3SHAPE TRIOS®

User Manual

TRIOS-2014-1-1.3.1.0-A-EN

Contents

1 Getting Started

1.1 Introduction

Dear Customer,

Congratulations on your purchase of the 3Shape TRIOS® - a next generation intraoral digital impression solution.

This online help system will assist you in setting up your TRIOS® system, as well as guide you through the steps for scanning and handling digital impressions.

Please see the section How Do I - Task List for specific help topics.

Note! Before connecting or operating TRIOS, please be sure to read the *TRIOS Safety and Setup Guide* for assembly and safety instructions and observe all its safety information and warnings.

Thank you,

3Shape

1.2 Indications

3Shape TRIOS® supports the following indications:

- **Single crowns**
- **Inlays**
- **Onlays**
- **Veneers**
- **Implants (single abutments)**
- **Post & core**
- **Up to 5-unit bridges**
- **Orthodontics** (Orthodontics is only available after purchase of add-on module)

1.3 System Description

Note! Please refer to the TRIOS Safety and Setup Guide for instructions regarding assembly of TRIOS® and getting started for the first time.

Note! Please refer to the TRIOS Safety and Setup Guide for a system description of the TRIOS models T12A and T12P (TRIOS is also available as model TRIOS11A which is supplied with a cart with built-in PC).

Note! Information about the supplied model can be found on the label at the back of the cart and of the Pod.

2 How Do I - Task List

This section helps you quickly find information about specific tasks when performing:

2.1 Configuration

2.2 Orders

How do I create a new order

How do I view an existing order

How do I send an order

How do I exchange comments with the lab

2.3 Scanning

How do I prepare for scanning

How do I find the best scanning approach

How do I scan a posterior quadrant

How do I scan a full arch

How do I trim the scan

How do I align scans

2.4 Analysis

How do I set insertion direction

How do I add annotations

How do I perform the post-processing of the model

How do I measure occlusion clearance

2.5 Maintenance

How do I perform scanner calibration

How do I autoclave the scanner tip

How do I clean, disinfect and sterilize the system

How do I update the system

3 Taking Digital Impressions

3.1 TRIOS Workflow

3Shape TRIOS® realizes a full digital workflow:

- **Step 1:** Order creation
- **Step 2:** Impression scanning
- **Step 3:** Clinical validation
- **Step 4:** Uploading of digital impression
- **Step 5:** Communication with the lab

WORKFLOW TOOLBAR

The Workflow toolbar appears at the top or bottom of the main window and guides you through the main TRIOS workflow steps:

(1) ***Home*** - Opens the last visited item from the Service toolbar: Patients/Calendar/Cases or Messages.

(2) ***Order form*** - Opens the Order form for creating an order and specifying order details.

(3) ***Scan*** - Opens the scanning window for taking a digital impression.

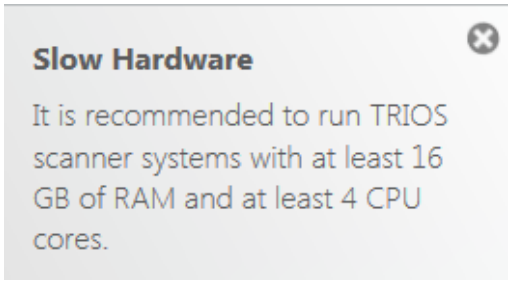
(4) ***Analyze*** - Opens a window with special tools for inspecting and validating your impression scan.

(5) ***Send*** - Opens the form that allows you to send your order to the lab.

(6) *3Shape Communicate* **-** Opens a window for exchanging comments with the Lab, viewing sent orders and receiving design of 3D models from the Lab for visual inspection and approval.

- A step is check marked when completed successfully  .
- A step appears disabled if the previous step has not been completed.
- The current step in the workflow is highlighted.

NOTIFICATIONS



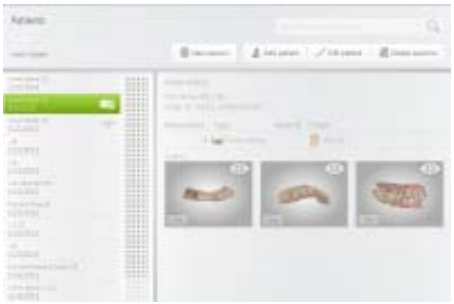
Notifications may appear on the screen throughout the TRIOS workflow. A few examples of notifications are license and order form updates, incomplete steps, connection status, insufficient scan data, and other.

Please read notification information carefully and follow the instructions.

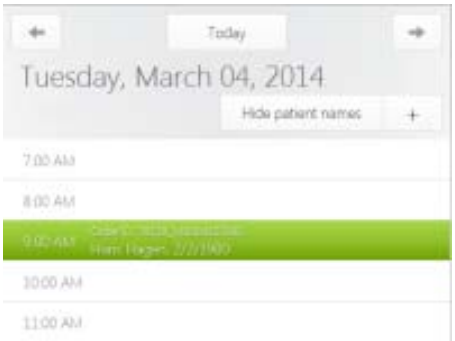
SERVICE TOOLBAR

The Service toolbar is on the left side of the screen. It provides access to the main TRIOS system settings and options:

- Opens patient information page with order sessions history overview.



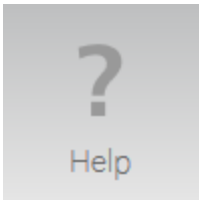
- Opens a calendar with orders.



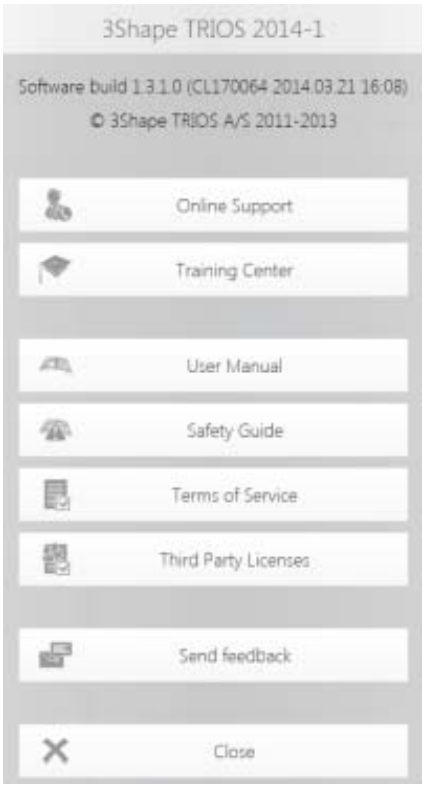
- Opens a search and filter page of all existing order cases.

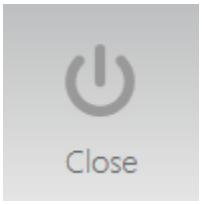
- Opens a page with notifications about incoming messages and designs.

- Opens the system configuration settings.

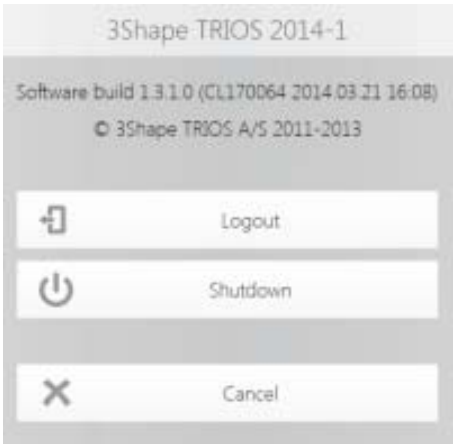


- Opens the help menu options.





- Opens the closing options.



KEYBOARD

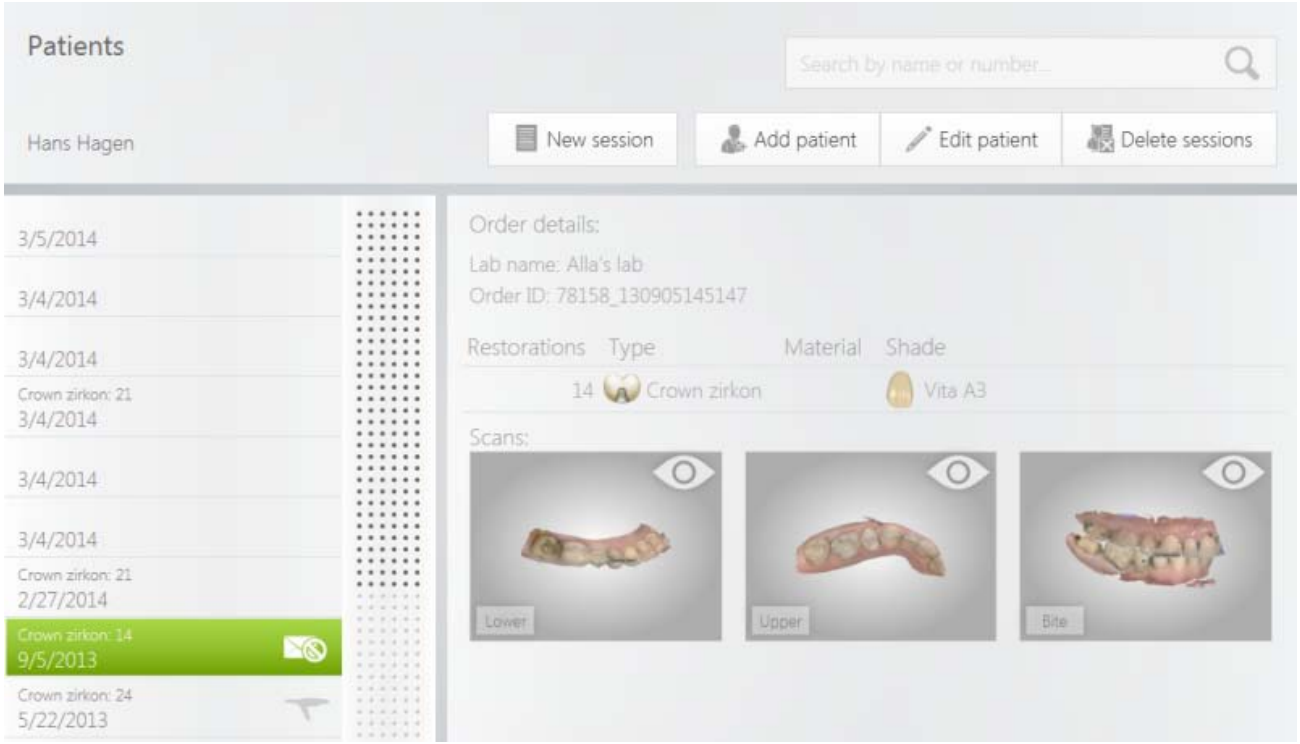
To enter a text, press on the text field and use the virtual keyboard (for cart version) that appears on the screen.

Press the ***Home*** button when you need to return from the workflow pages to the service toolbar.

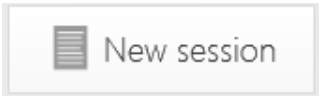
3.2 Create and Manage Orders

You must create an order session before taking an impression. The order session combines all information about the patient, the indication and the impression you will take.

You would usually start from the *Patients* page where you can add new or delete existing sessions, search for patients, add patients, edit patients, observe orders and order details of the selected patient.

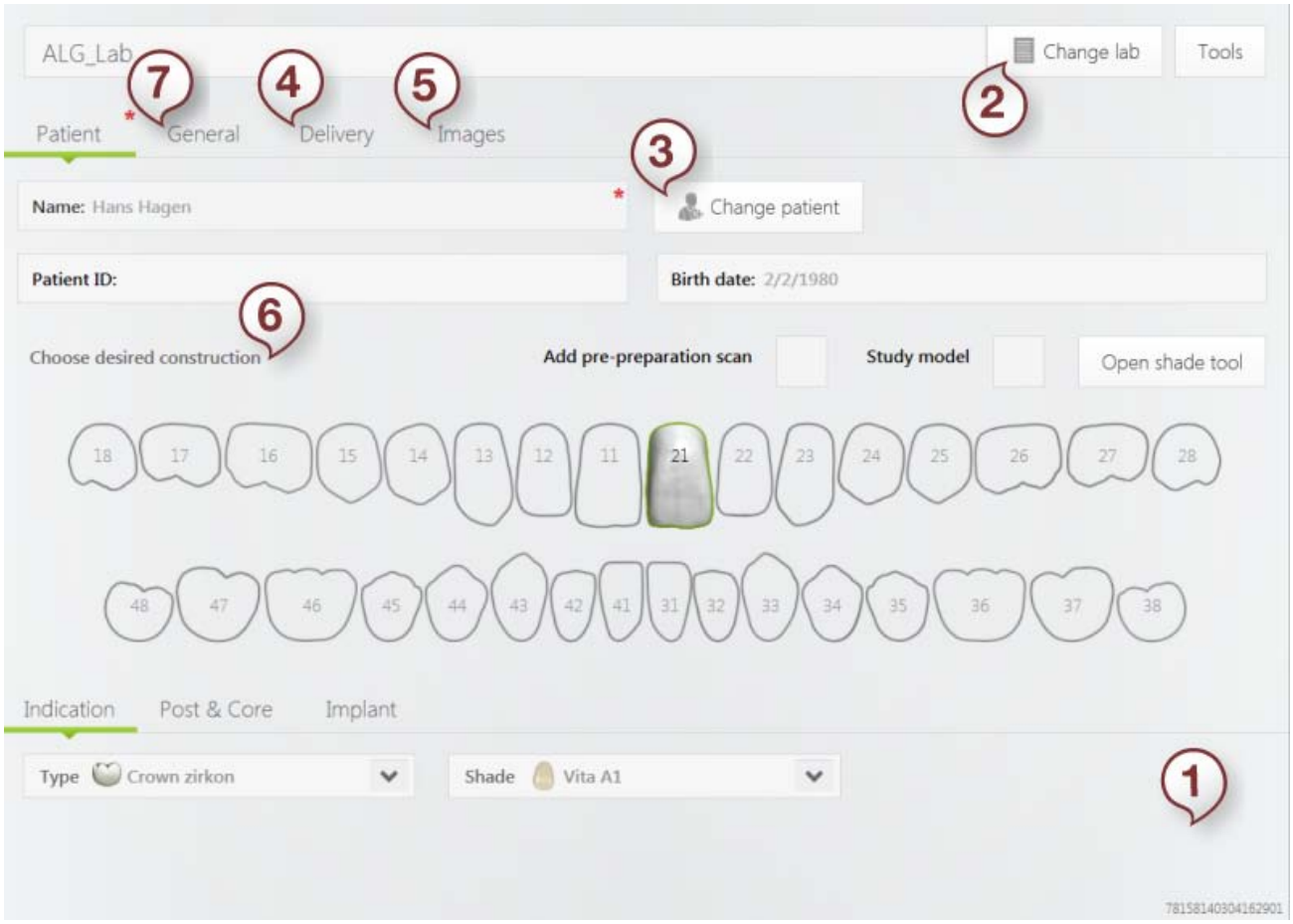


TO CREATE A NEW ORDER



Step 1: Open a blank order form

Press the ***New session*** button in the ***Patients*** page for the chosen patient or press ***Calendar*** in the Service toolbar and select the desired time slot in the appeared calendar to open a new Order Form:



Step 2: Lab selection

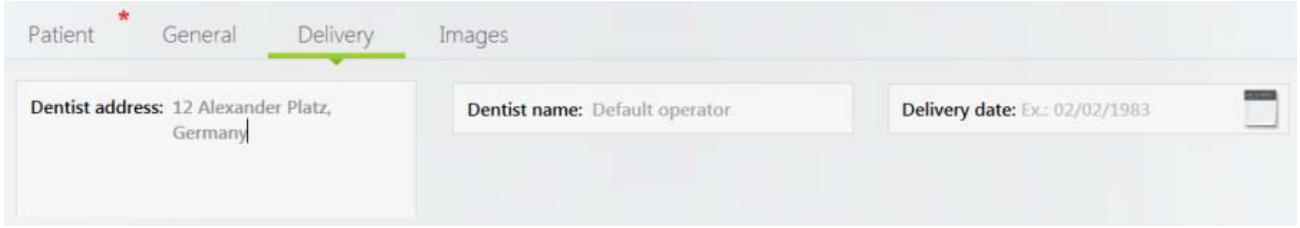
When entering the *Order* page, you are asked to choose a lab. A default lab can be chosen, which will be used for all future orders. Lab selection can be opened by pressing the ***Change lab*** button.

Note! Templates can be customized for specific labs and therefore, the fields and settings available in the order form may vary.

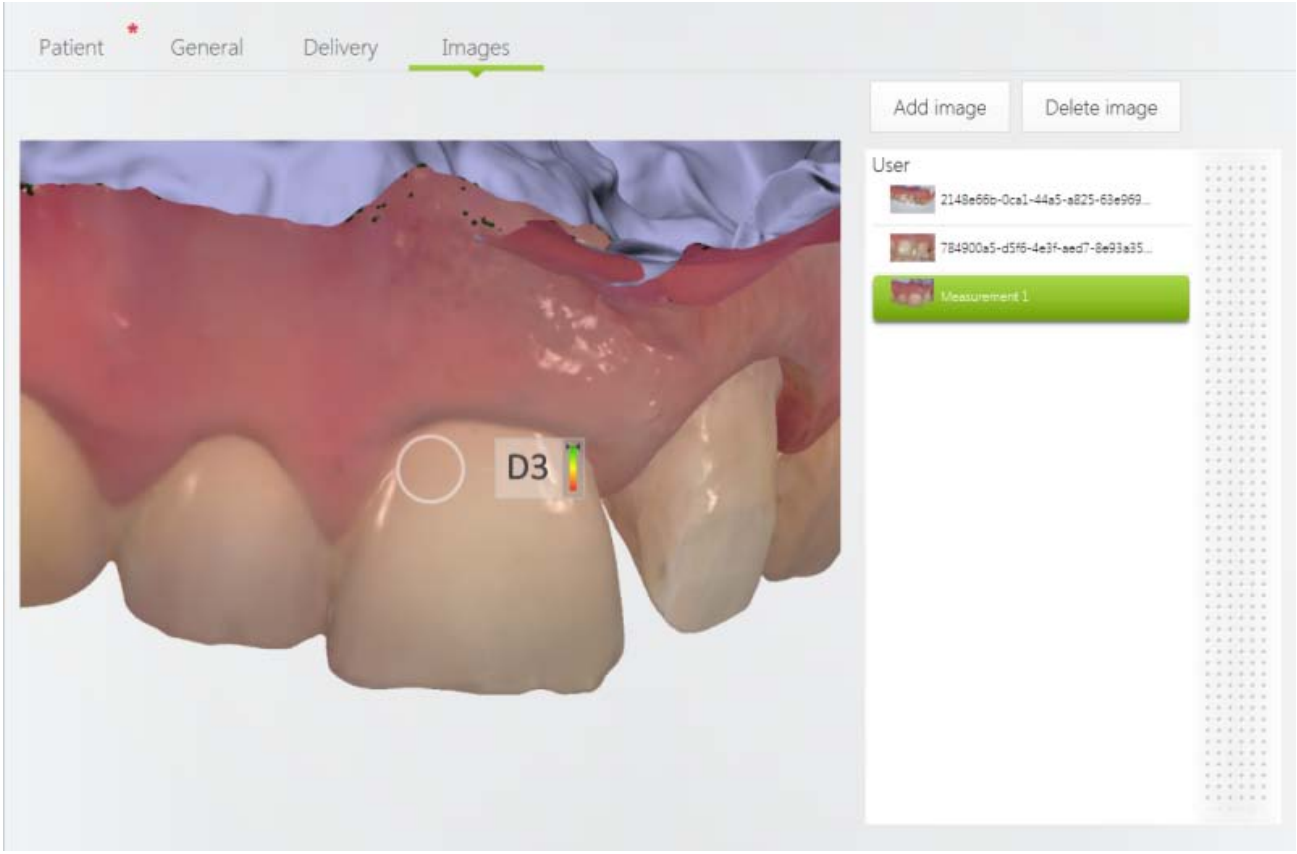
Step 3: Patient information

Patient is pre-selected (if the order form was opened from the Patients page) and can be changed, a new patient can be added.

Step 4: Specify Delivery information



▶ Step 5: Add Patient images (optional)



▶ Step 6: Select Construction details for the restoration

Choose the necessary teeth in the map and specify the job Type (Crown, Implant etc.).

Open Shade Tool

Press the ***Open shade tool*** button to access tools for placing markings and annotations on the teeth, allowing you to relay specific instructions to the lab:

- ***Draw*** - You can draw a line by pressing on a tooth and dragging your finger across.
- ***Type text*** - Pressing on a tooth opens a virtual keyboard and allows you to type specific comments.
- ***Color name*** - Lets you select the desired color from the table (e.g., A1). Press on a tooth to assign the selected color.

- To edit a specific tooth, press its icon  . Use the scroll bar to scroll through and select teeth when there are many.
- Press ***OK*** to save the changes and close the Color Tool.

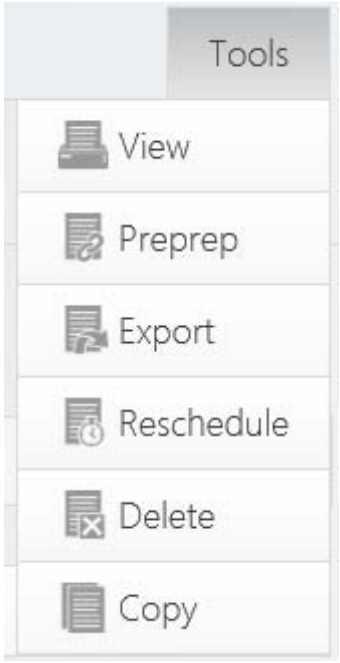
Study model – Used for scanning study models and orthodontic cases. When used, it is not necessary to define construction details.

Add pre-preparation scan - Enables you to add a pre-preparation scan to your order.

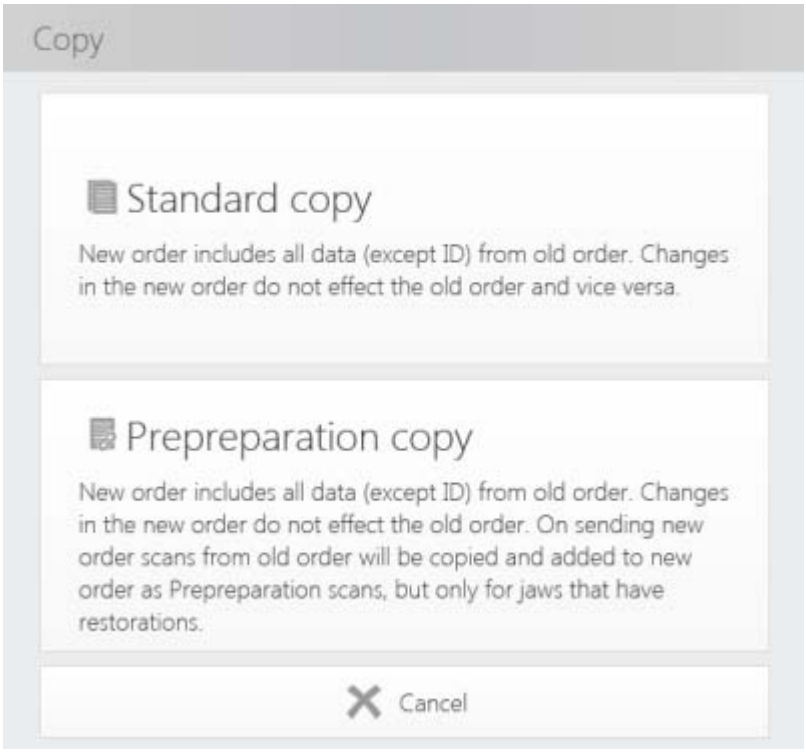
Step 7: Add comments

Use the Comments field under the **General** tab to add special instructions or comments for the lab.

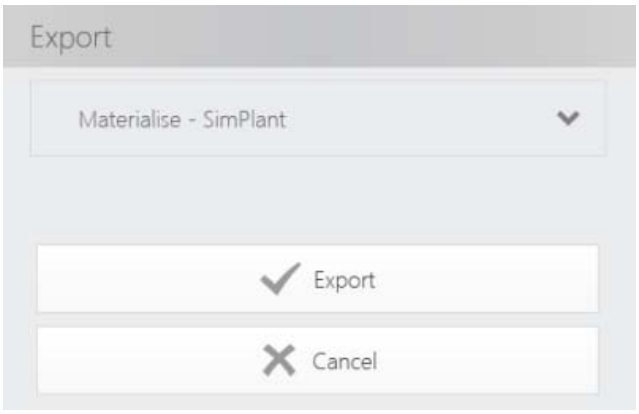
Order Form Tools Menu



- ***View*** - Opens the order details in a separate page for printing.
- ***Preprep*** - This button is only available if a Prepreparation copy of the order has been created previously (see description of the ***Copy*** button below). Pressing the ***Preprep*** menu opens the original order.
- ***Export*** - Allows you to export configured and scanned orders in a selected format.
- ***Reschedule*** - Opens a calendar with a list showing free time slots (see the image below). Press the preferred date, time and *Select* to reschedule the session.
- ***Delete*** - Deletes the entire order after confirmation.
- ***Copy*** - Creates a Standard or Prepreparation copy of an order (read the description to learn the difference):



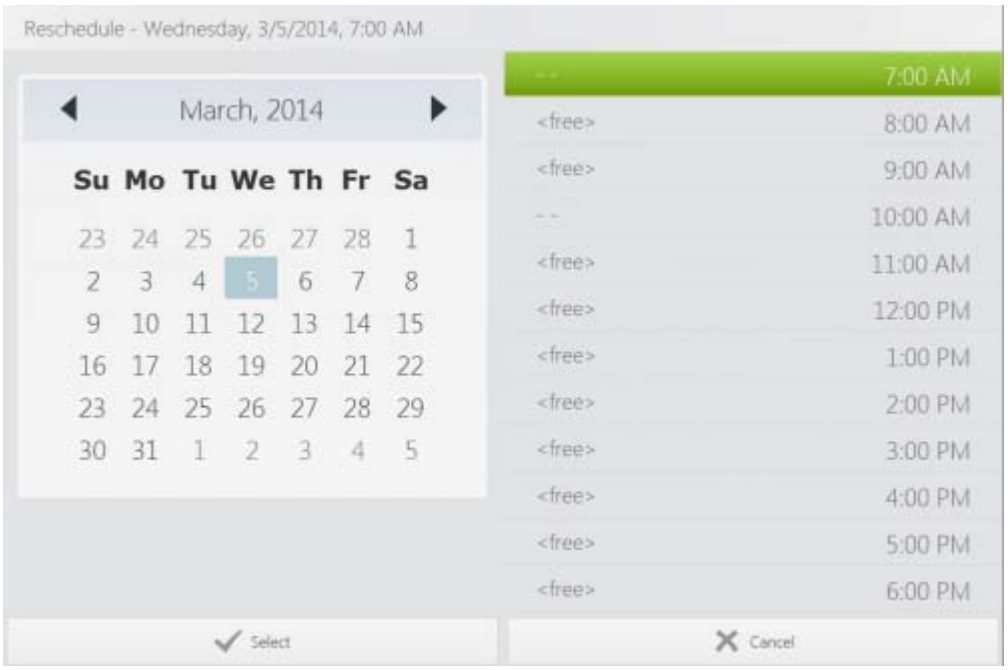
For export, press the ***Export*** button and select the required format. DDX orders are uploaded to the server, while orders in other formats are saved locally for further processing. When Direct Connect is listed under the Export drop-down selection menu, you can export your order to Direct Connect and at the same time send it to an external lab.



Export option

Export format selection

- ***Reschedule*** - Opens a calendar with a list showing free time slots (see the image below). Press the preferred date, time and ***Select*** to reschedule the session.

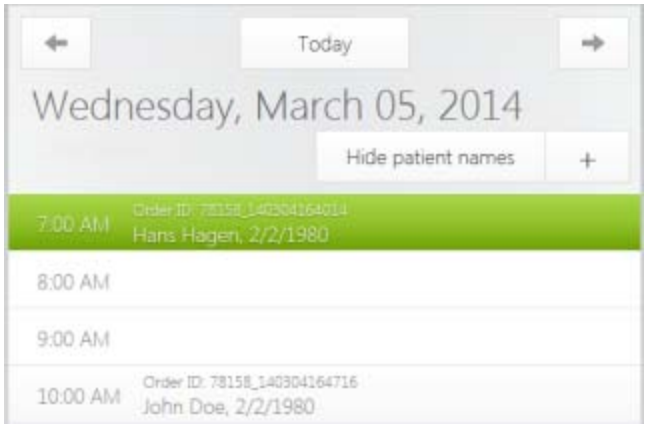


TO VIEW EXISTING ORDERS

You can view orders on the **Patients**, **Calendar** and **Cases** pages.

1. Viewing orders via Calendar

Press the ***Calendar*** button in the Service toolbar to open the calendar view of order sessions for a particular day.



- Existing sessions are displayed as calendar slots showing session time, order number, patient name and the order status icon.
- The ***Left*** / ***Right*** buttons allow you to scroll through the calendar dates.
- The ***Today*** button brings you back to the current day in the calendar if you have navigated away.

Order status icons are explained below:

Created - An order has been created.

Scanned - All preparations have been marked.

Sending - Only seen if returning to the calendar page right after pressing ***Send*** on the Send page.

Sent - The order has been sent.

Waiting Receive - The case has been received/downloaded by the lab, but neither approved or rejected yet.

Received Approved - Dental Manager or 3Shape Communicate web site approved the order.

Rejected - The lab has rejected the order.

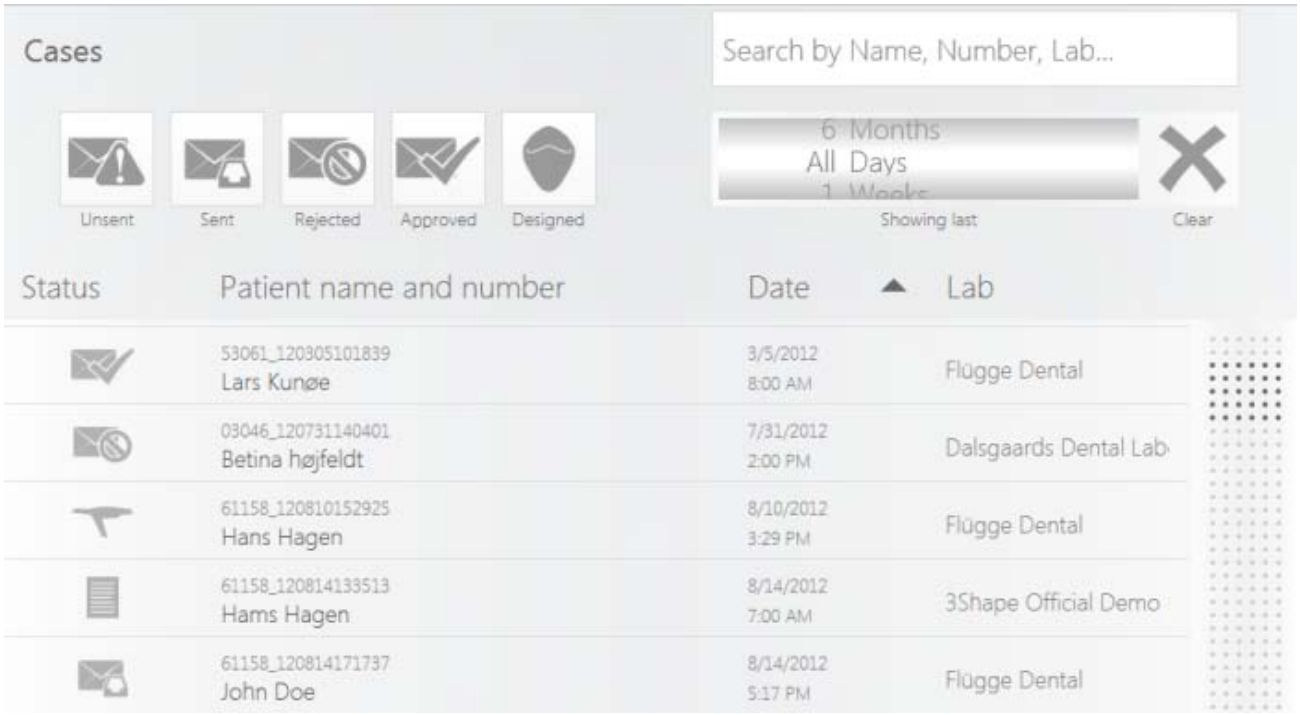
Warning - The order sending has failed.

Linked - The order is a prepreparation copy and thus linked to the original order.

2. Viewing orders via Cases function

Press the ***Cases*** button in the Service toolbar to open a list of all existing order sessions.

- The list displays orders status, patient names, numbers, delivery dates and labs.
- You can sort orders in the list by pressing the corresponding column headers.



The search options allow you to:

- Type text into the **Search** field to find the necessary order(s).
- Use **Unsent**, **Sent**, **Rejected**, **Approved** and **Designed** filters to narrow your search results.
- Use the rotation menu to select orders within the given time interval.

TO OPEN AN EXISTING ORDER

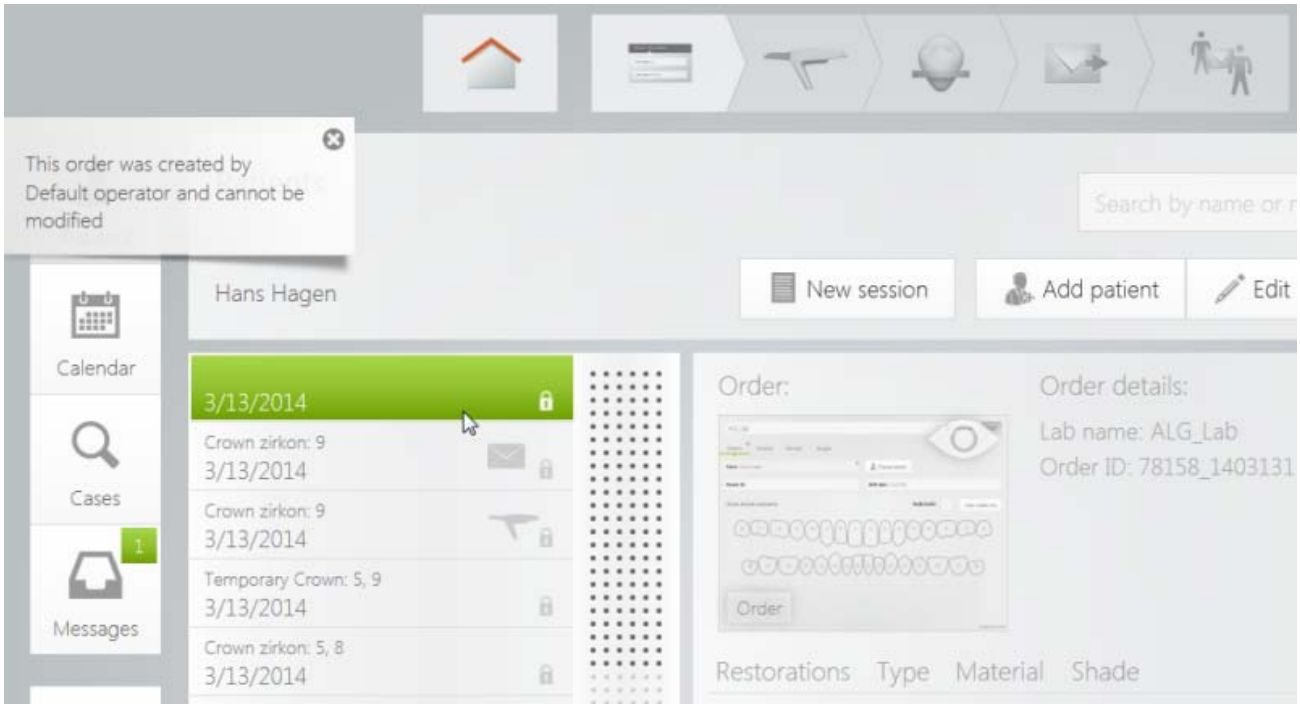
Step 1: Find the required order

Use **Calendar** or **Cases** (see help on **TO VIEW EXISTING ORDERS** described above).

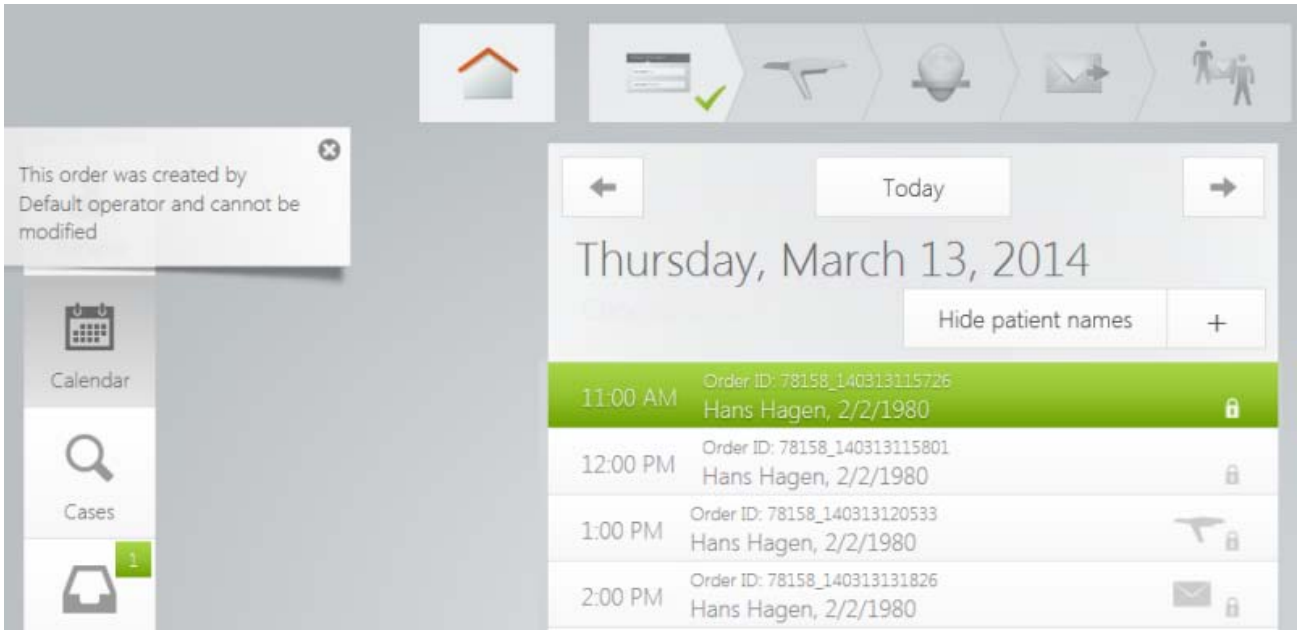
Step 2: Press the order to open its details

Note! Each operator has his own 3shape communicate account and can only change his own orders.
Orders created by other operators appear with the lock icon in the list and can only be viewed.

A notification massage comes up informing you that the selected locked order cannot be modified.



Orders created by other operators appear locked on the Patients page



Orders created by other operators appear locked on the Calendar page

3.3 General Scanning Workflow and Tools

3.3.1 Heating and Mounting Scanner Tip

This help topic describes how to make preparations for taking a digital impression.

The scanner tip is assisted with heating in systems supplied with the external heater, while systems without it use only the heater inside the scanner tube.

Step 1: Warm up the scanner

Note! Make sure the calibration tip is not attached to the scanner as the tip may become very warm.

The warming of the scanner depends on the TRIOS model:

- **TRIOS11A**: Turn on the cart to activate the heating system and attach the protection and heater tip. Allow about 10 minutes for the scanner-tube to fully warm up to prevent condensation on the scanner window during scanning. It is recommended to attach the protection and heater tip to the scanner at the end of each order (ensure the scanner is cleaned and disinfected). This way, the warming of the scanner-tube commences immediately at the next power up.
- **T12A**: Turn on the cart and attach a clean and sterile scanner tip. Allow about 10 minutes for the scanner-tube to fully warm up to prevent condensation on the scanner window during scanning.
- **T12P**: Turn on the PC, start-up TRIOS application software and attach a clean and sterile scanner tip. Allow about 10 minutes for the scanner-tube to fully warm up to prevent condensation on the scanner window during scanning

Note! For systems having an internal heater, a progress bar on the screen shows you the process of heating. It is still possible but not recommended to start scanning before the heating ends.

Step 2: Prepare the patient for scanning

Preparations for scanning in the mouth are no different from the preparations applied before taking a physical impression.

1. Prepare the tooth as usual by using at least 1 gingival retraction cord to retract the gingiva (3Shape recommends using 2 cords).
2. Extract the cord(s) just before scanning.
3. Start by scanning the preparation(s).

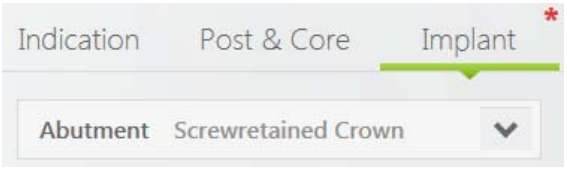
Step 3: Create an order or open an existing order

See *Create and Manage Orders* chapter for instructions on creating/opening orders.

Step 4: Select the scanning option

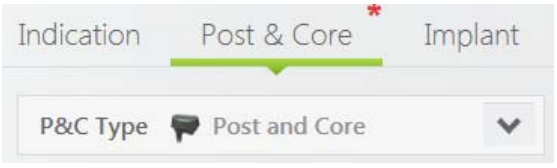
1. Press the ***Scan*** button in the workflow bar at the top to go to the scanning screen.
2. Select the button for the scan you require: upper jaw, lower jaw or occlusion.

Note! The scanning option can also contain buttons for scanning implants, post and core on upper and/or lower jaw(s) if a corresponding job type has been selected in the Order Form (see the images below):



Abutment Screwretained Crown *job type selected in the Order Form*

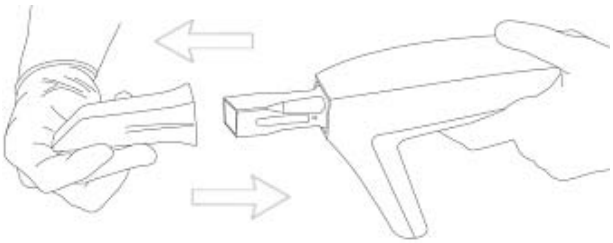
(1) *Scan lower scanbody* ***(2)*** *Scan upper scanbody*



Post and Core *job type selected in the Order Form*

(1) *Scan lower scanbody* ***(2)*** *Scan upper scanbody*

Step 5: Prepare your scanner



1. Warm up the scanner tip to avoid condensation.

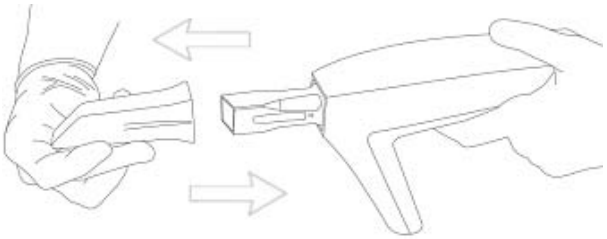
TRIOS11A: Just before scanning, remove the protection and heater tip and mount a clean and sterile scanner tip onto the scanner. The scanner tip must be positioned facing down in order for the heater to warm it up. Return the scanner to the scanner-mount on the cart and allow the scanner tip to warm up. The tip is ready when the heater turns off.

About heating the scanner tip:

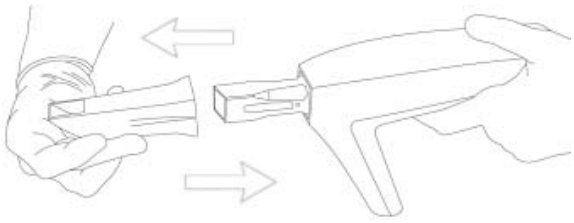
To avoid condensation, the scanner tip must be warmed up by the cart heater before scanning. When you open the scanning screen, the heater turns on automatically **if the scanner is placed on the scanner mount with the scanner tip facing down**. The heater measures the temperature of the scanner tip and turns itself off when the scanner tip is warm enough. The heater continues to monitor the scanner tip (as long as it is on the scanner mount with the tip facing down) and will re-heat the scanner tip if the temperature drops below the optimal temperature.

- **T12A**: Follow the same approach as for TRIOS11A except that a clean and sterile scanner tip is already mounted onto the scanner.
- **T12P**: A clean and sterile scanner tip is already mounted onto the scanner and the tip has already been heated.

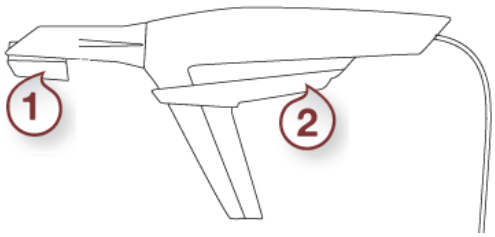
2. Once the scanner tip is warmed up, you may need to change its position depending on the jaw you are about to scan:



*Scanning the **lower** jaw - Tip Mirror is facing down*



*Scanning the **upper** jaw - Tip Mirror is facing up*



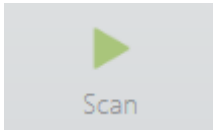
***(1)** Heater*
***(2)** Scanner Mount*

Continue to the Scanning chapter.

3.3.2 Scanning

Once the preparation steps have been completed, you can start scanning.

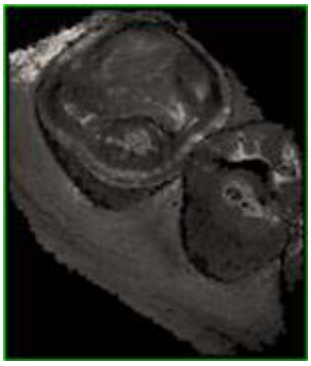
The scanning toolbar is described in the help chapter General Scanning Tools.



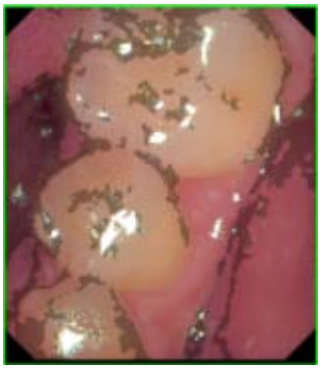
Step 1: Start scanning

1. Insert the scanner tip into the patient's mouth and point at the area to scan.
   Press the **Scan Activation** button on the scanner or press the ***Scan*** button at the bottom of the screen to initiate the scanning process.

Either a color or monochrome 2D image indicates the scanner's field of view:



Monochrome scanning



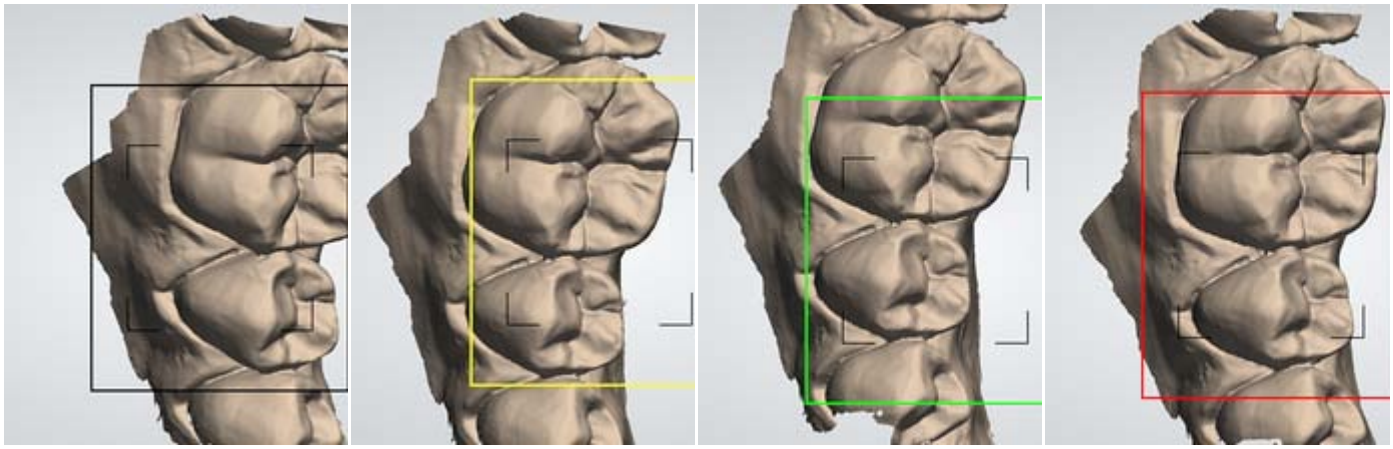
Color scanning

A 3D model appears in the center of the window when the scanning process starts.

The colored frame outlines the scanner's field of view with the color indicating the current capture quality. When the frame is:

- **Green** - the capture is optimal.
- **Yellow** - the capture is less than optimal e.g., due to the scanner being moved too fast.
- **Red** - there is no capture at all.

The images below illustrate possible colors of the rectangle during scanning:



Black rectangle	***Yellow rectangle***	***Green rectangle***	***Red rectangle***
Touch the screen to get a new starting view	*Warns you when the scanner is moved too fast.*	*Scanning has resumed alignment*	*The alignment is lost*

Tip! If you miss the alignment, roll back to the previous spot or move to the occlusal surface (molar). You can also press on the model during scanning. The view of the model will go to the best suited spot and indicate the direction you should continue from (the starting view).

Note! Please see the *Scanning Strategies* and Tips to Obtaining a Good Scan for instructions.

Step 2: Scanning process

Gradually slide the scanner over the teeth you wish to scan following the scan paths shown in the Scanning Strategies section.
The tip can rest on the teeth to help with getting a more steady scanning.

Tip! It is possible to stop scanning and then resume from where you have left. Simply press the ***Scan Activation*** button to continue the scanning process.

Ensure that the digital impression does not have critical holes. The distal and mesial facets of the ordinary teeth are hard to scan completely however, this is not required for most clinical cases.

Note! When making color scans please avoid the light from the dentist chair lamp pointing directly into the patient's mouth as this will affect the color quality.

HD PHOTO OPTION

You can add several high definition photos (HD Photos) of the scan model, for example, to supply the lab with visual appearance of the neighboring teeth or assist them with placing the margin line, etc.

To take HD Photos:

- Press the ***HD Photo*** button at the scan step once the model is scanned.
- (Optional: Press the area on the model you would like to take an HD Photo of to define the scanbox starting position. Start scanning and when the frame of the scanbox becomes green, press the ***Scan*** activation button once to take a photo.
- A scrolling thumbnail menu of the added HD Photos appears on the scan page, it shows a corresponding scan in the main window when a thumbnail is pressed. The "center" button in the selected thumbnail positions the direction of view to the one when the photo was taken, while the 'delete' button removes the photo.

Note! HD Photo feature only works for color and monochrome scanners that have a firmware version equal to or higher than revision 1.03.02, otherwise this option is disabled.
Dental laboratory requires Dental System 2014 or later to be able see the HD photos in scans.

Step 3: Mark Preparation

Mark preparation menu automatically appears at the bottom of the screen when you stop scanning or it can be opened by tapping the ***Mark Preparation*** button. The menu consists of buttons numbered according to the corresponding teeth. When one preparation is marked, the system automatically selects the button of the next preparation. Make sure to mark the right preparation for every numbered button. The currently active button has a darker color.

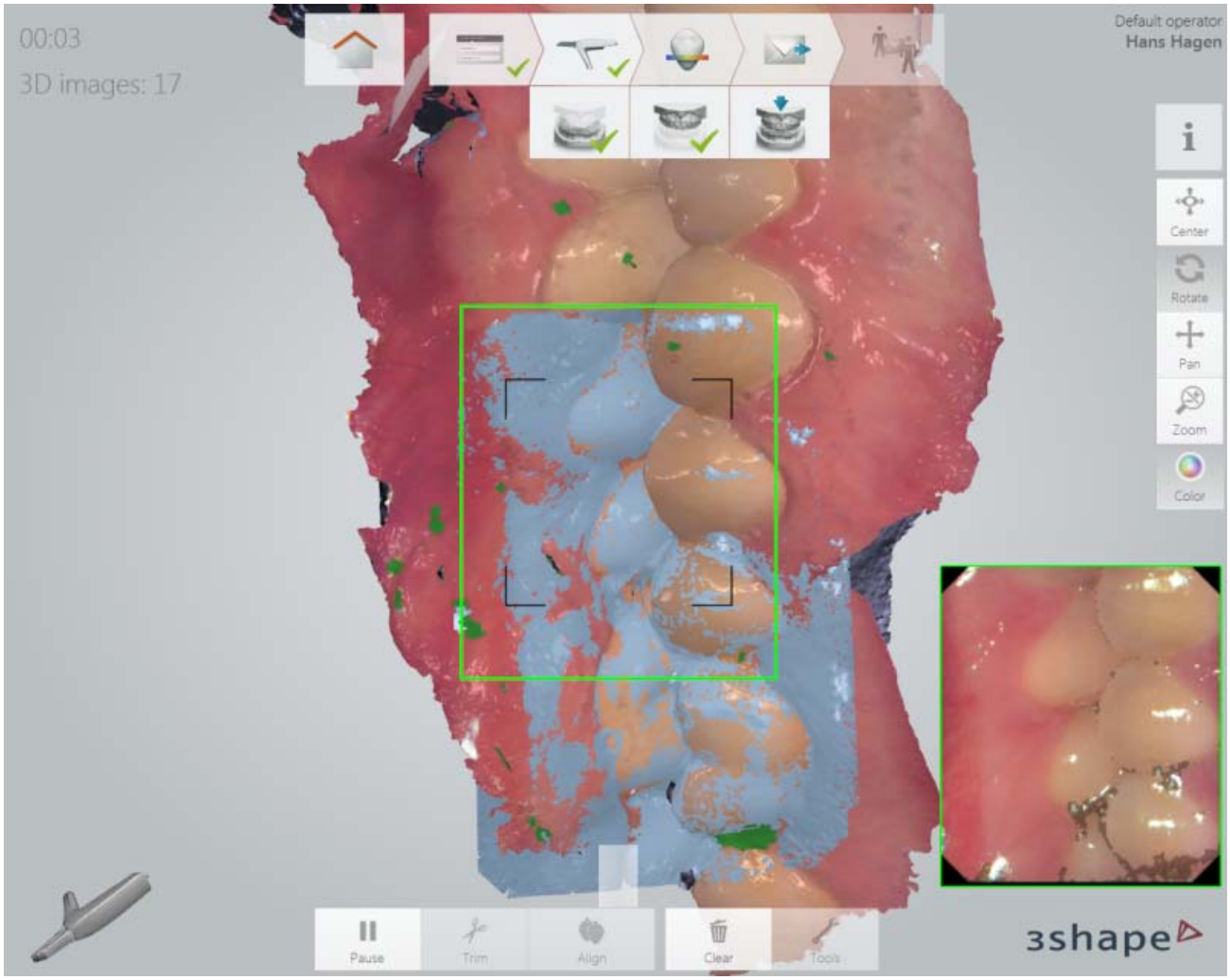
Once all preparations are marked the **Mark preparation** menu closes.

Step 4: Scan antagonist

Continue by scanning the antagonist if required. The workflow is similar to the steps described above apart from making preparations.

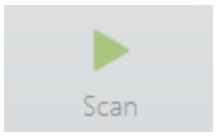
Step 5: Scan occlusion

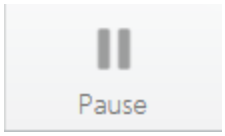
Scan occlusion, until the jaws align themselves automatically when using the "Live" alignment method. There is also an alternative to choose "Automatic" or "Manual" method to perform the alignment after the process of scanning is done. The bite alignment operation method is chosen in *Configure->Scan*: Manual, Automatic or Live. Please see the Align Occlusion chapter for details.


00:03
3D images: 17
Default operator
Hans Hagen
Center
Rotate
Pan
Zoom
Color
Pause
Trim
Align
Clear
Tools
3shape

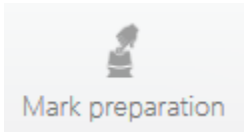
3.3.3 General Scanning Tools

General scanning tools are located in the toolbar at the bottom of the screen:

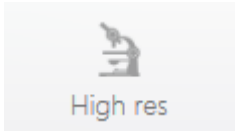




- ***Scan*** / ***Pause*** scanning (typically the ***Scan Activation*** button on the scanner is used).



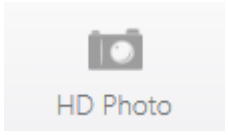
- ***Mark preparation*** - Used to mark prepared teeth for further post-processing once scanning is completed.



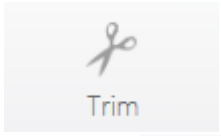
- ***High resolution*** - Captures areas that are difficult to scan, with higher amount of details.

Follow these instructions to use the ***High res*** feature:

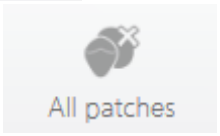
1. Scan with normal resolution.
2. Inspect the scan and determine where high resolution is required.
3. Set to ***High res***. Note, that high resolution can only be applied to a region around a preparation mark
4. Re-scan the desired area.
5. Turn off ***High res*** if continued scanning is needed.



- ***HD Photo*** - Lets you take and add high quality photos of the area of interest to your order.



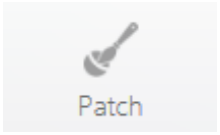
- ***Trim*** - Provides tools for cleaning and trimming the scan:



- ***All patches*** - Automatically removes all "islands" and "peninsulas" having slim attachment to the main surface e.g., accidentally scanned fingers and the tongue.

Before

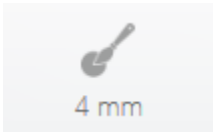
After



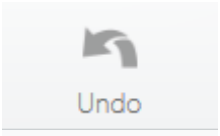
- ***Patch -*** Manual removal of “island” surfaces. Remove a small area
- disconnected from the largest surface by tapping it once.

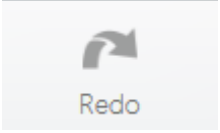
Before

After

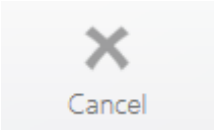


- ***Brush 4, 2, 1 mm*** - Selection of the trimming tool thickness.
- Removes the drawn, colored part of the scan.

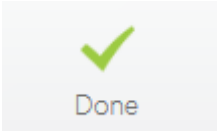




- ***Undo*** - Cancels the last action / ***Redo*** - Reverses the ***Undo*** action***.***

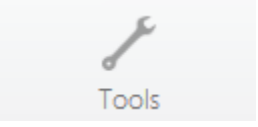


- ***Cancel*** - Closes the trimming tool without applying changes.

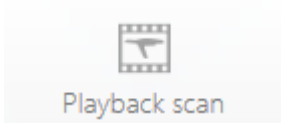


- ***Done*** - Accepts changes and closes the trimming tool.

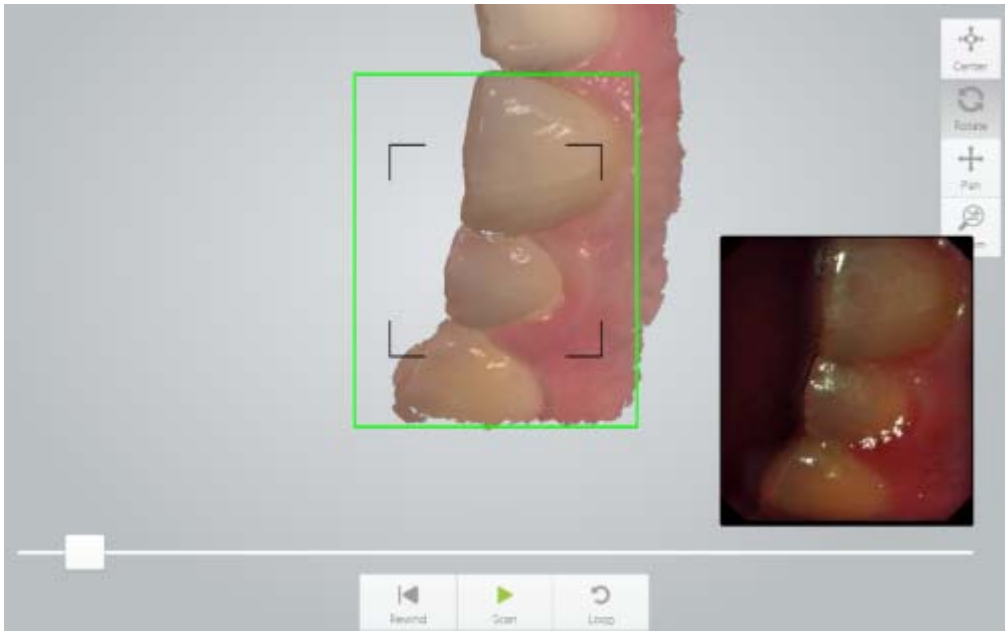
- ***Clear*** - Removes the whole scan to start over.

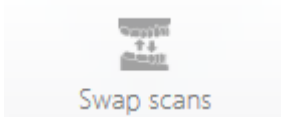


- ***Tools*** menu



- ***Playback scan*** - Plays back the scanning process.



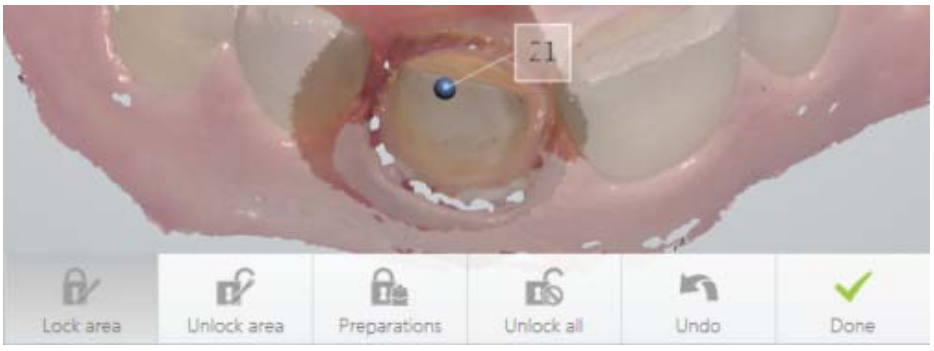


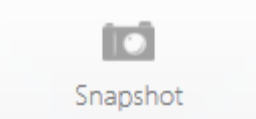
- ***Swap scans*** - Swaps upper and lower jaw scans. Requires user confirmation. This is useful if the operator accidentally scanned the wrong jaw.

- ***Color calibration*** - Used to calibrate a color TRIOS scanner.

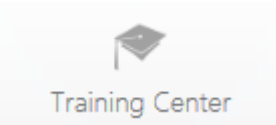
- ***Shade Measurement*** - Allows you to determine the color shade of teeth near the preparation and send this information to the lab.

- ***Lock surface*** - Apply by painting the area to lock. Locked (colored) area will not be updated by further scanning. Use this feature to fix retracted gingiva after immediate scanning as it might collapse and possibly degrade the scan area otherwise. Locking does not affect trimming, you can still trim the locked surface. Deleted locked surface can be re-scanned.





- ***Snapshot*** - Adds a snapshot to the order.

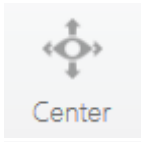


- ***Training Center*** - Opens a window with links to view various training material.

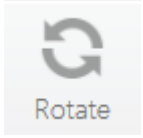
- Indicates scanner's orientation.

Visualization Toolbar

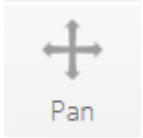
You can change the model viewing modes: **Center**, **Rotation**, **Translation, Zoom** and **Color** by pressing the corresponding buttons in the Visualization toolbar.



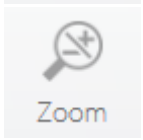
Center - Centers the model and places it in a middle of the screen.



Rotate - Rotates the model.

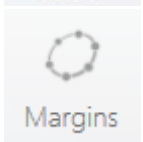


Pan - Moves the model.



Zoom - Allows you to zoom the model in/out by moving the finger up/down.

Color - the button is present in the toolbar when a color scanner is connected. It can be used to toggle between color and B&W scan image representations.



Margins - Toggles the visibility of the margin line.

3.3.4 Align Occlusion

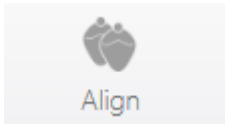
Bite alignment operation method is chosen in *Configure->Scan*: Manual, Automatic or Live.

LIVE ALIGNMENT

If you have Bite alignment operation set by default to "Live", the bite alignment process is shown and run during the scanning process in real time, therefore you don't have to wait for it after scanning.

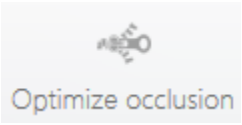
AUTOMATIC ALIGNMENT

The software automatically aligns the scanned preparation and antagonist using the bite scan. However, you can always re-align the scans manually if needed. In order to start or adjust the alignment of the scanned jaws tap the ***Align*** button at the bottom.

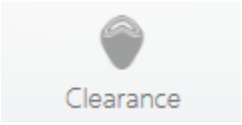


Align - Opens alignment tool bar.

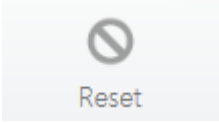
- ***Auto Align*** - automatically aligns the scanned preparation and antagonist using the bite scan when pressed if the **Use automatic bite alignment** feature in Scan Settings was disabled.



- ***Optimize occlusion*** **-** Automatically adjusts the occlusion for an optimal bite.

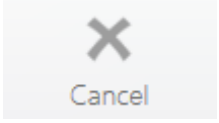


- ***Clearance*** - Analyzes the distance between preparation and antagonist. You can also find the Clearance option on the Analyze page.

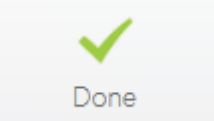


- ***Reset*** - Cancels the alignment changes and allows you to re-align the scans again.

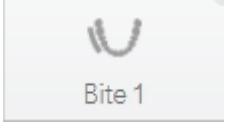
- ***Undo*** - Cancels the last action / ***Redo*** - Reverses the ***Undo*** action***.***



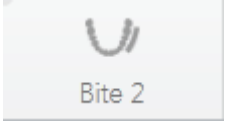
- ***Cancel*** - cancels the changes and closes the toolbar.



- ***Done*** - Accepts changes and closes the alignment tool.



- ***Bite 1*** - Always required: For quadrants, Bite 1 is the only bite scan required. For full arches, it is one of the two bite scans required.



- ***Bite 2*** - Only required if scanning full arches. Must be the opposite side to Bite 1.

MANUAL ALIGNMENT (optional)

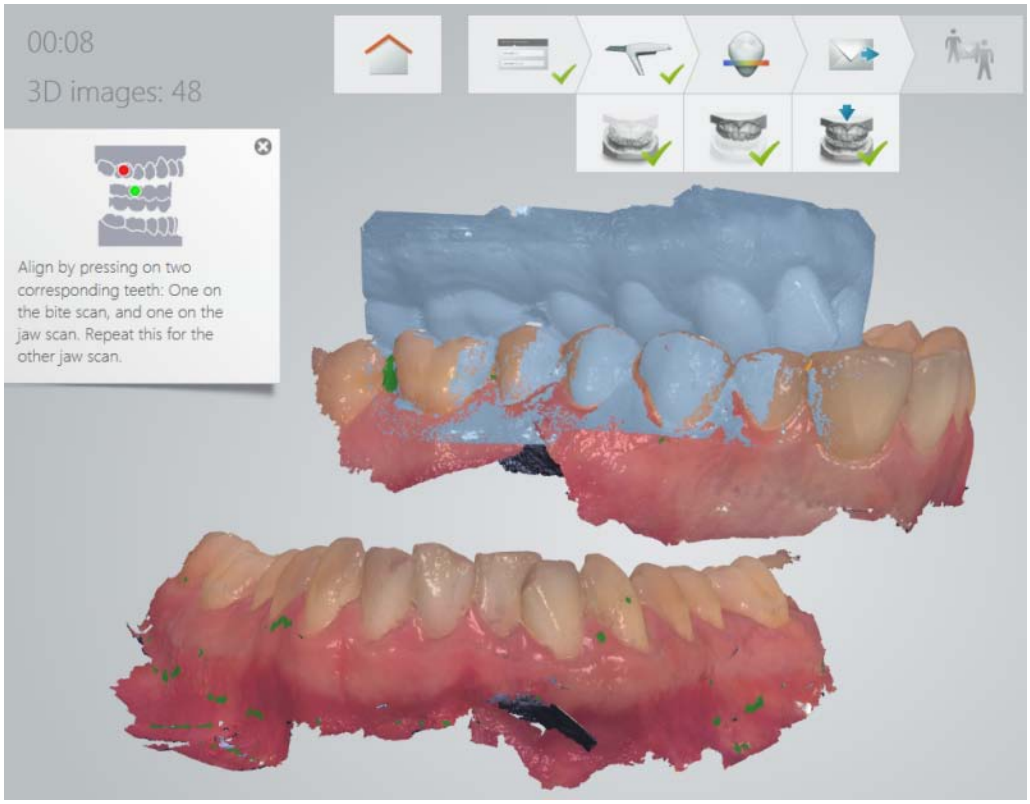
The software lets you perform the alignment of one or two bite scans manually:

Step 1: Reset automatic alignment

Press the ***Reset*** button in the scanning toolbar to cancel the Live/Automatic **Bite alignment operation** if it was enabled in Scan Settings.

Step 2: Place marker points

Follow the instructions on the screen to place marker points on the upper/lower jaws and occlusion scans. Alignment is processed on placing the last marker point.



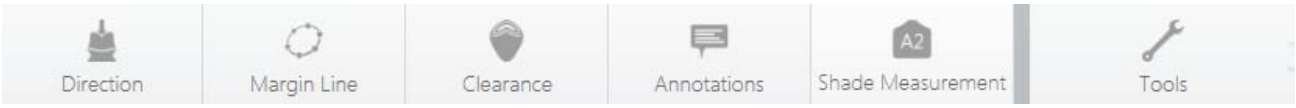
Step 3: Complete alignment

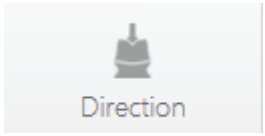
The ***Undo*** button allows you to cancel the last action while, pressing the ***Done*** button completes the alignment and closes the alignment tool.

3.3.5 Analyze Scan

The **Analyze** page provides instruments for inspecting and validating the impression scans.

1. Press the ***Analyze*** button to start once you are satisfied with your impression.
2. Use the provided tools to apply additional validation options.





Setting insertion direction for the restoration

By optimizing the insertion direction you minimize undercuts. The undercuts are graphically represented by the color scale.

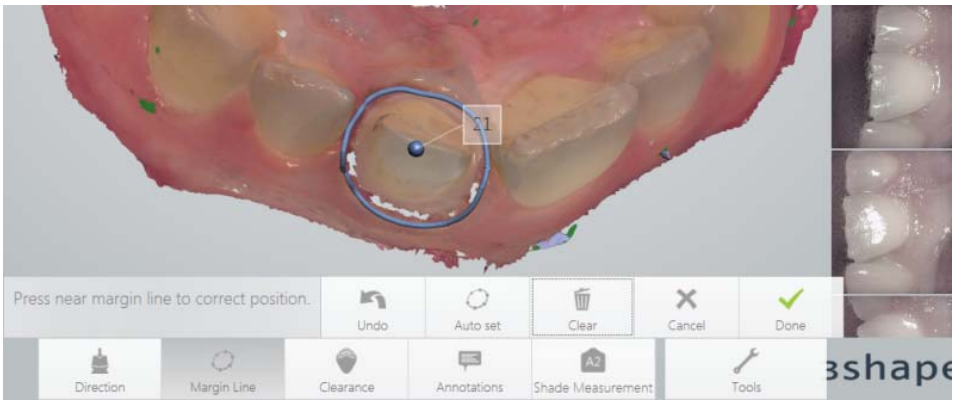
You can set the insertion direction in two ways:

1. Use the ***Auto detect*** button. The system automatically calculates and sets the insertion direction.
   OR
2. Press the ***Use view*** button. The program sets the insertion direction based on your view of the scan.

The undercut area is automatically measured and its value displayed on the screen.
Press ***Done*** when finished.

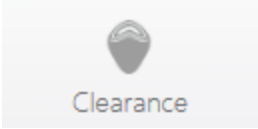
Placing the margin line

TRIOS automatically detects and presets the margin line. You can manually edit the margin line by pointing or drawing its new position.



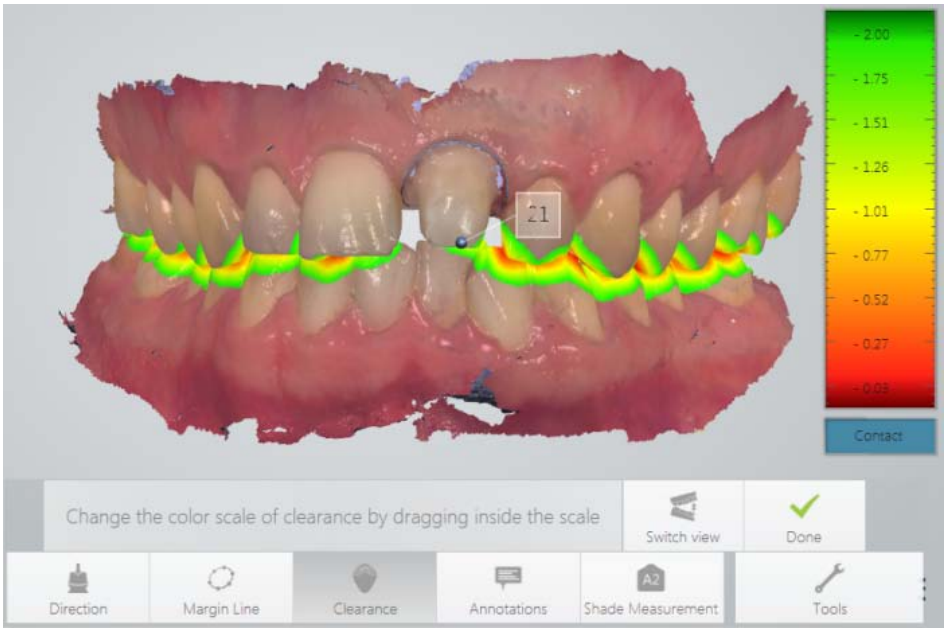
You can switch between margin lines when you have a few by pressing the ***Next/Previous*** buttons.
Press ***Done*** when finished.

Margin line visibility is toggled with the ***Margins*** button. The button appears at **Analyze Scan** step when the **Margin Line** tool is active or after you edited the margin line.

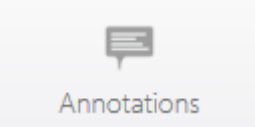


Identifying distances between preparation and antagonist

To determine whether additional preparation of a tooth is required, open the **Clearance** tab by pressing the button and viewing the color scale indicating a range of distances between the preparation and antagonist. The distance values are shown in millimeters.



The clearance display is changed by dragging inside of the color scale. ***Switch view*** button lets you toggle between opened and closed jaws views. Press ***Done*** when finished.



Placing annotations on the model

You can add comments to the digital impression:

Step 1: Placing annotation

Mark the target point for a new annotation by pressing the point on the 3D model.

Step 2: Typing annotation text

Enter your comment into the blank field and press ***Done***. Use the ***Delete*** button to remove your annotation if needed.

Annotations are sent together with the digital impression to the lab. Lab technicians can see the annotations in 3Shape Dental System design software.

Allows you to determine the color shade of teeth near the preparation

This tool is also available at the scanning step. You can use it to measure the color shade of the teeth near the preparation and send the information in the order to the lab:

Step 1: Place color shade measurement

Press ***Tools->Add*** button and indicate the area on a tooth you want to measure the color shade of. The indicated area is marked with a circle and the attached label displays its color shade.

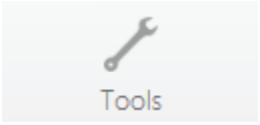
Step 2: Define the standard color shade value

Press and move the shade measurement circle to make sure the selected value becomes with a green tick as the yellow color indicates that the color shade is out of the given range.

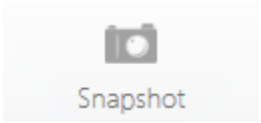
Shade measurements can be deleted by pressing the ***Remove*** button and indicating the shade measurement you want to remove.

Shade measurements only works on upper and lower jaw, and not on extra scans. It is only shown while the feature is active.

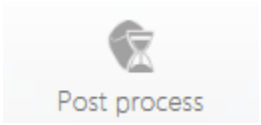
Note! Shade measurement requires a shade enabled color scanner.



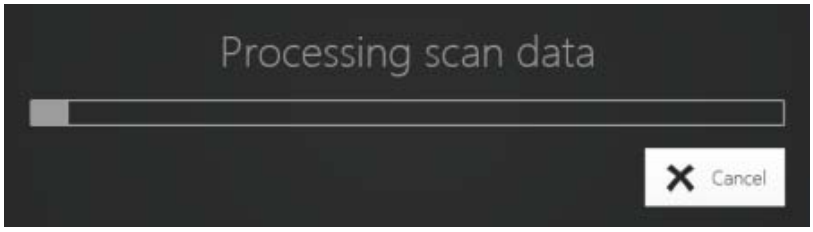
Tools menu



- ***Snapshot*** - Add a snapshot to the order.



- **Model Post-processing**
  Pressing the ***Post process*** button, automatically:
  - Optimizes 3D model for better details around the preparation(s).
  - Reduces noise of the 3D model.
  - Closes holes within the model.



Post-processing might take a couple of minutes to complete.

Tip! Post-processing will be done automatically during order sending if the post-process button was not activated by the operator. However, it is recommended to do post-processing at the Analyzing step and inspect the result in order to avoid the risk of overlooking changes introduced by post-processing.

3.4 Specific Scanning Workflows

3.4.1 How Do I Scan One or More Preparations

Dentist should perform the following operations when scanning preparations:

- **Step 1:** Prepare patient's teeth.
- **Step 2:** Retract the gingiva around the preparation for the preparation lines to stand out clearly by using at least 1 gingival retraction cord to retract the gingiva (3Shape recommends using 2 cords).
- **Step 3:** Dry the teeth lightly using compressed air. Be sure to reach the narrow regions between teeth. Consider using saliva ejector and/or tampons.
- **Step 4:** Scan preparation and the rest of preparation jaw. Scan antagonist and bite (two bites for full arch cases).
- **Step 5:** Send your preparation order to the lab.

3.4.2 How Do I Make a Pre-preparation Scan

An order can include a pre-preparation scan as a reference when designing the new restoration, so that the new and the old tooth look alike. Pre-preparation scans are allowed for all restorations except Post and Core, and Abutments.

There is a choice of two options to follow when performing a pre-preparation scan:

Option 1

- **Step 1:** Mark the restoration tooth in the order form.
- **Step 2:** Select the indication type.
- **Step 3:** A checkbox appears called “Add pre-preparation scan”.
- **Step 4:** Tap the checkbox.
- **Step 5:** Proceed to the Scan page.
- **Step 6:** Select the pre-preparation scan page (already selected if restoration is in lower jaw).
- **Step 7:** Scan the required area.
- **Step 8:** The Mark preparation tool opens.
- **Step 9:** Mark the center/top of the tooth.
- **Step 10:** Go to the preparation scan page.
- **Step 11:** The marked area is now auto deleted, and the rest is locked to avoid unwanted changes to the scan.
- **Step 12:** Finish your preparation and begin scanning until the deleted area is filled out again.

Option 2

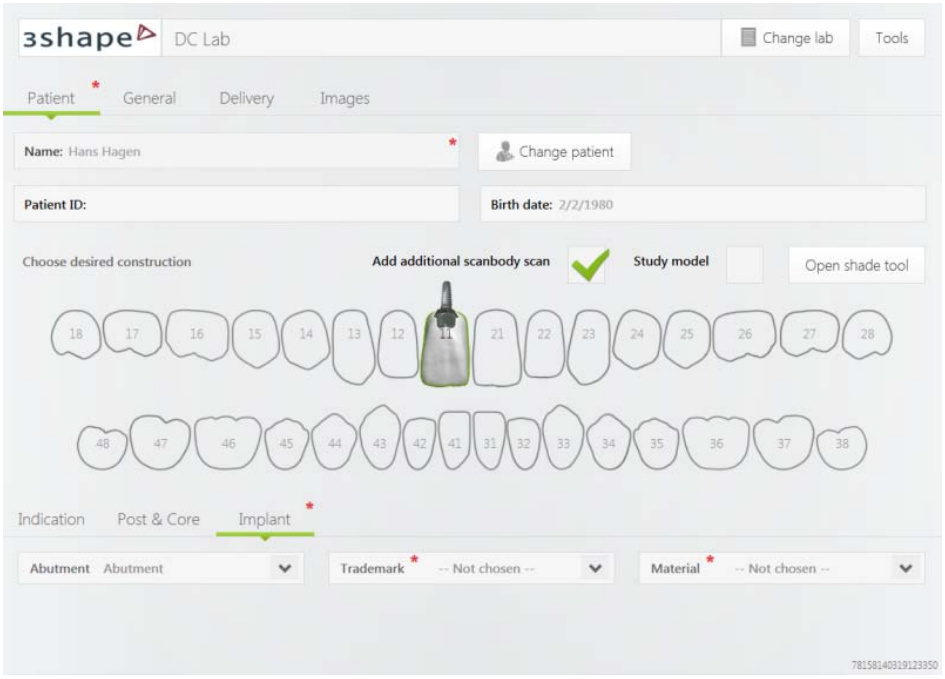
- **Step 1:** Scan patient's teeth before their preparation is done. This order is called a pre-preparation order.
- **Step 2:** Send pre-preparation order to the lab to have them make the temporaries.
- **Step 3:** Patient comes in for a second appointment once the Dentist receives the temporaries.
- **Step 4:** Open the existing pre-preparation order and select ***Copy*** with the pre-preparation scan option.
  A new order is created automatically and the content of the pre-preparation order is copied into the new order.
- **Step 5:** Prepare patient's teeth.
- **Step 6:** Go to the preparation scan page. The marked area has been automatically deleted, and the rest of the scan is locked to avoid unwanted changes to the scan.
- **Step 7:** Re-scan the preparation area starting from the surface next to the preparation (for the system to recognize some of the 3D structures to start on.
- **Step 8:** Send the new order which will include pre-preparation and preparation scans to the lab.

3.4.3 How Do I Make an Implant Scan

Dentist should perform the following operations when scanning implants:

- **Step 1:** Create an order and select "Implant" for the restoration type.

The **Add additional scanbody scan** checkbox on the order form is marked by default. It creates an extra implant scan step automatically, you need to unmark the checkbox if the extra scan page is not required.



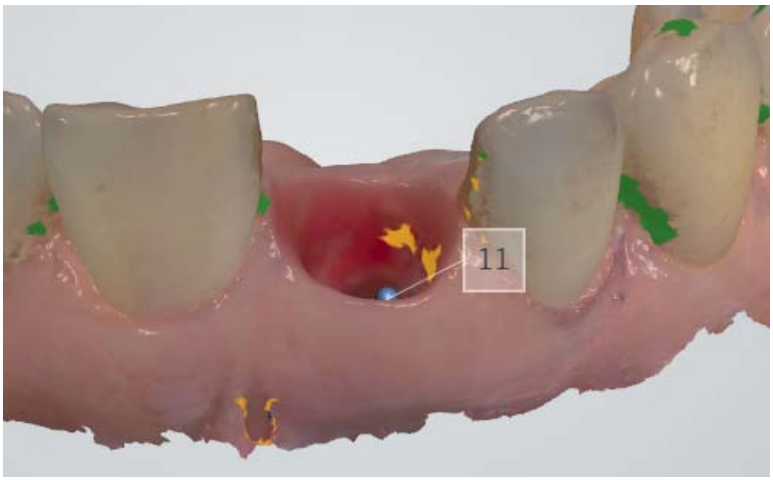
Step 2: Select first page of implant scan, the one without the scan body icon:

Please continue to Step 11 if you have unmarked the **Add additional scanbody scan** checkbox on the order form and thus do not require an extra implant scanning step.

Step 4: Remove the healing abutments.

Step 5: Make first scan.

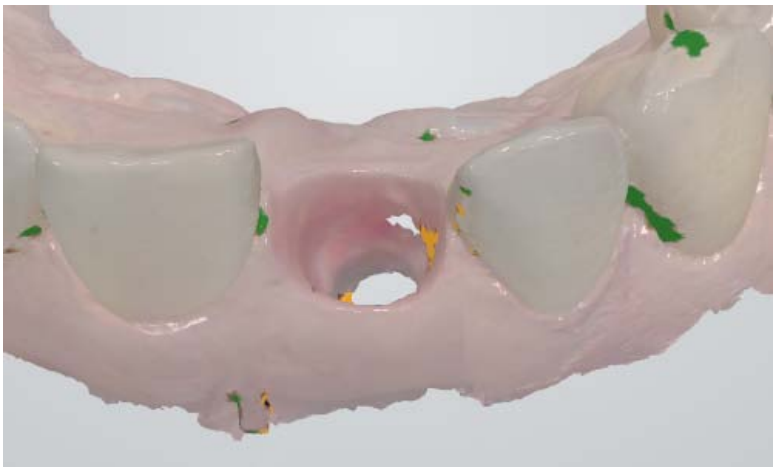
Step 6: Mark implant locations using the Mark preparation tool.



Step 7: Attach the scan body to implant.

Step 8: Select the second page of the implant scan with the scan body icon:

Step 9: The area around the scan bodies is automatically removed.



Step 10: Trim the areas, if the automatic removal was insufficient.

Step 11: Scan the scan body starting from the surface 1-2 teeth away from the scan body for the system to recognize 3D structures (the scan body does not need to be perfectly scanned but must contain enough information to be used by the laboratory to detect the placement of the implant). If the contact points were auto deleted, there is no need to re-scan them again.

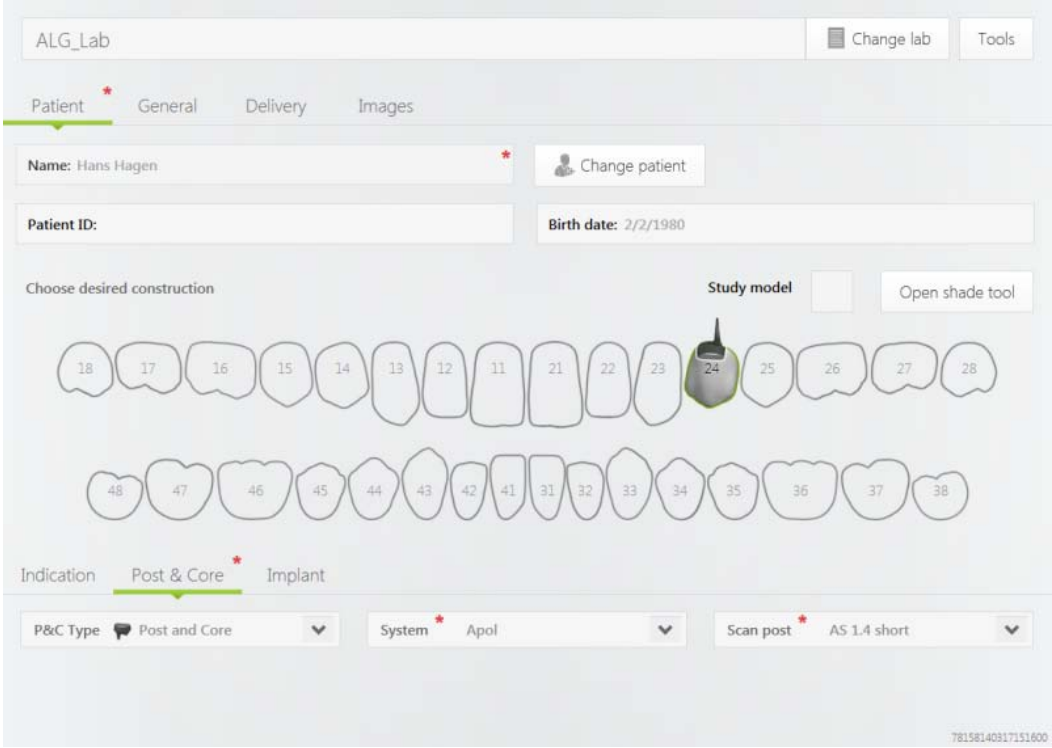
Step 12: Remove the scan body and continue to antagonist and bite scans.

Note! The scanning process can also be completed in the opposite order if desired, starting with the scan body.

3.4.4 How Do I Make Post and Core Scan

Dentist should perform the following operations when scanning Post and Core:

Step 1: Create an order and select "Post & Core" for the restoration type.

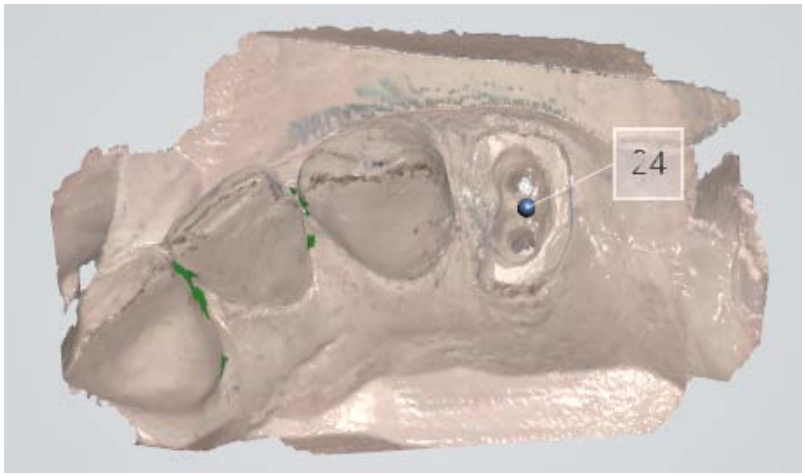


Step 2: An extra scan page is added automatically, giving you 2 pages for the jaw with the post and core.

Step 3: Select first page of post and core scan, the one without the scan flag icon:

Step 4: Make first scan.

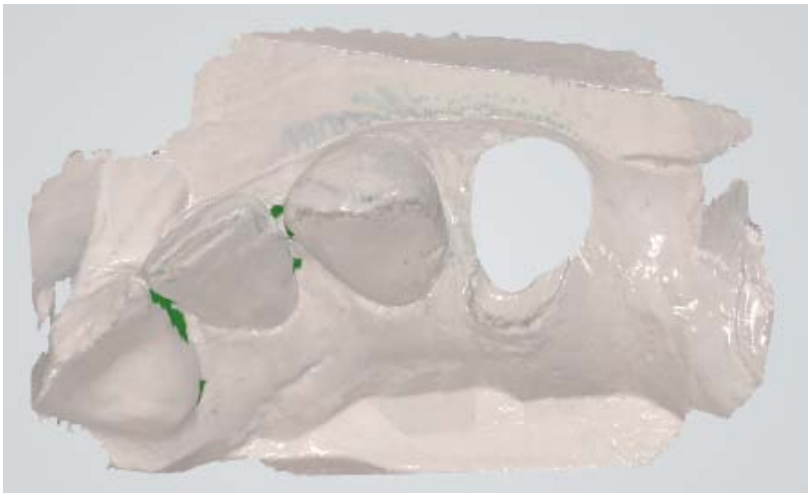
Step 5: Mark post and core locations using the Mark preparation tool.



Step 6: Attach a scan flag to post and core.

Step 7: Select the second page of the post and core scan with the scan flag icon:

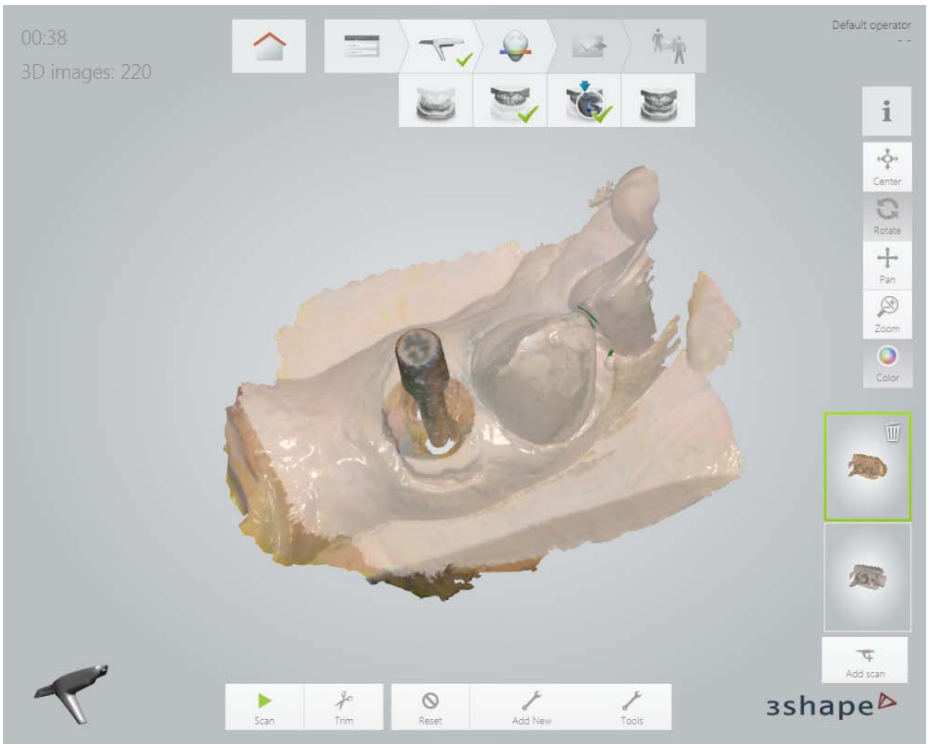
Step 8: The area around the scan flag is automatically removed.



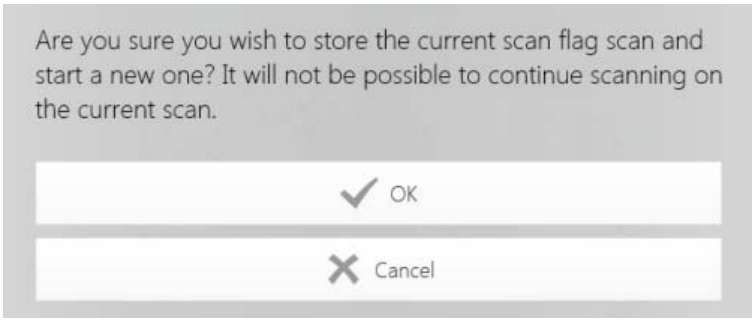
Step 9: Trim the areas, if the automatic removal was insufficient.

Step 10: Scan the scan flag starting from the surface 1-2 teeth away from the scan flag for the system to recognize 3D structures.
(the scan flag does not need to be perfectly scanned but must contain enough information to be used by the laboratory to detect the direction of the post).
If the contact points were auto deleted, there is no need to re-scan them again. Only the scan post is important for later alignment.

When it is not possible to scan all posts at once, e.g., due to their close positioning, you can scan posts separately by pressing the ***Add scan*** buttons at the bottom of the screen.



Confirm your intention in the appeared dialog window and scan another post after it has been placed in the new location.



Additional scans add preview thumbnails on the right that show related scans in the main window when pressed.
Should that be required, you can remove the additional post scans by pressing the delete button that appear in the selected thumbnail.

Step 11: Continue to antagonist and bite scans (without scan flag).

Note! The scanning process is fixed – you have to scan without flags first and then go to the scan flag page.

3.5 Tips to Obtaining a Good Scan

PREPARATION

1. **Turn on the cart or PC in advance to allow the system to heat up**. See section Heating and Mounting the Scanner Tip, step 1. Allow the system to warm up for about 10 minutes prior to use. If the cart has a heater, the final temperature is reached when the light goes out.
2. **Retract the gingiva around the preparation** by using retraction cord(s) for the margin line to stand out clearly.
3. **Make sure the scanner tip is warm to avoid condensation on the mirror**. See section Heating and Mounting the Scanner Tip, step 5.

SCANNING

1. **Dry the teeth lightly** using compressed air. Be sure to reach the narrow regions between teeth. Consider using a saliva ejector and/or tampons.
2. **Get a good start**:

   - Start at preparation (or 1st molar if antagonist).
   - Wait for about 5 scanner "clicks" before proceeding (helps build up a good starting point).
   - Complete preparation including the margin line.
   - Scan neighboring teeth: Occlusion, lingual/palatinal side, buccal/labial side, mesial and distal sides for contact points.

3. **Keep scanner head at 0-5mm from the teeth**, it is OK to touch the teeth occasionally.
4. **Move the scanner slowly and smoothly**, you should hear a more rapid clicking sound.
5. **Keep lips, cheeks, and tongue out of the scanner's view**:

   - Use your finger or a dental mirror to create space between the teeth, lips and cheeks.
   - Use a lip-and-cheek-retractor to keep lips and cheeks away.
   - Be careful not to scan your own or assistant's fingers.
   - If you get lips, cheeks or tongue in the scan, make sure to trim it all, especially where they have contact with the teeth (no surfaces should stick out from the teeth).

6. **Focus on**:

   - Option 1 - Look at the teeth while scanning and listen to the "clicks". If it stops clicking/capturing, carefully move back to the area marked on the screen.
   - Option 2 - Look at the 2D image at the lower right corner. What you see here is what you scan. Avoid lips, cheeks and the tongue to get an easy scan.

7. **When scanning is complete, inspect the result by rotating the scan.**
   The important areas are:

   - Margin line (avoid interference from gingiva, saliva, blood).
   - Contact points.
   - Occlusal surfaces.
   - If an important area is missing, simply start scanning the area until the scanner detects the location and the clicking/capturing begins. You can optionally touch the area on the model to get a new starting position if the scanner doesn't automatically detect the area.

8. **Bite Scan**:

- Place the scanner tip pressed against the cheek and ask the patient to bite down.
- Start scanning from the second molar or canine if you make an anterior scan.
- Scan 4 teeth in mesial direction for optimal alignment.
- Scan e.g., mainly lower jaw first by covering gingiva and teeth. When the scan automatically aligns into place, move the scanner up to upper jaw teeth and gingiva until it also aligns.

9. **Important for good colors**:

- Avoid the light from the dentist chair lamp pointing directly into the patient's mouth.
- Scan at several angles to even out any discoloration or shadows.

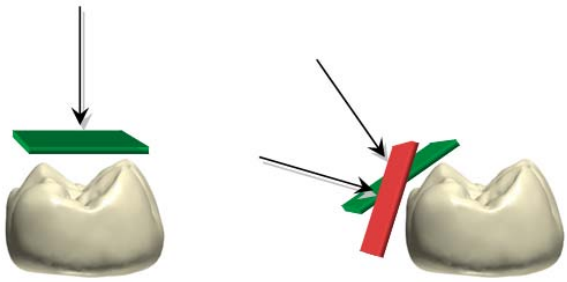
3.6 Scanning Strategies

BASIC PREPARATIONS FOR EASY SCANNING

Follow the steps from section Tips to Obtaining a Good Scan, Preparation to prepare for easy scanning.

SCANNING APPROACH

The best scanning method is to start with a molar, since it has greater details for easier identification. Change the scanning angle to 35-55 degrees during scanning to allow the surfaces to overlap, if the overlap is small, the alignment may be lost.



SCANNING PATH

The recommended scanning path consisting of 3 sweeps: occlusal, lingual and buccal to ensure good data coverage of all surfaces.

The occlusal sweep always comes first as it has most of the 3D structure, which makes scanning easier. The first sweep should be started at the first molar (if antagonist) or the preparation (to scan gingiva before it collapses from the retraction). Allow the scanner to get a good ‘starting point’ by waiting for 3-5 clicks before moving the scanner steadily and slowly 0-5mm above the teeth.

While scanning, the biggest challenge is to control the soft tissue, such as the tongue, lips and cheeks as they may confuse the scanner if getting into its view and potentially slow down or even stop the scanning process. Therefore, the easiest second sweep depends on the jaw:

- The upper jaw has only the soft tissue on one side (buccal) therefore, the second sweep should be buccal as this pushes the soft tissue away and creates a clear view for the scanner.

- The lower jaw is more challenging because of the tongue. The cheek can easily be retracted using a finger or a mirror. Therefore, the second sweep is lingual, pushing the tongue away.

- The third sweep covers the opposite side of the second sweep. Again, try to avoid soft tissue. Because the scanner has already been on the other side of the teeth during the sweep two, the system uses the obtained data to avoid adding soft tissue to the scanned teeth.

The recommended scan paths are summarized.

General Principles:

Upper jaw	*Lower jaw*
1. Occlusion	1. Occlusion
2. Buccal - There is no soft tissue in the way.	2. Lingual - the tongue is the most moving soft tissue (compared to the cheek). The cheek is easily retracted.
3. Palatal - As the scanner has already been on the other side of the teeth during the step two, the system uses the obtained data to avoid adding soft tissue to the scanned teeth.	3. Buccal - As the scanner has already been on the other side of the teeth during the step two, the system uses the obtained data to avoid adding soft tissue to the scanned teeth.

If a scanned jaw has a preparation - start with the preparation, then follow the steps described above.

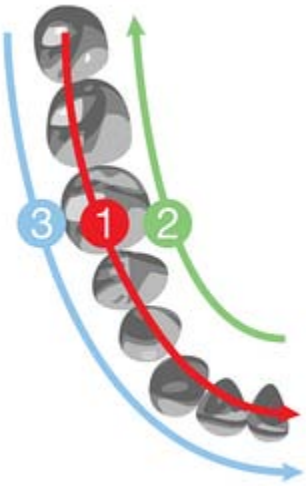
Centrals

When scanning the first sweep of centrals, it is important to cover both, lingual and labial sides of the teeth. The easiest method is to slowly wiggle the scanner tip between the labial and lingual sides.

The centrals require more attention than molars. Therefore, the scanner tip should move a little slower in that region.

Posterior quadrant

The general principles are applied in the following 2 examples:



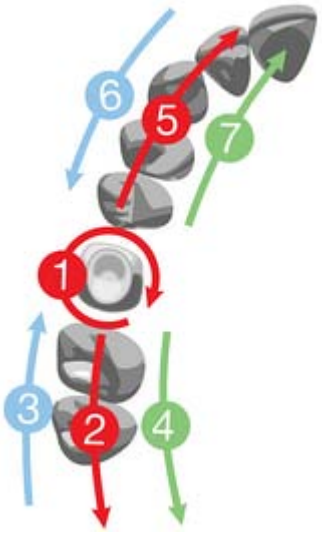
Example I: Lower quad, antagonist

▶ **Step 1:** Antagonist: Start directly on the occlusion (the first molar), then sweep along the occlusion.

▶ **Step 2:** Lower jaw: Roll 45-90 degrees to the lingual side and sweep to the second molar. Use the tip to keep the tongue away.

▶ **Step 3:** Roll to the buccal side and complete the buccal sweep.

Example II: Upper quad, with preparation



▶ **Step 1:** Start with the preparation:

- Go to the occlusal side of the preparation.
- Roll to the palatal side.
- Roll to the buccal side.
- Rotate almost 90 degrees to get the best angle for the distal and mesial contact points.
- Rotate back to the occlusal.

▶ **Step 2:** Swipe along the occlusion.

▶ **Step 3:** Upper jaw: Roll 45-90 degrees to the buccal side and complete the buccal sweep on one side of the preparation.

▶ **Step 4:** Roll to the palatal side and complete the sweep.

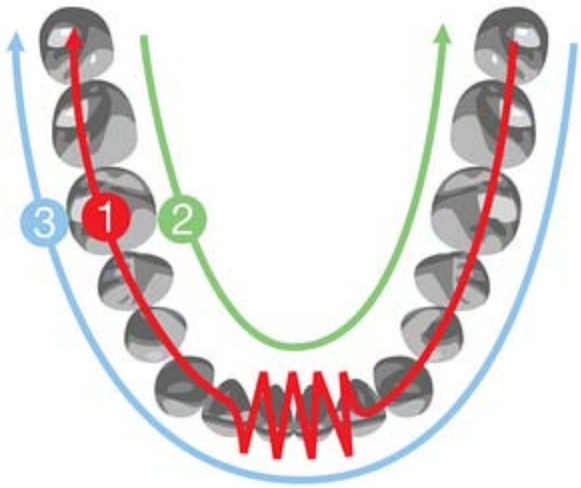
▶ **Step 5:** Complete scanning on the other side of the preparation by performing the occlusal sweep first.

▶ **Step 6:** Perform the buccal sweep.

▶ **Step 7:** Perform the palatal sweep.

Full arch

The general principles are applied in the following 2 examples:

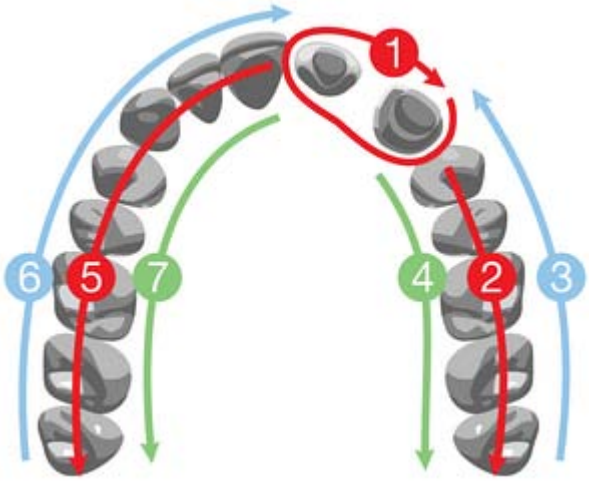


Example I: Lower full arch, antagonist

▶ **Step 1:** Antagonist: Start directly on the occlusion (first molar), then sweep along the occlusion. Slowly wiggle the scanner when passing the centrals.

▶ **Step 2:** Lower jaw: Roll 45-90 degrees to the lingual side and sweep to the second molar. Use the tip to keep the tongue away.

▶ **Step 3:** Roll to the buccal side and complete the buccal sweep.



Example II: Upper full arch, with preparation

Start with the preparation:

Step 1: Go to the occlusal side of the preparation.

- Roll to the palatal side.
- Roll to the buccal side.
- Rotate almost 90 degrees to get the best angle for the distal and mesial contact points.
- Rotate back to the occlusal.

Step 2: Swipe along the occlusion.

Step 3: Upper jaw: Roll 45-90 degrees to the buccal side and complete the buccal sweep on one side of the preparation.

Step 4: Roll to the palatal side and complete sweep.

Step 5: Complete scanning on the other side of the preparation by performing the occlusal sweep first.

Step 6: Perform the buccal sweep.

Step 7: Perform the palatal sweep.

Especially important regions

In order for the lab to be able to make a good restoration it is especially important to have a good scanning quality of the functional surfaces:

- The margin line must stand out clearly. Observe that the gingiva is retracted, saliva and blood are removed by using compressed air.
  Adjust the margin line in the Analyze scan page if required.
- Contact points. If there are non-scanned areas near the contact points, a warning will appear in the upper left corner of the screen. Press the message for the model to display the areas in question. Contact points on a molar may be difficult to reach, try going across the mouth/over the tongue and tilt the scanner tip.
- Occlusal surfaces.

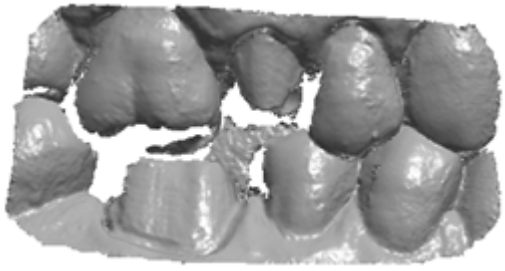
Bite Scan

Step 1: Insert the scanner tip into the patient's mouth at the buccal side of the teeth and rotate it to scan the side of the teeth. (Start from the second molar or canine if you make an anterior scan), then close patient's mouth.

Step 2: While centering 2D image on occlusion plane, slowly move the scanner tip in mesial direction with equal coverage of upper and lower teeth.

Step 3: Scan 4 teeth for optimal alignment (no more/no less).

Below is an example of a good bite scan:



Situations with more preparations

In cases of multiple preparations focus must be put on scanning the preparations before the gingiva collapses. If preparations are closely positioned, they may be scanned in one go. If preparations are further apart, the retraction agent can be removed from 2-3 teeth at a time, having these areas scanned before moving to the next region and repeating the procedure.

4 Options and Settings

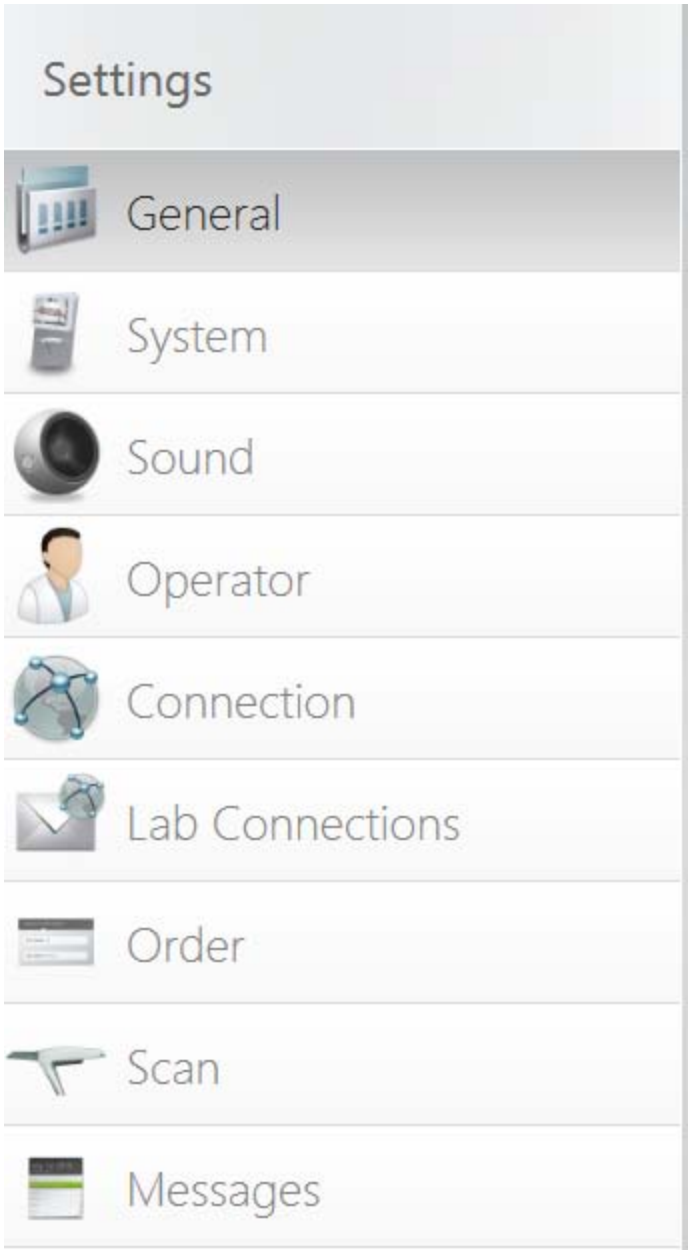
This section provides an overview of the setting sections. Each section is explained in details in the corresponding chapters.

Individual settings for operators are supported. For example, an operator can have his own preferred settings for the Scan Sound, volume, Color System etc.

You must have configuration parameters set before using TRIOS.

Step 1: Press the ***Configure*** button in the Service toolbar to open the *Settings* window with configuration sections (see image).

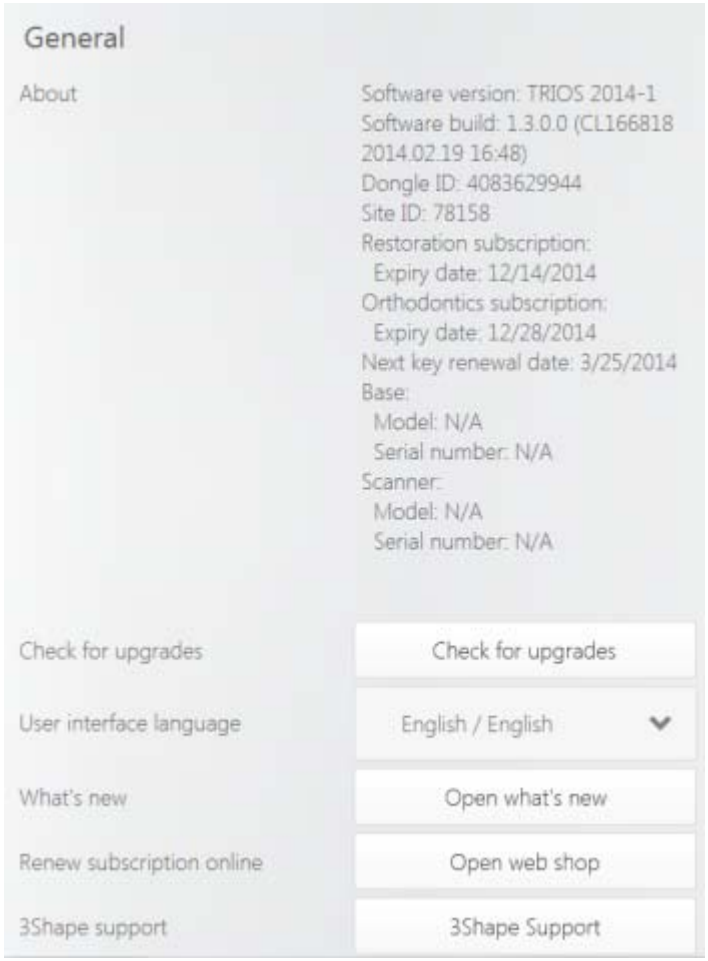
Step 2: Follow the steps below to configure the settings.



1. General

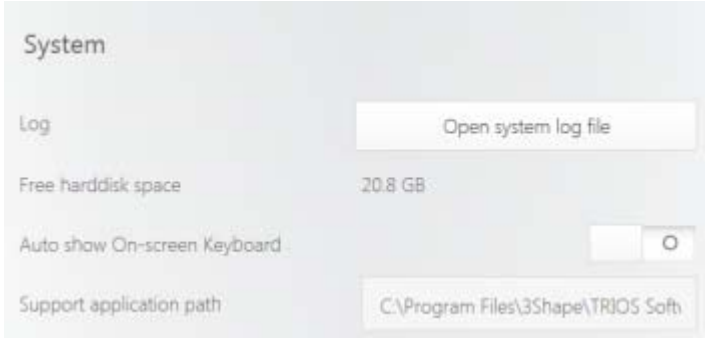
In the general settings, you can check for upgrades, select the interface language, read what's new, renew you subscription online and get support online.

See the help topic *General Options and Settings* for details.



2. System

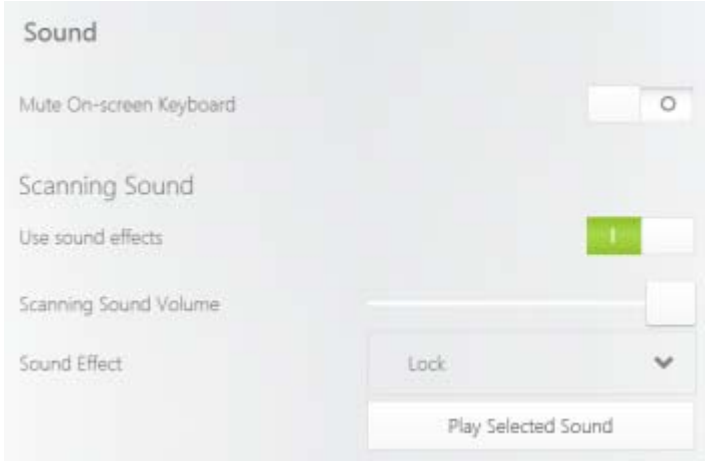
System settings let you to view the system log file, available hard disk space and define the path to the support application. You can also enable the auto show function of the on-screen keyboard here.



3. Sound

Contains Mute on-screen keyboard switch and scanning sound setting options:

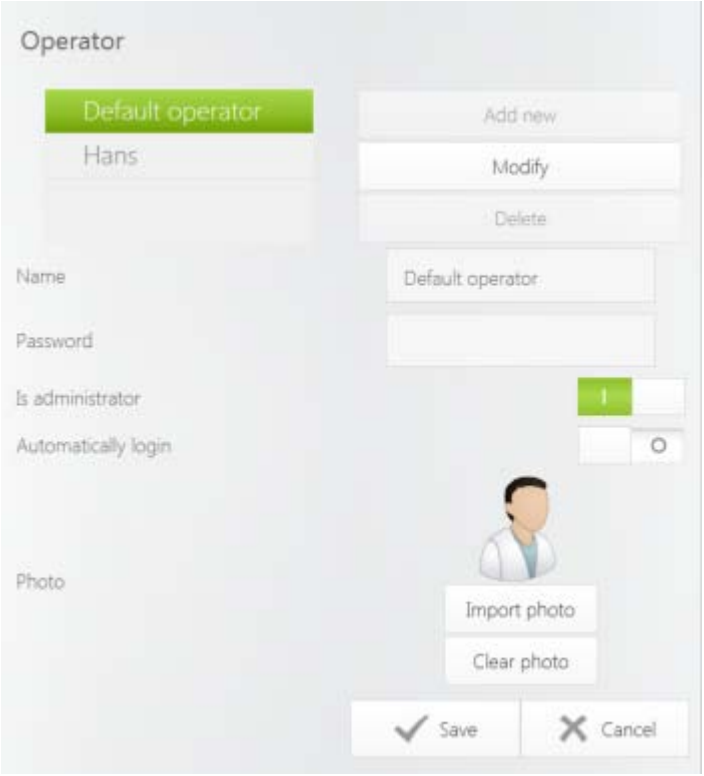
- Use sound effect switch.
- Scanning sound volume.
- Sound effect drop-down selection menu.



4. Operator

Press ***Operator*** to add a new TRIOS operator or change the existing name and password (see *Operator Options and Settings* for details).

Tip! Your account photo in *.png, jpg, jpeg or bmp formats can be added by pressing the ***Import photo*** button.



5. Connection

Allows you to enable remote management, client sharing, remote screen/tablet scanning options and diagnose internet connection.

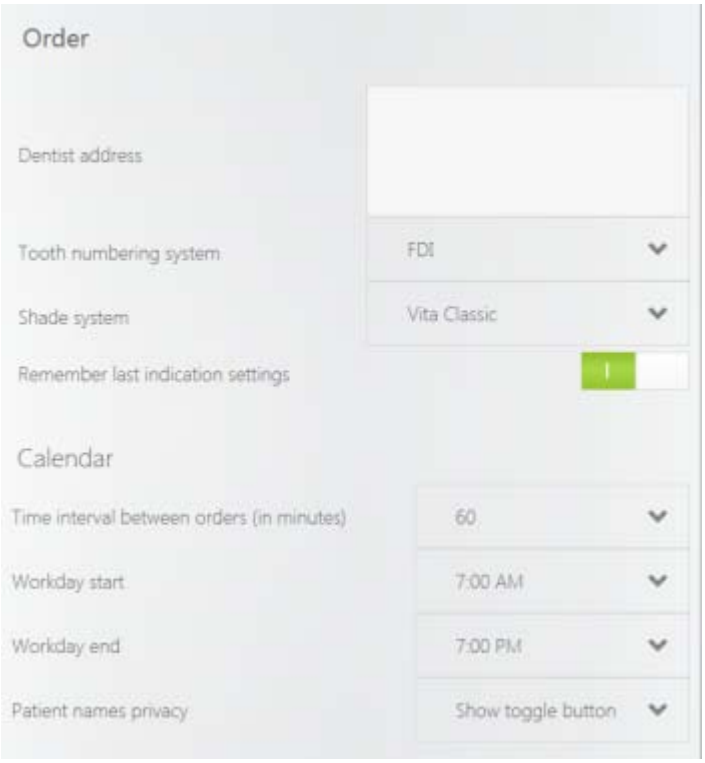
See *Connection Settings* chapter for details.

6. Lab Connections

The lab connection settings allow you to create and configure the 3Shape Communicate™ account of the operator and view connected 3Shape Communicate™ and direct connect labs.

See chapters Lab Connections, Create 3Shape Communicate™ Account and Connect to the Lab for details.

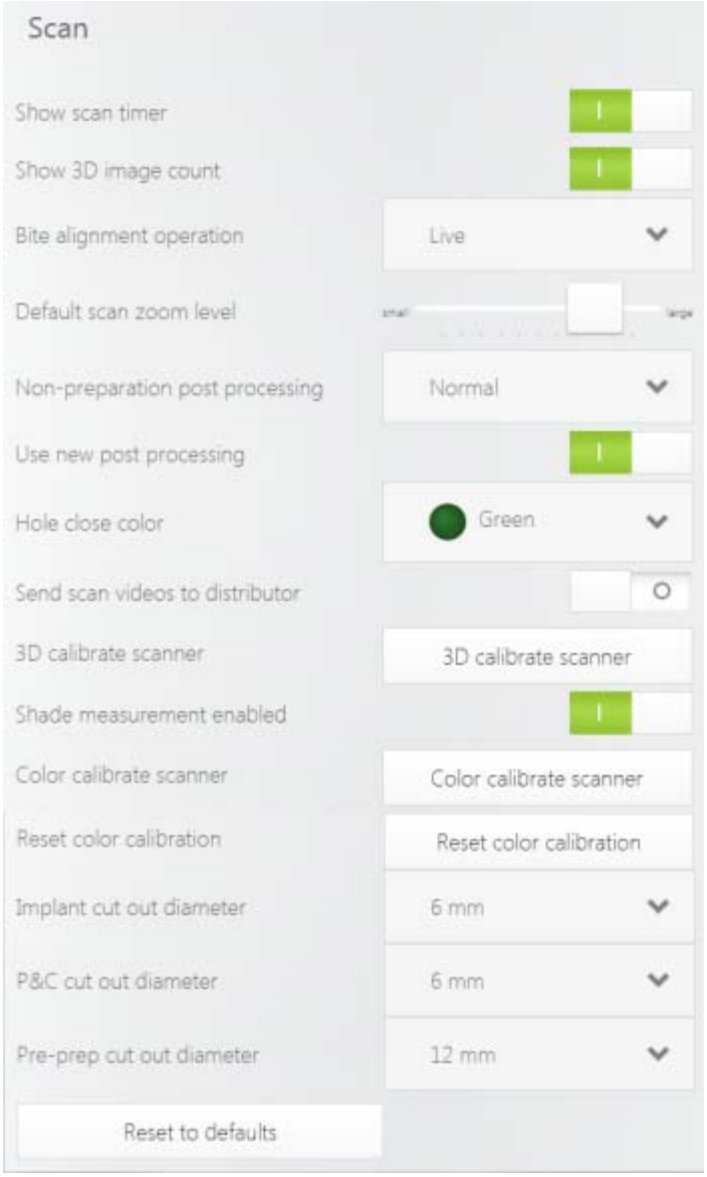
7. Order



Dentist address - Enter the address of your dental clinic. This address is included on the Order form (if supported by this order form).
Tooth numbering system - Lets you to select the preferred tooth numbering system, e.g.: UNN, FDI, Haderups, that changes the way the teeth are numbered in the Order form.
Shade system – Lets you to select one of the available shade systems.
Remember last indication setting – Sets the last used indication for the next selected tooth.
Time interval between orders (in minutes) – Specify the time interval between new orders.
Work day start / Work day end - Sets the start and end time of your workday in the calendar.
Patient names privacy - Has a selection option to either always show, hide patient names or show a toggle button for selection in the Calendar list.

8. Scan

The ***Scan*** settings allow you to calibrate your scanner and configure the scanning preferences.
See *Scan Options and Settings* chapter for a detailed description of all the parameters.
See *Scanner Calibration* chapter for detailed instructions on scanner calibration.

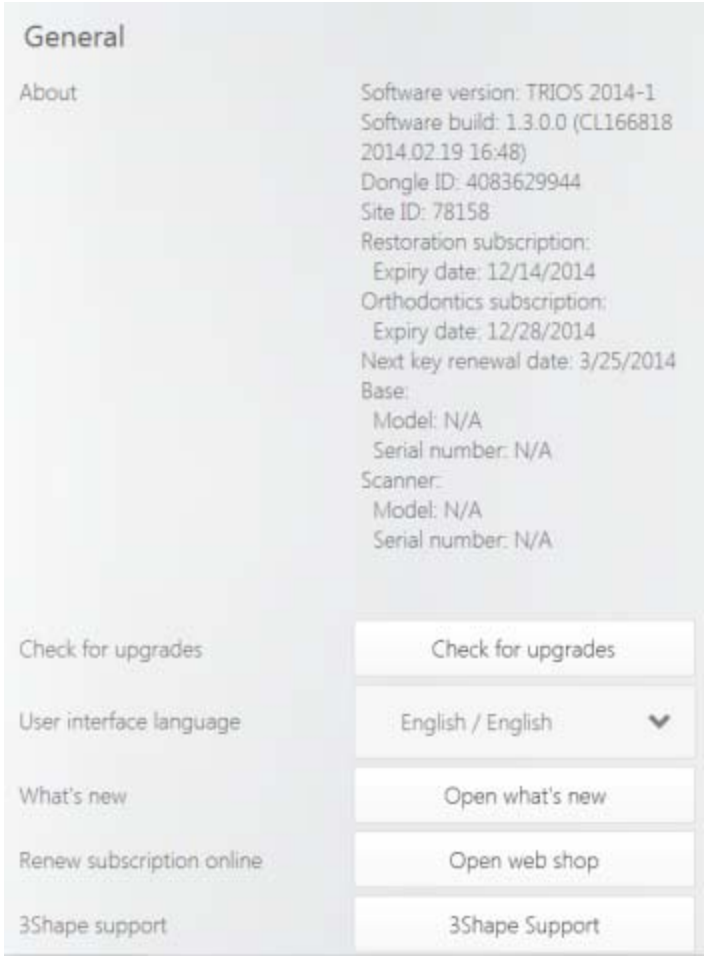


9. Messages

Used to automatically discard old messages from your Message page.

4.1 General Options and Settings

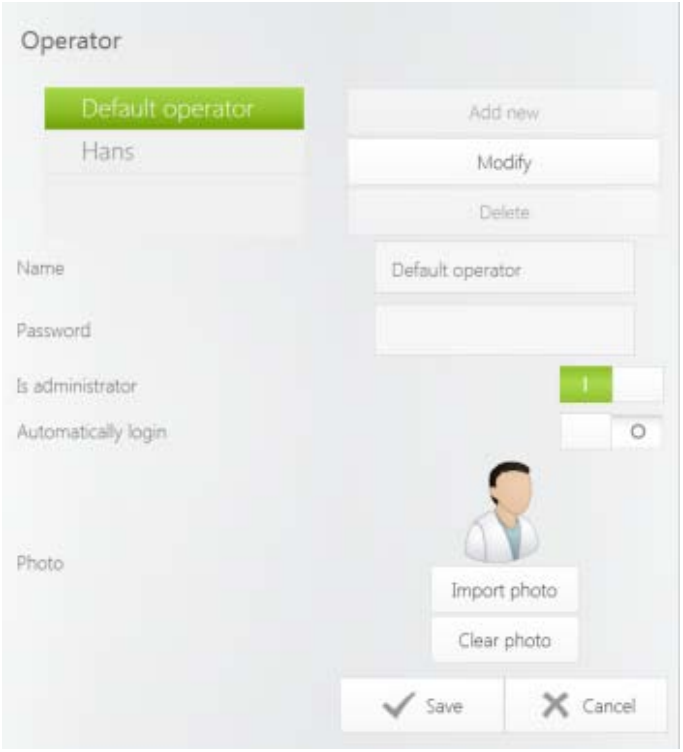
General settings contain the following buttons and options:



- ***Check for upgrades*** - lets you keep your TRIOS system up-to-date
- **User interface language** - Select the preferred TRIOS interface language.
- **What's new** - ***Open what's new*** button lets you see the What's new document.
- ***Open web shop*** - Lets you renew your subscription online. The dongle information is displayed under ***About***.
- ***3Shape Support*** - Online support is normally accessed by pressing ***Help*** and then ***Online Support*** buttons. This enables the remote support at the choice of your distributor. Should support be required directly from 3Shape, the ***3Shape Support*** button opens *3Shape QuickSupport* dialog window. Tell 3Shape the ID and password displayed on the screen for desktop sharing assistance.

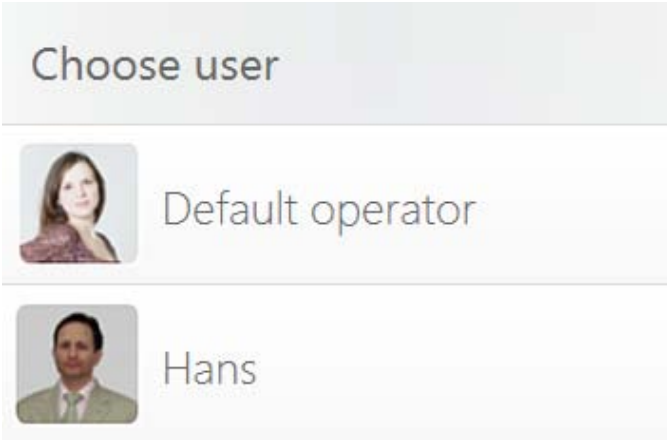
4.2 Operator Options and Settings

Operator helps you add or modify TRIOS operators:



OPERATOR

- ***Add new*** - Used to create a new TRIOS operator (the name appears in the list on the left).
  When a newly created operator logs in for the first time, it is presented with a guided wizard to setup his account. Alternatively, the settings can be made via the Service toolbar: Configure->Settings->Operator.
- ***Modify*** - Lets you edit the selected operator.
- ***Delete*** - Removes the selected operator from the list.
- **Name** - Fill in your name.
- **Password** - Create/modify your password. If you do not want to have a password, leave this field blank.
- **Is administrator** - sets operator as an administrator.
- **Automatically login** - Logs the operator in TRIOS automatically.

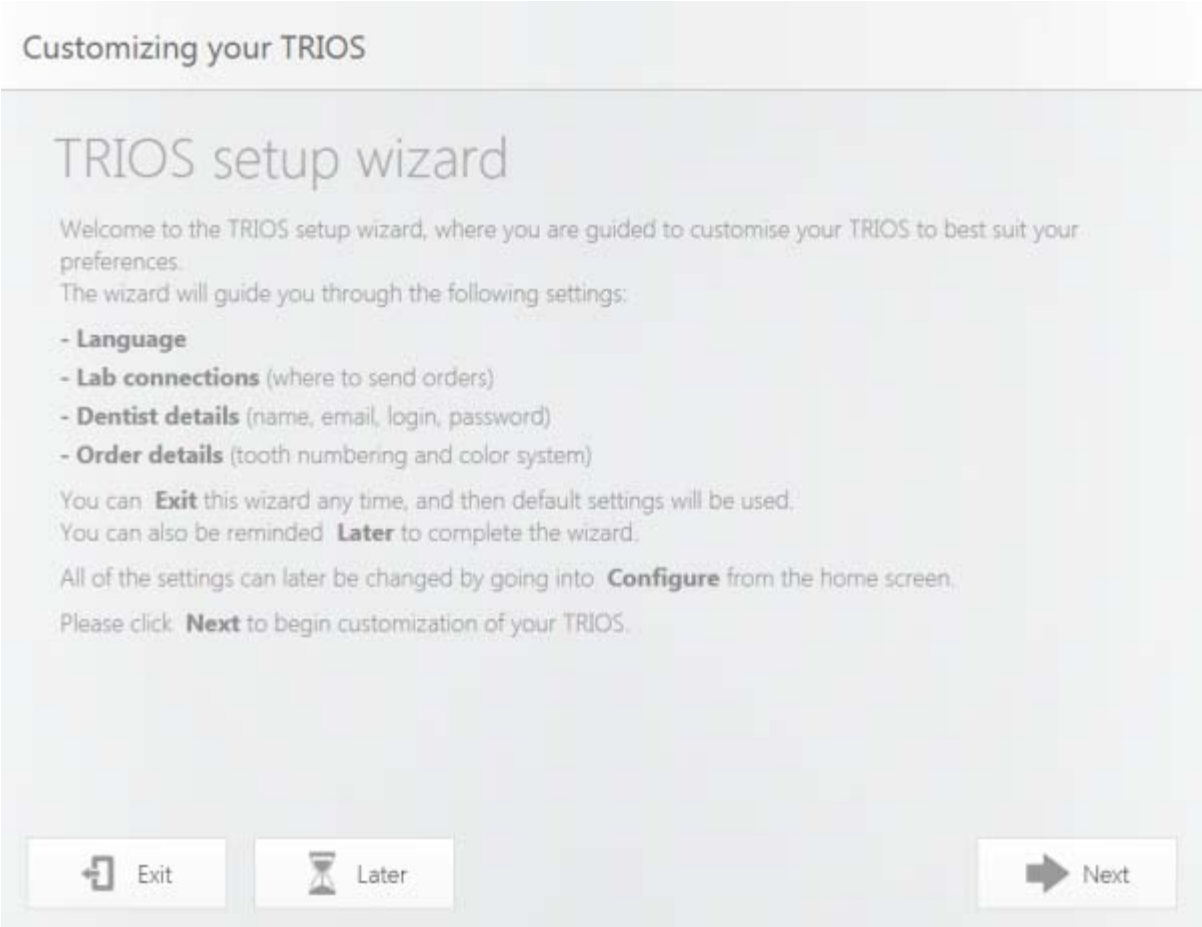


PHOTO

You can upload your personal photo in *.png, jpg, jpeg or bmp formats by pressing the ***Import photo*** button.

The ***Clear photo*** button removes added photo.

User photos appear next to the operators names on the *Choose user* login screen.



New TRIOS operator setup wizard

4.3 Connection Settings

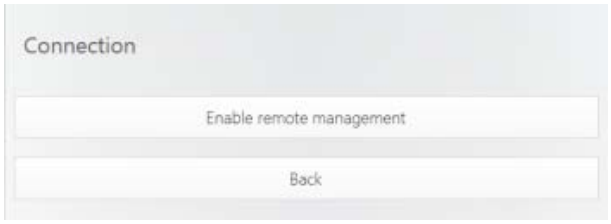
Connection page contains configuration settings for:

- ***Remote management*** - lets you enable or disable remote management.
- ***Client sharing*** - TRIOS cart data sharing setup.
- ***Wi-Fi*** - Wireless network connection setup.
- ***Proxy Settings*** - Internet access setup.
- ***Diagnose Internet*** - Tests your internet connection.

- **Remote screen/tablet scanning** - Lets you control TRIOS over a distance via iPad/tablet.

- ***Bluetooth Devices*** - Bluetooth device connection setup.

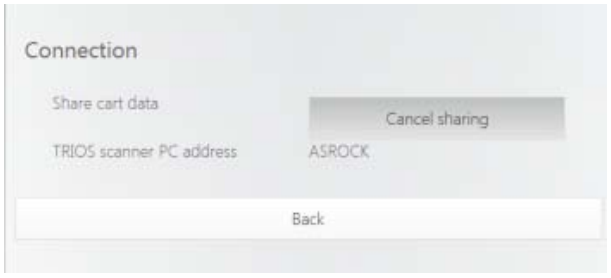
Note! The ***Wi-Fi*** and ***Bluetooth Devices*** buttons are enabled only in the cart installation of TRIOS when a Wi-Fi and Bluetooth dongles are available in the cart.



REMOTE MANAGEMENT

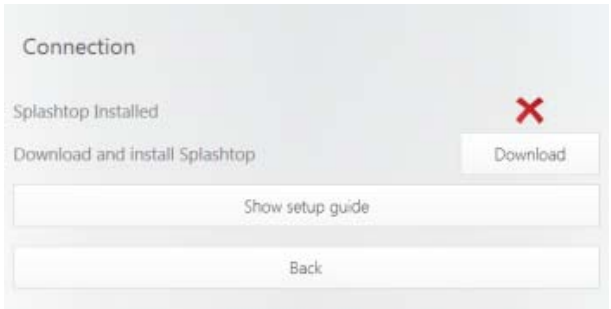
Enable / Disable remote management toggle button.

CLIENT SHARING



- Pressing the ***Share*** button makes your TRIOS cart data (orders, updates etc.) available to the client users.

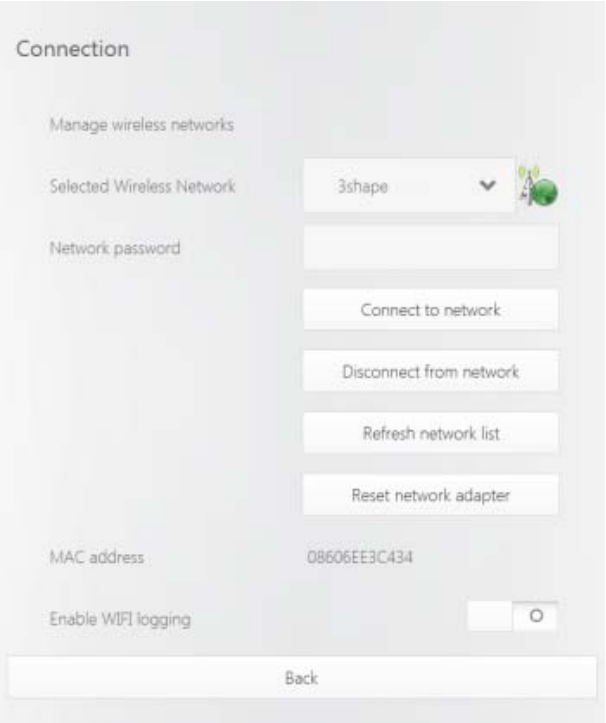
- The shared path is used by the clients to connect to the TRIOS cart.
- A client is an external version of the TRIOS software, that can create and modify TRIOS orders (typically placed at the receptionist of the clinic).



REMOTE SCREEN/TABLET SCANNING

Let's you download and install the Splashtop application for remote connection between TRIOS and iPad/tablet. See the supplied setup guide for instructions.

Wi-Fi



- **Selected Wireless Network** drop-down menu lets you choose a connection from the available networks. A **Network password** is required for a secure connection.
- ***Connect to network*** / ***Disconnect from network*** buttons - Establishes / closes connection to the selected wireless network. If the connection is established, a small globe icon is displayed next to the Selected Wireless Network drop-down menu.
- ***Refresh network list*** button - Updates the list of available networks in the **Selected Wireless Networks** drop-down menu.
- ***Reset network adapter*** button - May help you solve connection problems.
- ***Enable Wi-Fi logging*** - Automatically connects TRIOS to a predefined Wi-Fi network when enabled.

Please read Wi-Fi Installation Considerations section for guidelines on wireless network installation.

PROXY SETTINGS

If your network uses a proxy, fill in your proxy settings here. They can be obtained from your network administrator.

BLUETOOTH DEVICES

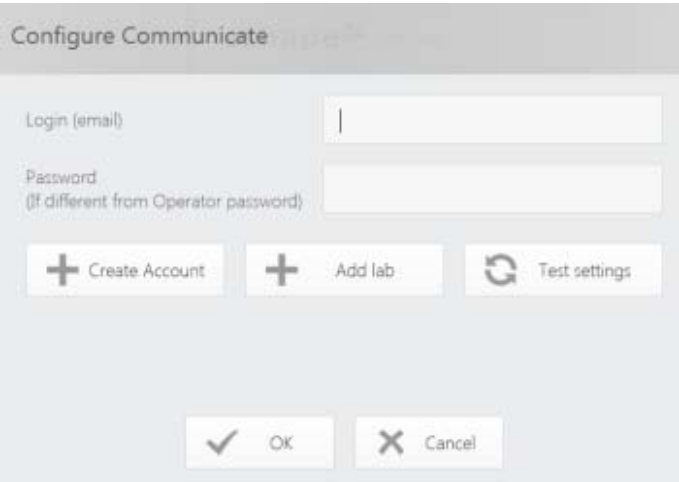
Opens up a page which allows you to connect to a Bluetooth device, e.g. a keyboard.

4.4 Lab Connections

Lab Connections page contains configuration settings, a list of labs and their type connections.

LAB CONNECTIONS

- **External Connection Method** - lets you select between 3Shape Communicate and FTP type of external connection.
- ***Configure Communicate*** - Lets you configure 3Shape Communicate account.
- ***Configure direct Connect Lab*** - Lets you configure direct connection (DC) to a lab.
- ***Add new Direct Connect Lab*** - Allows you to add a new direct connection (DC) to a lab.
- ***Refresh*** - Refreshes Lab Connections list.

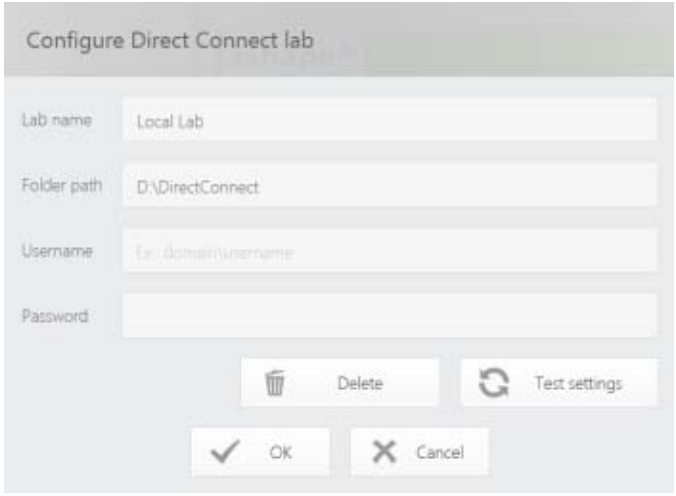


CONFIGURE COMMUNICATE

- **Login (email), password** - Your 3Shape Communicate login details.
- ***Add Account*** - Opens 3Shape Communicate registration page.
- ***Add Lab*** - Opens 3Shape Communicate login page to add a lab.
- ***Test settings*** - Tests 3Shape Communicate connection settings.

ADD NEW DIRECT CONNECTION LAB / CONFIGURE DIRECT CONNECTION LAB

Lab name - Name selected for the local lab.



Folder path - Path to the local folder.

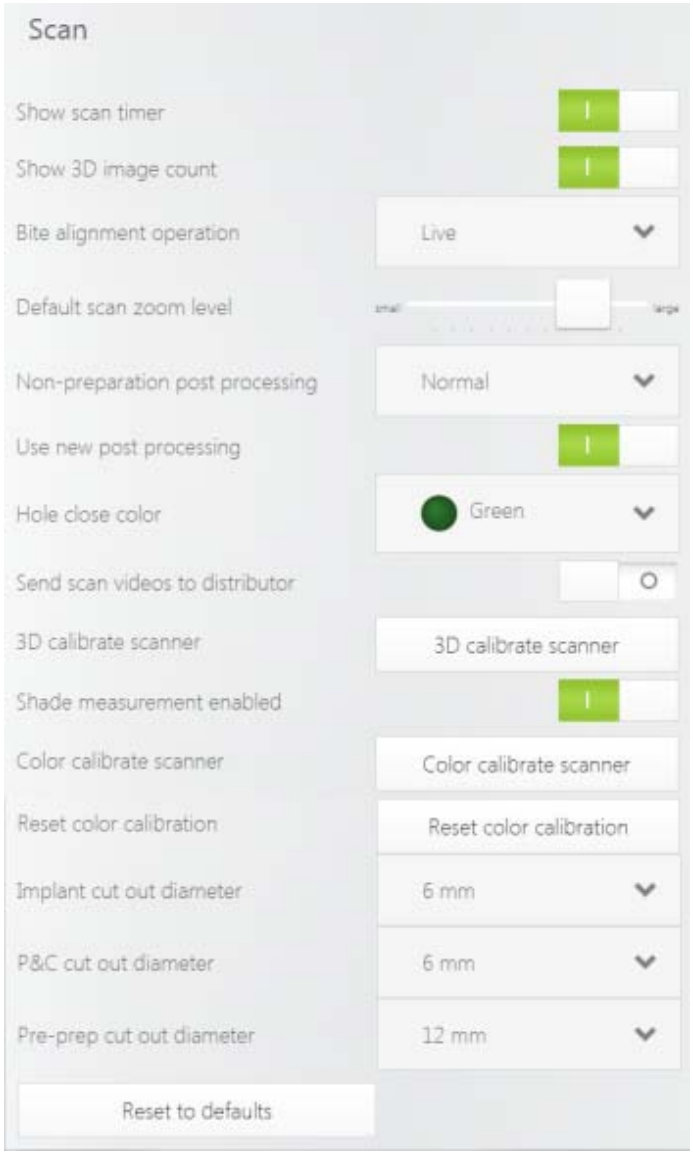
User name, Password - Network login details if needed.

Delete - Deletes selected lab connection.

Test Settings - Tests configured direct connection.

4.5 Scan Options and Settings

Scan settings frame contains parameters activated with the buttons on the right:



- **Use automatic tip heater -** Allows you to turn automatic heating on/off.
- **Show scan timer** - The scan timer is displayed during the scanning process in the upper left corner of the window.
- **Show 3D image count** - Shows the number of taken images during scanning.
- **Bite alignment operation** - Lets you select the type of bite alignment: Manual, Automatic - done after scanning, or Live - done during scanning.
- **Default scan zoom level** - Allows you to adjust the default zoom level for scanning.
- N**on-preparation post processing -** Sets the precision level of the models without preparation. Applies to antagonist and study orders.
- **Use new post processing** - Applies new post processing algorithm when enabled.
- **Hole close color** - Select the color shade to indicate closed holes on the model.
- **Send scan videos to distributor** - Automatically sends scan videos to distributor when enabled.
- **3D calibrate scanne**r - Used to calibrate monochrome and color TRIOS scanner. See Scanner Calibration chapter for details.

Color scanner (these settings appear only when a color scanner is connected):

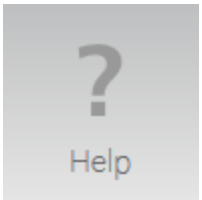
- **Shade measurement enabled** - enables shade measurement option for the color scanner.
- **Color calibrate scanner** - Opens color calibration guide. See Scanner Calibration chapter for details.

- **Reset color calibration** - Resets color scanner calibration to the factory default value. A New color calibration is required after resetting.

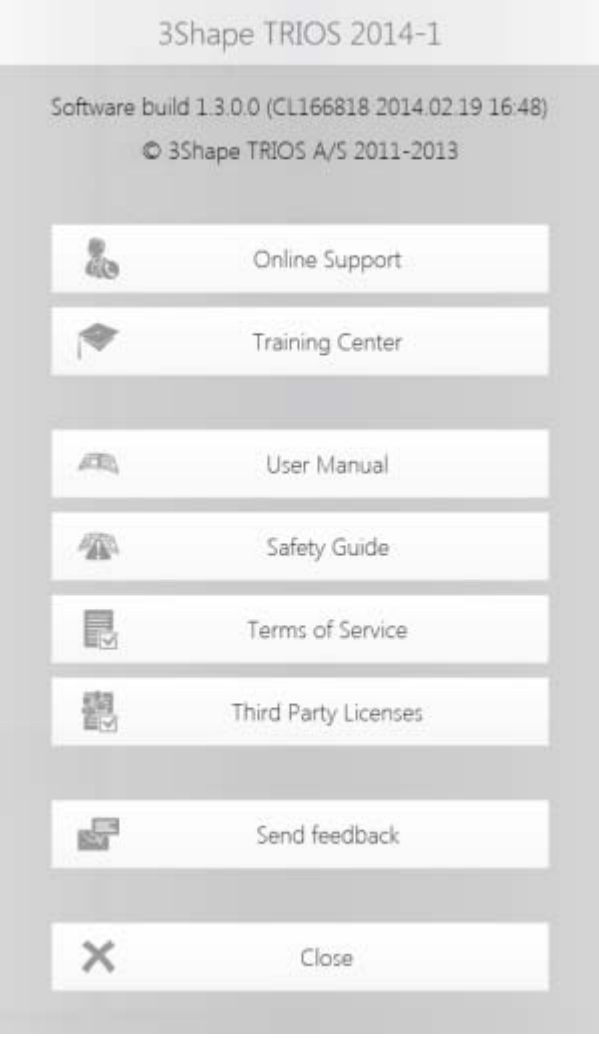
- **Implant / P&C / Pre-preparation cut out diameter** - Default values settings applied during scanning.

Reset to defaults - Resets all settings to factory default values.

4.6 Help Options



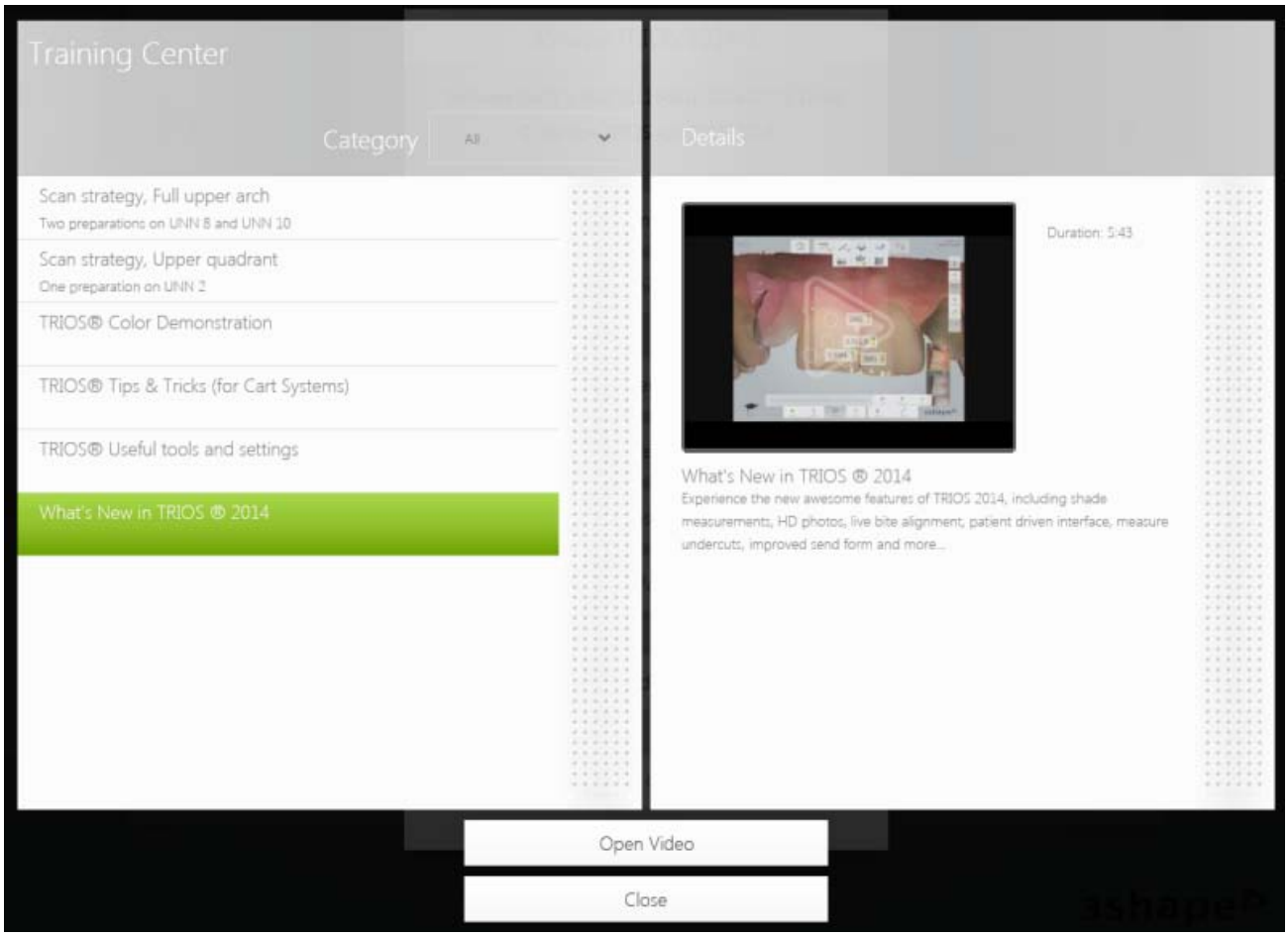
The *Help* window displays information about the current system version and provides the following options:

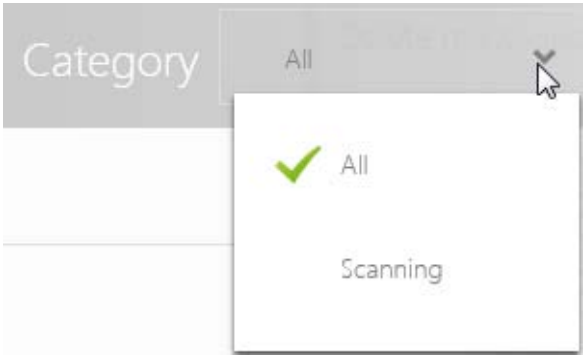


- ***Online Support*** - Launches a screen sharing session for online support.
- ***Training Center*** - opens a dialog window with training videos. Can be accessed from the Help menu and Scanning ***Tools*** unfolding menu at the bottom of the screen.
- ***User Manual*** - Opens TRIOS online help.
- ***Safety Guide*** - Opens TRIOS Safety and Setup Guide.
- ***Terms of Service*** - Opens the general license terms and conditions.
- ***Third Party License*** - Opens a list with third party licenses.
- ***Send feedback*** - Opens a form for reporting a bug.
- ***Close*** - Closes the *Help* window.

Tip! Pressing the **3Shape** logo also opens the *Help* dialog window.

Training Center allows you to select and view various training material:





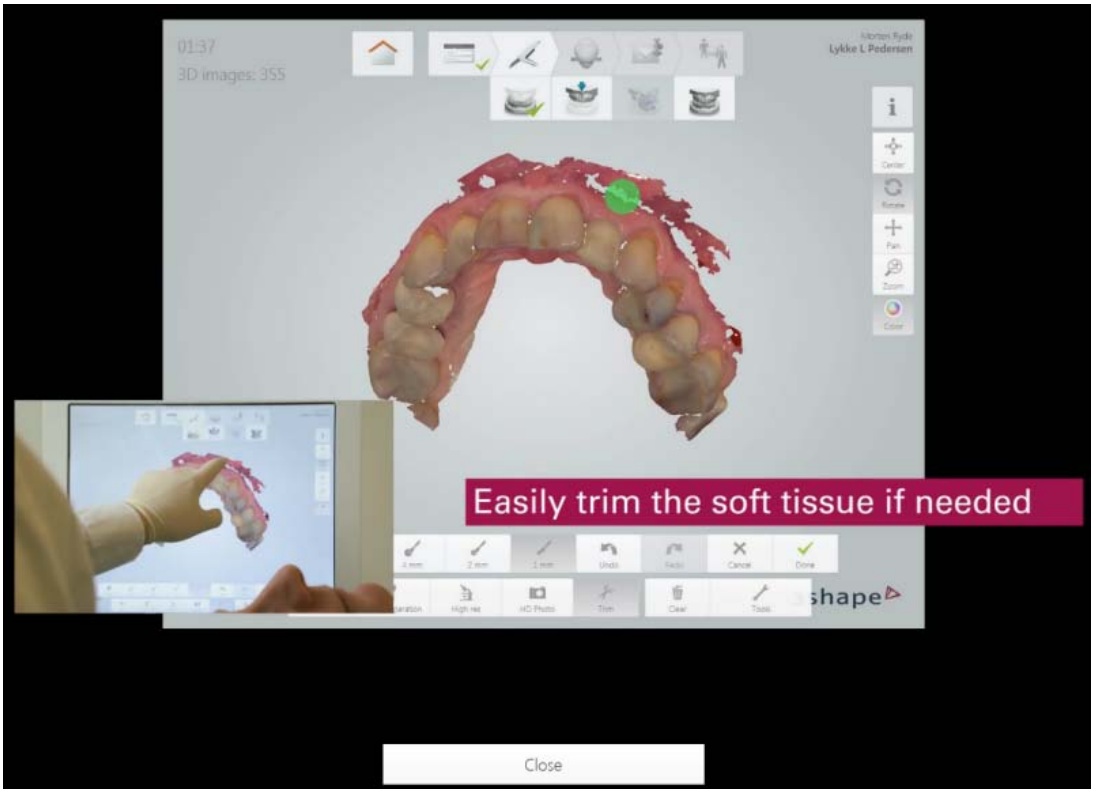
Training videos are listed in the left pane of the page and can be filtered by categories.

The right page shows details for the selected video.

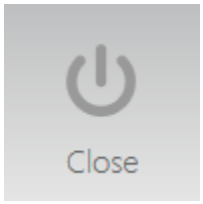
Playback of the selected video is initiated by clicking either the ***Open Video*** button or the preview image in the **Details** pane on the right.

While some videos can be viewed locally, others may require a working internet connection for streaming.

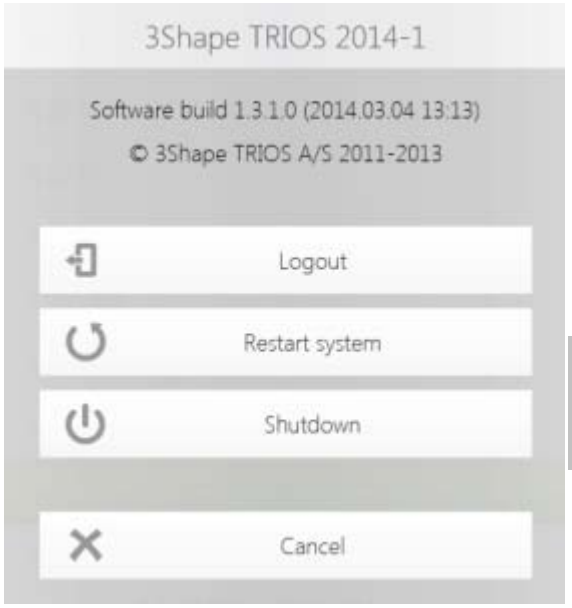
The following page is opened for the selected video:



4.7 Closing Options



The ***Close*** button opens a dialog window with the information about the current system version and provides the following closing options:



- ***Logout*** - signs you out and displays the Choose user list.
- ***Restart system*** - reboots the TRIOS system (available on cart systems).
- ***Shutdown*** - turns OFF the TRIOS system. You need to confirm your intention in the appearing dialog.

Note! Please allow enough time for the system to shut down properly before disconnecting the power cable. The ***Standby*** button light illuminates while the system is still processing

- ***Cancel*** - closes the window and returns to the main screen.

Note! After cleaning and disinfecting the scanner, put the protection tip on the scanning tube to protect its optics from contamination when not in use.

Note! The ***Standby*** button on the cart also functions as a ***Reset*** one to restart the system in case it becomes frozen and stops responding. Should that happen, push and hold the ***Standby*** button pressed for about 5 seconds to restart the system.

4.8 TRIOS Client

3Shape TRIOS installer contains two installation options: **Cart** and **Client**.

The **Cart** version is installed directly on a TRIOS cart.

The **Client** version can be installed on regular PC's for an easy data-exchange between TRIOS cart and client PC's within the clinic. The Client can be used for all TRIOS operations except scanning such as, creating new orders and reviewing old ones.

Note! The Client cannot run if the Cart or Pod PC is turned off.

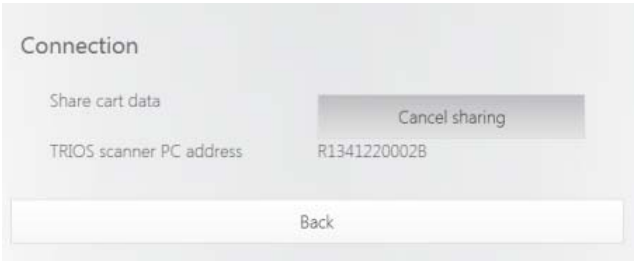
Software Requirements for installing 3Shape TRIOS Client:

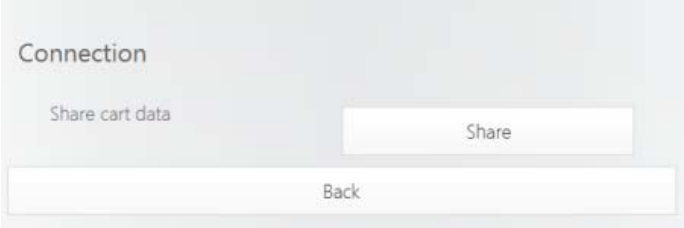
- Windows Vista or later.
- Microsoft .Net 4. (version 4.5 is part of the installer)

Step 1: Enable Client sharing on the Cart

Before you can start using the Client, Client sharing must be enabled on the Cart.

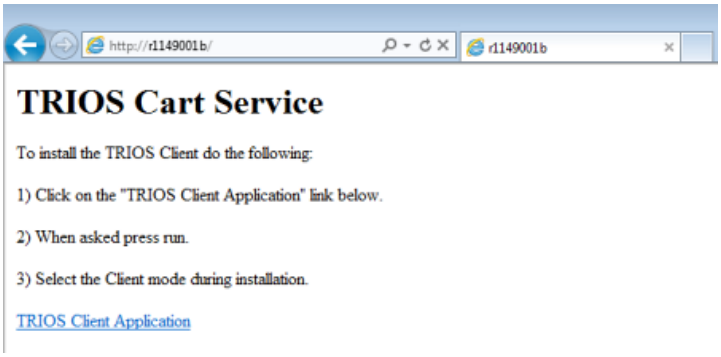
1. In the Cart interface, select **Configure** from the Service toolbar on the left to open **Settings**.
2. Select **Connection** and press the ***Client sharing*** button in the *Connection* page**.**
3. Press the ***Share*** button and confirm your choice to enable Client sharing.





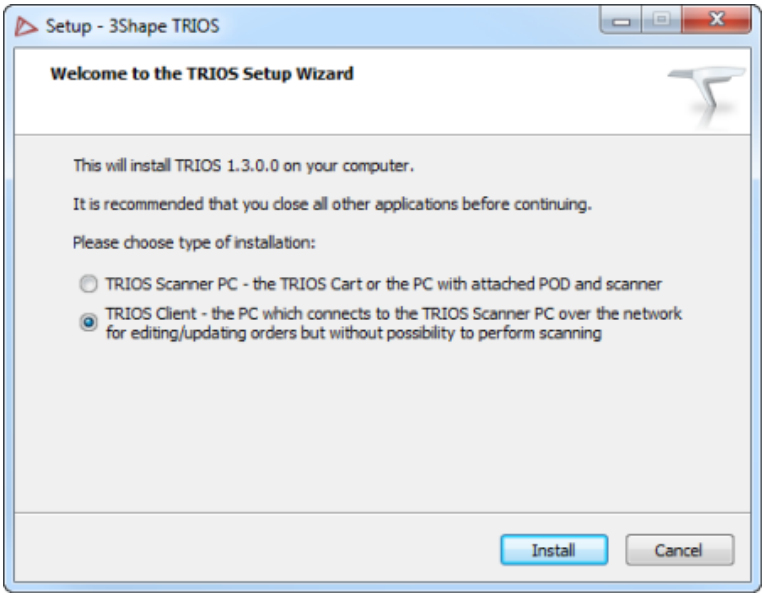
Copy the Installer address to use for Client installation (see Step 2) and the Cart address to connect the Clients to (see Step 3).

Step 2: Run the Client installation



1. The TRIOS installer can be found via the link from the Cart settings by typing it in a file explorer or a web browser. This opens a web page with instructions and a link to the Client Installation file.

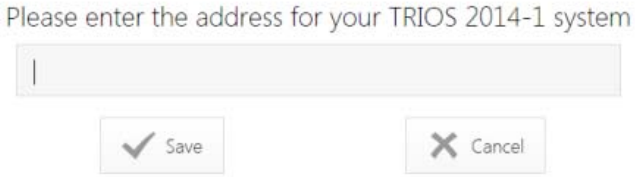
2. When clicking the **TRIOS Client Application** link you can either choose to Run the installation after the download, or save it for later installation.



3. Select **TRIOS Client** option in the appeared screen.

4. Press the ***Install*** button to continue the installation process.

Step 3: Start the Client

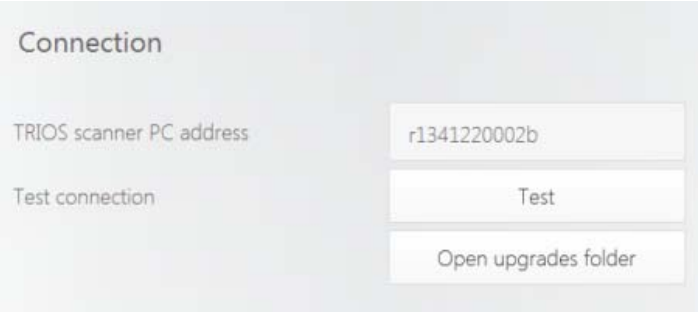


On the first start-up of the TRIOS Client, you need to enter the address or name of your TRIOS Cart PC (see Step 1).

The TRIOS client restarts on saving the address and connects to the TRIOS Cart.

Step 4: Using the Client

Except for the excluded scanning ability and limited *Settings* page, the TRIOS functionality described for the Cart is also valid for the Client version.



Orders created with the Client are stored on the Cart or Pod PC. The Client cannot run if the Cart or Pod PC is not running.

Orders open with Cart or Client are locked, the users are notified when they try to open locked orders.

You can change the existing Client to Cart connection by opening the Connection page and filling in a new Cart name.

The ***Test*** button allows you to confirm the established connection.

4.9 Wi-Fi Installation Considerations

Wireless router lets you access your network using a Wi-Fi connection from virtually anywhere within the operating range of the wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business.

The key to **maximizing wireless range** is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (0.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

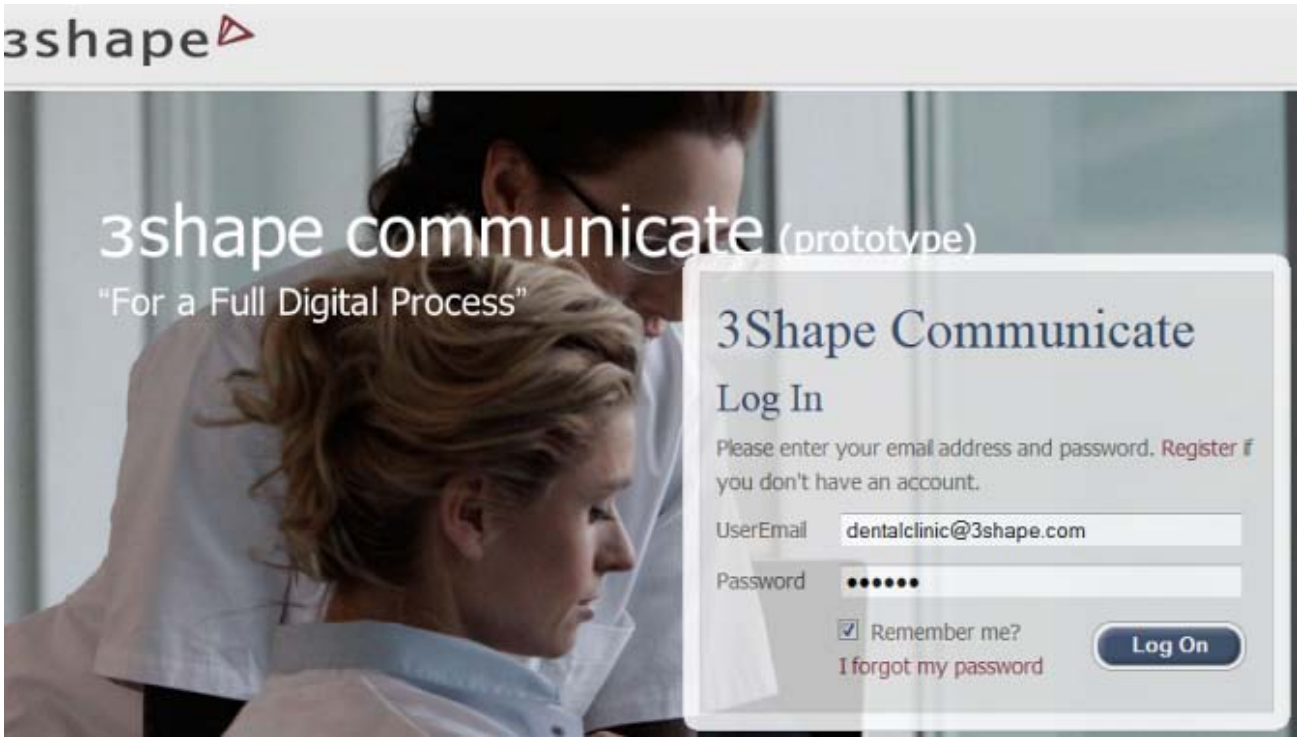
6. There may be more than one wireless network active in your area. Each network uses one or more channel numbers. If the channel numbers are close to the channels of your system, a degradation of the communication may occur. Ask your IT department to verify this, and change the channel numbers used by your network if required.

5 Communication With the Lab

With TRIOS system, it is possible to exchange orders and comments with the lab of your choice using 3Shape Communicate™ - an advanced tool, integrated in your TRIOS system.

3Shape Communicate™ allows you to:

- Send 3D scans from your TRIOS system to the lab.
- Receive designs from your lab for review.
- Exchange comments with the lab.
- Discuss virtual diagnostic wax-ups with your lab and patients.
- Communicate with labs using TRIOS cart or any other PC.



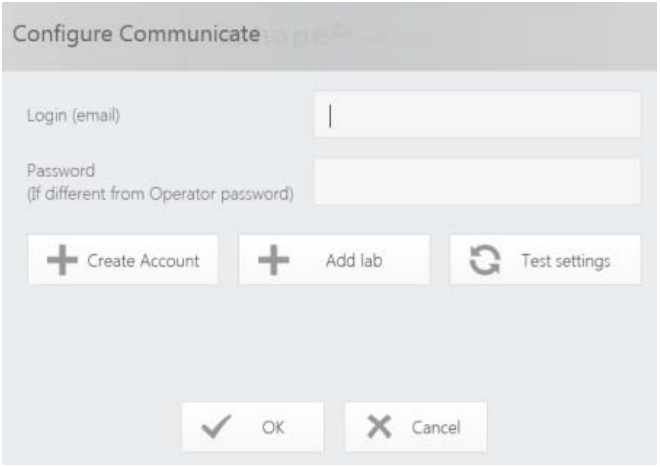
Note! To be able to use 3Shape Communicate™, you have to register your Dental Clinic with the 3Shape Communicate™ web site - www.3shapecommunicate.com and configure your TRIOS Lab Connections settings.

5.1 Create 3Shape Communicate™ Account

To create a 3Shape Communicate account, please follow steps below (Access to the internet is required):

Step 1: Open Configure Communicate window

Press ***Configure->Lab Connections->Configure Communicate*** buttons to open the window.



Step 2: Open 3Shape Communicate registration

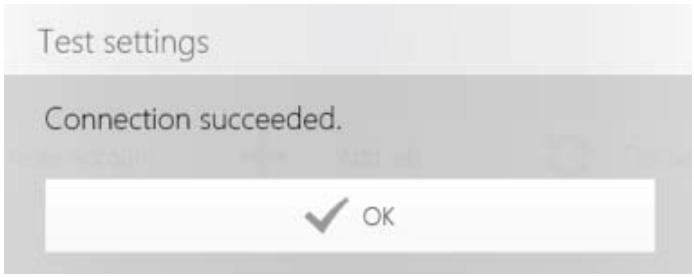
Press the ***Create Account*** button to open the 3Shape Communicate web page (www.3shapecommunicate.com) and follow the *Register a Dental Clinic* link.

Step 3: Register a Dental Clinic

Fill in the registration form and Press the ***Register*** button to complete the registration.

Step 4: Activate your account

Open the confirmation e-mail sent to your e-mail address and press the activation link.



Step 5: Start using 3Shape Communicate™

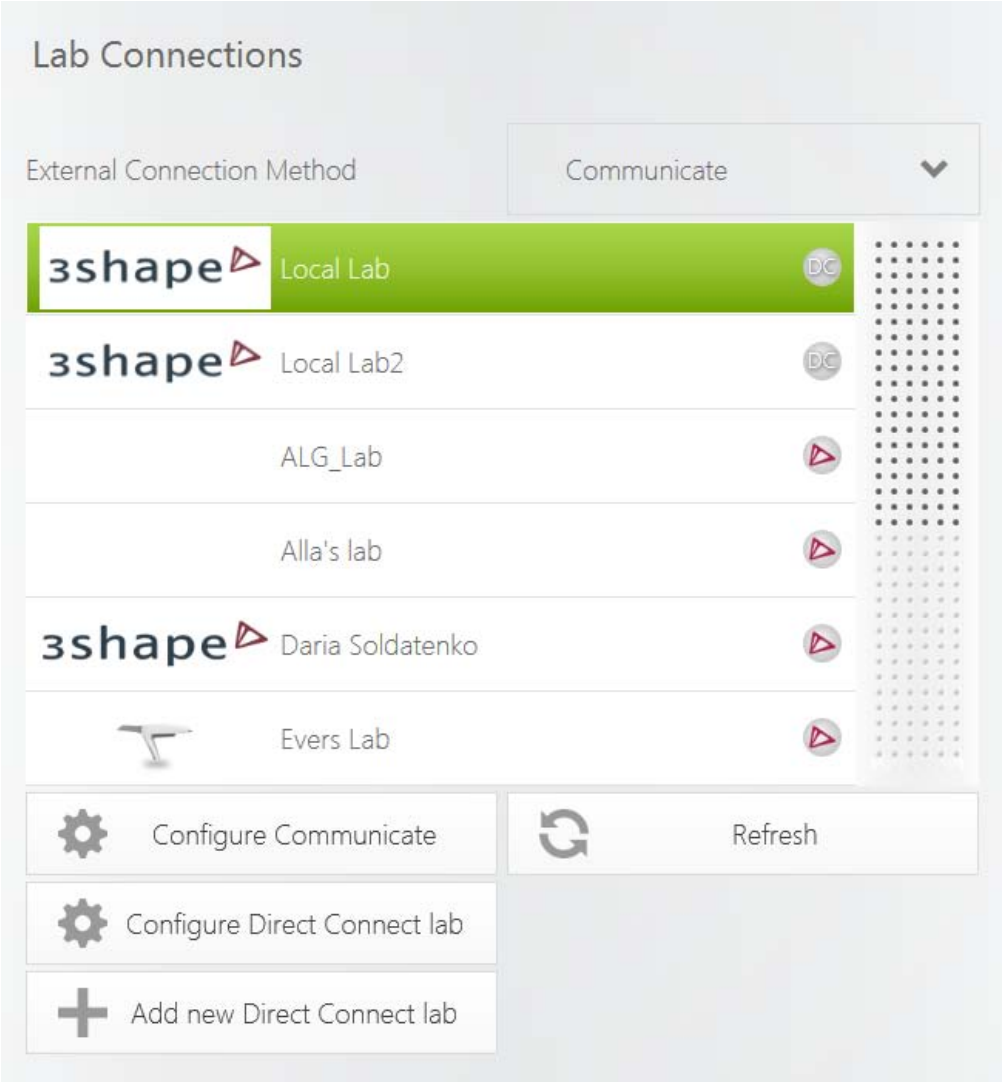
Open **Configure Communicate** window, enter your login and password and press ***Test settings*** button. If the connection is successful, you receive a confirmation message.

Tip! You can use your credentials to access your 3Shape Communicate account from any remote PC.

5.2 Connect to the Lab

Depending on your requirements, you can configure 3Shape Communicate and direct lab (local) connections in TRIOS by following the steps described below.

Open Lab **Connections** page from the **Settings** menu.

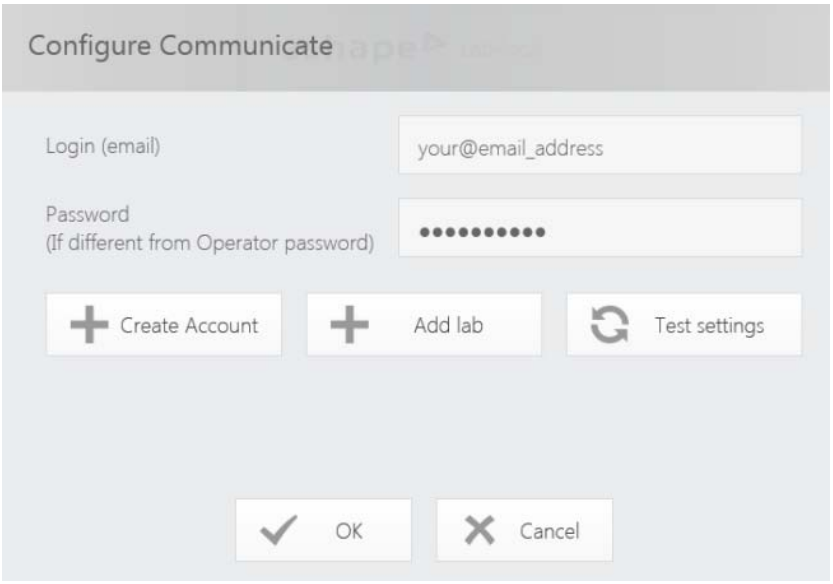


3SHAPE COMMUNICATE LAB CONFIGURATION

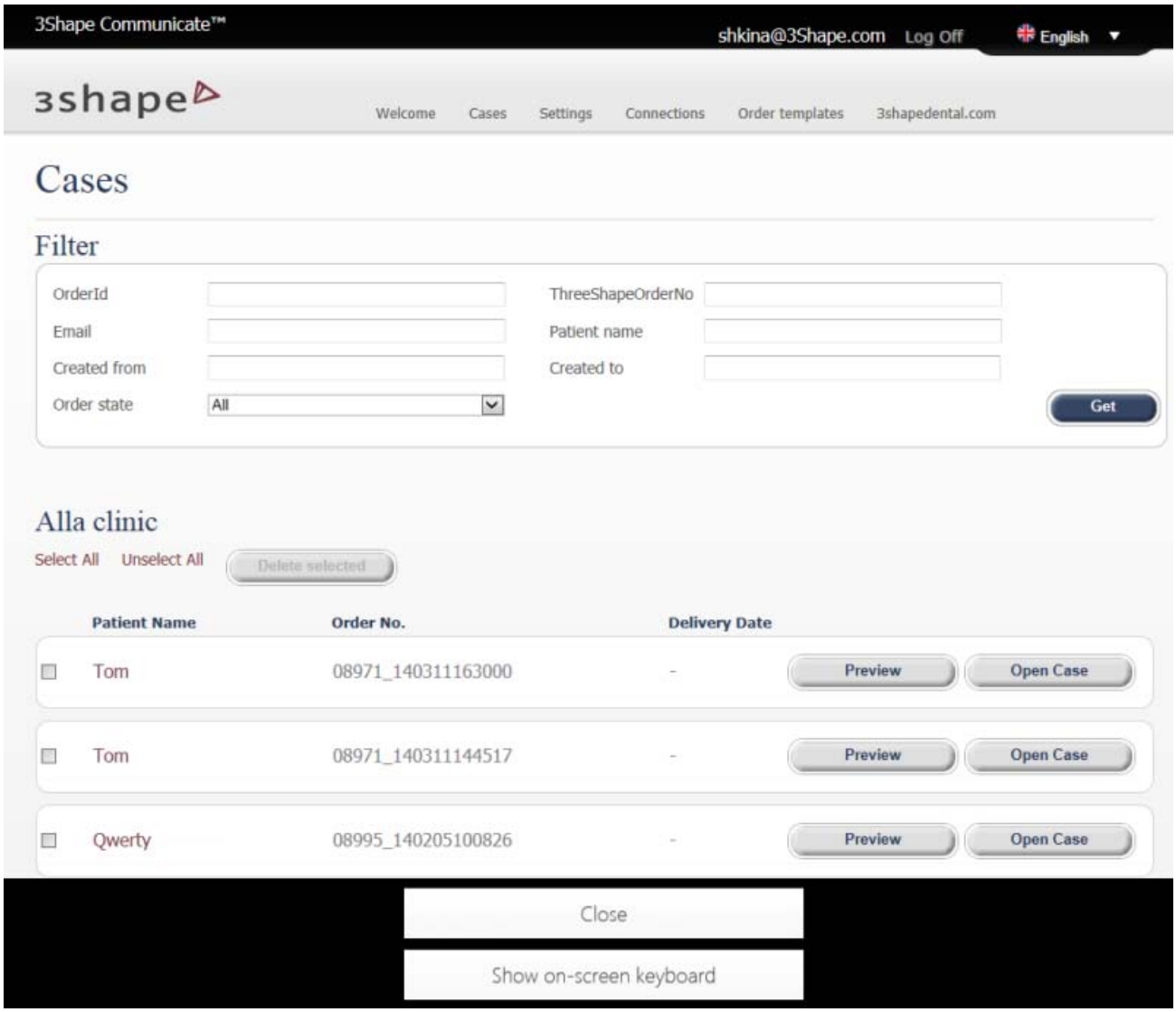
Once your 3Shape Communicate account has been created, you need to set up a connection to the Lab.

▶ Step 1: Open 3Shape Communicate web site

Press ***Configure Communicate*** button on the **Lab Connection** page to open **Configure Communicate** window.



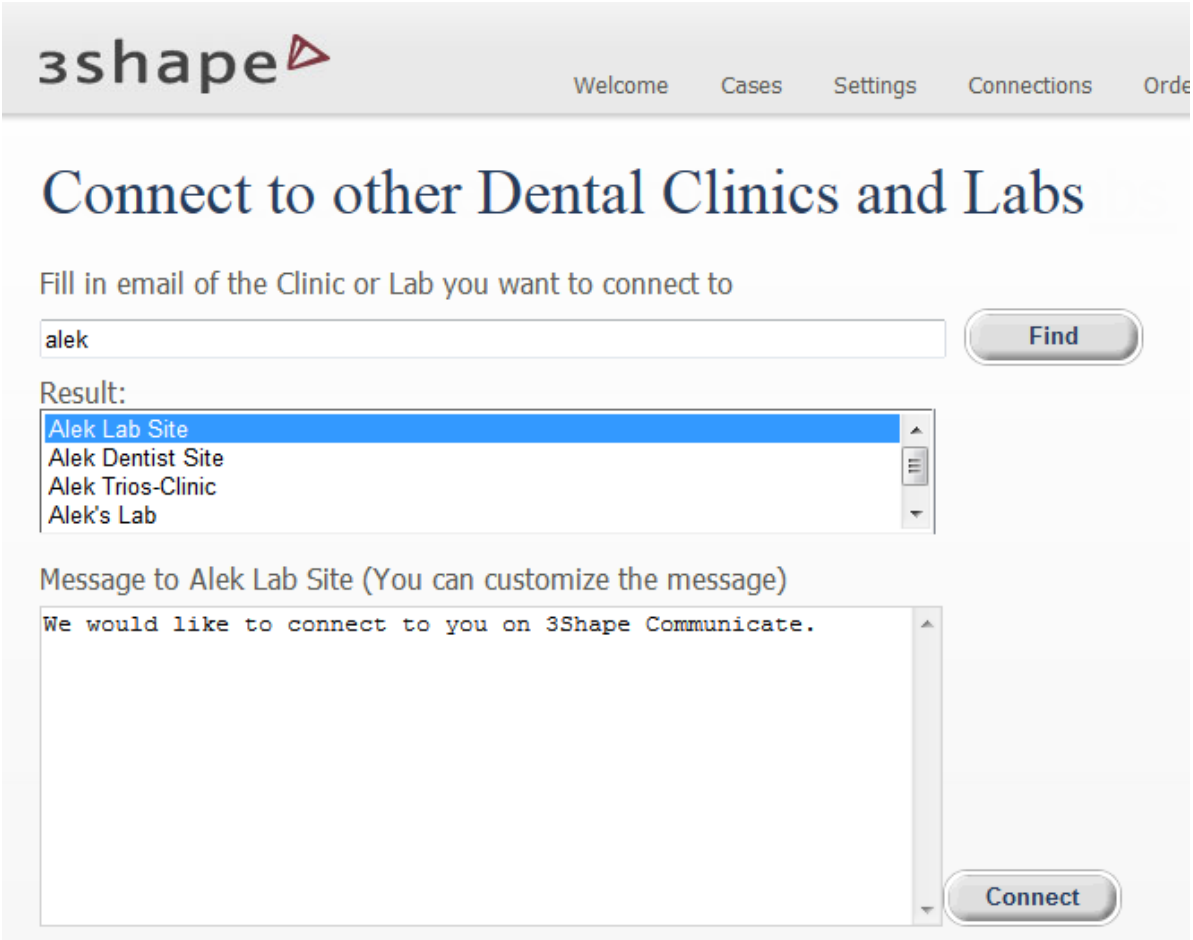
Press the ***Add lab*** button to load 3Shape Communicate web site.



Step 2: Add Lab

Press the **Connections** menu item at the top to load **Connected Sites** page.

Press ***Add Connection*** button to open **Connect to other Dental Clinics and Labs** page. Fill in the name of the lab (e-mail obtained from the lab) you want to connect to and press the ***Find*** button to search.



Select the required Lab in the list of found items and press the ***Connect*** button to send your connection request to the selected laboratory. A message is sent along with your request (text can be customized). The lab you wish to connect is added to the **Connected Sites** list with the **Waiting for approval** status.

Step 3: Start working with the lab

When the lab confirms the connection, its status is changed to **Active** and the laboratory appears in the Lab Connection list of your TRIOS system. If you added a lab from a remote PC, press ***Refresh*** to update the list.

When a lab has been added, the system automatically checks for order templates and downloads them to your TRIOS system.

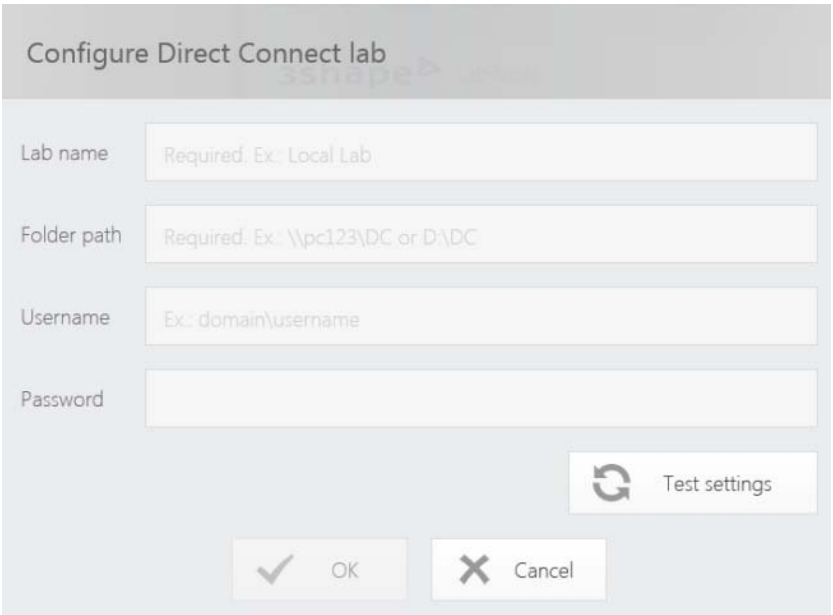
You can now select the lab from the list in the Order form to be able to exchange orders and messages with the lab.

DIRECT CONNECT LAB CONFIGURATION

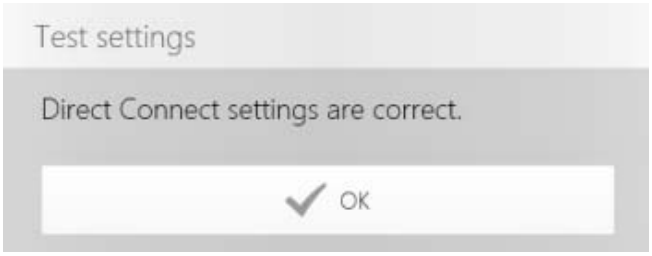
You can use a direct connection to your local Lab - the option must be enabled in dongle.

Step 1: Add new Direct Connect lab

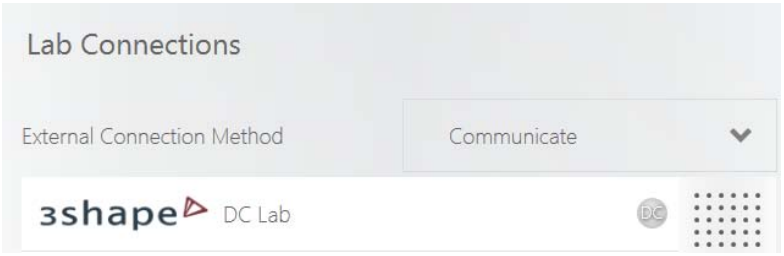
Press ***Add new Direct Connect lab*** button on the **Lab Connection** page to open **Configure Direct Connect lab** window. Fill in **Lab name**, **Folder path** and login details for the local network domain if required.



Confirm connection details by pressing the ***Test settings*** button.

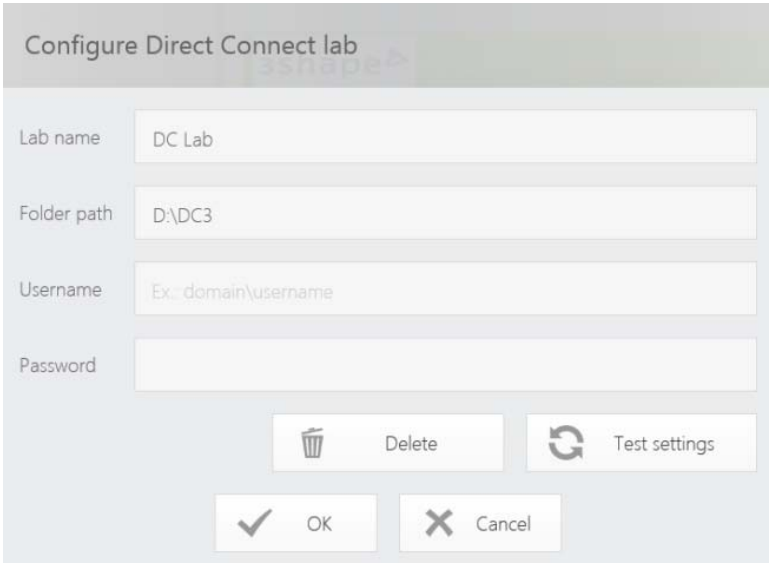


Press ***OK*** to save the newly created local lab. It will appear in the **Lab Connections** list with the DC icon.

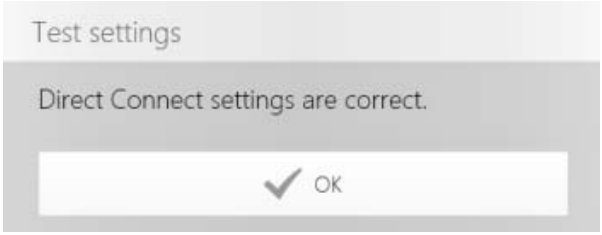


Step 2: Configure Direct Connect lab

Press ***Configure Direct Connect lab*** button on the **Lab Connection** page to open **Configure Direct Connect lab** window. Modify **Lab name**, **Folder path** or the login details for the local network domain if required. The existing direct connect lab can be also deleted by pressing the ***Delete*** button here.



Confirm connection details by pressing the ***Test settings*** button.



Press ***OK*** to save connection setting changes for the local lab.

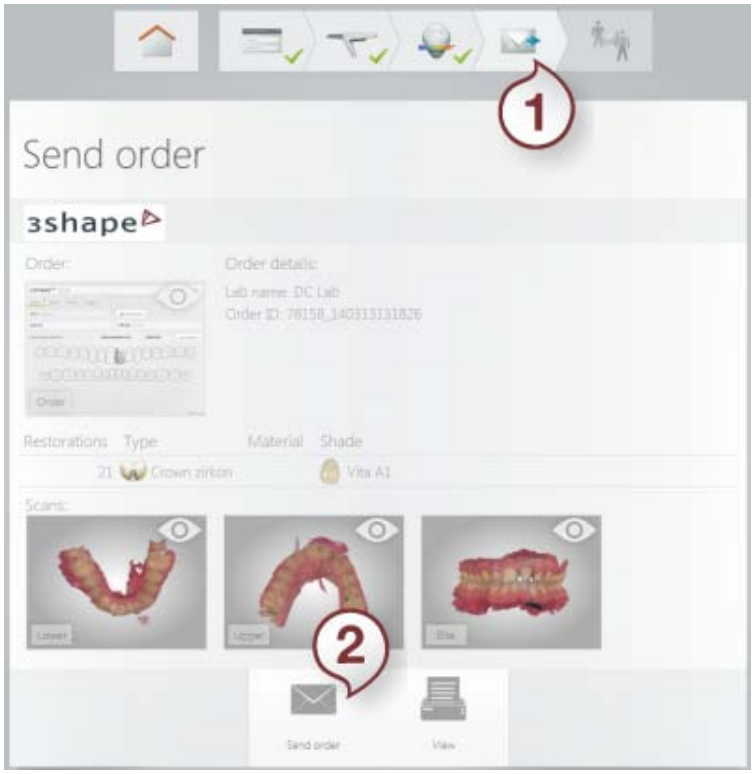
5.3 Send Order to the Lab

On the order page, choose the desired Lab while creating order by clicking ***Change Lab*** button and selecting the lab. You can then perform scanning and send your order to the Lab.

The list of labs can be modified using the **Lab Connections** settings. Please see chapter Connect to the Lab for details.

To send your order:

Step 1: Press the *Send* button (1)



A detailed order description with scan images is visible in a preview.

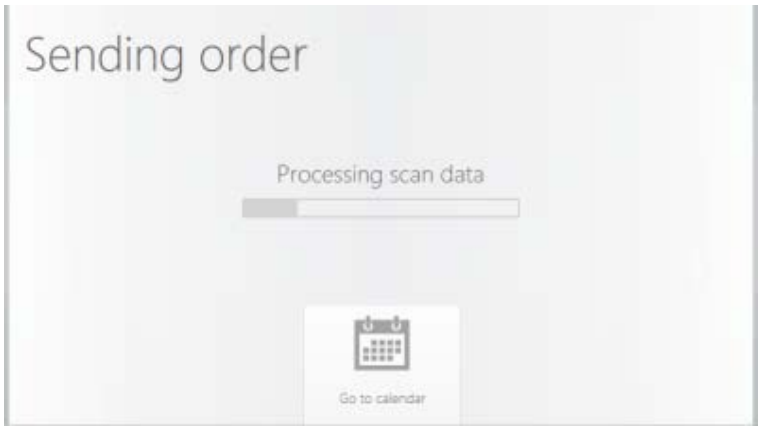
Step 2: Press the *Send order* button (2)

The ***View*** button lets you get a print overview of the order and send it to print.

If you haven't performed post-processing at the previous Analyze step, it is automatically performed during order sending and may take a minute to complete.

Tip! It is recommended to do post-processing at the Analyzing step and inspect the result.

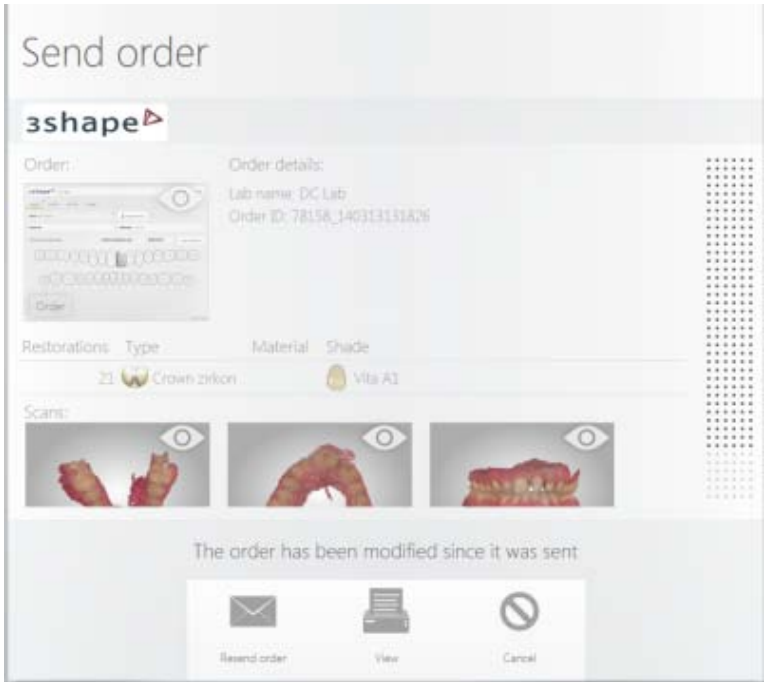
Tip! You can always return to the order and send it later. You can also re-send a changed order.



Tip! Order is sent in the background, enabling you to immediately start a new session with another patient by pressing the ***Go to calendar*** button.

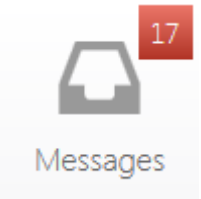
Orders can be resent.

When you try to change an order (e.g., modify the margin line, add new annotations, images) that has been already sent, a warning message automatically appears reminding you to re-send the order if you proceed.



When you confirm you intention by pressing the ***Yes*** button, the ***Resend order*** button appears in the **Send order** form. Press the button to resend the modified order to the lab.

5.4 Communicate with the Lab

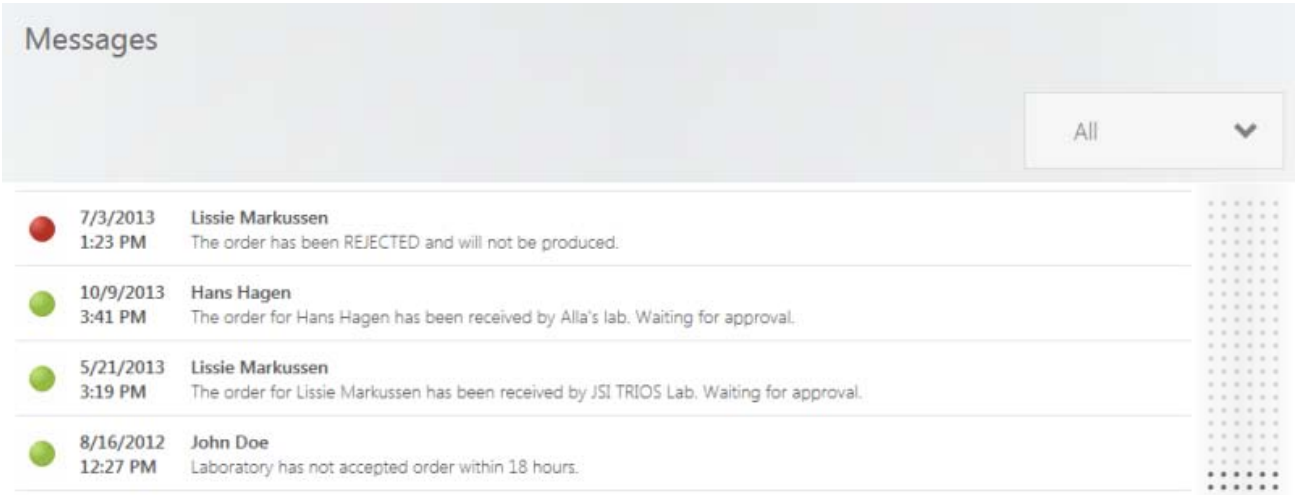


MESSAGES

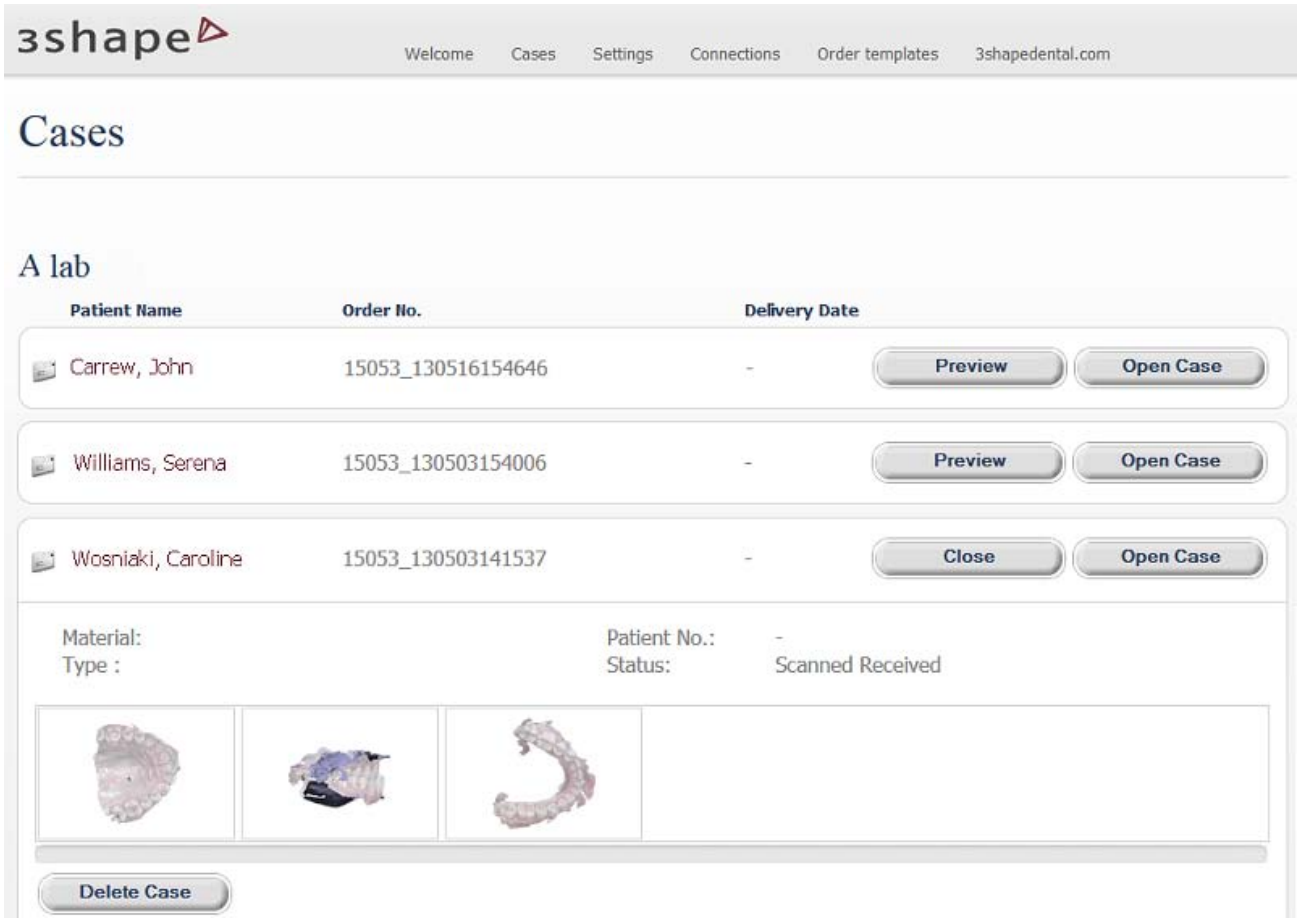
The **Messages** page shows notifications about the received comments, lab designs and system messages. The important messages like a rejected case, design approval is requested, or lab has not accepted the case for a while are displayed with a red icon while others are indicated in green.

1. The laboratory can send you comments regarding the received orders, their statuses (see the image below) and design updates to the restorations.
2. System messages are automatically generated by the TRIOS system to inform you about the order status. For example, you are notified if the order has not been accepted by the lab within 18 hours. You also receive a message when the lab approves your order.

- The number of new and unread messages appears in the ***Messages*** screen.
- To view an order that received a comment or design and send a reply to the lab, tap the message to open the 3Shape Communicate page of your TRIOS system.
- Press on the green dot to mark a message as read.
- Use the **Show messages** filter to view **All** / **System** / **Order** / **Unread** messages.



Orders and comments can also be accessed via the 3Shape Communicate web site - www.3shapecommunicate.com.



Press the ***Open case*** button to view order details and scroll down to write a comment:

3SHAPE COMMUNICATE

If you have a notification in **Messages**, click on it to open the order in the **3Shape Communicate** page and view the received message or design. **3Shape Communicate** page lets you view the design, models and margin lines in 3D, and discuss the case with a technician:

(1) Open the ***3Shape Communicate*** page. View the scan model. If the lab uploaded a new design to the 3Shape Communicate web site, it will be automatically downloaded to your TRIOS system and visible on this page.

(2) Press the ***Comments*** button to show the message box on the left

(3) Press ***Write Comment*** to open the corresponding window **(4)**

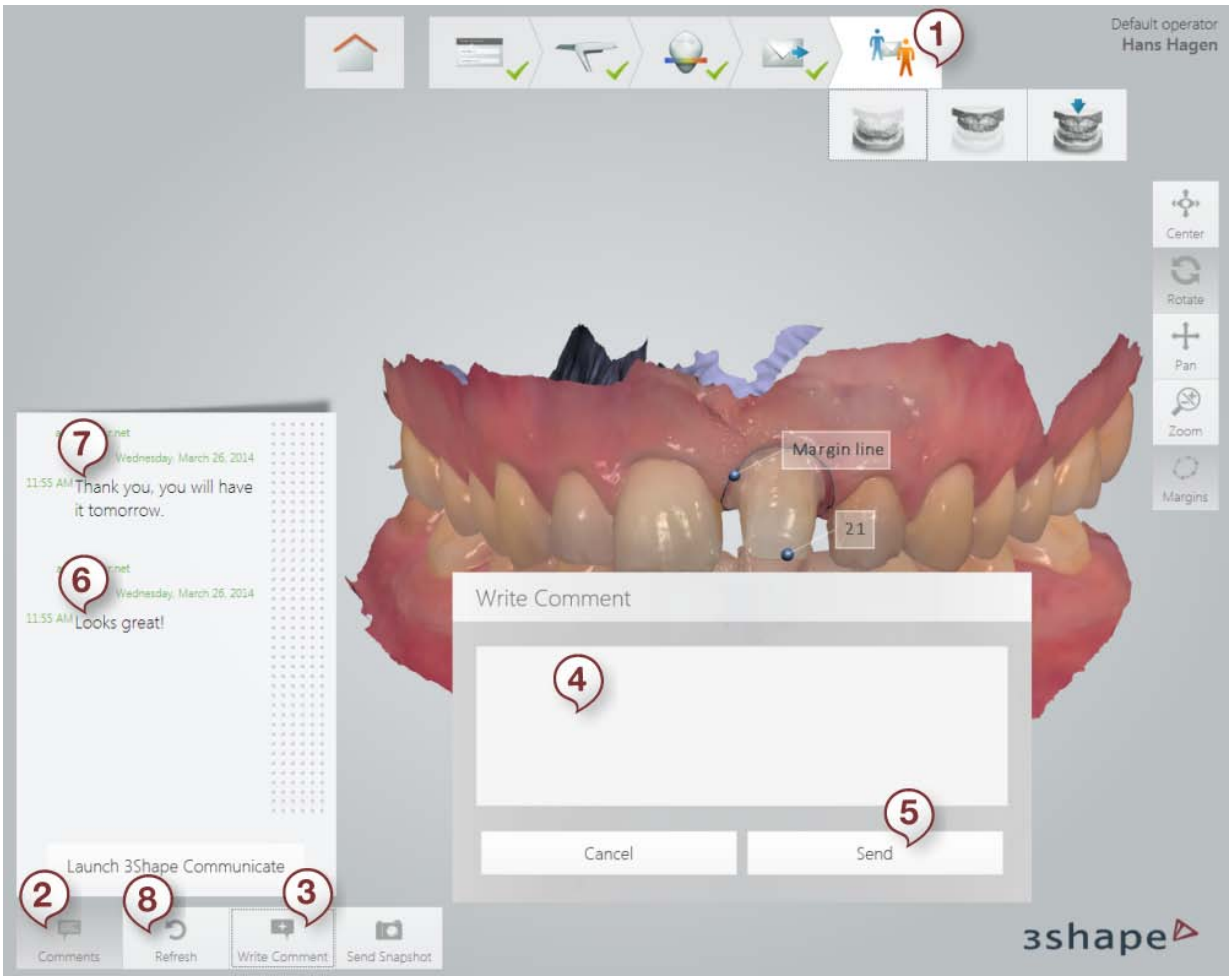
(4) Type in your comment in the text field of the window.

(5) Press the ***Send*** button.

(6) Your comment is sent to the lab and you can view it in a dialog box.

(7) The newest message in the conversation is placed at the top.

(8) Press ***Refresh*** to update the page and see if new messages arrived.



Launch 3Shape Communicate **-** opens the 3Shape Communicate web page.

6 Maintenance

6.1 Scanner Calibration

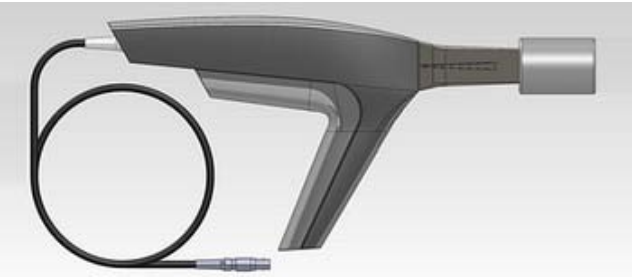
The following types of calibrations can be done on the scanner:

- **3D calibration** – Adjusts the optics of the scanner for generating 3D images.
- **Color calibration** – Adjusts the color recognition for a particular scanning tip.

WHEN TO CALIBRATE

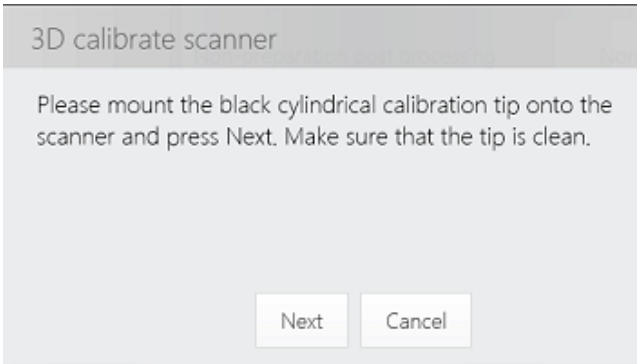
- 3D calibrate the scanner before using it for the first time and every eight days during regular use.
- 3D calibrate the scanner when it has been moved, sustained hits or wide-range temperature changes.
- 3D calibrate the scanner when the scan quality degrades. Calibration adjusts the scan quality to the initial factory level and ensures optimum results.
- Color calibrate the scanner before each scan for optimal color quality if you intend to use Shade Measurement .
- The mirror in the tip is almost never 100% clean, small variances could have an impact on the Shade Measurement.
- Color calibration has a weekly reminder. Shade Measurement will be disabled if the scanner has not been color calibrated for 30 days.

HOW TO CALIBRATE 3D



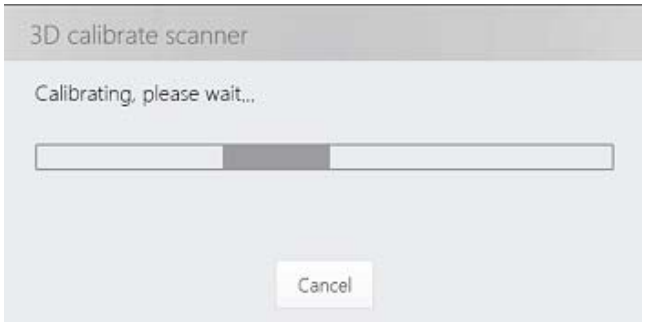
Step 1: Prepare for calibration

Remove the scanner tip from the TRIOS scanner and put on the supplied calibration tip.

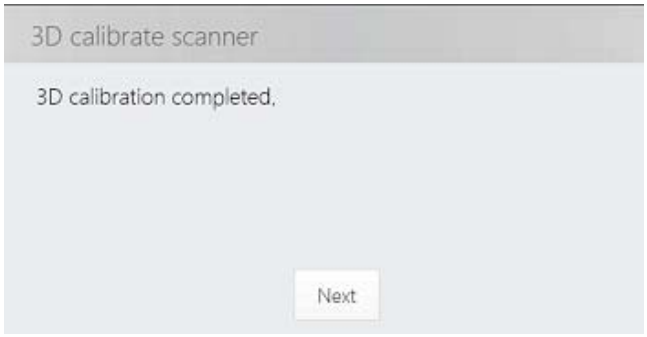


Step 2: Start calibration wizard

1. Go to the *Configure* page of your TRIOS system.
2. Select *Scan->**3D calibrate scanner*** for monochrome or ***Color calibrate scanner*** for color scanner.
3. Follow the on-screen instructions.

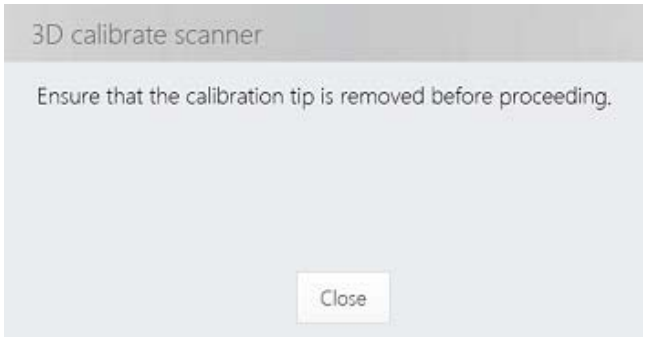


Step 3: Wait for system to calibrate the device



Step 4: Complete the process

A message will tell you once the calibration is completed.



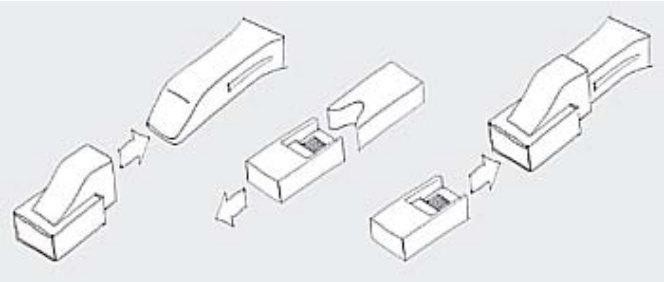
Step 5: Remove the calibration tip

While being guided by the wizard, remove the calibration tip and put on the protection tip when finished.

Note! Make sure the calibration tip is removed from the scanner after calibration as the tip otherwise may become very warm.

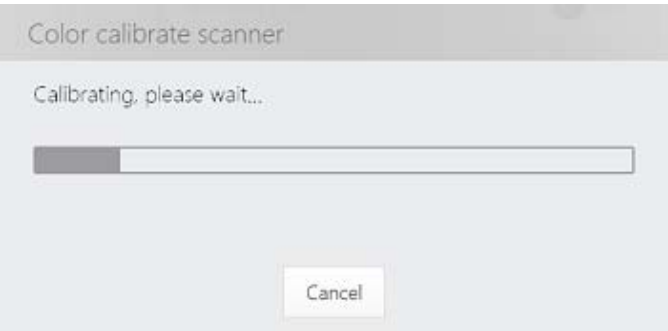
HOW TO CALIBRATE COLOR

Step 1: Locate the supplied color calibration kit



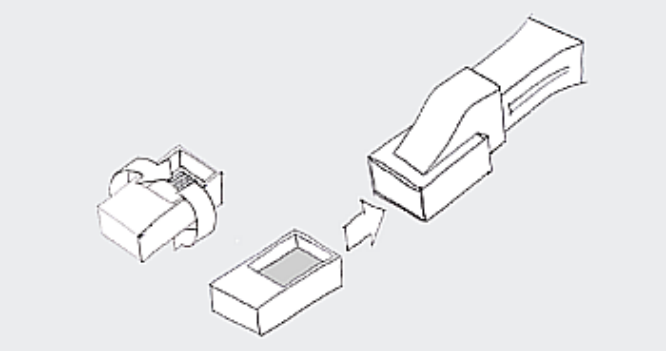
Step 2: Prepare for color calibration

1. Attach the scanner tip facing down, make sure the tip is clean.
2. Mount the color calibration adapter onto the scanner tip.
3. Remove the sleeve from the color calibration target.
4. Insert the color calibration target into the color calibration adapter with the color side facing up.



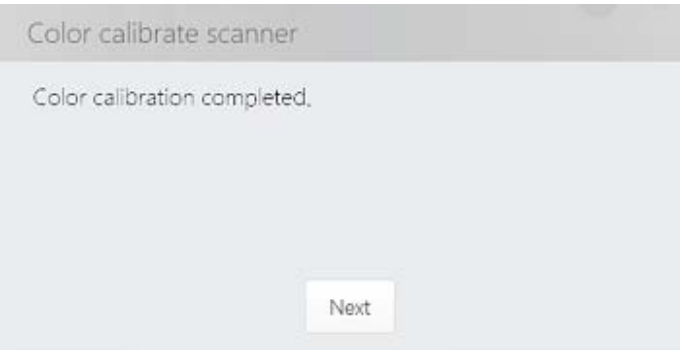
Step 3: Start calibration wizard

1. Open TRIOS Scan settings page.
2. Press ***Color calibrate scanner*** button to open the color calibration guide.
3. Press ***Next*** and wait for the system to calibrate the device.



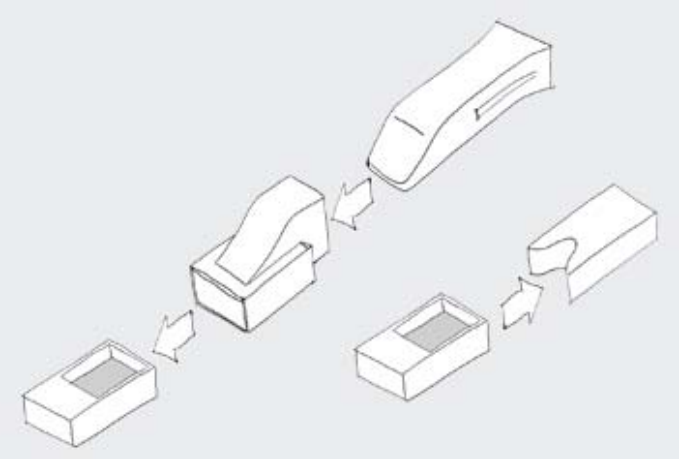
Step 3: Prepare for validation

1. Detach the color calibration target, turn it over for the gray side to face upwards, then reattach it to the color calibration adapter.
2. Press ***Next*** to perform validation.



Step 4: Complete the process

A message will tell you once the calibration is completed.



Step 5: Remove the calibration kit

Remove the calibration target and adapter from the scanner tip and put the calibration target into its sleeve.

6.2 Cleaning, Disinfection and Sterilization

Please refer to the TRIOS Safety and Setup Guide for cleaning, disinfection and sterilization instructions.

Note! TRIOS model TRIOS11A can be cleaned, disinfected, and sterilized similar to model T12A.

Note! The scanner tips for TRIOS11A can be handled similar to the scanner tips for T12A and T12P.

6.3 Disposal of the Scanner Tip

Please refer to the TRIOS Safety and Setup Guide for Disposal of the scanner tip instructions.

Note! The scanner tip for TRIOS model TRIOS11A can be disposed similar to T12A and T12P

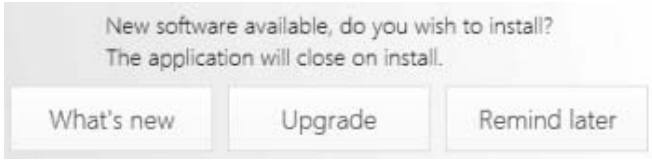
6.4 System Upgrades

When connected to a network, TRIOS automatically checks for:

- New scanner firmware availability on startup. You are asked to upgrade it if a new firmware is found.

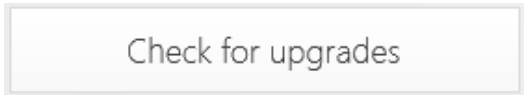
- Software upgrades and order form updates are checked at regular intervals.

AUTOMATIC



New software and order form versions are automatically downloaded by the TRIOS system when available.
You are asked for a confirmation to install the software upgrade once it has been downloaded, you can also opt to upgrade at a later time. You are reminded of the upgrade the next time you turn the system on.

MANUAL



You can also check for order form updates and software upgrades manually by pressing the ***Check for upgrades*** button in *Configure->Setting->General page*.

Caution! It is very important to follow on-screen instructions during the installation process. Do NOT unplug the scanner while firmware is being updated.