of the product or an object in its environment.

IMPORTANT

Application instructions and other important information.

Tip: Information on making work easier.

2.4.2 Formats and symbols used

The formats and symbols used in this document have the following meaning:

✓ Prerequisite **1.** First action step **2.** Second action step or ➢ Alternative action ↳ Result ➢ Individual action step	Requests you to do something.
See "Formats and symbols used [→ 11]"	Identifies a reference to another text passage and specifies its page number.
• List	Designates a list.
"Command / menu item"	Indicates commands, menu items or quotations.

2.4.3 Conventions

Example	Meaning
Click	Single pressing and subsequent release of the left mouse button or the left trackball button on the acquisition unit
Double-click	Double pressing and release in quick succession of the left mouse button or left trackball button on the acquisition unit
Moving the mouse in one direction	On the acquisition unit: Moving the trackball in the corresponding direction.
Seizing a point	Pressing the left mouse button (left trackball button on the acquisition unit) and keeping it pressed.
For acquisitions with the CEREC Bluecam: Actuate foot switch	The same function as: Pressing the left trackball button on the acquisition unit or the left mouse button.
"Ctrl+N"	On the keyboard: Press the **Ctrl** and **N** keys simultaneously.
Drag & drop	. Press and hold an element (e.g. a pictograph) and drop / release it onto a potential destination.

2.4.4 Manual formats (assistance)

You can access the manual via the Help button or by pressing "F1".

The PDF-format user manual can be found on the supplied software DVD or on the Internet (http://www.sirona.com/manuals).

This format is page-oriented and is well suited for printing out the desired pages.

2.4.5 Odontogram used

The software can be adjusted to the international odontogram (FDI) or the USA odontogram (ADA) (ADA/FDI odontogram [→ 41]).

In this documentation teeth are named as follows:

Principle:	FDI	(#ADA)
Example:	13	(#6)

2.4.6 File format

You can assign one or more orders to any dentist in the software. Depending on the processing status, an order comprises multiple optical impressions, the virtual models reconstructed from them and one or more virtual restorations.

The software uses its own file format (*.lab) to export an order. This format contains all of the order data. LAB files can be opened with other inLab software installations. Under certain circumstances, older software versions cannot open data exports from a more recent version.

Using this interface license, models or restorations can also be exported in *.stl format for the further processing of this data in other software. Using this license, *.stl data can also be imported into the inLab SW to make constructions on them.

3 Getting started

3.1 Installing the software

NOTICE

Initial installation without inEos X5 / Blue

Perform the initial installation of the software **without** connecting inEos X5 / Blue.

The software requires the 2.00 firmware version of the USB license stick. Update the firmware version if necessary. For more information, refer to the section License manager [→ 23].

You need at least one inLab 4-PC V 1.0.1 for the software. An inLab 4 PC V 3.0.1 is recommended.

Use the version of the license manager provided with this version to import licenses from the license certificate provided.

NOTICE

Installation only with administrator rights

You must have administrator rights on the PC on which you want to install the software!

✓ The license stick firmware is available in version 2.00.

✓ The PC is powered up and all programs are terminated.

1. Insert the DVD in the DVD drive.
   ↳ The setup program starts automatically.
2. If this is not the case, run the *"Setup.exe"* file in the root directory of the DVD.
   ↳ The installation wizard opens.
3. Click on the *"OK"* button.
4. Select the language for the installation and click on "*"Next"*".
5. In the next dialog, click the *"Next"* button.
6. Select the language for the software from the drop-down menu, and select the region you are in from the download menu below it. Then click on *"Next"*.
7. In the next step, you can choose the installation folder. You can also change the path for the patient data folder and the path for the CAM data. Click on *"Next"*.
8. Read the license agreement carefully. If you accept the license agreement, then activate the *"I accept the terms in the license agreement"* option button and click the *"Next"* button.
   ↳ The installation starts. This may take several minutes.
9. Following successful installation, click on the *"Start"* button to complete the installation and to start the application immediately after this.
   Tip: If you do not want to start the application immediately, remove the tick from the *"Start application directly"* check box and then click on the *"Exit"* button. This installation program closes.

3.2 Uninstalling the software

✓ The program is closed.

1. Click on "StartAll Programs / Sirona Dental SystemsinLab SWToolsDeinstallation" to uninstall the software.
   ↳ During the uninstall procedure, you will be asked whether you want to delete the patient data or the entries in the registration database (e.g. the calibration data).
2. Depending on your decision, click either the *"Yes"* or *"No"* button.
   ↳ The software is uninstalled.

3.3 Copy protection

The software can be started only when the USB license stick is plugged in. The USB license stick is included in the scope of supply of the units. If you require additional licenses, please contact your dealer.

Always keep the USB license stick near the unit.

All authorizations (software licenses) can be installed as electronic licenses on the USB license stick. You must enter a 25-digit license key for this purpose.
You will receive the license key along with the unit. Alternatively, you can order it separately from your dealer.

Following an update, you may require a new license that is not available on your USB license stick. For more information, refer to the section License manager [→ 23].

3.4 Downloading software

Auto-update, Sirona Connect Center

IMPORTANT
In order to use the auto-update function, the PC must be connected to the Internet.

During the installation of inLab SW, the auto-update function is also installed as a part of the Sirona Connect Center. You can conveniently download and install future software updates of inLab SW through the Internet.

Once an update is ready for download, you are notified of this automatically through a dialog box.

Service packs

To keep your software updated, regularly check whether new service packs are available.

Visit the Sirona website at www.sirona.com. In the product area for digital dental care, you will find the download area with the products for “inLab laboratory solutions”.

Update

You have to pay for major software updates, and these also require a license. If you do not have a new license, you can only work in the demo version.

Contact your dealer for information on how to obtain new licenses for an update.

3.5 Starting the software

✓ The inLab SW software is installed. You will find the start icon on the desktop.

✓ The USB license stick is connected with a valid, current license.

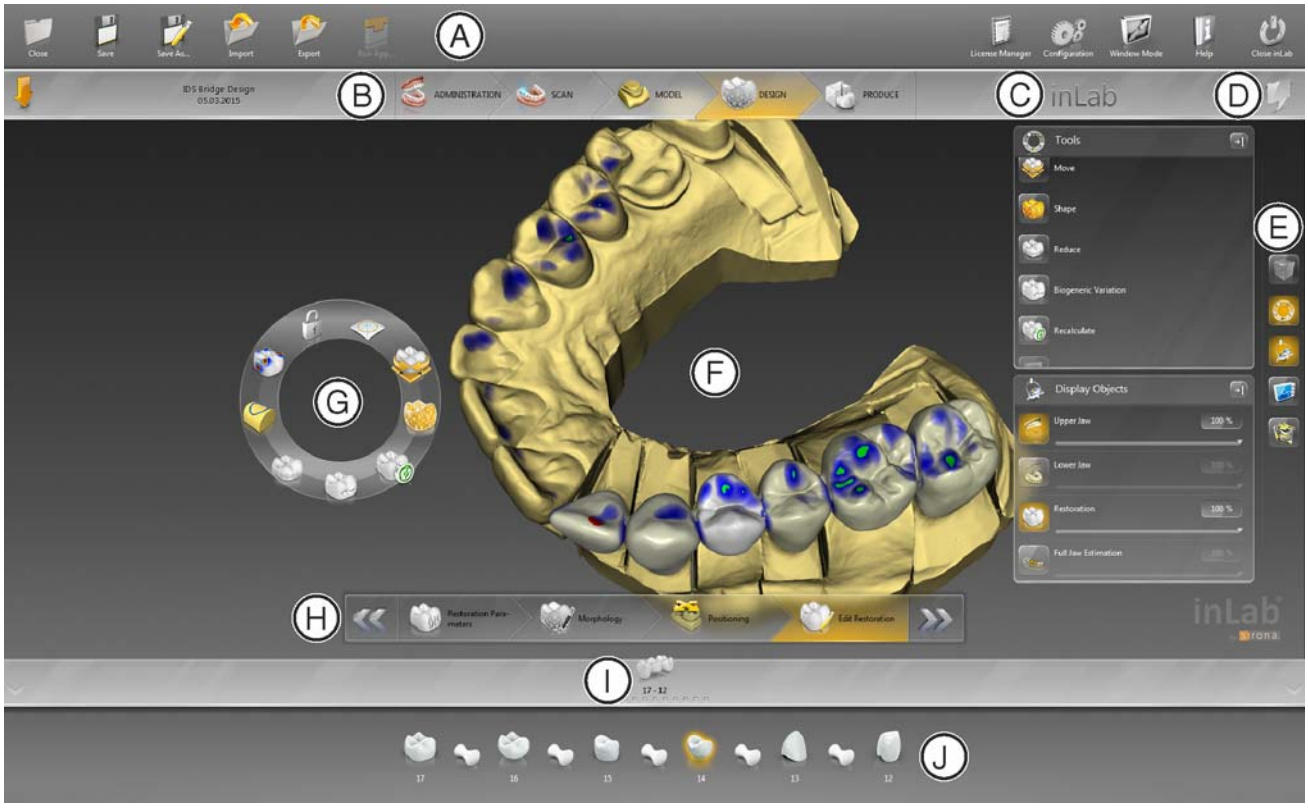
➢ Double-click the inLab SW start icon.

or

➢ Click on "StartAll Programs/ Sirona Dental SystemsinLab SWinLab SW 4".

↳ The software is started.

4 User interface



Overview of the user interface

A	System menu	F	Main window
B	Phase bar	G	Tool wheel
C	Information dialog	H	Step menu
D	Opens a Sirona Connect chat	I	Object bar
E	Page palette	J	Restoration selector

4.1 Phase bar

The workflow is illustrated in the software in 5 phases.

Phase bar

- ADMINISTRATION
- SCAN
- MODEL
- DESIGN
- PRODUCE

4.1.1 ADMINISTRATION

In this phase, you can perform the following:

- Create restorations and determine their type
- Specify a production machine
- Select material

4.1.2 SCAN

In this phase, you can perform the following:

- Acquisitions with inEos X5/Blue
  - lower jaw,
  - upper jaw,
  - buccal bite registration
- View a 3D preview of the acquisitions
- Add additional image catalogs
- Import STL scan data

4.1.3 MODEL

In this phase, you can perform the following:

- Edit the model
- Check or redefine the bite situation
- Align the models
- Check the trimmed model or manually re-trim
- Check, correct or re-enter the preparation margin
- Define insertion axes
- Define jawline and restoration positions
- Define restoration axes if necessary (abutments and telescopes only)
- Select the patient photo for Smile Design

4.1.4 DESIGN

In this phase, you can perform the following:

- Select tooth form
- Position and scale restorations
- Individually change restoration parameters
- Have initial restoration suggestions generated
- Design restorations individually

4.1.5 PRODUCTION

In this phase, you can perform the following for each restoration:

- Specify a production machine
- Define manufacturing options (not possible for all materials)

- Determine the block size
- Check and adapt the positioning of the restoration in the block
- Define the sprue location of the restoration
- Start the manufacturing process
- Export the restoration/model for the inLab CAM SW or as *.stl files (additional license required)

4.2 Object bar

The buttons for restoration selection are located in the object bar.

Each restoration is represented by a tooth or a bridge symbol with the corresponding tooth number(s). You can switch back and forth between the teeth by clicking on the corresponding icon.

Active elements are highlighted in orange.

If restorations span multiple tooth positions or two objects per tooth position are selectable for multilayer, the object bar is extended downwards. You can change between different active elements in the extended area.

4.3 Page palette

Various functions and options are offered to you in the page palette, depending on the step currently active.

You can open several page palettes at the same time. Initially all page palettes opened on the right side of the main window in a fixed state. In this state all opened page palettes share the height available there.

Should this display be inadequate for you, you can remove any page palette of your choosing from the fixed state of the magnet bar. To do this, press and hold the left mouse button on the header of the page palette and then drag the palette to the desired position within the main window. **Tip**: If you are using inLab SW in window mode or on multiple screens, then you can also pull the page palettes out of the application window and position them in any point on your screen.

All changes to a page palette (size and position) are saved separately for each step. You can therefore configure each work step as you want.

IMPORTANT
If a page palette is closed, the size and position are retained when next opened. If a page palette is stuck back on the magnet bar, however, the saved size and position are lost.

In order to affix a page palette back onto the magnet bar on the right side, drag any page palette over the magnet bar on the right side. When the magnet bar lights up, you can then release the left mouse button. Click the left mouse button. The page palette will now automatically put itself back in order with the other page palettes.

To close a page palette, click on the right button in the page palette header or once more on the respective right button in the magnet bar.

4.4 Tool wheel

In the MODEL and DESIGN phases, the tool wheel provides the most common tools for simplifying access. The tools available vary depending on the current step.

1. Right-click in the workspace.
   ↳ The tool wheel opens.
2. Click with the right mouse button anywhere in the workspace.
   ↳ The tool wheel moves to the position of the mouse pointer.
3. Select a tool.
   ↳ The selected tool is available. The tool wheel closes automatically.

You also can close the tool by clicking in the workspace with the left mouse button.

4.5 Step menu

Each phase is divided into steps. They are shown in the step menu at the bottom edge of the screen. The step menu changes depending on which phase the current restoration is located in at the time.

This menu guides you through the process step-by-step. The system runs through all steps in a phase with the restoration(s). Changes in the individual steps are accepted by clicking on the next step.

The double arrow keys can be used to switch between phases.

4.6 System menu

In the system menu, you can:

- Switches to the start window to start a new case
- Save case
- Save the case under a different name
- Import case
- Export case
- Call up App Center/start plug-ins
- Open license manager
- Configure hardware and software
- Change window mode
- Open help information
- Exit program

Opening system menu

➢ Move the mouse cursor to the top of the window.

or

➢ Click the start window button.

↳ The system menu is displayed.

Closing system menu

➢ Click the start window button.

or

➢ Click into the main window with the left mouse button.

↳ The system menu is closed.

4.6.1 Save case

In this dialog, you can save the actual case.

➢ Select *"Save Case"* in the system menu.

↳ The current processing status of the case is saved.

Tip: How you are able to save individual restorations or export them for the inLab CAM SW is described in the section “Exporting a restoration [→ 121]”.

4.6.2 Save the case under a different name

This dialog allows you to save the current case under a new name or assign it to a different patient.

1. Select *"Save Case As..."* in the system menu.
   ↳ The patient list is opened.
2. Select the appropriate patient.

or

   ➢ Create a new patient via *"Add New Patient"*.

3. You can give the case a new name in the *"Case"* column via the pencil icon.

4.6.3 Import case

✓ The LAB file, DXD file, CMG.DXD file (or older CDT files) of a case are located on the inLab4 PC or a storage medium connected to it.

1. Click the *"Import Case..."* button in the system menu.
   ↳ The *"Import Case..."* dialog box opens.
2. Select the folder where the case is located.
3. Select the relevant file.
4. Click the *"Open"* button.

↳ The case is then imported and opened.
Depending on the type of restoration, only the optical impression is opened.

4.6.4 Exporting a case

You can store a case in any location.

✓ You have opened a case in the software.

1. Click on the *"Export Case..."* button in the system menu.
   ↳ The *"Export Case..."* dialog box opens.
2. Select the target folder to which you want to export the case.
3. Assign any name to the case.
4. Click on the *"Save"* button.

↳ The case is exported as an LAB file.

If you want to save the model in *.stl format (interface license required), select the appropriate file format from the dialog box and continue as described in points 2 to 4.

If you would like to transfer the optical impression to another PC, you can use a USB stick or a network drive for this purpose.

4.6.5 License manager

The license manager is used for the installation of new software licenses on the USB license stick. To do this, start the license manager via the system menu and follow the instructions on the screen. Keep the license certificate with 25-digit license key ready, which you either obtained with the unit or ordered separately from your dealer.

Tip: You can also start the license manager via "StartAll Programs / Sirona Dental SystemsinLab SWToolsLicense Manager".

To activate the license you must have an Internet connection and the USB license stick must be connected.

Licenses and code libraries

For information on licenses and code libraries from third parties, see licenses.pdf. The file is in the installation directory under "C:/Programs/ Sirona Dental Systems/CADCAM".

4.6.6 Configuration

The configuration is described in the section “Configuration [→ 26]”.

4.6.7 Window mode

The *"Window Mode"* function can be used to exit full-screen mode or enter it again.

4.6.8 Current program version

If you click on the lettering *"inLab"* in the phase tab, you obtain information on the current program version.

4.6.9 Exit program

The *"Exit"* function can be used to close the software.

4.7 Start view

In the start view you can perform the following:

- Create a new job
- Edit order data
- Search patient database,

Switching to the start view

You can switch to the start view at any time.

1. Open the system menu.
2. Click on the *"Start Screen"* button.

4.7.1 Create a new job

In the data structure, orders are uniquely identified by one of the following two entries:

- Name of the dentist and name of the patient
  or
- Name of the dentist and order number

Add order

1. If the dentist concerned has already been created, click on the dentist.
2. Click on the *"Add New Order"* button.
   ↳ A job order card opens. The name of the dentist that you preselected is then suggested.
3. Enter the name of the dentist and the name of the patient.

or

➢ Enter the name of the dentist and the order number.

↳ Once you have entered enough information, the step *"Add New Case"* is enabled.

4. Click on the *"Add New Case"* button.
   ↳ The program switches over to the *"ADMINISTRATION"* phase.

4.7.2 Searching for a patient or case

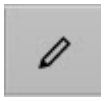
You can view individual patients by searching for them

1. Click into the search text box.
2. Enter the surname or the patient ID.
3. Click the magnifying glass to start.
   ↳ The program now shows all the search results.

Tip: You can also enter the initial letter of the dentist or patient click on the magnifying glass. The list is sorted accordingly.

4.7.3 Editing case data

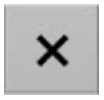
4.7.3.1 Editing case data



✓ You are in the job list.

1. Click on the pencil icon in the desired column.
   ↳ The fields that can be changed are active.
2. Click on the *"Edit Order"* step in the step menu.
   ↳ The job order card is opened for editing.
3. Carry out the changes.
4. Confirm the change by clicking on the tick icon in the relevant line.
   ↳ The changes are saved in the memory.

5. You can discard the changes by clicking on the cross (X) in the relevant line.



4.7.3.2 Removing a patient or case

✓ You are in the job list.

1. Click on the trash can icon in the *"Order"* column to remove a patient, or in the *"Case"* column to remove a case.
2. Confirm the deletion by clicking the *"Ok"* button.
   ↳ The patient or case is deleted.

4.7.3.3 Opening a case

✓ You have found the associated order in the overview.

➢ Click on the folder icon.
   ↳ The case opens.

4.7.3.4 Add a new case

✓ You have found the associated order in the overview.

1. Select the dentist and the patient.
2. Click on the *"Add New Case"* step in the step menu.
   ↳ The program switches over to the *"ADMINISTRATION"* phase.

5 Configuration

The *"Configuration"* menu contains the following submenus:

- Parameters
- Devices
- Settings
- Apps

5.1 Parameters

The *"Parameters"* menu is structured by restoration type. You can make the settings for each of the following restoration types.

The changes in the values are displayed graphically.

Changed parameter settings are accepted for all initial suggestions here.

Tip: If you want to change the parameter values only for one restoration, do this in the DESIGN phase in the step *"Restoration Parameters"* .

Parameter profiles

In the *"Configuration"* menu you can define parameter profiles from inLab SW version 15.0 onwards. Through this menu you can define and save different parameter sets for all restoration types.

1. Duplicate the default settings with the manufacturer specifications by clicking on the tick icon.
2. Give the profile a unique name and confirm the entry with the tick icon.
3. Adjust the parameters to your needs and then save them.
   ↳ You can then use these default settings both as global and local parameters.
4. You can select the newly created profile as a favorite by clicking on the star icon.

Crown, inlay, onlay and veneer

Parameters	Description	Default value		
		Crown	Inlay/ Onlay	Veneer
Spacer	• Possibility for setting the space for the fastening material below the restoration. Acts up to the preparation margin. A different spacer for radial and occlusal can set for crowns.	80 µm	80 µm	80 µm
Marginal Adhesive Gap	• Adjust width of space on preparation margin. • The value of the adhesive gap cannot exceed the spacer value.	-	60 µm	-
Veneer Thickness	• Set to minimum thickness. • The software tries not to fall below this thickness when calculating the restoration suggestions. • DESIGN And MILL The value is displayed as a semitransparent geometry on the preparation. Areas where the thickness falls short of the minimum level in the design phase are thus made visible.	-	-	500 µm
Occlusal Milling Offset	• Apply or remove material in the occlusal direction over the entire occlusal surface. • This value concerns only the milling result. • DESIGN And MILL The effects are not visible.	0 µm	0 µm	0 µm
Proximal Contacts Strength	• Set the thickness of the proximal contacts. • The software tries to achieve this stored thickness in the restoration suggestions.	25 µm	2 µm	-
Occlusal Contacts Strength	• Set the thickness of the occlusal contacts. • The software tries to achieve this stored thickness in the restoration suggestions.	25 µm	2 µm	-

Parameters	Description	Default value		
		Crown	Inlay/ Onlay	Veneer
Minimal Thickness (Radial)	• Set the minimum wall thickness in the horizontal direction. • The software tries not to fall below this thickness when calculating the restoration suggestions. • DESIGN And MILL The value is displayed on the preparation as a semitransparent geometry together with the minimum occlusal thickness and the instrument geometry setting. Areas where the thickness falls short of the minimum level in the design phase are thus made visible. • Observe the material manufacturer's recommendations when setting the minimum thickness. • Can be switched on and off	500 µm ON	500 µm ON	-
Minimal Thickness (Occlusal)	• Set the minimum wall thickness in the occlusal direction. • The software tries not to fall below this thickness when calculating the restoration suggestions. • DESIGN And MILL The value is displayed on the preparation as a semitransparent geometry together with the minimum radial thickness and the instrument geometry setting. Areas where the thickness falls short of the minimum level in the design phase are thus made visible. • Observe the material manufacturer's recommendations when setting the minimum thickness. • Can be switched on and off	700 µm ON	700 µm ON	-
Margin Thickness	• Reinforce restoration margins with additional material. – Simplifies handling of the restoration – Prevents splitting of the material • The additional material can be milled off manually before inserting the restoration. • Can be switched on and off	50 µm ON	50 µm ON	50 µm ON
"Margin Ramp Angle"	Specifies the angle at which the restorations rise from the edge.	60°	60°	60°
"Margin Ramp Width"	Specifies the length of the edge with which the restoration rises from the preparation margin.	300 µm	150 µm	150 µm

Parameters	Description	Default value		
		Crown	Inlay/ Onlay	Veneer
Regard Instrument Geometry	Considers the instrument geometry in the bottom of the restoration. Areas of the preparation that are smaller than the diameter of the instrument geometry are calculated in the bottom of the restoration so that they increase with the instrument geometry.	YES	YES	YES
Remove Undercuts	Undercuts within the preparation margin are blocked out in the restoration bottom.	YES	YES	YES

Abutment (anatomical, framework, lower layer)

Parameters	Description	Default value		
		Anatomical	Framework	Lower layer
Proximal Contacts Strength	• Determines the thickness of a contact in the mesial or distal direction.	25µm	-	-
Occlusal Contacts Strength	• Determines the thickness of a contact in the occlusal direction (to the antagonist).	25µm	-	-
Minimal Thickness (Radial)	• Determines the minimum radial wall thickness of the abutment. Minimum amount of material required around the adhesive base to produce a stable abutment. • Can be switched on and off	500µm ON	500µm ON	500µm ON
Minimal Thickness (Occlusal)	• Determines the minimum occlusal wall thickness of the abutment. Minimum amount of material required around the adhesive base to produce a stable abutment. • Can be switched on and off	700µm ON	700µm ON	700µm ON
Gingival Placement Pressure	• Determines how strongly the initial suggestion for the abutment penetrates the gingiva in order to build up pressure on the gingiva.	0µm	0µm	-
Gingival Depth	• Determines how far below or above the preparation margin the gingiva lies in reference to the gingival line.	0µm	0µm	-
Shoulder Width	• Width of the shoulder of an abutment or telescope.	-	1,000µm	1,000µm
Telescope Angle	• Telescope angle of an abutment or telescope.	-	4°	4°

Crown (framework, telescope)

Parameters	Description	Default value	
		Framework	Telescope
Spacer	• Possibility for setting the space for the fastening material below the restoration. Acts up to the preparation margin. The spacer can be set differently for radial and occlusal.	80 µm	80 µm
Minimal Thickness (Radial)	• Set the minimum wall thickness in the horizontal direction. • The value determines the radial wall thickness of the crown cap. • DESIGN And MILL The value is displayed on the preparation as a semitransparent geometry together with the minimum occlusal thickness and the instrument geometry setting. Areas where the thickness falls short of the minimum level in the design phase are thus made visible. • Can be switched on and off	500 µm ON	500 µm ON
Minimal Thickness (Occlusal)	• Set the minimum wall thickness in the occlusal direction. • The value determines the occlusal wall thickness of the crown cap. • DESIGN And MILL The value is displayed on the preparation as a semitransparent geometry together with the minimum radial thickness and the instrument geometry setting. Areas where the thickness falls short of the minimum level in the design phase are thus made visible. • Can be switched on and off	700 µm ON	700 µm ON
Margin Thickness	• Reinforce restoration margins with additional material. – Simplifies handling of the restoration – Prevents splitting of the material • The additional material can be milled off manually before inserting the restoration. • Can be switched on and off	50 µm ON	50 µm ON
Telescope Angle	• Angle by which the outer wall of the telescope cone is inclined inward in relation to the restoration axis.	-	4 °
Telescope Height	• Initial height of the outer wall of the telescope cone from the cervical shoulder to the junction to the occlusal surface. • It influences the size of the friction surface.	-	3000 µm

Parameters	Description	Default value	
		Framework	Telescope
Occlusal Shoulder Width	• Width of the occlusal shoulder at the junction between the outer wall of the telescope cone and the occlusal surface. • The occlusal shoulder is inclined inward 45° in relation to the telescope axis.	-	300 µm
Regard Instrument Geometry	• Considers the instrument geometry in the bottom of the restoration. • Areas of the preparation that are smaller than the diameter of the instrument geometry are calculated in the bottom of the restoration so that they increase with the instrument geometry.	YES	YES
Remove Undercuts	• Undercuts within the preparation margin are blocked out in the restoration bottom.	YES	YES

Attachment

Parameters	Description	Default value
Attachment Diameter	• Diameter of the cylindrical anchor of the positive part.	1500
Attachment Height	• Height of the entire positive part.	2000
Attachment Bridge Length	• Length of male bridge. The male bridge is the connecting element between the anchor and the base.	1000
Attachment Bridge Width	• Width of bridge.	1000
Attachment Gingiva Distance	• Distance from male bottom to gingival adaptation. • Negative values result in a penetration of the gingiva.	0
Attachment Gingiva Adaption	• Gingival adaptation: Yes/No	YES
Attachment Spacer Value	• Divided attachment: Space between positive part and cut-out negative part in neighboring positive part.	80 µm
Attachment Shoulder Width	• Size of plate located on the gingiva.	500 µm

Bar

Parameters	Description	Default value
Bar Height	• Describes the height of the bar segment in µm.	3000
Bar Width	• Describes the width of the bar segment in µm.	3000
Bar Cone Angle	• Describes the angle of incidence of lateral and friction surfaces in degrees. • Applies only to primary bars (design mode squared).	4 °
Bar Smoothing Radius	• Describes the radius of the junction between the anchor element and the bar in µ. This should guarantee a smooth junction between the anchor and the bar and prevent predetermined breaking points.	2500 µm
Bar Interdental Space	• Space in µm required to ensure easy cleaning. This space is left in the anchor-bar transition zone between the bar and the gingiva.	1000 µm

Pontic (anatomical, framework)

Parameters	Description	Default value	
		Anatomical	Framework
Gingival Spacing	• Space between pontic and preparation geometry/gingiva.	0	0
Lingual Opening Angle	• Increase of pontic for the basal area in the oral direction.	0	0
Proximal Contacts Strength	• Set the thickness of the proximal contacts. • The software tries to achieve this stored thickness in the restoration suggestions.	25 µm	-
Occlusal Contacts Strength	• Set the thickness of the occlusal contacts. • The software tries to achieve this stored thickness in the restoration suggestions.	25 µm	-

Crown (bottom layer)

Parameters	Description	Default value
Spacer	• Possibility for setting the space for the fastening material below the restoration. Acts up to the preparation margin.	120 µm
Occlusal Milling Offset	• Set the minimum wall thickness in the horizontal direction. • The value determines the radial wall thickness of the crown cap. • DESIGN And MILL The value is displayed on the preparation as a semitransparent geometry together with the minimum occlusal thickness and the instrument geometry setting. Areas where the thickness falls short of the minimum level in the design phase are thus made visible.	0 µm
Minimal Thickness (Radial)	• Determines the minimum radial wall thickness in the horizontal direction. • Can be switched on and off	500 µm ON
Minimal Thickness (Occlusal)	• Determines the minimum radial wall thickness in the occlusal direction. • Can be switched on and off	700 µm ON
Telescope Angle	• Angle by which the outer wall of the telescope cone is inclined inward in relation to the restoration axis.	4 °
Regard Instrument Geometry	• Considers the instrument geometry in the bottom of the restoration. • Areas of the preparation that are smaller than the diameter of the instrument geometry are calculated in the bottom of the restoration so that they increase with the instrument geometry.	YES
Remove Undercuts	• Undercuts within the preparation margin are blocked out in the restoration bottom.	YES

Crown (top layer)

Parameters	Description	Default value
Spacer	• Possibility for setting the space for the fastening material below the restoration. Acts up to the preparation margin.	120µm
Occlusal Milling Offset	• Apply or remove material in the occlusal direction over the entire occlusal surface. • This value concerns only the milling result. • DESIGN and MILL The effects are not visible.	0µm
Minimal Thickness (Radial)	• Set the minimum wall thickness in the horizontal direction. • The software tries to achieve this stored thickness in the restoration suggestions.	500µm ON
Minimal Thickness (Occlusal)	• Set the minimum wall thickness in the occlusal direction. • The software tries to achieve this stored thickness in the restoration suggestions.	700µm ON
Regard Instrument Geometry	• Considers the instrument geometry in the bottom of the restoration. • Areas of the preparation that are smaller than the diameter of the instrument geometry are calculated in the bottom of the restoration so that they increase with the instrument geometry.	YES
Remove Undercuts	• Undercuts within the preparation margin are blocked out in the restoration bottom.	YES

Model

Observe the information supplied concerning the pins, model holders and base plates.

Parameters	Description
Segmentation Cut Width	• Set the width of the saw-cut.
Baseplate Distance	• Adjust the distance of the base plates from each other.
Pin Diameter	• Set the diameter of the pins.
Pin Spacing	• Set the distance of the pins from each other.

Articulator

The preset parameters are mean values which can be used without alteration for an average articulation.

Parameters	Setting	Mean value
"Arms"	Side of the Bonwill triangle	105 mm
"Base"	Intercondylar distance	100 mm
"Balkwill Angle"	Balkwill angle	23°
"Sagittal Angle Left" and *"Sagittal Angle Right"*	Sagittal condylar path inclination	35°
"Bennett Angle Left" and *"Bennett Angle Right"*	Bennett angle	15°
"Immediate side shift left" and *"Immediate side shift right"*	Initial Bennett movement	0 µm
"Include Restorations"	If activated, available restorations are taken into consideration for the calculation of the FGPs as if they were already inserted. This means reconstructed cuspid guidance can be considered for the other restorations in the case, for example.	-

Gingiva

Parameters	Description	Default value
"Gingiva Cleaning Spacer"	Specifies the distance between the gingival element and the gum. The gap is also produced at the edge of the gingival element.	0 µm
"Gingiva Spacer"	Specifies the distance of the gingival element and the gums between the edges of the elements. The edges are always on the gum.	50 µm
"Gingiva Implant Spacer"	Specifies the space between the gingival element and the cemented cap of the abutment.	100 µm
"Gingiva Minimal Thickness"	Specifies the minimum wall thickness of the element	700 µm
"Gingiva Margin Thickness"	Specifies the material thickness at the edge of the element. Prevents the splitting of the material.	50 µm
"Regard Instrument Geometry"	Considers the instrument geometry in the bottom of the restoration. Areas of the element that are smaller than the diameter of the instrument geometry are calculated in the bottom of the restoration so that they increase with the instrument geometry.	Yes
"Remove Undercuts"	Undercuts within the preparation margin are blocked out in the restoration bottom.	Yes

CEREC Guide

Parameters	Description	Default values
Thickness	Template body thickness	4 mm
Spacer	Gap between the contact surface on the remaining teeth and the interior of the template body.	60 µm

Accepting settings

➢ Click on the *"Ok"* button.

Discarding settings

➢ Click on the *"Cancel"* button.

Resetting settings

➢ Click on the *"Reset All Group Parameter"* button.

↳ The settings for this restoration type are reset to the factory settings.

5.2 Devices

All connected devices can be displayed and configured under the menu item *"Devices"*.

A green check mark on a device indicates its availability.

Adding devices automatically

You can add additional devices with the *"Scan for New Devices"* function.

✓ The unit is connected to the PC.

1. Click on the *"Scan for New Devices"* button.
   ↳ All units connected to the PC are recognized. In the case of new units, you will be prompted to enter a name.
2. Enter a name for the new unit.

Adding devices (manual)

You can add devices manually with the *"Add Device (Manual)"* function. This is mandatory for units which cannot be operated at the maximum speed of 115,200 baud. This concerns devices with long cable connections or when certain radio modules (e.g. Futaba, 19,200 baud) are used.

1. Click on the *"Add Device (Manual)"* button.
2. Choose whether the device should be connected via the network or a serial connection.
3. Network: Enter the network address.
   Serial: Enter the COM port and the baud rate.
4. Click on the *"Ok"* button.
   ↳ The software attempts to contact the device.

If the connection fails, check the connection. If necessary, ask a qualified technician.

Updating

With the *"Refresh Devices"* button you can

- Refresh the status display; e.g. check whether a milling unit has finished milling in the meantime, or
- Check the current availability of a device.

5.2.1 inEos X5

Under the *"inEos X5"* menu item, the inEos X5 can be set.

Setting	Description
Shake tolerance	• Set motion sensitivity for automatic activation. • The more exact the setting, the longer you have to hold the model still before taking the next scan.
Acquisition behaviour	• Setting scan behavior during the range scan • If the setting is activated, the standard scan sequence is initiated while you select the detail areas.

Accepting settings

➢ Click on the *"Ok"* button.

Discarding settings

➢ Click on the *"Cancel"* button.

5.2.1.1 Resetting settings

➢ Click on the *"Reset inEos X5 Settings"* button.
  ↳ The settings are reset to factory settings.

5.2.1.2 Calibration

✓ The inLab SW is switched on.
✓ The jaw model supplied for calibration is ready.
✓ You have restarted the software.
1. Click the *"Configuration"* button in the menu.
2. Click the *"Devices"* button.
3. Click *"inLab SW"*.
   ↳ A selection menu opens.
4. Click on the *"Calibrate"* button.
   ↳ The calibration dialog opens.
5. Follow the steps in the calibration dialog.
6. Position the calibration model on the rotation disk in such a way that the front teeth are facing directly in the direction of the unit.
7. Start the scan process.
   ↳ The unit is calibrated. Wait until the process has been completed.
8. Restart the software.

5.2.2 inEos Blue

Under the menu item *"inEos Blue"*, inEos Blue can be set.

Setting	Description
Shake tolerance	• Set motion sensitivity for automatic activation. • The more exact the setting, the longer you have to hold the model still before taking the next scan.

Accepting settings

➢ Click on the *"Ok"* button.

Discarding settings

➢ Click on the *"Cancel"* button.

5.2.2.1 Resetting settings

➢ Click on the *"Reset inEos Blue Settings"* button.
↳ The settings are reset to factory settings.

5.2.2.2 Calibration

1. Click on the *"Calibrate"* button.
2. Then simply proceed as prompted by the software.

Also observe the operating instructions of the inEos Blue.

5.2.2.3 XYZ calibration

1. Click on the *"Calibrate XYZ"* button.
2. Then simply proceed as prompted by the software.

Also observe the operating instructions of the inEos Blue.

5.2.3 Milling unit

5.2.3.1 Editing settings

inLab MC XL

You can later edit the following settings via the menu item *"MC XL"*:

- Name
- Connection settings
  - Retrieve IP settings automatically
  - Specify IP settings manually
- Manual block fixing
  - If you use manual block fixing, a check mark must be placed in front of *"Manual block fixation"*.
  - Models can only be milled using manual block fixation.
- Second motor set
  - The check mark must be placed in front of *"Two Bur Sets"*.
  - You can deactivate instrument sets individually. A deactivated instrument set will simply be ignored during production, calibration etc.
    NOTICE! The restoration may be damaged if longer instruments are present in the deactivated instrument set than in the active set. Ensure that the instruments installed in the deactivated instrument set are not longer than those in the active set.
- Scanner
  - If the grinding unit has an integrated scanner, a check mark must be placed in front of *"Scanner"*.
  - Use the scanner to read bar codes.
- Bar code reader
  - If a bar code reader is used, this option must be activated.
- External tank
  - If the external water tank is connected and the check mark has been placed, you will not be reminded to change the water until a later point in time.
- Firmware Update
  - Click on the *"Firmware Update"* button to load the firmware related to the software on the MC XL.

inLab

You can later edit the following settings via the menu item *"CEREC 3/ inLab"*:

- Name
- Connection settings
- Large water tank
  - If the 25-liter canister (option, Order No. 60 56 217) is connected and the check mark has been placed, you will not be reminded to change the water until a later point in time.
  - If the 25-liter canister is retrofitted, your service engineer must place a check mark in the box in front of *"Large Water Tank"*.
- Scanner
  - If the *"CEREC 3/inLab"* milling unit has an integrated scanner (option, Order No. 58 33 707) a check mark must be placed in front of *"Scanner"*.
  - If a scanner is retrofitted, your service engineer must place a check mark in front of *"Scanner"*.

5.2.3.2 Calibration

1. Click on the *"Calibrate"* button.
2. Then simply proceed as prompted by the software.

5.2.3.3 Changing instruments

1. Click on the *"Change Instruments"* button.
2. Then simply proceed as prompted by the software.

5.2.3.4 Removing the milling unit

1. Click on the *"Delete Device"* button.
2. Then simply proceed as prompted by the software.

5.3 Settings

The menu item *"Settings"* has the following subitems:

- *"ADA/FDI Notation"*
- *"Warning messages"*
- *"Order Database"*
- *"Language"*
- *"MC XL Milling"*
- *"Material"*
- *"generic machines"*

5.3.1 ADA/FDI odontogram

You can set the odontogram using *"ADA/FDI Notation"*:

- International (*"FDI Notation"*)
- USA (*"ADA Notation"*)

5.3.2 Warning messages

Warnings may appear in pop-up windows when using the software. Many of these messages can be deactivated by clicking on the *"Don't show this message again"* check box. If this check box is already selected or if a new user uses the software, all warnings can be reset here. All warnings are then displayed, if required.

Setting	Description
YES	Displays all the deactivated warnings in the workflow again.
NO	Warnings which were previously hidden, remain hidden.

5.3.3 Job database

In the menu item *"Order Database"*, you can determine where patient data and cases are saved and to which path the workpiece database should be stored.

To change the directory for one of the databases, click on *"Browse"* and select the desired path.

You can place databases on a network path so that other PCs can also access this data and can secure them centrally.

5.3.4 Language

Here, you can set the language of the software.

From software version inLab SW 4.x, a restart of the application is no longer required in order to switch language.

5.3.5 MC XL milling

You can activate and deactivate the grinding manufacturing option for zirconium oxide, plastic, and metal here.

When this option is activated, you can choose between the milling and grinding manufacturing processes for plastic, metallic and zirconium oxide materials in the material selection step.

Grinding of zirconium oxide, plastic and metal is possible using machines with the following serial numbers:

Machine type	Serial number
inLab MC XL	129001
CEREC MC XL	129001
CEREC MC XL Premium Package	302001
CEREC MC	202001
CEREC MC X	231001

Other machines must be equipped with the milling starter kit, Design 2011 (REF: 64 48 893) or with the milling starter kit for connected motors (REF: 64 51 079).

5.3.6 Material configuration

You can configure the display of the materials in the software with this setting. You can deactivate either a whole manufacturer, individual materials of a manufacturer, or block sizes.

➢ To do this, remove the tick next to the relevant display.

↳ Manufacturer, material, or block size is no longer displayed in the selection lists.

5.4 Generic machine

If you wish to establish restorations for other production machines, you can enter the necessary parameters of this machine here.

Tip: You can configure several production machines.

You can assign an individual name to the machine.

Under *"Machine Properties"*, you can set the following:

- The number of axes (3, 4 or 5-axis)
- The smallest grinding diameter
- The type of grinding head (cylinder, ball-shaped)

You can select the data path where the data should be saved.

6 Restoration types and design mode

6.1 Restoration types

Single tooth restoration

Symbol	Restoration type	Design mode
	Crown	• Biogeneric Individual (Split: MultiLayer) • Framework • Biogeneric Copy (Split: MultiLayer) • Biogeneric Reference (Split: MultiLayer) • Telescope
	Inlay/Onlay	• Biogeneric Individual • Biogeneric Copy
	Veneer	• Biogeneric Individual • Biogeneric Copy • Biogeneric Reference
	Implant Superstructure	• Biogeneric Individual (Split: MultiLayer) • Framework • Biogeneric Copy (Split: MultiLayer) • Biogeneric Reference (Split: MultiLayer)
	Missing	Click on the teeth in the odontogram which are not created.

Bridge restoration

Symbol	Restoration type	Design mode
	Crown	• Biogeneric Individual • Framework • Biogeneric Copy • Biogeneric Reference • Telescope
	Inlay/Onlay	• Biogeneric Individual • Biogeneric Copy
	Veneer	• Biogeneric Individual • Biogeneric Copy • Biogeneric Reference
	Pontic	• Biogeneric Individual (Split: MultiLayer) • Framework • Biogeneric Copy (Split: MultiLayer) • Biogeneric Reference (Split: MultiLayer)
	Missing	Click on the teeth in the odontogram which are not created.
	Connector	• Intersection • Anatomic

Symbol	Restoration type	Design mode
	Bar	• Cylindric • Squared • Dolder • Hader
	Attachment	• Cylindric

Model

Symbol	Restoration type	Design mode
	Model	

6.2 Design mode

Biogeneric Individual

For more information, refer to “Biogeneric Individual [→ 48]”.

Biogeneric Reference

For more information, refer to "Biogeneric Reference [→ 49]”.

Biogeneric Copy

For more information, refer to “Biogeneric Copy [→ 49]”.

Anatomic / Intersection

The *"Anatomic"* and *"Intersection"* modes are available only for bridge connectors.

Anatomic
The connector is a separate element and can be edited.

Intersection
The connector is created by penetrating the neighboring teeth. It is not a separate element, and therefore cannot be edited.

Framework

Select this design technique to create frameworks or primary sections without taking the antagonist information into account. These frameworks are then not automatically suggested to support cusps.

Telescope

Select the *"Telescope"* design technique to set telescope elements for bridges. The telescope elements of a bridge are always aligned parallel.

Bars

You can select the following geometries for the bars:

			
Cylindric	Squared	Dolder	Hader

Multilayer

However, the fully anatomical shape is broken down into a framework with no undercut and the covering layer by this technique. The two parts can be milled from different materials.

Do not use this design technique if you want to manually veneer a framework.

Gingiva

Select this option if you also want to construct an additional gum element for the implant-supported bridges and bars. It represents an independent element for which the design tools can be used.

The *"Gingiva"* option is currently only available for the design of implant-supported restorations.

6.3 Biogenerics

6.3.1 General information on biogenerics

Biogenerics enable the inLab SW software to reconstruct teeth in a natural way. Biogenerics is a biogeneric process based on the scientific understanding that there are morphological connections between the teeth that can be expressed in mathematical functions.

With inLab SW 4.x software, the suggestion process for biogenerics has experienced fundamental revision: now the positioning and the entire morphology are also included in the analysis and suggestion. Consequently, the quality of the initial suggestions has been significantly further improved. This applies to individual teeth, but especially for large bridges, multiple restorations and anterior teeth as well.

All scanned teeth are analyzed with respect to their position and morphology. Based on this analysis the relevant restoration can be produced in fully automated fashion.

For the biogenerics to deliver ideal suggestions, it is important that entries are correct and complete. This applies to the following steps in particular:

- **Exposure**
  The exposure should always include the entire model, where possible. This applies in particular to large bridges and multiple restorations. Data holes around the preparation and the proximal contacts should be avoided.
- **Model axis**
  The model axis should be aligned precisely (see “Set model axis”).

6.3.2 Biogeneric Individual

In the *"Biogeneric Individual"* design technique, the exposure taken is analyzed and the restoration suggestion is calculated on the basis of this information. The more information that is available, the more successful the calculation. A full image of at least one neighboring tooth should therefore be taken from the occlusal/incisal direction. For anterior and corner teeth, an image of the labial surface should also be taken.

For premolars or molars, the calculation is mainly based on the distal neighbor, for anterior teeth the mesial neighbor is used.

6.3.3 Biogeneric Copy

Select the *"Biogeneric Copy"* design technique to transfer parts of an existing occlusal surface to the restoration and enhance the rest using the patented Biogeneric technique.

To do this, acquire the status separately in the *"BioCopy Upper"* or *"BioCopy Lower"* image field prior to the preparation.

This technique can be used for inlays, onlays, partial crowns, crowns, and bridges.

6.3.4 Biogeneric Reference

Select the *"Biogeneric Reference"* design technique for user definition of the tooth to be used as a reference for calculating the restoration suggestion. The reference tooth can be any tooth of the same class (anterior/posterior tooth), e.g. the antagonist or the contralateral tooth. You also can use a reference tooth from a model to achieve the desired morphology.

This reference tooth must be acquired on a separate basis in the *"BioRef Lower"* or *"BioRef Upper"* image field. This technique can be used for inlays, onlays, partial crowns, crowns, and bridges.

7 Editing orders

The section Shortcut keys [→ 155] describes how the following tools and options can be opened via shortcut keys.

7.1 Tools and functions of the page palette

The page palette offers you various different functions, depending on the current step.

7.1.1 View options

Different views are available to you in the *"View Options"* page palette. These view options are split into global and local views. The global views are based on the model axis of the upper and lower jaw.
Tip: You can adjust the global model axis in the *"Set Model Axis"* step.

The local views are determined by the element currently selected in the object bar. Each element in the object bar therefore has its own coordinate system. Depending on the current step, the following views are available to you:

Global views

- *"Top"*
- *"Bottom"*
- *"Right"*
- *"Left"*
- *"Front"*
- *"Back side"*

Local views

- *"Mesial"*
- *"Distal"*
- *"Buccal"* / *"Labial"*
- *"Lingual"*
- *"Cervical"*
- *"Occlusal"* / *"Incisal"*

Enlarge or reduce 3D preview

In the *"View Options"* page palette on global and local views you will find the zoom options.

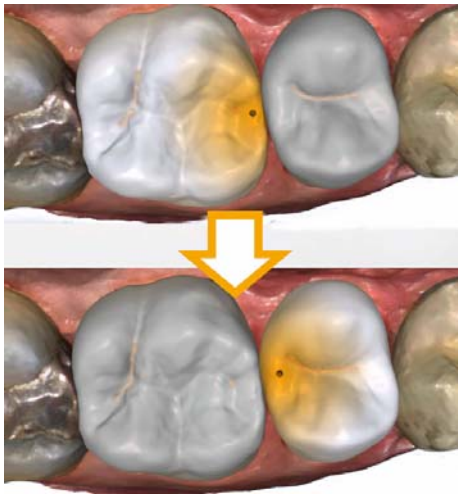
Using the slide you can enlarge or reduce the 3D preview.

In the attendant text field, the current degree of enlargement is displayed in percent. Here you can also manually enter a value from 0 to 100 percent and confirm with the Enter button.

Tip: If the mouse pointer is inside the 3D preview, then you can also change the view with the center mouse button pressed down while simultaneously moving the mouse up and down.

Zoom adjustment via the mouse's scroll wheel is also supported.

7.1.2 Tools



Tip: Automatic tooth change is possible when using the tools for several restorations. You do not have to make a selection via the restoration selector or by double-clicking.

Tools which can be used on the active restoration element are always active. The other tools are grayed out.

The most important tools are also offered to you in the tool wheel. You can find further information on the tool wheel in the section "Tool wheel [→ 64]".

You will find all tools as a sub-menu under *"Tools"*. The available tools are displayed for each step.

To change a tool, click on the button of another tool in the left column of the page palette.

To close a tool, click on the button of the active tool once more in the left column.

Undoing and resetting

Using the *"Undo"* button in the tools, you can undo the last change.

With the *"Reset"* button in the tools you can reset changes that were made with the tool.

7.1.2.1 Buccal registration

Correcting buccal images

The buccal registration takes place automatically. If it is not correct you can do it manually.

1. Click on the *"Reset"* button.
   ↳ The buccal registration is triggered and you have both jaws and the buccal exposure separated on the screen.
2. Click on the buccal image and displace it to the same region on the upper or lower jaw.
   ↳ The image is accepted.
   Tip: If an image is not accepted, align the jaw buccally. This enables better overlaying.
   If registration is still not possible, check whether the buccal sections in the jaws and in the buccal image are sufficient.
3. If the image was accepted, move the image to the corresponding region of the opposite jaw.

Flip Buccal Impression

With the *"Flip Buccal Impression"* function, you can rotate the buccal image.

1. Click on the *"Buccal"* button.
2. Click on the *"Flip Buccal Impression"* button.
   ↳ The buccal image is then rotated.

7.1.2.2 Buccal bite tools

You can adjust the occlusion using the following tools.

Move jaw

You can correct the buccal bite by positioning and rotating the upper jaw using the *"Align Jaw"* function.

➢ Click on the *"Align Jaw"* button.
   ↳ The rotating/positioning tool will be shown.

7.1.2.3 Shaping

With the *"Form"* function, you can do the following with material

- apply
- remove
- smoothen

Tip: If one of the shape tools is active, you can also switch to the following order using the space bar on the keyboard:
Apply > Remove > Smooth > Apply > etc.

Apply material

1. Click the *"Form"* button.
2. Click on the *"Add"* button.
3. Click with the mouse cursor on the area you wish to shape.
4. Press and hold the left mouse button and apply the material to the surface location by moving the mouse.

Removing material

1. Click the *"Form"* button.
2. Click the *"Remove"* button.
3. Press and hold the left mouse button and remove the material from the surface location by moving the mouse.

Smoothing

When smoothing, you are able to smooth the surface locally.

1. Click the *"Form"* button.
2. Click the *"Smooth"* button.
3. Click with the mouse cursor on the location you wish to smoothen.
4. Press and hold the left mouse button and smoothen the surface location by moving the mouse.

7.1.2.3.1 Properties

Modifying the size

You can use the *"Size"* slider to modify the size of the area affected. The area affected is shown as an orange-colored area on the current restoration in the 3D preview.
The size of the area affected can be modified for each shaping tool.

1. Click the *"Size"* slider and press and hold the mouse button.
2. Now drag the slider to the right or left to enlarge or reduce the area affected.
   ↳ The orange-colored area (area affected) will be expanded or reduced in the 3D preview.

Tip: You can also change the size of the area affected by dragging the mouse up or down with the right mouse button held down on the restoration.

Adjusting thicknesses

You can use the *"Strength"* slider to modify the intensity of the area affected. The thicknesses of the affected area can be modified for each forming tool.

1. Click the *"Strength"* slider and press and hold the mouse button.
2. Now drag the slider to the right or left to increase or reduce the intensity.

Hiding the neighboring restoration

You can hide the neighboring restoration with the *"Hide Neighbors"* function.

"Apply global"

This function allows you to use the tool on two adjacent restorations simultaneously. For this to happen, the teeth must be grouped in advance (Ctrl/Shift key + left mouse button) and the check box should subsequently be checked.

7.1.2.4 Cut out model areas

With the *"Cut"* function, you can cut out model areas. The cut out model areas are then discarded. You cannot display cut out areas later on.

Removing the model area

The *"Discard Part"* function enables model areas to be removed.

When performing this activity, be careful not to accidentally cut out any areas that e.g. are located behind the model or are otherwise cut away from the line.

1. Click the *"Cut"* button.
2. Begin the cut line with a double-click.
3. Click to set additional points.
4. Finish the cut by double clicking.
   ↳ The model area is cut off.

Inverting the model area

With the *"Invert Selected"* function, the model area that is cut out can be inverted.

✓ The *"Cut"* tool is selected.

✓ You have created a cut.

➢ Click the *"Invert Selected"* button.

↳ The model area which was cut out is displayed.
The rest of the model area is hidden.

Tip: You can invert the model area that is cut out by double-clicking on the semitransparent cut-out area.

7.1.2.5 Correcting defects

With the *"Replace"* function, you can correct defects and artifacts on the model (e.g. holes or elevations).

To do so, drag a line around the defect in your model and select the appropriate function.

1. Click the *"Replace"* button.
2. Set the starting point with a double-click.
3. Click to set further points in order to enclose the defect tightly. The line must be located completely on the model.
4. Set the line end by double-clicking.
   ↳ The line is finalized.
   Tip: You can use delete to remove the line.
5. Click on the *"Apply"* button.
   Tip: The tool can also be triggered by pressing the Enter key.
   ↳ The software smoothens everything within the line by interpolation.

7.1.2.6 Resetting the model

With the *"Reset Model"* function, all changes will be reset.

1. Click the *"Tools"* button.
2. Click on the *"Reset Model"* button.
   ↳ The program will ask whether you really want to reset all changes.
3. Confirm with *"Ok"*.

7.1.2.7 Trimming

With the *"Trim"* function, you can isolate the preparation. You can thus e.g. draw in the preparation margin more easily. Trimmed image regions can be optionally displayed and hidden later on.

Hiding image regions

The *"Discard Part"* function enables you to hide image regions.

The trim line can also be placed over the preparation line. Only the region underneath the preparation will then be hidden automatically. The prepared region remains fully intact.

1. Click on the *"Trim"* button.
2. Click on the *"Discard Part"* button.
3. Start by double-clicking in the vicinity of the model or on the model.
4. Click to set additional points. Draw the line close to the preparation around which you want to trim.
5. Finish the line by double clicking.
   ↳ The smaller region of the model is hidden.

Inverting an image region

With the *"Invert Selected"* function, an image region which was hidden can be restored.

✓ An image region has been hidden using the *"Trim"* tool.

➢ Click on the *"Invert Selected"* button.

↳ The hidden image region will be shown.
The image region shown will be hidden.

Tip: You can invert the hidden image area by double-clicking on the semitransparent hidden region.

7.1.2.8 Entering the preparation margin

More information on using this tool can be found in the section “Entering the preparation margin [→ 111]”.

Automatic edge detection

With *"Margin"* / *"Auto"*, you can work with automatic edge detection.

1. Click on the *"Margin"* button.
2. Click on the *"Auto"* button.

↳ Automatic edge detection is switched on.

Manual drawing

With *"Manual"* you can draw in the preparation margin manually. With this technique, you must place the individual points close together in order to clearly define the contour of the preparation margin even in difficult situations.

✓ The *"Margin"* tool is open.

➢ Click on the *"Manual"* button.

↳ The manual technique is switched on.

Manual drawing with intensity image

With *"Manual with intensity image"* you can manually draw in the preparation margin on the intensity image.

✓ The *"Margin"* tool is open.

➢ Click on the *"Manual with intensity image"* button.

↳ The manual technique with intensity image is switched on.

Tip: As long as the *"Margin"* tool is activated, you can switch back and forth between the drawing options by pressing the space bar.

7.1.2.9 Entering the baseline on the gingival mask

In the *"Click Scanbody"* step, you can select whether or not the gingival mask is to be used for calculating the emergence profile. This option is available only if a gingival mask was acquired in the *"SCAN"* phase.

The baseline for the pontic can also be entered on the gingival mask. To do so, the corresponding option must be activated in the tool.

7.1.2.10 Positioning

With the *"Move"* function, you can displace, rotate, and scale the restoration.

Displacing and rotating

With the *"Position and Rotate"* tool, you can displace and rotate the restoration.

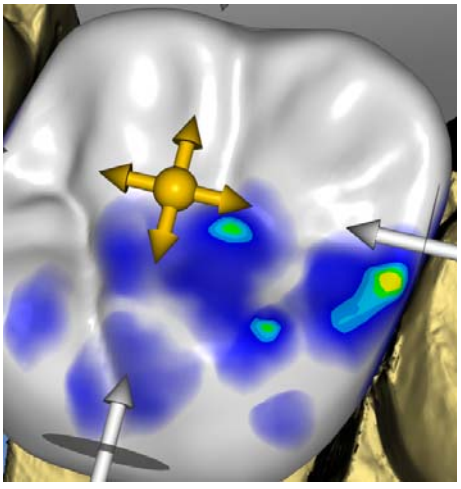
Displacing and rotating the restoration

➢ Left-click on an arrow symbol and hold the button down.
  ↳ You can displace or rotate the restoration in the corresponding direction.

Changing axes

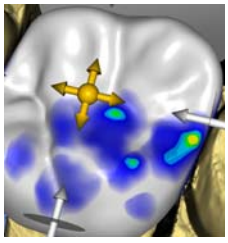
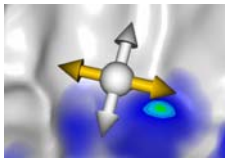
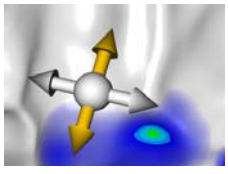
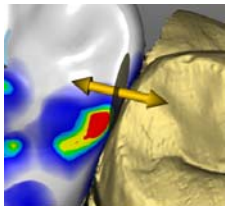
➢ Right-click on an arrow symbol and hold the button down.
  ↳ You can change the axis on which the object is rotated or moved.

Scaling



With the *"Scale"* function, you can change the size of the restoration. The area affected is shown as an orange-colored area.

1. Click on the *"Move"* button.
2. Click on the *"Scale"* button.
3. Use the mouse cursor to click with the arrow on the selected scaling direction.
   ↳ The arrow is shown in orange.
4. Hold the left mouse button down and drag the mouse to enlarge or reduce the restoration.
   ↳ The orange-colored area will be expanded or reduced.

Layout	Effect
	Click on the ball in the center to enlarge or reduce the entire restoration.
	Drag the mouse and click on the arrow to enlarge or reduce the restoration in the mesio-distal direction.
	Drag the mouse and click on the arrow to enlarge or reduce the restoration in the bucco-lingual direction.
	Drag the mouse and click on the arrow to enlarge or reduce the restoration in the direction shown. The restoration is enlarged or reduced to half-page size.

7.1.2.11 Recalculating restorations

The initial suggestion can be recalculated using the *"Recalculate"* tool.

1. To do so, select *"Recalculate"* and then click on *"Recalculate"* in the tool.
2. If you select the *"Unadapted"* option, you can choose to align the restoration before the recalculation via the *"Move"* / *"Scale"* tool.
3. Finally, click on *"Recalculate"* to conclude the process.

7.1.2.12 Designing

Anatomical

The *"Anatomic"* function is used to preselect regions of morphology, e.g. cusps or fissure lines, for designing.

Circular

The *"Circular"* is used to preselect a circular region for designing.

The *"Shape"* function enables you to shape a selected region.

You can shape the restoration in 2 ways:

Function	Description
2-Direction	The movement is possible along one axis orthogonal to the restoration surface.
4-Direction	The movement is possible along two axes parallel to the restoration surface.

7.1.2.12.1 Properties

Changing size
This option is available only for the circular variant.

You can use the *"Size"* slider to modify the size of the area affected. The area affected is shown as an orange-colored area on the current restoration in the 3D preview.

1. Click the *"Size"* slider and press and hold the mouse button.
2. Now drag the slider to the right or left to enlarge or reduce the area affected.
   ↳ The orange-colored area (area affected) will be expanded or reduced in the 3D preview.

Tip: You can also change the size of the area affected by dragging the mouse up or down with the right mouse button held down on the restoration.

Hiding the neighboring restoration

You can hide the neighboring restoration with the *"Hide Neighbors"* function.

7.1.2.13 Biogeneric variation

Phase *"DESIGN"* – Step *"Edit Restoration"*

With the *"Biogeneric Variation"* function, you can generate different variants of the possible morphology.

1. Click the *"Biogeneric Variation"* slider and press and hold the mouse button.
2. Drag the slider to the left or right.
   ↳ The new morphology is shown as a 3D preview.
3. If you are satisfied with the morphology, release the mouse button.
   ↳ The new morphology is applied to the current restoration.

7.1.2.14 Reduce

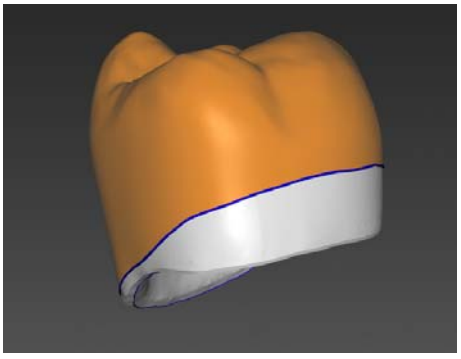
With the *"Reduce"* function, you can anatomically reduce the restoration: You also can perform partial reductions.

7.1.2.14.1 Full reduction

1. Click on the *"Reduce"* button.
2. Set the reduction level using the slider. The value will be memorized for other reductions.
3. Click on *"Apply"* to execute the reduction.
   ↳ The restoration is reduced by the set value.

Tip: You can reduce several teeth at the same time by grouping them first with the following key combinations:

- *"Ctrl"* + left mouse button
- Shift key + left mouse button



Tip: You can edit the reduction line before the reduction and create festoons and back rest plates quickly and easily.

7.1.2.14.2 Partial reduction

1. Click on the *"Reduce"* button.
2. Double-click on the restoration and draw a closed line.
3. Set the reduction level using the slider.
4. Click on *"Apply"* to execute the reduction.
   ↳ The restoration is reduced by the set value.

Tip: You can use the space bar or *"Toggle area"* to switch the area to be reduced. It is displayed as an orange colored area.

7.1.2.14.3 Properties

Taking into account the minimum geometry during reductions

The *"Reduce"* tool enables you to choose whether the minimum geometry should be taken into account during reductions.

- If the corresponding option is selected in the tool, the minimum geometry is observed during reduction.
- If the corresponding option is not selected in the tool, the minimum geometry may not be reached during reduction.

Attaching the base of the pontic

If the *"Stick Pontic Base to Gingiva"* function is active, the base of the pontic is not reduced for a full reduction.

Hiding the neighboring restoration

You can hide the neighboring restoration with the *"Hide Neighbors"* function.

7.1.2.15 Contacts

If you modify the restoration, the contact surfaces also will be displaced. The *"Contacts"* function is used to reset the contacts to the thickness set in the parameters.

1. Click on the *"Contacts"* button.
2. Click the *"Mesial"*, *"Distal"*, *"Occlusal"*, or *"FGP"* button.
   ↳ The respective contact surface is then reset.

Hiding the neighboring restoration

You can hide the neighboring restoration with the *"Hide Neighbors"* function.

7.1.2.16 Adjusting sprue location

This option is only available for the PRODUCE manufacturing process.

The *"Sprue"* function enables you to rotate the position of the sprue location on the restoration in 2 ways:

- Step-by-step, by clicking on the arrow in the circle segment.
- Continuously, by clicking and holding the left mouse button inside the circle segment and moving the mouse.

7.1.2.17 Positioning blocks

Moving

The *"Position"* function enables you to displace the block surrounding the restoration in all spatial directions until the restoration strikes one of the block margins.

You can move the block in 3 ways:

- Step-by-step, by clicking on one of the arrows showing the movement axes on the semitransparent cube.
- Continuously in 2 directions, by clicking on one side of one of the cube surfaces, holding the button down and moving the mouse.
- Continuously in all 4 directions, by clicking in the center of a cube surface, holding the button down and moving the mouse.

Rotating

With the *"Rotate"* function, you can rotate the restoration about the axis of the block.

This function is only available for the *"MILL"* manufacturing process.

You can rotate the restoration in the block in 2 ways:

- Step-by-step, by clicking on the arrow in the circle segment.
- Continuously, by left-clicking on or inside of the circle segment and moving the mouse.

7.1.2.18 Incisal variation

Phase *"DESIGN"* – Step *"Edit Restoration"*

Using the *"Incisal Variation"* function, you can generate mamelons (vertical structures) and growth lines (horizontal structures) on your anterior restorations.

Strength

Using the *"Strength"* slider you can set the intensity at which the selected structure acts on a restoration.

Variation

Using the *"Variation"* slider you can select the desired structure type.

- Items 1 to 4 stand for mamelons (vertical structures).
- Items 5 to 6 stand for growth lines (horizontal structures).

Positioning structures

If you have set the structure type and the desired intensity, you can now adjust the position of the structure.

1. To do this click on your current anterior restoration in the 3D preview and then hold down the left mouse button.
   ↳ The tools effect area is colored in orange.
2. Now move the mouse to position the structure as you want it.

Applying structures

1. If you are satisfied with the structure created, click on the *"Apply"* button. The created structure is now saved.

IMPORTANT
In order to combine multiple structures together, first complete a structure and then save this with the *"Apply"* button.

2. Now create additional structures and save every other structure here once they are completed.

7.1.2.19 Using a gingival mask

In the *"Click Scanbody"* step, you can select whether or not the gingival mask is to be used for calculating the emergence profile. This option is available only if a gingival mask was acquired in the *"SCAN"* phase.

The baseline for the pontic can also be entered on the gingival mask. To do so, the corresponding option must be activated in the tool.

7.1.2.20 Splitting

Phase *"DESIGN"* – Step *"Edit Restoration"*

Using the *"Split"* function you can split a full-format *"Multilayer Abutment"* into a frame and veneer structure.

Using the *"Unsplit"* function you can join the frame and a veneer structure of a multi-layer abutment back together.

1. Select the desired option *"Split"* or *"Unsplit"* through the associated button.
2. Then click on the *"Apply"* button.
   ↳ The multi-layer abutment is split or joined together again.

7.1.2.21 Scaling

You can use this tool for frameworks, telescopes, multilayer frameworks and bars.

In the tool menu, you can select whether the tool is to be effective in the radial or the occlusal direction. You can toggle between these directions with the space bar or with the mouse.

1. Place the mouse pointer on an active restoration.
   ↳ Various design elements are then offered, depending on the restoration type.
   ↳ An arrow shows the direction in which the scaling will occur. The area affected is shown highlighted in orange.
2. Press and hold down the left mouse button.
3. Move the mouse to change the object.

Radial/occlusal

You can edit the edge of the crown caps and bridge frameworks for the restoration type *"Framework"* in radial or occlusal direction.

1. Click the *"Scale"* button.
2. Click on the *"Radial"* or *"Occlusal"* button.
3. Place the mouse pointer on an active restoration.
   ↳ The area affected is shown highlighted in orange.
4. Press and hold down the left mouse button.
5. Move the mouse to change the object.

Properties

Modifying the size

If a check mark is placed in front of *"Complete"* the area affected is maximized and applies to the entire design element. If no check mark is placed, you can determine the area affected individually.

You can use the *"Size"* button to modify the size of the area affected. The area affected is shown as an orange colored area. The size of the area affected can be modified for each shaping tool.

1. Click the *"Scale"* button.
2. Click the *"Size"* button and press and hold the mouse button.
3. Drag the mouse cursor up or down.
   ↳ The orange-colored area will be expanded or reduced. The size is displayed on the restoration.

Tip: You can also change the size by clicking on the restoration with the right mouse button and, while holding the right mouse button down, dragging the mouse up or down.

7.1.2.22 Creating a cavity design

If you click on this tool, the female part of the attachment in the restoration element to be mounted is calculated. The male part of the attachment must be finished for this purpose.

7.1.2.23 Tool wheel

In the MODEL and DESIGN phases, the tool wheel provides the most common tools for simplifying access. The tools available vary depending on the current step.

1. Right-click in the workspace.
   ↳ The tool wheel opens.
2. Click with the right mouse button anywhere in the workspace.
   ↳ The tool wheel moves to the position of the mouse pointer.
3. Select a tool.
   ↳ The selected tool is available. The tool wheel closes automatically.

You also can close the tool by clicking in the workspace with the left mouse button.

7.1.2.24 Adjusting connectors

Various tools are available for designing the connectors.

Scaling

With the *"Scale"* function, you can adjust the connectors.

1. Click on the *"Scale"* button.
2. Place the mouse pointer on an active connector.
   ↳ The area affected is shown highlighted in orange.
3. Press and hold down the left mouse button.
4. Move the mouse to change the object.

If you have selected the *"Scale Whole"* option, you can adjust the entire connector.

Positioning

With the *"Move"* function, the connector can be displaced.

1. Click on the *"Move"* button.
2. Place the mouse pointer on an active connector.
   ↳ The area affected is shown highlighted in orange.
3. Press and hold down the left mouse button.
4. Move the mouse to change the object.

If you have selected the *"Position All"* option, you can displace the entire connector. The neighboring elements are displayed transparently.

The adhesion sites are recalculated after displacement.

Editing lines

You can change the lines of a connector with *"Drag Line"*. The neighboring elements are displayed transparently.

1. Click on the *"Connector Edit Lines"* button.
2. Click on the *"Drag Line"* button.
3. Drag the lines as required.

You can redraw the lines of a connector with *"Edit Line"*.

1. Click on the *"Connector Edit Lines"* button.
2. Click on the *"Edit Line"* button.
3. Redraw the line at the required points.

7.1.2.25 Adjusting the baseline of the pontic

Editing lines

You can change the baseline of the pontic with *"Drag Line"*. The neighboring elements are displayed transparently.

1. Click on the *"Connector Edit Lines"* button.
2. Click on the *"Drag Line"* button.
3. Drag the lines as required.

You can redraw the baseline of the pontic with *"Edit Line"*.

1. Click on the *"Connector Edit Lines"* button.
2. Click on the *"Edit Line"* button.
3. Redraw the line at the required points.

7.1.3 Display objects

You can use these functions to display and hide the region of the model and that of the restorations.

1. Click on the *"View Options"* button.
2. Click the respective button.
   ↳ The affected region is then displayed or hidden.

	With the *"Upper Jaw"* button, you can display and hide the **upper jaw**.
	With the *"Lower Jaw"* button, you can display and hide the **lower jaw**.
	You can adjust the transparency of the **upper/lower jaw** continuously. 1. Click the slider of the “Upper/lower jaw” and press and hold the mouse button. 2. Now drag the slider to the right or left to increase or reduce the transparency.
	With the *"Minimal Thickness"* button, you can show and hide the **display of minimum thicknesses**. You can set the minimum thickness under *"Parameters"*. For more information, refer to the section onParameters.
	The *"Restoration"* button enables you to display and hide the **restoration**.
	You can adjust the **transparency of the restoration** continuously. 1. Click the *"Restoration"* slider and press and hold the mouse button. 2. Now drag the slider to the right or left to increase or reduce the transparency.
	With the *"Trimmed Model"* button, you can display and hide the **trimmed region**.
	With the *"BioCopy Upper"* button, you can display and hide the **BioCopy upper jaw** region (only if the corresponding image catalog contains images).

	With the *"BioCopy Lower"* button, you can display and hide the **BioCopy lower jaw** region (only if the corresponding image catalog contains images).
	With the *"BioRef Upper"* button, you can display and hide the **BioReference upper jaw** region (only if the corresponding image catalog contains images).
	With the *"BioRef Lower"* button, you can display and hide the **BioReference lower jaw** region (only if the corresponding image catalog contains images).
	With the *"Gingiva Mask Upper Jaw"* button, you can display and hide the **Gingival mask upper jaw** region (only if the corresponding image catalog contains images).
	With the *"Gingiva Mask Lower Jaw"* button, you can display and hide the **Gingival mask lower jaw** region (only if the corresponding image catalog contains images).
	With the Implant button, you can display and hide **implants** (abutment only).
	With the TiBase button, you can display and hide the **TiBase** (abutment only).

7.1.4 Activating analysis

Activating Analyzing Tools

➢ Click the *"Analyzing Tools"* button to activate the analysis tools.

Contact surfaces on the virtual model

Using the *"Model Contacts"* button, the contact surfaces on the virtual model can be displayed or hidden.

➢ Click on the *"Model Contacts"* button.

↳ The contact areas on the model are displayed or hidden.

Penetration/pressure:	> 100 µm 100 - 50 µm 50 - 0 µm
Distance:	0 - 50 µm 50 - 100 µm > 100 µm

Contact surfaces on the restoration

You can use the page palette button to check the occlusal contact points of the jaws.

The same color scheme is used as when displaying the contacts to the neighboring teeth or to the opposing jaw.

Penetration/pressure:	> 100 µm 100 - 50 µm 50 - 0 µm
Distance:	0 - 50 µm 50 - 100 µm > 100 µm

Side and bottom surfaces

Using the *"Model Box"* button, the virtual model can be displayed without the sides and bottom.

➢ Click on the *"Model Box"* button.

↳ The virtual model is displayed without side and bottom surfaces.

Tip: In the MILL phase show the relevant jaw model (show reference objects) and hide the bottom of the model in order to check the fit from all sides.
This enables you to check the tightly sealed preparation limit and check whether the ceramic extends through the preparation. This is a reference to areas where the restoration may be too low.

Occlusal contacts

Through the *"Occlusal Contacts"* button, the occlusal contact points of the active restorations displayed in color can be switched on or off.

➢ Click on the *"Occlusal Contacts"* button.
  ↳ The restoration is displayed with or without occlusal contacts.

Proximal contacts

Through the *"Proximal Contacts"* button, the proximal contact points of the active restorations displayed in color can be switched on or off.

➢ Click on the *"Proximal Contacts"* button.
  ↳ The restoration is displayed with or without proximal contacts.

Model color

Using the *"Color restoration"* button, the restoration can be displayed in the model color.

➢ Click on the *"Color restoration"* button.
  ↳ The virtual model is shown in white or the model color.

Cut

Using the *"Cut"* button, a cut can be created through the restorations and model in the screen plane.

1. Click on the *"Cut"* button.
   ↳ A cut is created in the screen plane through the virtual model and all restorations.
2. Click on one of the drag points in the 3D preview and hold down the mouse button. By moving the mouse at the same time, you can move the height of the cutting plane or rotate the cutting plane.

Cursor Details

Via the *"Cursor Details"* button, you can have the height and thickness of the restoration displayed. The cursor details are displayed at the bottom left of the screen.

➢ Click on the *"Cursor Details"* button.
  ↳ The height and thickness of the restoration are displayed on the mouse cursor and updated in real time.

Depending on the type of restoration, the following information is displayed:

Height	Distance from this point to the bottom of the model
Fissure height	Minimum thickness in fissure.
Thickness	Thickness of the restoration at this point
With anatomical connectors	Smallest section

Distance

You can use the *"Distance"* button to measure distances.

1. Click on the *"Distance"* button.
2. Click on the restoration to define the starting point and the end point.
   ↳ The distance is then displayed.

Grid Mode

With the *"Grid Mode"* function, you can display a grid comprised of vertical and horizontal lines. It serves as an orientation guide.

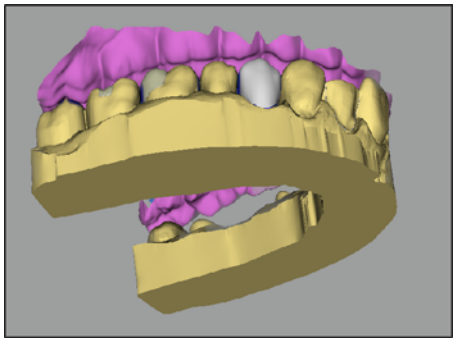
➢ Click on the *"Grid Mode"* button.
↳ The grid is displayed in the 3D preview.

Guidelines

The *"Guideline Mode"* function enables you to display and hide the Smile Design auxiliary planes.

➢ Click on the *"Guideline Mode"* button.
↳ The guiding lines are displayed in the 3D preview.

7.1.5 Articulation



The *"Articulation"* function enables you to configure a restoration taking the dynamics into consideration.
Once the initial suggestion has been calculated, the dynamic contact points are displayed in color.

For the most accurate result possible, it is important that the acquisition of the jaw meets the following conditions:

- The canine guidance must be able to be carried out on both sides.
- The virtual model is accurately aligned on the guide lines when setting the model axis.

The virtual articulator uses Camper's plane as a reference plane for the articulation parameters. The Camper's plane is usually parallel to the occlusal plane.

Once the model axis has been set, you can activate the virtual articulator at any time by using the button in the page palette.

IMPORTANT
Use the lower jaw to set the model axis.

Articulation Parameters

The values for articulation only apply for the current restoration. You can adjust the settings in the *"MODEL"* and *"DESIGN"* phases.

1. Click on the *"Articulation"* button.
2. Click on the *"Articulation Parameters"* button.
   ↳ The articulation parameters are displayed.

You can set the following values individually:

Parameters	Setting	Mean value
"Arms"	Side of the Bonwill triangle	105 mm
"Base"	Intercondylar distance	100 mm
"Balkwill Angle"	Balkwill angle	23°
"Sagittal Angle Left" and *"Sagittal Angle Right"*	Sagittal condylar path inclination	35°
"Bennett Angle Left" and *"Bennett Angle Right"*	Bennett angle	15°
"Immediate side shift left" and *"Immediate side shift right"*	Initial Bennett movement	0 µm
"Include Restorations"	If activated, available restorations are taken into consideration for the calculation of the FGPs as if they were already inserted. This means reconstructed cuspid guidance can be considered for the other restorations in the case, for example.	-

Incisal Pin

An opening of the jaw can be produced using the *"Incisal Pin"* function. The *"Incisal Pin"* function is only available in the *"MODEL"* phase.

1. Click on the *"Articulation"* button.
2. Click on *"Incisal Pin"*. Hold the left mouse button down and drag the mouse until the desired value of the jaw opening is reached.

Functionally generated path (FGP)

You can show a virtual FGP for the opposing jaw or the jaw using the *"Lower Virtual FGP"* and *"Upper Virtual FGP"* functions. The cover shows the maximum movement of the respective jaw for the selected articulation parameters.

The interrupting contacts are displayed by the FGP. The interrupting contacts can correspondingly be removed using the tools.

Lower virtual FGP

1. Click on the *"Articulation"* button.
2. Click on the *"Lower Virtual FGP"* button.
   ↳ The virtual FGP is displayed.

Upper virtual FGP

1. Click on the *"Articulation"* button.
2. Click on the *"Upper Virtual FGP"* button.
   ↳ The virtual FGP is displayed.

Occlusal Compass

The occlusal compass can be calculated using the virtual FGP. The software uses the Schulz occlusal compass.

The *"Occlusal Compass"* button enables you to display and hide the dynamic contact points.

1. Click on the *"Articulation"* button.
2. Click on the *"Occlusal Compass"* button.
   ↳ The dynamic contact points are displayed.

Color	Dynamic contact point
Blue	Laterotrusion
Green	Mediotrusion
Black	Protrusion
Red	Centric
Yellow	Latero-protrusion

Each direction of movement can be shown/hidden.

Manual Move

The lower jaw can be moved manually in accordance with the calculated masticatory movement using the *"Manual Move"* button,

1. Click on the *"Articulation"* button.
2. Click on the *"Manual Move"* button.

3. Move the lower jaw so by clicking on the orange ball in the diamond on the left.

7.1.6 Smile Design

With Smile Design, anterior restorations can be designed with consideration of the mouth or face of the patient.

During the construction, it is possible to change between the jaw model and the view with the patient using the analysis tool.

Changing to Smile Design

✓ You set the model axis in the *"Set Model Axis"* step in the MODEL phase.

➢ Click on the *"Smile Design"* function on the left lower on-screen menu.

Changing to Smile Design

1. In the *"ADMINISTRATION"* phase, look for *"Case"* and select the *"Smile Design"* function.
2. After the *"Set Model Axis"* step, when in the MODEL phase, click *"Next"*.
   ↳ The software changes to the *"Smile Design"* function.

Exiting Smile Design

✓ You are in *"Smile Design"*.

➢ Click the *"Full Model"* function at the bottom left edge of the screen to exit *"Smile Design"*.

You can change back to SmileDesign at any time.

7.1.6.1 Loading reference image

You must load an image of the patient's face for Smile Design. The image must be a head-on passport photograph of the patient smiling.

Approved formats	Resolution
• jpeg / jpg • bmp • png	Min. 2 megapixels

1. Click on the step *"Load Reference Picture"*.
   ↳ The *"Load Reference Picture"* dialog box opens.
2. Select the folder where the file is located.
3. Select the relevant file.
4. Click on the *"Open"* button.
   ↳ The software changes to the *"Define Feature Points"* step.
   ↳ The image is then imported and opened.

7.1.6.2 Setting reference points

You must set the reference points in the patient image in the *"Define Feature Points"* step. Then simply proceed as prompted by the software. The yellow point in the avatar image shows you where the next face point must be set.

If a magnifier is displayed automatically, you must set the point as precisely as possible.

You can undo each step using *"Undo"*.

7.1.6.3 Adjusting the canthi distance

Use a suitable measurement tool to measure the clearance between the two canthi points. Change to step *"Lateral Canthi Distance"*.

Adjust the value using the slider.

IMPORTANT
You have to perform this step to achieve a precise correlation between a 3D facial model and the jaw.

7.1.6.4 Aligning the model

Align the model to the image.

Positioning the model

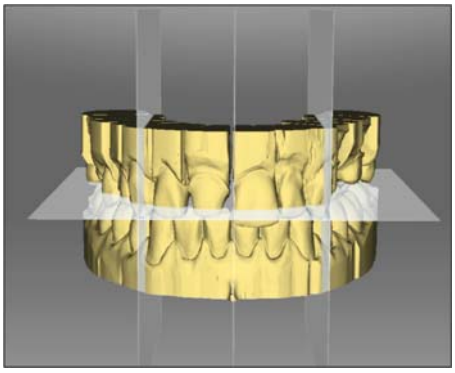
➢ Left-click on an arrow symbol and hold the button down.
  ↳ You can displace or rotate the model in the corresponding direction.

Use the *"Left"* or *"Right"* perspective or turn the facial model to the side using the *"Global"* view options. This enables you to align the facial model and the jaw model precisely.

Changing axes

➢ Right-click on an arrow symbol and hold the button down.
  ↳ You can change the axis on which the object is rotated or moved.

7.1.6.5 Auxiliary planes

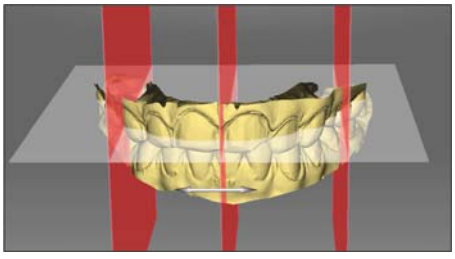


You can display the auxiliary planes in the *"Guideline"* step. The auxiliary planes help with positioning the jaw in the image of the patient.

You can also display the planes for the construction.

1. Double click on the plane you would like to adjust.
2. Adjust the plane using the arrow points.

Positioning the plane



➢ Click with the left mouse button on the arrow symbol and hold the button down.
  ↳ You can move the planes in the relevant direction.

If you only want to move one plane, remove the checkmark at *"Group Guidelines"*. You can activate the planes by double clicking on them.

7.1.7 Case details

In the *"Case Details"* page palette, you can open all the information on a case during the construction (see also the section “ADMINISTRATION phase [→ 77]”).

7.2 ADMINISTRATION phase

Selecting a restoration type

1. Create a new job (see Create a new job [→ 24]) or a new case (see Add a new case).
2. Select the restoration type in the page palette: *"Single Restoration"*, *"Bridge Restoration"*, or *"Model"*.

Single tooth restoration

✓ You have selected the restoration type *"Single Restoration"*.

1. Select the restoration type.
   ↳ The types of restoration available match the selected tooth number.
2. Select the design mode.
   Tip: For information on the design technique, see the section Restoration types and design mode [→ 44].
3. Click on the tooth for which the restoration must be set up.
   ↳ The selected tooth is marked.

4. In the step menu click on the *"Select Milling Device"* step and select the desired production machine.
5. Optional: In the step menu, click on the *"Select Material"* step, in order to select the desired material for the restoration.
   For the materials zirconium oxide, PMMA plastic and sintered metals (e.g.: inCoris CC) you also have to select the manufacturing process (milling or grinding) by clicking on the relevant tool.
   For the multilayer restoration type, you have to select two materials.
   For the abutments restoration type, you have to select the scan body type and an implant type.
6. Click on *"Ok"* to confirm the settings.
   Tip: If you click on *"Cancel"*, the restoration will not be created and the program will return to the odontogram.
7. If necessary, create further restorations.

Bridge restoration

✓ You have selected the restoration type *"Bridge Restoration"* .

1. Determine the restoration type and the design mode for the abutment teeth as described in the "Single tooth restoration" section.
2. Select the positions of the abutment teeth of the bridge.
   ↳ The selected teeth are marked.
3. Determine the restoration type and the design mode for the intermediate teeth.
   ↳ The selected teeth are marked.

4. In the step menu click on the *"Select Milling Device"* step and select the desired production machine.
5. Optional: In the step menu, click on the *"Select Material"* step, in order to select the desired material for the restoration.
   For the materials zirconium oxide, PMMA plastic and sintered metals (e.g.: inCoris CC) you have to select the manufacturing process (milling or grinding) by clicking on the relevant tool.
6. Click on *"Ok"* to confirm the settings.
   Tip: If you click on *"Cancel"*, the restoration will not be created and the program will return to the odontogram.
7. If necessary, create further restorations.

Editing the restoration

You can edit previously created restorations.

1. Click on the restoration in the object bar.
2. Select the *"Edit Restoration"* step.
3. To change the restoration type and the design mode, proceed as when creating a new restoration.
   Important: To do this, click on the restoration concerned in the tooth model!
4. Confirm your changes by clicking the *"Ok"* button.

Selecting the implant connection and scanbody type (only for implant-supported crowns and bridges)

1. Select single restoration or bridge restoration.
2. Select the tooth number from the odontogram.
3. Click in the step *"Implant Connection"*.
4. If you have selected single tooth restoration, you can choose between Ti-Base or implant level at *"Implant ConnectionType"*.
   If you have selected bridge restoration, you can choose between Ti-Base or multi-unit abutment at *"Implant ConnectionType"*.
5. Then select the implant and, if necessary, the manufacturer.
6. Click on the step *"Select Scanbody Type"*.
   ↳ The scanbody type to be used is displayed depending on the implant connection.
7. In the step menu click on the *"Select Milling Device"* step and select the desired production machine.
8. In the step menu, click on the *"Select Material"* step, in order to select the desired material for the restoration.

Selecting material for the veneering structure

You can select the desired material for the veneering structure in this step.

➢ Click on the desired material.

Selecting material for the framework

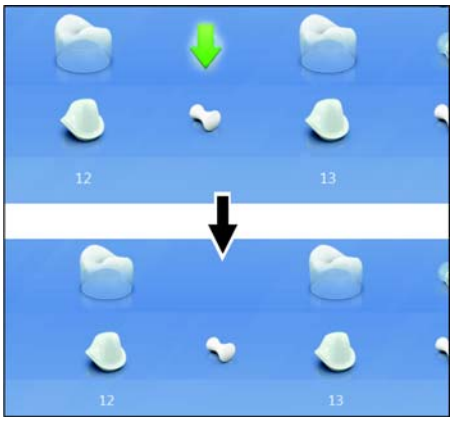
You can select the desired material for the framework in this step.

➢ Click on the desired material.

IMPORTANT
Multilayer restorations can currently only be created in connection with Ti_Bases.

Type of multilayer construction

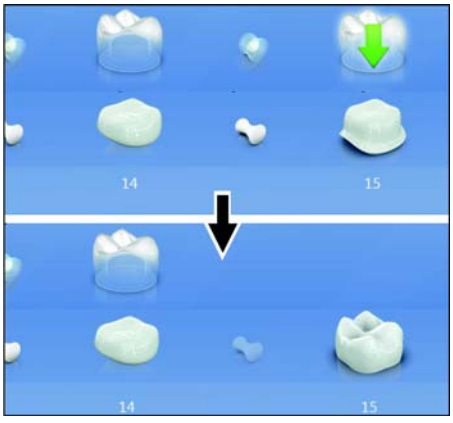
In the *"Multilayer Definition"* step, you can define the type of multilayer construction. The veneering structure and the framework structure are offered separately.



Separating the veneering structure

➢ Click on the connector symbol with the left mouse button at the separating positions.

↳ The connector symbol is removed and the veneering structure is separated.



Creating a full-format framework element

➢ Click on the element from the veneering structure with the left mouse button at the position of the tooth.

↳ The element is removed and a full-format framework element is created.

Abutment-carrying multilayer bridges

Abutment-carrying multilayer bridges are created in the same way as multilayer bridges.

You must define:

- On which teeth the abutments are located
- At what point the multilayer pontics are located

Abutment-carrying bridges can only be created on abutments. Abutment-carrying bridges cannot be created on abutments and blunt elements.

Partial reductions or individual veneering elements cannot be used for abutment-carrying bridges.

Closing the ADMINISTRATION phase

✓ All restorations to be attached are defined.

✓ The *"SCAN"* phase can be selected.

➢ Click on the *"SCAN"* phase.

or

➢ Click on the double arrow.

↳ The program switches over to the *"SCAN"* phase.

Case details

After creating a case, all information is displayed in the page palette.

The following information can be read there during the entire construction of the case.

- Indication
- Design mode
- Material
- Production machine
- For bridges: The indication for each element

The information for each element can be opened and closed. This is closed by default.

7.3 SCAN phase

7.3.1 Image catalogs with inEos Blue

Overview

In the *"SCAN"* phase, three image catalogs are available as standard:

- Lower Jaw

- Upper Jaw

- Buccal

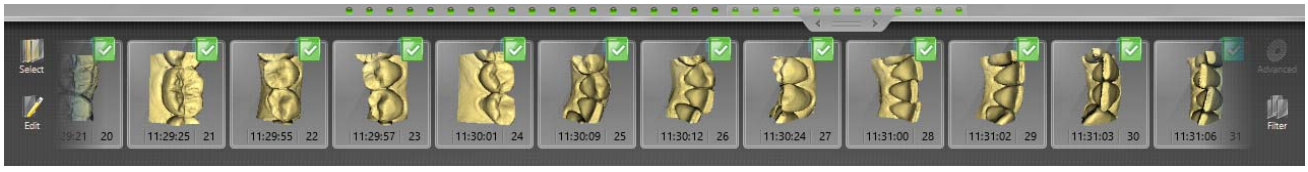
In addition, further image catalogs can be shown:

- BioRef Lower (Lower jaw)
- BioRef Upper (Upper jaw)
- BioCopy Lower (Lower jaw)
- BioCopy Upper (Upper jaw)
- Gingiva Mask Lower Jaw (Lower jaw)
- Gingiva Mask Upper Jaw (Upper jaw)
- *"BiteReg Lower"*
- *"BiteReg Upper"*
- *"Scanbody Lower Jaw"* (only inEos X5)
- *"Scanbody Upper Jaw"* (only inEos X5)

Opening the image catalog

1. Click on the icon of the desired image catalog.
2. Move the mouse cursor to the bottom edge of the screen.
   ↳ The active image catalog is opened, the individual acquisitions are visible.

7.3.1.1 Working with the image catalog



In the image catalog all acquisitions are shown respective to their regions.

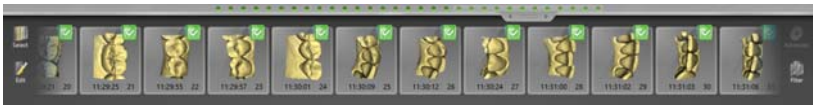
The first acquisition of an image catalog is called the reference acquisition and is marked with a dot (flag in the upper right-hand corner of the single image).

The acquisitions are marked as follows:

Symbol	Meaning
Green flag with check mark	Reconstructed / overlapped images
Green flag with dot	Reference optical impression
Blue flag	Reconstruction / overlapping attempt still in progress.
Red flag with exclamation mark	Reconstruction / overlapping failed.
No flag	Hidden images

If you position the mouse over an acquisition, it will be displayed in the camera view and highlighted in the 3D preview.

Scrolling through the image catalog



For each acquisition, a colored dot will be shown at the top of the image catalog.

Color	Meaning
Green	Reconstructed / overlapped images
Blue	Reconstruction / overlapping attempt still in progress
Red	Reconstruction / overlapping failed
White	Hidden images

If the acquisitions can no longer be displayed in full in the image catalog, a scroll bar appears. You can use it to scroll through all acquisitions.

1. Click on the scroll bar and press and hold the mouse button.
2. Slide the scroll bar to the right or left.

Selecting images

➢ Click on the acquisition with the left mouse button.
Several images can be selected.

↳ The images are now selected.

Moving acquisitions

You can move acquisitions to other image catalogs using drag & drop.

1. Click on marked acquisitions and keep the mouse button pressed.
2. Drag your selection to the icon of the desired image catalog.
   ↳ The program will ask whether you want to move or copy the acquisition.
3. Select *"YES"* to copy the acquisition or *"NO"* to move it. *"Cancel"* can be used to cancel the operation.
   ↳ The acquisition will be ready for use in the corresponding image catalog.

Tip: You can copy or move all of the acquisitions contained in an image catalog. Simply click on the image catalog with the left mouse button and drag it to any other previously created folder.

Hiding images

➢ Click an acquisition with the right mouse button.

↳ The exposure is displayed in gray.
The acquisition is no longer used for the 3D preview or creation of the virtual model.

You can make the acquisitions visible again by following the same process.

If the *"Ignored"* filter is active, the acquisition remains visible in the image catalog.
If the *"Ignored"* filter is deactivated, the acquisition is not displayed in the image catalog (see Filter command [→ 85]).

Command Select

The *"Select"* command enables you to:

- select all images
- void the selection
- invert the selection

1. Click the *"Select"* button in the image catalog.
2. Click the appropriate button.

Command Edit

The *"Edit"* command enables you to:

- copy
- cut
- insert
- delete
- hide
- display acquisitions

1. Select the acquisitions you want to edit.
2. Click the *"Edit"* button in the image catalog.
3. Click the appropriate button.

Command Filter

The *"Filter"* command enables you to:

- Switch the display of hidden acquisitions on/off
- Show or hide discarded acquisitions (offsetting/overlaying not possible)

Command	Description
"Ignored" (active)	Hidden acquisitions are displayed.
"Rejected" (active)	Rejected acquisitions are displayed.

1. Click the *"Filter"* button in the image catalog.
2. Click the appropriate button.

7.3.1.2 Adding image catalogs

Using the *"Add Catalog"* button, you can create additional image catalogs in the page palette.

1. Click the *"Add Catalog"* button in the page palette.
   ↳ The possible image catalogs are offered.
2. Click on the required image catalog.

↳ The image catalog is displayed next to the standard image catalogs.

7.3.1.3 Recycle bin

Removing acquisitions

1. Select the acquisitions you wish to remove.
2. Click on the *"Edit"* button.
3. Click on the *"Delete"* button.

or

➢ Grab the image with your mouse and move it using drag & drop to the recycle bin.

↳ The acquisition is sent to the recycle bin.

Tip: You can move the last acquisition to the recycle bin by right-clicking on the image catalog icon.

Opening the recycle bin

In the recycle bin you will see the acquisitions removed from the currently active image catalog.

1. Click on the icon of the image catalog, for which you wish to open the recycle bin.
2. Click on the icon of the recycle bin.

↳ The recycle bin for the active image catalog is displayed.

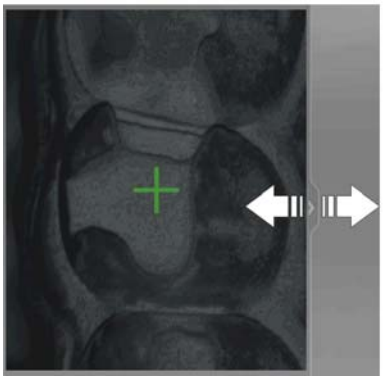
Reusing acquisitions from the recycle bin

➢ Grab the image with your mouse and move it using drag & drop to the desired folder.

Tip: If you display/hide acquisition in the recycle bin then these are automatically moved back into the image catalog.

7.3.2 Live image

Change window size



You can adjust the size of the live image proportionally.

1. Click the arrow at the right edge with the mouse and hold down the mouse button.
2. Drag the camera view to enlarge or reduce it.

Height and intensity image

Acquisitions from the image catalog can be displayed as height or intensity images.

Height image

Intensity image

✓ The camera is switched off.

1. Click on the icons to switch between the height and intensity image.
2. Position the mouse over a scan in the image catalog.
   ↳ The scan is shown in the selected display in the camera view.

7.3.3 3D Preview

In the default setting, the data are displayed from the occlusal direction in the 3D preview.

You can freely select the viewing direction of the virtual model in the 3D preview window by using the mouse.

Rotating a 3D preview

1. Click on the 3D preview with the left mouse button and hold it down.
2. Move the mouse.

↳ The 3D preview is rotated.

Moving the 3D preview

1. Click on the 3D preview with the right mouse button and hold it down.
2. Move the mouse.

↳ The 3D preview moves.

Zooming into/out of the 3D preview

1. Click on the 3D preview with the middle mouse button and hold it down.
2. Move the mouse up or down as desired.
   ↳ The 3D preview is enlarged or reduced.

7.3.4 Take a scan

7.3.4.1 inEos X5

7.3.4.1.1 General

7.3.4.1.1.1 Acquisition methods

Three methods are available for acquiring scans with the inLab SW:

- Automatic jaw scan
  - For all tasks
  - Especially for large, complex tasks or tasks with high accuracy requirements

- Free jaw scan
  - For simple tasks
  - For free detail scans under various angles

- Individual stump scan
  - For the measurement of one or more single tooth stumps
  - For single restorations without consideration of the proximal contacts or the antagonist

Tip: You can execute several scan methods in sequence. You can omit a scan method if, for example, it is either not suitable or is not required for your model.

IMPORTANT
Perform the individual stump scans either completely prior to or after the automatic and/or free scans. It is not possible (for example) to initially perform an automatic scan, then carry out a scan of individual stumps, and, finally, to change back to automatic mode once again.

Tip: For stump model tasks, first take the scans of the prepared stumps. Then add automatic and/or free scans. In this way, you can reduce the processing time.

Scanbody recording (with inEos X5 only)

For the measurement of one or more implant positions with the scanbody inPost for directly screwed on crowns and bridges.

Tip: For more on this, also read the section “Anatomical or reduced directly screwed-on bridges [→ 149]”.

IMPORTANT
Pay attention to the inPost scanbodies / multi-unit abutments matching the implant system. Ensure the correct seating on the laboratory analog of the screwed in inPost scanbodies and multi-unit abutments prior to scanning. Elements screwed in incorrectly may lead to the incorrect detection of the implant position and thus to inappropriate restorations.

7.3.4.1.1.2 Scan modes

You can take the scans using two modes. You can switch between the modes using the *"Mode"* function.

Import Model

Use the *"Import Model"* mode to import a model from *.stl files. To do this, first select the image catalog for which you want to import the stl model and then click on *"Load"* in the step menu.

Additional image catalogs can be added and *.sdl data can be imported for this.

The interface module (REF 65 43 057) is required for this function.

"Single Exposure"

Use the *"Single Exposure"* mode for scans of models with no special requirements in terms of the brightness settings for the exposure (standard value).

"Multiple (HDR) Exposure"

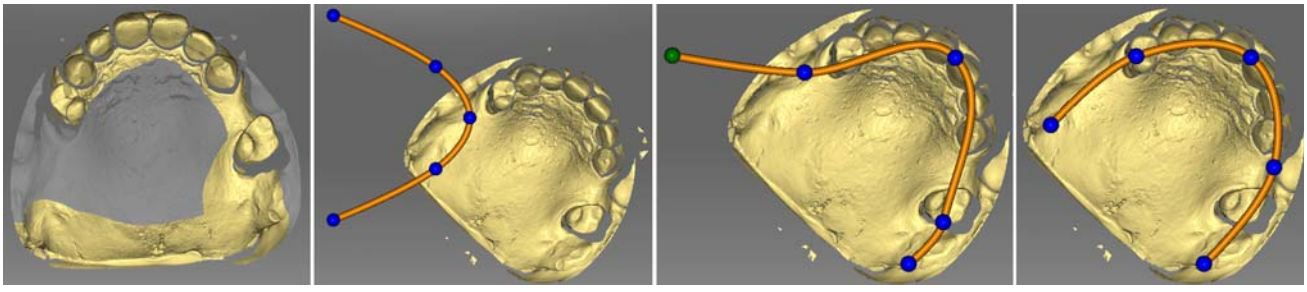
The HDR ("high dynamic range") mode captures situations requiring a large dynamic range (differences in brightness) during the exposure.

This mainly concerns material mixes, for example:

- Dark plaster
- Abutments covered with Optispray
- When using scan wax
- When measuring scanbodies
- When capturing silicon impression trays with several multi-colored impression materials

inLab SW captures these situations using multiple exposure, so that every part of the surface is measured with the optimal exposure setting. Accordingly, the scan takes longer.

7.3.4.1.1.3 Guideline editor



If the guideline is not automatically found after the overview scan, it can be corrected via the guideline editor.

1. Click on the balls and drag them to the correct jaw ridge line.
2. Then confirm with *"Apply"*.

7.3.4.1.1.4 Scan options

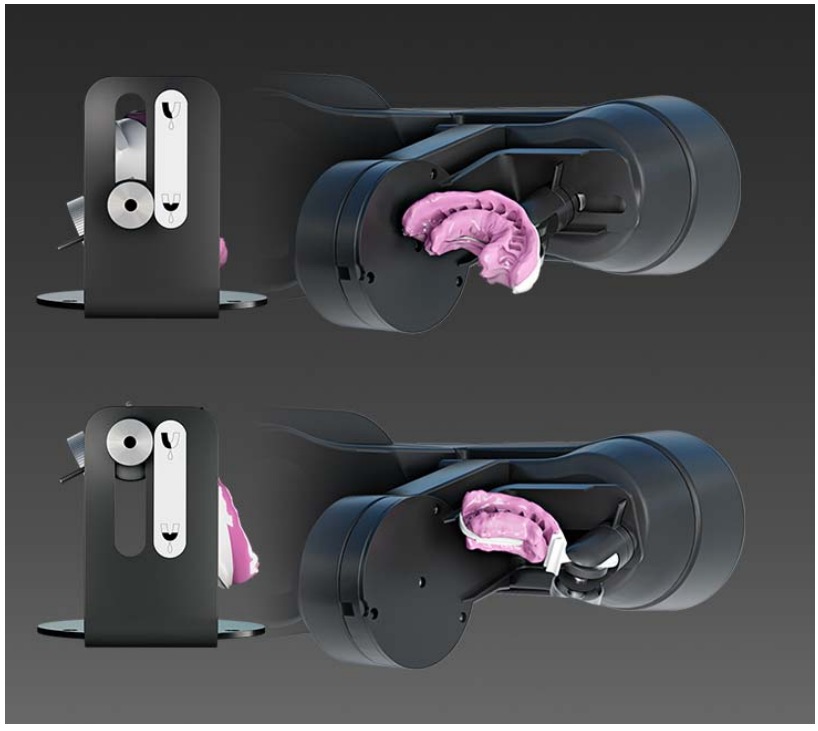
You can use the free scan option to capture models and impressions.

Acquiring impressions

1. Click on the *"Options"* button.
2. Click on the *"Toggle Impression Scan"* button.
   ↳ The icon for the impression scan is displayed in the live image.
3. Select the image catalog.
4. Start the free acquisition procedure.

Switching the double arch

1. Click on the *"Options"* button.
2. Click on the *"Toggle DoubleArch"* button.
   ↳ The icon for the double arch impression scan is displayed in the live image.



3. Position the impression tray as per the illustrations in the software.
4. Select the image catalog for the jaw section which is initially aligned with the camera.
5. Start the acquisition and follow the instructions and illustrations in the software for changing the jaw.

7.3.4.1.1.5 Model options

For all image catalogs (with the exception of the buccal registration), it is possible to specify for each new case whether the palate areas are taken into account for calculating the model or automatically ignored.

Complete Reconstruction

For this option, the complete model is calculated **with** the palate/model plate area. This option increases the calculation time for the model.

Reduced Reconstruction

For this option, the model is calculated as a dental arch **without** the palate/ model plate area. This option reduces the calculation time for the model.

Tip: Select *"Reduced Reconstruction"* for all work which does not involve the palate areas, or if areas of the model plate were also scanned. This also helps to speed up the model calculation process.

Changing the standard settings of the model options

You can change the standard value of the reconstruction model in the global settings from *"Complete Reconstruction"* to *"Reduced Reconstruction"* .

For all future cases, the reconstruction mode set as the default in each case is selected in each image catalog. However, this can be adjusted separately at any time.

The mode can be changed under *"Configuration"* | *"Devices"* | *"inEos X5"* | *"Configure Device"* . You can activate the respective mode in the *"Standard Mode for model calculation"* field.

7.3.4.1.1.6 Scan models and impressions

Materials

You can scan all materials that correspond to the following criteria:

- Non-reflecting
- Non-transparent
- No transparent parts
- Not highly absorbent
  (e.g. heavily colored plasters, scannable impression materials)

IMPORTANT
Unscannable materials generate artifacts or gaps in the image.

Tip: When using materials that do not meet these criteria, you must powder the affected areas. Otherwise the measuring accuracy will be heavily influenced.
The following is suitable for this purpose, for example: CEREC Optispray (REF 61 44 179)

For scanning with inLab SW, we recommend using CEREC Stone BC plaster (REF 62 37 502).

Saw-cut models

- When preparing saw-cut models, be careful not to mill off the single stump segments. Place the model next to the stumps so that the inLab SW can properly capture these areas.
- Create only a slight fluting below the preparation margin.

7.3.4.1.1.7 Autofocus

The inLab SW features automatic focusing.

As soon as the object stops moving, the image is automatically focused both in the automatic and in the manual mode.

7.3.4.1.1.8 Deleting images

You can delete individual scans by marking them with the left mouse button and dragging them into the recycle bin.

You also can delete an entire image catalog (see inLab SW Operator's Manual).

7.3.4.1.1.9 Operation via foot switch

As an alternative to the Start button of the inLab SW, you also can use the optionally available foot switch (REF 63 10 449) to start and end scanning processes in the respective scanning mode.

➢ Plug the connector of the foot switch into the matching socket (USB port) of your PC.

7.3.4.1.2 Starting the unit/standby mode

The inLab SW automatically starts (if the main switch is turned on) as soon as you switch to the acquisition phase of the inLab software.

You can set the inLab SW to standby mode and wake it up manually.

➢ To do this, click the inLab SW icon in the bottom left window are of the inLab software.

Set the inLab SW to standby mode

Activate the inLab SW

Tip: Switch off the inLab SW via the main switch only if the inLab SW is in standby mode (projection lamp switched off and articulated arm in parking position) or if no scan process has been started.

Shutdown during a running scan process causes considerable delays when the unit is restarted.

7.3.4.1.3 Automatic jaw scan

Capture the model situation fully automatically in the *"Capture Jaw"* mode.

- For all tasks.
- Especially for large, complex tasks or tasks with especially high accuracy requirements

7.3.4.1.4 Free scans

In the *"Capture Free"* mode, you can capture the model situation fast, manually and in a controlled manner for simple tasks.

Moreover, you can scan e.g. areas that may not be sufficiently captured in the automatic mode with detail scans.

- For simple tasks
- For detail scans under various angles

7.3.4.1.5 Rotational scans

Use the rotational scan mode to acquire single tooth stumps from all sides.

- For the surveying of single tooth stumps
- For single restorations without consideration of the proximal contacts or the antagonist

IMPORTANT
Perform the rotational scan either completely prior to or after the automatic and/or free scans.

Various scan options are available in the *"Capture Rotation"* mode.

Button	Scan option
	• Individual stump scan slanted • For scanning all standard individual stumps **Tip:** Change the angle for the individual stump scans for the scanning of heavily chamfered stumps or for scanning abutments by moving the slide controller. You can adjust the angle of incidence to the respective situation from 45° to 105° individually in 5° steps. An angle of 60° is recommended as a default value for all common single stump scans.
	• Multiple-stump scan • For scanning up to 4 stumps at the same time **Tip:** The difference in height between the stumps in the group being scanned should not exceed 10 mm in relation to the assembly plate. If this cannot be avoided, scan the stumps using the individual scan option. If the stumps are not made from the same type of plaster, activate the HDR mode.

7.3.4.1.6 Acquiring a buccal registration

You can secure the model using the articulator plate which is available as an option (see “Using the articulator plate”).

✓ You have selected the *"Buccal"* image catalog.

✓ The image catalogs of the jaw and of the opposite jaw contain images with buccal sections at a position next to or directly on the preparation.

✓ In the buccal image, both jaws must be moved to the centric jaw relation and an exposure taken that records both jaws at the same time.

✓ **Tip**: The model can be left in the articulator.

✓ Alternatively, it is recommended to fasten the model e.g. with wax and manually hold it under the camera. The model should be supported on the working area.

1. Select the *"Table free"* exposure mode.
2. Position the model under the camera in such a way that one jaw is located in each half of the image.
3. Wait until the autofocus has focused the model.
4. Release an exposure. In most cases, one exposure is sufficient.

7.3.4.1.7 Scanbody recording (with inEos X5 only)

⚠ CAUTION

Pay attention to the inPost scanbodies / multi-unit abutments matching the implant system.

Ensure the correct seating on the laboratory analog of the screwed in inPost scanbodies and multi-unit abutments prior to scanning. Elements screwed in incorrectly may lead to the incorrect detection of the implant position and thus to inappropriate restorations.

Use the enclosed screwing tool for screwing in the scanbodies. This connects to the scan body when you take it out of the packaging. If you do not use the screwing tool you must take hold of the scanbody with gloves.

1. Select this image catalog in order to be able to record the implant location for directly screwed crowns and bridges in connection with the inPost scanbodies.
2. Clamp the model without screwed in scanbodies to the arm of the scanner and start the overview scan.
   ↳ The *"Capture Scanbody"* button becomes active once the overview scans are complete.
3. Click on the *"Capture Scanbody"* button.

NOTICE

The scanner moves into an appropriately easy-to-access position for screwing in the scanbodies.

➢ Do not take the model down from the holder.

4. Screw the scanbody onto the first implant position.

5. Rotate the model in the 3D preview in the implant axis and double-click on the position in which you screwed the scanbody in beforehand.
   ↳ The scanbody is recorded via a rotation scan and illustrated in the 3D preview once the scan is complete.
6. Continue with other implant positions.

7.3.4.2 inEos Blue

7.3.4.2.1 General

There are three modes for executing scans with inEos Blue:

- Grid scan
  – For big jobs with 9 or more units
  – Long, untoothed areas
- Free scan
  – For jobs comprising up to 8 units
  – For detail scans under various angles
- Rotational scan
  – For measuring single tooth stumps
  – For single restorations without consideration of the proximal contacts or the antagonist

You can execute several scan modes in sequence.

You can omit a scan mode if, for example, it is not suitable for your model.

Scan models

You can scan all materials that correspond to the following criteria:

- Non-reflecting
- Nontransparent
- No transparent parts
- Not highly absorbent
  (e.g. heavily colored plasters)

Unscannable materials generate artifacts in the image.

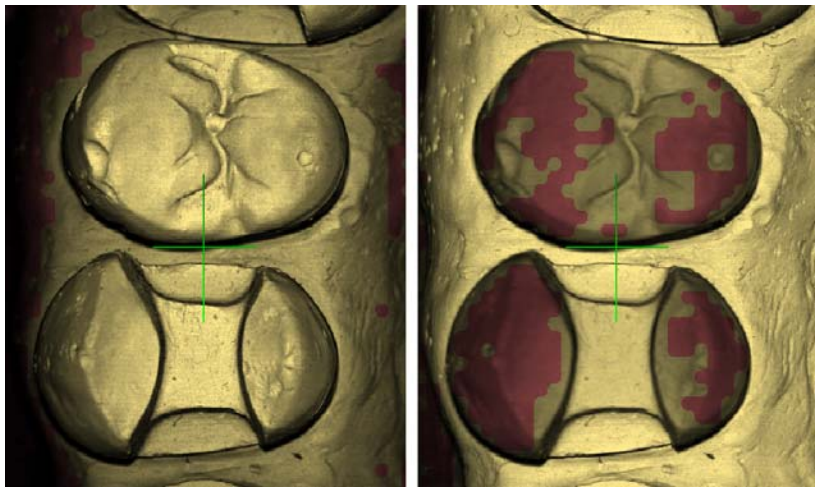
Tip: When using plasters that do not meet the above criteria, you must powder the affected areas. Otherwise the measuring accuracy will be impaired considerably.
The following are suitable for this purpose: CEREC Optispray (REF 61 44 179)

For scanning with inEos Blue, we recommend using CEREC Stone BC plaster (REF 62 37 502).

Focusing the image

➢ Turn the rotary buttons for height adjustment.
  ↳ The sharpness adjustment changes.

The image is then sharpened if the relevant areas are not red.



Left: Scan clear; Right: Scan blurred

Image blurred

If the image is blurred, the acquisition will not be reconstructed and will be marked with a red flag (see Working with the image catalog [→ 83]).

Sharpen the image and take a new scan.

Deleting images

You can delete completed scans by right-clicking on the active scan button (e.g. *"Preparation"*). Each further click deletes the last scan.

Overlap area during acquisition

If images are acquired via free scans, each image must overlap with the previous image. This overlap area must comprise roughly half of the image.

Overlapping insufficient

If the overlap with the previous scans is not sufficient, the software cannot assign the image. The error message *"The image cannot be registered!"* appears.

Select a section that has a larger overlap with previously acquired images or reduce the tilt.

Operating the foot control

You can use the foot control instead of the start button of the inEos Blue.

7.3.4.2.2 Switching the inEos Blue on/off

The inEos Blue is turned on automatically when you switch to the acquisition phase. If the inEos Blue device is not used for a long time, it will switch itself off.

➢ Click on the inEos symbol to switch the inEos Blue device on or off.

7.3.4.2.3 Grid scans

- For big jobs with 9 or more units
- Long, untoothed areas

Preparing the model

1. Secure the model to the model holder included. The labial side faces the fixing screw.
2. Release the ball and socket joint.
3. Align the model:
   The model is horizontal and the front teeth stand parallel to a triangle side.
4. Remove the sliding block from the model holder.

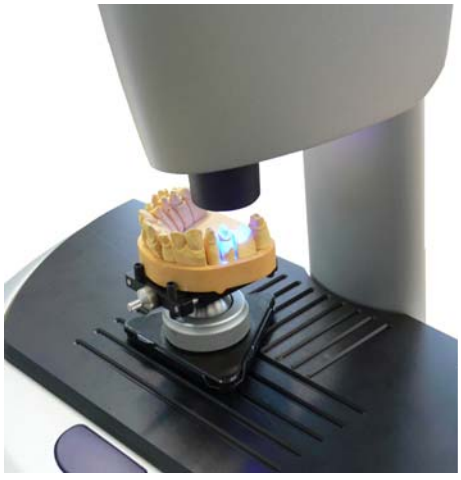
Take a scan

NOTICE

Do not damage the shifting plate

Do not apply any pressure to the model when it is located on the shifting plate. Doing so could damage the shifting plate.

Tip: Do not change the position of the ball-and-socket joint during acquisition.



1. Place the model holder on the shifting plate. The small balls must lodge in the longitudinal and transverse grooves. The tip of the model holder plate and the oral side of the model face the column of the inEos Blue.

2. Click the button for grid scans.
   ↳ A section of the model appears in the live image.
3. Slide the model until you can begin scan acquisition on a distal side.
4. Focus the image by turning the rotary buttons for height adjustment, see Focusing the image.
   Do not touch the rotary buttons while the scans are being taken.
5. Click the Start button of the inEos Blue once.
   ↳ The image is acquired.
6. Add additional scans from adjacent areas: Move the model in the desired direction by one stop position and repeat steps 4 to 5.

If you do not require any further grid scans, you can change to the next acquisition mode; see Free scans or Rotational scans.

Tip: If a bite registration is to be acquired, additional mesial and distal areas also must be scanned. These areas must not be concealed by the bite registration.

7.3.4.2.4 Free scans

You can use detail scans for example to detect undercuts which were not detected by the overview scans.

- For scans with up to and including 8 units
- For detail scans under various angles

Preparing the model

1. Press the triangular glide foot on to the bottom of the model holder until the glide foot clicks into place.
   ↳ The model holder can be moved into any position across the shifting plate.
2. Secure the model to the model holder included. The labial side faces the fixing screw.
3. Release the ball and socket joint.
4. Align the model:
   The model is horizontal and the front teeth stand parallel to a triangle side.

Take a scan

The Free Scan mode offers a variety of options for image acquisition.

Acquisition with the Start button

Double-click the Start button	A single exposure will be acquired.
Single-click the Start button.	The crosshairs turn blue. The system will automatically acquire new images after you move the model or reset the image focus. If you want to interrupt the automatic scan, click the Start button of the inEos Blue once. The crosshairs turn green. Use the Start button to acquire additional exposures. **Tip:** When taking detail scans, interrupt the automatic scan to continue at a different model location. This location must overlap roughly one half of the image previously scanned.

Acquisition with the foot control

Actuate the foot control once	A single exposure will be acquired. The model must be motionless and set in focus.
Press and hold down the foot control	The crosshairs turn blue. The system will automatically acquire new images after you move the model or reset the image focus. If you want to interrupt the automatic scan, release the foot control. The crosshairs turn green. You can acquire additional exposures by reactivating the foot control. **Tip:** When taking detail scans, interrupt the automatic scan to continue at a different model location. This location must overlap roughly one half of the image previously scanned.

Take a scan

1. Click the Free Scan button.
   ↳ A section of the model appears in the live image.
2. Slide the model until you can begin scan acquisition on a distal side.
3. Focus the image with the rotary knobs for height adjustment; see Focusing the image.
4. Click the Start button of the inEos Blue once.
   ↳ The first scan is taken and the crosshairs are displayed blue.
5. Add additional scans from adjacent areas: Move the model freely on the table until you have reached the next acquisition position. As soon as the model stops moving, the camera is automatically released. You can turn the model on the shifting plate by up to 30°.
   Tip: The new image must overlap approximately one half of the previous image. If necessary, you can turn the model by 180°.
6. Repeat step 5 until all of the required scans have been taken.

If you do not require any further free scans (including detail scans), you can change to the next acquisition mode; see Rotational scans.

Performing detail scans

You can acquire detail scans at any time during the free scan.

1. Tilt the model no more than 30° in the desired direction.
   Tip: You can turn the entire model on the shifting plate by 180° if necessary.
2. Double-click the Start button of the inEos Blue.
   ↳ An image is acquired.
3. Repeat steps 1 and 2 until all of the required scans have been taken.

Tip: Align the scanned area as for the overview scan. Tilt the model holder to an angle of up to 30°.
Multiple scans are required for angles larger than 30°. Start with a small angle and execute further scans at steeper angles directly afterward.
Do not rotate the model. The lateral alignment must remain the same as for the overview scans.

7.3.4.2.5 Rotational scans

Use the rotational scans to acquire single tooth stumps from all sides.

- For the surveying of single tooth stumps
- For single restorations without consideration of the proximal contacts or the antagonist

Preparing the model

1. Move the model holder on the rotation mouse to the 0° position.
2. Secure the object (e.g. a tooth stump) with the fill material in the center of the model holder. The longitudinal alignment of the object must correspond to the model holder's axis of rotation.
3. Tilt the model holder at an angle which enables the undercuts to be recorded (standard: 60°).

7.3.4.2.6 Acquiring a buccal registration

✓ You have selected the buccal image catalog.

✓ The image catalogs of the jaw and of the opposite jaw contain images with buccal sections at a position next to or directly on the preparation.

✓ In the buccal image, both jaws must be moved to the centric jaw relation and an exposure taken that records both jaws at the same time.

✓ If possible, you can exit the model in the Articulator. Otherwise, it is recommended to fix the model, e.g. with wax, and manually hold it under the camera while supporting the model on the shifting plate.

1. Select the *"Table free"* exposure mode.
2. Position the model underneath the camera with the anterior teeth pointing towards you.
3. Ensure that one jaw is located in each half of the image.
4. Focus the image.
5. Trigger an exposure, preferably using the foot switch. In most cases, one exposure is sufficient.

7.3.4.3 Additional acquisitions

You can switch back from the DESIGN phase to the *"SCAN"* phase and add additional exposures.

✓ You are now in the DESIGN phase.

1. Click on the *"SCAN"* phase.
   ↳ The *"SCAN"* phase opens. The image catalogs are locked.
2. Click the *"Unlock"* button in the page palette.
   ↳ The image catalogs are unlocked.
   ↳ You can take additional exposures.

7.3.4.4 Finishing the phase

✓ All required scans are present (jaw, if necessary the opposing jaw and buccal bite exposure).

✓ The *"MODEL"* phase can be selected.

➢ Click on the *"MODEL"* phase.

or

➢ Click on the double arrow.

↳ The program switches over to the *"MODEL"* phase.

7.4 MODEL phase

In the *"MODEL"* phase, the virtual models are reconstructed based on the acquired image catalogs.

If you would like to edit the model, change to the *"Edit Model"* step.

The *"Edit Model"*, *"Bite Registration"* and *"Set Model Axis"* refer to the entire model (upper and lower jaw).
All other steps in the *"MODEL"* phase refer to the restoration currently selected. These steps must be performed individually for each restoration.

7.4.1 Editing the model

In the *"Edit Model"* step, you can work with the following tools:

- Shaping
- Cut
- Replace
- Reset

Use of the individual tools is described in the section “Page palette”.

7.4.2 Buccal registration

The software joins the models together automatically. If this is not possible, you can also correlate the models together manually.

Manual correlation

In this step the virtual models of the upper and lower jaw should be aligned with one another with the help of the buccal image in its correct position.

In the *"Buccal Bite Registration"* step, you can work with the following tools in the page palette:

- Drag Buccal
- Flip Buccal Impression

Rotating the lower and upper jaw

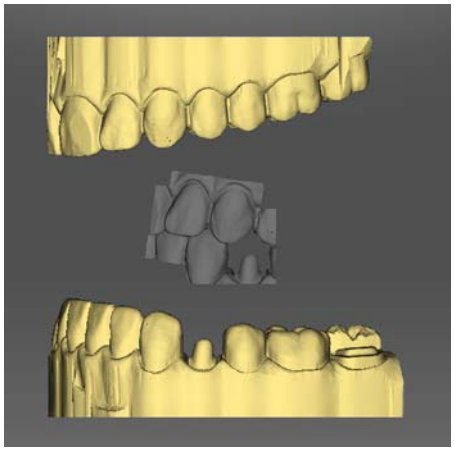
➢ Click in the blue area with the left mouse button and hold the button down.

↳ The lower jaw and upper jaw can be rotated about the vertical axis simultaneously.

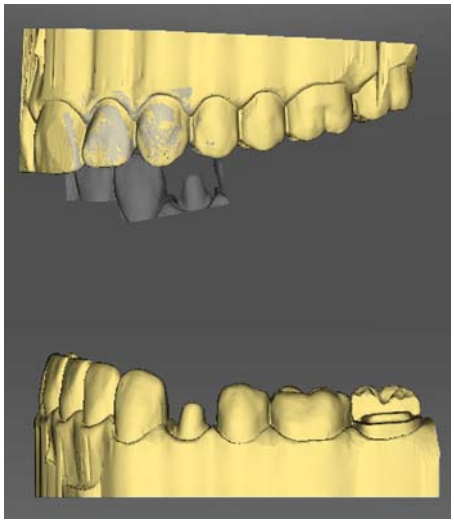
➢ Click on the lower jaw or upper jaw with the left mouse button and hold the button down.

↳ The arches can be rotated freely, individually.

Drag Buccal



1. Rotate both models so that you can see the overlap area of the buccal acquisition and of the upper jaw and lower jaw.
2. Now drag the buccal acquisition to the corresponding area of the upper jaw with the mouse and let go of the mouse button (drag & drop).



↳ The buccal acquisition automatically registers itself on the upper jaw. If the registration was successful, this will be indicated by a "leopard pattern". If the registration was not successful, the buccal acquisition returns to its original position. In this case, you must repeat the drag&drop procedure in order to find a better correlation surface.

3. Now click on the buccal acquisition once again and drag it onto the appropriate area of the lower jaw (drag & drop).

↳ If the registration was successful, this will be indicated by a "leopard pattern". If the registration was not successful, the buccal acquisition returns to its original position. In this case, you must repeat the drag&drop procedure in order to find a better correlation surface.

It is irrelevant whether you drag the buccal acquisition onto the lower jaw or onto the upper jaw first.

Flip Buccal Impression

In some cases, the buccal acquisition may be displayed upside down in relation to the lower jaw and the upper jaw. Proceed as follows in such cases:

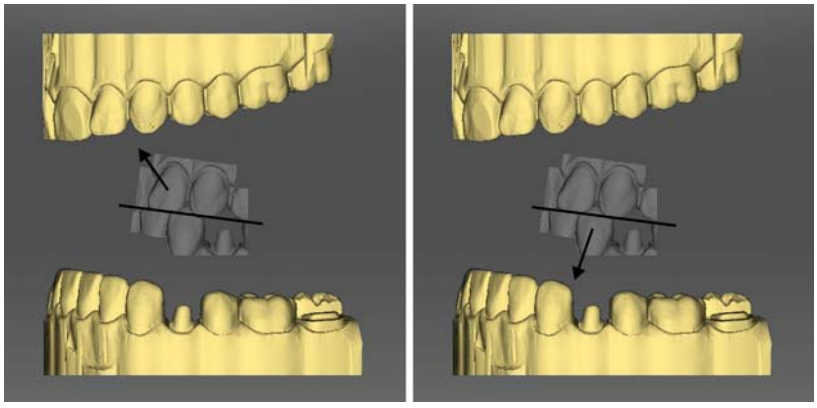
➢ Click on the upper area of the buccal image and drag it onto the lower model.

or

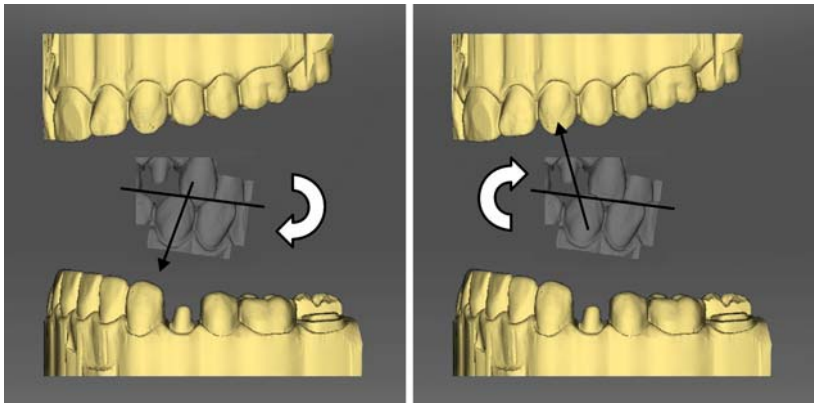
➢ Move the mouse via *"Tools"* onto the *"Bite Registration"* button and activate the *"Flip Buccal Impression"* command.

↳ The buccal acquisition will automatically flip, and you can then register it on the jaw using the drag & drop technique.

This works in the same way vice versa, i.e. if you click on the lower area of the buccal image and then drag it onto the upper model.



The buccal image is then displayed right side up. Registration is possible without rotation.



The buccal image is then displayed upside down. When you begin the registration, the software detects this and automatically flips the image right side up.

Moving to the next step

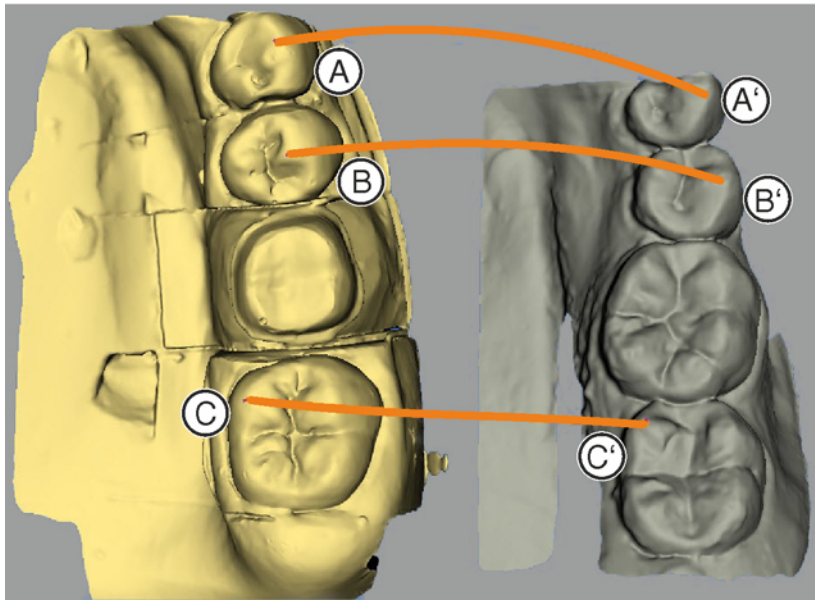
✓ The step is completed.

➢ Click on the next step to continue.

7.4.3 Manual correlation for image fields

If automatic correlation of the image fields does not occur, you can compose the image fields via manual correlation. To do so, three points must be set by double-clicking on both models.

1. Select the *"Set Points"* tool.



2. Double-click a prominent location (e.g. **A**) in a model to set a point.
3. Then double-click the corresponding location on the other model (e.g. **A'**).
   ↳ This pair of points is marked by an orange curve.
4. Set reference points B – B' and C – C' as described under items **2 – 3**.
5. Click *"Apply"*.

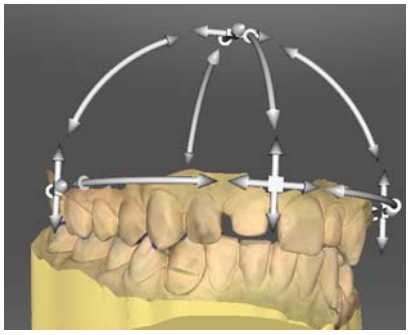
7.4.4 Buccal bite tools

You can align buccal registration manually in this step.

In the step *"Buccal Bite Tools"*, you can work with the following tool:

- Move Jaw

Positioning the upper jaw

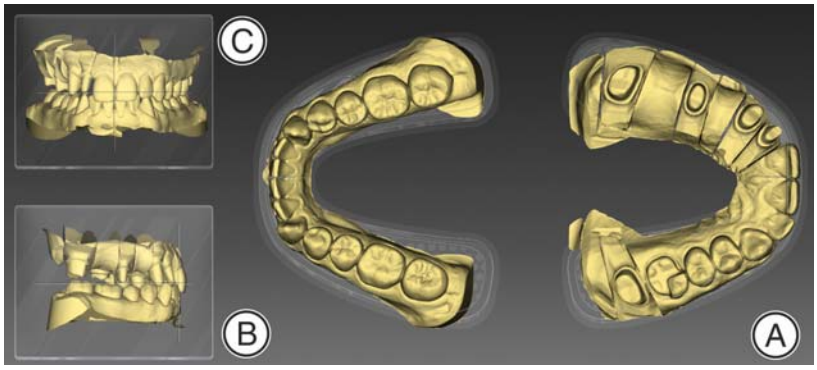


➢ Left-click on an arrow symbol and hold the button down.
   ↳ You can displace or rotate the upper jaw in the corresponding direction.

Changing axes

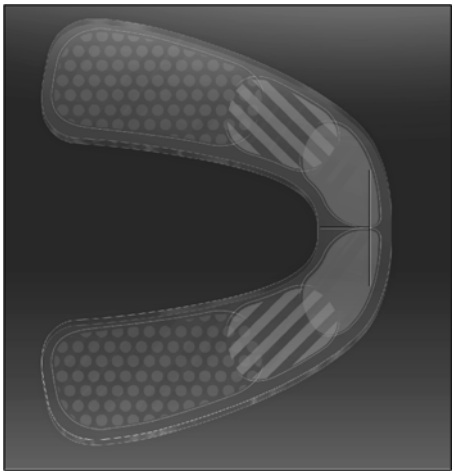
➢ Right-click on an arrow symbol and hold the button down.
  ↳ You can change the axis on which the upper jaw is rotated or shifted.

7.4.5 Set model axis



In this step, adapt the alignment of the jaw model to the software specifications. This alignment is required to calculate optimal initial suggestions.

Aligning the occlusal view (A)



1. Align the model using the schematic mandibular arch. Each tooth must be in the correct quadrant.
2. Align the incisors using the center lines displayed.
   The following markings should help you with the alignment:
   - T-shaped cross hairs for the incisal points of the incisors
   - Dotted area for the molars
   - Dashed area for the premolars
   - Filled area for the anterior teeth
3. Hold down the left mouse button to rotate the jaw; or the right mouse button to move the jaw. If you move a jaw, the other jaw automatically moves as well.
4. Click in the next step to reach the configuration of the jaw ridge line. The settings in the model axis are adopted automatically.

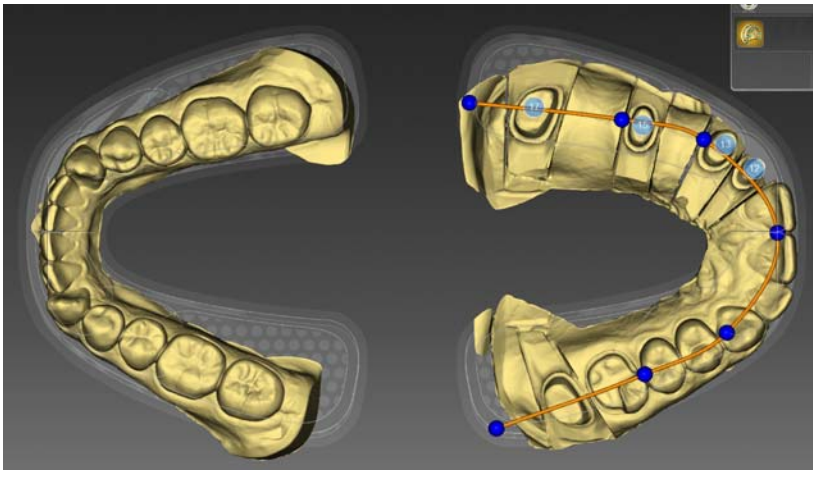
Aligning the buccal view (B)

1. Align the jaw so that the incisal point and distobuccal cusp of the first molars are parallel with the horizontal guiding lines.
2. Hold down the left mouse button to rotate the jaw; or the right mouse button to move the jaw.
3. Click in the next step to reach the configuration of the jaw ridge line. The settings in the model axis are adopted automatically.

Aligning the mesial view (C)

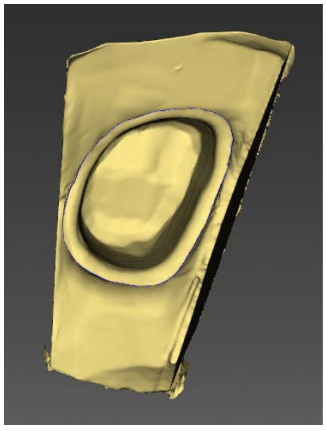
1. Align the quadrants of the jaw parallel with the horizontal guiding line.
2. Hold down the left mouse button to rotate the jaw; or the right mouse button to move the jaw.
3. Click in the next step to reach the configuration of the jaw ridge line. The settings in the model axis are adopted automatically.

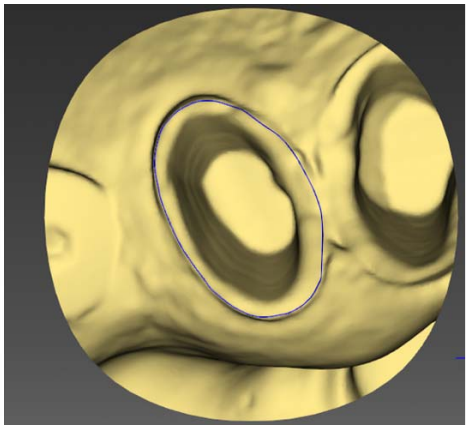
7.4.6 Editing the jaw ridge line



1. Adapt the jaw ridge to the model by moving the blue balls by seizing them with the left mouse button. The line should match the main jawline. The blue balls should be at the intersection between anterior teeth–premolars and premolars–molars in each case.
2. Then position the blue tooth numbers in the center of the associated preparation if this is not yet in the middle of the preparations.
3. Once you have complete the settings, click on the step *"Trim"* to continue. Your settings are adopted automatically.

7.4.7 Trimming the preparation





The software trims the preparations automatically. In the case of rotation stumps, the stump is trimmed using the saw-cut. If only overview scans have been made, or in the case of intraoral scans, a circle around the stump is trimmed.

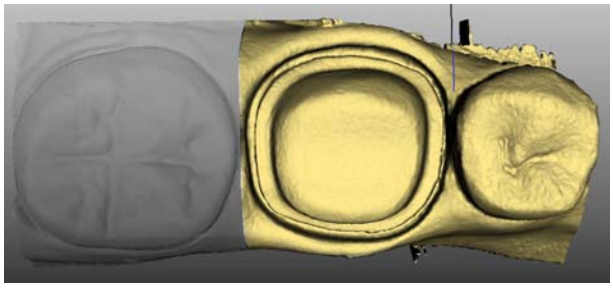
If you want to undo the automatic trimming, click on *"Reset"*. Then you can trim manually.

Handling the tool is described in the section “Trimming [→ 55]”.

Trimming image regions

You can trim several image regions.

1. Rotate the model to a perspective in which you can see all areas that you want to trim. The model cannot be rotated while you are drawing the line.
2. Double click in any location to set the starting point of the trim line.



Distal neighbor hidden

3. Click to set further points of the line, e.g. in the interdental space.
4. Double click in any position to end the line. Ensure that the closing end of the line does not cut any areas of the model that you want to keep.
   ↳ The smaller image region to the side of the line is hidden.
   Tip: If the wrong image region is hidden, you can switch to the other image region by double-clicking the hidden region.

7.4.8 Entering the preparation margin

Correcting the preparation margin

The preparation margin is automatically suggested by the software. If the preparation margin is not found correctly, you can correct it.

1. Start by double-clicking in the vicinity of the point to be corrected.
   ↳ The line is opened and the line hangs from the mouse cursor.
2. Redraw the line appropriately by guiding the cursor over the correct positions and setting points with a left mouse click.
3. Continue with this procedure until the point is corrected and the end the line with by double-clicking.

Deleting and re-entering preparation margins

1. If you want to completely delete a line and re-enter one, click *"Reset"*.
   ↳ The line is deleted.
2. Now enter the line manually.

General information

IMPORTANT

You can enlarge or reduce the 3D view during the input or editing of the preparation margin (see “Enlarging or reducing the 3D preview [→ 50]”) in order to ensure the correct positioning of the preparation margin.

As you are entering the preparation margin, you can rotate the 3D model. Be sure to hold down the left mouse button for a long time. A short click adds a point to the preparation margin.

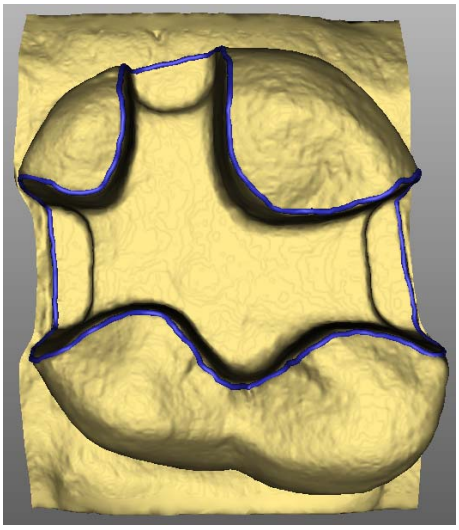
The preparation margin must always form a closed line.

You can edit the finished preparation margin after entering the last line.

To enter the preparation margin, a technique can be selected in the page palette:

Technique	Layout	Usage
"Auto"	Height image	With clear preparation margins, for initially drawing in the margin.
"Manual"	Height image	For unclear preparation margins, for subsequent correction of the initial limit.
"Manual with intensity image"	Intensity image	

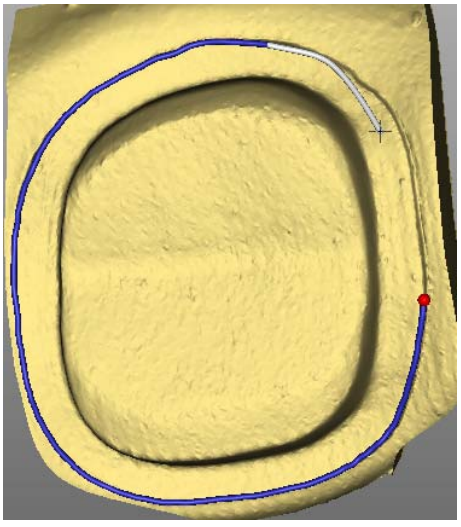
Entering the preparation margin in the case of clear preparation edges



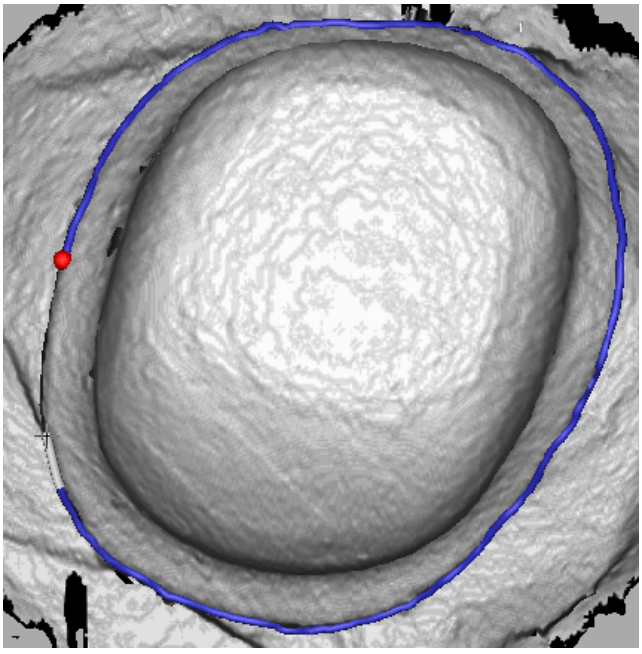
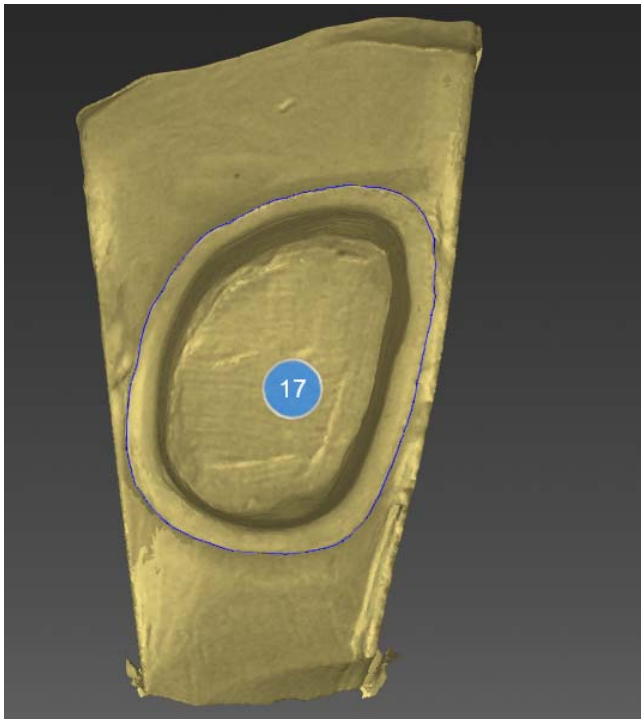
Tip: You can rotate the model during input in order to obtain a better view of the preparation limit.
Click and hold the left mouse button and move the model with the mouse.

1. Start the entry by double-clicking anywhere on the preparation margin.
2. Move the cursor along the preparation margin.
   Tip: To support the automatic edge detection, click anywhere near the margin on the raised side. There is an automatic correction when the next point is set.
3. Continue this procedure until you are back at the starting point.
4. Conclude the entry by double-clicking the starting point.

Entering the preparation margin in the case of blurred preparation edges



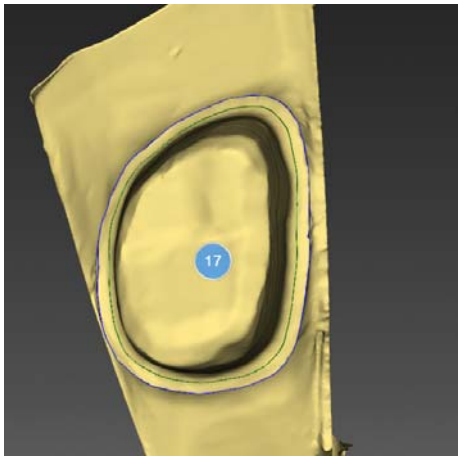
If you change to *"Manual"* in the page palette while entering the preparation margin, you can draw in the limit yourself.
Be careful to set the points exactly on the edge and place them close together.

	
inEos Blue intensity image	inEos X5 intensity image

If you wish to see the intensity image in blurred situations, change to the *"Analyzing Tools"* page palette to *"Intensity Image"*.

Tip: The space bar can be used to switch back and forth between drawing modes.

Seating Area



The *"Seating Area"* option (green line) can be activated via the *"Tools"* page palette.

The course of the crown fit equates to the course of the stump between the blue preparation margin line and the green line. From the green line, the spacer goes to the set value in the parameters. The support shoulder is set at a width of 400 µm by default.

1. Click the *"Seating Area"* option in the *"Tools"* page palette.
   ↳ The support shoulder (green line) is shown. You can redraw the support shoulder.
2. Start by double-clicking in the vicinity of the point to be corrected.
   ↳ The line is opened and the line hangs from the mouse cursor.
3. Redraw the line appropriately by guiding the cursor over the correct positions and setting points with a left mouse click.
4. Continue with this procedure until the point is corrected and the end the line with by double-clicking.

Gingival element preparation margin

If you have selected a gingival element for the preparation margin, you must enter the preparation margin for the element in this step.

This works in the same way as the manual drawing of a preparation margin on a stump.

Moving to the next step

✓ The step is completed.

➢ Continue with the preparation limits for the next restoration by clicking on the desired restoration in the object bar.

or

➢ Click on the next step.

7.4.9 Defining the insertion axis

The insertion axis is automatically suggested by the software. If you are not satisfied with the suggestion, you can redefine the insertion axis (see “Redefining the insertion axis [→ 115]”).

7.4.9.1 Preparing the right insertion axis

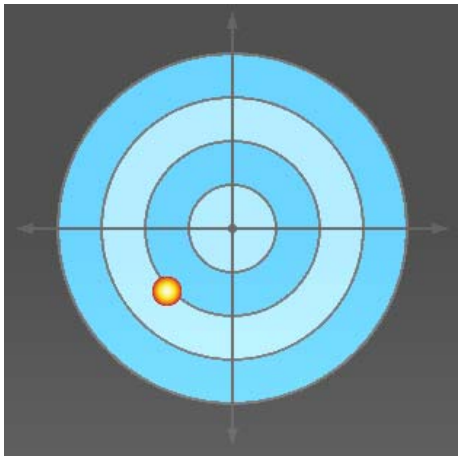
If indentations are created by positioning the insertion axis vertically to the occlusal surface in the preparatory steps, you must change the direction of the insertion axis.

7.4.9.2 Redefining the insertion axis

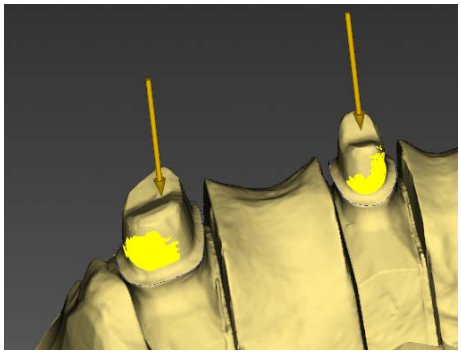
Tip: Regions within a preparation margin that show an undercut from the viewing direction are marked yellow.

➢ Change the position of the preparation such that all colored markings disappear.
If this is not possible, (e.g. in the case of diverging stumps) make sure that all preparation margins are completely visible from the viewing direction and the color highlighted undercuts are as far away as possible from the preparation margin.

You can set the insertion axis in 3 different ways.



1. Change the insertion axis by pulling the orange ball in the target circle of the page palette with the left mouse button.



2. You can pull the arrows over the preparations with the left mouse button.
3. Rotate the model to the desired insertion axis and select the *"Apply View Direction"* option from the page palette.

In the case of bridges, you have the option to re-define the insertion axis of the individual stumps.

➢ To do this, click on the desired tooth in the restoration selector.
↳ All the options for setting the insertion axis are available to you.

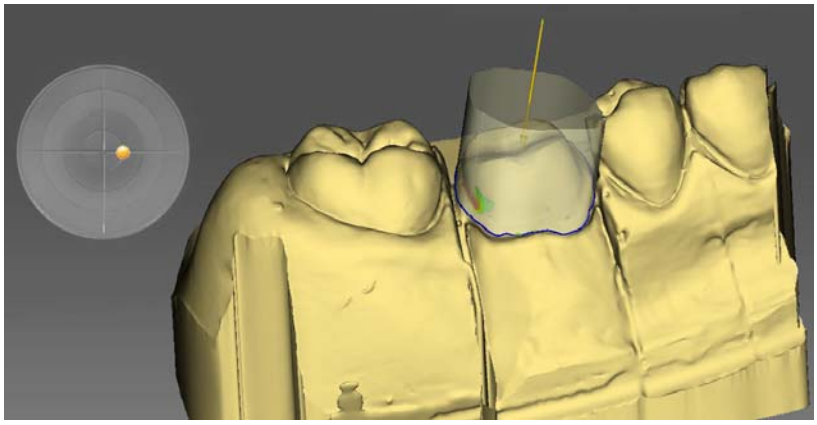
Depending on the selected production machine, the degree of freedom varies:

- inLab MC X5 = 5 axes

- inlab MC XL = 4 axes (the insertion can only be set here in the bucco-lingual direction to the bridge axis.

7.4.9.3 Displaying the insertion axis cylinder

In order to check that the insertion axis does not collide with the neighboring teeth, when adjusting the insertion axis, you can display one cylinder. This symbolizes the eventual crown.



✓ You are in the *"Define Insertion Axis"* step.

1. In the page palette, place a cross in front of *"Show insertion axis cylinder"*.
   ↳ The insertion axis cylinder is displayed.

2. Where necessary, adjust the dimensions of the cylinder via the additional slide control in the page palette.

7.4.9.4 Setting the insertion axis for the gingival element

If you have selected a gingival element for the preparation margin, you must enter the insertion axis of the gingival element in this step.

7.4.10 Finishing the phase

✓ The next phase is can be selected.

➢ Click on the next phase.

or

➢ Click on the double arrow.

↳ The program switches over to the next phase.

7.5 DESIGN phase

Tip: In the DESIGN phase you can group with the following key combinations:

- Ctrl + left mouse button
- Shift key + left mouse button

7.5.1 Adjusting parameters

Before further editing, you can check the parameters for this restoration and make any changes that are necessary. The values set here refer only to the current restoration.

This step is optional. If you skip this step, the global parameters will be used

You can set the parameters as described in the “Parameters [→ 26]” section.

7.5.2 Morphology step

The *"Morphology"* step offers you the following options:

- Whether the restorations should be calculated fully by the biogenerics
- Whether you want to specify the tooth shape (for anterior teeth)
- Whether the suggestion should be made using a database tooth In this version, the databases of VITA, Candulor, and Merz are available.

The morphology is selected separately according to anterior and posterior teeth.

To do this, click on tooth shape to specify a tooth shape for anterior teeth or select the tooth database to select a database tooth.

7.5.3 Positioning step

In the *"Positioning"* step, you can modify the position of the teeth. The teeth are not yet taken into account in the preparation margin in this step and can be moved freely. The *"Position and Rotate"* and *"Scale"* tools are available to you for this purpose. The new positioning can be performed for each tooth, or you can group neighboring restorations (Ctrl/ shift key + left mouse button) and thus process several teeth simultaneously. When you group the teeth, the software takes account of the contact situation of the selected teeth. For example, this means that if one tooth in a group is enlarged, the others are reduced in size. The same mechanism applies when positioning the teeth. The teeth are adjusted in size to the modified conditions here, too.

If *"Linear"* is checked, all grouped restorations are moved, enlarged or reduced to the same extent. The linear function is only active if multiple teeth are grouped.

With the *"Harmonic Positioning"* option, the initial position of the edge of the preparation is ignored for the benefit of an even course of the mandibular arch. This allows natural malpositions in the mandibular arch to be compensated for to a certain degree.

If the *"Adapted Proposal"* function is checked (default), the initial suggestion is adjusted once more in shape and position to accommodate the contact situation, material thickness and the edge of the preparation. If this is not desired, this option can be deactivated. Then the suggestion is only calculated for the edge of the preparation and the shape and positioning remains the same. This may mean that material has to be manually applied so material wall thicknesses can be maintained.

7.5.4 Editing the restoration

The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

The individual tools and their applications are described in the section “Tools and functions of the page palette [→ 50]”.

7.5.5 Finishing the phase

✓ The next phase is can be selected.

➢ Click on the next phase.

or

➢ Click on the double arrow.

↳ The program switches over to the next phase.

7.6 PRODUCING phase

7.6.1 Changing the production machine

You can select the production machine or whether the case should be exported in the *"Devices"* / *"Export"* page palette.

7.6.2 Changing the milling settings

Fast milling quality

1. Select a production machine in the *"Devices"* / *"Export"* page palette.
2. Select the quality *"Fast"* in the page palette.

This mode is slightly quicker, the restoration is less detailed as a result.

Extra Fine milling quality

1. Select a production machine in the *"Devices"* / *"Export"* page palette.
2. Select the quality *"Extra Fine"* in the page palette.

You must equip your machine with the following instruments for this:

In instrument set 1, *"Extra Fine"*-type instruments:

Left – CYLINDER BUR 12 EF, Right – CYLINDER POINTED BUR 12 EF

In instrument set 2, “standard”-type instruments

7.6.3 Selecting the color

You can set the color of the restoration and the incisal edge for "CEREC Blocs C In" materials.

✓ You have selected the "CEREC Blocs C In" material in the ADMINISTRATION phase.

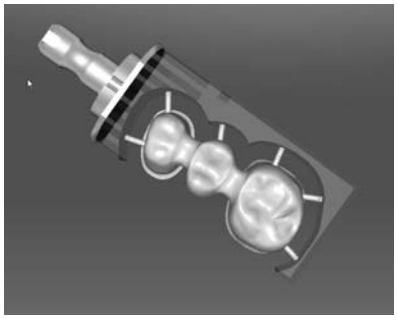
1. Select in the *"Select Color"* step.
2. Select the desired color by clicking on the color in the color center.
3. Click *"Incisal Edge"*.
4. If necessary, adjust the dentine core of the individual situation in the incisal or apical direction.
5. Click the *"OK"* button.
6. The software sets the restoration in the block according to the selected parameters.

7.6.4 Positioning restorations in the block

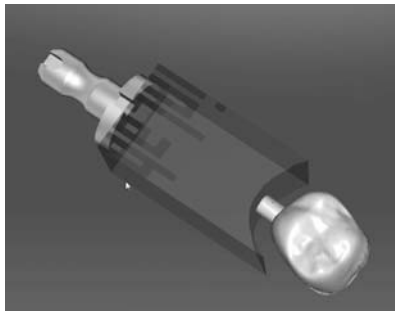
You can use the positioning tools to move the block around the restoration, turn it, and determine the sprue location.

The tools are described in the “Tools [→ 51]” section.

2 pinned connection options are available for grinding purposes. Nesting the restoration in a block is always attempted (multiple sprue locations). To take full advantage of the block, the software switches to one sprue location for individual elements. You can generate a nest again at any time by selecting a larger block.



Several sprue locations in the block



Single sprue location in the block

7.6.5 Changing block sizes

The block size is automatically suggested by the software. You can change the block size in the *"Block Sizes"* side palette.

➢ Click on the selected block size in the side palette.

↳ The restoration is positioned in the block selected by you.

7.6.6 Exporting a restoration

You can export individual restorations in order to

- process them with the inLab CAM SW software
- save them for shipment to infiniDent or
- save them in a different format.

TIP: To reuse blocks which have been ground, export the restoration to the inLab CAM SW software. It is not possible to call up blocks which have already been ground in the inLab SW milling preview.

inLab CAM restorations	The restoration is stored in *.cam file format. This file format can be read only by inLab CAM SW software.
File restoration	The restoration is saved as an *.i.lab file. This file format can be processed by infiniDent.
	If a corresponding license is available, the restoration also can be saved as an *.stl file. This format can be processed by any other program that can interpret STL data.

IMPORTANT
Sirona will not be held liable for the further processing of *.stl data in other/external software.

7.6.7 Starting the milling process

Once you have completed the design and assessed the restoration in the milling preview, you can mill the restoration.

For further information on milling or grinding, please see the corresponding Operating Instructions.

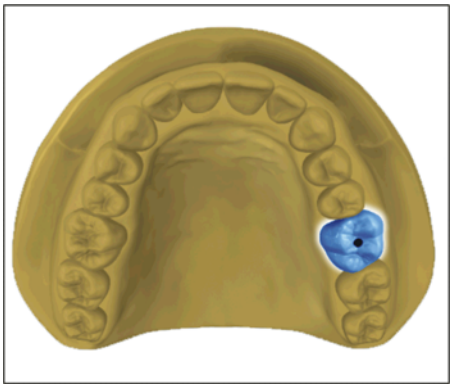
8 Design examples

8.1 Abutment - Biogeneric individual - MultiLayer

Design example *"Abutment"* with design mode *"Biogeneric Individual"* (*"Split"*: *"MultiLayer"*) on tooth 26 (#14)

8.1.1 Create a new restoration

Determine restoration type



✓ You have selected a case or created a new one.

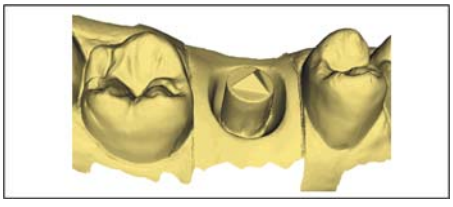
✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Single Restoration"*.
2. Select the restoration type *"Abutment"*.
   ↳ The types of restoration available match the selected tooth number.
3. Choose the design modes *"Biogeneric Individual"* and *"MultiLayer"*.
4. Click on the tooth for which the restoration must be set up.
   ↳ The selected tooth is marked.

Choose settings

1. Click on the *"Select Scanbody Type"* step in the step menu.
2. Select the scanbody type to use and which implant is to be taken care of.
3. Optional: If you use several milling units, you can select the machine you would like to use for a specific case in the *"Select Milling Device"* step.
4. In the step menu, click on the step *"Select Veneering Structure Material"* and select the material for the upper layer.
5. In the step menu, click on the step *"Select Framework Material"* and select the material for the lower layer.
6. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.
7. Change to phase SCAN.

8.1.2 Scanning a preparation



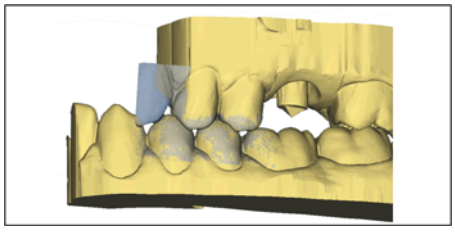
1. Acquire the preparation (see SCAN phase [→ 82]).
2. If all required acquisitions are present, change to phase MODEL.

8.1.3 Editing the model

✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

8.1.4 Bite registration



✓ The step *"Bite Registration"* is active.

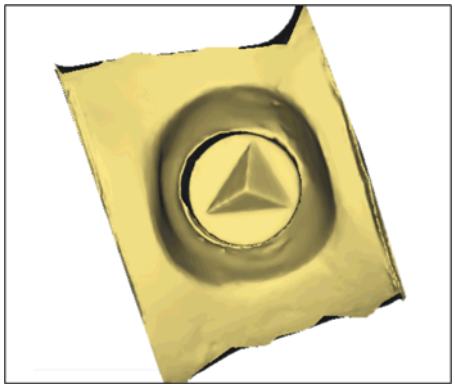
➢ Complete the buccal registration (see Buccal registration [→ 104]).

8.1.5 Set model axis

✓ The step *"Set Model Axis"* is active.

➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

8.1.6 Mask areas



✓ The step *"Trim Area"* is active.

➢ Cut away the distal and mesial neighbors, so that you input an open line in each case (see Trimming the preparation [→ 110]).

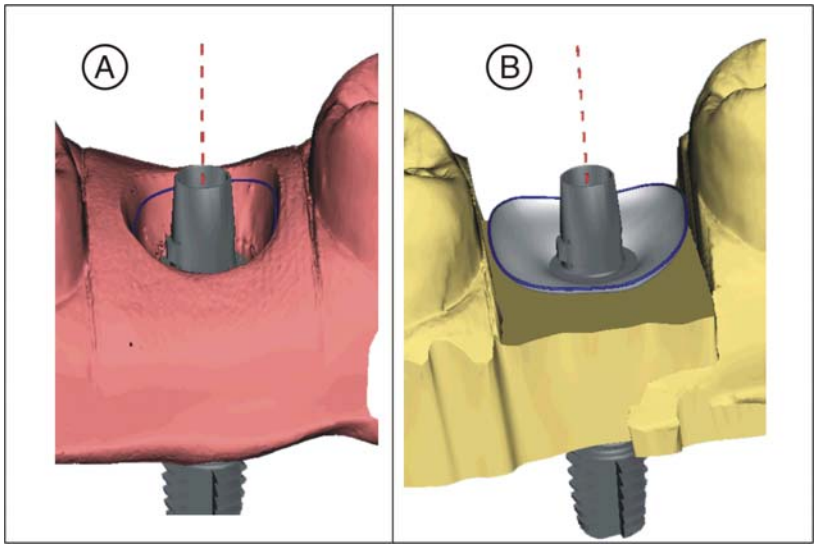
8.1.7 Select Scanbody

✓ The step *"Click Scanbody Head"* is active.

➢ Double-click the Scanbody you are working on.

8.1.8 Editing the baseline

Phase *"MODEL"* – Step *"Edit Base Line"*



If you have acquired a gingival mask, the baseline (emergence line, blue) will be suggested automatically (**A**).
If you have not acquired a gingival mask, or the *"Use Gingiva Mask"* option has been deselected, an emergence profile will automatically be suggested (**B**).

If necessary, adjust the baseline as follows.

1. Start the entry by double-clicking anywhere on the baseline. Draw a new baseline by clicking along the desired path.
2. Complete the entry with a double-click on a point on the old baseline.

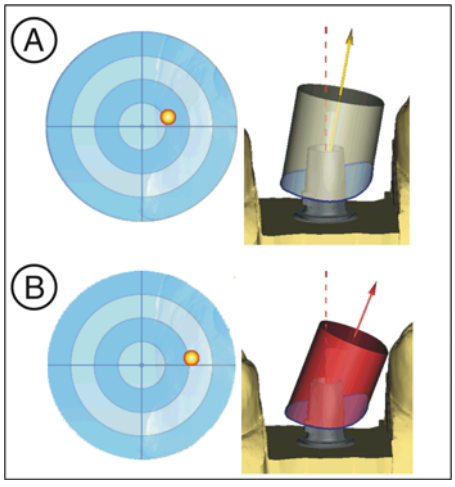
IMPORTANT
Editing the baseline is possible both for the automatic emergence profile and the gingiva-based emergence profile.

Option *"Use Gingiva Mask"*

In the *"Edit Base Line"* step, you can select whether or not the gingival mask is to be used for calculating the emergence profile. This option is available only if a gingival mask was acquired in the *"SCAN"* phase.

The baseline for the pontic can also be entered on the gingival mask. To do so, the corresponding option must be activated in the tool.

8.1.9 Define restoration axis



The angle between the implant axis (dotted red) and the restoration axis (yellow arrow) may be no higher than 20° (**A**).

If an angle of more than 20° is selected between the implant axis (dotted red) and the restoration axis (yellow arrow), the user will be warned by a change of color to red (**B**).

✓ The step *"Define Restoration Axis"* is active.

1. Check the restoration axis and adjust it where necessary (see Defining the insertion axis [→ 114]).
2. Change to phase DESIGN.

8.1.10 Adjusting parameters

✓ The step *"Restoration Parameters"* is active.

1. Adjust the parameters where necessary.
2. Confirm the changes with *"Ok"*.
   ↳ The initial suggestion is then calculated automatically.
3. If you have not altered any parameters, change to the *"Calculate Restoration"* step.
   ↳ An initial suggestion is calculated.

8.1.11 Editing the restoration

The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

The individual tools and their applications are described in the section .

Editing a single-part restoration

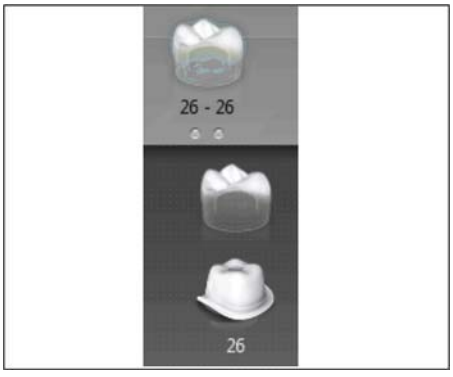
✓ The step *"Edit Restoration"* is active.

➢ Use the tools from the page palette to edit whichever restoration is active.

Edit layers individually

✓ The step *"Edit Restoration"* is active.

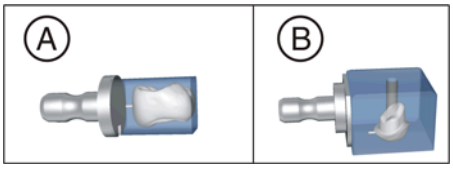
1. Select the *"Split"* tool.
   ↳ The crown is displayed transparently.



2. With the mouse pointer, go to the bottom edge of the picture.
   ↳ The restoration range expands. 2 restorations are represented for the tooth position.
3. Click on the icon for crown or abutment, to toggle between the two restorations.
4. Use the tools from the page palette to edit whichever restoration is active.

Change to phase MILL. Both restoration layers have to be ground individually.

8.1.12 Grinding of restoration layers



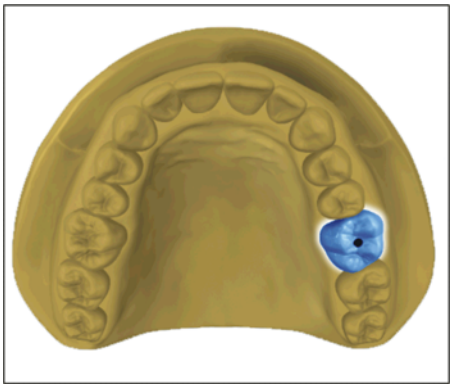
1. In step *"Milling Unit"*, select the tool with which the restoration needs to be ground.
2. In step *"Change Block Size"*, change the block size, where necessary.
3. In step *"Adjust Mill Position"*, position the restoration in the block, where necessary.
4. Start the milling process.

8.2 Abutment - Biogeneric individual

Design example *"Abutment"* with design mode *"Biogeneric Individual"* on tooth 26 (#14)

8.2.1 Create a new restoration

Determine restoration type



✓ You have selected a case or created a new one.

✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Single Restoration"*.
2. Select the restoration type *"Abutment"*.
   ↳ The types of restoration available match the selected tooth number.
3. Choose the design mode *"Biogeneric Individual"*.
4. Click on the tooth for which the restoration must be set up.
   ↳ The selected tooth is marked.

Choose settings

1. Click on the *"Select Scanbody Type"* step in the step menu.
2. Select the scanbody type to use and which implant is to be taken care of.
3. Optional: If you are using several milling units, you can select which machine you will use each time in the *"Select Milling Device"* step.
4. In the step menu, click on the step *"Select Material"* and select the material.
5. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.
6. Change to phase SCAN.

8.2.2 Scanning a preparation

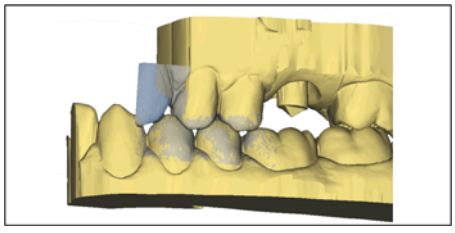
1. Acquire the preparation (see SCAN phase [→ 82]).
2. If all required acquisitions are present, change to phase MODEL.

8.2.3 Editing the model

✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

8.2.4 Bite registration



✓ The step *"Bite Registration"* is active.

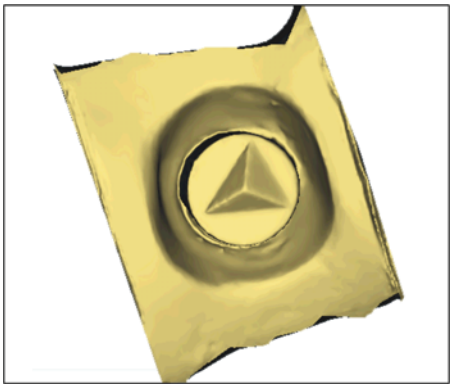
➢ Complete the buccal registration (see Buccal registration [→ 104]).

8.2.5 Set model axis

✓ The step *"Set Model Axis"* is active.

➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

8.2.6 Mask areas



✓ The step *"Trim Area"* is active.

➢ Cut away the distal and mesial neighbors, so that you input an open line in each case (see Trimming the preparation [→ 110]).

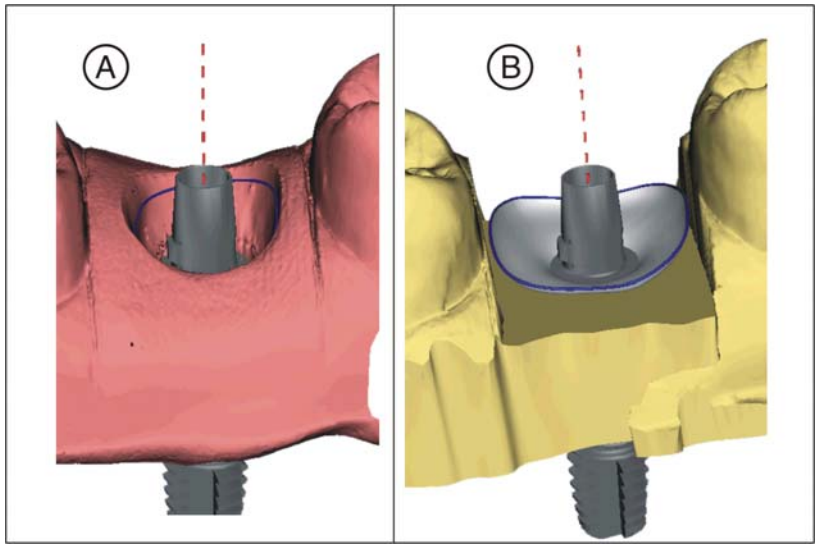
8.2.7 Select Scanbody

✓ The step *"Click Scanbody Head"* is active.

➢ Double-click the Scanbody you are working on.

8.2.8 Editing the baseline

Phase *"MODEL"* – Step *"Edit Base Line"*



If you have acquired a gingival mask, the baseline (emergence line, blue) will be suggested automatically (**A**).
If you have not acquired a gingival mask, or the *"Use Gingiva Mask"* option has been deselected, an emergence profile will automatically be suggested (**B**).

If necessary, adjust the baseline as follows.

1. Start the entry by double-clicking anywhere on the baseline. Draw a new baseline by clicking along the desired path.
2. Complete the entry with a double-click on a point on the old baseline.

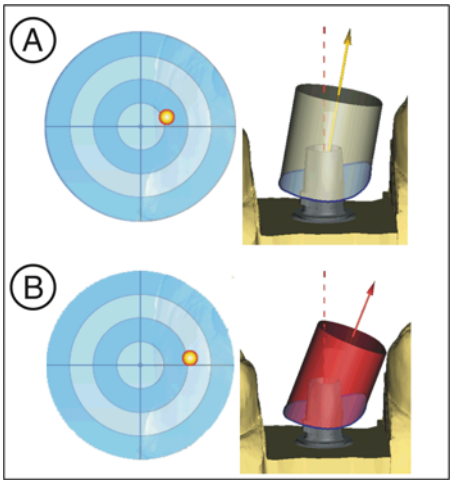
IMPORTANT
Editing the baseline is possible both for the automatic emergence profile and the gingiva-based emergence profile.

Option *"Use Gingiva Mask"*

In the *"Edit Base Line"* step, you can select whether or not the gingival mask is to be used for calculating the emergence profile. This option is available only if a gingival mask was acquired in the *"SCAN"* phase.

The baseline for the pontic can also be entered on the gingival mask. To do so, the corresponding option must be activated in the tool.

8.2.9 Define restoration axis



The angle between the implant axis (dotted red) and the restoration axis (yellow arrow) may be no higher than 20° (**A**).

If an angle of more than 20° is selected between the implant axis (dotted red) and the restoration axis (yellow arrow), the user will be warned by a change of color to red (**B**).

✓ The step *"Define Restoration Axis"* is active.

1. Check the restoration axis and adjust it where necessary (see Defining the insertion axis [→ 114]).
2. Change to phase DESIGN.

8.2.10 Adjusting parameters

✓ The step *"Restoration Parameters"* is active.

1. Adjust the parameters where necessary.
2. Confirm the changes with *"Ok"*.
   ↳ The initial suggestion is then calculated automatically.
3. If you have not altered any parameters, change to the *"Calculate Restoration"* step.
   ↳ An initial suggestion is calculated.

8.2.11 Editing the restoration

The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

The individual tools and their applications are described in the section .

✓ The step *"Edit Restoration"* is active.

➢ Use the tools from the page palette to edit the restoration.

8.2.12 Grinding the restoration

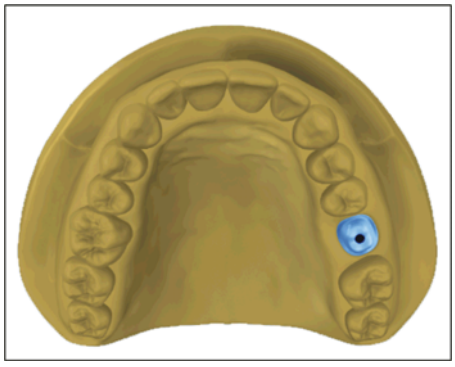
1. In step *"Milling Unit"*, select the tool with which the restoration needs to be ground.
2. In step *"Change Block Size"*, change the block size, where necessary.
3. In step *"Adjust Mill Position"*, position the restoration in the block, where necessary.
4. Start the milling process.

8.3 Abutment - framework

Design example *"Abutment"* with design mode *"Framework"* on tooth 26 (#14)

8.3.1 Create a new restoration

Determine restoration type



✓ You have selected a case or created a new one.

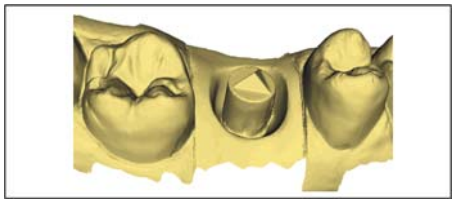
✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Single Restoration"*.
2. Select the restoration type *"Abutment"*.
   ↳ The types of restoration available match the selected tooth number.
3. Choose the design mode *"Framework"*.
4. Click on the tooth for which the restoration must be set up.
   ↳ The selected tooth is marked.

Choose settings

1. Click on the *"Select Scanbody Type"* step in the step menu.
2. Select the scanbody type to use and which implant is to be taken care of.
3. Optional: If you are using several milling units, you can select which machine you will use each time in the *"Select Milling Device"* step.
4. In the step menu, click on the step *"Select Material"* and select the material.
5. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.
6. Change to phase SCAN.

8.3.2 Scanning a preparation



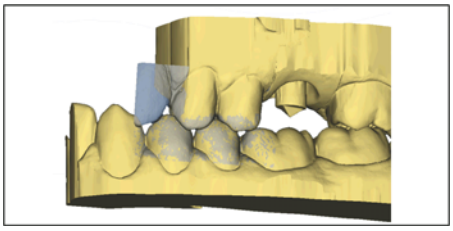
1. Acquire the preparation (see SCAN phase [→ 82]).
2. If all required acquisitions are present, change to phase MODEL.

8.3.3 Editing the model

✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

8.3.4 Bite registration



✓ The step *"Bite Registration"* is active.

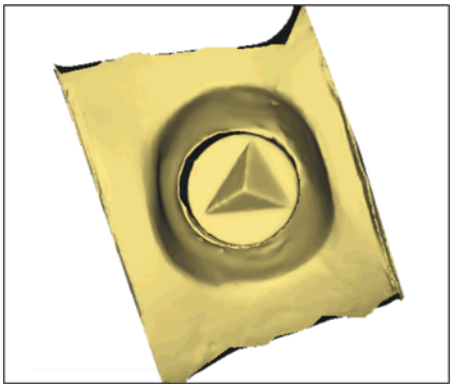
➢ Complete the buccal registration (see Buccal registration [→ 104]).

8.3.5 Set model axis

✓ The step *"Set Model Axis"* is active.

➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

8.3.6 Mask areas



✓ The step *"Trim Area"* is active.

➢ Cut away the distal and mesial neighbors, so that you input an open line in each case (see Trimming the preparation [→ 110]).

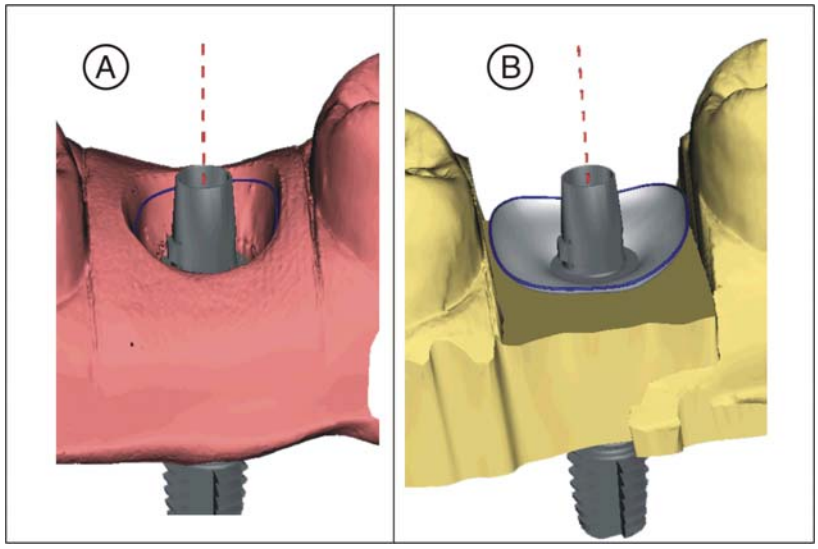
8.3.7 Select Scanbody

✓ The step *"Click Scanbody Head"* is active.

➢ Double-click the Scanbody you are working on.

8.3.8 Editing the baseline

Phase *"MODEL"* – Step *"Edit Base Line"*



If you have acquired a gingival mask, the baseline (emergence line, blue) will be suggested automatically (**A**).
If you have not acquired a gingival mask, or the *"Use Gingiva Mask"* option has been deselected, an emergence profile will automatically be suggested (**B**).

If necessary, adjust the baseline as follows.

1. Start the entry by double-clicking anywhere on the baseline. Draw a new baseline by clicking along the desired path.
2. Complete the entry with a double-click on a point on the old baseline.

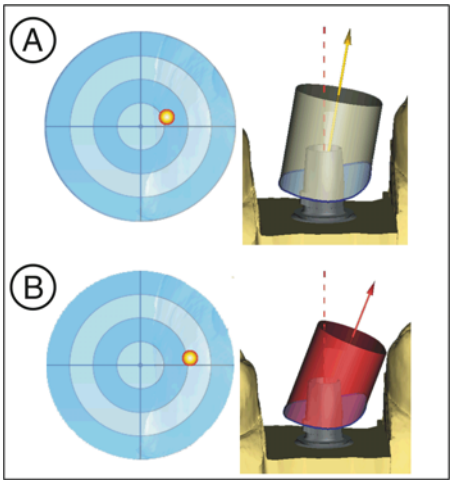
IMPORTANT
Editing the baseline is possible both for the automatic emergence profile and the gingiva-based emergence profile.

Option *"Use Gingiva Mask"*

In the *"Edit Base Line"* step, you can select whether or not the gingival mask is to be used for calculating the emergence profile. This option is available only if a gingival mask was acquired in the *"SCAN"* phase.

The baseline for the pontic can also be entered on the gingival mask. To do so, the corresponding option must be activated in the tool.

8.3.9 Define restoration axis



The angle between the implant axis (dotted red) and the restoration axis (yellow arrow) may be no higher than 20° (**A**).

If an angle of more than 20° is selected between the implant axis (dotted red) and the restoration axis (yellow arrow), the user will be warned by a change of color to red (**B**).

✓ The step *"Define Restoration Axis"* is active.

1. Check the restoration axis and adjust it where necessary (see Defining the insertion axis [→ 114]).
2. Change to phase DESIGN.

8.3.10 Adjusting parameters

✓ The step *"Restoration Parameters"* is active.

1. Adjust the parameters where necessary.
2. Confirm the changes with *"Ok"*.
   ↳ The initial suggestion is then calculated automatically.
3. If you have not altered any parameters, change to the *"Calculate Restoration"* step.
   ↳ An initial suggestion is calculated.

8.3.11 Editing the restoration

The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

The individual tools and their applications are described in the section .

✓ The step *"Edit Restoration"* is active.

➢ Use the tools from the page palette to edit the restoration.

8.3.12 Grinding the restoration

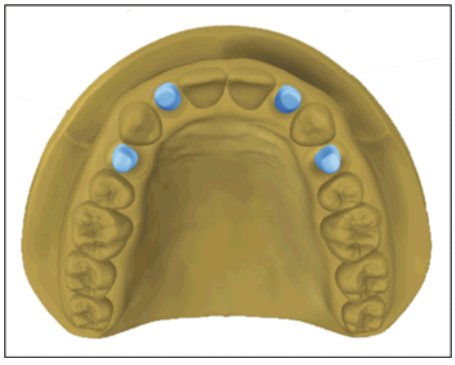
1. In step *"Milling Unit"*, select the tool with which the restoration needs to be ground.
2. In step *"Change Block Size"*, change the block size, where necessary.
3. In step *"Adjust Mill Position"*, position the restoration in the block, where necessary.
4. Start the milling process.

8.4 Bars

Design example *"Bridge Restoration"* with bars (*"Telescope"* design mode on teeth 14-24 (#5-#12)

8.4.1 Create a new restoration

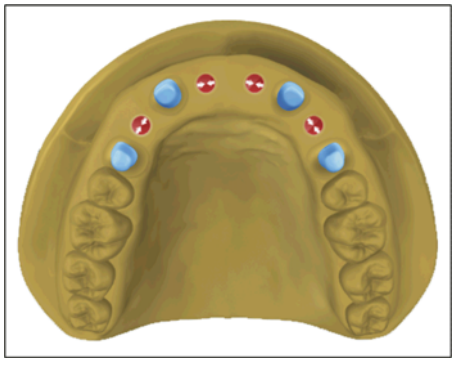
Determine restoration type



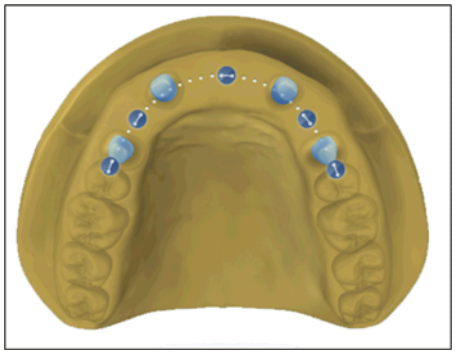
✓ You have selected a case or created a new one.

✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Bridge Restoration"*.
2. Choose the restoration type *"Crown"*.
3. Choose the design mode *"Telescope"*.
4. Click on the teeth to be used as supporting elements.
   ↳ The selected teeth are marked.



5. Select the restoration type *"Missing"*.
6. Click on the missing teeth between the supporting elements.
   ↳ The selected teeth are marked.

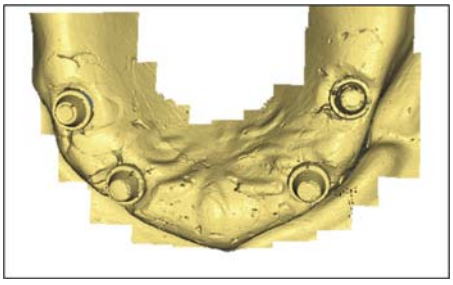


7. Click on the restoration type *"Bar"*.
8. Select the restoration type *"Squared"*.
9. Select the bars
   Also select the exposed ends if necessary.

Choose settings

1. Optional: In the step menu, click on the step *"Select Milling Device"* to change the current milling unit.
2. In the step menu, click on the step *"Select Material"* and select it for the restoration.
3. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.
4. Change to phase SCAN.

8.4.2 Scanning a preparation



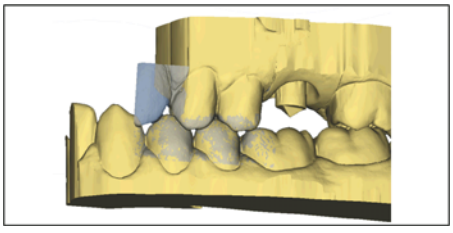
1. Acquire the preparation (see SCAN phase [→ 82]).
2. Acquire the existing WaxUp models to the *"BioCopy Upper"* or *"BioCopy Lower"* image catalog. Be careful to include the regions for the buccal registration.
3. Acquire the gingival mask if necessary.
4. If all required acquisitions are present, change to phase MODEL.

8.4.3 Editing the model

✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

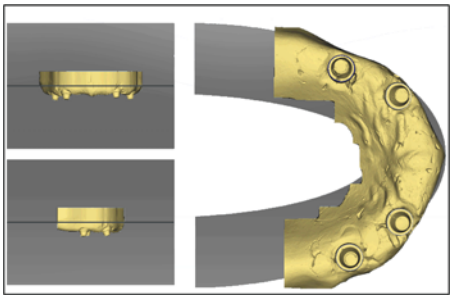
8.4.4 Bite registration



✓ The step *"Bite Registration"* is active.

➢ Complete the buccal registration (see Buccal registration [→ 104]).

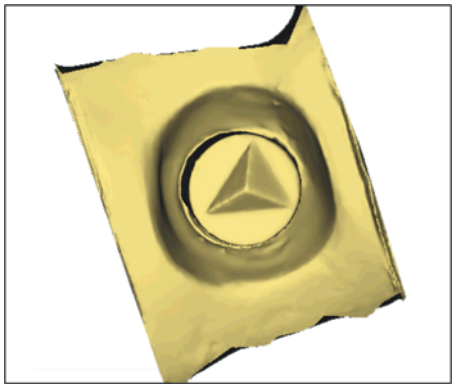
8.4.5 Set model axis



✓ The step *"Set Model Axis"* is active.

➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

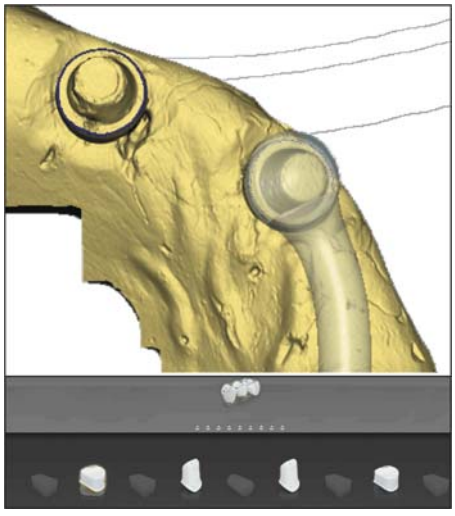
8.4.6 Mask areas



✓ The step *"Trim Area"* is active.

➢ Cut away the distal and mesial neighbors, so that you input an open line in each case (see Trimming the preparation [→ 110]).

8.4.7 Drawing the preparation margin

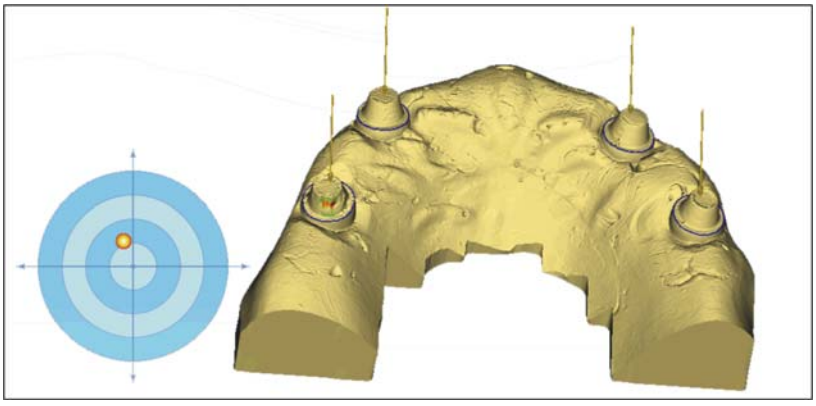


✓ The step *"Draw Margin"* is active.

1. Move the mouse to the bottom edge of the screen.
   ↳ The components of the bridge are then displayed.
2. Select the first crown, tooth 14 (#5).
3. Draw in the preparation margin on tooth 14 (#5).
4. Repeat this procedure for teeth 12 (#7), 22 (#10) and 24 (#12).

8.4.8 Defining axes

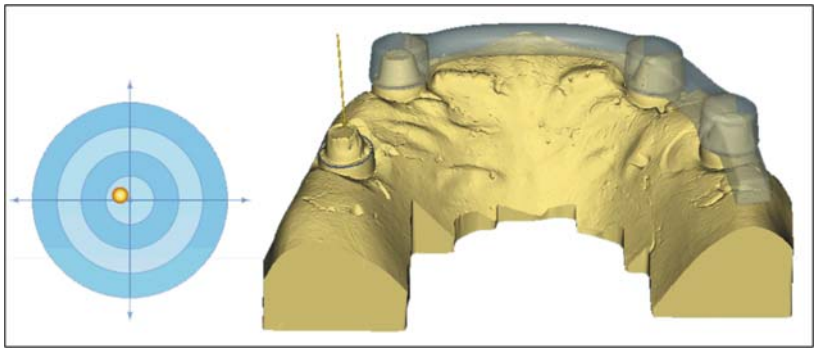
Defining the bridge axis



➢ Define the axis for the entire bridge in the step *"Define Bridge Insertion Axis"*.

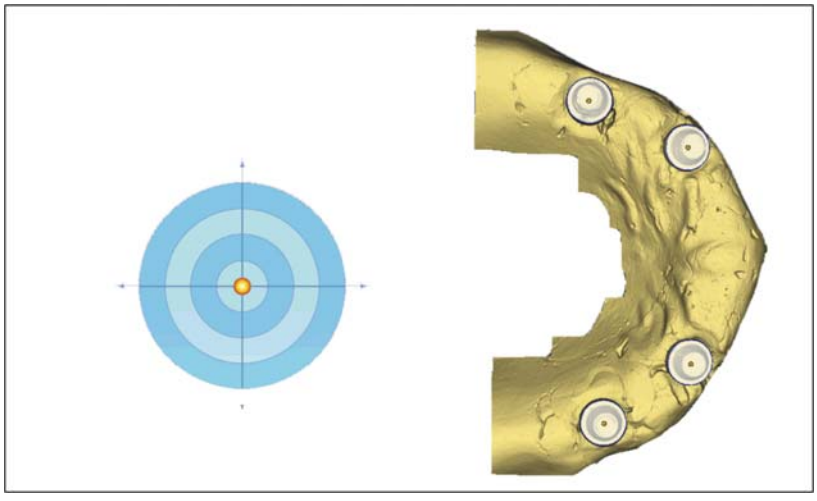
Defining the insertion axis

The step *"Define Insertion Axis"* is optional, depending on the selected milling machine.



➢ Define the axis for all teeth individually in the step *"Define Insertion Axis"*.

Defining the restoration axis



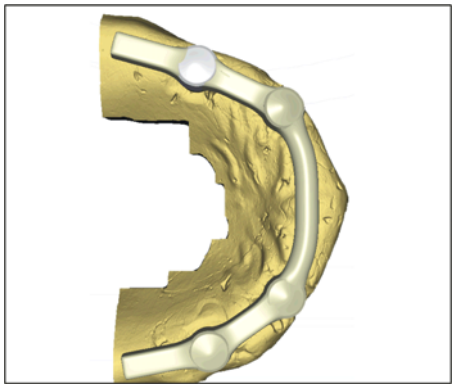
➢ In the step *"Define Restoration Axis"*, group all supporting elements and fit them together.

8.4.9 Adjusting parameters

✓ The step *"Restoration Parameters"* is active.

1. Adjust the parameters where necessary.
2. Confirm the changes with *"Ok"*.
   ↳ The initial suggestion is then calculated automatically.
3. If you have not altered any parameters, change to the *"Calculate Restoration"* step.
   ↳ An initial suggestion is calculated.

8.4.10 Editing the restoration



The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

The individual tools and their applications are described in the section .

✓ The step *"Edit Restoration"* is active.

➢ Use the tools from the page palette to edit the restoration.

8.4.11 Grinding the restoration

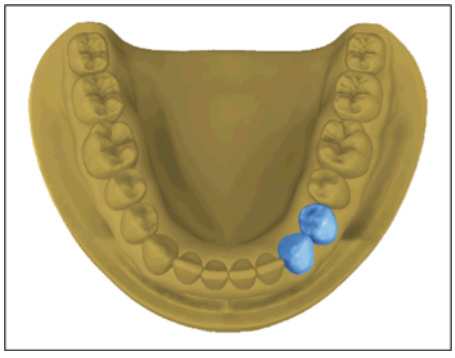
1. In step *"Milling Unit"*, select the tool with which the restoration needs to be ground.
2. In step *"Change Block Size"*, change the block size, where necessary.
3. In step *"Adjust Mill Position"*, position the restoration in the block, where necessary.
4. Start the milling process.

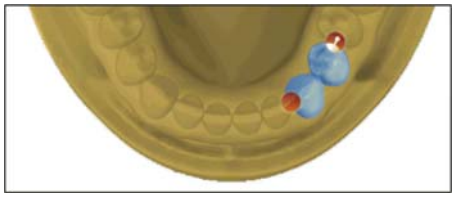
8.5 Attachments

Design example *"Bridge Restoration"* with attachment on teeth 33-34 (#22-#21) and bridge on teeth 35-37 (#20-#18)

8.5.1 Create a new restoration

Creating a bridge with an attachment



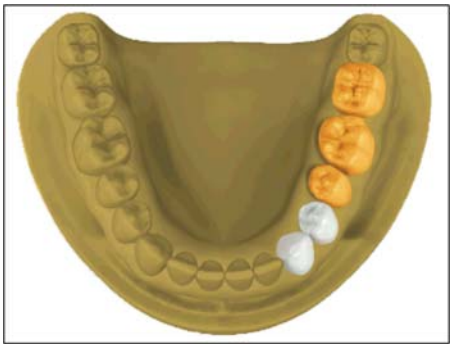


✓ You have selected a case or created a new one.

✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Bridge Restoration"*.
2. Choose the restoration type *"Crown"*.
3. Choose the design mode *"Biogeneric Individual"*.
4. Click on tooth 34 (#21) where the attachment is to be located and on the existing neighboring tooth 33 (#22).
   ↳ The selected teeth are marked.
5. Select the restoration type *"Attachment"*.
6. Click on the distal attachment.
7. Optional: In the step menu, click on the step *"Select Milling Device"* to change the current milling unit.
8. In the step menu, click on the step *"Select Material"* and select it for the restoration.
9. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.

Creating a bridge with a pontic

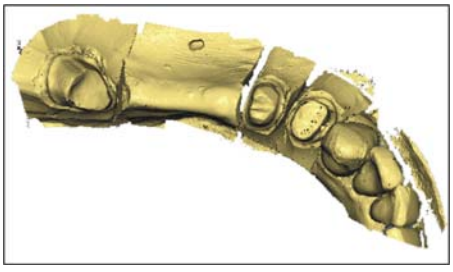


✓ You have created a bridge with an attachment.

✓ You are now in the ADMINISTRATION phase.

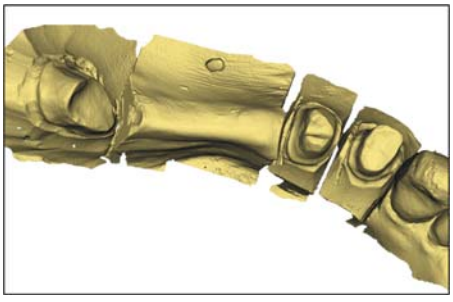
1. Choose the restoration type *"Bridge Restoration"*.
2. Select the required restoration categories and restoration types and click on the respective teeth.
   Distal tooth 35 (#20) for the attachment must be a pontic.
   ↳ The selected teeth are marked.
3. Optional: In the step menu, click on the step *"Select Milling Device"* to change the current milling unit.
4. In the step menu, click on the step *"Select Material"* and select it for the restoration.
5. Click on *"Ok"* to confirm the settings.
   ↳ The case has been created.

8.5.2 Scanning a preparation



1. Acquire the preparation (see SCAN phase [→ 82]).
2. If all required acquisitions are present, change to phase MODEL.

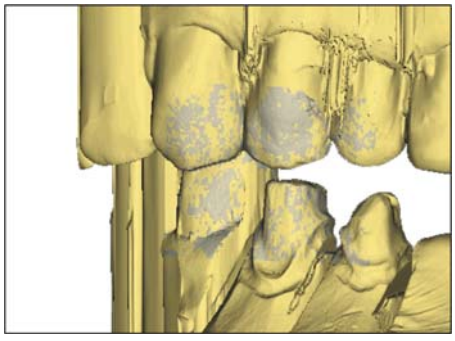
8.5.3 Editing the model



✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

8.5.4 Bite registration



✓ The step *"Bite Registration"* is active.

➢ Complete the buccal registration (see Buccal registration [→ 104]).

8.5.5 Set model axis

✓ The step *"Set Model Axis"* is active.

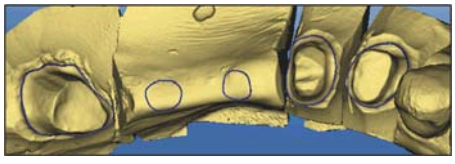
➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

8.5.6 Mask areas

✓ The step *"Trim Area"* is active.

➢ Cut away the distal and mesial neighbors, so that you input an open line in each case (see Trimming the preparation [→ 110]).

8.5.7 Drawing the preparation margin



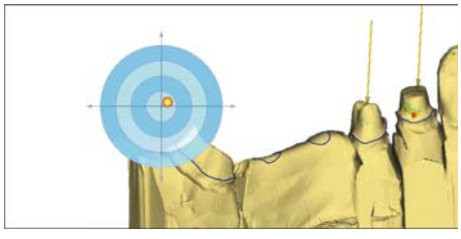
✓ The step *"Draw Margin"* is active.

➢ Draw in the preparation margins for all restorations in both bridges (see Entering the preparation margin [→ 111]).

8.5.8 Defining axes

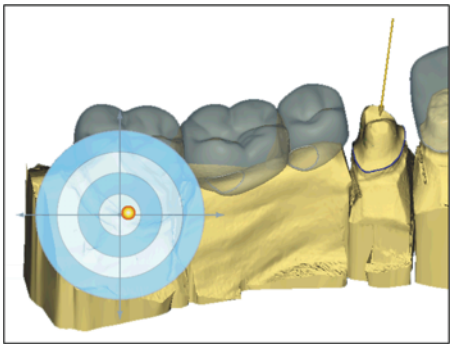
Perform the following steps for both bridges.

Defining the bridge axis



➢ Define the axis for the entire bridge in the step *"Define Bridge Insertion Axis"* .

Defining the insertion axis



➢ Define the axis for all teeth individually in the step *"Define Insertion Axis"*.

8.5.9 Adjusting parameters

✓ The step *"Restoration Parameters"* is active.

1. Adjust the parameters where necessary.
2. Confirm the changes with *"Ok"*.
   ↳ The initial suggestion is then calculated automatically.
3. If you have not altered any parameters, change to the *"Calculate Restoration"* step.
   ↳ An initial suggestion is calculated.

8.5.10 Editing restorations

The virtual model provides a visualization and design of a restoration in 3D.

Once the restoration has been calculated, you can change the restoration with the tools in the toolbar.

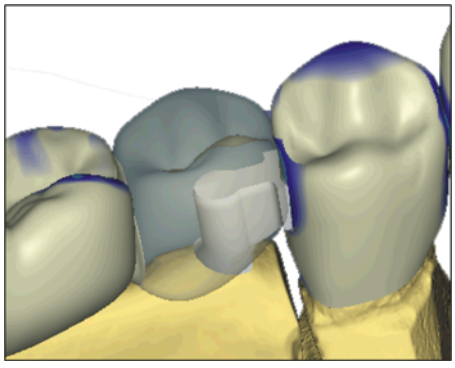
The individual tools and their applications are described in the section .

✓ The step *"Edit Restoration"* is active.

➢ Use the tools from the page palette to edit both bridges.

Editing the attachment

1. Click on the bridge with the attachment in the object bar.
2. Move the mouse to the bottom edge of the screen.
3. Click on the attachment in the detail display.

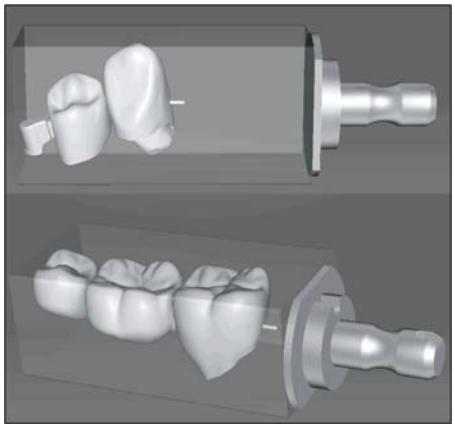


↳ The overlying tooth element is displayed transparent.

4. Select the *"Move"* tool and place the attachment in a suitable location.
   Be careful to maintain the occlusal distance.
   Important: Unsuitable placement. The position of the attachment is checked after you close the tool. The attachment is then displayed in red if the positioning can cause problems.
5. Select the tool *"Subtract Attachment from Pontic"* and click on the attachment. The overlying tooth element is then adapted so that it can be slid onto the attachment.

8.5.11 Grinding the restoration

Perform the following steps for both bridges.



1. In step *"Milling Unit"*, select the tool with which the restoration needs to be ground.
2. In step *"Change Block Size"*, change the block size, where necessary.
3. In step *"Adjust Mill Position"*, position the restoration in the block, where necessary.
4. Start the milling process.

8.6 Model

NOTICE

Make sure the correct tools are used

Special tools (milling cutters) are needed to mill models. The milling cutters will be used as follows:

Set 1: Finisher 10

Set 2: Shaper 25

➢ Do not use the milling instruments for restorations to produce models.

NOTICE

Make sure the milling cutters are used correctly

If the milling cutters are not used as described below, this may cause damage to the grinding unit.

➢ Use the Shaper 25 and Finisher 10 milling cutters only in inLab MC XL grinding units, as of serial number 120 000 or in inLab XL grinding units that have been upgraded using the motor upgrade kit for inLab (REF 6338631).

➢ Use the Shaper 25 and Finisher 10 milling cutters only for manufacturing models from the inCoris S model (REF 6299361) and inCoris L model blocks (REF 6299379).

8.6.1 Create a new restoration

✓ You have selected a case or created a new one.

✓ You are now in the ADMINISTRATION phase.

1. Choose the restoration type *"Model"*.
2. Click on the upper and lower jaw or on both jaws.

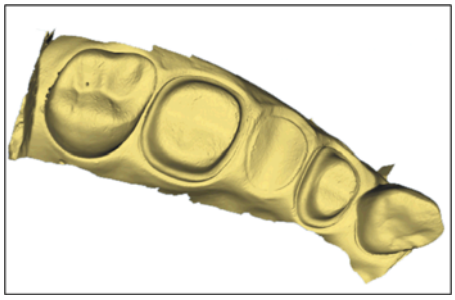
3. Change to step *"Select Base Plate"*.
4. Select the base plate *"Large"* or *"Small"*.
   Tip: If you select *"Automatic"*, the software will automatically select the appropriate base plate.
5. Click on the *"Ok"* button.
   ↳ The model is then created

6. If necessary, create restorations.

8.6.2 Scanning a preparation

1. Acquire the preparation (see SCAN phase [→ 82]
   Acquire the entire jaw or a section of it.
2. If all required acquisitions are present, change to phase MODEL.

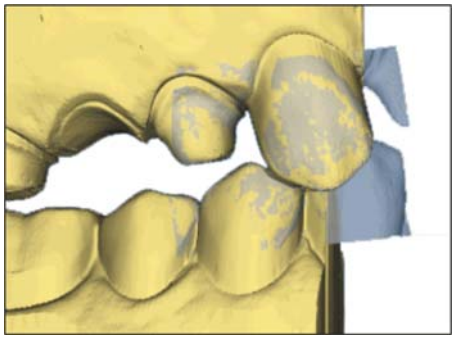
8.6.3 Editing the model



✓ The step Edit Model is active.

1. With the tool *"Form"*, apply, remove or smoothen material (see Shaping [→ 52]).
2. With the tool *"Cut"*, cut out unnecessary image areas (see Cut out model areas [→ 54]).
3. Correct defects with the tool *"Replace"* (see Correcting defects [→ 55]).

8.6.4 Bite registration



✓ The step *"Bite Registration"* is active.

➢ Complete the buccal registration (see Buccal registration [→ 104]).

8.6.5 Set model axis

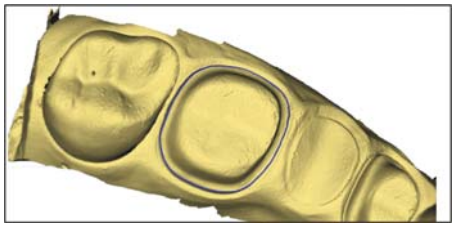
✓ The step *"Set Model Axis"* is active.

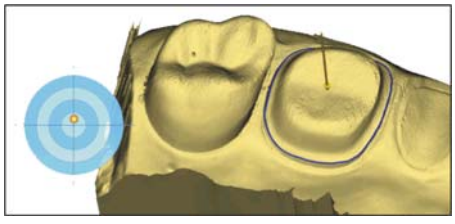
➢ Set the axes for model alignment (see Set model axis). Please ensure a consistent representation here.

8.6.6 Editing restorations

If you have created restorations, you now must generate them. Perform the following steps for each created generation before continuing to edit the model.

1. Click on the restoration in the object bar.
2. Enter the preparation margin (see Entering the preparation margin [→ 111]).



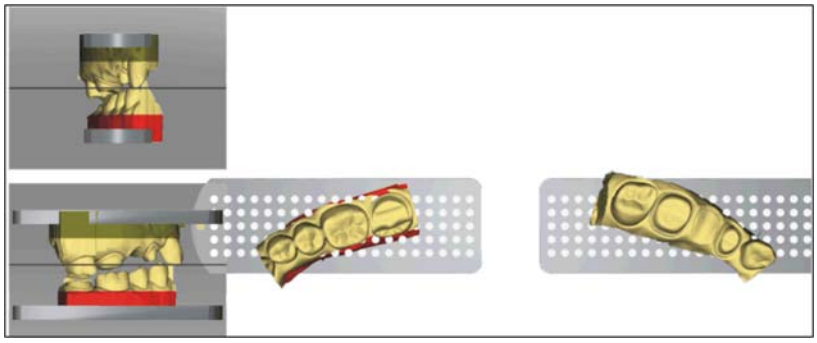


3. Aligning the insertion axis (see Defining the insertion axis [→ 114]).

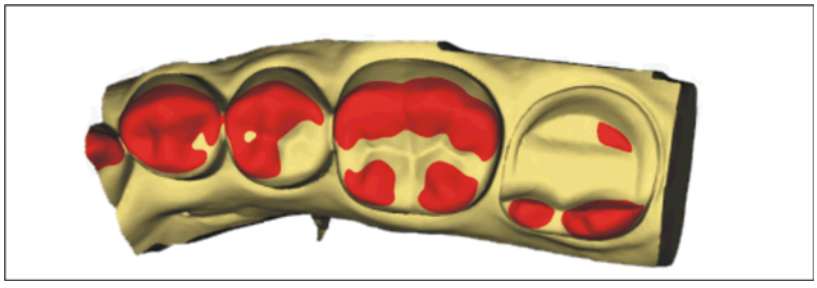
8.6.7 Aligning the model

✓ You have edited all preparations.

1. Click on the model in the object bar.
   ↳ The software changes to the *"Orientation"* step.



2. Move the model so that all important regions are visible. All red regions lie outside of the block and will be cut off.
   You can displace the model up and down, rotate and move it.
3. Check whether the model is properly aligned and click the *"Ok"* button.



Misalignment - red areas will be cut off

8.6.8 Adjusting parameters

✓ The step *"Model Parameters"* is active.

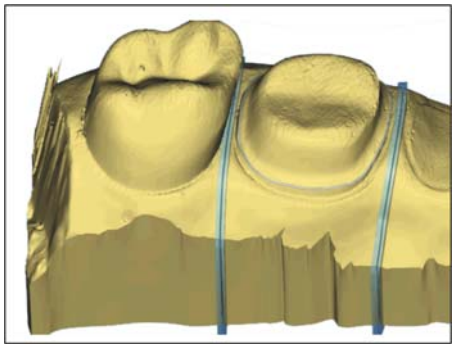
1. **Important:** Here change only the setting *"Segmentation Cut Width"*. Leave all other values unchanged.
2. Change to step *"Initialize Segments"*.
   ↳ An initial suggestion is calculated.

8.6.9 Segmentation

You can divide the model into multiple segments in the *"Segmentation"* step.

If the virtual model is segmented in this design step, both the sides and the bottom are subsequently displayed as closed.

Segmenting the model

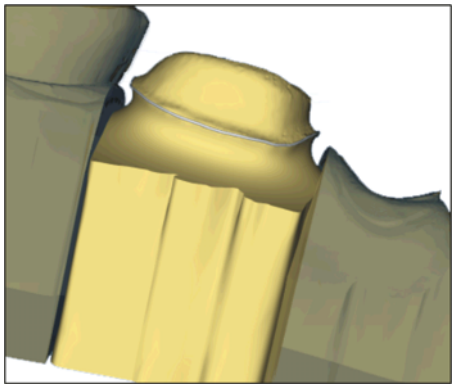


✓ The step *"Segmentation"* is active.

1. Rotate the model to a perspective in which you can see all areas that you want to segment. The model cannot be rotated while you are drawing the line.
2. Double click in any location to set the start point of the line.
3. Click to set further points of the line, e.g. in the interdental space.
4. Double click in any position to end the line.
   ↳ The model is then divided along the line.

5. Check to make sure that the individual segments fit into a block. Areas that are too long are displayed in red.
   Tip: Double click on an existing cut to remove it.

8.6.10 Undercutting segments

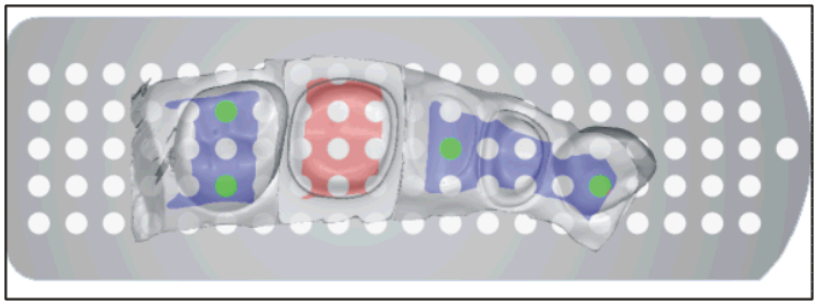


Segments that cannot be undercut are grayed out.

✓ The step *"Ditching"* is active.

➢ Double-click on the segment you would like to undercut.
   ↳ The segment is undercut.
   Tip: You can double-click on the segment again to undo the undercut.

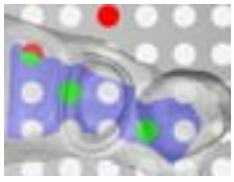
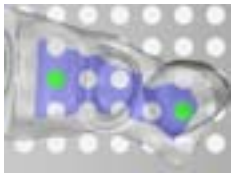
8.6.11 Placing pins



✓ The step *"Pinning"* is active.

1. You can place the model on the base plate freely.
   Make sure that no important regions are cut off. All red regions lie outside of the block and will be cut off.
   You can displace the model up and down, rotate and move it.
2. Select the *"Automatic Model Pinning"* tool.
   ↳ The pins are automatically set in such a way that at least 2 pins with optimal spacing are set per segment.

3. Select the *"Manual Model Pinning"* tool.
4. In necessary, set additional pins by clicking on a pin position.
   Remove the pins by clicking on an existing pin.
5. If all regions are displayed in blue, click the OK button.

	• Green pin – Positioning OK • Red pin – Positioning not OK. Place this pin in the valid region.
	• Blue region – Segment has enough pins (at least 2) and therefore can be produced.
	• Red region – Segment does not have enough pins. – Place additional pins in this segment.

8.6.12 Closing the model

1. Click on the *"MILL"* phase.
2. The model segments are calculated.
   The software changes to the step *"Preview"*.
3. Check the preview and go back to make changes if necessary.
4. Change to step *"Export"*.
5. Click the *"inLab CAM Restoration"* button to export the model for the inLab Stack software.

6. Click the *"File Restoration"* button to save a stack file (*.cam) or an Infinident file (*.i.lab) to any folder.

8.7 Anatomical or reduced directly screwed-on bridges

8.7.1 ADMINISTRATION phase

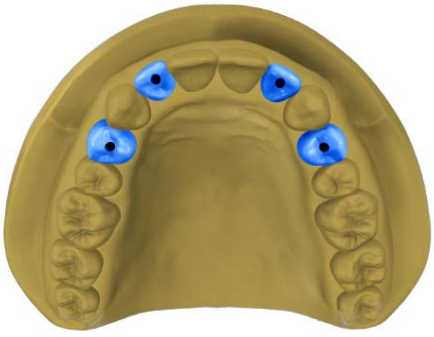
8.7.1.1 Create a new restoration

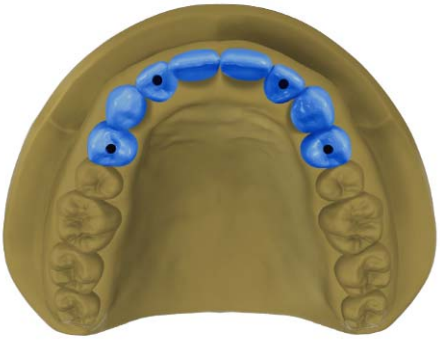
Phase ADMINISTRATION – Step *"Define Restoration"*

✓ You have selected a case or created a new one.

✓ You are now in the ADMINISTRATIONphase in the step *"Define Restoration"*.

1. Open the *"Indications"* page palette.
2. Select the type of supply *"Bridge Restoration"* from the left column of the *"Indications"* page palette.
3. Select the restoration type *"Implant Superstructure"* and the design mode *"Biogeneric Individual"* in the right column of the page palette.
4. Select the teeth on which the implants are placed.





5. Switch to the restoration type *"Pontic"* and select the pontics.

8.7.1.2 Implant connection

Phase ADMINISTRATION – Step *"Implant Connection"*

1. Change to step *"Implant Connection"*. Here you can select the type of connection.
2. If it is a unilateral, directly screwed-on bridge, select the type *"Implant Level"* as *"Implant ConnectionType"*.
3. Select the manufacturer (e.g. *"Sirona"*) and the implant system (e.g. FX4.5).
4. Enter the information for all implant positions.

Tip: Select the type *"MU Abutment Cemented"* as *"Implant ConnectionType"* for the bridges on adhesives bases. Then the manufacturer and the relevant implant system must be selected.

8.7.1.3 Selecting scanbody types

Phase ADMINISTRATION – Step *"Select Scanbody Type"*

Based on the previously selected implant connection, the scanbody is now displayed by the software.

8.7.1.4 Selecting the grinding device

Phase ADMINISTRATION – Step *"Select Milling Device"*

You can select the inLab MC X5 for screwed bridges on the abutments from nt-Trading and Medentika.

For directly screwed-on bridges from made titanium or base metals, you can select a generic machine. If this is not yet available, you can create a generic machine through the configuration.

8.7.1.5 Material selection

Phase ADMINISTRATION – Step *"Select Material"*

In this step, you can select the material from which the work should be produced, and then confirm with *"Ok"*.

8.7.2 SCAN phase

NOTICE

The scan is made with screwed-in abutments. The scanbody is screwed on to this.

➢ Only fix the scanbodies with gloves so that the surface does not get contaminated with dirt and grease!

8.7.2.1 Jaw scanning

Phase SCAN – Step *"Capture Jaw"*

1. First scan the jaw model including the gingival mask in the relevant image catalog (*"Upper Jaw"* or *"Lower Jaw"*).
2. Open the *"Add Catalog"* page palette.
3. Add the relevant image catalog *"Scanbody Upper Jaw"* or *"Scanbody Lower Jaw"*.
4. Now take an overview scan of the jaw model without the gingival mask in the relevant image catalog *"Scanbody Upper Jaw"* or *"Scanbody Lower Jaw"*.
   ↳ Once this scan is completed, the *"Capture Scanbody"* button is active under the live image and you can start with scanning the individual implant positions.

8.7.2.2 Scanning implant positions

Phase SCAN – Step *"Double Click at Jaw Position to Capture Scanbody!"*

⚠ CAUTION

Pay attention to the inPost scanbodies / multi-unit abutments matching the implant system.

Ensure the correct seating on the laboratory analog of the screwed in inPost scanbodies and multi-unit abutments prior to scanning. Elements screwed in incorrectly may lead to the incorrect detection of the implant position and thus to inappropriate restorations.

Use the enclosed screwing tool for screwing in the scanbodies. This connects to the scan body when you take it out of the packaging. If you do not use the screwing tool you must take hold of the scanbody with gloves.

NOTICE

The scanner moves into an appropriately easy-to-access position for screwing in the scanbodies.

➢ Do not take the model down from the holder.

1. Screw the scanbody onto the first implant position.

2. Rotate the model in the 3D preview in the implant axis and double-click on the position in which you screwed the scanbody in beforehand.

↳ The scanbody is recorded via a rotation scan and illustrated in the preview once the scan is complete.

3. Unscrew the scanbody from the first position and into the next implant position.
4. Rotate the model in the preview in the implant axis and double-click on the next position in which you screwed the second scanbody.
5. Repeat this procedure until all implant positions are scanned.

Alternatively, you can also screw scanbodies into all the implant positions at the same time after the overview scan, if you have sufficient pieces. As described above, you still have to double-click on every position to capture the individual positions.

You can then create additional scans such as the opposing jaw and gingival mask.

8.7.3 MODEL phase

1. Align the model (see “Set model axis”).
2. Edit the jawline.
3. Specify the scanbody positions by double-clicking on each scanbody. You can jump around between the individual implant positions via the restoration selector.
4. If a gingival element has been selected, then you must draw in the shape of the gingival element in the step *"Draw Margin"* and define the insertion axis of the element in the step *"Define Insertion Axis"*.

8.7.4 DESIGN phase

In the step *"Restoration Parameters"*, you can set the parameters for both the gingival element and the restorations.

In the *"Morphology"* step, you can select the shape and occlusal surface of the restorations.

In the *"Positioning"* step, you can modify the position of the teeth.

In the *"Edit Restoration"* step, you can design the gingival element and the restorations.

8.7.5 PRODUCING phase

In the PRODUCE phase, the restoration can be exported to inLab CAM and produced on the inLab MC X5 if the restoration was constructed on MU abutments without a gingival mask.

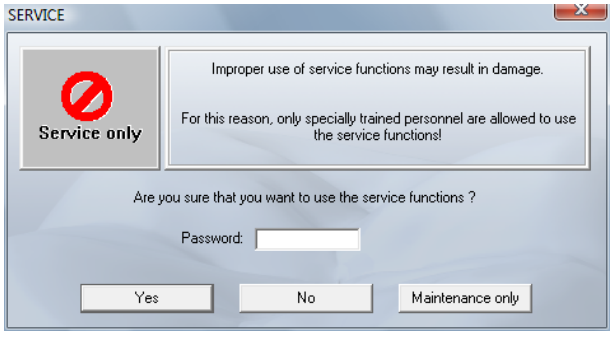
If a gingival mask has been constructed or if he work should be finished with the implant connections, you must export the work as STL.

9 Tips and Tricks

9.1 Service program

➢ Start the service program in the inLab program group by clicking StartAll Programs/Sirona Dental SystemsinLab SWTools *"Service"*.

↳ A dialog box containing an input box for the service password and three buttons is displayed.



Service dialog

⚠ CAUTION

Service functions

The service functions are exclusively for use by authorized inLab service engineers.

This program area can be accessed only by authorized technical personnel with a service password.

- With the Yes button, you confirm the service password.
- With the *"No"* button, you exit the service program.
- With the *"Maintenance only"* button, you also can change the water of the milling unit **without** having to enter a service password (also see the operating instructions for the milling unit).

9.2 Shortcut keys

System menu

Shortcut keys	Meaning
Ctrl + N	Closes the current case and the application returns to the start screen.
Ctrl + S	Saves the current case.
Ctrl + Alt + S	Saves the current case under a new patient.
Ctrl + I	Opens the file import dialog for importing a file.
Ctrl + E	Opens the file export dialog for exporting a file.
Ctrl + Q, Alt + F4	Exits the application.
F1	Opens the Help section.
Alt + F2	Opens the configuration
F11	Full frame mode

Phases

Shortcut keys	Meaning
Ctrl + F1	Switches to the ADMINISTRATION phase, if available.
Ctrl + F2	Switches to the SCAN phase, if available.
Ctrl + F3	Switches to the MODEL phase, if available.
Ctrl + F4	Switches to the DESIGN phase, if available.
Ctrl + F5	Switches to the MILL phase, if available.
Ctrl + F6	Opens the configuration, if it is available.

Opening the tool wheel and page palette

Shortcut keys	Meaning
Alt + V	Opens the *"View Options"* menu in the page palette.
Alt+ T	Opens the *"Tools"* menu in the page palette.
Alt + D	Opens the *"Display Objects"* menu in the page palette.
Alt +A	Opens the *"Analyzing Tools"* menu in the page palette.
Ctrl + Num 3	Changes to buccal display, left
Ctrl + Num 5	Changes to centered display
Ctrl + Num 2	Changes to cervical display, bottom
Ctrl + Num 9	Changes to distal display, rear
Ctrl + Num 7	Changes to lingual display, right
Ctrl + Num 1	Changes to mesial display, front
Ctrl + Num 8	Changes to occlusal display, top

Analyzing Tools

Shortcut keys	Meaning
Ctrl + O	Displays or hides the occlusal contacts.
Ctrl + B	Displays or hides the box of the model.
Ctrl + C	Start/ends the cut-out analysis tool.
Ctrl + D	Displays or hides the details on the mouse cursor
Ctrl + T	Start/ends the distance analysis tool.
Ctrl + G	Displays or hides the grid.

Scanning

Shortcut keys	Meaning
1	Change to the Lower Jaw image catalog
2	Change to the Upper Jaw image catalog
3	Change to the Buccal image catalog
Right arrow	Changes to the right, to the next image catalog. If this is not yet available, the corresponding image catalog is applied.
Left arrow	Changes to the left, to the next image catalog. If this is not yet available, the corresponding image catalog is applied.
Space bar	Switches the camera on or off
Return	Changes to manual mode or triggers an acquisition
+	Starts the acquisitions in automatic acquisition mode
-	Ends the acquisitions in automatic acquisition mode

Tools – Edit Restoration

Shortcut keys	Meaning
Alt + F	Opens the *"Form"* tool.
Alt + S	Opens the *"Scale"* tool.
Alt + R	Opens the *"Reduce"* tool.
Alt + B	Opens the *"Biogeneric Variation"* tool.
Alt + C	Opens the *"Contacts"* tool.
Alt + P	Opens the *"Split"* tool.
Alt + U	Enables a blocked restoration again.
Alt + M	Opens the *"Move"* tool.
Alt + X	Opens the *"Recalculate"* tool.
Alt + L	Opens the *"Connector Lines"* tool.
Alt + 0	Opens the *"Connector Move"* tool.
Alt + I	Opens the *"Incisal Variation"* tool.
Alt + E	Opens the *"Edit Base Line"* tool.

Tools – Edit Model

Shortcut keys	Meaning
Alt + C	Opens the *"Cut"* tool.
Alt + E	Opens the *"Replace Tool..."* tool.
Alt + F	Opens the *"Form"* tool.
Alt + R	Opens the *"Reset Model"* tool.
Ctrl + Z	Undo
Ctrl + Y	Repeat
Ctrl + Alt + Z	Resets the changes made with the tool.
Ctrl + C	Copy
Ctrl + V	Insert
Ctrl + X	Cut
Ctrl + A	Mark all

Tools – Display Objects

Shortcut keys	Meaning
Ctrl + M	Opens the *"Minimal Thickness"* tool.
Ctrl + R	Opens the *"Restoration"* tool.

10 Sirona Connect portal

10.1 Starting the Sirona Connect portal

✓ The start screen is active.

➢ Click the *"CEREC Connect Portal"* button on the step by step menu.

↳ The login window is displayed.

10.2 Log out of the Sirona Connect software at the portal

1. Enter user name and password.
2. Activate the relevant option if you want to save the user name and password.
3. In the step menu, click on *"Ok"*.

↳ The data are uploaded in parallel to the information being entered in the portal.

10.3 Order list

You can filter the orders by the various statuses via the filter below the list.

In order to view the order details you must click the relevant order in the list so that it is highlighted in orange. Then you can view the details by clicking on *"View Order"* in the step menu.

10.4 Restoration data

Cases with several restorations are always fully displayed and downloaded.

Data on individual restorations is shown to the left of the overview display. The active restoration is colored orange in the overview and is displayed in white in the model.

Now click *"Order Data"* to proceed to the next step.

10.5 Order information

The delivery date, potential delivery time, and dentist placing the order are displayed here.

Now click *"Additional Instructions"* to proceed to the next step.

10.6 Additional information

In this step you can find information on the patient's sex, age, and type of insurance cover (applies only to Germany).

The dentist can enter additional information in *"Additional Instructions"*, in the form of flowing text.

The *"Additional Files"* function can be used to download the additional data (e.g. photos) that the dentist has attached. To do so, click the file and save it accordingly.

Now click *"View Work Ticket"* to proceed to the next step.

10.7 Displaying the order sheet

In this step, the order sheet is displayed and saved.

Click the printer icon to print the order sheet.

To zoom in and out of the order sheet display, you can click the corresponding magnifying glass icon.

The icon underneath the magnifying glass can be used to scale the order sheet to the window size.

Now click *"Check Model"* to proceed to the next step.

10.8 Checking the model

In this step, the model is downloaded to the software for checking.

Activating analysis

Using the *"Analyzing Tools"*, you can display the model contacts or hide the model box.

Display objects

Using *"Display Objects"*, you can display the individual image fields.

Using *"Display Objects"*, you can also check additional image data that the dentist may have recorded (e.g. *"BioCopy Lower"*) by clicking on the corresponding buttons.

The transparency of the image fields can be minutely adjusted using the button for each image field. To do so, hold the button down with the left mouse button and move the mouse up or down.

Now click *"Accept"* to proceed to the next step.

10.9 Accepting/rejecting an order

In this step, you can reject or accept the order.

The restoration data is shown to the left of the overview display and to the top right, the dentist placing the order.

Using *"My comments"*, you can send the dentist a message.

In the step by step menu, you can click on *"Yes"* to accept the order or *"No"* to reject it. The dentist receives a confirmation email which also includes your comments.

Then the order list reappears automatically.

10.10 Order list appears automatically

In this step, you can either examine the next order or download the model for construction to the inLab software, using the *"Load Order"* button.

10.11 Chat function

From version inLab SW 4.x, you can chat with your Sirona Connect dentists via the speech bubble in the phase menu. When you click on the speech bubble, you are requested to log in at the Sirona Connect portal.

In the chat window under *"All Chats"* you can have your job-related chats displayed. You can archive or display your chats in the chat window.

Under *"My lab's new conversations"* you will see if there are new messages from your dentists.

Under *"System notifications"* you see the messages from the Sirona Connect portal.

Under *"Completed conversations"* you find your archived conversations.

Under *"Settings"* you can configure your online chat. You can have messages from the Sirona Connect portal displayed in the chat in a job-specific manner using the *"Show system notifications within chat conversation"* option.

Add screenshot

You have the option of sending a screenshot to your dentist in an opened chat via *"Add screenshot"*.

➢ Click *"Add screenshot"*.

↳ A screenshot of the current situation is inserted into the chat.

Add file

You can send a file of any format to your dentist via the chat using the *"Add file"* function.

1. Click *"Add file"*.
2. Navigate to the saving location of the file and select it.

↳ The file is added to the chat.

Tip: You can also return constructions in *.dxd format to your dentist using this function, which he/she can mill on a CEREC milling machine.

11 Creating a CEREC Guide 2

11.1 Optical impression

1. Scan the situation in the mouth either intraorally or using a model. The following applies at least to all areas, which are intended to later serve as a support for the CEREC Guide 2. The surface scan is also used for the overlay of the x-ray volume.

NOTICE

Note that the drilling template cannot be bigger than the scanned area.

Avoid holes in the scan. Otherwise, no locating surface for the CEREC Guide 2 can be determined at these points.

2. Design a restoration at the planned implant position. Mark the emergence profile of the tooth on the gingiva in manual entry mode.
3. Export the data record using in *.SSI format.

11.2 3D x-ray and implant planning

A DVT scan can be performed before or after the optical impression. Make sure that there are no metal artifacts in the scan, as these may hinder the overlay of optical data with the x-ray volume or even make it impossible. Do not scan the patient at the final bite position, but rather with a slightly opened jaw. Remove all removable metal parts in the opposing jaw (e.g. prosthetics). If possible, record 3/4 of the arch of the jaw. This increases the likeliness that teeth free from artifacts can be used for registration.

To produce a CEREC Guide 2, the import of the previously created *.SSI data record in GALILEOS Implant is necessary. The optical surface scan is superimposed over the X-ray volume. This makes it possible to determine the implant location while also considering the soft tissue and prosthetic planning.

⚠ CAUTION

Check that the optical impression is correctly aligned with the X-ray data record.

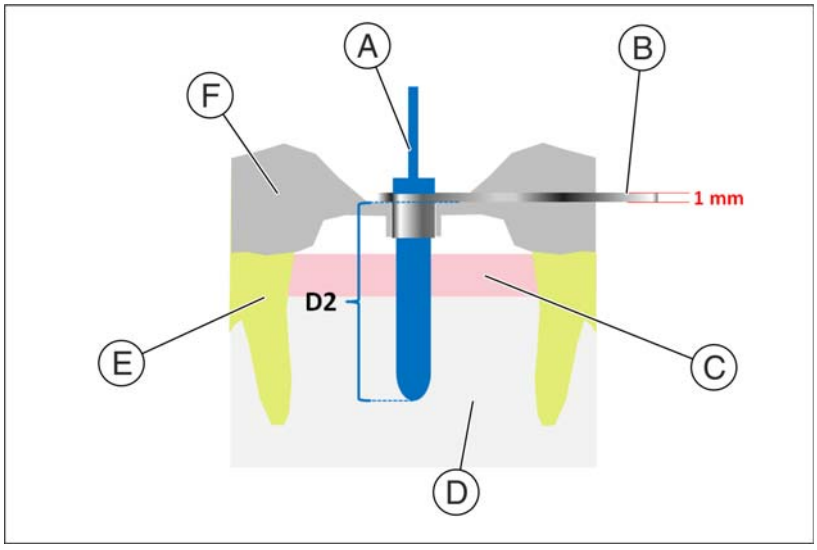
If multiple implants are to be planned, multiple *.SSI data records must be imported.

To plan the implant follow the instructions provided in the "GALILEOS Implant 1.9.2" operator's manual. Follow the instructions provided in Appendix C.2 "Exporting plans for third-party processing using optical impressions".

Select Sirona - CEREC Guide Drill Keys as the sleeve system (CEREC Guide 2, SICAT Surgical Guides). You then have three sleeves available to choose from, which match the CEREC Guide drill keys S, M or L respectively.

If, for example only one pilot hole is to be created, the selection of size S is sufficient (apart from Camlog).

The specification of a depth stop is oriented on the length of the drill used. The planned position is reached when drilling once the mechanical stop of the drill reaches the drill key or (if the drill does not have a stop) the length marking on the drill is lowered to the upper side of the drill key.



A	Drill	D	Bones
B	CEREC Guide Drill Key	E	Tooth
C	Gingiva	F	CEREC Guide 2

In the GALILEOS Implant software, the depth stop is to be entered using the D2 value. The D2 value is defined as the distance from the side of the drilling template to the apical top of the implant. As the drill strikes the 1 mm thick drill key, the D2 value to be set results from the length of the drill minus one millimeter
(**D2 = drill length – 1 mm**).

The statement of the D1 value is to be ignored.

After entering the D2 value, the sleeve is visualized above the implant at the relevant height.

NOTICE

When selecting the bushing, ensure that it does not collide with neighboring teeth and the drill key and the drill itself can be introduced without a collision.
Note that selecting a smaller sleeve may limit the use of larger drill diameters.
The Camlog Guided System is only compatible with sleeve L.

If the representation of the underside of the sleeve cuts the scan shown as the yellow line, this indicates that the position of the drill key is at least partially subgingival.

Multiple implants and sleeve positions are planned in the same way. It is possible to export this as a file. Export the plan for “processing by third-party providers by way of optical impressions” as a .CMD.DXD file.

11.3 Design and development of the CEREC Guide 2

By selecting *"Import"*, you can switch the directly load the *.CMG.DXD file.

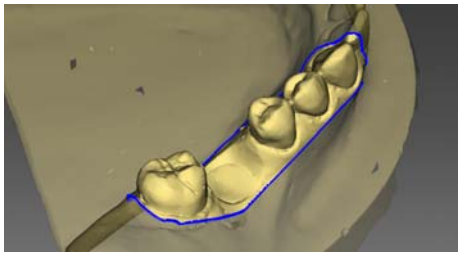
Phase ADMINISTRATION

If the plan contains multiple implants, these will be treated as multiple separate restorations. Select the implants that you want to integrate into a drilling template.

Select the machine type for development. This determines the possibilities for further processing.

- You can create drilling templates up to the full jaw length and with multiple bore holes on an inLab MC X5.
- Drilling templates can be produced with a bore hole on an inLab MC XL and up to an anatomical size of 85mm x 40mm.

Phase MODEL



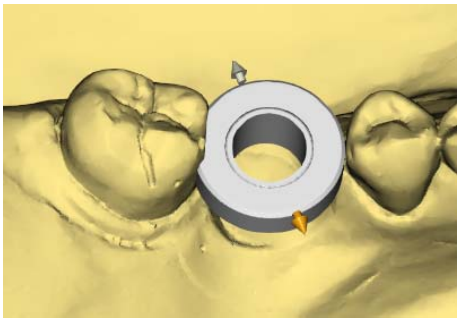
If the original scan is presented, which was also the basis for the implant planning. All areas, which are not intended to serve as a support for the CEREC Guide 2 should be cut. This includes, for example, larger areas of gingiva outside the planned implant position. Parts of the residual teeth may also be discarded if they are not required for support.

Note that a longer template is easier to hold in position with one finger and ensures secure support. This applies to free-end situations in particular.

In the *"Define Insertion Axis"* step, you can define the insertion axis of the drilling template. To do this move the orange-colored ball in the target circle.

Phase DESIGN

Set the parameters for the drilling template.



The position and shape of the sleeve cannot be changed using general design tools.

If a sleeve is shown in red, parts of it are subgingival. Determine whether these areas are to be cut away (e.g. to enable the unhindered placement on a model) or are to be left as they are. They color of the sleeve then turns green.

Optionally, you can create side access to introduce the drill from the side. This is only recommended for reasons of stability where required due to a lack of space.

After calculating the template element and if necessary orienting it in the block or round blank, you have the option of creating viewing panels in the step *"Inspection Window"*, which you can use to check the fitting of the template even during the surgical intervention. To do this click on the cursor at the point at which you want to design a viewing panel. Then you have the option to change the position of the viewing window, if necessary.

You can then still adapt the design of the template by cutting away any problematic areas.

Phase MILL

If you want to create the drilling template on an inLab MC XL, ensure that you have activated the option *"MC XL Milling"* in *"Configuration"*.

To create the drilling template on an inLab MC X5, select the option *"Export to inLab CAM"* in the *"Devices"* / *"Export"* page palette.

If you want to create the drilling template on another production machine, select the option *"Export to folder"* in the *"Devices"* / *"Export"* page palette. Here you have the option of saving the drilling template in *.stl format (interface module required).

So that the milling process runs without interruption, ensure where necessary that milling tools with a sufficient service life are used, the water filter has been cleaned and there is sufficient water in the tank.

After milling, ensure that no shavings enter into the tank during the cleaning process, as these can quickly clog the water filter.

11.4 Surgical intervention

⚠ CAUTION

Remove burrs and round sharp corners on the template element.
Check that the template fits correctly beforehand where necessary using a model. The template element must be completely slid open and must not wobble.
Clean and disinfect the CEREC Guide 2 as described in the chapter below.
Select the drill key required which corresponds to the drills specified by the manufacturer of the guided system. Also adhere to the drill key assignment table.
Ensure that the drill key can fully enter the drill hole and stops there without wobbling.

1. Perform the implantation according to the implant manufacturer’s instructions.
2. Fix the template in the mouth, holding it in position with your finger if necessary.

Tip: If you have created access to the drill from the side due to a lack of space, first place the CEREC Guide 2 into the patient’s mouth. Then guide the drill key through the drill and push it upwards. Now guide the drill through the side into the sleeve position and lower the drill key to the stop point. Then start drilling.

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We reserve the right to make any alterations which may be required due to technical improvements.

D3534.208.03.07.02 08.2015
Sprache: englisch
Ä.-Nr.: 120 975
Printed in Germany

Sirona Dental Systems GmbH

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Order No **63 75 914 D3534**