

Panoramic and 3D Modality User guide

for CS 8100 3D Family

Including

CS 8100 3D

CS 8100 3D Access

CS 8100SC 3D

CS 8100SC 3D Access

Notice

Congratulations on your purchase of the Panoramic and 3D Modality for the CS 8100 3D Family. Thank you for your confidence in our products and we will do all in our power to ensure your complete satisfaction. The **Panoramic and 3D Modality User guide** for the CS 8100 3D Family provides information on complete or segmented tomographic digital panoramic X-ray image and three-dimensional digital X-ray image features. We recommend that you thoroughly familiarize yourself with this Guide in order to make the most effective use of your system.



Important: We recommend that you consult the “Safety, Regulatory and Technical Specifications User Guide” before using the CS 8100 3D Family.

The CS 8100 3D Family comprises:

- CS 8100 3D: Panoramic modality and dental volumetric reconstruction modality, 3D focused teeth acquisition and 3D full upper and lower jaw acquisition.
- CS 8100 3D Access: Panoramic modality and dental volumetric reconstruction modality, limited to 3D focused teeth acquisition. The system has the capability to expand the field of view to the 3D full upper and lower jaw acquisition with license upgrade.
- CS 8100SC 3D: Panoramic modality, dental volumetric reconstruction modality, 3D focused teeth acquisition and 3D full upper and lower jaw acquisition, and cephalometric modality (see the relevant documentation SM987).
- CS 8100SC 3D Access: Panoramic modality, dental volumetric reconstruction modality, limited to 3D focused teeth application, and cephalometric modality (without the 26x24 Field of View (FoV)). The system has the capability to expand the field of view to the 3D full upper and lower jaw acquisition and to the cephalometric 26x24 FoV with licence upgrade (see the relevant documentation SM987).

This document refers to all models as CS 8100 3D unless otherwise specified.

For the Cephalometric Modality, see the Cephalometric Modality User guide for CS 8100 Family and CS 8100 3D Family (SM987).



WARNING: Do not use cone beam imaging for routine or screening examinations. Consider using other diagnostic tools. You must justify that the imaging method that you use to examine each patient demonstrates that the benefit outweighs the risks.

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The CS 8100 3D Family complies with Directive 93/42/EEC relating to medical equipment.



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1 Conventions in This Guide

Conventions in this Guide

The following special messages emphasize information or indicate potential risk to personnel or equipment:



WARNING: Warns you to avoid injury to yourself or others by following the safety instructions precisely.



CAUTION: Alerts you to a condition that might cause serious damage.



Important: Alerts you to a condition that might cause problems.



Note: Emphasizes important information.



Tip: Provides extra information and hints.

2 CS 8100 3D Overview

The CS 8100 3D Family comprises:

- CS 8100 3D: Panoramic modality and dental volumetric reconstruction modality, 3D focused teeth acquisition and 3D full upper and lower jaw acquisition.
- CS 8100 3D Access: Panoramic modality and dental volumetric reconstruction modality, limited to 3D focused teeth acquisition. The system has the capability to expand the field of view to the 3D full upper and lower jaw acquisition with license upgrade.
- CS 8100SC 3D: Panoramic modality, dental volumetric reconstruction modality (3D focused teeth acquisition and 3D full upper and lower jaw acquisition) and cephalometric modality (see relevant documentation).
- CS 8100SC 3D Access: Panoramic modality, dental volumetric reconstruction modality (limited to 3D focused teeth application) and cephalometric modality (without the 26x24 Field of View (FoV)). The system has the capability to expand the field of view to the 3D full upper and lower jaw acquisition and to the cephalometric 26x24 FoV with licence upgrade (see relevant documentation).

This document refers to all models as CS 8100 3D unless otherwise specified.



WARNING: X-rays can be harmful and dangerous if not used properly. The instructions and warnings contained in this guide must be followed carefully.

Mobile Components

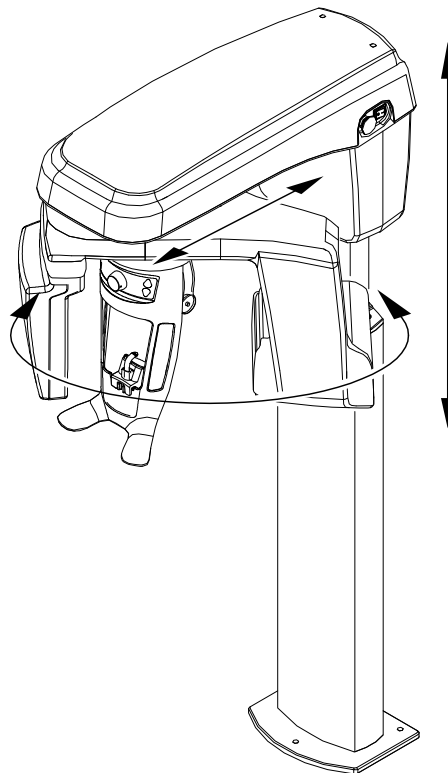
Figure 1 illustrates the:

- Up and down movement of the unit
- Rotation and translation movement of the rotative arm



Important: The patient can enter by either the left side or the right side of the unit.

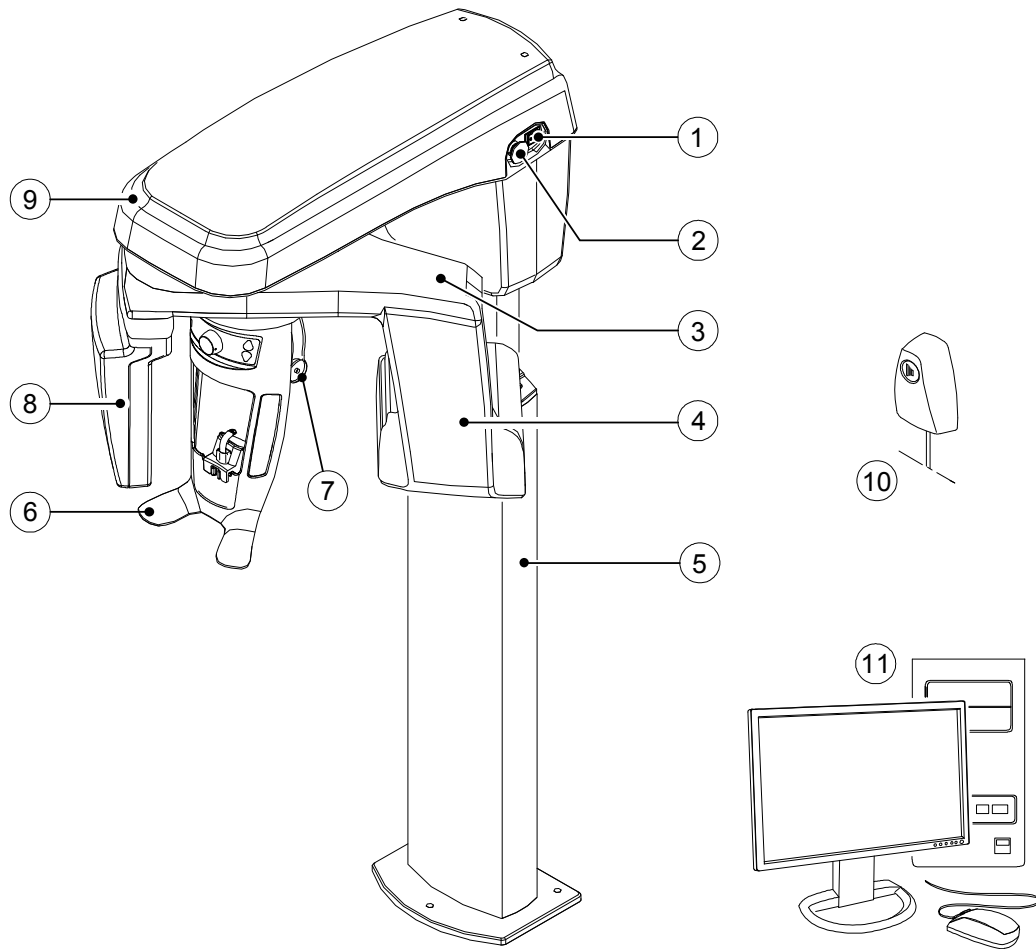
Figure 1 Unit Mobile Components



General Functional Components

The following figures illustrate the general functional components of the unit.

Figure 2 Unit Functional Components

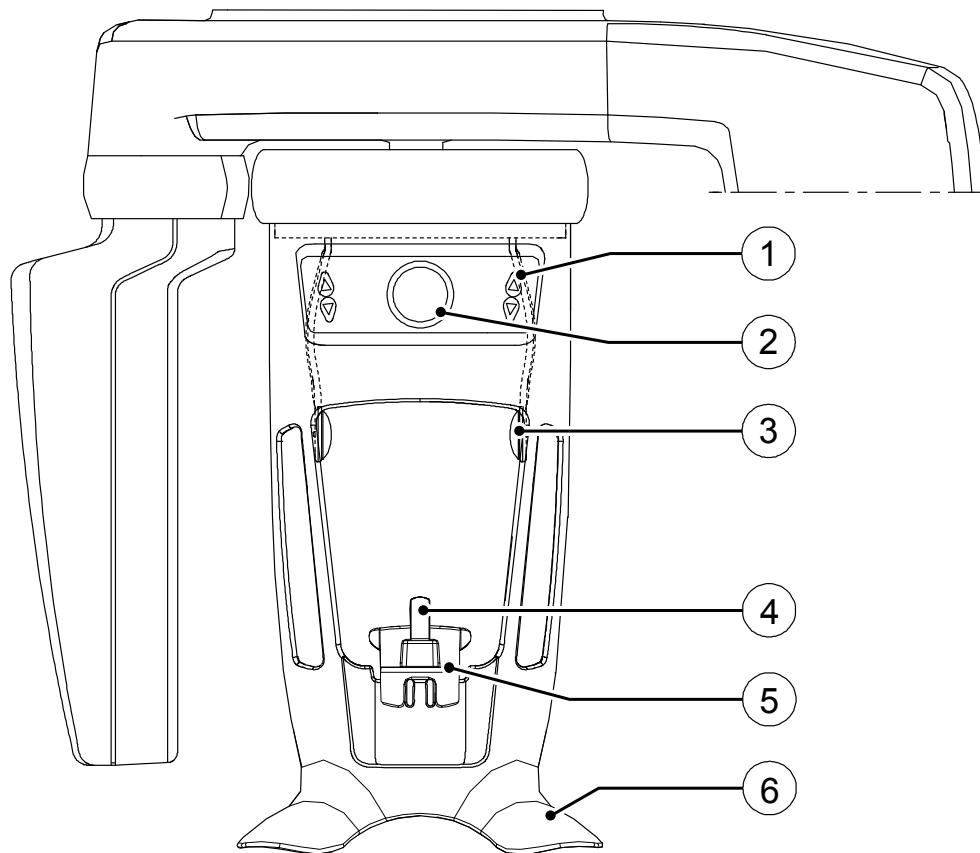


- | | | | |
|---|-----------------------|----|---|
| 1 | ON/OFF button | 7 | Temple support |
| 2 | Emergency stop knob | 8 | Digital sensor |
| 3 | Unit rotative arm | 9 | Unit head |
| 4 | X-ray source assembly | 10 | X-ray remote control |
| 5 | Unit column | 11 | Computer hosting the imaging and the acquisition software |
| 6 | Head and chin rest | | |

Head and Chin Rest

The following figure illustrates the functional components of the head and chin rest.

Figure 3 Head and Chin Rest Functional Components



- | | | | |
|---|--------------------------------|---|--------------------|
| 1 | Positioning Panel | 4 | Bite block support |
| 2 | Temple support adjustment knob | 5 | Chin rest |
| 3 | Temple support | 6 | Hand grips |

Positioning Accessories

The following accessories are used when positioning a patient using the unit.

Table 1 Positioning Accessories

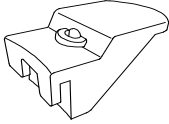
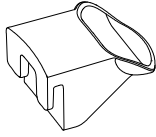
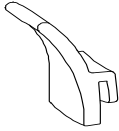

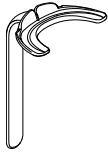


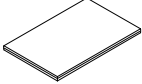
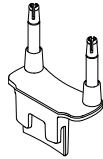

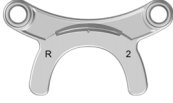

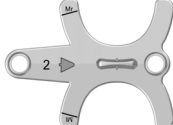
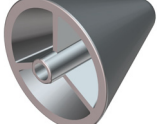
Accessory	Description
	Panoramic chin rest
	Sinus chin rest
	TMJ nose rest
	Standard bite block (x5)
	Frankfort guide bite block for panoramic (x3)
	Bite block for edentulous patients (x2)
	Single use sheaths for bite block (500 pcs box)
	Single use sheaths for 3D bite block and Frankfort guide bite block (100 pcs box)

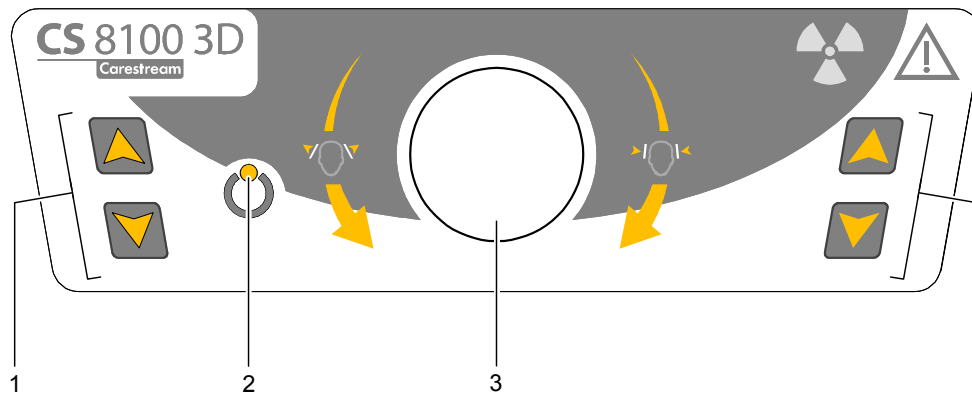
Table 1 Positioning Accessories

Accessory	Description
	3D bite block support
	(1) 3D bite block (x4)
	(2) 3D molar bite block (x2)
	(4) 3D child bite block (x2)
	(2) 3rd Molar offset 3D bite block (x2) (for use with 5x5 MI and Mr FoV only)
	Temple support cone (for use with 3rd Molar offset 3D bite block only)

Positioning Panel

The positioning panel is a console on the head and chin rest that enables you to correctly position and align a patient before you acquire an image.

Figure 4 Unit Positioning Panel



1 Height Adjustment buttons:

- Adjusts the height of the unit to the height of the patient.
- **When the unit is not in use**, places the rotative arm in a parallel position to the unit head, leaving more free space around the unit.
To do so, press and hold both buttons until the **Ready Indicator LED** switches off.
When you release both buttons, the **Ready Indicator LED** will flash before the rotative arm turns to the parallel position.

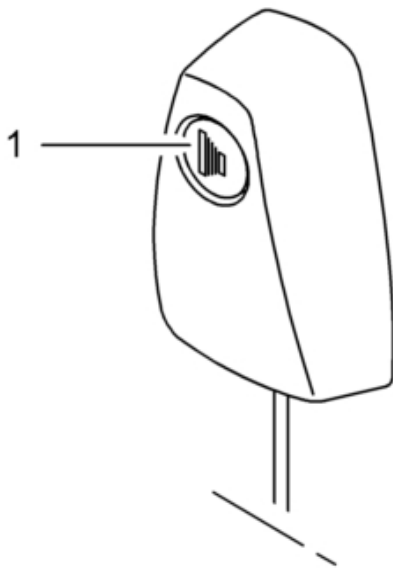
2 Ready Indicator LED: Green indicates that the unit is ready for acquisition.

3 Temple support adjustment knob: Opens and closes the temple supports when you turn the knob.

X-ray Remote Control Overview

The X-ray remote control enables you to launch a radiological image acquisition via the exposure button from outside the X-ray room. You must press and hold the exposure button until the end of acquisition. Premature release of the exposure button interrupts the acquisition.

Figure 5 X-ray Remote Control



- 1 **Exposure button:** launches image acquisition.



WARNING: X-rays can be harmful and dangerous if not used properly. The instructions and warnings contained in this guide must be followed carefully.

3 Imaging Software Overview

Computer System Requirements

For the minimum computer system requirements and configuration for the Imaging Software, see the **CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide**.



WARNING: It is **MANDATORY** to check that the computer system configuration is compatible with the computer system requirements for the CS 8100 3D Family software. If necessary you **MUST** update your computer system configuration. The CS 8100 3D Family **MUST** be connected to the computer via a point-to-point Ethernet link and not via a LAN.

General Software Overview

The CS 8100 3D operates with the following software:

- Imaging Software
- Acquisition interface

The following **3D Object Acquisition** options are also available:

- **CS Restore:** Acquires 3D representations of digital X-ray images that are used for dental restorative workflows.
- **CS Model:** Acquires 3D representations of digital X-ray images that are used for orthodontic workflows.
- **Appliance:** Acquires 3D representations of guided surgical images for double-scan protocol producing acquisition files that are compatible with competitor solutions.

For user instructions see [Chapter 7–3D Object Acquisition](#).

Imaging Software

The **Imaging Software** is a user-friendly working interface designed and developed specifically to support image diagnosis.

Acquisition Interface

The **Acquisition** interface is a user-friendly interface designed and developed specifically for the CS 8100 3D Family.

The **Acquisition** interface has the following features:

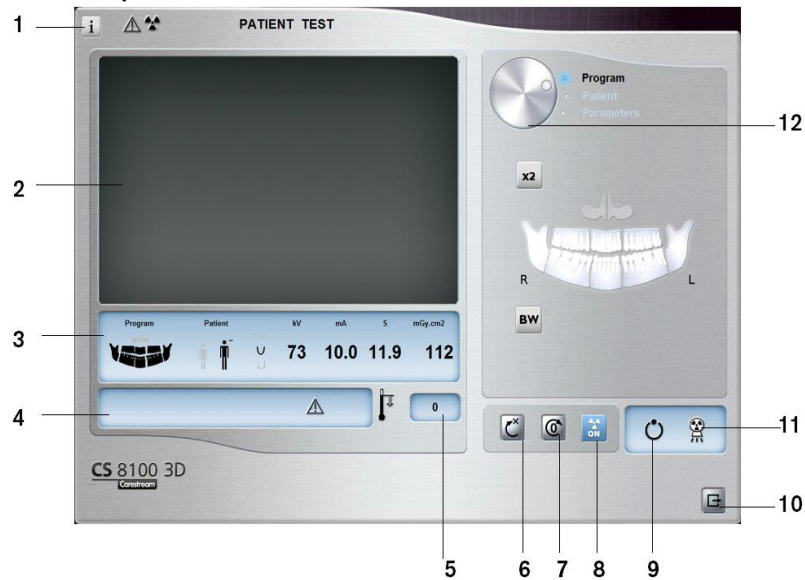
- The **Panoramic Acquisition** interface.
- The **3D Acquisition** interface.

Acquisition Interface

Panoramic Acquisition Interface Overview

The **Panoramic Acquisition** interface provides you with panoramic imaging acquisition functions.

Figure 6 Panoramic Acquisition Interface



- 1 **Information button:**
 - **Show versions:** Identifies Software and Firmware versions.
 - **Additional features:** Contains information on additional activated options and date of expiration.
 - **Resetting Anatomy setting:** Resets to the manufacturing parameter settings.
 - **Memorize Anatomy setting:** Memorizes the user preference settings for each patient type (kV, mA and seconds).
- 2 **Preview Screen:** Displays the acquired acquisition frames.
- 3 **Selected Parameter Display:** Displays the current acquisition parameter settings.
- 4 **System Status Screen:** Displays various alert or warning messages originating from the unit.
- 5 **Generator Cooling indicator:** Indicates the automatic cooling time (mm:ss) required before the next acquisition.
- 6 **Reset button:** Resets the unit to the patient-entry position to enable you to position a patient in the unit.
- 7 **Parallel position button:** Leaves more free space around the unit when it is not in use by placing the rotative arm in a parallel position to the unit head.
- 8 **X-ray On/Off button:** Enables or disables X-ray emission.
- 9 **Ready Indicator LED**
 - Green indicates the unit is ready to start acquisition.
 - Black indicates the unit is not ready to start acquisition.
- 10 **Exit button:** Closes the Acquisition interface.
- 11 **X-ray Emission indicator:** Yellow, indicates the X-ray emission status.
- 12 **Selector Button:** Selects different acquisition setting options.
 - Click **Program** to select examination type options.
 - Click **Patient** to select patient type parameters.
 - Click **Parameters** if you need to manually adjust the exposure parameter options.

Program Pane

The **Program pane** enables you to choose the different radiological exams. The diagram in the **Program pane** represents a jaw, with the **R** side of the diagram corresponding to the right side of the patient.

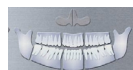
Figure 7 Program Pane



Radiological exam options:

Full panoramic acquisition:

Click on all the areas of interest. Example:



Segmented panoramic acquisition:

Click on the following areas of interest that you want to examine:

- Posterior
- Anterior


The selected area of interest will highlight. Example (anterior exam):



Maxillary Sinus acquisition:

Click .

TMJ acquisition:

Click  for a TMJ acquisition.

The selected area of interest will highlight:



Double click  .  appears for a TMJ x4 acquisition.

Bitewing acquisition:

Click .

Select one or both area of interest:



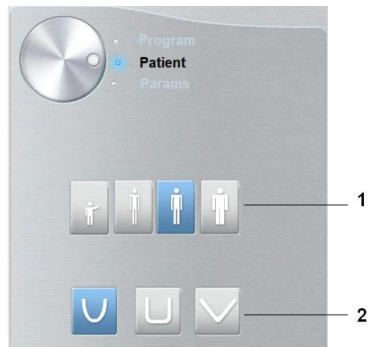
Patient Pane

The **Patient pane** enables you to choose and select the different patient parameters. The selected parameters for a patient influences the image quality because:

- The default kV and mA exposure settings are set for the selected patient mode.
- The image is reconstructed according to the patient dental arch morphology.

Selected parameters must be based on the age and morphology (jaw size and bone density) of the patient.

Figure 8 Patient Pane



Note: A selected patient mode sets the:

- kV and mA
- jaw size




Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide* for information on radiation protection and recommendations when you select a patient type, especially the pediatric patient.


1


Patient type parameters:


Pediatric mode:

Click  if the patient is a child.

Adult mode:

Click  if the patient is small.


Click  if the patient is medium.


Click  if the patient is large.

2

Patient dental arch morphology:

Click  for a **normal** shape dental arch.

Click  for a **square** dental arch.

Click  for a **sharp** dental arch.

Parameter Pane

The **Parameter Pane** enables you to choose exposure parameters for the radiological image acquisition. If the default parameter setting is not adapted to your patient type, you can manually adapt the parameter setting to the patient type and save this setting as the default setting.


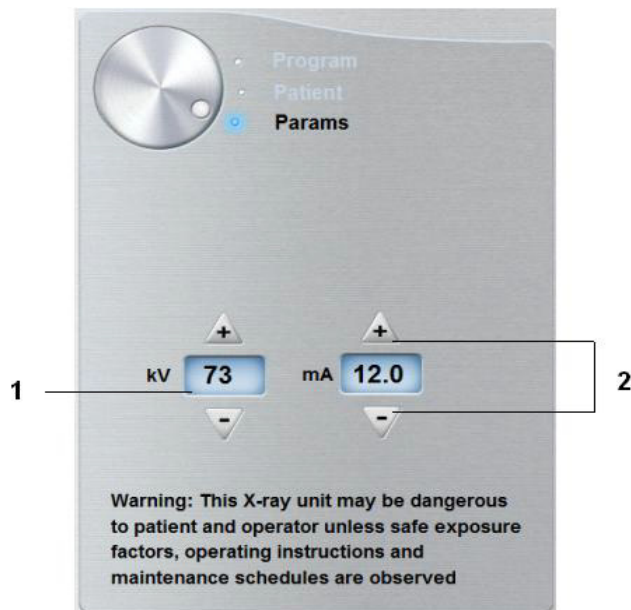
To save a parameter setting for a specific patient type, click  and select **Memorize Anatomy setting**.

Figure 9 Parameter Pane





- 1 Exposure setting options:

 kilovolt

 milliamperere

- 2 Fine-tuning buttons:

Click  or  to fine-tune the kV and the mA.

3D Acquisition Interface Overview

The **3D Acquisition** interface provides you with 3D imaging acquisition functions.

Figure 10 3D Acquisition Interface



1 Information button:

- **Show versions:** Identifies Software and Firmware versions.
- **Additional features:** Contains information on additional activated options and date of expiration.
- **Resetting Anatomy setting:** Resets to the manufacturing parameter settings.
- **Memorize Anatomy setting:** Memorizes the user preference settings for each patient type (kV, mA and seconds).

2 **Preview Screen:** Displays the acquired acquisition frames.

3 **Selected Parameter Display:** Displays the current acquisition parameter settings.

4 **System Status Screen:** Displays various alert or warning messages originating from the unit.

5 **Generator Cooling indicator:** Indicates the automatic cooling time (mm:ss) required before the next acquisition.

6 **Reset button:** Resets the unit to the patient-entry position to enable you to position a patient in the unit.

7 **Parallel position button:** Leaves more free space around the unit when it is not in use by placing the rotative arm in a parallel position to the unit head.

8 **X-ray On/Off button:** Enables or disables X-ray emission.

9 Ready Indicator LED

- Green indicates the unit is ready to start acquisition.
- Black indicates the unit is not ready to start acquisition.

10 **Exit button:** Closes the Acquisition interface.

11 **X-ray Emission indicator:** Yellow, indicates the X-ray emission status.

12 **Low dose acquisition button:** Enables low dose acquisition option to reduce patient exposure.

13 **Fast scan button:** Minimizes acquisition time to avoid patient movement.

- 14 **3D acquisition option:** indicates 3D acquisition option selected: full |upper | lower jaw acquisition, or focused teeth acquisition.
- 15 **Selector Button:** Selects different acquisition setting options.
- Click **Program** to select examination type options.
 - Click **Patient** to select patient type parameters.
 - Click **Parameters** if you need to manually adjust the exposure parameter options.






3D Program Pane

The **3D Program pane** enables you to choose different radiological exams. See the program panes below for information on the different radiological exams and their features.

Figure 11 3D Full Upper and Lower Jaw Acquisition*



3D full upper and lower jaw acquisition:

-  Full upper and lower jaw exam.
-  Upper only jaw exam.
-  Lower only jaw exam.
-  Fast scan: Minimizes acquisition time to avoid patient movement.
-  Low dose: Minimizes the acquisition X-ray dosage.



Note: * Optional for CS 8100 3D Access and CS 8100SC 3D Access.

Figure 12 3D Focused Teeth Acquisition



3D focused teeth acquisition:



To examine a required block of the upper teeth area of interest.



To examine a required block of the lower teeth area of interest.



To enable an acquisition at a higher resolution. Select if you want to have an image with more precision.



Fast scan: Minimizes acquisition time to avoid patient movement.



Low dose: Minimizes the acquisition X-ray dosage.

3D Patient Pane

The **Patient pane** enables you to choose and select the different patient parameters. The selected parameters for a patient influences the image quality because the default kV and mA exposure settings are set for the selected patient mode.

The selected parameters must be based on the age and morphology of the patient.


Figure 13 Patient Pane




Note: A selected patient mode sets the kV and mA.


Patient type parameters:


Pediatric mode:

Click  if the patient is a child.

Adult mode:

Click  if the patient is small.

Click  if the patient is medium.

Click  if the patient is large.

3D Parameter Pane

The **Parameter Pane** enables you to choose exposure parameters for the radiological image acquisition. If the default parameter setting is not adapted to your patient or program type, you can manually adapt the parameter setting to the patient or program type and save this setting as the default setting.


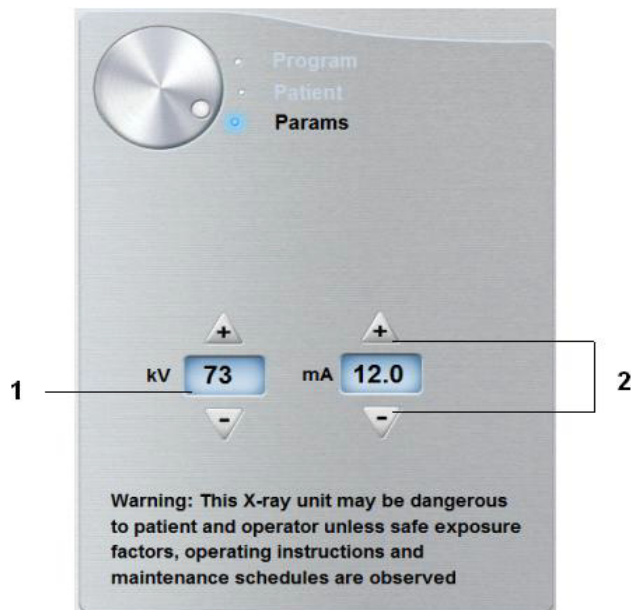
To save a parameter setting for a specific patient type, click  and select **Memorize Anatomy setting**.

Figure 14 Parameter Pane





- 1 Exposure setting options:

 kilovolt

 milliamperere

- 2 Fine-tuning buttons:

Click  or  to fine-tune the kV and the mA.

4 Getting Started

Switching on the Unit

Before switching on the unit, check that:

- The installation of the unit is complete.
- The computer is switched on.
- The imaging software is not opened.



Important: You must switch on the computer and wait for it to be ready for the connection before switching on the unit.

To switch on the unit, follow these steps:

1. On the unit column, press the **ON** button.
2. You must wait for a minute for the connection between the unit and the computer to be established. If you start the imaging software before the connection is established an error message is displayed. Click **OK**, close the imaging software and wait for the connection to be established.
3. You can now proceed to start the **CS Imaging Software**.

Increasing the operating life of the X-ray tube



Important: To increase the operating life of the X-ray tube, on first loading and if the unit has not been used for a month, you must follow the following procedures before use.

To increase the operating life of the X-ray tube, follow these steps:

1. In the **Panoramic Acquisition Window**, select the **Parameter pane**.
2. Select the following parameter setting: 70 kV - 6.3 mA
3. Leave the X-ray room and close the door.
4. Launch an X-ray for the parameter setting by pressing and holding the X-ray remote control exposure button.
5. Repeat **Steps 2 to 4** for the following parameters:
 - 80 kV - 10 mA
 - 85 kV - 10 mA

The unit is now ready to be used for acquisition.

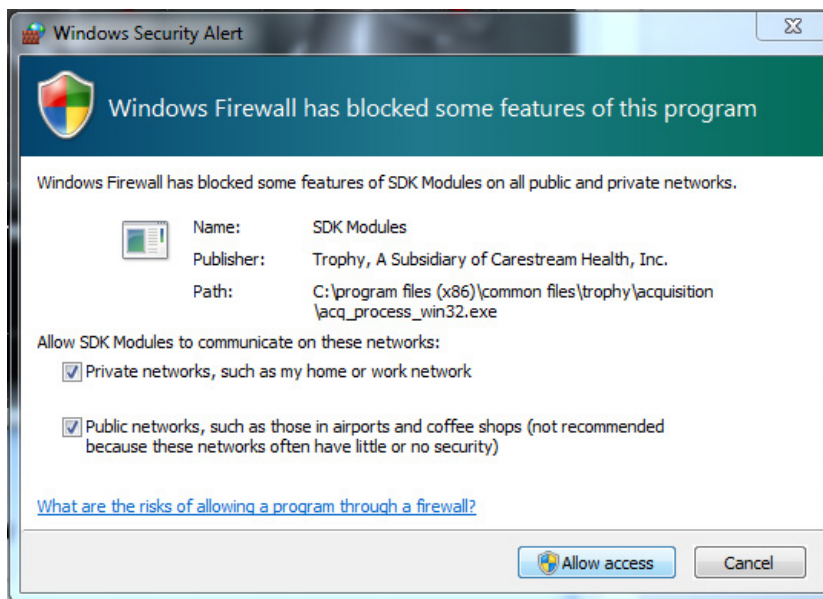
Firewall or Network Settings

You will not be able to access the **Acquisition** interface if you did not configured the firewall or network settings.

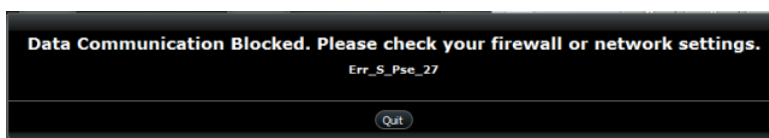
To configured the firewall or network settings, follow these steps:


- 1 On your desktop, double-click  to open the CS Imaging Software.

The **Windows Security Alert** dialog box displays. Select **Private networks**, **Public networks**, and click **Allow access**.



- 2 Click **Quit** on the following dialog box:



- 3 Close the imaging software.
- 4 On your desktop, double-click  to re-open the imaging software.



Note: See your firewall documentation for information on how to configure the firewall or network settings.

Accessing the Acquisition Interface



To access the **Acquisition** interface, follow these steps:

- 1 On your desktop, double-click  to open the **CS Imaging Software**.



Important: If the Windows Security Alert dialog box opens to block the imaging software, you must configure the firewall or network settings. See [“Firewall or Network Settings”](#) .

- 2 Find or create the patient record.
- 3 Select and double-click the patient card in the patient list.
The Imaging window is displayed.
- 4 Click the Imaging window to access the **Acquisition interface** options:

- Click  to access the **Panoramic Acquisition Interface**.
- Click  to access the **3D Acquisition Interface**.

The selected acquisition interface is displayed.

To launch an acquisition, see the following image acquisition chapters:

- [Chapter 5—Acquiring Panoramic Images](#)
- [Chapter 6—Acquiring 3D Images](#)
- [Chapter 7—3D Object Acquisition](#)

5 Acquiring Panoramic Images

Acquiring a Panoramic, TMJ x2, or Sinus Image for the Adult and Pediatric Patient

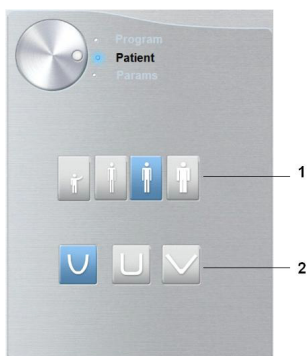
Before acquiring an image, check that you have:

- Reset the unit rotative arm to the patient entry position for patient to enter the unit.
- Selected the patient record.
- Accessed the imaging window.
- Accessed the **Panoramic Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Parameters

To set the acquisition parameters, follow these steps:

1. In the **Panoramic Acquisition Interface**, click the **Patient** button to access the **Patient pane**.



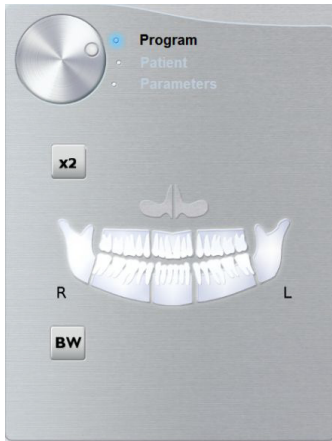
Select the **Patient** type and **Dental arch morphology**:

- Type (1)
 - Child
 - Adult: Small, Medium, Large Jaw size
- Dental arch morphology (2)






Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)* for information on radiation protection and recommendations when you select a patient type, especially the pediatric patient.

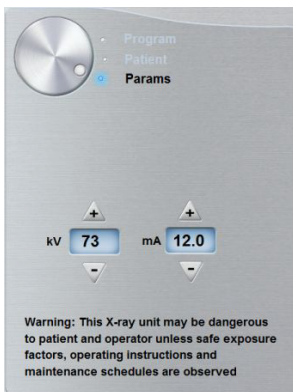
2. Click the **Program** button to access the **Program pane**.




Click on one area of interest that you want to examine:

- Panoramic: for example, 
- TMJ x2: 
- Sinus: 

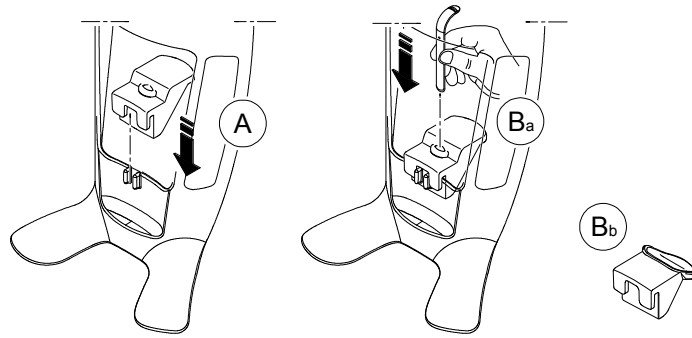
3. **(Optional)** If the default parameter setting is not adapted to your patient type, click the **Parameter** button:



- Select the appropriate parameters.
 - Click  and select **Memorize Anatomy setting** if you want to save the new parameter settings as future default settings.
4. Position and fix the panoramic chin rest (A). Fit the bite block to the panoramic chin rest (Ba). Make sure that you click it well into place. If needed, use the edentulous bite block or the sinus chin rest (Bb). You may if required use the **Frankfort guide bite block for panoramic** to help position the patient.

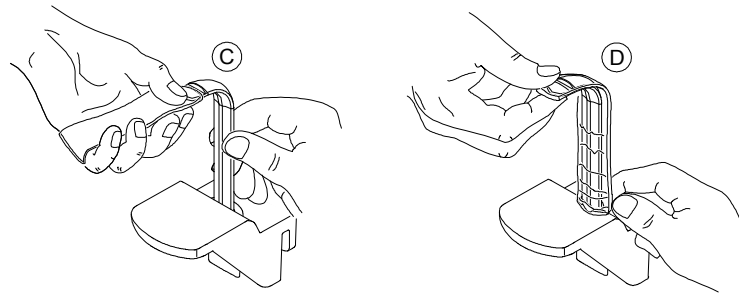


Note: Use the panoramic chin rest (A) for a panoramic or TMJ x2 image acquisition. Use the sinus chin rest (Bb) for a sinus image acquisition. Use the TMJ nose rest for a TMJ x4 acquisition.

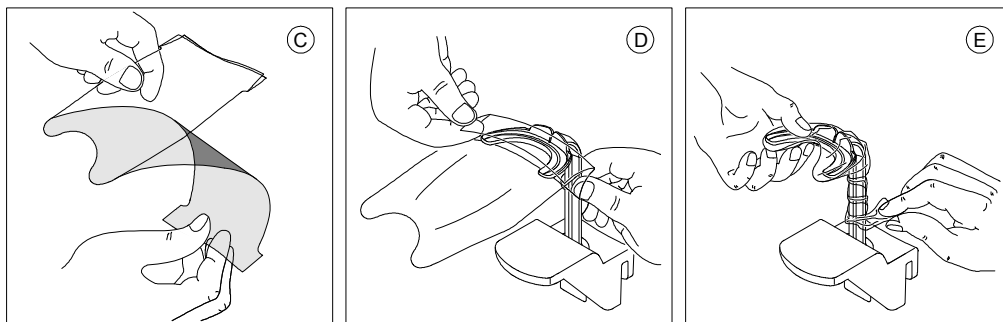


5. Insert a hygienic barrier over the bite block.

- **If you are using the standard bite block**, fit the hygienic barrier as shown in (C) and (D).



- **If you are using the Frankfort guide bite block for panoramic**, use the same single use hygienic sheaths as for use with 3D bite blocks (C), (D), (E).




Make sure that you cover the bite block completely with the hygienic barrier.

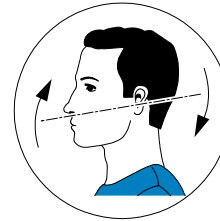


Important: You must cover the bite blocks with FDA-cleared protective sheaths that are available from distributors.



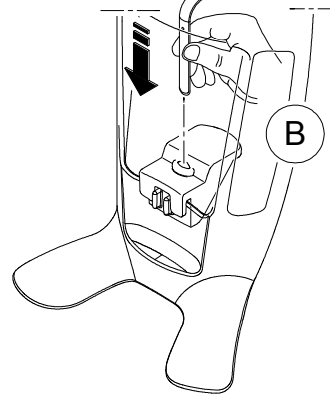
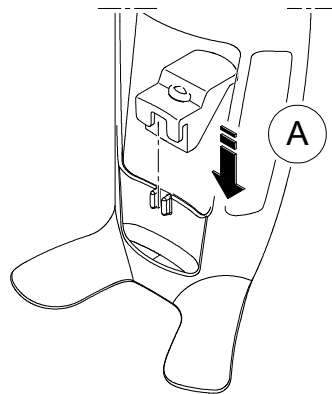
Note: To acquire a bitewing segmented panoramic image:

- Click .
- Select one or both area of interest.
- Position the patient in the Camper plane alignment (horizontal occlusion) as shown.



For a more accurate Camper plane alignment, you can:

- Use the panoramic chin rest (A).
- Fit the standard bite block or edentulous bite stick to the panoramic chin rest (B).



Important: Do not use the Frankfort guide bite block when performing bitewing procedures.

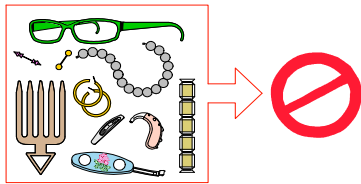


Important: The acquisitions that you obtain using the bitewing segmented panoramic program are not equivalent to an intraoral bitewing examination.

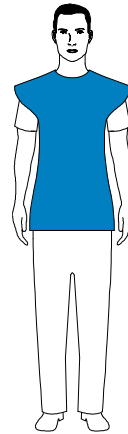
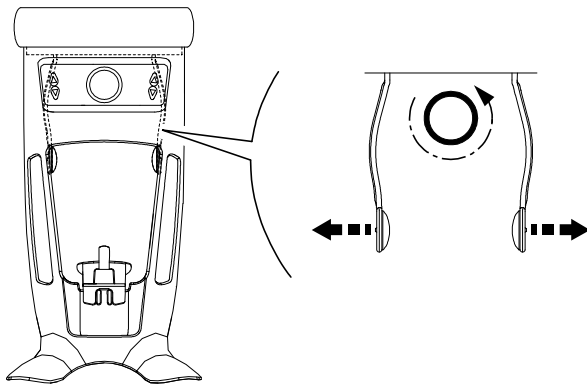
Preparing and Positioning the Adult and Pediatric Patient

To prepare and position the patient, follow these steps:

1. Ask the patient to remove all metal objects.



2. Ask the patient to wear a lead apron. Ensure that the apron lays flat across the patient's shoulders.
3. Turn the adjustment knob to open the temple supports laterally.



Note: You can adjust the temple supports manually to the back or front for a better head fit.

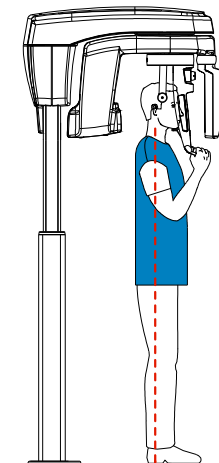
4. Ask the patient to enter the unit. On the **Positioning panel**, press and hold   to raise the chin rest to the height of the patient.



Note: If the patient is too tall, tell the patient to sit on a stool.

5. Ask the patient to:

- Stand up straight (**do not position the feet slightly forward**).
- Grip both the lower handles of the head and chin rest.
- Relax and lower the shoulders for full motion of the unit rotative arm.





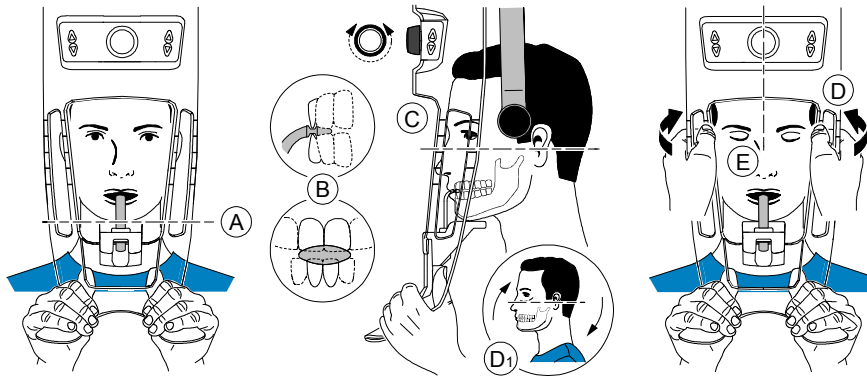
Note: By correctly positioning the patient, you can reduce the spinal column shadow that is transferred to the acquired image.

6. Ask the patient to place the chin on the chin rest support (A).
7. Ask the patient to bite on the bite block:

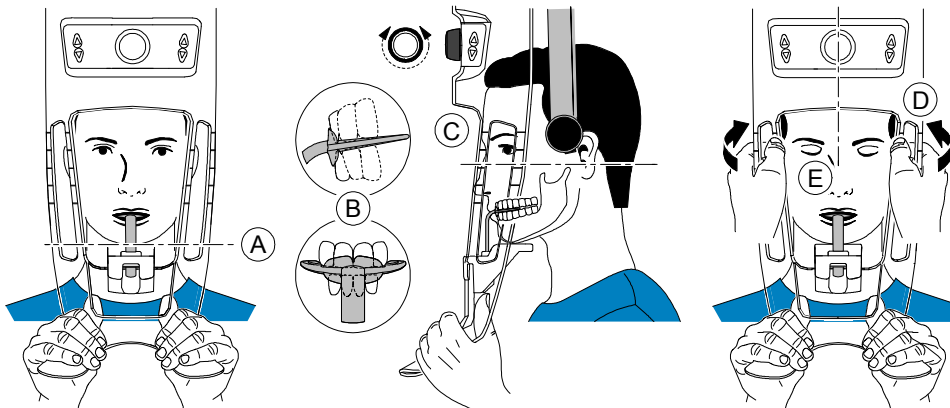


Important: You must cover the bite blocks with FDA-cleared protective sheaths that are available from distributors.

- If you are using the **standard panoramic bite block**, ask the patient to bite **into the groove** of the bite block (B) as shown.



- If you are using the **Frankfort guide bite block for panoramic**, ask the patient to bite on the **bite block (B)** as shown.



Important: If you are using the **Frankfort guide bite block**, make sure the patient bites on the complete block, and that the patient's occlusal plane inclination **follows the angle** of the bite block.

8. Turn the adjustment knob to close the temple supports (C).
If you are using a standard panoramic bite block, you can use the horizontal positioning indicators as a visual aid to adjust the up or down inclination of the patient head (D1) to obtain a Frankfort plane horizontal alignment.
9. Use both hands to align the vertical position of the head (D).



Important: The spinal column and the nose of the patient must be aligned in a straight vertical line (E).

10. Ask the patient to:
 - Close the eyes (E).
 - Swallow.
 - Remain still.
 - Breathe through the nose.
 - Place the tongue on the palate.

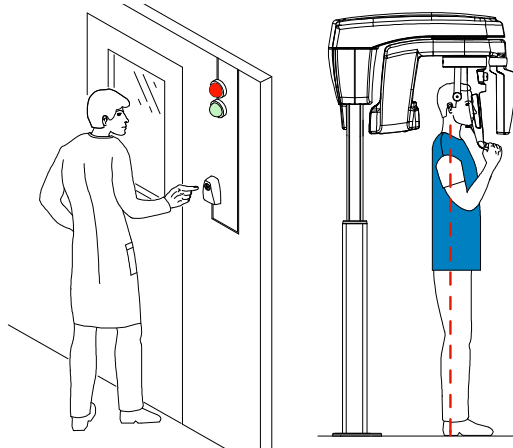
Launching the X-ray

To launch the X-ray, follow these steps:


1. Leave the X-ray room and close the door. You must keep visual contact with the patient during acquisition.



Important: To stop the acquisition, if there is any problem, release the exposure button of the remote control or press the red emergency stop button.



2. Launch the X-ray with the remote control.

The  turns yellow and a warning sound is heard, indicating X-ray emission.

Press and hold the exposure button until the end of the acquisition is indicated by the on-screen “Release Handswitch” message.

When the acquisition ends, the **Acquisition** interface disappears and the acquired image is automatically transferred to the **Imaging Window**.



3. Check the image quality.
4. Do the following when the acquisition is finished:
 - Release the patient.
 - Remove the hygiene barrier from the bite block.

Acquiring a TMJ x4 Image for the Adult and Pediatric Patient

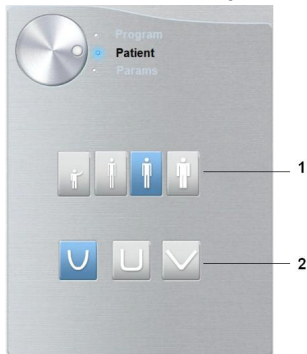
Before acquiring an image, check that you have:

- Reset the unit rotative arm to the patient entry position for patient to enter the unit.
- Selected the patient record.
- Accessed the imaging window.
- Accessed the **Panoramic Acquisition** interface.

Preparing the Unit and Setting the Acquisition Parameters

To set the acquisition parameters, follow these steps:

1. In the **Panoramic Acquisition** interface, click the **Patient** button to access the **Patient** pane.



Select the **Patient** type and **Dental arch morphology**:



- Type (1):
 - Child
 - Adult: Small, Medium, Large
- Dental arch morphology (2)



Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)* for information on radiation protection and recommendations when you select a patient type, especially the pediatric patient.

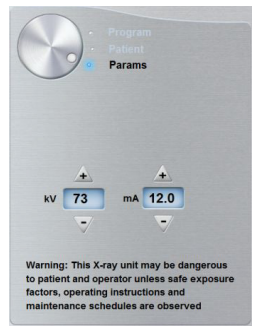
2. Click the **Program** button to access the **Program** pane.







3. Click . The selected are of interest will highlight: 

4. Double click .  appears for a TMJ x4 acquisition.

5. **(Optional)** If the default parameter setting is not adapted to your patient type, click the **Parameter** button:



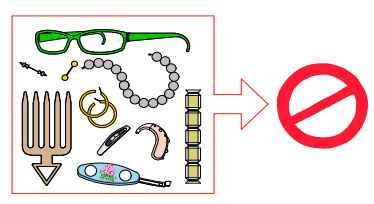
- Select the appropriate parameters.
- Click  and select **Memorize Anatomy setting** to save the new parameter settings as future default settings.

6. On the head and chin rest, remove  or , place  and cover it with a hygienic barrier.

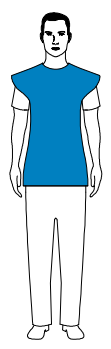
Preparing and Positioning the Adult and Pediatric Patient

To prepare and position the patient, follow these steps:

1. Ask the patient to remove all metal objects.



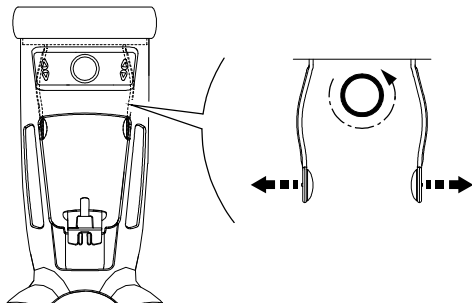
2. Ask the patient to wear a lead apron. Ensure that the apron lays flat across the patient's shoulders.



3. Turn the adjustment knob to open the temple supports laterally.



Note: You can adjust the temple supports manually to the back or front for a better head fit.



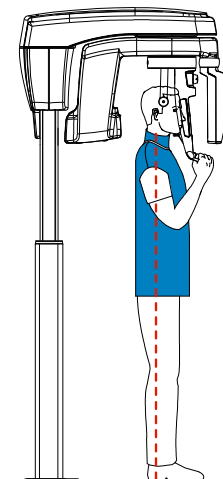
4. Ask the patient to enter the unit. On the **Positioning panel**, press and hold  to raise the chin rest to the height of the patient.



Note: If the patient is too tall, tell the patient to sit on a stool.

5. Ask the patient to:

- Stand up straight (**do not position the feet slightly forward**).
- Grip both the lower handles of the head and chin rest.
- Relax and lower the shoulders for full motion of the unit rotative arm.



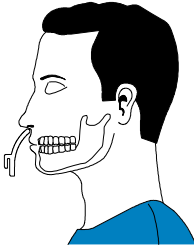
Note: By correctly positioning the patient, you can reduce the spinal column shadow that is transferred to the acquired image.

6. Turn the adjustment knob to close the temple supports.

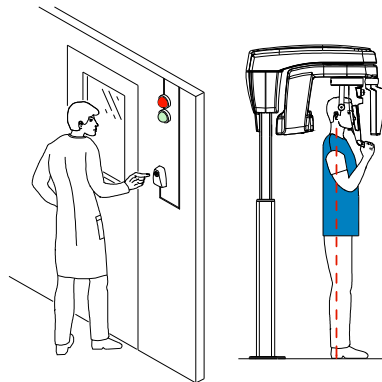
Launching the X-ray

To launch the X-ray, follow these steps:


1. Ask the patient to remain still, eyes closed, mouth closed, and tongue placed on the palate. Leave the X-ray room and close the door. You must keep visual contact with the patient during acquisition.



Important: To stop the acquisition, if there is any problem, release the exposure button of the remote control or press the red emergency stop button.



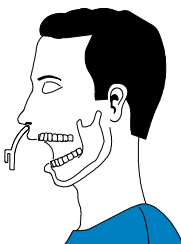
2. Launch the X-ray with the remote control to acquire an image.


The  turns yellow and a warning sound is heard, indicating X-ray emission.

Press and hold the exposure button until the end of the acquisition is indicated by the on-screen “Release Handswitch” message.

When the acquisition ends, the **Acquisition** interface disappears and the acquired image is automatically transferred to the **Imaging window**.

3. Ask the patient to stay in the same position but with mouth opened. Repeat Step 2 to acquire another image with the mouth opened.



4. Check the quality of the images.
5. Do the following when the acquisition is finished:
 - Release the patient.
 - Remove the hygiene barrier and the  from the head and chin rest.

X-ray Dose Emission Information

Compliance with EURATOM 97/43 Directive

You can right-click on each image to display the estimated emitted dose received by the patient. You can use this information to calculate the effective dose received by the patient for the image.

The radiation emission dose is expressed in mGy.cm^2 . This dose is measured at the primary collimator outlet. The dose is accurate to $\pm 30\%$.

6 Acquiring 3D Images

Acquiring a 3D Image of the Full, Upper and Lower Jaw for the Adult and Pediatric Patient

Before acquiring an image, check that you have:

- Reset the unit rotative arm to the patient entry position for patient to enter the unit.
- Selected the patient record.
- Accessed the imaging window.
- Accessed the **3D Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Parameters

To set the acquisition parameters, follow these steps:



Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)* for information on radiation protection and recommendations when you select a patient type.

1. In the **3D Acquisition Interface**, click the **Patient** button to access the **Patient pane**.






Select the patient type:

- Child
- Adult: Small, Medium, Large

2. Click the **Program** button to access the **Program pane**.




3. Click on one of the following programs and select the area of interest that you intend to examine:

-  Full jaw (both upper and lower jaw) exam
-  Upper jaw exam
-  Lower jaw exam

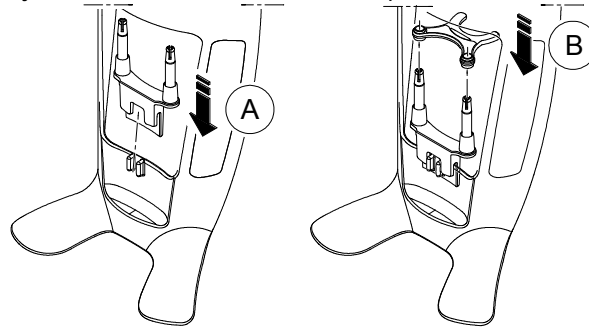
4. (Optional) If the default parameter setting is not adapted to your patient type:

- Click the **Parameter** button
- Select the appropriate parameters.













- Click  and select **Memorize Anatomy setting** to save the new parameter settings as future default settings.

5. Fit the 3D bite block support (A), and insert the 3D bite block (B) as shown.

Make sure that you click the bite block well into place.



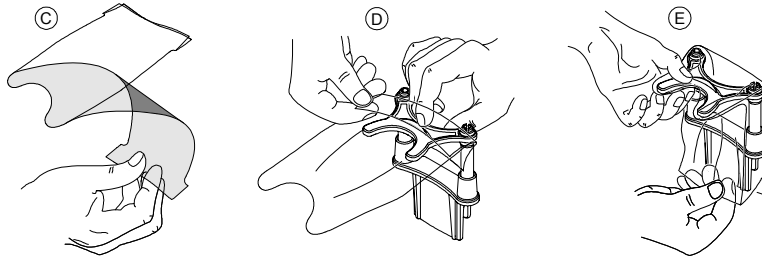
See the table below for information on the recommended Fields of View (FoV) and Acquisition types for available 3D bite blocks.

Full Upper and Lower Jaw Acquisition*; Recommended Fields of View (FoV) and Acquisition Types			
Acquisition types	1 3D bite block	2 3D molar bite block	4 3D child bite block
	 8x9 **	 8x9 **	 8x8
	 8x5	 8x5	 8x5
	 8x5	 8x5	 8x5

* Optional for CS 8100 3D Access and CS 8100SC 3D Access.

** In Canada, the full upper and lower jaw acquisition is limited to **8x8** FOV instead of **8x9** FOV.

6. Remove the paper backing from the hygienic barrier (C), and cover the bite block with the hygienic barrier (D). Make sure that you cover the bite block completely with the hygienic barrier (E).

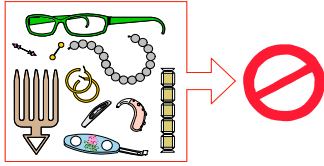


Important: You must cover the bite blocks with FDA-cleared protective sheaths that are available from distributors.

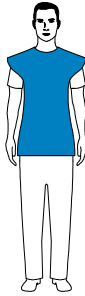
Preparing and Positioning the Adult and Pediatric Patient

To prepare and position the patient, follow these steps:

1. Ask the patient to remove all metal objects.



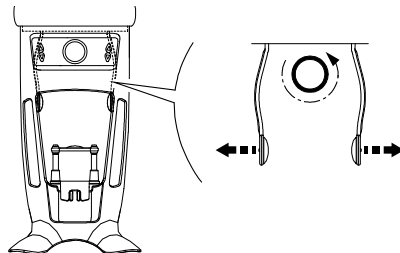
2. Ask the patient to wear a lead apron. Ensure that the apron lays flat across the patient's shoulders.



3. Turn the adjustment knob to open the temple supports laterally.



Note: You can adjust the temple supports manually to the back or front for a better head fit.



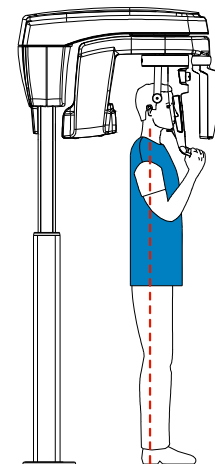
4. Ask the patient to enter the unit. On the **Positioning panel**, press and hold  to raise the chin rest to the height of the patient.



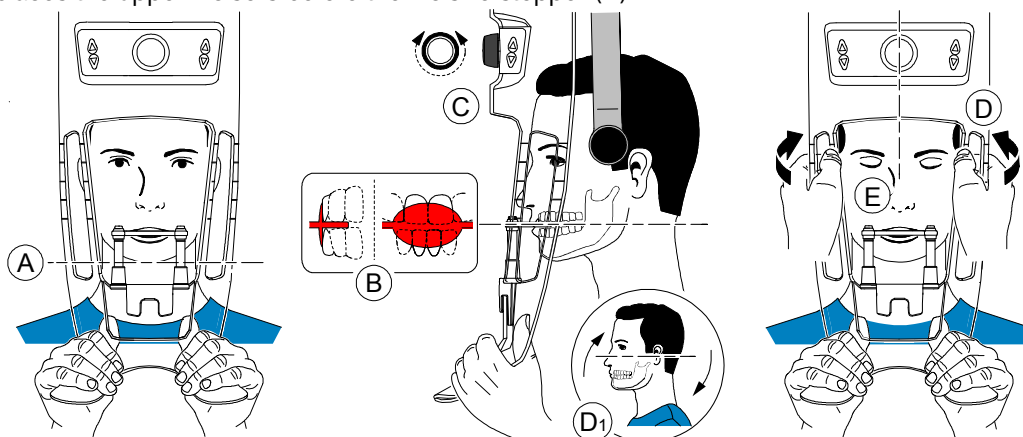
Note: If the patient is too tall, ask the patient to sit on a stool.

5. Ask the patient to:

- Stand up straight (**do not position the feet slightly forward**).
- Grip both the lower handles of the head and chin rest.
- Relax and lower the shoulders for full motion of the unit rotative arm.



6. To position the patient, ask the patient to bite into the bite block (A). Make sure that the patient places the upper incisors before the incisive stopper (B).



Important: The spinal column and the nose of the patient must be aligned in a straight vertical line.

7. Turn the adjustment knob to close the temple supports (C).
8. Use both hands to align the vertical position of the head (D). Ensure that the patient occlusion is fully horizontal (camper plane) (D1).
9. Ask the patient to:
 - Close the eyes (E).
 - Swallow.
 - Remain still.
 - Breathe through the nose.
 - Place the tongue on the palate.

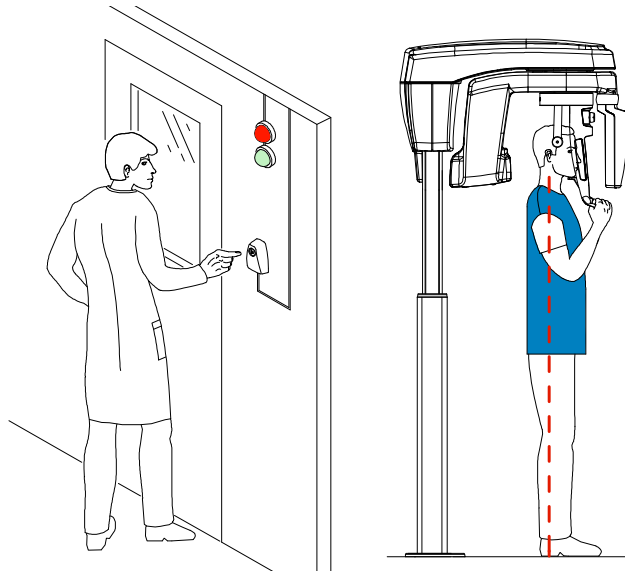
Launching the X-ray


To launch the X-ray, follow these steps:

1. Leave the X-ray room and close the door. You must keep visual contact with the patient during acquisition.



Important: To stop the acquisition, if there is any problem, release the exposure button of the remote control or press the red emergency stop button.



2. Launch the X-ray with the remote control. Press and hold the exposure button until the end of the acquisition is indicated by the on-screen “Release Handswitch” message. The  turns yellow and a warning sound is heard, indicating X-ray emission. When the acquisition ends, the **Acquisition Interface** disappears and the volume is set under reconstruction. During reconstruction, release the patient and remove the hygiene barrier from the bite block.
3. Open and review the volume from you imaging software.

Acquiring a 3D Focused Teeth Image for the Adult and Pediatric Patient

Before acquiring an image, check that you have:

- Reset the unit rotative arm to the patient entry position for patient to enter the unit.
- Selected the patient record.
- Accessed the imaging window.
- Accessed the **3D Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Parameters

To set the acquisition parameters, follow these steps:

1. In the **3D Acquisition** interface, click the **Patient** button to access the **Patient** pane.



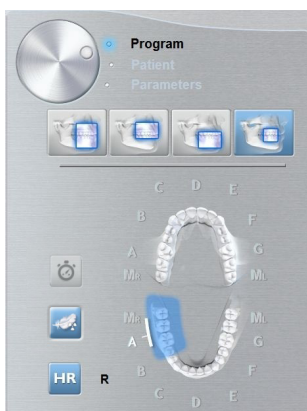
Select the patient type:




- Child
- Adult: Small, Medium, Large




Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)* for information on radiation protection and recommendations when you select a patient type.

2. Click the **Program** button to access the **Program** pane.








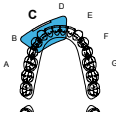
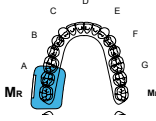

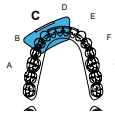

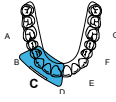
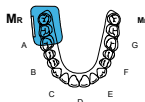
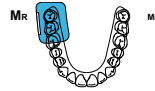
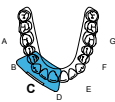
3. Click on the area of interest: upper jaw:  or lower jaw: .
4. **(Optional)** If the default parameter setting is not adapted to your patient type, click the **Parameter** button:
 - Select the appropriate parameters.
 - Click  and select **Memorize Anatomy setting** if you want to save the new parameter settings as future default settings.

 **Important: See the CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844) for information on radiation protection and recommendations when you select a patient type, especially the pediatric patient. .**

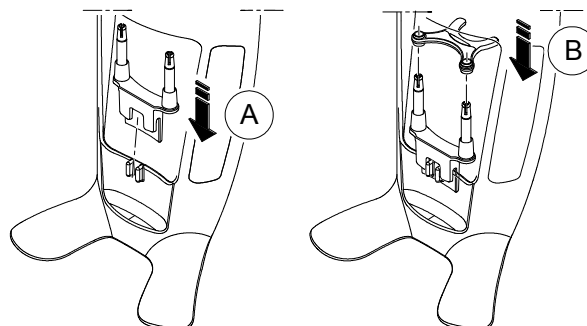
5. Position and fix the bite block support (A), and insert the appropriate 3D bite block (B).

Make sure that you click the bite block well into place.

See the table below for information on recommended 3D bite block use, for each Acquisition type and Field of View (FoV).

3D focused teeth acquisition: Recommended Fields of View (FoV) and Acquisition Types				
Acquisition option	1 3D bite block	2 3D molar bite block	2 3rd Molar offset 3D bite block*	4 3D child bite block
				
Upper	5x5	5x5	5x5	4x4
				
Lower	5x5	5x5	5x5	4x4
				

- If you are using a standard 3D bite block or a 3D molar bite block, fit the bite block (A) to the support as shown:

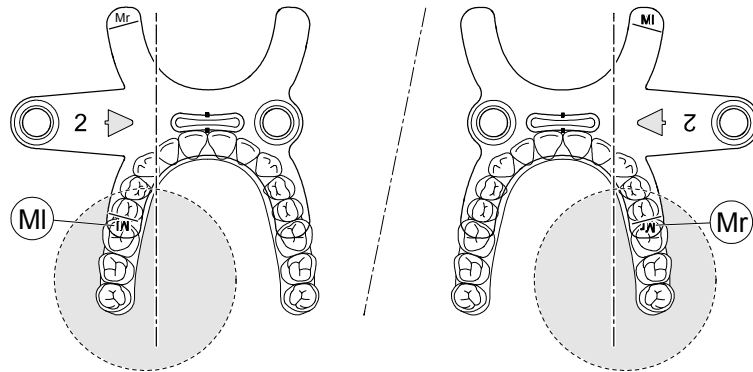


- If you are using a 3rd molar offset 3D bite block, insert the offset bite block (B) for a right-molar (MR) or left-molar (ML) acquisition as required:



Important: The 3rd Molar offset 3D bite block is for use with 5x5 MI and MR FoVs only.

- To acquire an image of the **left-side 3rd molar**, insert the offset bite block so that the part indicated **MI** will be placed in the corresponding position in the patient's mouth.

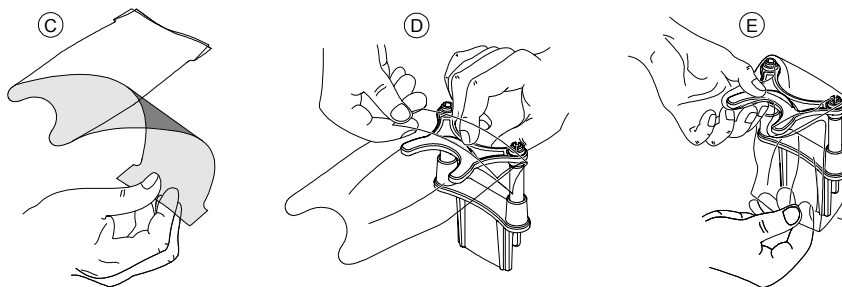


- To acquire an image of the **right-side 3rd molar**, insert the offset bite block so that the part indicated **MR** will be placed in the corresponding position inside the patient's mouth.

6. Remove the paper backing from the hygienic barrier (C). Cover the bite block with the hygienic barrier (D). Make sure that you cover the bite block completely with the hygienic barrier (E).



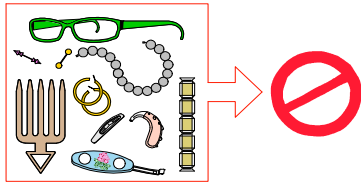
Important: You must cover the bite blocks with FDA-cleared protective sheaths that are available from distributors.



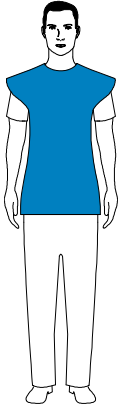
Preparing and Positioning the Adult and Pediatric Patient

To prepare and position the patient, follow these steps:

1. Ask the patient to remove all metal objects.



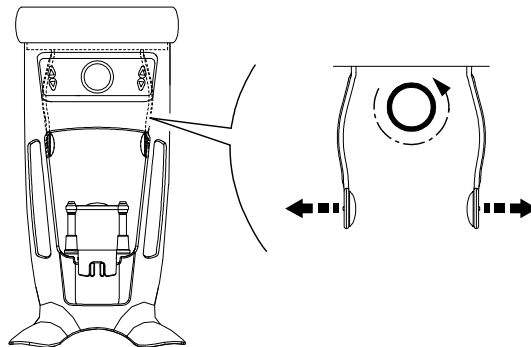
2. Ask the patient to wear a lead apron. Ensure that the apron lays flat across the patient's shoulders.



3. Turn the adjustment knob to open the temple supports laterally, as shown.

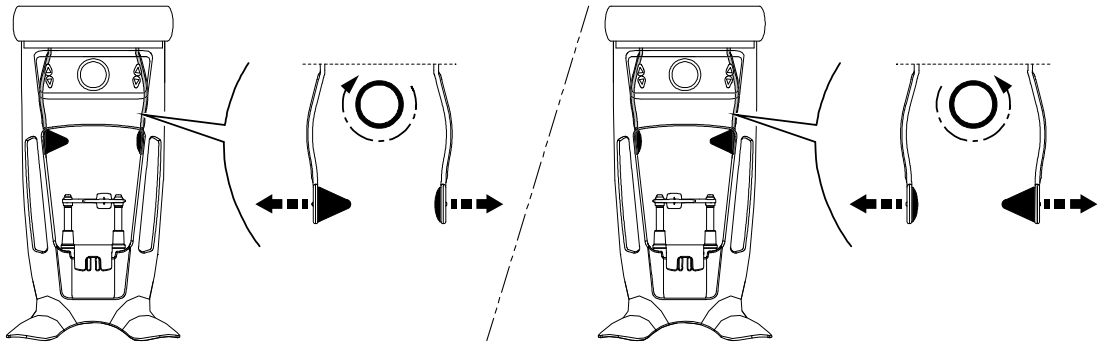


Note: You can adjust the temple supports manually to the back or front for a better head fit.



If you are using the 3rd Molar offset 3D bite block (optional):

- **Remove the standard temple support** from the right or left head clamp, depending on the side of the mouth targeted for focused acquisition (right molar (MR) or left molar (ML))
- **Replace it with the offset temple support cone** designed for use with **the 3rd Molar offset 3D bite block** as shown below:



Store the standard temple support carefully, and replace it when you have completed the focused offset acquisition.



Important: Remember to store the standard temple support carefully, and to replace it once you have completed the offset acquisition.

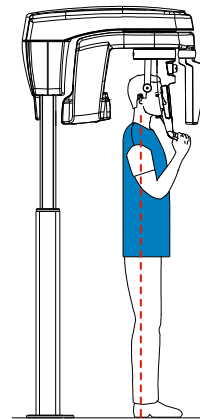
4. Ask the patient to enter the unit. On the **Positioning panel**, press and hold  to raise the chin rest to the height of the patient.



Note: If the patient is too tall, ask the patient to sit on a stool.

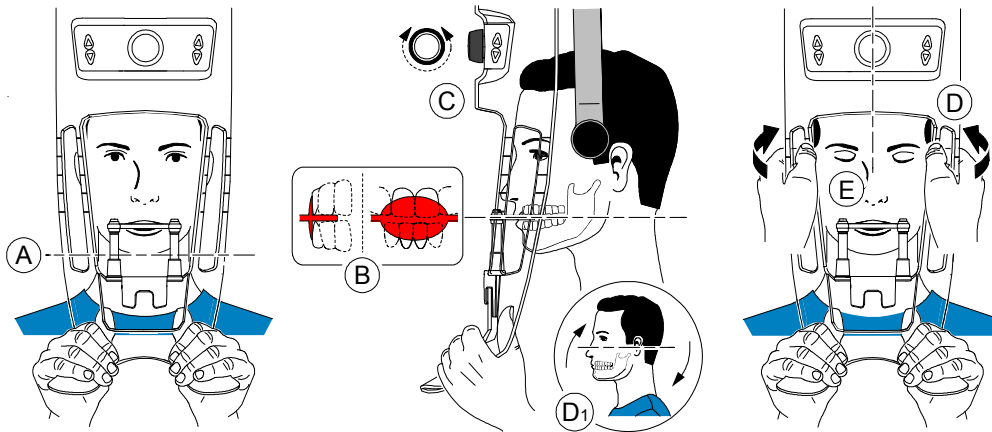
5. Ask the patient to:

- Stand up straight (**do not position the feet slightly forward**).
- Grip both the lower handles of the head and chin rest.
- Relax and lower the shoulders for full motion of the unit rotative arm.



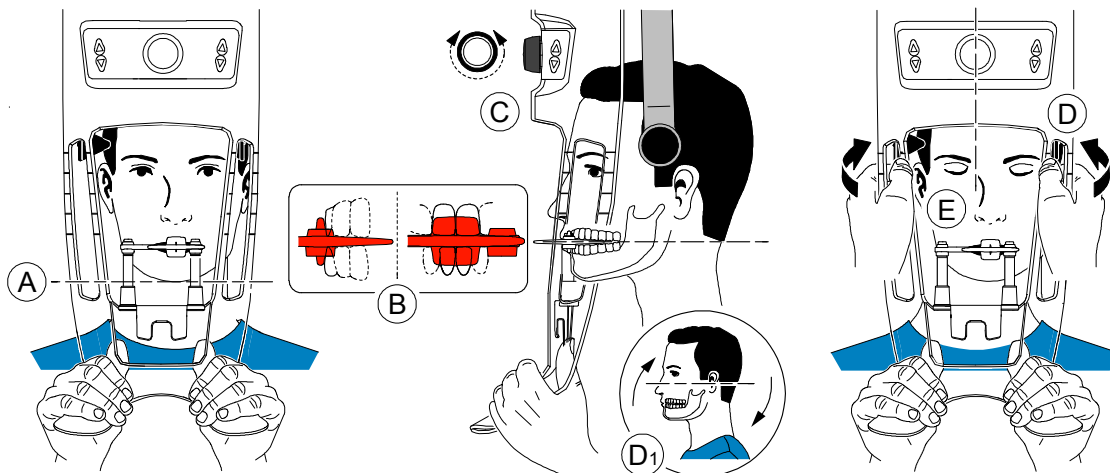
6. To position the patient:

- If you are using a standard 3D bite block or a 3rd molar bite block, ask the patient to bite on the 3D bite block as shown (A), (B).

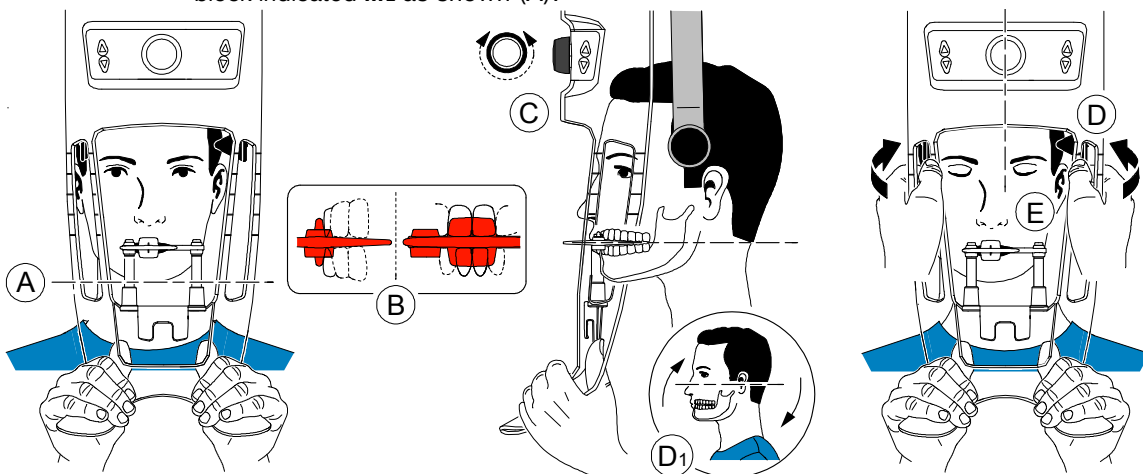


- If you are using a 3rd molar offset 3D bite block:

- To acquire an image of the **right 3rd molar**, ask the patient to bite on the side of the bite block indicated **MR** as shown (A):



- To acquire an image of the **left 3rd molar**, ask the patient to bite on the side of the bite block indicated **ML** as shown (A):



The indication on the bite block (ML or MR) should be placed in the corresponding region inside the patient's mouth.

Ask the patient to bite into the **bite block**, making sure that the patient places the upper incisors before the incisive stopper (B).

7. Turn the adjustment knob to close the temple supports (C).
8. Use both hands to align the vertical position of the head (D).
9. Ask the patient to:
 - Close the eyes (E).
 - Swallow.
 - Remain still.
 - Breathe through the nose.
 - Place the tongue on the palate.

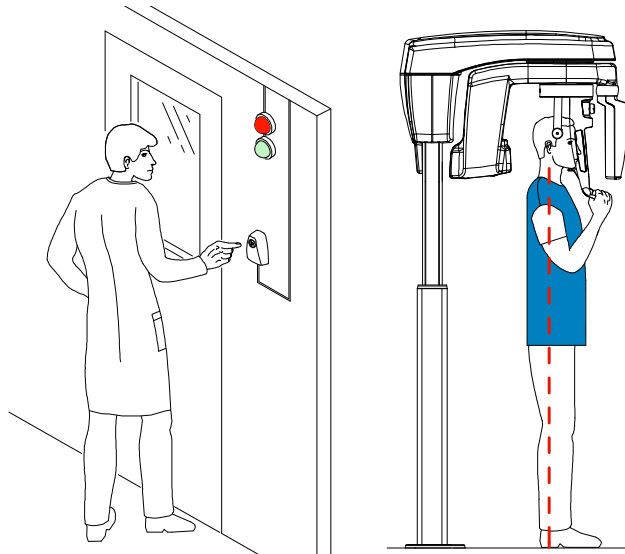
Launching the X-ray


To launch the X-ray, follow these steps:

1. Leave the X-ray room and close the door. You must keep visual contact with the patient during acquisition.



Important: To stop the acquisition, if there is any problem, release the exposure button of the remote control or press the red emergency stop button.



2. Launch the X-ray with the remote control. Press and hold the exposure button until the end of the acquisition is indicated by the on-screen “Release Handswitch” message. The  turns yellow and a warning sound is heard, indicating X-ray emission. When the acquisition ends, the **Acquisition** interface disappears and the volume is set under reconstruction. During reconstruction, release the patient and remove the hygiene barrier from the bite block.
3. Open and review the volume from you imaging software.

X-ray Dose Emission Information

Compliance with EURATOM 97/43 Directive

You can right-click on each image to display the estimated emitted dose received by the patient. You can use this information to calculate the effective dose received by the patient for the image.

The radiation emission dose is expressed in $\text{mGy}\cdot\text{cm}^2$. This dose is measured at the primary collimator outlet. The dose is accurate to $\pm 30\%$.

7 3D Object Acquisition

The 3D Object Acquisition comprises the following acquisition modes:

- CS Restore: Acquires 3D representations of digital X-ray images that are used for dental restorative workflows.
- CS Model: Acquires 3D representations of digital X-ray images that are used for orthodontic workflows.
- Appliance: Acquires 3D representations of guided surgical images for double-scan protocol producing acquisition files that are compatible with competitor solutions.

3D Object Acquisition Interface Overview




- 1 **Show versions button:** Identifies the Software and the Firmware versions.
- 2 **Animated display screen:** Guides you on the acquisition positioning modes.
- 3 **Selected Parameter Display:** Displays the current acquisition mode and parameter settings.
- 4 **System Status Screen:** Displays various alert or warning messages originating from the unit.
- 5 **Generator Cooling indicator:** Indicates the automatic cooling time (mm:ss) required for the generator to reach 0 for a new acquisition.
- 6 **Reset button:** Resets the unit to the patient-entry position.
- 7 **Parallel position button:** Leaves more free space around the unit when it is not in use by placing the rotative arm in a parallel position to the unit head.
- 8 **X-ray On/Off button:** Enables or disables X-ray emission.
- 9 **Ready Indicator LED:**
 - Green indicates that the unit is ready to start an acquisition.
 - Black indicates that the unit is not ready to start an acquisition.


- 10 **Exit button:** Closes the Acquisition interface.
- 11 **X-ray Emission indicator:** Yellow indicates that X-ray emission is in progress.
- 12 **Acquisition Options:** Provides the various acquisition scenarios.
- 13 **Acquisition Export Mode:** Provides one of the following acquisition export modes to view the acquired images:
 - CS Restore.
 - CS Model.
 - Appliance.
- 14 **Acquisition Mode:**
 - Plaster button.
 - Impression material button.
 - Radiological Guide button.
- 15 **Selector button:**
 - **Program:** To select the capture option.


CS Restore: Plaster Pane Overview

- Click  .
- Select  .



Click  for the triple tray impression mode.

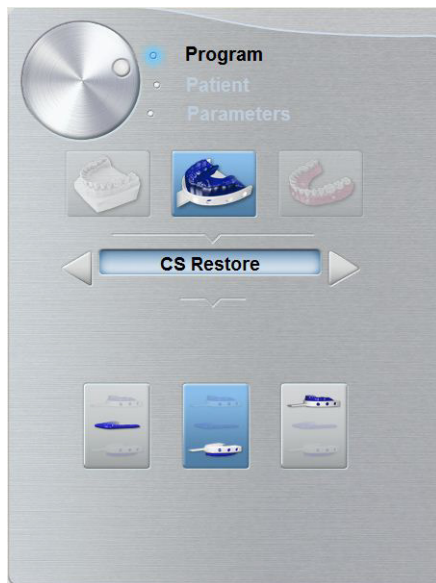
Click  for the lower jaw mode.


Click  for the upper jaw mode.


CS Restore: Impression Material Pane Overview


The CS Restore impression material program pane becomes active when you:

- Click .
- Select .



Click  for the triple tray impression mode.

Click  for the lower jaw mode.

Click  for the upper jaw mode.


CS Model: Plaster Pane Overview


The CS Model plaster program pane becomes active when you:


- Click .
- Select .





Important: To have a true occlusion alignment of the full jaw mode, make sure that the rear ends of both the occlusion models are cut flat. If they are not, you must select the full jaw mode with wax bite.

Click  for the full jaw mode.

Click  for the full jaw mode with wax bite.

Click  for the lower jaw mode.

Click  for the upper jaw mode.


Click  for the lower and upper jaw in occlusion mode.


CS Model: Impression Material Pane Overview


The CS Model impression material program pane becomes active when you:


- Click .
- Select .



Click  for the full jaw mode.

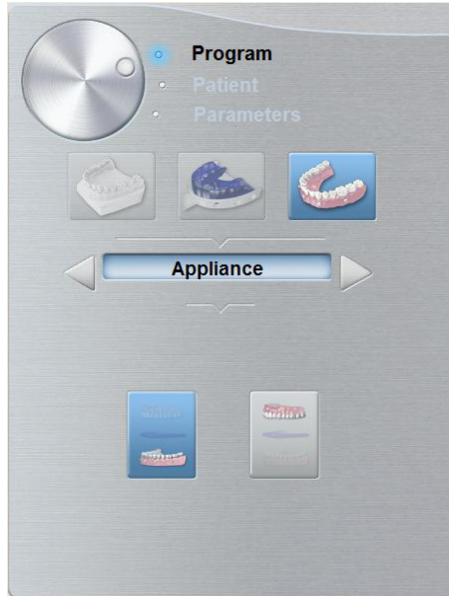
Click  for the full jaw mode with wax bite.


Click  for the lower jaw mode.


Click  for the upper jaw mode.

Appliance: Radiological Guide Pane Overview

The  radiological guide program pane becomes active when you click

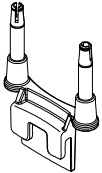
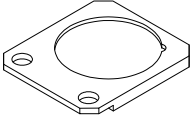
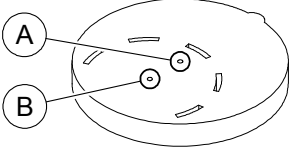


Click  for the lower jaw mode.

Click  for the upper jaw mode.




3D Object Acquisition Accessories

Table 2 3D Object Acquisition Accessories

Item	Description	Quantity
	3D dental impression holder support	1
	3D dental impression holder	1
	Black foam: A - Center of the big circle B- Center of the small circle	10

Acquiring Images of CS Restore Impression Material Objects

Before acquiring an image of the object, do the following:


- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Parameters

To prepare the unit for acquisition, follow these steps:

1. Insert the 3D bite block support (A) in the chin rest base.



2. Place the dental impression holder (B) onto the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).
4. Click the **Program** button to access the **Program** pane.
5. Click  to access the impression material acquisition mode interface.
6. Select the acquisition option that you require. See [“Launching the Acquisition for the Impression Material.”](#) or [“Launching the Triple Tray Impression Acquisition.”](#)



Important: The animated display screen will guide you on how to position the acquisition object that you have selected.



WARNING: Make sure that you position the acquisition object correctly to obtain quality data.

Launching the Acquisition for the Impression Material



WARNING:

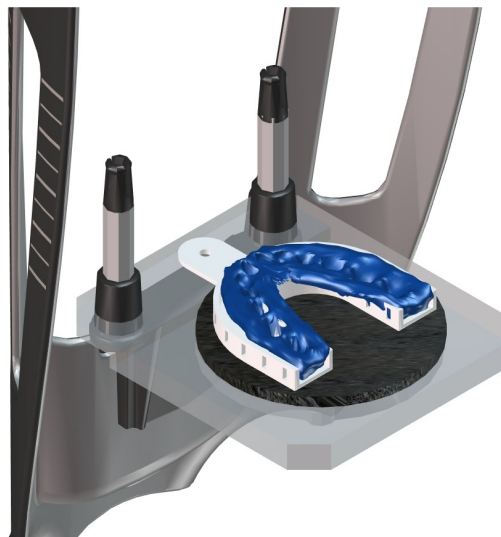
- **ALWAYS** use a metal-free tray for the Impression Material.
- **Make sure that the Impression Material and the plastic tray are dry.**


To launch the acquisition, follow these steps:

1. Select either the lower jaw or upper jaw acquisition mode.




2. Follow the on-screen animated instruction on how to correctly position the impression at the center of the black foam.



3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.

5. Once all items have been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The completely reconstructed object will display in the image browser.

Launching the Triple Tray Impression Acquisition

To launch the triple tray impression acquisition, follow these steps:



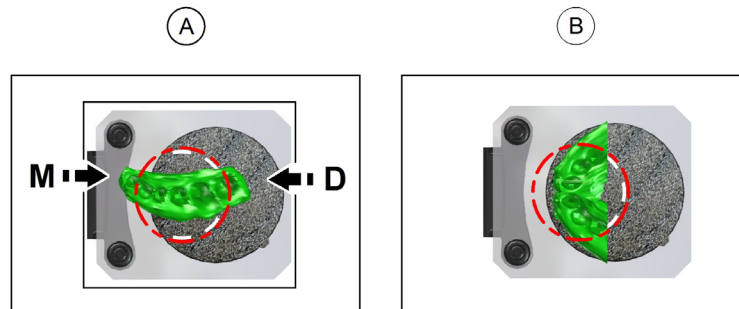
Important:

- Make sure that the triple tray impression is dry.
- The triple tray impression must be level when you position it on the black foam. If it is not level, use a scalpel to cut and level it.


1. Select the triple tray impression acquisition mode.



2. Follow the on-screen animated instruction on how to correctly position the triple tray impression on the black foam.




Important: You must place the triple tray impression on the black foam in the same orientation as when you take it out of the patient mouth.

3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.

The acquired image appears in the **Preview Screen**.

5. Once the triple tray impression has been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.




The completely reconstructed object will display in the image browser.

Acquiring Images of CS Restore Plaster Objects

Two acquisition modes are available when you select the CS Restore acquisition export mode:

- Plaster
- Impression Material

Before acquiring an image of the object, do the following:

- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **Acquisition Interface**.


Preparing the Unit and Setting the Acquisition Options

To prepare the unit for acquisition, follow these steps:

1. Insert the 3D bite block support (A) into the chin rest base.



2. Place the dental impression holder (B) on the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).
4. Click the **Program** button to access the **Program** pane.

5. Click  to access the plaster acquisition mode interface.
6. Select the acquisition option that you require. See [“Launching the Plaster Acquisition”](#) or [“Launching the Triple Tray Acquisition”](#) .





Important: The animated display screen will guide you on how to position the acquisition material that you have selected.



WARNING: Make sure that you position the acquisition material correctly to obtain quality data.

Launching the Plaster Acquisition


To launch the acquisition, follow these steps:

1. Select either the lower jaw or upper jaw acquisition mode.




2. Follow the on-screen animated instruction on how to correctly position the upper jaw or lower jaw plaster at the center of the black foam.



3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.

The acquired image appears in the **Preview Screen**.

5. Once all items have been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The reconstruction object will display in the image browser.

Launching the Triple Tray Acquisition

To launch the triple tray impression acquisition, follow these steps:



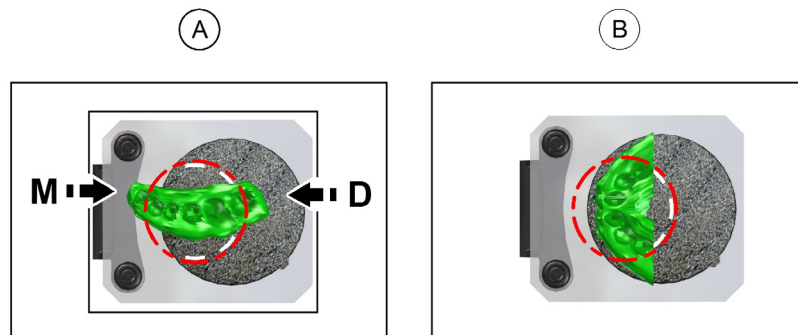
Important:

- **Make sure that the triple tray impression is dry.**
- **The triple tray impression must be level when you position it on the black foam. If it is not level, use a scalpel to cut and level it.**


1. Select the triple tray impression acquisition mode.



2. Follow the on-screen animated instruction on how to correctly position the triple tray impression at the center of the black foam.




Important: You must place the triple tray impression on the black foam in the same orientation as when you take it out of the patient mouth.

3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.




The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.

5. Once the triple tray impression has been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The completely reconstructed object will display in the image browser.

Acquiring Images of CS Model Impression Material Objects

Before acquiring an image of the object, do the following:


- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Options

To prepare the unit for acquisition, follow these steps:

1. Insert the 3D bite block support (A) in the chin rest base.



2. Place the dental impression holder (B) onto the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).
4. Click the **Program** button to access the **Program** pane.
5. Click  to access the impression material acquisition mode interface.
6. Select the acquisition option that you require. See "[Launching the Impression Material Acquisition.](#)"



Important: The animated display screen will guide you on how to position the acquisition object that you have selected.



WARNING: Make sure that you position the acquisition object correctly to obtain quality data.

Launching the Impression Material Acquisition



Important:

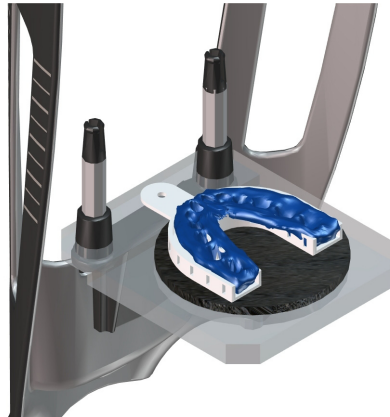
- **ALWAYS** use a metal-free tray for the Impression Material.
- **Make sure that the Impression Material and the plastic tray are dry.**


To launch the acquisition, follow these steps:

1. Select either one of the acquisition options.




2. Follow the on-screen animated instruction on how to correctly position the impression at the center of the black foam.



3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.

The acquired image appears in the **Preview Screen**. If you select the option that requires the acquisition of the wax bite, see the following section for information: "[Launching the Wax Bite Acquisition.](#)"

5. Once all items have been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The completely reconstructed object will display in the image browser.

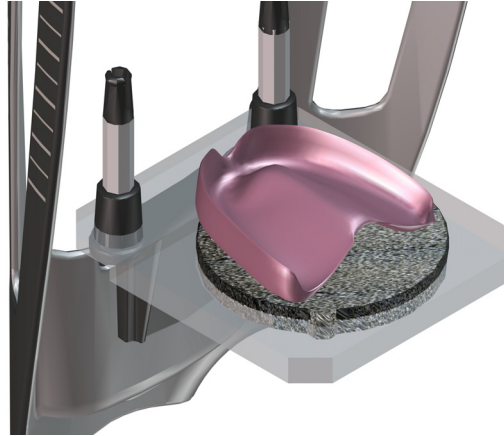
Launching the Wax Bite Acquisition


To launch the wax bite acquisition, follow these steps:



Important: Make sure that the wax bite is dry.


1. Follow the on-screen animated instruction on how to correctly position the wax bite at the center of the black foam.



2. Leave the X-ray room and close the door.
3. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.




The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.

4. Once the wax bite has been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The completely reconstructed object will display in the image browser.

Acquiring Images of CS Model Plaster Objects

Before acquiring an image of the object, do the following:


- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **Acquisition** interface.

Preparing the Unit and Setting the Acquisition Options

To prepare the unit for acquisition, follow these steps:

1. Insert the 3D bite block support (A) into the chin rest base.



2. Place the dental impression holder (B) on the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).
4. Click the **Program** button to access the **Program** pane.
5. Click  to access the plaster acquisition mode interface.
6. Select the acquisition that you require. See [“Launching the Plaster Acquisition.”](#) .



Important: The animated display screen will guide you on how to position the acquisition material that you have selected.

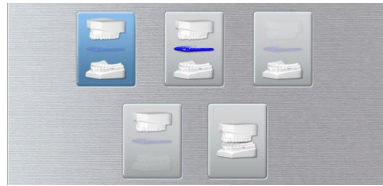


WARNING: Make sure that you position the acquisition material correctly to obtain quality data.

Launching the Plaster Acquisition


To launch the acquisition, follow these steps:

1. Select either one of the acquisition options.




2. Follow the on-screen animated instruction on how to correctly position either one of the following objects at the center of the black foam:
 - upper jaw or lower jaw.
 - upper and lower jaw in occlusion.



3. Leave the X-ray room and close the door.
4. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.

The acquired image appears in the **Preview Screen**. If you select the option that requires the acquisition of the wax bite, see the following section for information: "[Launching the Wax Bite Acquisition.](#)"

5. Once all items have been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The reconstruction object will display in the image browser.

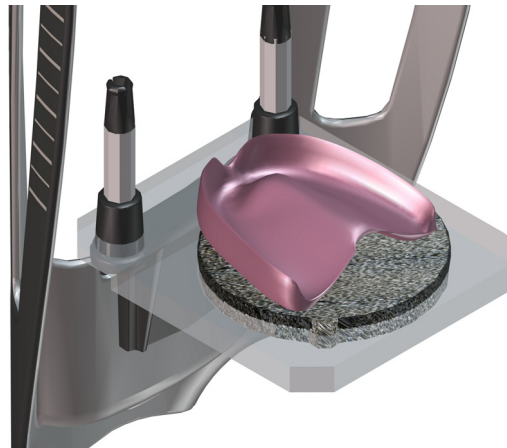
Launching the Wax Bite Acquisition


To launch the wax bite acquisition, follow these steps:



Important: Make sure that the wax bite is dry.


1. Follow the on-screen animated instruction on how to correctly position the wax bite at the center of the black foam.



2. Leave the X-ray room and close the door.
3. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.



4. Once the wax bite has been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The completely reconstructed object will display in the image browser.

Acquiring Images of the Radiological Guide in the Patient Mouth

The Appliance acquisition export mode enables you to carry out the acquisition procedures for dual scan protocol that is needed to perform dental implant guided surgery.

Before acquiring an image of the object, do the following:

- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  to access the **3D Acquisition Interface**.

Preparing the Unit and Setting the Acquisition Parameters

To prepare the unit for acquisition, follow these steps:

1. In the **3D Acquisition** interface, click the **Patient** button to access the **Patient** pane.



Select the patient type:

- Child
- Adult: Small, Medium, Large



Important: See the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)* for information on radiation protection and recommendations when you select a patient type.

2. Click the **Program** button to access the **Program** pane



3. Select the required acquisition type:

Full, upper and lower jaw acquisition*
Recommended Fields of View (FoV) and Acquisition Types

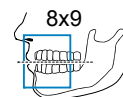
3D bite block

Acquisition option

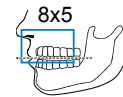


Upper and lower jaw

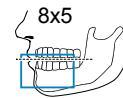
**



Upper jaw



Lower jaw



* Optional for CS 8100 3D Access and CS 8100SC 3D Access

** In Canada, the full upper and lower jaw acquisition is limited to **8x8** FOV instead of **8x9** FOV.

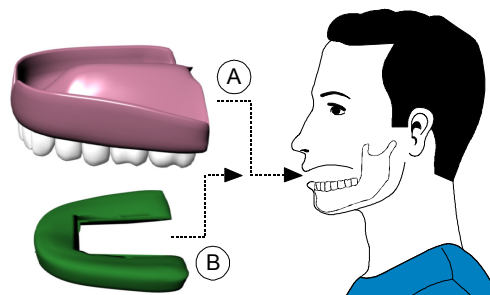
Preparing and Positioning the Patient

To prepare and position the patient, follow these steps:

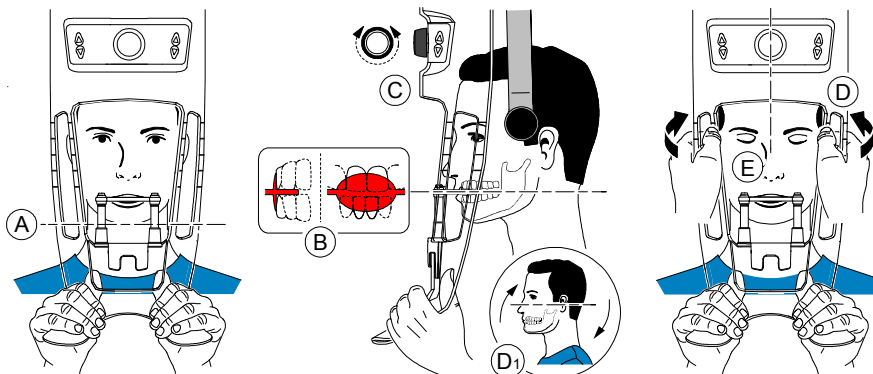
1. Ask the patient to remove all metal objects.



2. Ask the patient to wear a lead apron. Ensure that the apron lays flat across the patient's shoulders.
3. Ask the patient to do the following:
 - Stand up straight or sit on a stool.
 - Grip the lower handle on each side.
 - Position the feet slightly forward.
 - Relax and lower the shoulders to allow for the full motion of the unit rotative arm.
4. Place the radiological guide (A) and the bite index (B) in the patient's mouth. Ask the patient to remain in occlusion during the scanning operation.



5. Ask the patient to bite into the 3D bite block (A).



6. Make sure that the patient places the upper incisors before the incisive stopper (B).




Important: The spinal column and the nose of the patient must be aligned in a straight vertical line.

7. Turn the adjustment knob to close the temple supports (C).

8. Use both hands to align the vertical position of the head (D). Ensure that the patient occlusion is fully horizontal (camper plane) (D1).
9. Ask the patient to:
 - Close the eyes (E).
 - Swallow.
 - Remain still.
 - Breathe through the nose.
 - Place the tongue on the palate.


Launching the X-ray

To launch the X-ray, follow these steps:

1. Leave the X-ray room and close the door. You must keep visual contact with the patient during acquisition.
2. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.




The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.

3. The animated display in the **Acquisition** interface changes to demonstrate how to correctly position the next item to be scanned. Repeat steps 1 to 2.
4. Once the acquisition is completed, the **Acquisition** interface closes. Wait for the 3D object reconstruction.

The reconstruction object will display in the image browser.

Acquiring Images of the Radiological Guide Alone

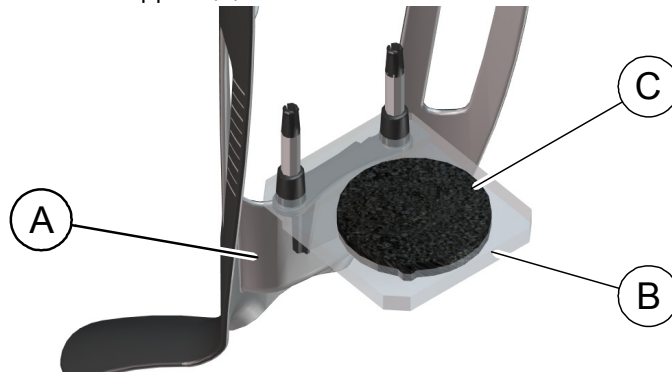
Before acquiring the images, do the following:

- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **3D Acquisition** interface.

Preparing the Unit and Setting the Acquisition Options

To prepare the unit for acquisition, follow these steps:

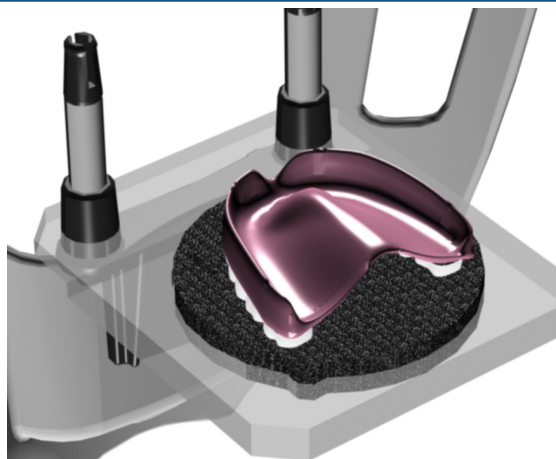
1. Insert the 3D bite block support (A) in the chin rest base.




2. Place the dental impression holder (B) onto the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).
4. Place the Radiological Guide on the black foam.



Important: You must place the Radiological Guide on the black foam in the same orientation as when you take it out of the patient mouth.



5. Click the **Program** button to access the **Program** pane.
6. Click  to access the Radiological Guide acquisition mode interface.

APPLIANCE

appears in the Acquisition Export Mode field.

7. Select either one of the appliance acquisition options.




Important: The animated display screen will guide you on how to position the acquisition mode that you have selected.



WARNING: Make sure that you position the acquisition material correctly to obtain quality data.


Launching the X-ray

To launch the X-ray, follow these steps:

1. Leave the X-ray room and close the door.
2. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.

The acquired image appears in the **Preview Screen**.

3. Once all items have been scanned, the **Acquisition** interface closes. Wait for the 3D object reconstruction.




The reconstruction object will display in the image browser.

Acquiring Appliance-Based Images



Important: Make sure that you have a calibration phantom that is provided by Nobel Biocare before you perform a NobelGuide™ or NobelClinician™ calibration procedure.

Before acquiring images of the NobelGuide™ or NobelClinician™ Biocare calibration phantom, do the following:

- On your desktop, double-click  to open the CS Imaging Software.
- Select the patient record.
- Access the imaging window.
- Click  then  to access the **3D Acquisition** interface.

Preparing the Unit and Setting the Acquisition Options of the NobelGuide™ or NobelClinician™ Calibration Phantom

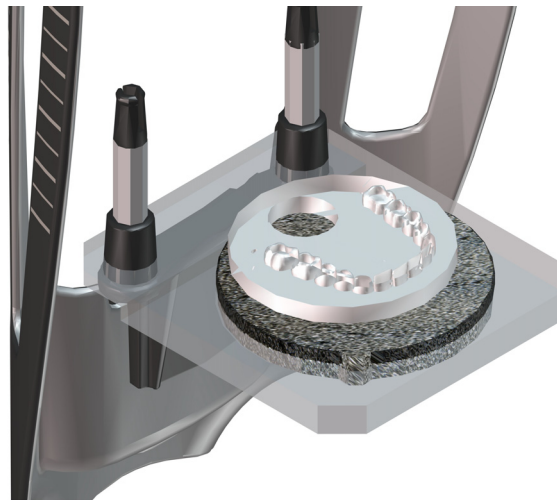
To prepare the unit for acquisition, follow these steps:


1. Insert the 3D bite block support (A) in the chin rest base.




2. Place the dental impression holder (B) onto the 3D bite block support (A).
3. Place the black foam (C) on the dental impression holder (B).

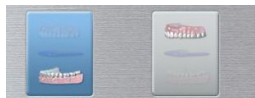
- Place the NobelGuide™ or NobelClinician™ calibration phantom on the black foam.



- Click the **Program** button to access the **Program** pane.
- Click  to access the Radiological Guide acquisition mode interface.

 appears in the Acquisition Export Mode field.

- Select either one of the appliance acquisition options.




Important: The animated display screen will guide you on how to position the acquisition mode that you have selected.



WARNING: Make sure that you position the acquisition material correctly to obtain quality data.


Launching the X-Ray To Acquire an Image of the NobelGuide™ or NobelClinician™ Calibration Phantom

To launch the X-ray, follow these steps:

1. Leave the X-ray room and close the door.
2. On the **Acquisition** interface, when  is green, press and hold the exposure button of the X-ray remote control until the end of acquisition.



Important: If you have a problem that requires you to stop the acquisition, release the exposure button of the remote control or press the red emergency stop button.

The  indicator in the acquisition interface turns yellow and a warning sound is emitted to indicate that X-ray emission is in progress.
The acquired image appears in the **Preview Screen**.

3. The animated display in the **Acquisition** interface changes to demonstrate how to correctly position the next item to be scanned. Repeat steps 1 to 2.
4. Once all items have been scanned, wait for the 3D object reconstruction.

The reconstruction object will display in the image browser.

8 Maintenance

Perform the following maintenance activities on your CS 8100 3D.



Important: For information on cleaning and disinfecting, see the *CS 8100 3D Family Safety, Regulatory and Technical Specifications User Guide (SM844)*.

Maintenance actions

Monthly maintenance


Wipe the outer covers of the unit with a soft and dry cloth.

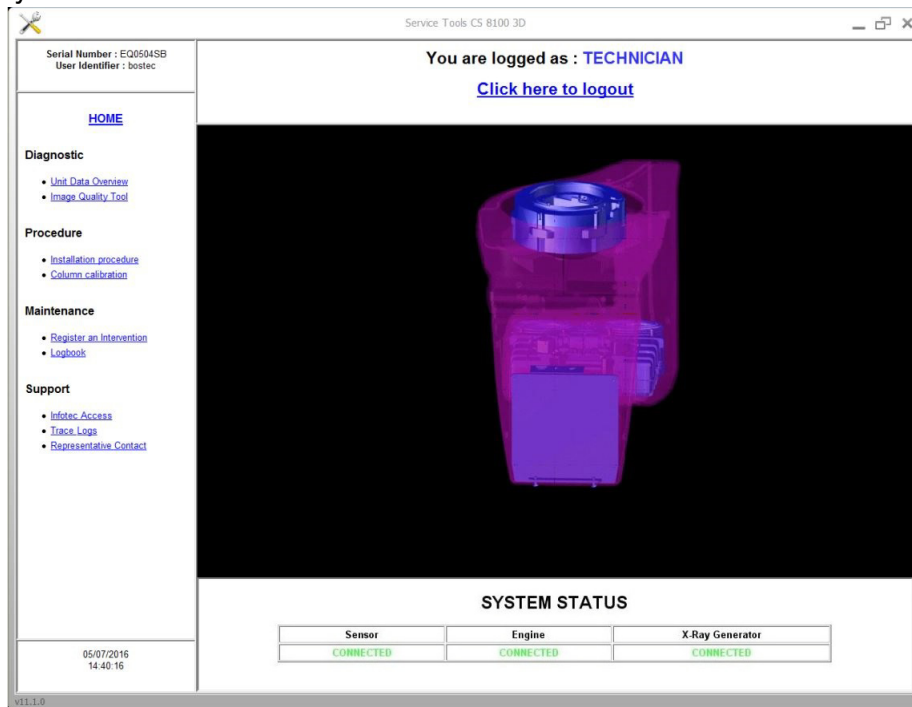
Annual maintenance

We recommend a general inspection of the unit carried out by an authorized service technician.

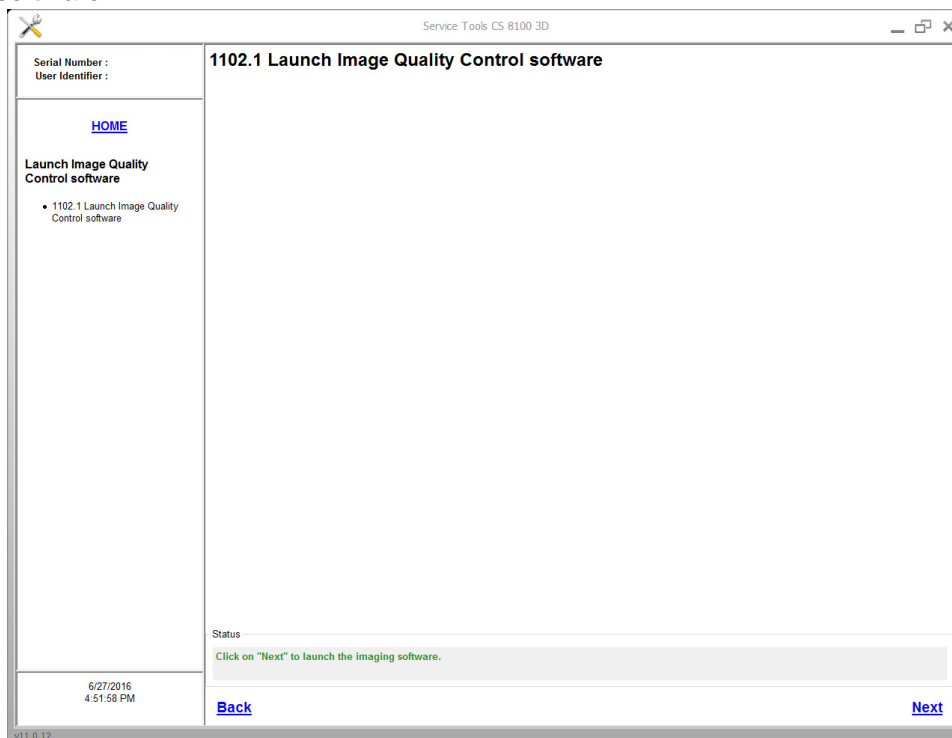
Controlling the Image Quality

To maintain optimum image quality, the image quality must be controlled once a month. To control the image quality, follow these steps:

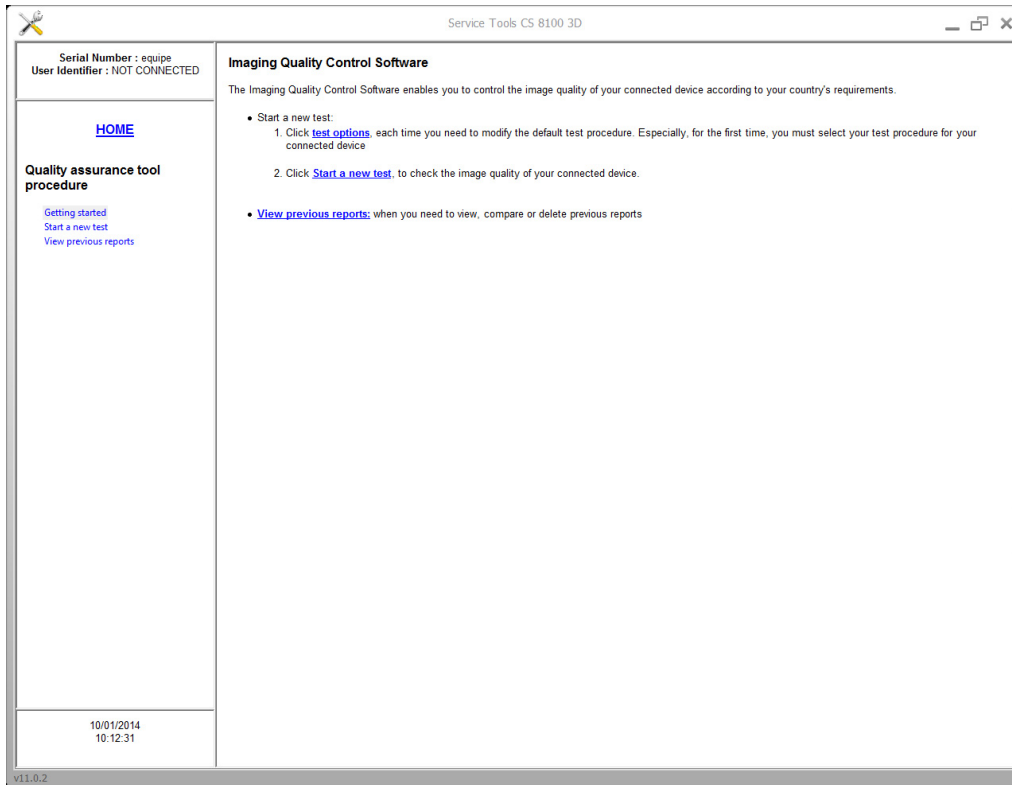
1. On your desktop, double-click  . The **CS 8100 3D Technician Tools** window is displayed.



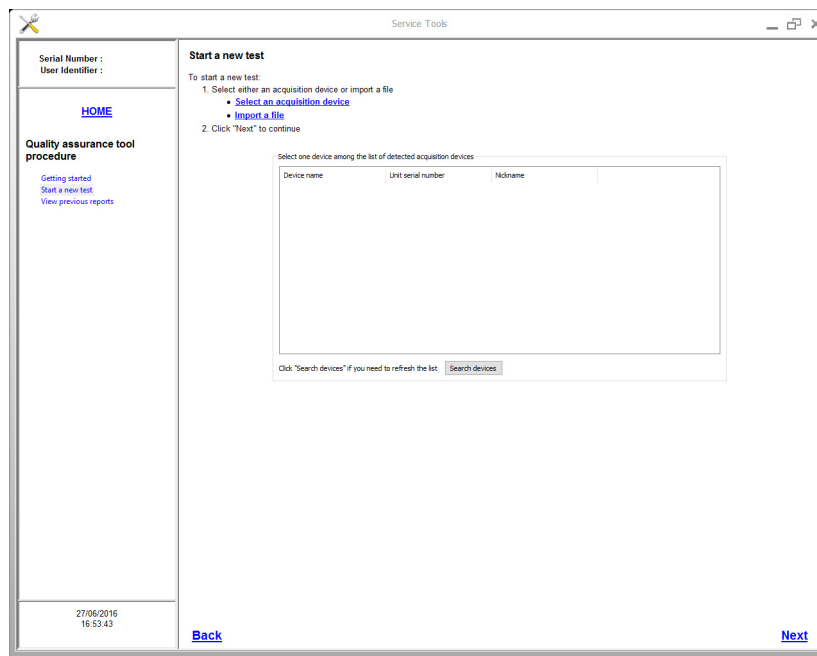
2. In the left pane, double-click **Image Quality Tool** to launch the **Image Quality Control** software.



- 3 Click **Next** to access the **Image Quality Control** window.



4. Click **test options** to select the desired test or to modify default test parameters.
- 5 Click **Start a new test**, and follow the on-screen instructions.




9 Troubleshooting

Quick Troubleshooting

Occasionally, malfunctions can occur during use in the event of an incorrect action. An error message is displayed on the popup on the **Acquisition** interface **System Status Screen**.

The following table lists the information messages, their description and the action to take:



Important: If an Error Code message is displayed, the malfunction persists or more serious conditions occur, contact a qualified technician. When you call the qualified technician have the following information ready:

- **Model Serial Number**
- **Error Code Message**

Table 3 Error Code Message

Error Code	Error Message	Description	Action
Err_S_GEN_36865	Handswitch was released before the end of exposure.	The user has released the exposure button prematurely.	Relaunch the acquisition and hold the exposure button until the end of the acquisition cycle.

Table 4 Quick Troubleshooting

Message	Description	Action
X-ray tube cooling	Cooling in progress.	Wait until the Generator Cooling Indicator on the Acquisition interface reaches zero.
Thermal security	Cooling in progress.	Wait until the Generator Cooling Indicator on the Acquisition interface reaches zero.
Release handswitch	The acquisition has ended.	Release the exposure button of the X-ray remote control.
Start the acquisition	The acquisition has been launched.	Keep pressing and holding the exposure button.
Upgrade of the firmware	The system is being upgraded.	Wait for completion of the upgrade.

10 Contact Information

Manufacturer's Address



Carestream Health, Inc.
150 Verona Street
Rochester, NY USA 14608

Factory

Trophy
4, Rue F. Pelloutier, Croisy-Beaubourg
77435 Marne la Vallée Cedex 2, France

Authorized Representatives

European Authorized Representative

EC REP

Carestream Health France
1, rue Galilée
93192 Noisy-Le-Grand Cedex, France

Representante no Brasil Carestream do Brasil Comércio e Serviços de Produtos MédicosLtda.

Rua Pequetita, 215 cjs.
31 E 32 Edifício Atrium VII - Vila Olímpia
São Paulo - Brazil
CEP (Zip code): 04552-060

