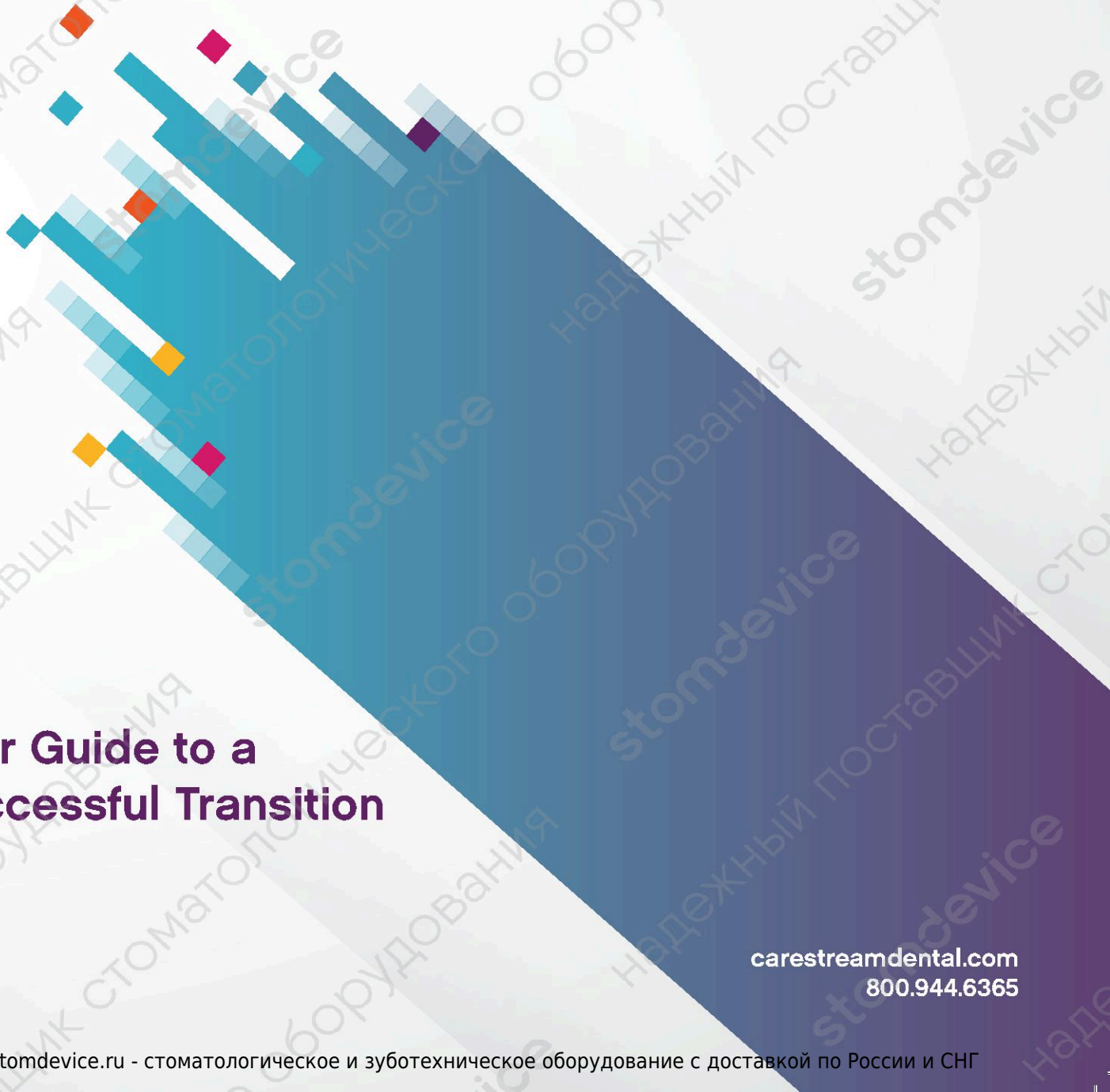
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Carestream DENTAL

Initial Training Workbook

Dental Imaging Hardware



Your Guide to a Successful Transition

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CS3160-03

CS Imaging Hardware

Initial Training Workbook

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U.S. Federal law restricts the CS 1200 intraoral camera, CS 1500 intraoral camera, CS 1600 intraoral camera, CS 2100 system, CS 2200 system, RVG 5100 system, RVG 5200 system, RVG 6100 system, RVG 6200 system, RVG 6500 system, CS 7400 system, CS 7600 system, 8000 digital panoramic system, 8000C digital panoramic and cephalometric unit, CS 8100 panoramic system, CS 8100 Access panoramic system, CS 8100SC panoramic system, CS 8100SC Access panoramic system, CS 8100 3D extraoral imaging system, CS 8100 3D Access extraoral imaging system, CS 9000 panoramic imaging system, CS 9000C extraoral and cephalometric imaging system, CS 9000 3D system, CS 9300 system, CS 9300C system, CS 9300 Select system, CS 9300C Select system, 9500 Cone Beam 3D system, CS 9600 extraoral imaging system, and CS OMS Imaging software to sale by or on the order of a dentist or physician.

Manual Name: *CS Imaging Hardware Initial Training Workbook*
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Warning: Radiographic images are not intended for diagnostic use when viewed on displays or monitors that do not meet system specifications. For more information, see the CS Orthodontic Imaging Software and CS OMS Imaging Software system requirements.

Warning: Modified radiographic images are not intended for diagnostic use.

Warning: When you launch CS Orthodontic Imaging from CS OrthoTrac Cloud or CS WinOMS Cloud and the bandwidth between the Cloud server and your office is limited, the displayed image may contain artifacts. The software is an aid to diagnosis only; you must apply your professional training and judgment before deciding a course of treatment.

Warning: Printed radiographic images are not intended for diagnostic use.

Warning: The implant module is intended to present surgical options to patients. It is not intended as a tool for surgical planning, mapping, or navigation.

Manufacturer

CE 2797

Carestream Dental LLC
3625 Cumberland Boulevard, Suite 700
Atlanta, GA 30339 USA

Authorized Representative in the European Community

EC REP

Trophy
4, Rue F. Pelloutier, Croissy-Beaubourg
77435 Marne la Vallée Cedex 2
FRANCE

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About This Guide

This workbook includes the following stand-alone lessons. You can view the lessons in any order.

- Using RVG Sensors
- Using the CS 3500 Intraoral Scanner
- Using the CS 3600 Intraoral Scanner
- Using the CS 7200 Computed Radiography System
- Using the CS 8100 and CS 8100 3D Units
- Using the CS 8100SC Unit
- Using the CS 9000 and CS 9000 3D Units
- Using the CS 9300 Unit
- Acquiring CS 9000 and CS 9300 Cephalometric Images
- Using the CS 9600 Unit
- Using CS Intraoral Cameras
- Using Digital Cameras

Related Documentation

For more information, see the user guides, safety and regulatory guides, and online help for each product.

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Using RVG Sensors

This lesson includes the following topics:

- RVG Sensor Overview
- Setting Up Filters for the RVG Sensors
- Acquiring Anterior Images
- Acquiring Bitewings
- Care and Maintenance

This lesson covers these RVG sensors:

- 5200
- 6200

RVG Sensor Overview

The following figures show the parts of the sensor:



1 Active surface of the sensor
2 Non-reactive surface of the sensor
3 USB 2.0 connector

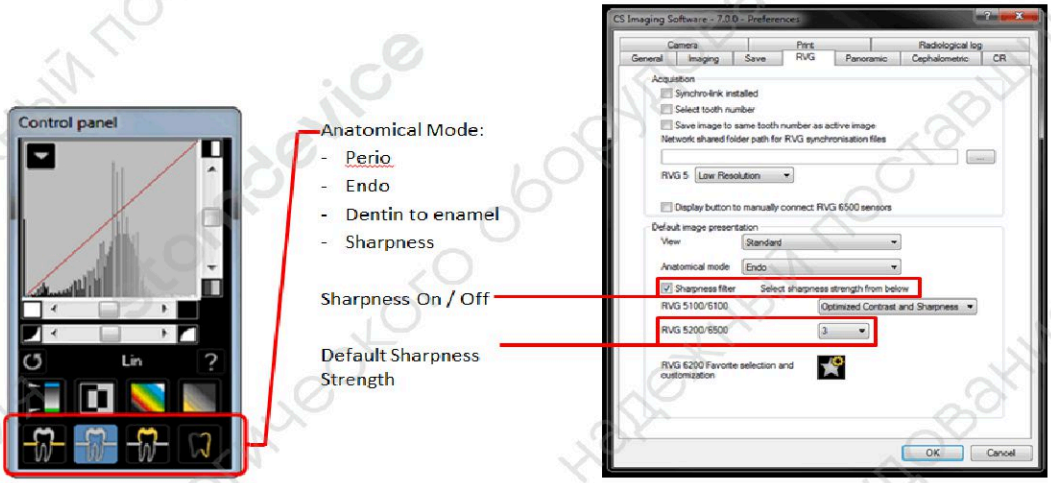
Positioning Accessories

RVG digital radiography sensors come in two sizes: size 1 and size 2. The following accessories are delivered with the RVG sensors:

- RINN® XCP-ORA™
  - 1 universal ring
  - 1 universal bar
- RINN-type bite blocks
  - 2 vertical bite block baskets – anterior
  - 2 horizontal bite block baskets – posterior
  - 2 vertical bitewings
  - 2 horizontal bitewings
- Toothbrush-type holders – vertical, horizontal, bitewing
- Universal-type holders – vertical, horizontal

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Setting Up Filters for the RVG Sensors



To set up the RVG filters from the control panel:

1 Launch the CS Imaging software.

2 Select a patient file.

3 Open an image.

4 Click an icon to adjust the anatomical mode:

-  – **Perio**
-  – **Endo**
-  – **DEJ**

To save your preferences:

1 Open the **Preferences** window.

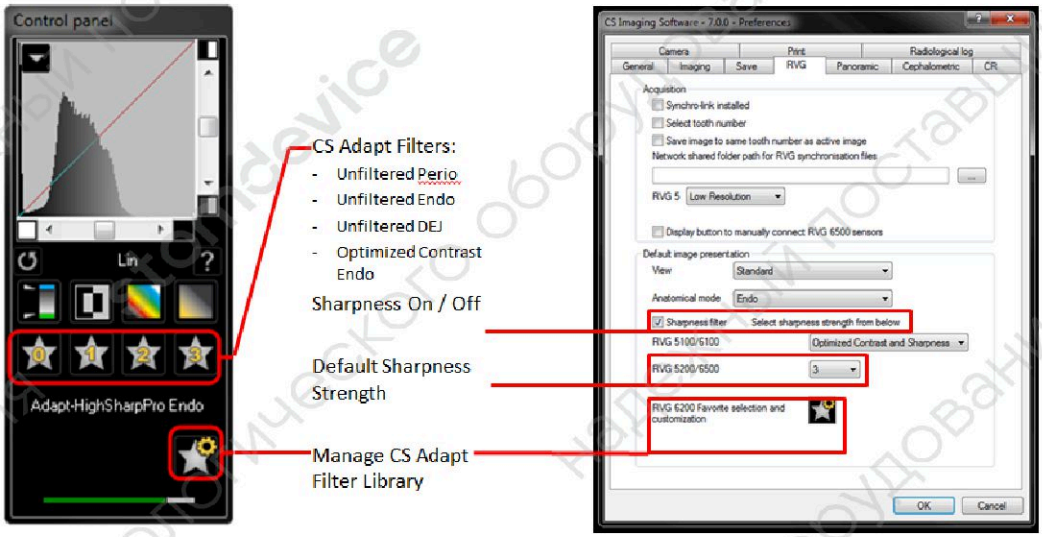
2 Click the **RVG** tab.

3 Set the **Anatomical Mode** and **Sharpness Strength** to apply by default and click **OK.**

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Selecting CS Adapt Filters



To select a CS Adapt filter from the control panel:

1 Launch the CS Imaging software.

2 Select a patient file.

3 Open an image.

4 Click an icon to select a filter:

-  – **Unfiltered Perio**
-  – **Unfiltered Endo**
-  – **Unfiltered DEJ**
-  – **Optimized Contrast Endo**

To save your preferences:

1 Open the **Preferences** window.

2 Click the **RVG** tab.

3 Set the **CS Adapt filter** and **Sharpness Strength** to apply by default and click **OK.**

Note: See the CS Adapt Filter Library online help for more information.

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Acquiring Anterior Images

Use the following techniques for maxillary and mandibular images.

Note: The RVG sensors come in two sizes: 1 and 2.

Maxillary Central Incisor

To acquire an image of the maxillary central incisor:

1 Place the sensor vertically behind the centrals, between the tongue and teeth.

2 Align the sensor parallel to the long axis of the teeth.

3 Ask the patient to close her mouth gently.

4 Align the beam indicating device (BID).

5 Move into position and acquire the image.

Mandibular Central Lateral Incisor

To acquire an image of the mandibular central incisor:

1 Place the sensor vertically behind the mandibular canine, between the tongue and teeth. Because the space may be narrow, place the sensor as far from the mandibular canine as possible. The canine should be positioned at the center of the incisor.

2 Align the sensor parallel to the long axis of the teeth.

3 Ask the patient to close his mouth gently.

4 Align the beam indicating device.

5 Move into position and acquire the image.

Maxillary Lateral Incisor

To acquire an image of a maxillary lateral incisor:

1 Place the sensor vertically behind the lateral incisor, between the tongue and teeth.

2 Make sure the incisor is in the center of the sensor, aligning the sensor parallel to the long axis of the teeth.

3 Ask the patient to close her mouth gently.

4 Align the beam indicating device.

5 Move into position and acquire the image.

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Mandibular Canine

To acquire an image of the mandibular canine:

1 Place the sensor vertically behind the mandibular canine, between the tongue and teeth. Because the space may be narrow, place the sensor as far from the mandibular canine as possible. The canine should be positioned at the center of the sensor.

2 Align the sensor parallel to the long axis of the teeth.

3 Ask the patient to close his mouth gently.

4 Align the beam indicating device.

5 Move into position and acquire the image.

Maxillary Canine

To acquire an image of the maxillary canine:

1 Place the sensor vertically behind the maxillary canine.

2 Align the sensor parallel to the long axis of the teeth.

3 Ask the patient to close her mouth gently.

4 Align the beam indicating device.

5 Move into position and acquire the image.

Acquiring Bitewings

Use the following techniques for horizontal and vertical bitewing images.

The bitewing should provide a clear view of the proximal surfaces, the crowns of the teeth, and the alveolar surfaces. It is imperative that you avoid horizontal overlap.

Horizontal Molar Bitewing

To acquire a horizontal image of a molar:

1 Place the sensor in the patient's mouth in a horizontal position.

2 With a sweeping motion, position the sensor between the tongue and the teeth. Use the rigidity of the sensor to push the tongue out of the way.

3 If the patient has a shallow vault, place the sensor as close to the midline as possible.

4 Position the sensor so that its posterior edge is behind the most posterior molar.

5 Ask the patient to close his mouth gently.

6 Align the beam indicating device.

7 Move into position and acquire the image.

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Horizontal Premolar Bitewing

To acquire a horizontal image of a premolar:

1 Place the sensor in the patient's mouth in a horizontal position.

2 Position the anterior edge of the sensor at the center of the mandibular canine so you can capture the interproximal contact of the premolar and canine.

3 Bring the beam indicating device mesially so that it is almost centered on the canine. The sensor should be almost perpendicular to the cone beam.

4 Ask the patient to close her mouth gently.

5 Align the beam indicating device.

6 Move into position and acquire the image.

Vertical Molar Bitewing

To acquire a vertical image of a molar:

1 Place the sensor in the patient's mouth horizontally, and then rotate it into position.

2 Place the sensor as close as possible to the patient's midline.

3 Position the sensor so its anterior edge is behind the distal surface of the second premolar.

4 Ask the patient to close his mouth gently.

5 Align the beam indicating device.

6 Move into position and acquire the image.

Vertical Premolar Bitewing

To acquire a vertical image of a premolar:

1 Place the sensor in the patient's mouth horizontally, and then rotate it into position.

2 Position the sensor so the anterior edge is behind the distal surface of the lateral incisor.

3 Make sure the anterior edge of the sensor is also centered behind the mandibular canine.

4 Ask the patient to close her mouth gently.

5 Align the beam indicating device.

6 Move into position and acquire the image.

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Care and Maintenance

For maximum hygienic safety in your practice, read the following instructions and recommendations:

- The RVG sensor is not sterile when shipped. It must be disinfected before use.
- Always use a hygienic protective barrier on the sensor.
- The sensor must be cleaned and disinfected after each patient.
- Use a new barrier for each patient.
- Never place the sensor in an autoclave. It could damage the sensor.
- Use only cold-disinfecting products that are registered with the Environmental Protection Agency, approved by the Food and Drug Administration, and have been tested by Carestream Dental laboratories for sensor compatibility.
- Follow all disinfectant manufacturer precautions and guidelines.

Cleaning and Disinfecting the Sensor and Cable

You must clean the RVG sensor before disinfecting it. Do not immerse the sensor control or USB cable connector in disinfectant.

To clean the sensor and cable:

1 Remove the hygienic protective barrier.

2 Use a disinfectant wipe to remove any blood, saliva, or other contaminants.

3 Hold the sensor in one hand, and use your other hand to run the wipe from the end of the sensor down the cable to the end of the sensor remote. Slide the wipe without force, using minimal pressure to pinch the cable between your fingers.

To disinfect the sensor:

1 Disinfect the sensor head with disinfecting wipes or soak it in a disinfecting solution with intermediate-level hospital disinfectant with label claims of tuberculocidal activity; for example: a chlorine containing product, a quaternary ammonium compound with alcohol, a phenolics, an iodophors, an EPA-registered chlorine-base product.

Caution: Be sure to follow the manufacturer's recommendations. Some disinfecting chemicals can damage the sensor.

2 Rinse the sensor with sterile water or potable tap water.

3 Dry the sensor.

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Maintaining the Sensor

To maintain the sensor:

- Do not place the sensor in a sterilizer or autoclave.
- Do not pull on the sensor cable. Be careful when removing the protective barrier.
- Do not step on or roll objects over the sensor cable.
- Do not allow the patient to bite on the sensor or the sensor cable.

Disinfecting Positioning Devices

Follow these guidelines for disinfecting positioning devices, such as paddles:

- Thoroughly disinfect a positioning device after each use.
- Disinfect the positioning device according to the manufacturer's recommendations.
- Most positioning devices, including those provided by Carestream Dental, can be cold-disinfected or placed in a steam or gas autoclave.

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Using the CS 3500 Intraoral Scanner

This lesson includes the following topics:

- CS 3500 Scanner Overview
- CS 3500 Holders Overview
- Accessing the Acquisition Interface
- Setting Up Preferences
- Setting Up the CS 3500 Scanner
- Acquiring a 3D Model for Restoration
- Acquiring a 3D Model for Implants
- Care and Maintenance

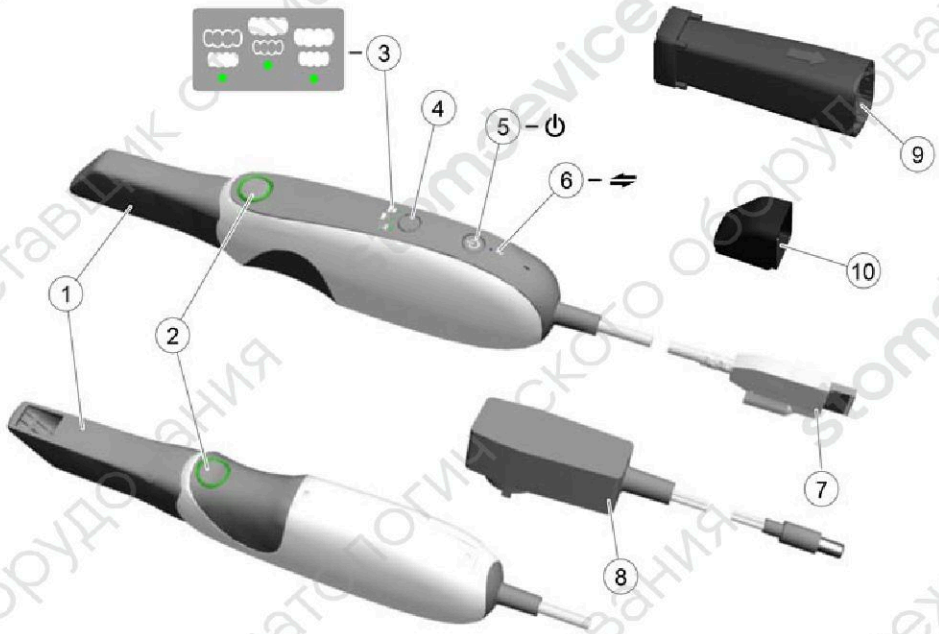
The CS 3500 acquires 2D and 3D still images in the following modes:

- Lower jaw
- Upper jaw
- Buccal bite registration

See the *CS 3500 User and Installation Guide* (9H4853), *CS 3500 Safety, Regulatory, and Technical Specifications User Guide*, and online help for more information.

CS 3500 Scanner Overview

The following figure shows the parts of the CS 3500:



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1 Reusable tip

The tip can be installed facing upward or downward. Tips come in two sizes: regular and small. Tips are autoclavable for up to 20 times.

2 Acquisition buttons

Press to acquire a 3D image.

- The CS 3500 is in auto acquisition mode by default. When the scanner is stable and the image is clear, the acquisition begins.
- To make a manual acquisition, press the Acquisition button once to acquire a single image. To keep the CS 3500 in manual acquisition mode, deselect **Auto Capture** in the **Preferences** window.
- When the guidance system is enabled in the **Preferences** window, the LED ring surrounding the buttons changes color.



-- Indicates an image was acquired correctly (Feedback option).
-- Indicates there is a proper overlap, and you can make an acquisition (Guide option).



-- Indicates an image was not acquired correctly (Feedback option).
-- Indicates there is not enough overlap or the angle of the CS 3500 is incorrect (Guide option).

3 Mode indicators

-  Lower jaw scan mode
-  Upper jaw scan mode
-  Buccal bite registration mode

4 Mode button

Press the button to switch between different modes.

5 Power button

- Press one second to power ON.
- Press three seconds to power OFF.

Power indicator LED:

-  Indicates the CS 3500 is active.
-  Indicates the CS 3500 is inactive.
-  Indicates the power is OFF.

6 USB connection indicator

-  Indicates the connection is established.
-  Indicates the connection is disconnected.

7 USB cable

One end of the cable is hard-wired to the bottom of the CS 3500, and the other end is inserted in the computer's USB port.

8 Power adapter

One end of the adapter is inserted in the jack on the USB plug, and the other end is inserted in the power outlet.

9 Service Calibration Diagnostic Tip

The service calibration diagnostic tip enables you to verify the accuracy of the CS 3500.

10 Reusable Collar

The collar is placed over the CS 3500 tip and can help you acquire images of the anterior teeth. The collar is autoclavable for up to 20 times.

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CS 3500 Holders Overview

The CS 3500 has both a desktop and a wall mount holder. Place the CS 3500 in the holder when you are not using it.

The following figure shows the CS 3500 in the desktop holder:



The following figure shows the CS 3500 in the wall mount holder:



The CS 3500 has the following modes:

- Holder mode when inserted into the holder. To use it again, take it out of the holder.
- Sleep mode when left idle for one minute. To use it again, pick it up or press the power button.
- Standby mode when the tip is removed. To use it again, put the tip on.
- Power off when it is idle for more than an hour.

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Installing the CS 3500 Desktop Holder

To install the desktop holder:

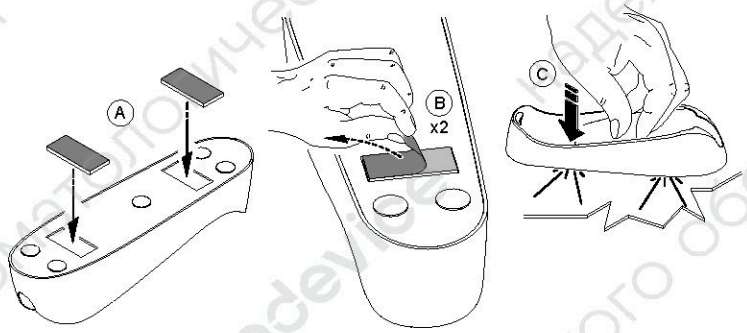
1 Select a clean surface area that you can access easily.

2 Clean the surface on which you are going to fasten the holder.

3 Attach the adhesive tape to the indentations in the holder (A).

4 Remove the adhesive tape protection (B).

5 Place the taped side of the holder on the clean surface (C) and press firmly several times for correct adherence. The maximum adherence is obtained after two hours.



Important: You must avoid all stress on the CS 3500 holder during the first two hours.

Important: Adhesive tape can lose its adherence capability due to environmental and other factors. Check the adherence regularly to ensure that it is secure.

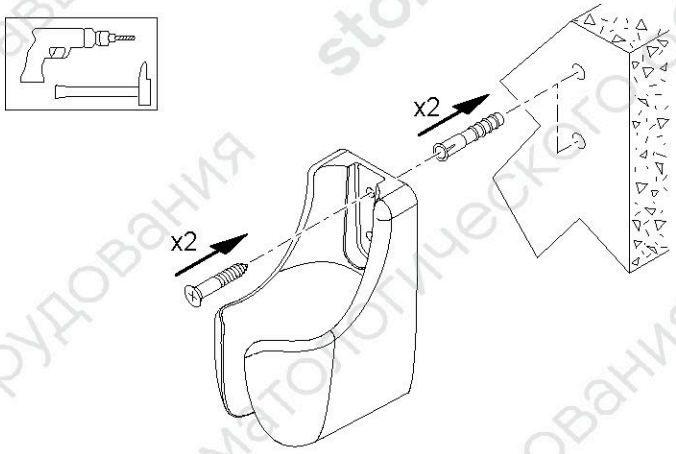
Important: Carestream Dental is not responsible for accidents or damage involving the CS 3500 falling due to loosening of the adhesive tape.

Installing the CS 3500 Wall Mount Holder

To install the wall mount holder:

1 Select an area that you can access easily.

2 Insert screws through the appropriate holes in the holder to affix it to a solid surface.

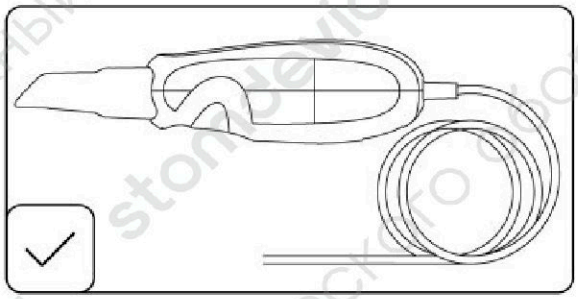


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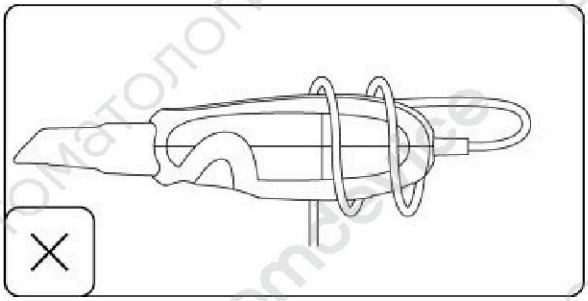
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CS 3500 USB Cable Storage

To avoid damaging the USB cable, you should loosely coil the cable and avoid creating any sharp kinks, especially in the area where the cable connects to the CS 3500.



Do not wrap the cable around the handle or create any sharp bends in the cable.



Accessing the Acquisition Interface

You can access the **CS 3500 Acquisition** interface from inside the CS Imaging software, the CS Orthodontic Imaging software, the CS OMS Imaging software, or from inside your practice management software.

Accessing the Acquisition Interface Using the Imaging Software

To access the **Acquisition** interface from imaging software:

1 On your desktop, double-click  or .

2 Find or create a patient record.

3 Double-click the patient record to access the **Imaging** window or tab.

4 Click .

5 Select your preference settings.

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Accessing the Acquisition Interface from Your Practice Management Software

To access the **Acquisition** interface from your practice management software:

1 Open the software.

2 Find a patient record and open it.

3 Open the imaging software.

4 Click .

5 Select your preference settings.

Setting Up Preferences

Set up your preferences before using the CS 3500. To set up the preferences:

1 In the **Acquisition** interface, click . The **Preferences** window is displayed.

2 Click  to set the general preferences.

3 Click  to set the CS 3500 preferences.

4 Click  to set the tools preferences.

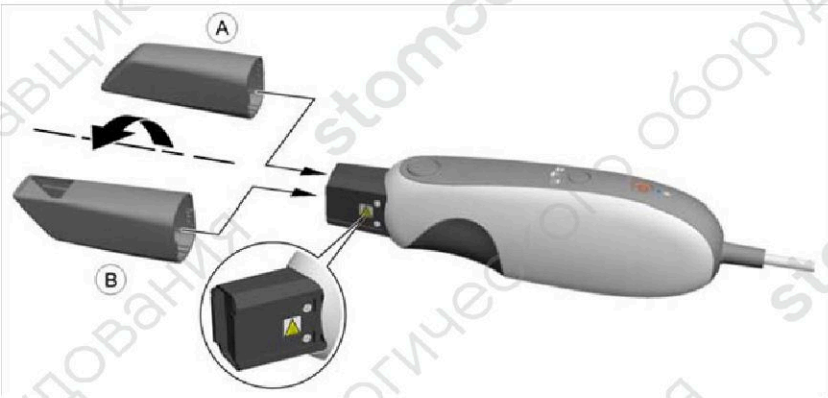
Setting Up the CS 3500 Scanner

Important: The removable scanner tip is autoclavable up to 20 cycles. After 20 cycles, discard the tip.

To set up the CS 3500:

1 Install the software. See the *CS 3500 User and Installation Guide* (9H4853).

2 Firmly slide the tip (A) or (B) onto the end of the CS 3500.

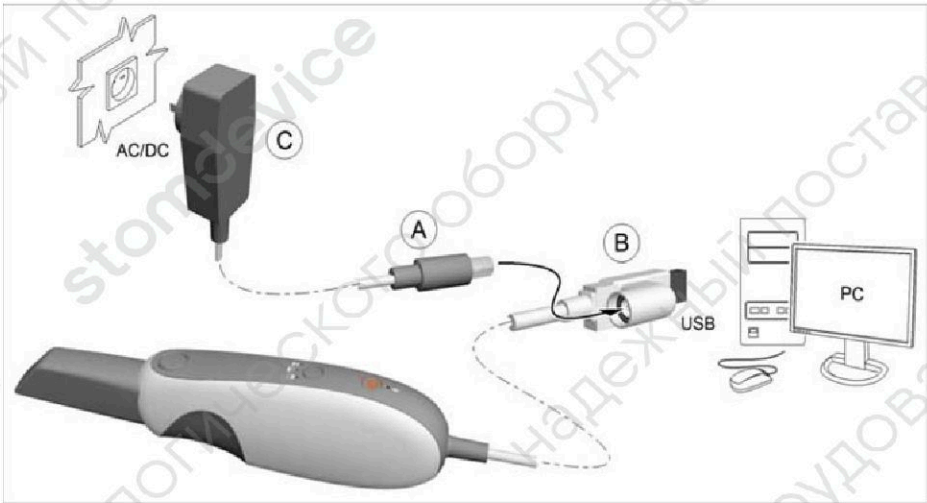


WARNING: The base of the CS 3500 becomes heated when it is turned on. Do not touch the heating element at the base.

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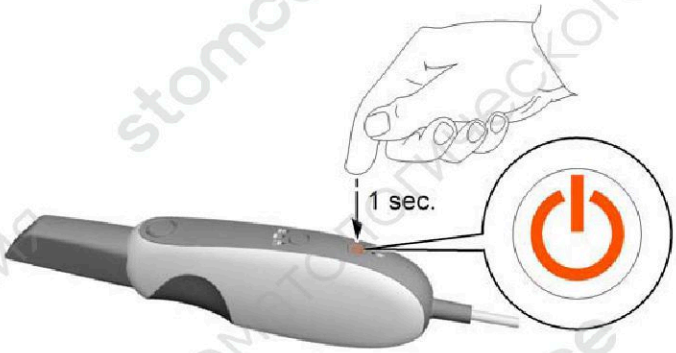
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3 Insert the DC power supply (A) into the jack on the USB plug (B), and insert the power adapter (C) into an outlet.



4 Connect the USB cable to the computer.

5 Press the power button one second to turn on the CS 3500. Ensure the power indicator turns orange.



6 Wait until the USB connection indicator turns blue.

Note: The power indicator turns green when the **Acquisition** interface is open and the CS 3500 is ready to acquire images.

Testing Image Quality and Accuracy

Using the service calibration diagnostic tip, verify the accuracy of the CS 3500:

- After setting up the CS 3500.
- If the CS 3500 is dropped.
- If a restoration does not fit in a patient's mouth accurately.

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To test the accuracy:

1 Firmly slide the service calibration diagnostic tip onto the end of the CS 3500. Ensure that the arrow on the tip is pointing toward the Acquisition button on the top of the CS 3500.



2 On your computer, open the imaging software, and find or create a patient record.

3 Double-click a patient record to access the **Imaging** window.

4 Open the **Acquisition** interface.

5 Click . The **Preferences** window is displayed.

6 Click . The **Tools Preferences** window is displayed.

7 Press the power button for one second to turn on the CS 3500.

8 Click **Diagnose Scanner**. When the test is finished, a message is displayed.

9 If the CS 3500 fails the test, click **Create Support File**, and save the .zip file. Contact your local service provider before using the CS 3500 again.

Acquiring a 3D Model for Restoration

You can use the CS 3500 to scan a partial or full arch. For either type of scan, you should acquire images of the upper jaw, lower jaw, and the buccal bite registration. The software combines these images to create a 3D model.

To acquire a 3D model:

- Scan the upper and lower jaw.
- Scan the buccal bite registration.
- Refine the image.
- Complete the preparation check and export the image.

Scanning Teeth on the Upper and Lower Jaw

To acquire images using auto acquisition:

1 Dry the teeth thoroughly.

2 To access the **Acquisition** interface, click  in the imaging software. The **Select Acquisition Type** window is displayed.

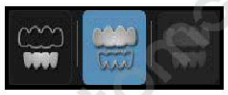
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3 Select .

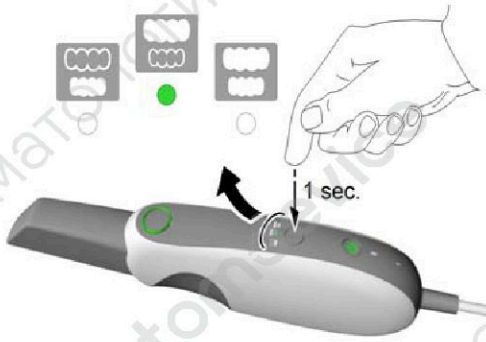
Note: To perform an orthodontic or implant acquisition, click the **Select Acquisition Type** icon in the upper-left corner of the **Acquisition** window, and select the acquisition type.

4 In the **Acquisition** interface, select the **Upper Jaw** acquisition mode.



OR

On the CS 3500, press the mode button for one second to select the acquisition mode. The mode indicator LED turns green.



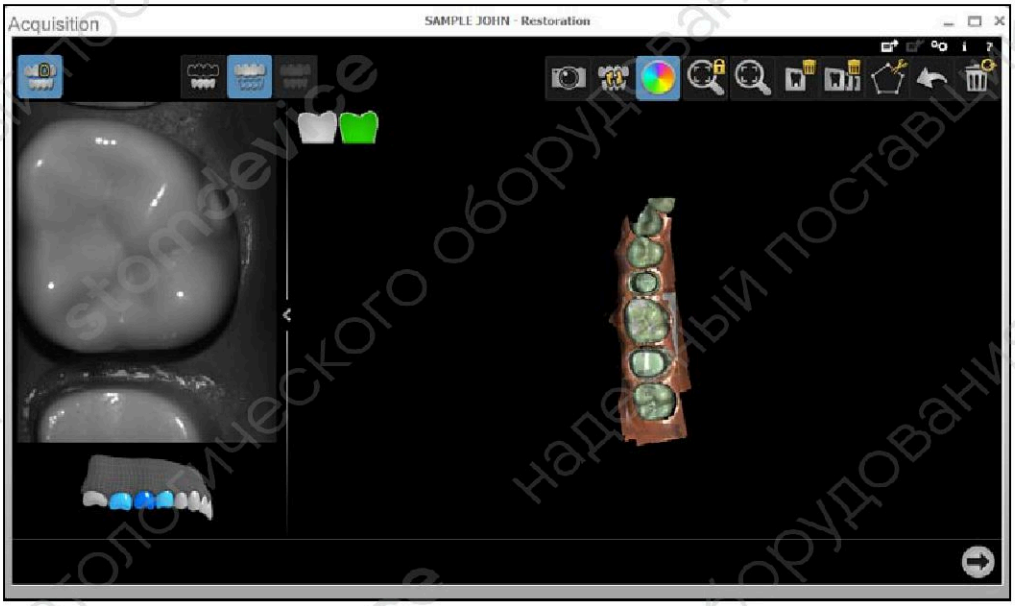
5 Hold the CS 3500 at a 90-degree angle to the occlusal surface and rest the tip on the tooth surface to steady it. Live video is displayed on the preview screen.

When the CS 3500 is stable and the image is clear, the acquisition begins. Images are automatically acquired and transferred to the 3D model display screen.

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The following image shows several acquisitions of the upper jaw:



Tip: To watch the demo in the lower-left of the **Acquisition** interface for information on scanning teeth, hover over the image of the jaw and click **Show Scanning Sample**.

After an acquisition, the feedback indicator displays the following:

-  – Indicates the image was acquired successfully.
-  – Indicates that there is not enough overlap between the last and the newest image.
-  – Indicates the CS 3500 was not stable. Reacquire the image.

Important: When scanning a tooth, overlap the last image approximately 30%.

6 Slowly move the CS 3500 tip along the occlusal surface to scan the remaining teeth in the preparation area.

Tip: It is recommended that you use the collar when scanning anterior teeth.

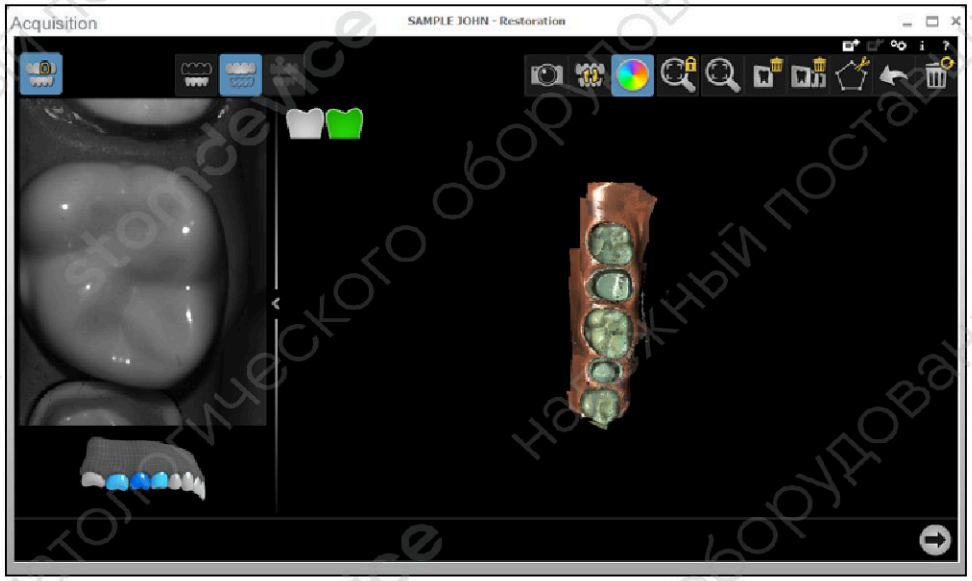
7 When the occlusal surface scan is complete, scan the lingual surface of the teeth in the preparation area. Hold the CS 3500 at a 45-degree angle to the lingual surface.

8 When the lingual surface scan is complete, scan the buccal surface of the preparation area. Hold the CS 3500 at a 45-degree angle to the buccal surface.

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The following image shows a 3D model of the upper jaw when the occlusal, lingual, and buccal surfaces have been completely scanned.



Important: If holes are displayed, re-scan the area until the holes are filled. Use the mouse wheel to zoom in on the preparation area for a closer look.

9 Once the upper jaw has been scanned, begin scanning the lower jaw. Click  and repeat steps 5 through 8 until the teeth in the area of restoration on the lower jaw are scanned.

The following image shows a 3D model of the lower jaw when the occlusal, lingual, and buccal surfaces have been completely scanned:



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10 Visually inspect the 3D model for any holes. If holes are present near the restoration area, re-scan the area until the holes are filled. When you are satisfied with the 3D model, continue with the buccal bite registration acquisition.

Scanning the Buccal Bite Registration

To acquire a buccal bite registration using auto acquisition:

1 Click .

2 Have the patient bite down.

3 Position the CS 3500 at a 90-degree angle to the buccal surface of the preparation area, and align the point where the upper and lower teeth meet in the middle of the preview screen. Rest the tip on the tooth surface to steady the CS 3500.

When the CS 3500 is stable and the image is clear, the acquisition begins.

The following image shows a buccal bite registration:



A dot  is displayed at the bottom of the window to indicate the capture was successful.

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Half of a dot (only one arch, upper or lower) indicates a partial buccal bite. The following image shows that one complete buccal bite image and one-half of a buccal bite image have been acquired. To complete the bite, acquire the teeth on the opposing jaw.



To complete a partial buccal bite image, move the CS 3500 slightly more gingival and ensure that there is at least a 30% overlap between the second buccal bite acquisition and the previous one.

Tip: If you need to acquire a second buccal bite image because an opposing arch is missing, always move **toward** the opposing arch with the CS 3500.

When both arches are displayed in the **Acquisition** interface, the bite image is successful, and you can acquire additional bite images.

Important: For a partial arch, you should acquire at least three buccal bite images—one on the preparation, one mesial to the preparation, and one distal to the preparation. For a full arch, you should acquire at least four buccal bite images—one on each side of the mouth at the molars and one on each side of the mouth at the canines.

4 Acquire at least two more buccal bite images. You can take up to six bite images for a full arch.

5 When the bite has been registered, rotate the model and zoom the view to ensure that the bite is accurate and that there are no areas where the bite is mismatched. Click a dot to view the bite for that acquisition.

6 When you have finished acquiring the buccal bite registration, proceed to the preparation and check steps. See the *CS 3500 User and Installation Guide* (9H4853) and online help for more information.

Acquiring a 3D Model for Implants

You can use the CS 3500 to scan a full or partial arch containing an abutment or implant to create a 3D model. When you acquire a full or partial arch with an existing abutment, the acquisition process is the same as that of a standard restoration. When you acquire a full or partial arch containing an implant, the software replicates the image, enabling you to cut out the implant area, re-scan the jaw with the scan body in place, and create two 3D models—one containing the scan body and one without. You then send these models to the lab to create the custom abutment.

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Before you can acquire a 3D model for an implant, you must select a scan type, which determines the scan process you will follow. The following scan types are available:

- **Standard Abutment**: Use when an abutment is present in the jaw. The acquisition process is the same as the restoration acquisition process.
- **Custom Abutment**: Use when acquiring 3D models to be sent to a lab that will create a custom abutment. The implant acquisition process—cutting out the implant area and acquiring the scan body—is performed on the appropriate jaw.

To acquire a 3D model for an implant:

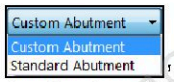
- Scan the upper and lower jaw.
- Scan the buccal bite registration.
- Use the Free Cut tool to cut out the implant area.
- Install the scan body, and re-scan the jaw with the scan body.
- Refine the image.
- Complete the preparation check and export the images.

Scanning Teeth on the Upper and Lower Jaw

To acquire images using auto acquisition:

1 Dry the teeth thoroughly before starting an acquisition.

2 Access the **CS 3500 Acquisition** interface by clicking  in the imaging software.

3 Select a scan type 

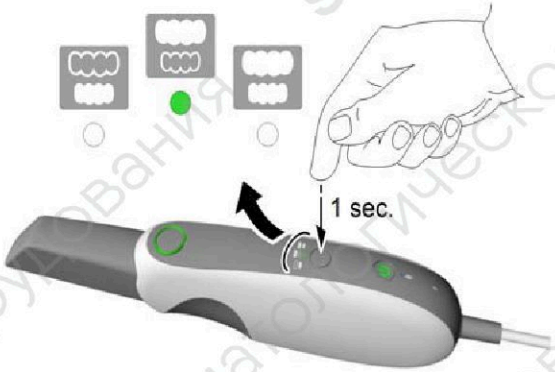
, click  in the **Select Acquisition Type** window, and click **OK**. This example uses the **Custom Abutment** option.

4 On the **Acquisition** interface, select the **Upper Jaw** acquisition mode.



OR

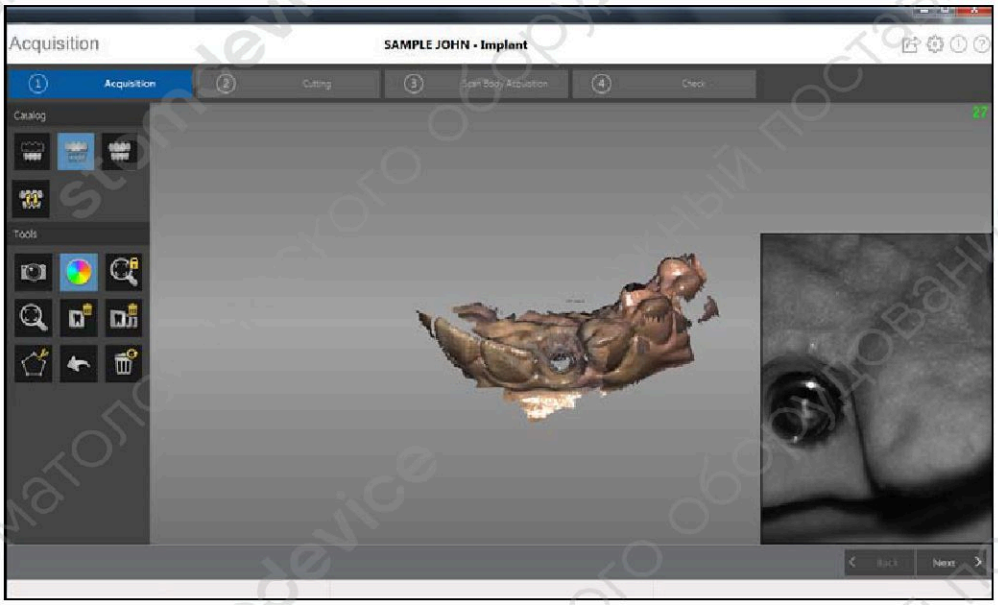
On the CS 3500, press the mode button for one second to select the acquisition mode. The mode indicator LED turns green.



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5 Hold the CS 3500 at a 90-degree angle to the occlusal surface of the implant area. Rest the tip on the tooth surface to steady the CS 3500. Live video is displayed on the video preview screen, and the acquisition begins. Images are automatically acquired and transferred to the 3D model display screen.

The following image shows several acquisitions of the upper jaw:



6 Slowly move the CS 3500 tip along the occlusal surface to scan the remaining teeth in the implant area, keeping a 30% overlap with the last image.

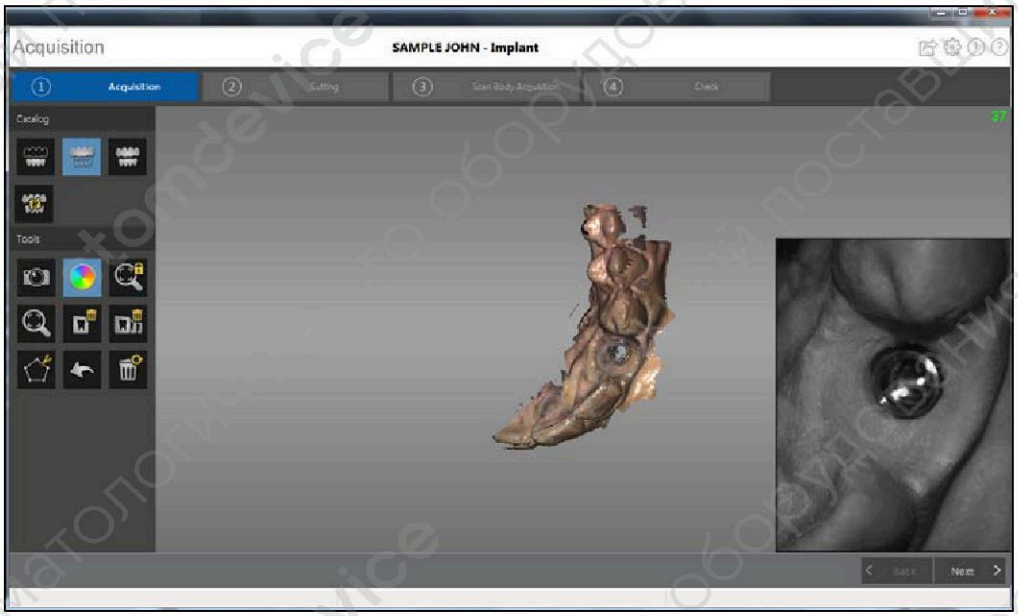
7 When the occlusal surface scan is complete, scan the lingual surface of the teeth in the implant area. Hold the CS 3500 at a 45-degree angle to the lingual surface.

8 When the lingual surface scan is complete, scan the buccal surface of the teeth in the implant area. Hold the CS 3500 at a 45-degree angle to the buccal surface.

Important: Re-dry the teeth as appropriate throughout the acquisition process.

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The following image shows a 3D model of the upper jaw when the occlusal, lingual, and buccal surfaces have been completely scanned.



Important: If holes are displayed in the scanned image on the implant area, re-scan the area until the holes are filled. Use the mouse wheel to zoom in on the implant area for a closer look.

9 Once the upper jaw has been scanned:

You can continue with only the upper jaw, if desired. Click Next. A message states that you have not acquired the opposing jaw and asks if you want to continue anyway. Click **Yes**. Continue with the steps listed under "Using the Free Cut Tool to Cut Out the Implant Area" on page 19.

Note: If you selected the **Enable Refinement Check** option in the **Preferences** window, the software refines the image before you perform the cutting step.

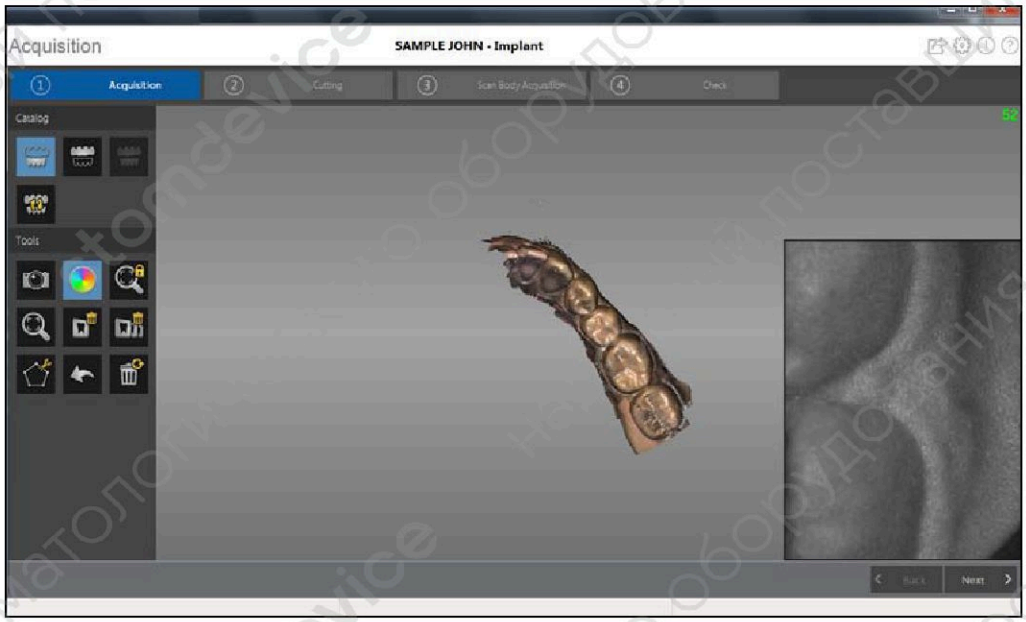
OR

You can begin scanning the lower jaw. Click  and repeat steps 5 through 8 until the teeth on the lower jaw are scanned.

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The following image shows a 3D model of the lower jaw when the occlusal, lingual, and buccal surfaces have been completely scanned:



10 Visually inspect the 3D model for any holes. If holes are present near the implant area, re-scan the area until the holes are filled.

11 When you are satisfied with the 3D model, continue with the buccal bite registration acquisition.

Important: If you acquire images of teeth from both the upper and lower jaw, you must also acquire the buccal bite registration.

Scanning the Buccal Bite Registration

To acquire a buccal bite registration using auto acquisition:

1 Click .

2 Have the patient bite down.

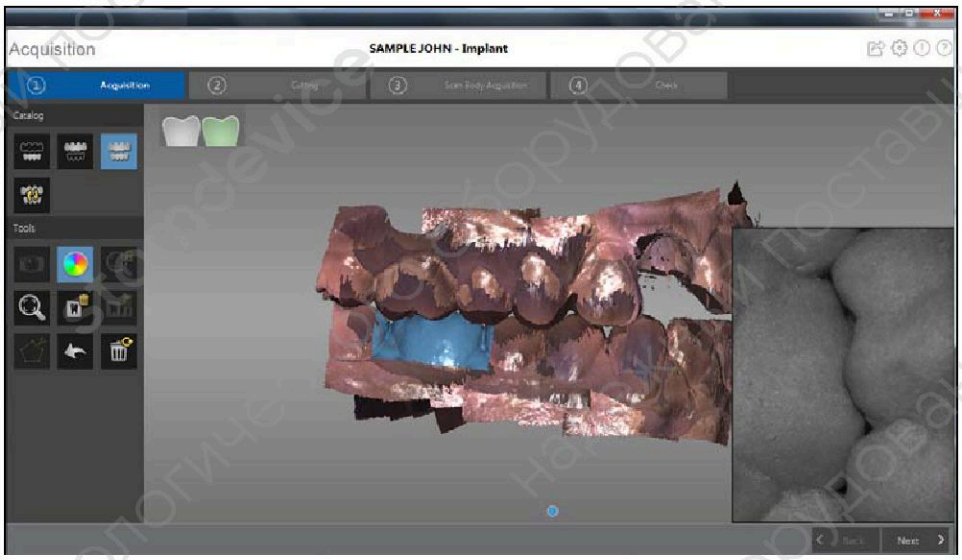
3 Position the CS 3500 at a 90-degree angle to the buccal surface of the implant area, and align the point where the upper and lower teeth meet in the middle of the video preview screen. Rest the tip on the tooth surface to help steady the CS 3500.

4 Move the CS 3500 slightly up and down to trigger the bite registration acquisition.

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The following image shows a buccal bite registration:



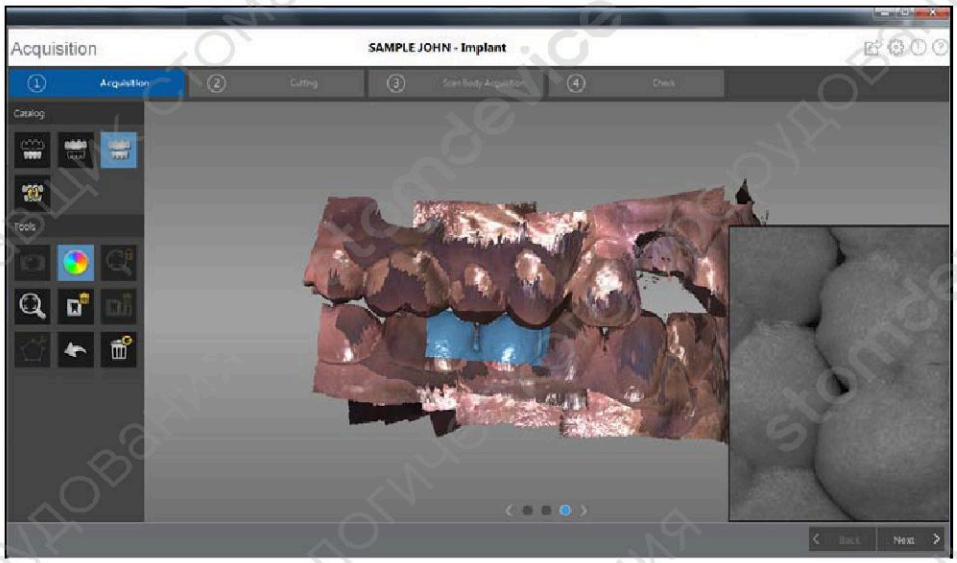
A dot is displayed at the bottom of the window to indicate the capture was successful. A successful bite image includes both the upper and lower arches.

Tip: To complete a partial buccal bite image, move **toward** the missing arch with the CS 3500, and make sure there is a 30% overlap between acquisitions.

5 Acquire at least two more buccal bite images, one on either side of the implant area. You can take up to six bite images for a full arch.

6 Once the bite has been registered, rotate the model and zoom the view to ensure that the bite is accurate and that there are no areas where the bite is mismatched. Click a dot to view the bite for that acquisition.

The following image shows several buccal bite registrations:



7 When you are finished, proceed with the process of cutting out the implant area using the Free Cut tool.

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Using the Free Cut Tool to Cut Out the Implant Area

The Free Cut tool enables you to remove the section of the image containing the implant so it can be replaced with the scan body image.

To cut the implant area from the 3D image:

1 Click Next.

Note: If you selected the **Enable Refinement Check** option in the **Preferences** window, the software refines the image before you perform the cutting step.

- If you are satisfied with the refined image, click Next and continue with the cutting process.
- If you are not satisfied with the image, click Back and re-scan the area until the holes are filled. Then click Next to proceed with the cutting process.

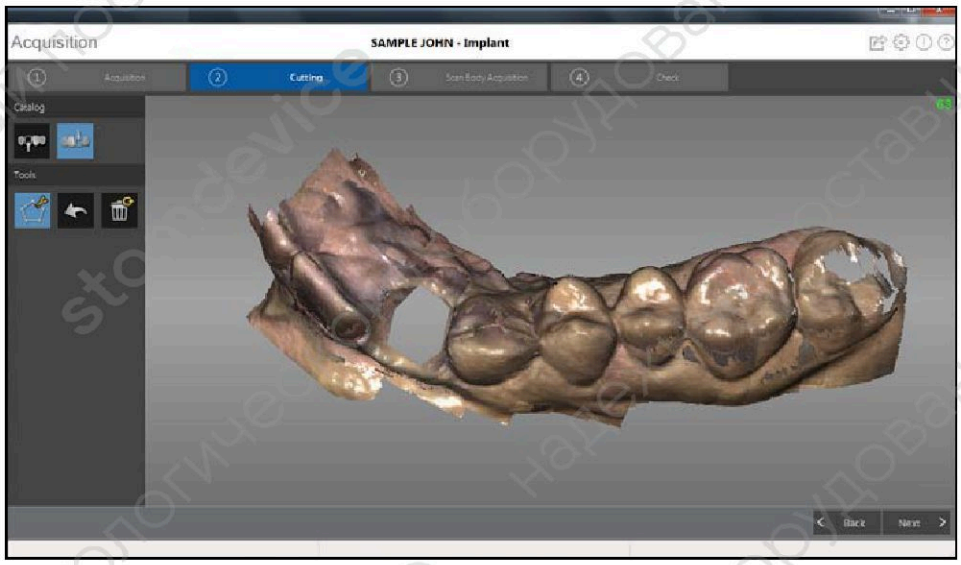
2 Click . Click the mouse at several points around the implant to form a circle big enough to surround the emergence profile.



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3 Double-click the mouse.



Note: If you removed too much of the image, click  to restore it and repeat the cutting process.

4 When you have finished cutting out the implant area, continue with the scan body acquisition.

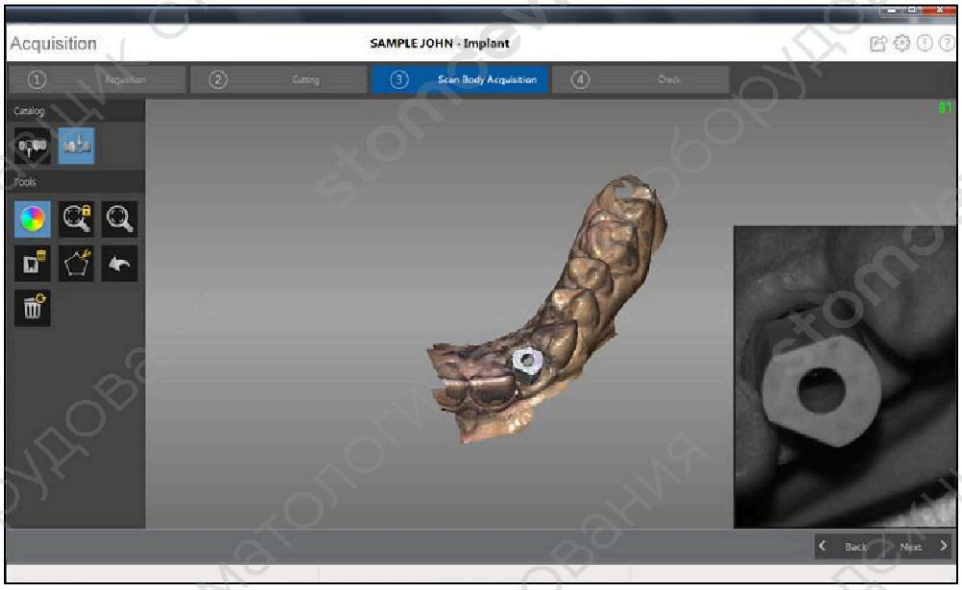
Acquiring the Scan Body on the Implant Jaw

After you install the scan body, scan the jaw to incorporate the scan body into the 3D image. To acquire an image of the jaw with the scan body in position:

1 Install the scan body.

2 Click Next.

3 Re-scan the jaw, concentrating on the area containing the scan body. Repeat the steps for acquiring an image as described in "Scanning Teeth on the Upper and Lower Jaw" on page 8.



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4 After you acquire the scan body, proceed to the check step. See the *CS 3500 User and Installation Guide* (9H4853) and online help for more information.

Note: If there is excessive soft tissue around the scan body, click  or  to remove it before proceeding.

Care and Maintenance

You must clean, disinfect, and sterilize the CS 3500 and accessories regularly.

The removable CS 3500 scanner tips and collars are autoclavable up to 20 cycles. After 20 cycles, discard the tip and collar.

Important: For information on cleaning, disinfecting, and sterilizing, see the *CS 3500 Safety, Regulatory, and Technical Specifications User Guide*.

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Using the CS 3600 Intraoral Scanner

This lesson includes the following topics:

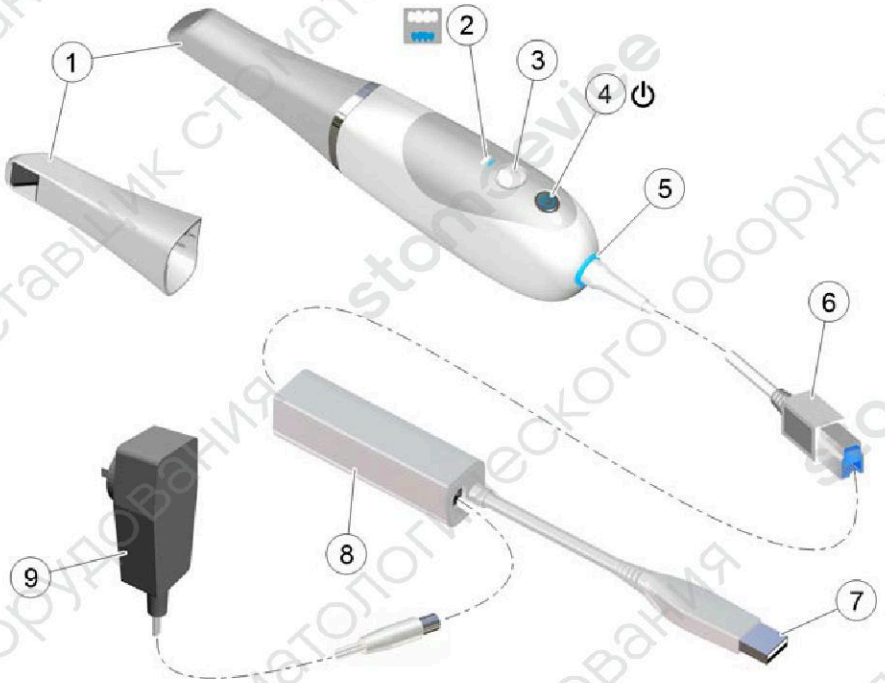
- CS 3600 Scanner Overview
- CS 3600 Holders Overview
- Accessing the Acquisition Interface
- Setting Up Preferences
- Setting Up the CS 3600 Scanner
- Acquiring a 3D Model for Restoration
- Acquiring a 3D Model for Orthodontics
- Acquiring a 3D Model for Implants
- Care and Maintenance

The CS 3600 is designed to acquire 3D still images in the lower jaw, upper jaw, and buccal bite registration modes.

See the *CS 3600 User and Installation Guide* (9J8267), *CS 3600 Safety, Regulatory, and Technical Specifications User Guide*, and online help for more information.

CS 3600 Scanner Overview

The following figure shows the parts of the CS 3600:



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1 Reusable tip

There are two types of tips: Normal, facing downward, and Side, facing left. Tips are autoclavable for up to 20 times.

2 Mode indicators

-  Lower jaw scan mode
-  Upper jaw scan mode
-  Buccal bite registration mode

Note: The mode indicators and the power button blink rapidly if the CS 3600 is overheating.

3 Mode button

Press the button to switch between different modes.

4 Power button

- Press one second to power ON.
- Press three seconds to power OFF.

Power indicator LED:



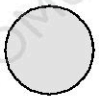
The CS 3600 is active.



When the brightness changes gradually, the CS 3600 is inactive, disconnected, or the tip is not installed.

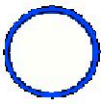


If the light is blinking rapidly and the **Overheating** icon is displayed in the **Acquisition** interface, place the CS 3600 in the holder for 5 to 10 minutes to cool down.



The power is off.

5 USB connection indicator



The USB port is connected.



The USB port is not connected.

6 Scanner connector

Plugs into the large jack on the end of the power box.

7 USB cable

One end of the cable is hard-wired to the power box, and the other end is connected to a USB port on the computer.

8 Power box/cable

Connects the scanner to the power adapter.

9 Power adapter

One end of the adapter is inserted in the small jack on the power box, and the other end is inserted in the power outlet.

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CS 3600 Holders Overview

The CS 3600 has both a desktop and a wall mount holder. Place the CS 3600 in the holder when you are not using it.

The following figure shows the CS 3600 in the desktop holder:



The following figure shows the CS 3600 in the wall mount holder:



The CS 3600 has the following modes:

- Inactive mode when inserted into the holder. To use it again, take it out of the holder.
- Sleep mode when left idle for five seconds. To use it again, pick it up.
- Standby mode when the tip is removed. To use it again, put the tip on.
- Power off when it is idle for more than an hour.

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Installing the CS 3600 Desktop Holder

To install the desktop holder:

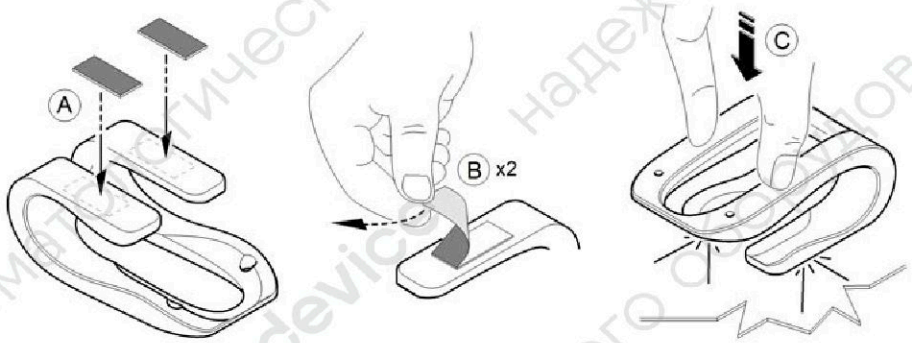
1 Select a clean surface area that you can access easily.

2 Clean the surface on which you are going to fasten the CS 3600 holder.

3 Attach the adhesive tape to the indentations in the holder (A).

4 Remove the adhesive tape protection (B).

5 Place the taped side of the holder on the clean surface (C) and press firmly several times for correct adherence. The maximum adherence is obtained after two hours.



Important: You must avoid all stress on the CS 3600 holder during the first two hours.

Important: Adhesive tape can lose its adherence capability due to environmental and other factors. Check the adherence regularly to ensure that it is secure.

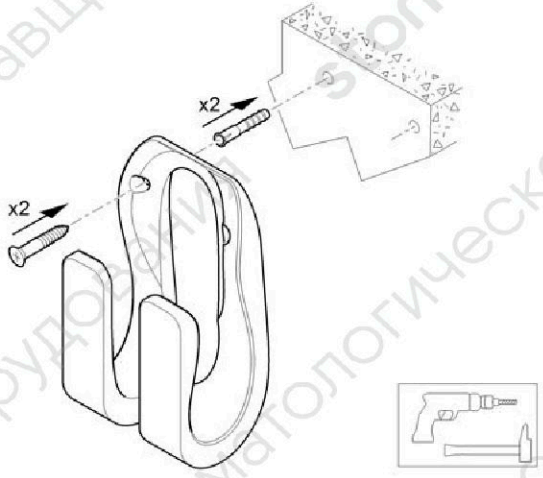
Important: Carestream Dental is not responsible for accidents or damage involving the CS 3600 falling due to loosening of the adhesive tape.

Installing the CS 3600 Wall Mount Holder

To install the wall mount holder:

1 Select an area that you can access easily.

2 Insert screws through the appropriate holes in the holder to affix it to a solid surface.

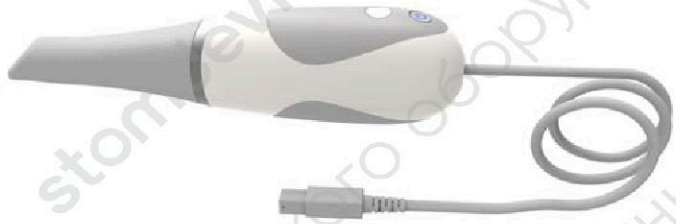


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CS 3600 USB Cable Storage

To avoid damaging the USB cable, you should loosely coil the cable and avoid creating any sharp kinks, especially in the area where the cable connects to the CS 3600.



Do **not** wrap the cable around the handle or create any sharp bends in the cable.



Accessing the Acquisition Interface

You can access the **CS 3600 Acquisition** interface from inside the CS Imaging software, the CS Orthodontic Imaging software, the CS OMS Imaging software, or from inside your practice management software.

Accessing the Acquisition Interface Using the Imaging Software

To access the **Acquisition** interface from imaging software:

1 On your desktop, double-click  or .

2 Find or create a patient record.

3 Double-click the patient record to access the **Imaging** window or tab.

4 Click .

5 Select your preference settings.

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Accessing the Acquisition Interface from Your Practice Management Software

To access the **Acquisition** interface from your practice management software:

1 Open the software.

2 Find a patient record and open it.

3 Open the imaging software.

4 Click .

5 Select your preference settings.

Setting Up Preferences

Set up your preferences before using the CS 3600. To set the preferences:

1 In the **Acquisition** interface, click . The **Preferences** window is displayed.

2 Click  to set the general preferences.

3 Click  to set the CS 3600 preferences.

4 Click  to set the tools preferences.

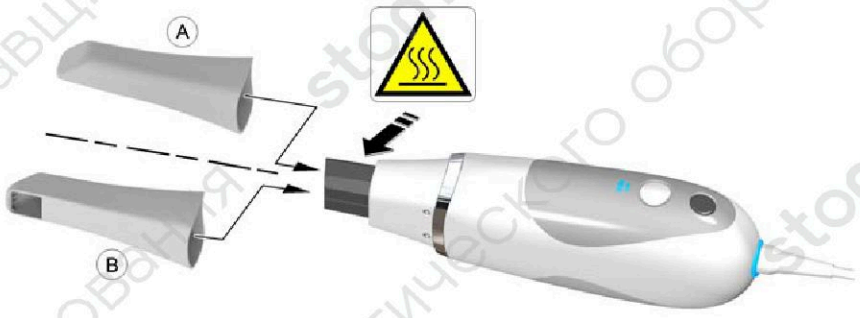
Setting Up the CS 3600 Scanner

Important: The removable scanner tip is autoclavable up to 20 cycles. After 20 cycles, discard the tip.

To set up the CS 3600:

1 Make sure the lens window at the base of the CS 3600 is clean by wiping it with a moist, lint-free cloth or lens tissue.

2 Slide the tip onto the CS 3600 as illustrated, with the lens facing downward (A), or to the side, facing left (B).



WARNING: The base of the CS 3600 becomes heated when it is turned on. Do not touch the heating element at the base.

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3 Press the power button for one second to power on the CS 3600.



4 Let the CS 3600 warm up for approximately three minutes to enable the antifog feature on the tip.

Acquiring a 3D Model for Restoration

You can use the CS 3600 to scan a partial or full arch. For either type of scan, you should acquire images of the upper jaw, lower jaw, and the buccal bite registration. The software combines these images to create a 3D model.

To acquire a 3D model:

- Scan the upper and lower jaw.
- Scan the buccal bite registration.
- Refine the image.
- Complete the preparation check and export the image.

Scanning Teeth on the Upper and Lower Jaw

To acquire images using auto acquisition:

1 Dry the teeth thoroughly.

2 To access the **Acquisition** interface, click  in the imaging software. The **Select Acquisition Type** window is displayed.

3 Select .

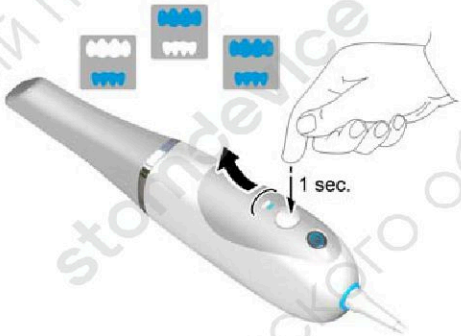
4 In the **Acquisition** interface, select the **Upper Jaw** acquisition mode.



OR

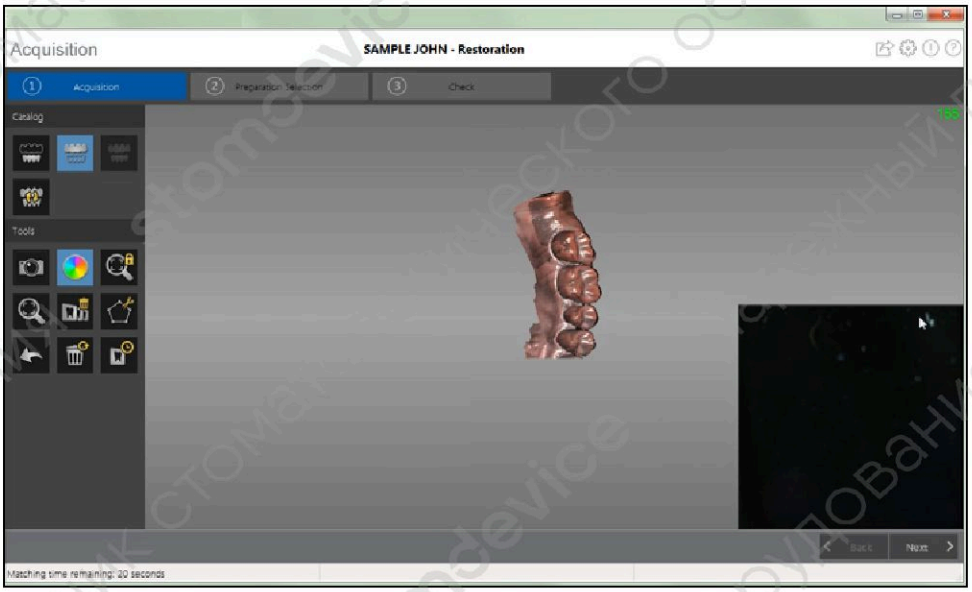
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On the CS 3600, press the mode button for one second to select the acquisition mode. The mode indicator LED turns blue.



5 Hold the CS 3600 at a 90-degree angle to the occlusal surface of the teeth. Rest the tip on the tooth surface to steady the CS 3600. Live video is displayed on the video preview screen, and the acquisition begins. Images are automatically acquired and transferred to the 3D model display screen.

The following image shows several acquisitions of the upper jaw:



Tip: To watch the demo in the lower-left of the **Acquisition** interface for information on scanning teeth, hover over the image of the jaw and click **Show Scanning Sample**.

6 Slowly move the CS 3600 tip along the occlusal surface to scan the remaining teeth in the preparation area.

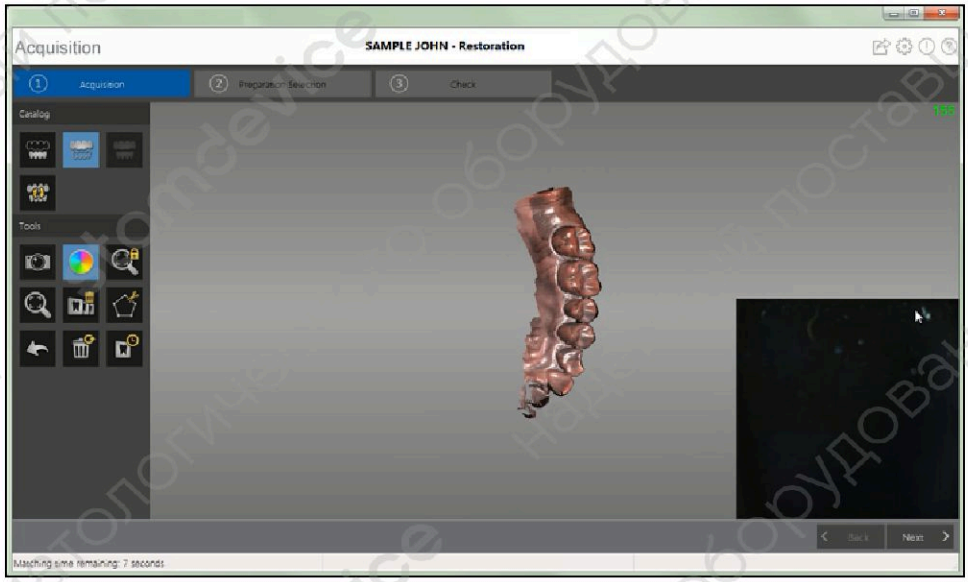
7 When the occlusal surface scan is complete, scan the lingual surface of the teeth in the preparation area.

8 When the lingual surface scan is complete, scan the buccal surface of the preparation area. Hold the CS 3600 at a 45-degree angle to the buccal surface.

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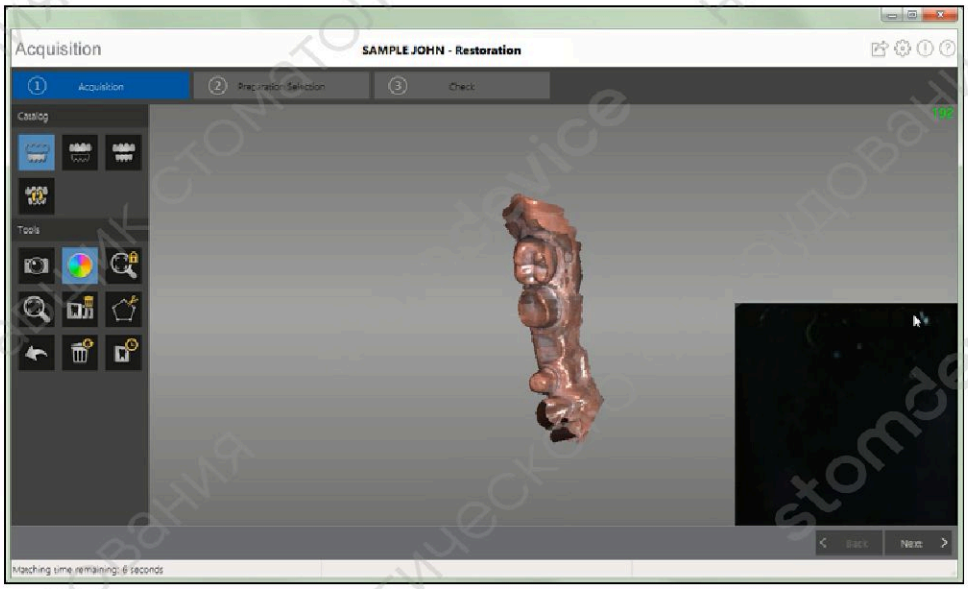
The following image shows a 3D model of the upper jaw when the occlusal, lingual, and buccal surfaces have been completely scanned:



Important: If holes are displayed, re-scan the area until the holes are filled. Use the mouse wheel to zoom in on the preparation area for a closer look.

9 Once the upper jaw has been scanned, begin scanning the lower jaw. Click  and repeat steps 5 through 8 until the teeth in the area of restoration on the lower jaw are scanned.

The following image shows a 3D model of the lower jaw when the occlusal, lingual, and buccal surfaces have been completely scanned:



10 Visually inspect the 3D model for any holes. If holes are present, re-scan the area until the holes are filled. When you are satisfied with the 3D model, continue with the buccal bite registration acquisition.

Important: If you acquire images from the upper and lower jaw, you must also acquire the buccal bite registration.

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Scanning the Buccal Bite Registration

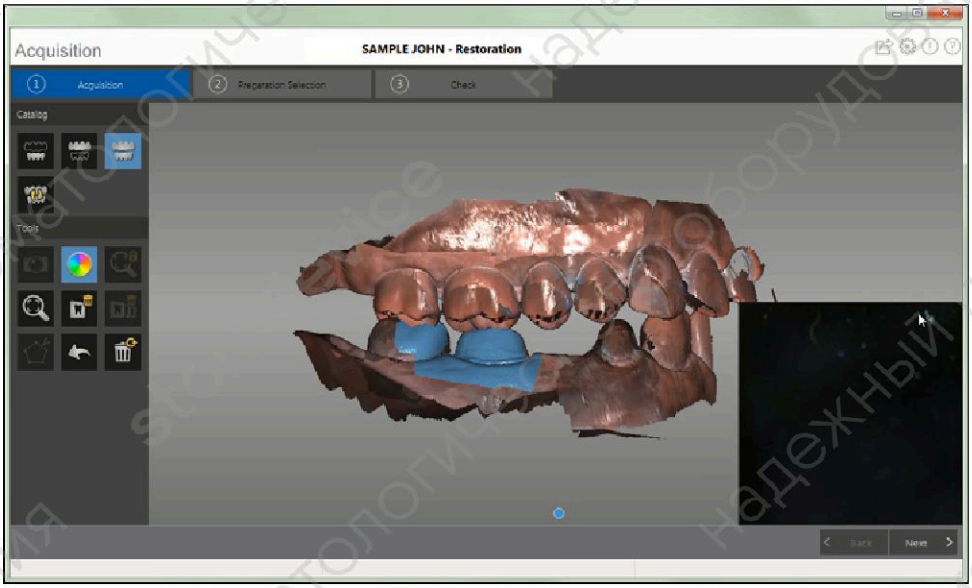
To acquire a buccal bite registration using auto acquisition:

1 Click .

2 Have the patient bite down.

3 Position the CS 3600 at a 90-degree angle to the buccal surface of the preparation area, and align the point where the upper and lower teeth meet in the middle of the video preview screen. Rest the tip on the tooth surface to help steady the CS 3600.

4 Move the CS 3600 slightly up and down to trigger the bite registration acquisition. The following image shows a buccal bite registration:



A dot  is displayed at the bottom of the window to indicate the capture was successful.

Tip: After acquiring the buccal image of one jaw, always move **toward** the opposing arch with the CS 3600.

Once both arches are displayed in the **Acquisition** interface, the bite image is successful, and you can acquire additional bite images, which will increase the accuracy of the bite.

Important: For a partial arch, you should acquire at least three buccal bite images—one on the preparation, one mesial to the preparation, and one distal to the preparation. For a full arch, you should acquire at least four buccal bite images—one on each side of the mouth at the molars and one on each side of the mouth at the canines.

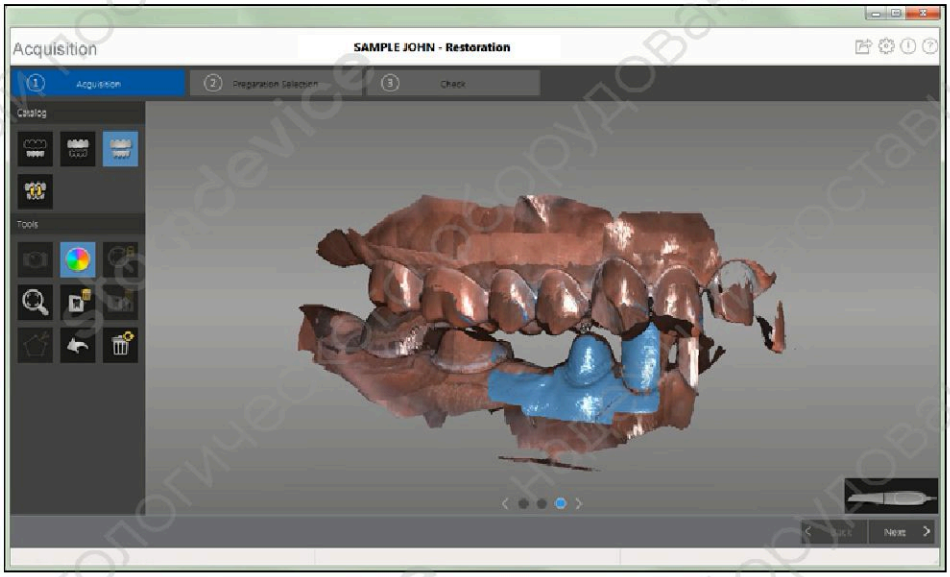
5 Acquire at least two more buccal bite images, one on either side of the preparation area. You can take up to six bite images for a full arch.

6 Once the bite has been registered, rotate the model and zoom the view to ensure that the bite is accurate and that there are no areas where the bite is mismatched. Click a dot to view the bite for that acquisition.

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The following image shows several buccal bite registrations:



7 When you have finished, proceed to the preparation and check steps. See the *CS 3600 User and Installation Guide* (9J8267) and online help for more information.

Acquiring a 3D Model for Orthodontics

You can use the CS 3600 to scan a full arch to create a 3D model. You should acquire images of the upper jaw, lower jaw, and the buccal bite registration. The software combines these images to create the 3D model.

To acquire a 3D model for orthodontic use:

- Scan the upper and lower jaw.
- Scan the buccal bite registration.
- Refine the image.
- Complete the preparation check and export the image.

Scanning Teeth on the Upper and Lower Jaw

To acquire images using auto acquisition:

1 Dry the teeth thoroughly.

2 To access the **CS 3600 Acquisition** interface, click  in the imaging software.

3 Select  in the **Select Acquisition Type** window, and click **OK**.

4 On the **Acquisition** interface, select the **Upper Jaw** acquisition mode.

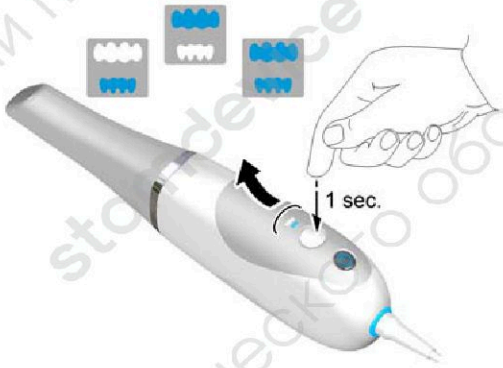


OR

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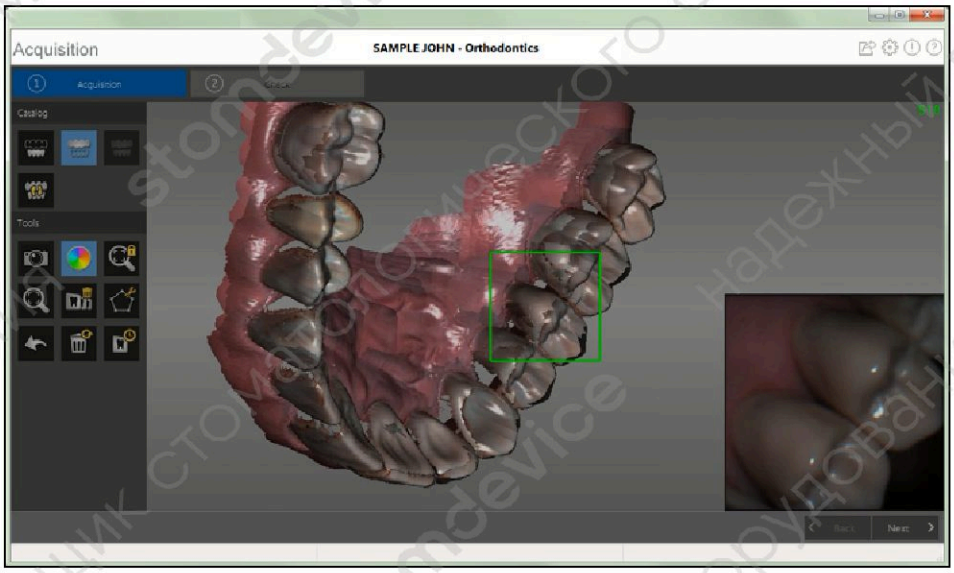
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On the CS 3600, press the mode button for one second to select the acquisition mode. The mode indicator LED turns blue.



5 Hold the CS 3600 at a 90-degree angle to the occlusal surface of the teeth. Rest the tip on the tooth surface to steady the CS 3600. Live video is displayed on the video preview screen, and the acquisition begins. Images are automatically acquired and transferred to the 3D model display screen.

The following image shows several acquisitions of the upper jaw:



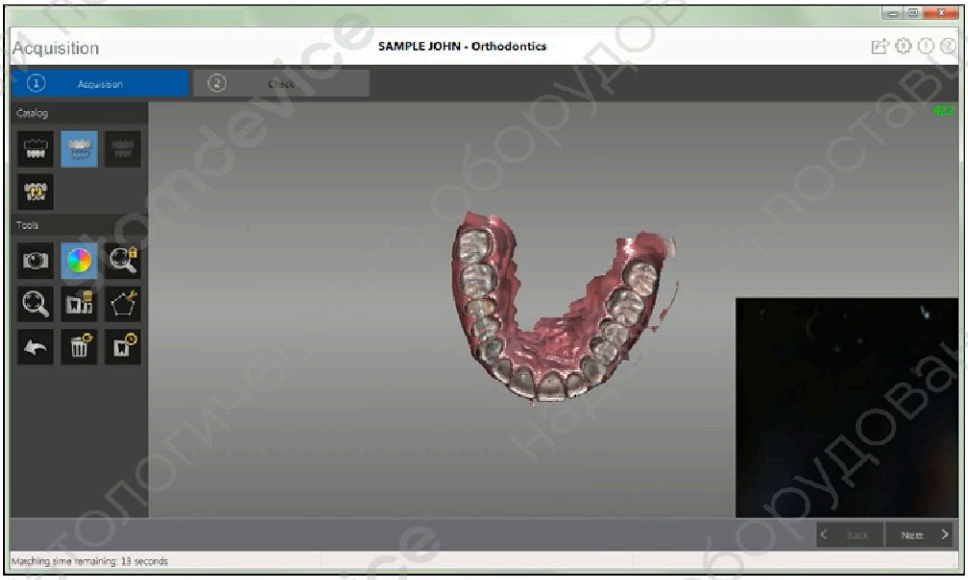
6 When the occlusal surface scan is complete, scan the lingual surface of the teeth. Hold the CS 3600 at a 45-degree angle to the lingual surface. Be sure to include several millimeters of gingival tissue in the lingual scan.

7 When the lingual surface scan is complete, scan the buccal surface of the teeth. Hold the CS 3600 at a 45-degree angle to the buccal surface. Be sure to include several millimeters of gingival tissue in the buccal scan.

Important: Re-dry the teeth as appropriate throughout the acquisition process.

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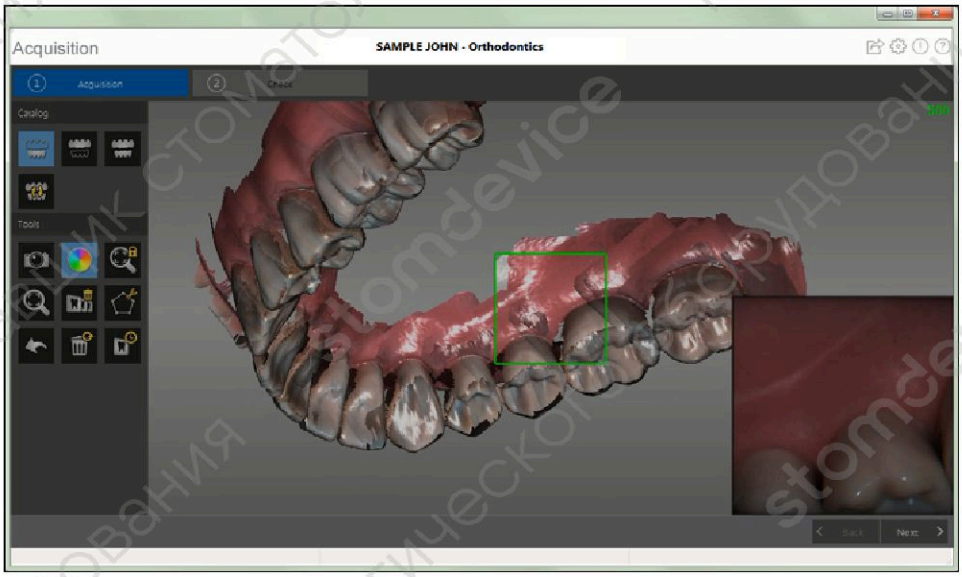
The following image shows a 3D model of the upper jaw when the occlusal, lingual, and buccal surfaces have been completely scanned, as well as much of the palate:



Important: If holes are displayed, re-scan the area until the holes are filled. Use the mouse wheel to zoom in on the image for a closer look.

8 Once the upper jaw has been scanned, you can begin scanning the lower jaw. Click  and repeat steps 5 through 7 until the teeth on the lower jaw are scanned.

The following image shows a 3D model of the lower jaw when the occlusal, lingual, and buccal surfaces have been completely scanned, including soft tissue:



9 Visually inspect the 3D model for any holes. If holes are present, re-scan the area until the holes are filled.

10 When you are satisfied with the 3D model, continue with the buccal bite registration acquisition.

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Scanning the Buccal Bite Registration

To acquire a buccal bite registration using auto acquisition:

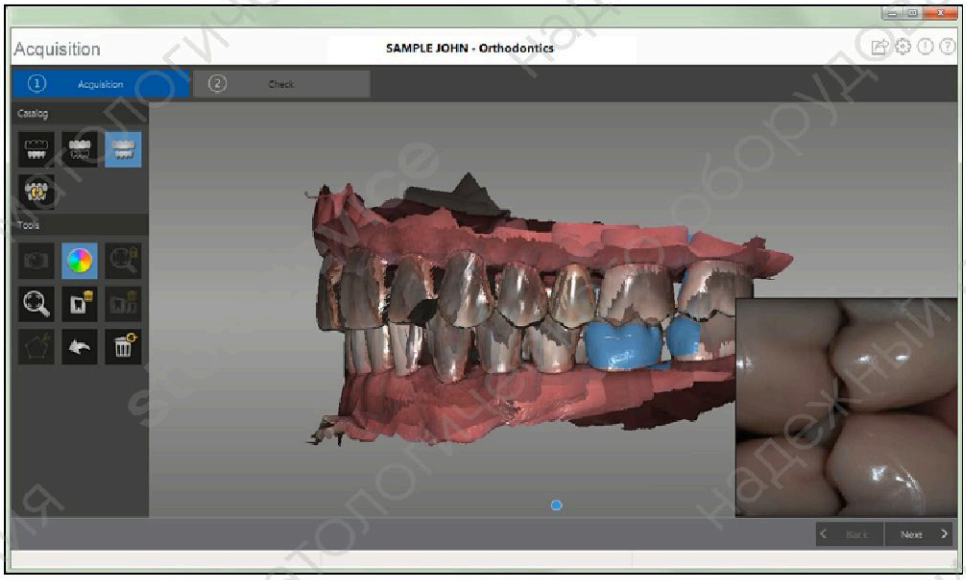
1 Click .

2 Have the patient bite down.

3 Position the CS 3600 at a 90-degree angle to the buccal surface of the teeth, and align the point where the upper and lower teeth meet in the middle of the video preview screen. Rest the tip on the tooth surface to help steady the CS 3600.

4 Move the CS 3600 slightly up and down to trigger the bite registration acquisition.

The following image shows a buccal bite registration:



A dot  is displayed at the bottom of the window to indicate the capture was successful.

Tip: After acquiring the buccal image of one jaw, always move **toward** the opposing arch with the CS 3600.

Once both arches are displayed in the **Acquisition** interface, the bite image is successful, and you can acquire additional bite images, which will increase the accuracy of the bite.

Important: For a full arch, you should acquire at least four buccal bite images—one on each side of the mouth at the molars and one on each side of the mouth at the canines.

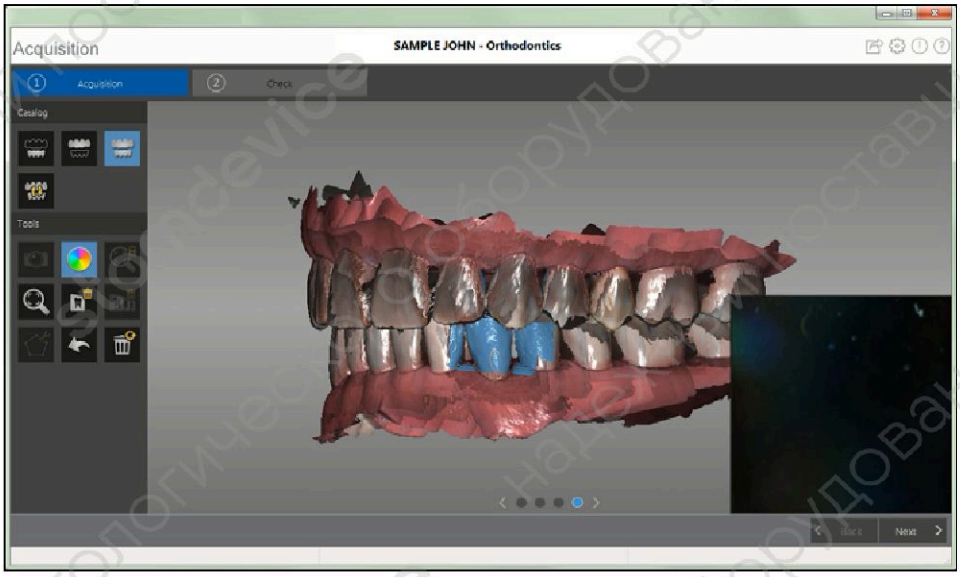
5 Acquire several additional buccal bite images. You can take up to six bite images for a full arch.

6 Once the bite has been registered, rotate the model and zoom the view to ensure that the bite is accurate and that there are no areas where the bite is mismatched. Click a dot to view the bite for that acquisition.

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The following image shows several buccal bite registrations:



7 When you have finished, proceed to the preparation and check steps. See the *CS 3600 User and Installation Guide* (9J8267) and online help for more information.

Acquiring a 3D Model for Implants

You can use the CS 3600 to scan a full or partial arch containing an abutment or implant to create a 3D model. When you acquire a full or partial arch with an existing abutment, the acquisition process is the same as that of a standard restoration. When you acquire a full or partial arch containing an implant, the software replicates the image, enabling you to cut out the implant area, re-scan the jaw with the scan body in place, and create two 3D models—one containing the scan body and one without. You then send these models to the lab to create the custom abutment.

To acquire a 3D model for an implant:

- Scan the upper and lower jaw.
- Scan the buccal bite registration.
- Use the Free Cut tool to cut out the implant area.
- Install the scan body, and re-scan the jaw with the scan body.
- Refine the image.
- Complete the preparation check and export the images.

Scanning Teeth on the Upper and Lower Jaw

To acquire images using auto acquisition:

1 Dry the teeth thoroughly before starting an acquisition.

2 Access the **CS 3600 Acquisition** interface by clicking  in the imaging software.

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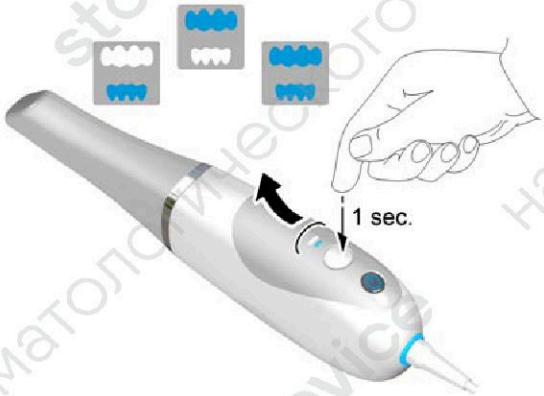
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3 On the **Acquisition** interface, select the **Upper Jaw** acquisition mode.



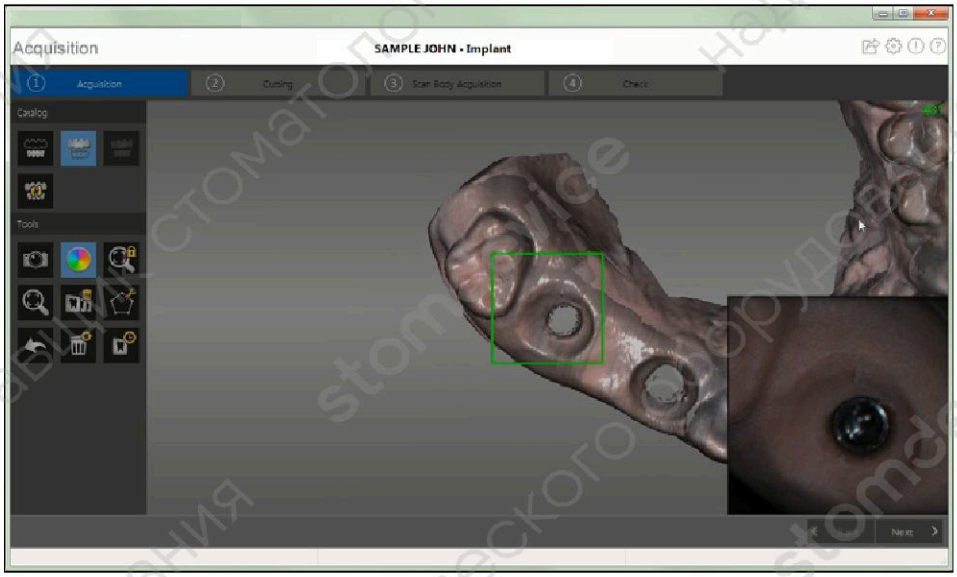
OR

On the CS 3600, press the mode button for one second to select the acquisition mode. The mode indicator LED turns blue.



4 Hold the CS 3600 at a 90-degree angle to the occlusal surface of the implant area. Rest the tip on the tooth surface to steady the CS 3600. Live video is displayed on the video preview screen, and the acquisition begins. Images are automatically acquired and transferred to the 3D model display screen.

The following image shows several acquisitions of the upper jaw:



5 Slowly move the CS 3600 tip along the occlusal surface to scan the remaining teeth in the implant area.

6 When the occlusal surface scan is complete, scan the lingual surface of the teeth in the implant area. Hold the CS 3600 at a 45-degree angle to the lingual surface.

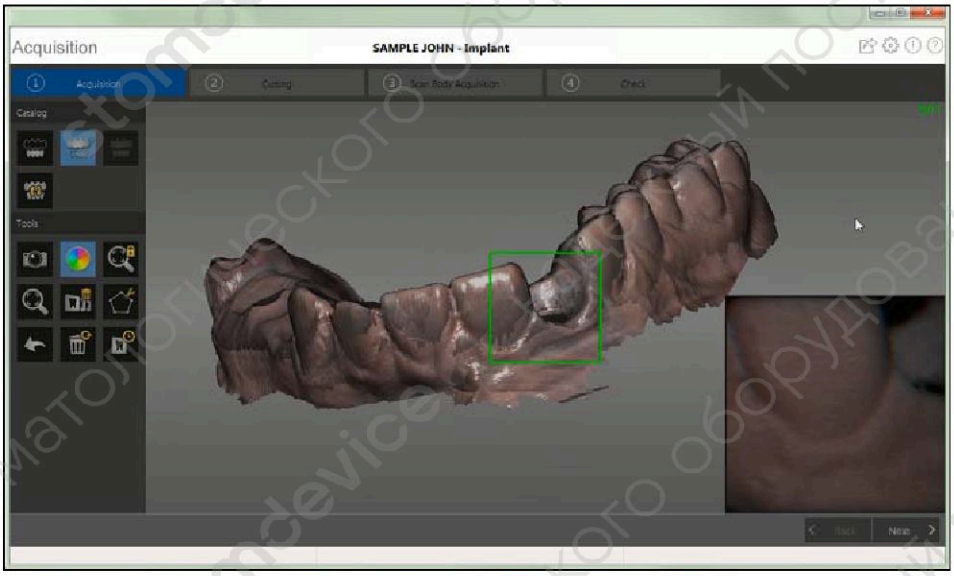
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7 When the lingual surface scan is complete, scan the buccal surface of the teeth in the implant area. Hold the CS 3600 at a 45-degree angle to the buccal surface.

Important: Re-dry the teeth as appropriate throughout the acquisition process.

The following image shows a 3D model of the upper jaw when the occlusal, lingual, and buccal surfaces have been completely scanned.



Important: If holes are displayed, re-scan the area until the holes are filled. Use the mouse wheel to zoom in on the implant area for a closer look.

8 Once the upper jaw has been scanned:

You can continue with only the upper jaw, if desired. Click Next >. A message states that you have not acquired the opposing jaw and asks if you want to continue anyway. Click **Yes**. Continue with the steps listed under "Using the Free Cut Tool to Cut Out the Implant Area" on page 20.

Note: If you selected the **Enable Refinement Check** option in the **Preferences** window, the software refines the image before you perform the cutting step.

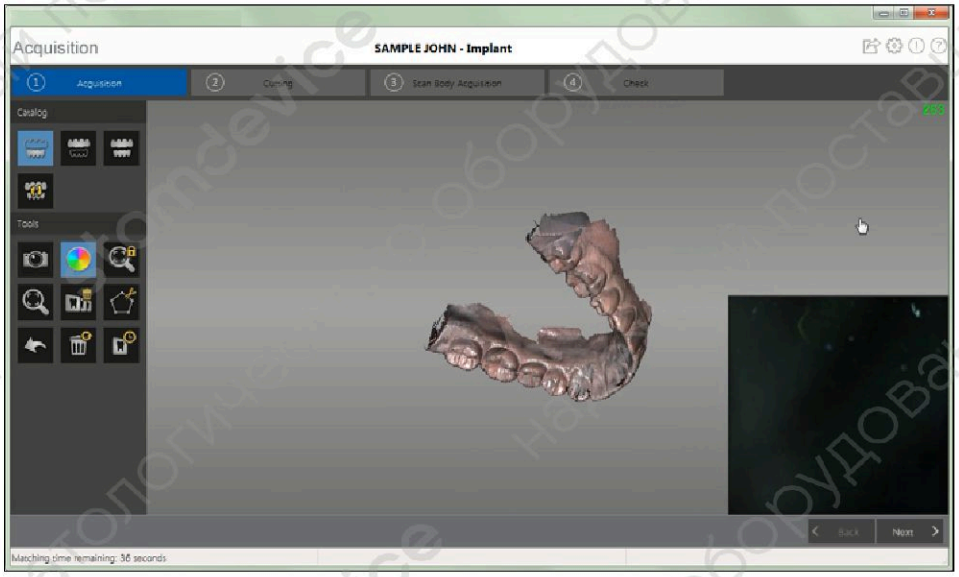
OR

You can begin scanning the lower jaw. Click  and repeat steps 5 through 8 until the teeth on the lower jaw are scanned.

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The following image shows a 3D model of the lower jaw when the occlusal, lingual, and buccal surfaces have been completely scanned:



9 Visually inspect the 3D model for any holes. If holes are present near the implant area, re-scan the area until the holes are filled.

10 When you are satisfied with the 3D model, continue with the buccal bite registration acquisition.

Important: If you acquire images of teeth from both the upper and lower jaw, you must also acquire the buccal bite registration.

Scanning the Buccal Bite Registration

To acquire a buccal bite registration using auto acquisition:

1 Click .

2 Have the patient bite down.

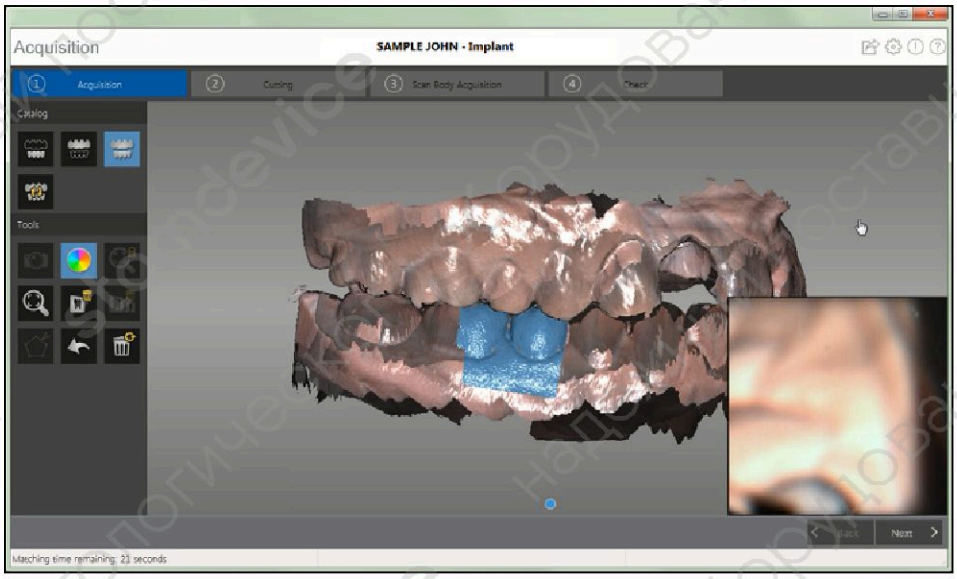
3 Position the CS 3600 at a 90-degree angle to the buccal surface of the implant area, and align the point where the upper and lower teeth meet in the middle of the video preview screen. Rest the tip on the tooth surface to help steady the CS 3600.

4 Move the CS 3600 slightly up and down to trigger the bite registration acquisition.

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The following image shows a buccal bite registration:



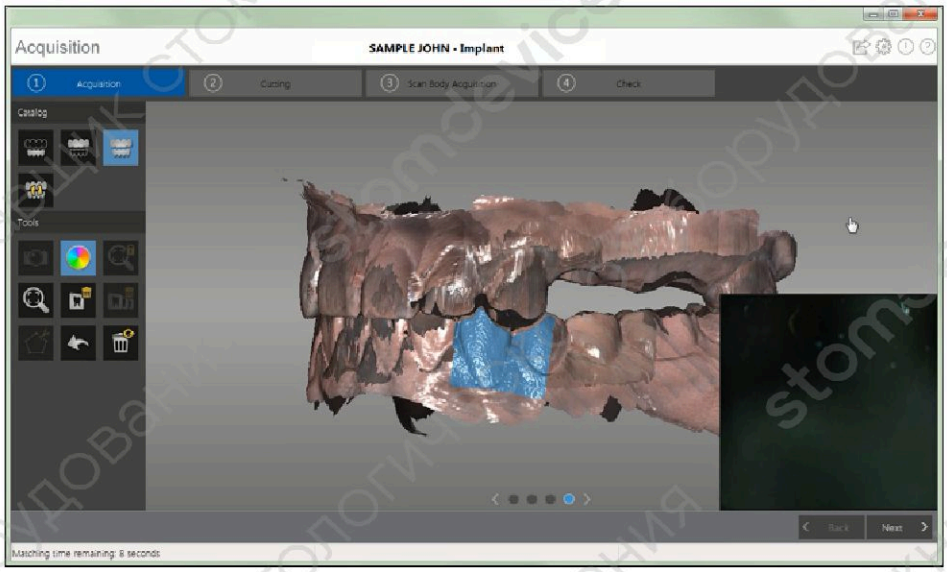
A dot is displayed at the bottom of the window to indicate the capture was successful. A successful bite image includes both the upper and lower arches.

Tip: After acquiring the buccal image of one jaw, always move **toward** the opposing arch with the CS 3600.

5 Acquire at least two more buccal bite images, one on either side of the implant area. You can take up to six bite images for a full arch.

6 Once the bite has been registered, rotate the model and zoom the view to ensure that the bite is accurate and that there are no areas where the bite is mismatched. Click a dot to view the bite for that acquisition.

The following image shows several buccal bite registrations:



7 Proceed with the process of cutting out the implant area using the Free Cut tool.

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Using the Free Cut Tool to Cut Out the Implant Area

The Free Cut tool enables you to remove the section of the image containing the implant so it can be replaced with the scan body image.

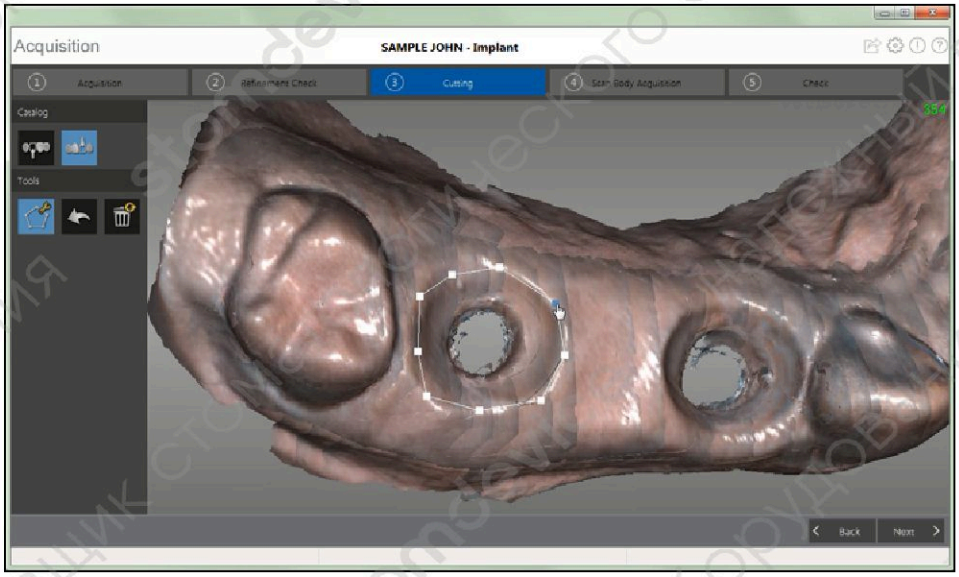
To cut the implant area from the 3D image:

1 Click Next.

Note: If you selected the **Enable Refinement Check** option in the **Preferences** window, the software refines the image before you perform the cutting step.

- If you are satisfied with the refined image, click Next and continue with the cutting process.
- If you are not satisfied with the image, click Back and re-scan the area until the holes are filled. Then click Next to proceed with the cutting process.

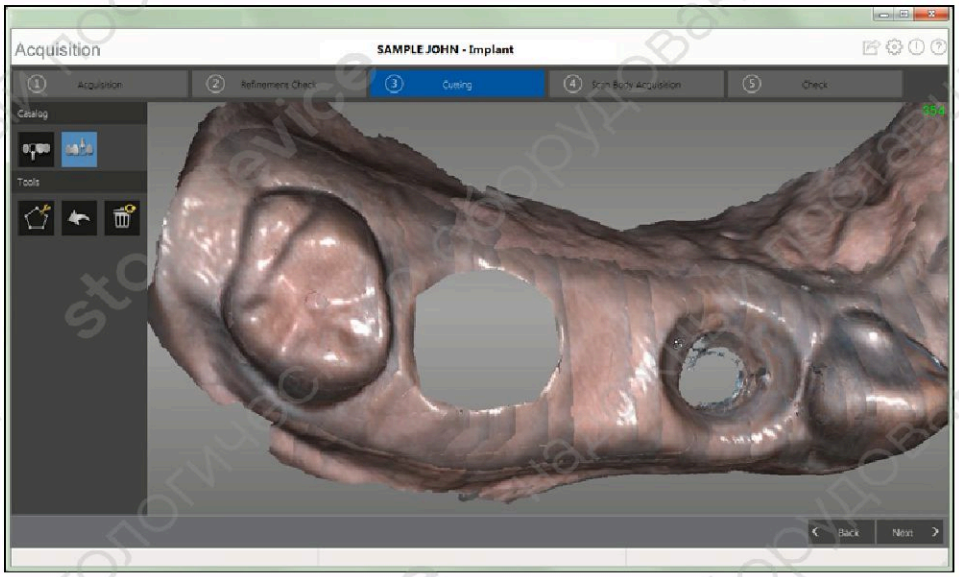
2 Click . Click the mouse at several points around the implant to form a circle big enough to surround the emergence profile.



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3 Double-click the mouse.



Note: If you removed too much of the image, click  to restore it and repeat the cutting process.

4 Continue with the scan body acquisition.

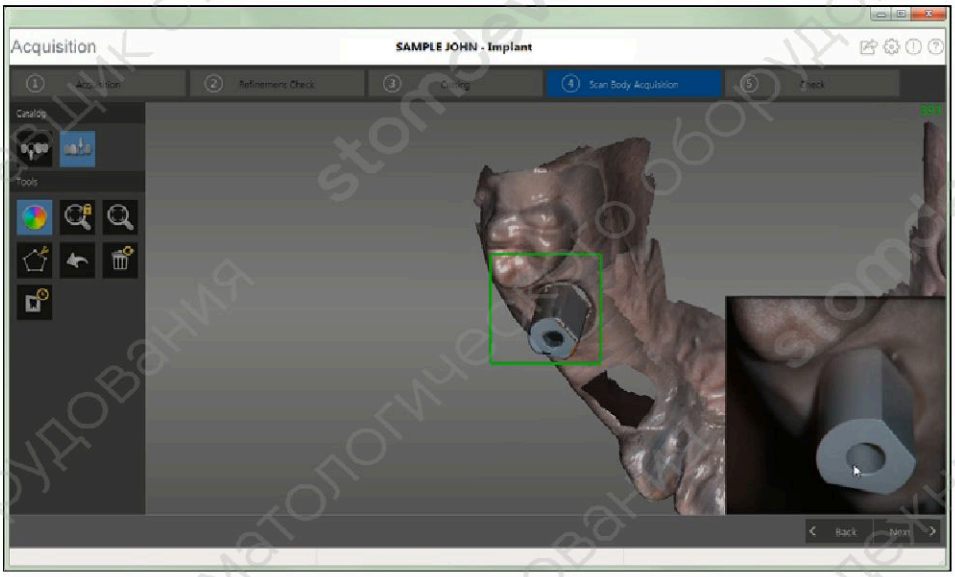
Acquiring the Scan Body on the Implant Jaw

After you install the scan body, scan the jaw to incorporate the scan body into the 3D image. To acquire an image of the jaw with the scan body in position:

1 Install the scan body.

2 Click Next.

3 Re-scan the jaw, concentrating on the area containing the scan body. Repeat the steps for acquiring an image as described in "Scanning Teeth on the Upper and Lower Jaw" on page 7.



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4 After you acquire the scan body, proceed to the check step. See the *CS 3600 User and Installation Guide* (9J8267) and online help for more information.

Note: If there is excessive soft tissue around the scan body, click  or  to remove it before proceeding.

Care and Maintenance

You must clean, disinfect, and sterilize the CS 3600 and accessories regularly.

The removable CS 3600 scanner tips and collars are autoclavable up to 20 cycles. After 20 cycles, discard the tip and collar.

Important: See the *CS 3600 Safety, Regulatory, and Technical Specifications User Guide* for more information.

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Using the CS 7200 Computed Radiography System

This lesson includes the following topics:

- Overview of the CS 7200 System
- Components of the CS 7200 System
- Acquiring Images
- Care and Maintenance

Overview of the CS 7200 System

The CS 7200 is used to scan and review intraoral x-ray images. When an imaging plate is exposed to x-rays, a digital image is displayed on the workstation screen. Afterwards, the system erases the imaging plate and ejects it. The imaging plate is ready to be used again.

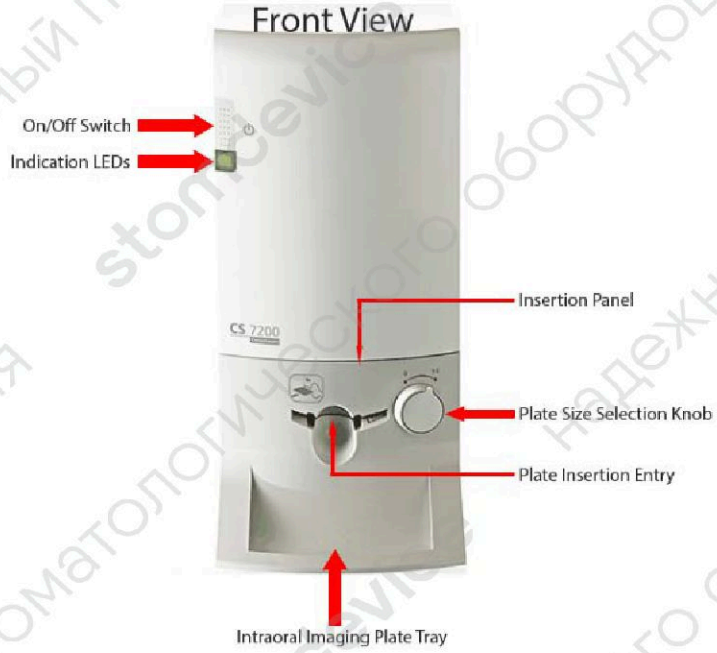
Components of the CS 7200 System

The following components comprise the hardware of the CS 7200:

- CS 7200 unit
- Intraoral imaging plates
- Protective sheaths
- Power supply and adapters
- USB cable

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The following figure shows a front view of the CS 7200:



The following figure shows a rear view and the cables compartment of the CS 7200:



Intraoral plates come in sizes 0, 1, and 2.

Hygienic sheaths come in sizes 0, 1, and 2. Each sheath has an adhesive strip for sealing. One side of the sheath is transparent, so the plate reference can be seen. Each sheath has a tear line which is opened to insert a plate into the sheath.

The CS 7200 includes the unit, the **Acquisition** interface, smart plates for intraoral imaging, and an intraoral plate transportation box and pad.

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Acquiring Images

To acquire an image:

- Select or create a patient record.
- Access the **Imaging** window.
- Select the tooth to x-ray.
- Insert an imaging plate into a hygienic sheath and seal it.
- Position the imaging plate into the patient's mouth in the region of interest.
- Expose the imaging plate to the x-ray.
- Remove the imaging plate from the patient's mouth.
- Scan the imaging plate.
- Review the image.
- Store the image in the CS Imaging software.

Starting the Imaging Software

To start the imaging software:

1 On your desktop, double-click the **Imaging Software** icon, OR select **Start > All Programs > CS Imaging Software**.

2 Open or create a patient record.

3 Access the **Imaging** window. An icon on the toolbar indicates the CS 7200 is connected to the workstation and is ready to acquire an image.

Preparing the Plate and Acquiring the Image

To prepare an intraoral imaging plate and acquire an image:

1 Choose an appropriately sized imaging plate for the examination.

Note: Use only CS 7200 intraoral imaging plates and hygienic sheaths. Third-party sheaths may cause a system malfunction and void the warranty.

Important: Use a new hygienic sheath for each patient to avoid contamination.

Tip: If a plate has not been used recently, erase it.

2 Insert the plate into a sheath with the inactive side of the plate facing the adhesive strip. The imaging plate's size (number) can be seen through the transparent side of the sheath, and its orientation mark is visible in the bottom corner. Handle the imaging plate by holding the hygienic sheath's empty edge, where the silicone strip is located.

3 Peel the adhesive strip's protective paper to expose the adhesive, and seal the hygienic sheath.

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4 Select an appropriate positioner for the region of interest and size of the plate.

5 Select the exposure time according to the region of interest and the patient type. Follow the user instructions of your x-ray generator.

6 Position the imaging plate in the mouth of the patient.

7 Move the x-ray BID head close to the patient, and align it with the patient's teeth, perpendicular to the imaging plate.

8 Tell the patient to remain still and not to move her tongue.

9 Position yourself at least two meters behind the x-ray generator or outside the door.

10 Trigger the x-ray with the remote switch.

11 Remove the imaging plate from the patient's mouth.

12 Move to the CS 7200 and make sure the plate size selector knob is set for the size indicated on the plate. The unit has two selection options: 0 and 1/2.

13 Open the hygienic sheath.

14 Load the plate into the unit.

15 Check the image to determine if it is satisfactory. The ideal image is indicated by a full green bar in the control panel. Under-exposed or over-exposed images are indicated by a partial or full red bar.

Care and Maintenance

- Use disinfectant wipes for medical equipment to clean the unit body.
- Use disinfectant wipes for medical equipment to clean the insertion panel.
- Do NOT autoclave the insertion panel.

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Using the CS 8100 and CS 8100 3D Units

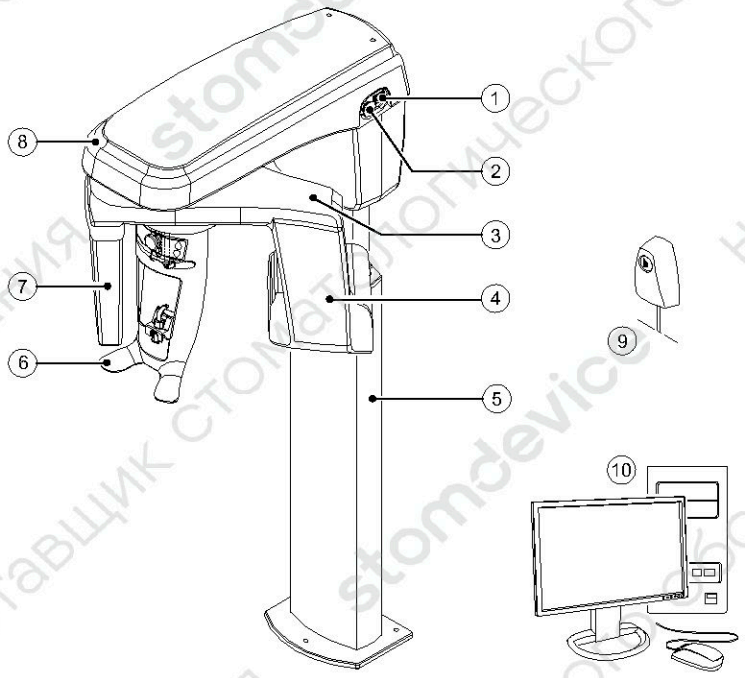
This lesson includes the following topics:

- Components of the CS 8100 and CS 8100 3D Units
- Preparing the Unit
- Preparing the Patient
- Acquiring Images
- Performing Quality Assurance Tests (QAT)
- Performing Quality Assurance Tests (QAT)

See the *CS 8100 and CS 8100 Access User Guide* (SM784) and the *CS 8100 3D User Guide* (SM842) for more information.

Components of the CS 8100 and CS 8100 3D Units

The following figure shows the components of the CS 8100:

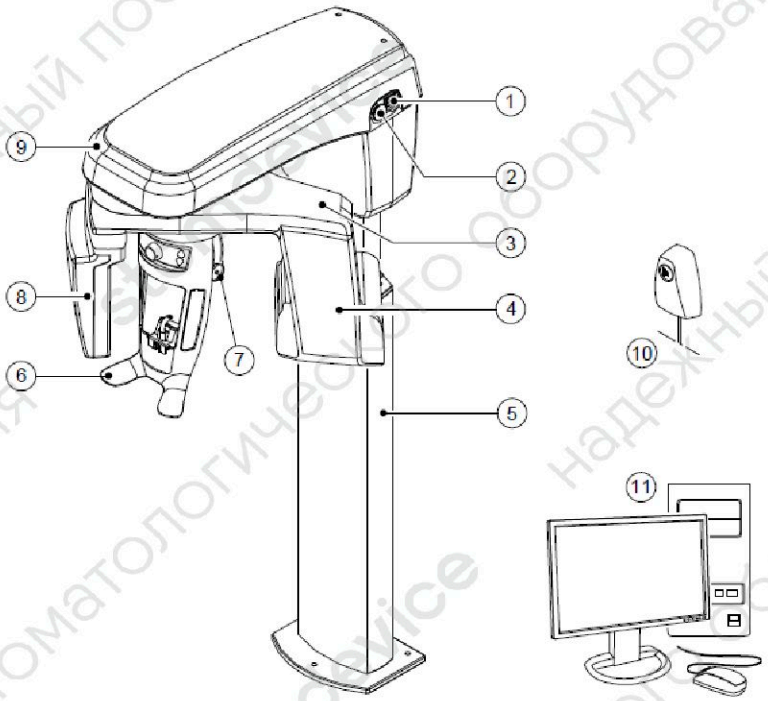


1 ON/OFF button	6 Head and chin rest
2 Emergency stop knob	7 Digital sensor
3 Unit rotative arm	8 Unit head
4 X-ray source assembly	9 X-ray remote control
5 Unit column	10 PC

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The following figure shows the components of the CS 8100 3D:

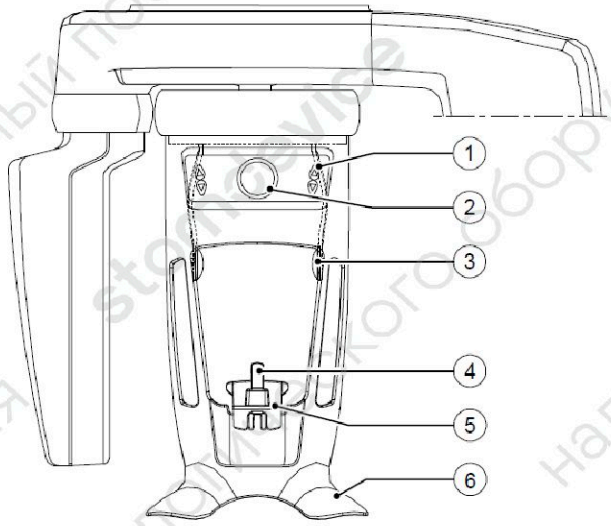


1 ON/OFF button
2 Emergency stop knob
3 Unit rotative arm
4 X-ray source assembly
5 Unit column
6 Head and chin rest
7 Digital sensor
8 Temple supports
9 Unit head
10 X-ray remote control
11 PC

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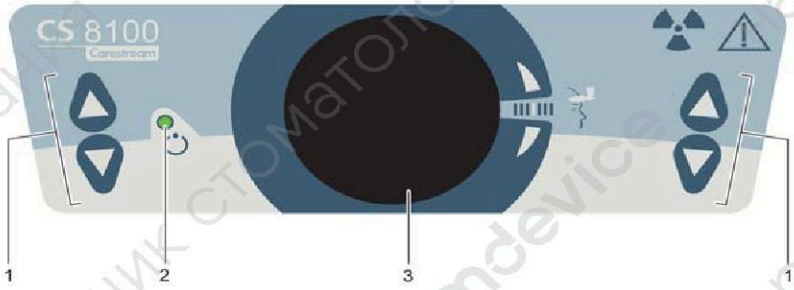
The following figure shows the components of the head and chin rest:



1 **Positioning panel**
2 **Temple support adjustment knob**
3 **Temple support**
4 **Bite block**
5 **Chin rest**
6 **Hand grips**

Control Panel

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



1 **Height Adjustment buttons** – Raise and lower the unit to the height of the patient. When the unit is not in use, place the rotative arm parallel to the unit head. To do this:

- Press and hold both buttons until the Ready Indicator LED switches off.
- When you release the buttons, the Ready Indicator LED flashes before the rotative arm moves to the parallel position.

2 **Ready indicator LED** – Green indicates the unit is ready for acquisition.

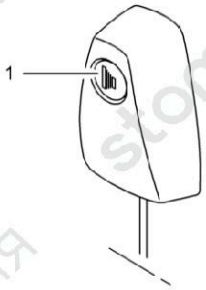
3 **Frontal head rest adjustment knob** – Turn the knob to adjust the patient's head.

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X-Ray Remote Control

The x-ray remote control enables you to launch a radiological image using the exposure button outside the x-ray room. You must press and hold the exposure button until the end of acquisition.

Note: Premature release of the exposure button interrupts the acquisition.



1 **Exposure button**: Launches the image acquisition.

Positioning Accessories

In addition to the basic components, the following accessories are delivered with the CS 8100 and CS 8100 3D:

- Panoramic chin rest
- Sinus chin rest
- TMJ nose rest
- Standard bite block
- Bite block for endentulous patients
- Single use sheaths for bite block (500 per box)
- Single use sheaths for 3D bite block (100 per box)
- 3D bite block support
- 3D bite block
- 3D molar bite block
- 3D child bite block
- 3rd molar offset 3D bite block
- Frankfort guide bite block for panoramic procedures

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Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection between the unit and the PC to be established.

3 Start the imaging software and set the acquisition parameters in the **Acquisition** window:

- Click the **Program** button to access the **Program** pane. Click on the section of the jaw to select the anatomical zone.

  Note: For a TMJ x4 image, click the **x2** button twice.

- Click the **Patient** button to access the **Patient** pane. Select the patient type, size, and dental arch morphology.

- Click the **Parameter** button to access the **Parameter** pane. Set the following parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV – 10 mA

4 If the default parameter settings are not adapted to your patient type, click the **Parameter** button, and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize anatomy setting**.

5 Position the appropriate chin rest on the chin rest support and cover the bite block with a hygienic barrier. If needed, use the edentulous bite block.

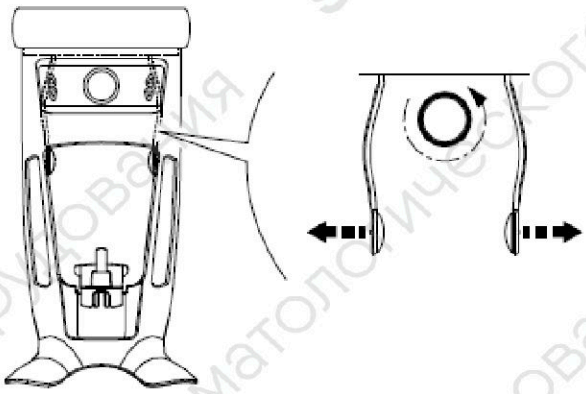
Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

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



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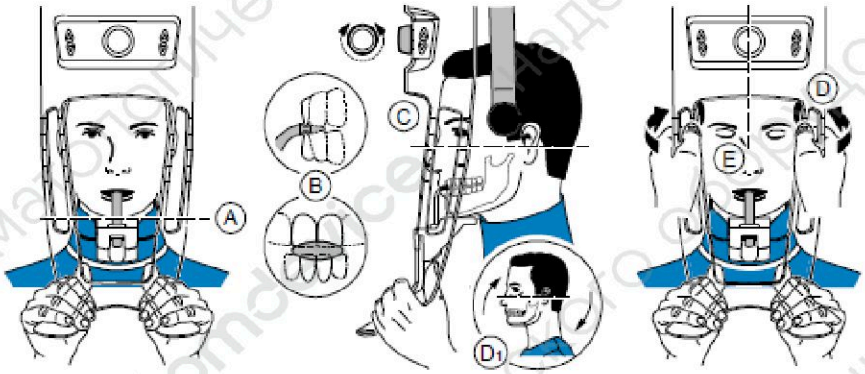
4 Have the patient enter the unit. On the control panel, press and hold the height adjustment buttons to raise or lower the chin rest to the appropriate height.

Note: If the patient is tall, ask him to sit on a stool and then adjust the chin rest.

5 Have the patient:

- Stand up straight.
- Grip both of the lower grip handles of the head and chin rest.
- Relax and lower the shoulders for full motion of the unit rotative arm.

6 Have the patient place her chin on the chin rest support (A).



7 Have the patient bite into the groove of the bite block (B). Adjust the frontal head rest (C) firmly to the forehead. Use your hands and the vertical positioning indicators to align the head to the Sagittal plane.

Important: The patient's spinal column and nose must be aligned in a straight, vertical line.

8 Turn the frontal head adjustment knob (D) and use the horizontal positioning indicators as a visual aid to adjust the up or down inclination of the patient's head for a Camper plane horizontal alignment.

9 Ask the patient to:

- Close the eyes.
- Remain still.
- Breath through the nose.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

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Acquiring Images

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 you see the on-screen **Release Hand Switch** message. The Ready Indicator turns yellow, and a warning is sounded, indicating x-ray transmission.

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

Note: For a TMJ x4 image, you should acquire an image with the mouth closed and one with the mouth open.

3 Check the image quality.

4 When the acquisition is complete, release the patient from the unit and remove the hygiene barrier from the bite block.

Performing Quality Assurance Tests (QAT)

Note: Most states require monthly quality assurance testing, except for New Jersey, which requires daily testing.

To perform QAT:

1 Close all open programs.

2 On the desktop, double-click . The **Service Tools Selection** window is displayed.



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3 Select **CS 8100 3D** and click **OK**. The **Service Tools CS 8100 3D** window is displayed.



4 In the **Diagnostic** section, click **Quality Assurance Tool**. The **Imaging Quality Control Software** window is displayed.



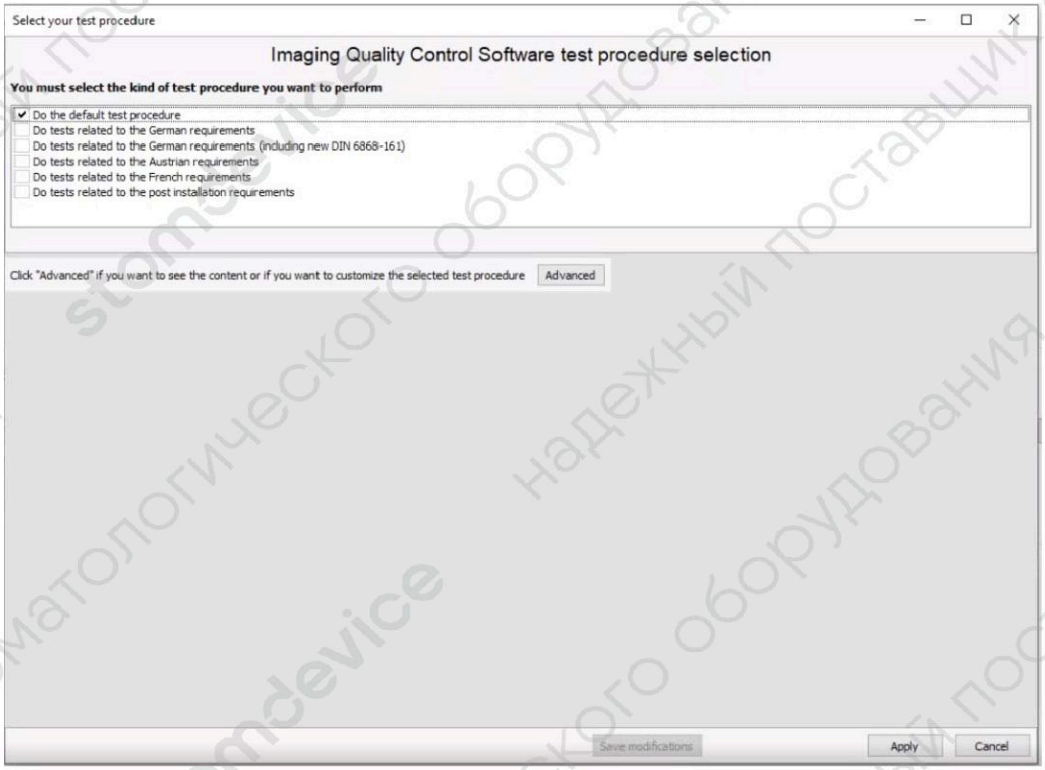
5 Click **Start a new test**.

Note: To retrieve and view reports, select **View previous reports**.

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The **Select your test procedure** window is displayed.



6 To perform the default test procedure, click **Apply**. The **Start a new test** window is displayed again.

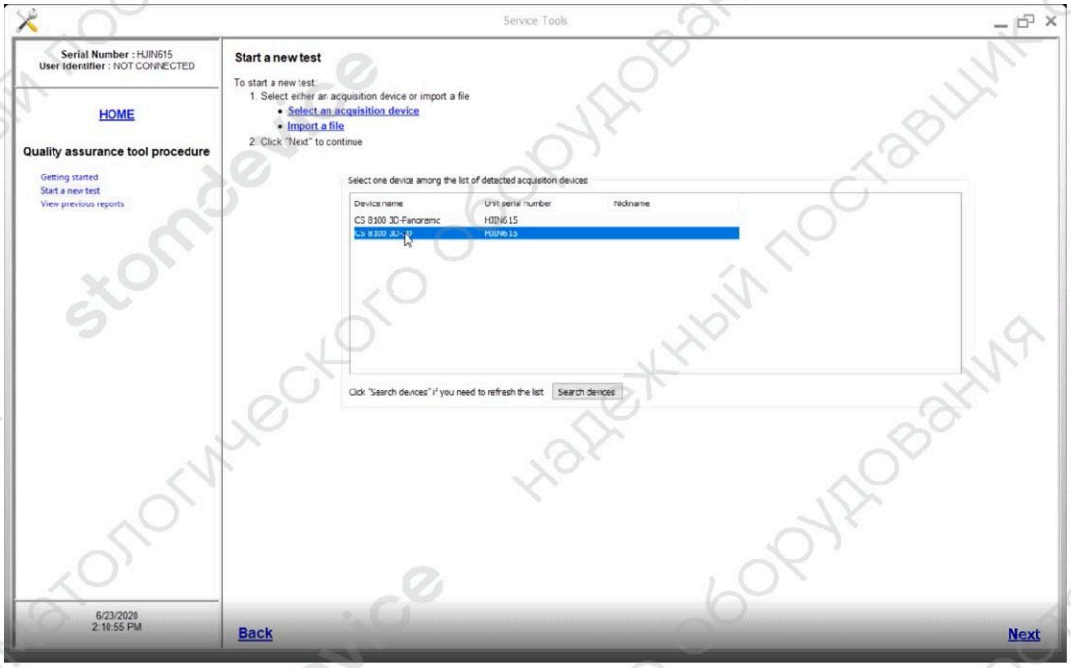


7 Select **Select an acquisition device** and click **Next**.

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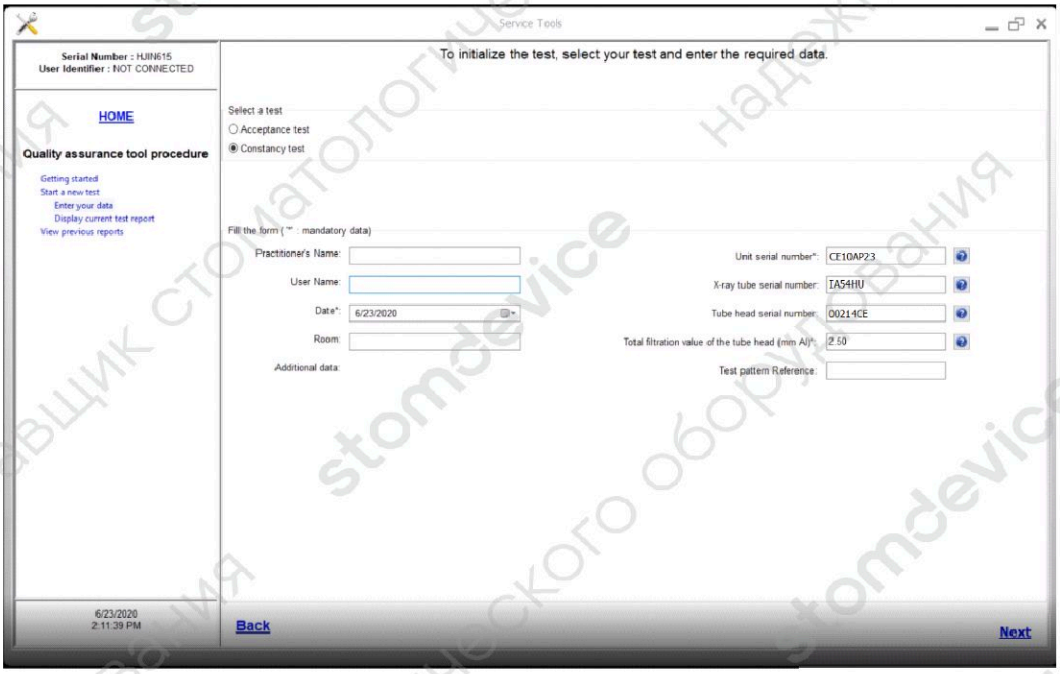
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The **Select one device** section is displayed.



8 Select **CS 8100 3D-3D** and click **Next**. The **Select a test** window is displayed.

Note: If the CS 8100 3D-3D device is not in the list click **Search devices**.



9 To initialize the test, select **Constancy test** and enter data in the fields:

- **Practitioner's Name**–Enter the name of the practice.
- **User Name**–Enter your name.
- **Room**–Enter the name of the room in which the unit is located.

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The fields on the right side of the window are populated during installation. If a field is blank, click the **?** to see where the information is located.

Note: If a previous test has been performed, the fields, except for **User Name**, are already populated. Enter your name in the field.

10 Click **Next**. The **Performing the Quality Assurance Tool phantom acquisition** window is displayed.



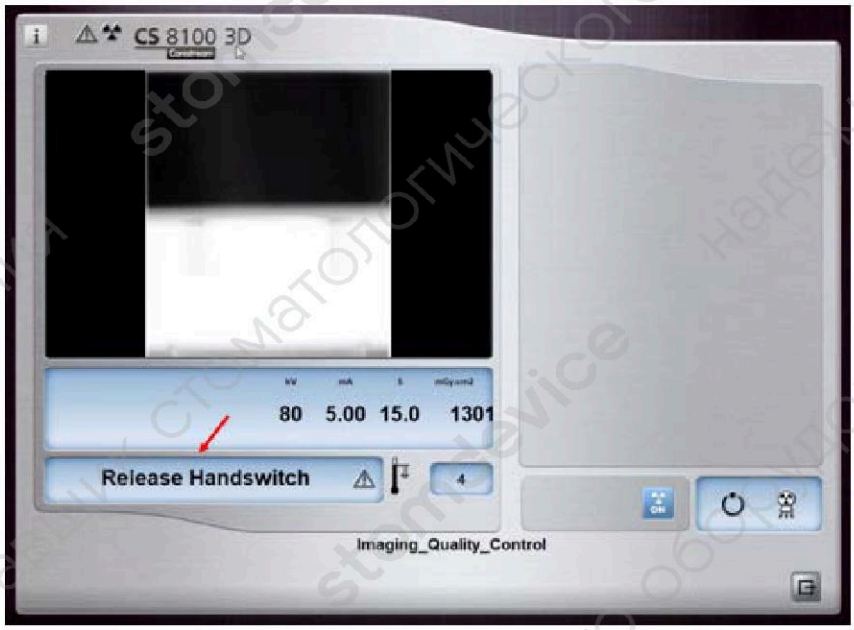
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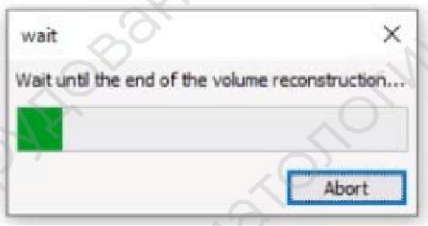
11 Follow steps 1 through 4 on the screen. Do **NOT** click **Next**.



12 When the **Ready** circle turns green, acquire the image.

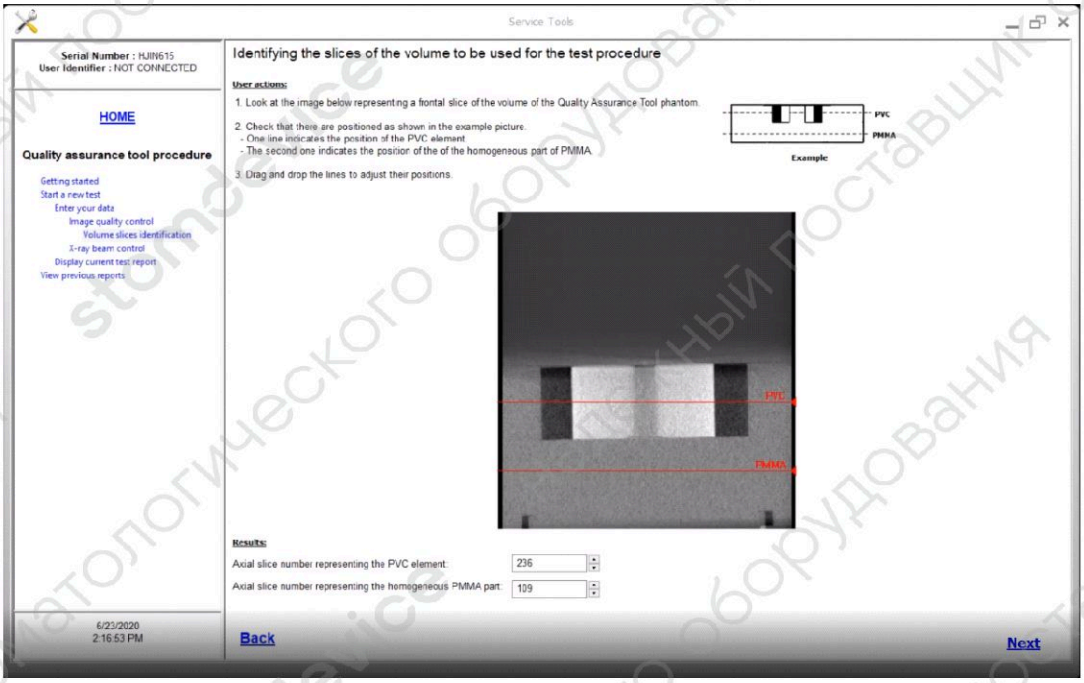


13 When the **Release Handswitch** message is displayed, release the handswitch. A **Wait until the end of the volume reconstruction** message is displayed.

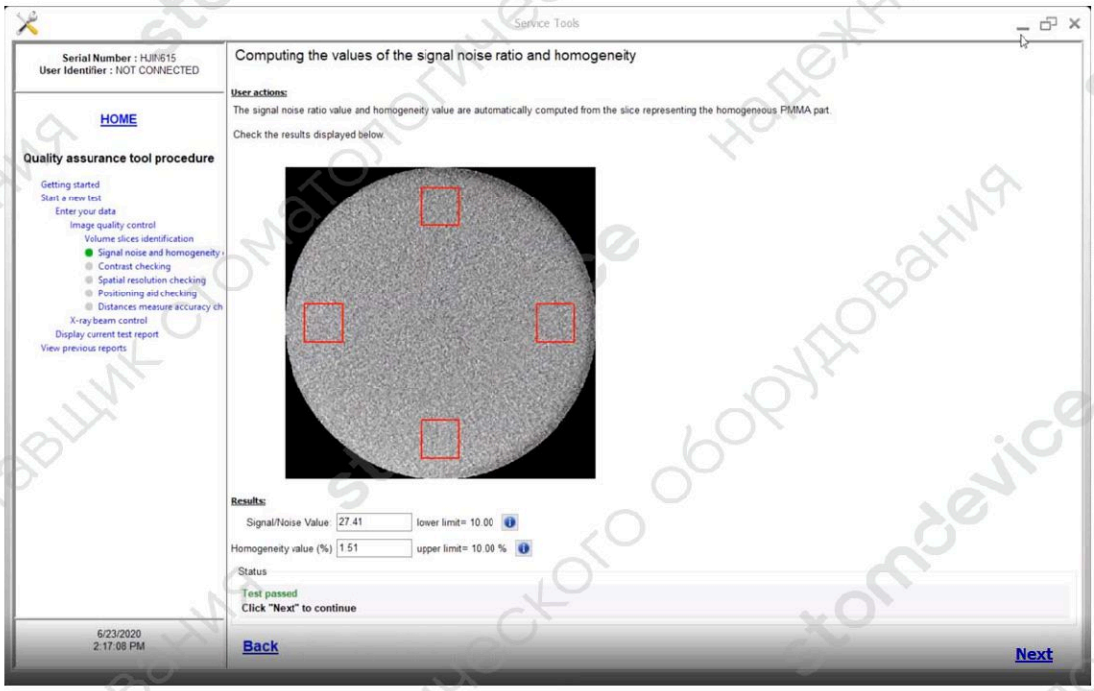


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The **Identifying the slices of the volume to be used for the test procedure** window is displayed.



14 Follow the steps on the screen and click **Next**. The **Computing the values of the signal noise ratio and homogeneity** window is displayed.

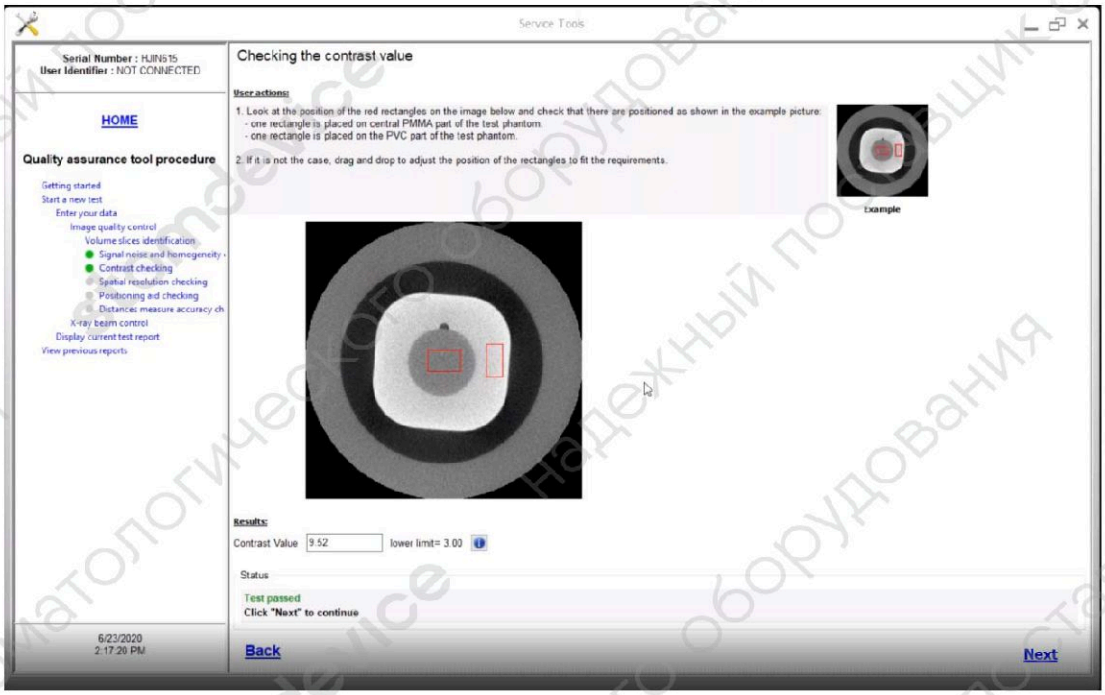


15 When **Test passed** is displayed at the bottom of the window, click **Next**.

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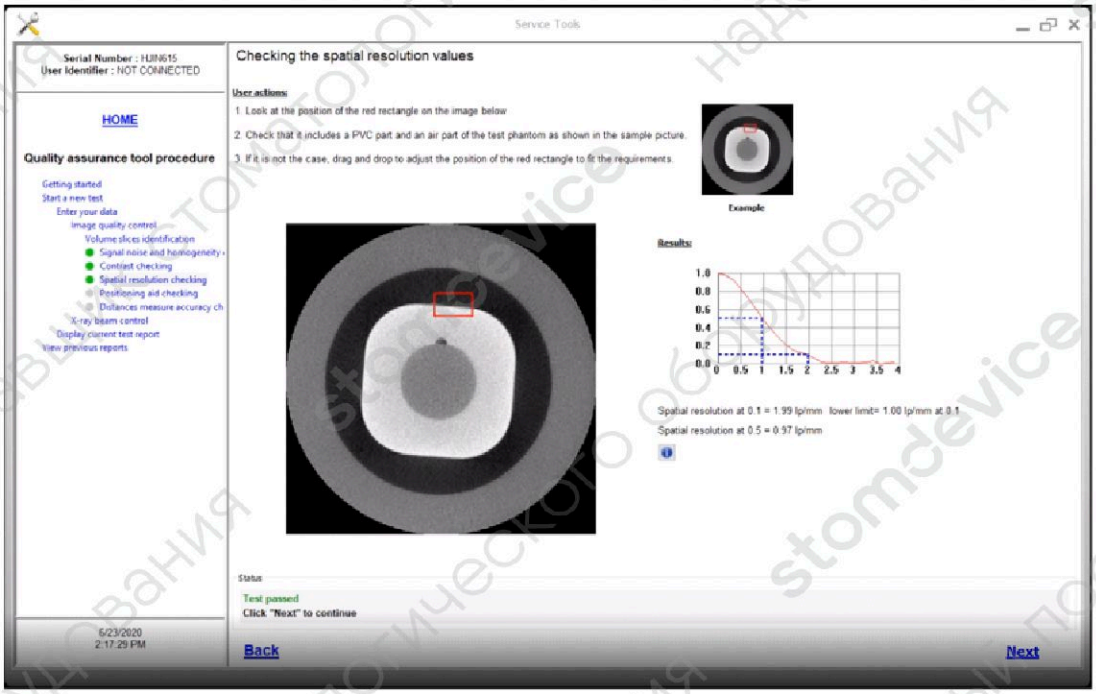
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The **Checking the contrast value** window is displayed.



16 Adjust the red rectangles, if necessary.

17 When **Test passed** is displayed, click **Next**. The **Checking the spatial resolution values** window is displayed.

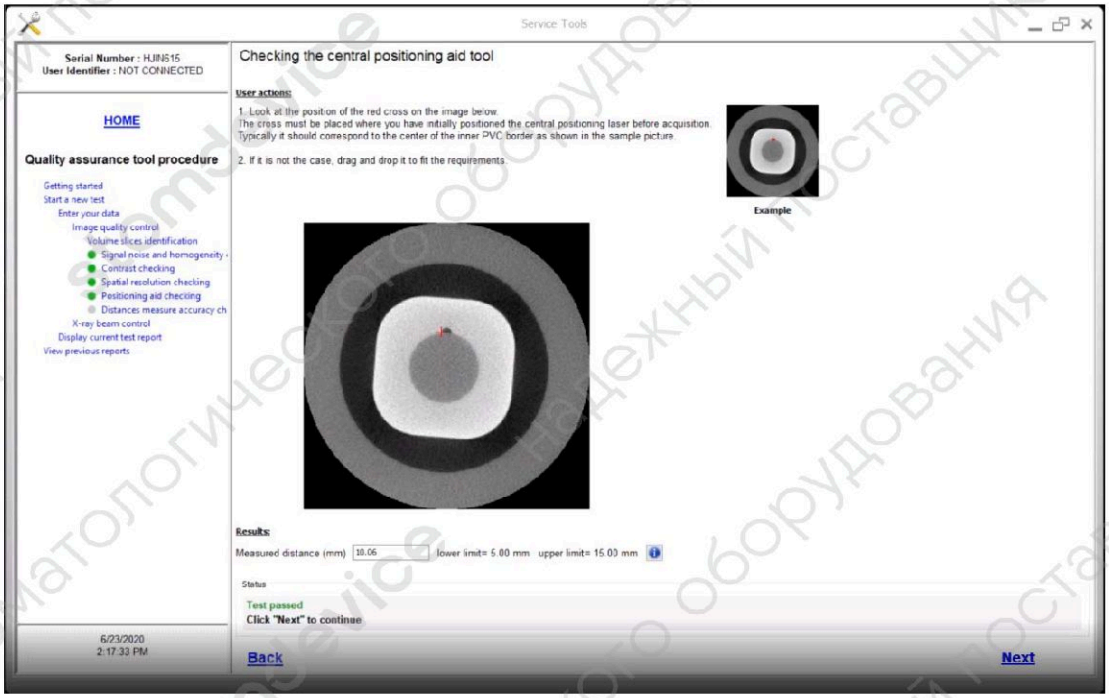


18 Adjust the red rectangle, if necessary.

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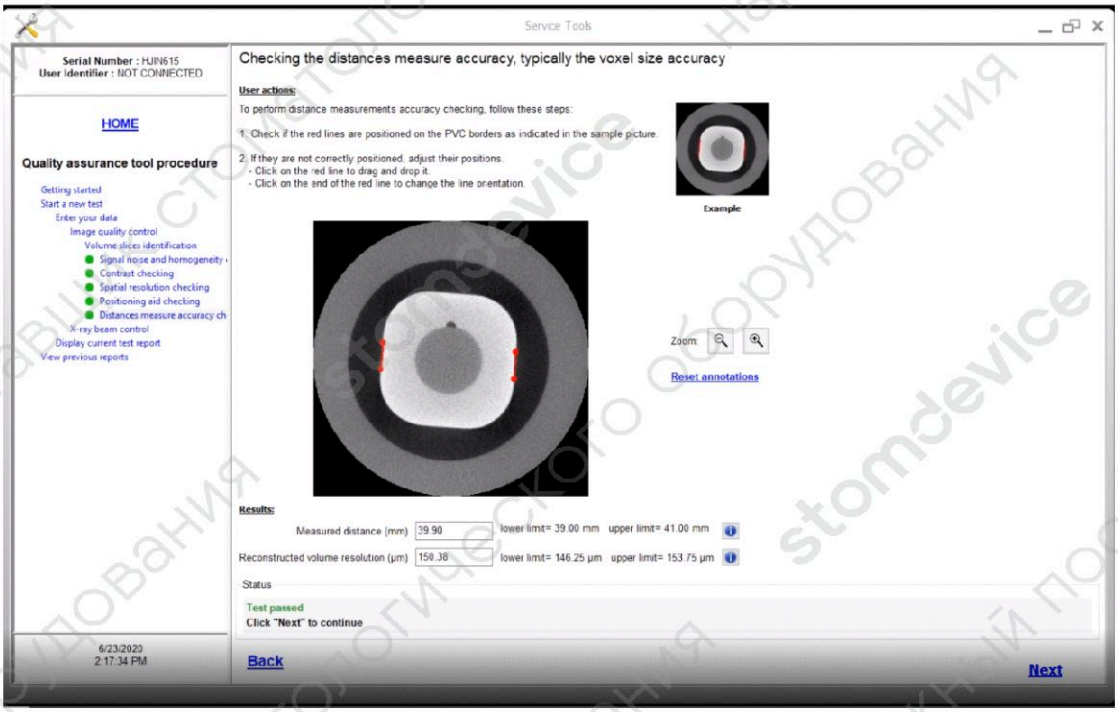
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19 When **Test passed** is displayed, click **Next**. The **Checking the central positioning aid tool** window is displayed.



20 Adjust the red cross to match the example, if necessary.

21 When **Test passed** is displayed, click **Next**. The **Checking the distances measure accuracy, typically the voxel size accuracy** window is displayed.

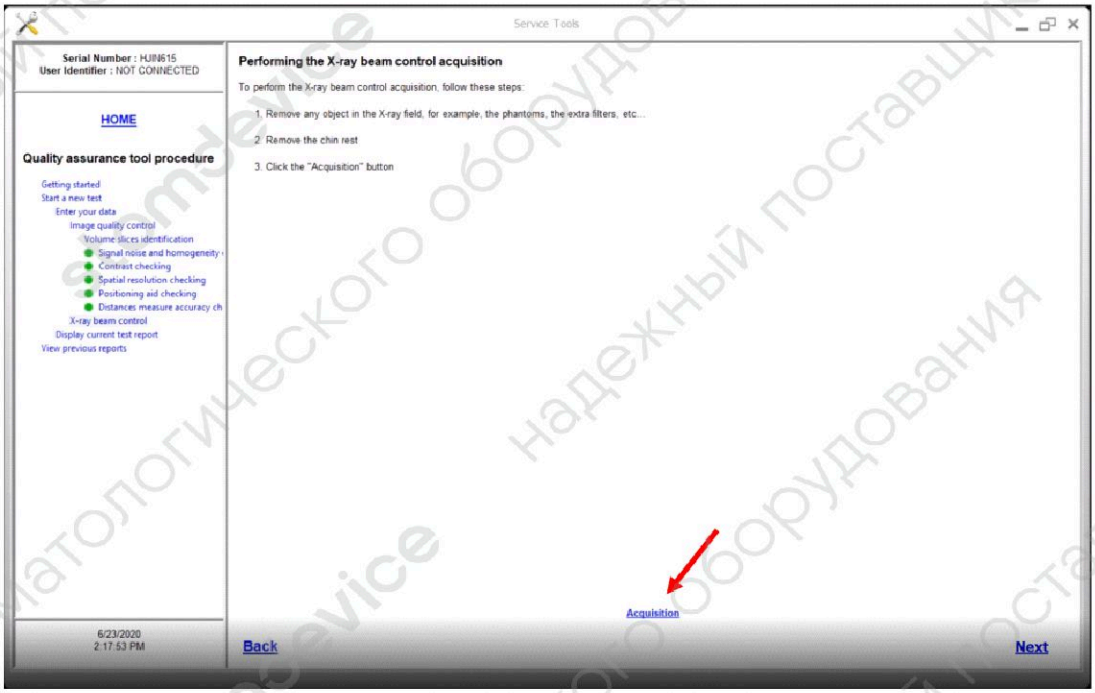


22 Adjust the red lines to match the example, if necessary.

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23 When **Test passed** is displayed, click **Next**. The **Performing the X-ray beam control acquisition** window is displayed.



24 Follow steps 1 through 3 on the screen. Do **NOT** click **Next**. The **Imaging Quality Control** window is displayed.

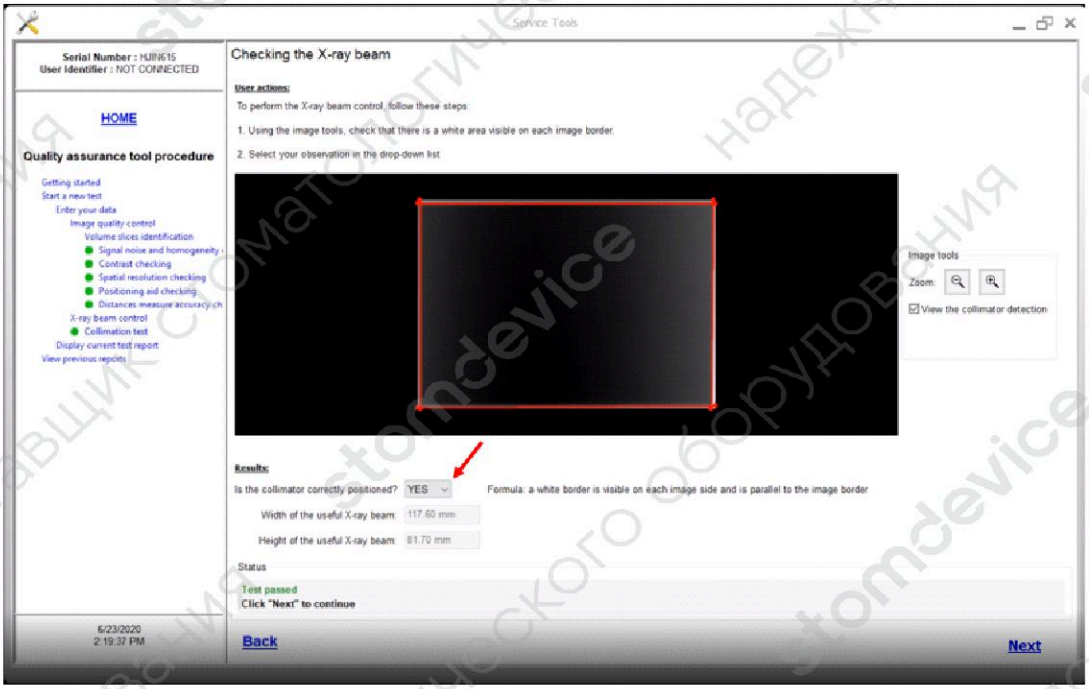


25 When the **Ready** circle turns green, acquire the image.

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26 When the **Release Handswitch** message is displayed, release the handswitch. The **Checking the X-ray beam** window is displayed.

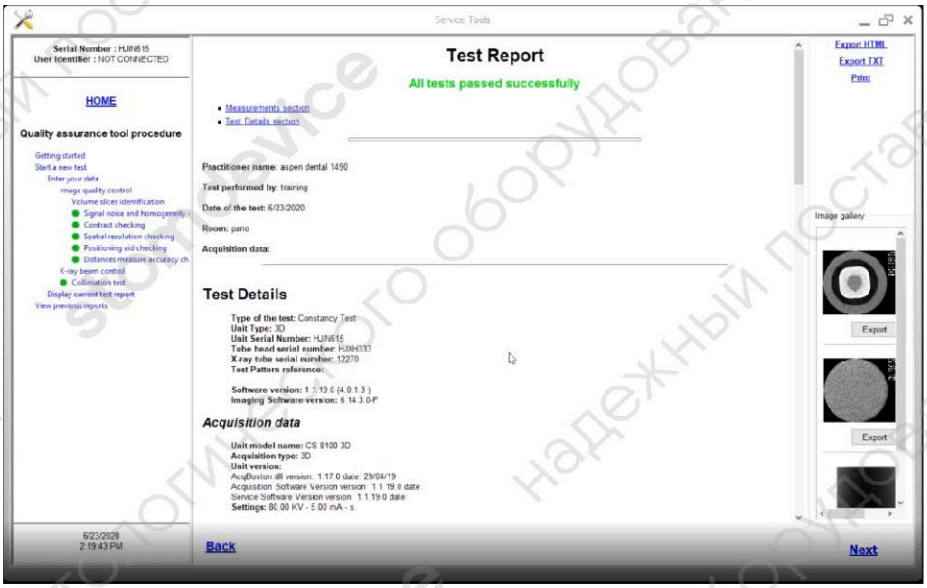


27 Check that a white area is visible on each border, and in the **Is the collimator correctly positioned?** drop-down field, select **YES**.

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The **Test Report** window is displayed.



Note: All reports are saved in Service Tools. You can print the report now or at a later date.

28 If **All tests passed successfully** is displayed, click **Next** twice and close Service Tools.

Care and Maintenance

Carry out the following daily maintenance procedures:

- Bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Edentulous bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Temple supports and chin rest–Clean with medical-grade 76% alcohol disinfectant before the next patient is x-rayed.
- Outer covers of the unit–Wipe the unit with a soft, dry cloth at the end of each day's operation.

WARNING: Do not use detergents or solvents to clean the outer covers of the unit.

An authorized service technician should perform a general inspection of the unit annually.

See the *CS 8100 3D Safety, Regulatory and Technical Specifications* (SM844) for more information.

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Using the CS 8100SC Unit

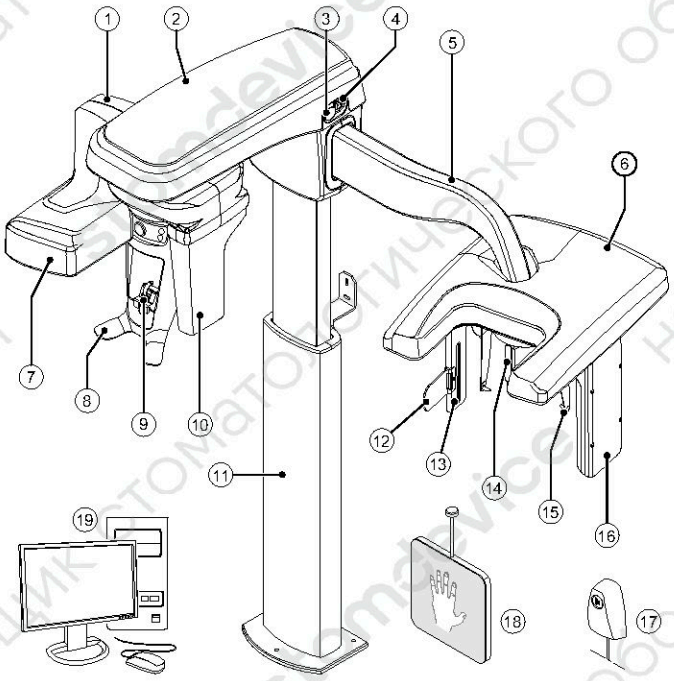
This lesson includes the following topics:

- Components of the CS 8100SC Unit
- Preparing the Unit
- Preparing the Patient
- Acquiring the Image
- Care and Maintenance

See the *CS 8100SC Family User Guide* (SM987) for more information.

Components of the CS 8100SC Unit

The following figure shows the components of the CS 8100SC:

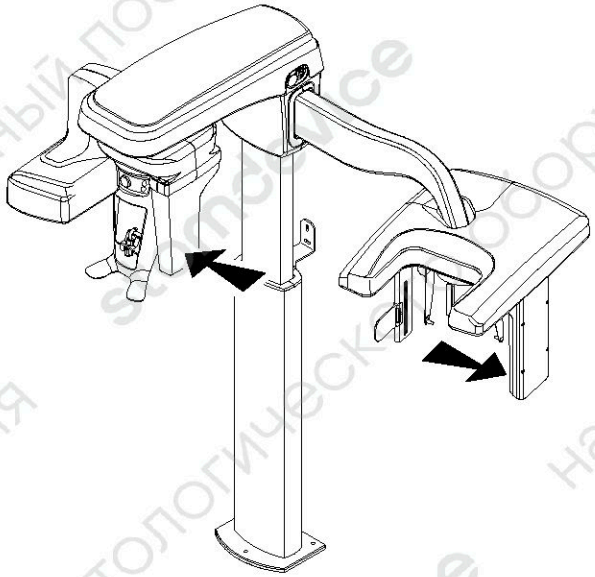


1	Unit rotative arm	11	Unit column
2	Unit head	12	Frankfort positioning indicator
3	Emergency stop knob	13	Secondary collimator
4	ON/OFF button	14	Nasion support
5	Cephalostat arm	15	Head clamps and ear cones
6	Cephalostat head	16	Cephalometric digital sensor
7	X-ray source assembly	17	X-ray remote control
8	Head and chin rest	18	Carpus panel (optional)
9	Chin rest and bite block	19	Computer hosting the imaging and the acquisition software
10	Panoramic digital sensor		

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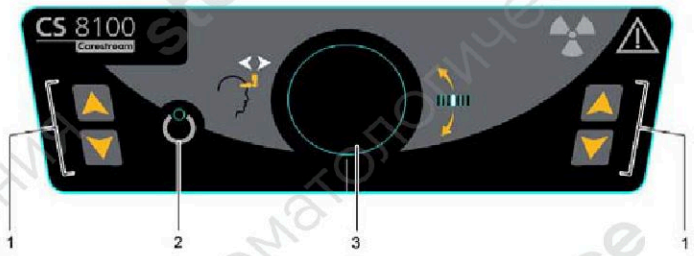
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The following figure shows the locations of the digital sensors:



Positioning Panel

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



1 **Height Adjustment buttons** – Raise and lower the unit to the height of the patient. When the unit is not in use, place the rotative arm parallel to the unit head. To do this:

- Press and hold both buttons until the Ready Indicator LED switches off.
- When you release the buttons, the Ready Indicator LED flashes before the rotative arm moves to the parallel position.

2 **Ready indicator LED** – Green indicates the unit is ready for acquisition.

3 **Frontal head rest adjustment knob** – Turn the knob to adjust the patient's head.

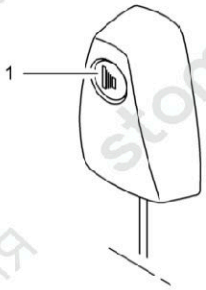
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X-Ray Remote Control

The x-ray remote control enables you to launch a radiological image using the exposure button outside the x-ray room. You must press and hold the exposure button until the end of acquisition.

Note: Premature release of the exposure button interrupts the acquisition.



1 **Exposure button**: Launches the image acquisition.

Positioning Accessories

In addition to the basic components, the following accessories are delivered with the CS 8100SC:

- Panoramic chin rest
- Sinus chin rest
- TMJ nose rest
- Standard bite block
- Bite block for endentulous patients
- Single use sheaths for bite block
- Single use sheaths for ear cones
- Carpus panel (optional)
- Frankfort positioning indicator

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Acquiring Lateral Images

To acquire a lateral image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for a lateral exam. The exam option becomes active.

4 Start the imaging software and set the acquisition parameters in the **Acquisition** window:

- Click the **Program** button to access the **Program** pane. Click on the section of the jaw to select the anatomical zone.
- Click the **Patient** button to access the **Patient** pane. Select the patient type, size, and dental arch morphology.
- Click the **Parameter** button to access the **Parameter** pane. Set the following parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV – 10 mA

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button, and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize Anatomy setting**.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 Pull out at the top part of a head clamp bar to extend both bars.

4 Have the patient:

- Move forward.
- Stand up straight.
- Place both ears between the ear clamps.

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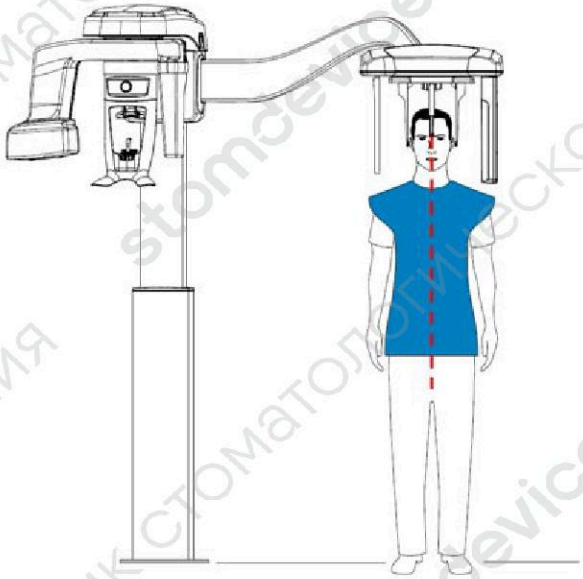
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5 On the positioning panel, press and hold  until the ear cones are the same height as the auditory canals.

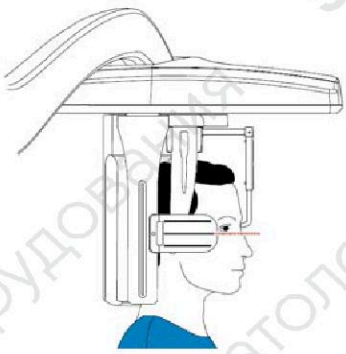
6 Gently push in at the top part of a head clamp bar to retract both head clamps. Fit the ear cones into the auditory canals.



7 Lower the nasion support to a vertical position.



8 Use the Frankfort positioning indicator as a visual aid to adjust the up or down inclination of the patient's head for a Frankfort plane horizontal alignment.



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Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 you see the on-screen **Release Hand Switch** message. The Ready Indicator turns yellow, and a warning is sounded, indicating x-ray transmission.

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

3 Check the image quality. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Frontal AP or PA Images

To acquire a frontal AP or PA image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for a frontal AP or PA exam. The exam option becomes active.

4 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane.
  - For a frontal AP exam, make sure  is active and select the acquisition format.
  - For a frontal PA exam, click  and select the acquisition format.

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- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

  See the user guide for your unit for information about the settings for each pane.

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 Pull out at the top part of a head clamp bar to extend both bars.

4 Have the patient:

- Move forward.
- Stand up straight in the following positions:
  - For a frontal AP, facing the generator.
  - For a frontal PA, facing the cephalometric sensor.
- Place both ears between the ear clamps.

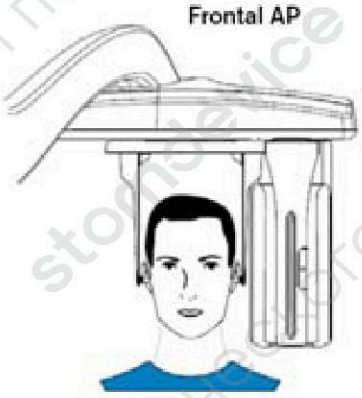
5 On the positioning panel, press and hold  until the ear cones are the same height as the auditory canals.

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6 Gently push in at the top part of a head clamp bar to retract both head clamps and to fit the ear cones into the auditory canals.

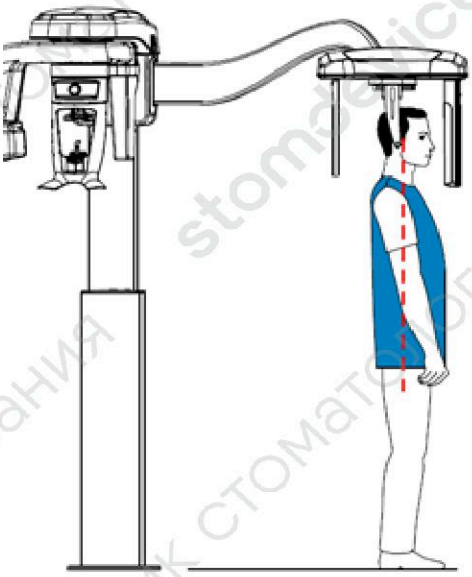
Frontal AP



Frontal PA



Frontal PA



Frontal AP

Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

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To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Oblique Images

To acquire an oblique image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for an oblique exam. The exam option becomes active.

4 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

See the user guide for your unit for information about the settings for each pane.

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

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Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

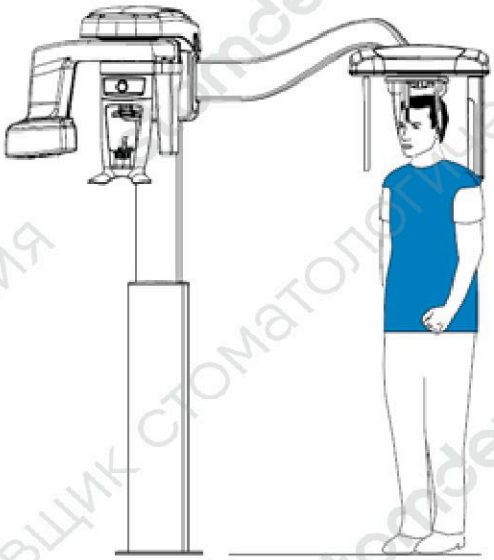
3 Pull out at the top part of a head clamp bar to extend both bars.

4 Have the patient:

- Move forward.
- Stand up straight.
- Place both ears between the ear clamps.

5 On the positioning panel, press and hold  until the ear cones are the same height as the auditory canals.

6 Gently push in at the top part of a head clamp bar to retract both head clamps and to fit the ear cones into the auditory canals.



Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

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To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the quality of the image. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Submento-Vertex Images

To acquire a submento-vertex image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for a frontal AP exam. The exam option becomes active.

4 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Click  for the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

See the user guide for your unit for information about the settings for each pane.

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

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Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

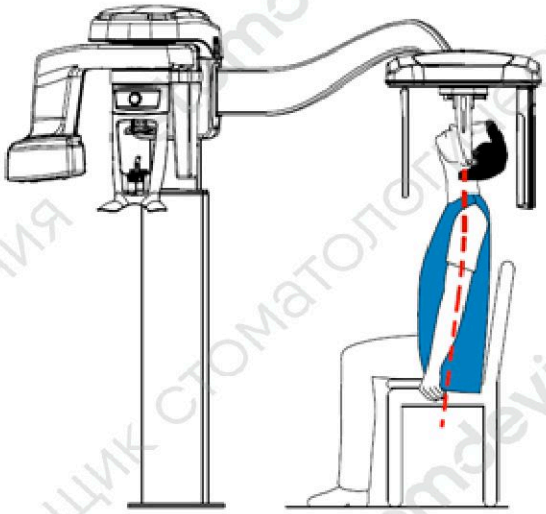
3 Pull out at the top part of a head clamp bar to extend both bars.

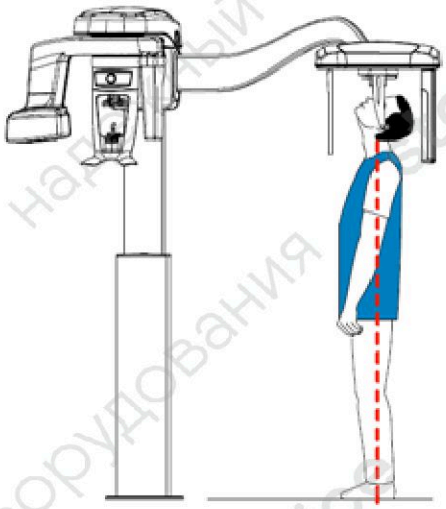
4 Have the patient:

- Move forward.
- Sit or stand up straight.
- Place the ears between the ear clamps.

5 On the positioning panel, press and hold  until the ear cones are the same height as the auditory canals.

6 Gently push in at the top part of a head clamp bar to retract both head clamps and to fit the ear cones into the auditory canals.





Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

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To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Carpus Images

To acquire a carpus image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

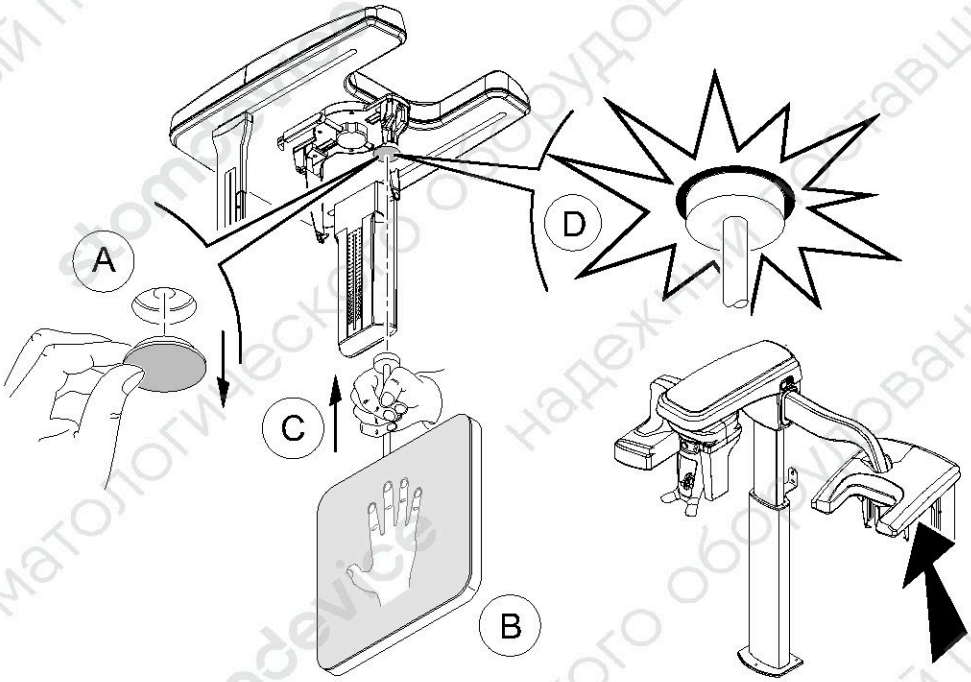
2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for a frontal AP exam.

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4 Remove the cap (A) and push the carpus panel (B and C) into the magnetic carpus panel slot (D).



5 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Click  to select the acquisition format.
- Select an 18 x 18 FoV.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

See the user guide for your unit for information about the settings for each pane.

6 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

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Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

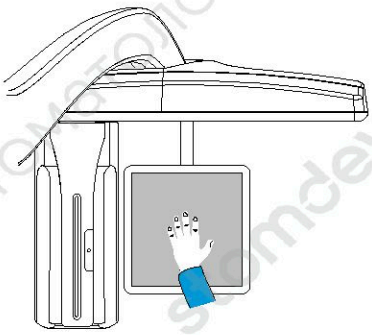
2 Ask the patient to wear a lead apron with a thyroid collar. Be sure the apron is flat across the patient's shoulders.

3 Ask the patient to:

- Stand as far as possible from the unit.
- Open the hand fully and place it flat on the middle of the sensor.

WARNING: To avoid exposure to other parts of the body, make sure the patient stands as far away from the x-ray emission range as possible.

Important: Make sure that the hand, wrist, and forearm are in a vertical position.



Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, release the patient.

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Care and Maintenance

Carry out the following daily maintenance procedures:

- Bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Edentulous bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Temple supports and chin rest–Clean with medical-grade 76% alcohol disinfectant before the next patient is x-rayed.
- Outer covers of the unit–Wipe the unit with a soft, dry cloth at the end of each day's operation.

  WARNING: Do not use detergents or solvents to clean the outer covers of the unit.

An authorized service technician should perform a general inspection of the unit annually.

See the *CS 8100 Family Safety, Regulatory and Technical Specifications User Guide* (SM785) for more information.

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Using the CS 9000 and CS 9000 3D Units

This lesson includes the following topics:

- Components of the CS 9000 3D Unit
- Preparing the Unit
- Preparing the Patient
- Acquiring Images
- Care and Maintenance

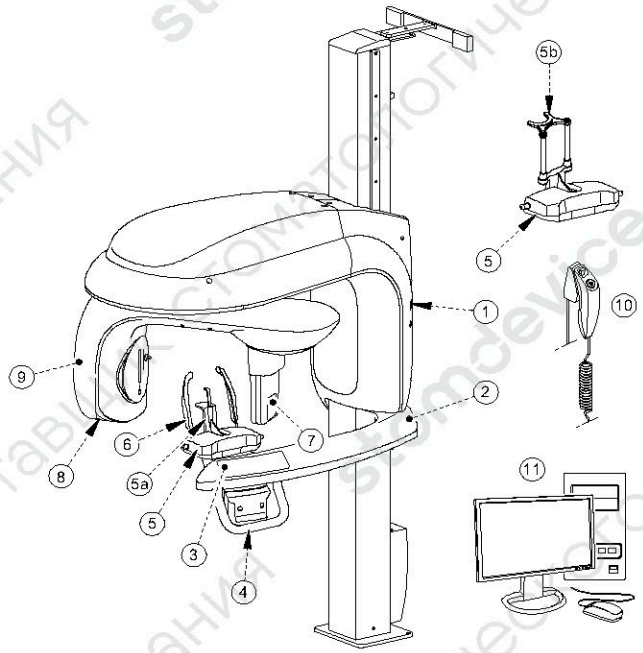
The CS 9000 and CS 9000 3D extraoral imaging unit is used for these radiological examinations:

- Panoramic
- Maxillary sinus
- Temporomandibular joints (TMJ)
- 3D images

See the *CS 9000 and CS 9000 3D Extraoral Imaging System User Guide* (SM710) for more information.

Components of the CS 9000 3D Unit

The following figure illustrates the components of the CS 9000 3D:



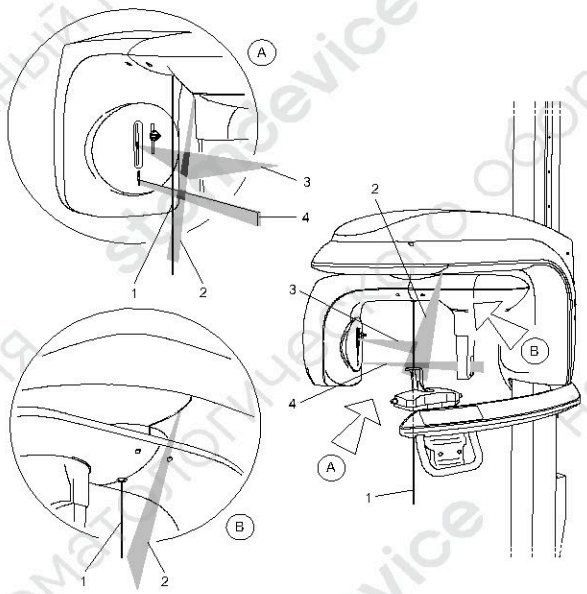
1 ON/OFF button	**5a Panoramic chin rest**	**8 Generator**
2 Unit fixed arm	**5b 3D chin rest and bite block**	**9 Unit rotative arm**
3 Control panel	**6 Temple supports**	**10 X-ray remote control**
4 Hand grips	**7 Sensor**	**11 PC**

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Laser Beams

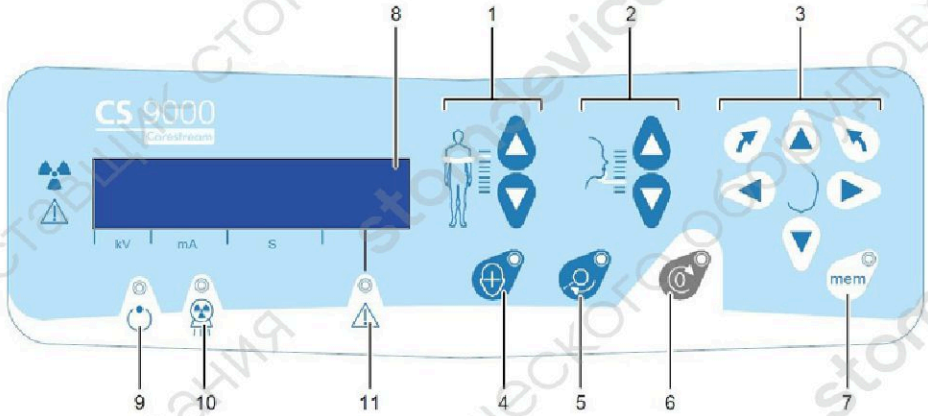
The following figure shows the location of the lasers in the CS 9000 and CS 9000 3D:



1 3D central positioning laser beam
2 Mid-sagittal plane positioning laser beam
3 Horizontal positioning laser beam
4 3D field of view (FoV) positioning laser beam

Control Panel

The control panel is an alphanumeric, digital soft touch console. It displays operating parameters and error messages.



1 Height Adjustment buttons
2 3D Head Adjustment buttons
3 3D Adjustment buttons
4 Laser Beam button
5 3D Position Verification button
6 Reset button
7 3D Memorization button
8 Display screen
9 Ready indicator LED
10 X-ray emission LED
11 System status LED

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The control panel components have the following functions:

1 **Height Adjustment buttons**: Adjusts the height of the unit to the height of the patient.

2 **3D Head Adjustment buttons**: Adjusts the patient's head to the x-ray beams.

3 **3D Adjustment buttons**: Adjusts the unit arm movements to position the patient correctly for 3D acquisition.

4 **Laser Beam button**: Activates the beams to position the patient correctly.

5 **3D Position Verification button**: Positions the unit arm at the selected or memorized 3D position.

6 **Reset button**: Resets the unit arm to the initial position to enable the patient to enter and exit the unit.

7 **3D Memorization button**: Memorizes the 3D current positioning parameter settings that override the default parameters.

8 **Display screen**: Displays the current acquisition parameters and the error messages.

9 **Ready indicator LED**: Green indicates the unit is ready for acquisition.

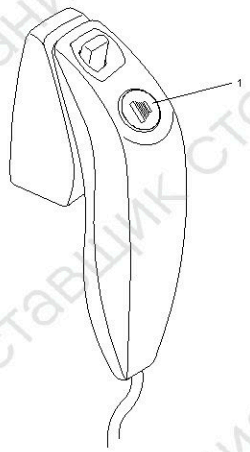
10 **X-ray emission LED**: Yellow indicates x-rays are being emitted.

11 **System status LED**: Red indicates error alerts.

X-Ray Remote Control

The x-ray remote control enables you to launch a radiological image acquisition using the exposure button outside the x-ray room. You must press and hold the exposure button until the end of acquisition.

Note: Premature release of the exposure button interrupts the acquisition.



1 **Exposure button**: Launches the image acquisition.

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Positioning Accessories

In addition to the basic components, the following accessories are delivered with the CS 9000 and CS 9000 3D:

- Panoramic chin rest
- TMJ x2 chin rest
- Sinus chin rest
- TMJ x4 nose rest
- Panoramic standard bite block
- Bite block for endentulous patients
- Single use sheaths for bite block (500 per box)
- 3D bite block and support
- 3D chin rest
- Single use sheaths for 3D bite block (100 per box)

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Start the imaging software and access the **Acquisition** window:

- To access the **Panoramic Acquisition** window, click .
- To access the **3D Acquisition** window, click .

4 Set the acquisition parameters:

- In the **Panoramic Acquisition** window, click the **Program** button to access the **Program** pane. Click on the section of the jaw to select the anatomical zone, such as panoramic, TMJ x2, or sinus.
- Click the **Patient** button to access the **Patient** pane. Select the patient type, dental arch morphology, and incisor orientation.

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button to access the **Parameter** pane and select the appropriate parameters. To save the new settings as the default, click  and select **Maintenance > Preference > Reinitialization of user preferences**.

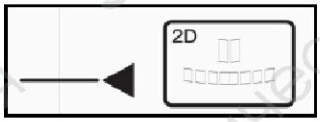
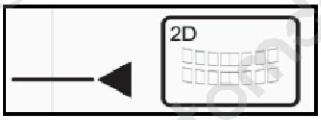
6 Position the appropriate chin rest on the chin rest support and cover the bite block with a hygienic barrier.

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Patient Positioning Indicators

The following table shows the positioning indicators, which are located on the base of the chin rest:

Positioning Indicators	Description
	3D upper jaw positioning
	Sinus positioning
	3D lower jaw positioning
	Panoramic positioning TMJ x2 and TMJ x4 positioning

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 Press and hold the height adjustment buttons to raise the chin rest to the maximum height. Ask the patient to enter the unit.

Note: If the patient is tall, ask her to sit on a stool and then adjust the chin rest.

4 Ask the patient to:

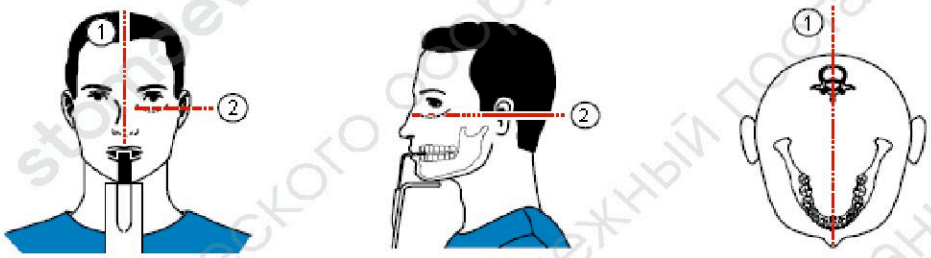
- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

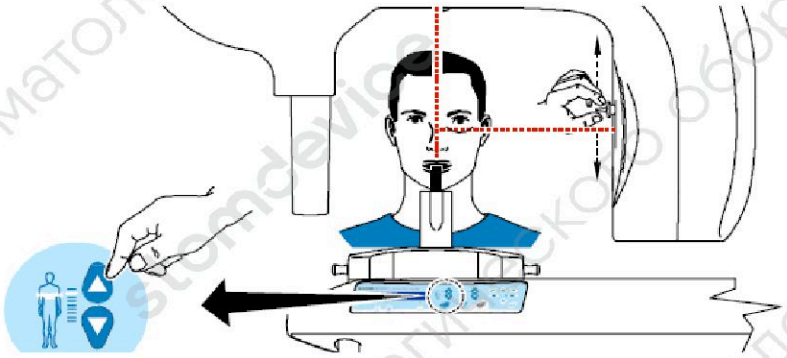
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5 On the control panel, click  to turn on the two positioning laser beams:

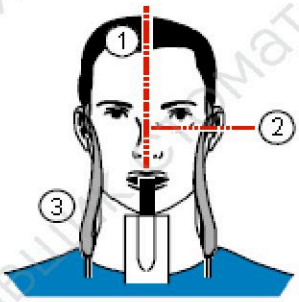
- Mid-sagittal plane positioning laser beam (1) for a vertical alignment
- Horizontal plane positioning laser beam (2) for a Frankfort plane alignment



6 Correctly align the Frankfort and mid-sagittal planes using the height adjustment buttons and the Frankfort laser adjusting knob.



7 Immobilize the patient's head with the temple supports (3).



8 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breath through the nose.

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Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission.

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

3 Check the image quality.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Care and Maintenance

Carry out the following daily maintenance procedures:

- Bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Edentulous bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Temple supports and chin rest–Clean with medical-grade 76% alcohol disinfectant before the next patient is x-rayed.
- Outer covers of the unit–Wipe the unit with a soft, dry cloth at the end of each day's operation.

WARNING: Do not use detergents or solvents to clean the outer covers of the unit.

An authorized service technician should perform a general inspection of the unit annually.

See the *CS 9000 and 9000 3D Safety, Regulatory and Technical Specifications* (SM766) for more information.

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Using the CS 9300 Unit

This lesson includes the following topics:

- Components of the CS 9300 Unit
- Preparing the Unit
- Patient Positioning Indicators
- Acquiring Images
- Care and Maintenance

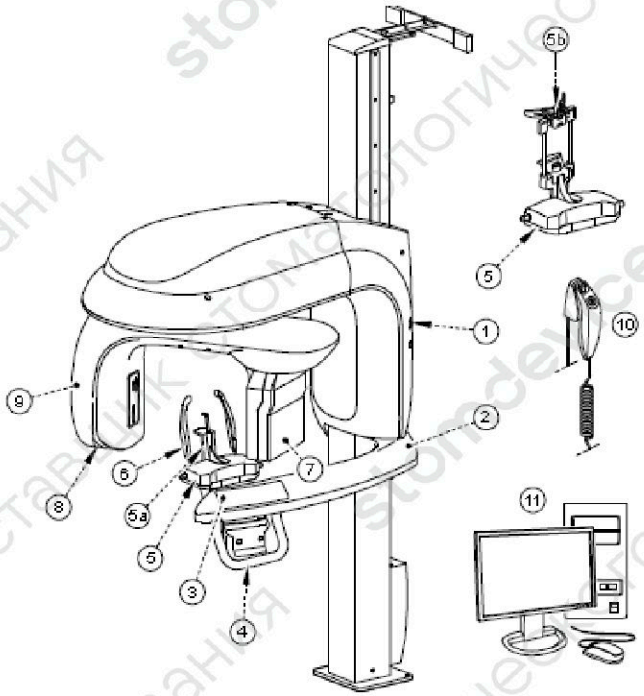
The CS 9300 imaging unit is used for these radiological examinations:

- Panoramic
- Dental volumetric reconstruction with ENT
- Dental volumetric reconstruction without ENT

See the *CS 9300 Family User Guide* (SM748) for more information.

Components of the CS 9300 Unit

The following figure shows the components of the CS 9300:



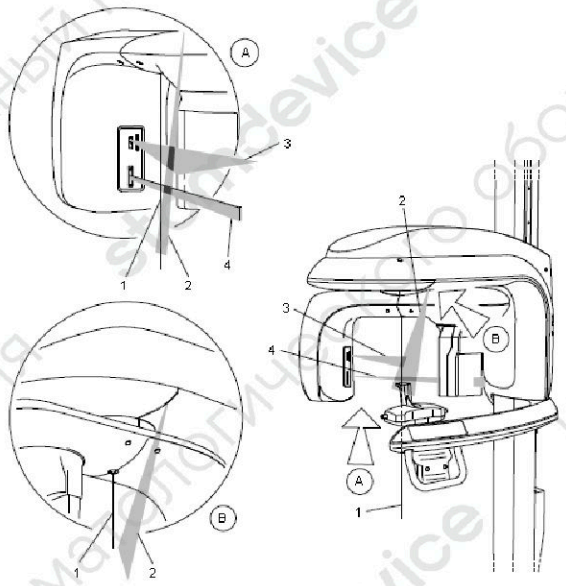
1 ON/OFF button	5a Panoramic chin rest	8 X-ray source assembly
2 Unit fixed arm	5b 3D chin rest and bite block	9 Unit rotative arm
3 Control panel	6 Temple supports	10 X-ray remote control
4 Hand grips	7 Sensor	11 PC

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Laser Beams

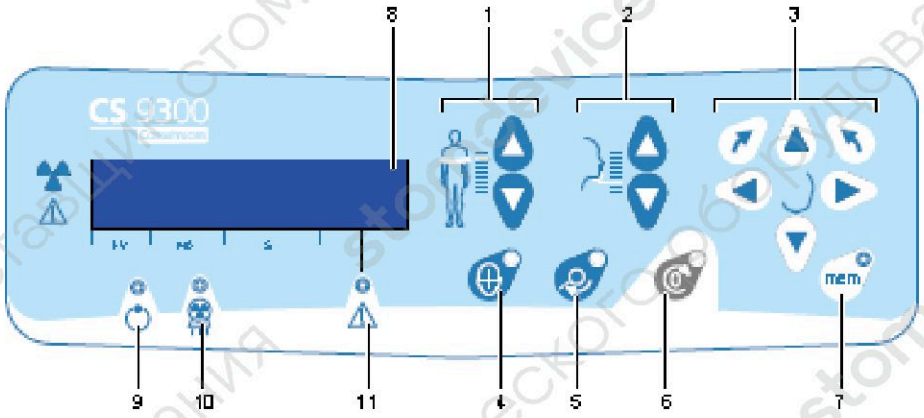
The following figure shows the location of the lasers in the CS 9300 unit:



1 3D central positioning laser beam
2 Mid-sagittal plane positioning laser beam
3 Horizontal positioning laser beam
4 3D field of view (FoV) positioning laser beam

Control Panel

The control panel is an alphanumeric, digital soft touch console. It displays operating parameters and error messages.

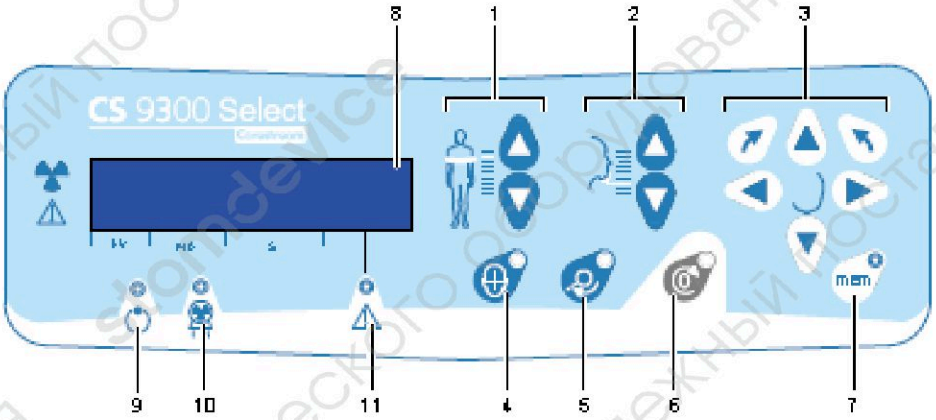


1 Height Adjustment button
2 3D Head Adjustment button
3 3D Adjustment buttons
4 Laser Beam button
5 Target Position button
6 Reset button
7 Not used
8 Display screen
9 Ready indicator LED
10 X-ray emission LED
11 System status LED

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The following figure shows the control panel for the CS 9300 Select unit:



1	**Height Adjustment button**	5	**Target Position button**	9	**Ready indicator LED**
2	**3D Head Adjustment button**	6	**Reset button**	10	**X-ray emission LED**
3	**3D Adjustment buttons**	7	**Not used**	11	**System status LED**
4	**Laser Beam button**	8	**Display screen**		

The control panel components have the following functions:

1 **Height Adjustment buttons**: Adjusts the height of the unit to the height of the patient.

2 **3D Head Adjustment buttons**: Adjusts the patient's head to the x-ray beams.

3 **3D Adjustment buttons**: Adjusts the unit arm movements to correctly position the patient for 3D acquisition.

4 **Laser Beam button**: Activates the beams to correctly position the patient.

5 **Target Position button**: Positions the unit arm at the selected position.

6 **Reset button**: Resets the unit arm to the initial position to enable the patient to enter and exit the unit.

7 Not used.

8 **Display screen**: Displays the current acquisition parameters and the error messages.

9 **Ready indicator LED**: Green indicates the unit is ready for acquisition.

10 **X-ray emission LED**: Yellow indicates x-rays are being emitted.

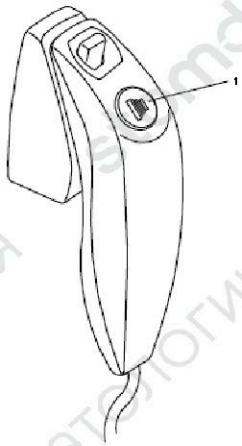
11 **System status LED**: Red indicates error alerts.

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X-Ray Remote Control

The x-ray remote control enables you to launch a radiological image acquisition using the exposure button outside the x-ray room. You must press and hold the exposure button until the end of acquisition.

Note: Premature release of the exposure button interrupts the acquisition.



1 **Exposure button**: Launches image acquisition.

Positioning Accessories

In addition to the basic components, the following panoramic accessories are delivered with the CS 9300:

- Panoramic chin rest
- TMJ x2 chin rest
- Sinus chin rest
- TMJ x4 nose rest
- Panoramic standard bite block
- Bite block for endentulous patients
- Single use sheaths for bite block (500 per box)

The following 3D accessories are delivered with the CS 9300:

- 3D bite block
- 3D child bite block–Available by special order
- 3D bite block support
- 3D head rest
- Single use sheaths for 3D bite block (100 per box)

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Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Start the imaging software and access the **Acquisition** window:

- To access the **Panoramic Acquisition** window, click .
- To access the **3D Acquisition** window, click .

4 Set the acquisition parameters:

- In the **Acquisition** window, click the **Program** button to access the **Program** pane. Click on the section of the jaw to select the anatomical zone, such as panoramic, TMJ x2, or sinus.
- Click the **Patient** button to access the **Patient** pane. Select the patient type, dental arch morphology, and incisor orientation.
- If the default parameter settings are not adapted to your patient type, click the **Parameter** button to access the **Parameter** pane and select the appropriate parameters.
  - Âµm (Voxel): For a 3D image, select the appropriate Âµm parameter. The higher the image resolution, the greater will be the image data size.
  - kV and mA: For a 3D image, select the appropriate kV and mA parameters.

To save the new settings as the default, click  and select **Memorize settings**.

5 Position the appropriate chin rest on the chin rest support and cover the bite block with a hygienic barrier. If needed, use the edentulous bite block.

6 Press and hold  to raise the chin rest to the following positioning indicators:

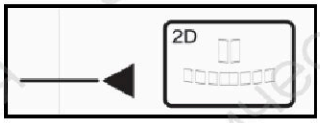
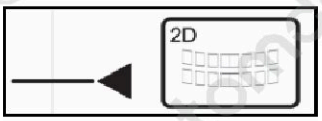
- For a panoramic or TMJ x2 position 
- For a sinus position 

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Patient Positioning Indicators

The following table shows the positioning indicators, which are located on the base of the chin rest:

Positioning Indicators	Description
	3D upper jaw positioning
	Sinus positioning
	3D lower jaw positioning
	Panoramic positioning TMJ x2 and TMJ x4 positioning

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 Press and hold the height adjustment buttons to raise the chin rest to the maximum height. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the chin rest.

4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax the shoulders for full motion of the unit rotative arm.

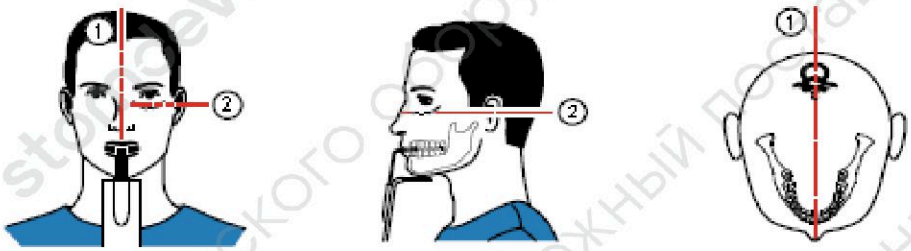
Note: Correct posture reduces the shadow of the spinal column transferred to the image.

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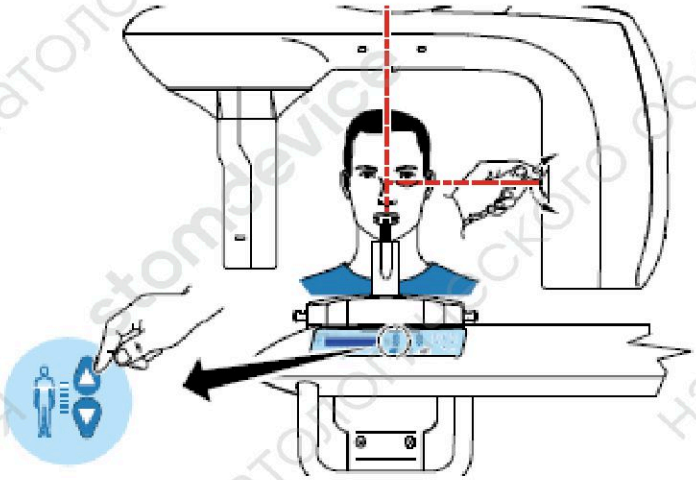
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5 On the control panel, click  to turn on the two positioning laser beams:

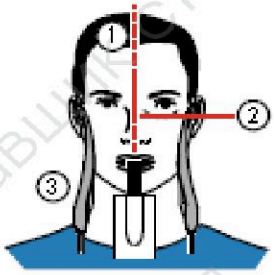
- Mid-sagittal plane positioning laser beam (1) for a vertical alignment
- Horizontal plane positioning laser beam (2) for a Frankfort plane alignment



6 Correctly align the Frankfort and mid-sagittal planes using the height adjustment buttons and the adjusting wheel.



7 Immobilize the patient's head with the temple supports (3).



8 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

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Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

Acquiring Panoramic, TMJ, and Sinus Images

To acquire a panoramic, TMJ, or sinus image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission.

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

3 Check the image quality.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring 3D Images

To acquire 3D images:

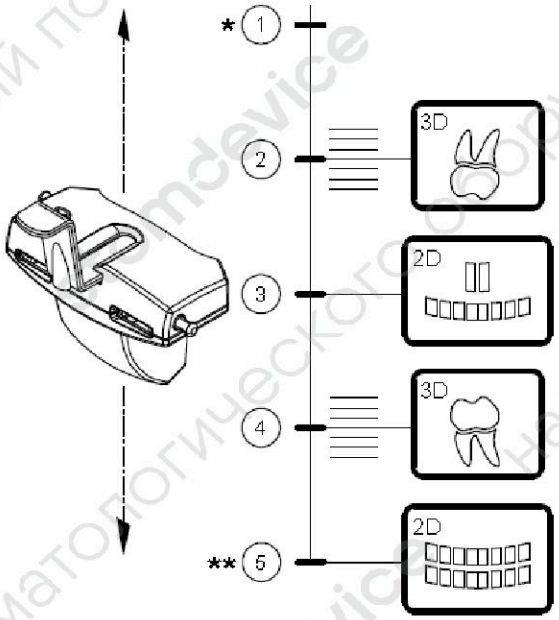
1 To prepare the unit, see steps 1 through 4 in “Preparing the Unit” on page 5.

2 Position the 3D head rest or 3D bite block.

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3 Press and hold to raise the chin rest to the following positioning indicators:



1 Lowest position of the chin rest base for 3D ear and TMJ images.

2 Approximate position for 3D upper jaw.

3 Position for 2D sinus.

4 Approximate position for 3D lower jaw.

5 Highest position of the chin rest base; exact position for 2D panoramic images.

Important: The higher the chin rest base, the lower the area of interest.

4 To prepare the patient, see steps 1 through 4 in "Patient Positioning Indicators" on page 6.

5 Use the 3D bite block or the 3D head rest to position the patient.

For the bite block method:

- Ask the patient to open the mouth.
- Ask the patient to bite gently and naturally into the bite block without joining the incisors.
- Center the upper incisors with the bite block.

For the head rest method: Ask the patient to place the chin into the chin rest and press the forehead into the head rest.

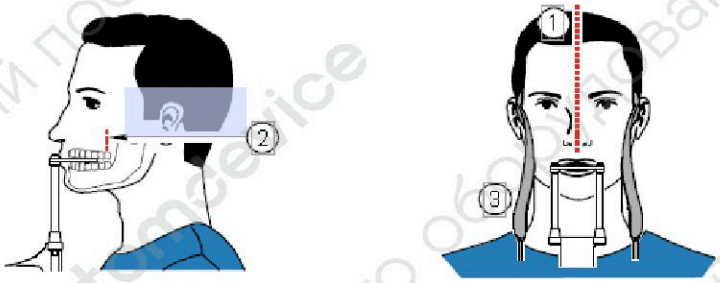
6 On the control panel, click to position the unit rotative arm to the correct 3D position.

7 On the control panel, click to turn on the positioning laser beams. Use the mid-sagittal (1) and the 3D FoV (2) positioning laser beams.

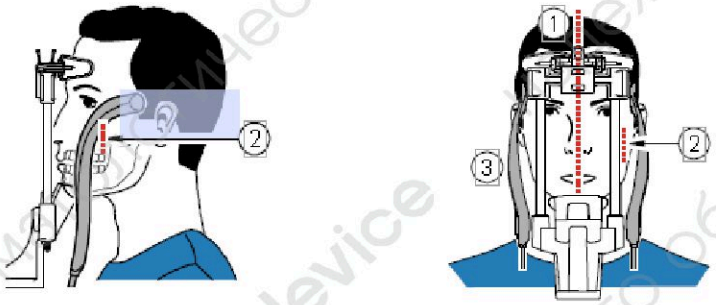
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Bite block positioning:



Head rest positioning:



Note: You can re-activate the laser beams as needed. Press the same button to turn OFF the laser beams, or wait 60 seconds for the beams to turn OFF automatically.

8 Press and hold to align the upper or lower jaw with the 3D FoV (2) laser beam. Tighten the temple supports (3) using the temple support adjusters.

9 Ask the patient to:

- Close the eyes.
- Remain still.
- Breathe through the nose.
- Keep the tongue still.

10 Follow steps 1 through 4 in “Acquiring Images” on page 8.

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Care and Maintenance

Carry out the following daily maintenance procedures:

- Bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Edentulous bite block–Sterilize with cold sterilization, or autoclave up to 134°C for 18 minutes, before the next patient is x-rayed.
- Temple supports and chin rest–Clean with medical-grade 76% alcohol disinfectant before the next patient is x-rayed.
- Outer covers of the unit–Wipe the unit with a soft, dry cloth at the end of each day's operation.

  WARNING: Do not use detergents or solvents to clean the outer covers of the unit.

An authorized service technician should perform a general inspection of the unit annually.

See the *CS 9300 Family Safety, Regulatory and Technical Specifications* (SM747) for more information.

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Acquiring CS 9000 and CS 9300 Cephalometric Images

This lesson includes the following topics:

- Components of a Unit with a Cephalostat
- Acquiring Lateral Images
- Acquiring Frontal AP or PA Images
- Acquiring Oblique Images
- Acquiring Submento-Vertex Images
- Acquiring Carpus Images

You can acquire images for these radiological examinations:

- Lateral
- Frontal (AP or PA)
- Oblique
- Submento-vertex
- Carpus

You can acquire cephalometric images using these systems:

- CS 9000C
- CS 9000C 3D
- CS 9300C
- CS 9300C Select

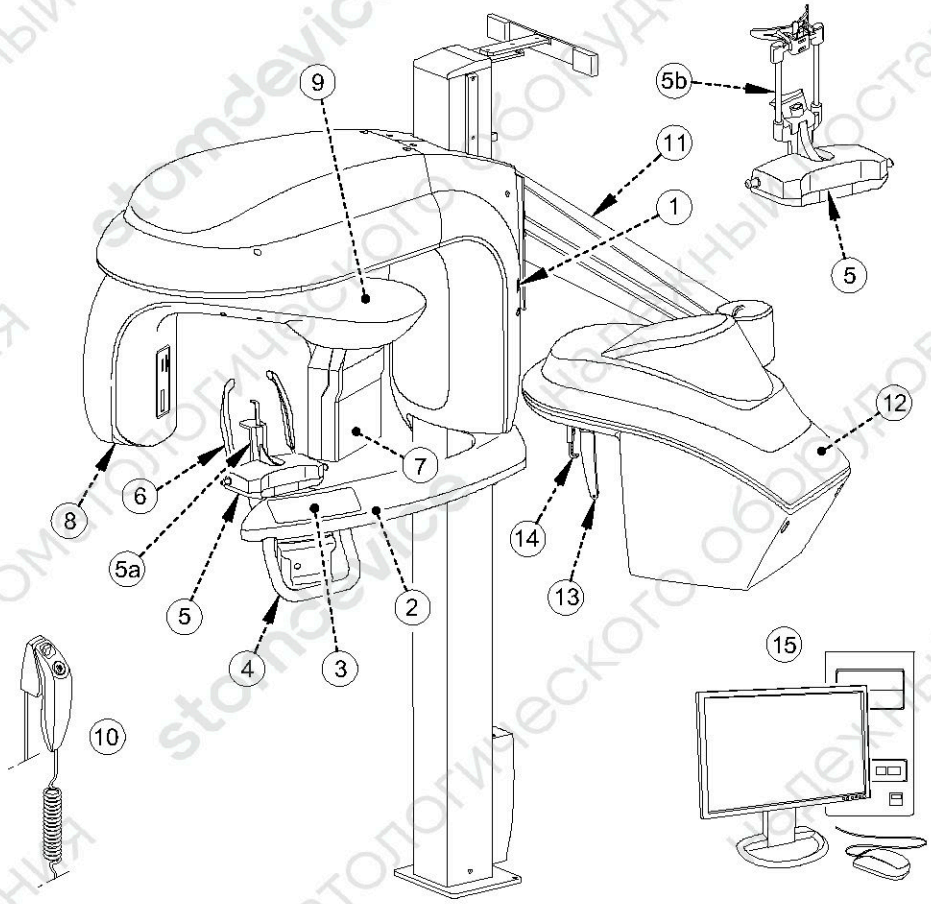
See the *CS 9000C and CS 9000C 3D User Guide* (SM768) and the *CS 9300C Family User Guide* (SM750) for more information.

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Components of a Unit with a Cephalostat

The following figure shows the components of the CS 9300C:



1 ON/OFF button

2 Unit fixed arm

3 Control panel

4 Hand grips

5 Chin rest base

5a Panoramic chin rest

5b 3D chin rest and bite block

6 Temple supports

7 Sensor

8 X-ray source assembly

9 Unit rotative arm

10 X-ray remote control

11 Cephalostat arm

12 Cephalostat head

13 Head clamps and ear cones

14 Nasion support

15 PC

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Acquiring Lateral Images

To acquire a lateral image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Position the head clamps manually for a lateral exam.

4 On the x-ray source assembly, set the collimator selector to LA.

5 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Make sure  is active and select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

  See the user guide for your unit for information about the settings for each pane.

6 If the default parameter settings are not adapted to your patient type, click the **Parameter** button, and in the **Parameter** pane, select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

7 Clean the ear cones with alcohol wipes and cover with plastic sheaths, if available.

8 Ensure that the unit rotative arm is set to the patient entry position.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the control panel, press and hold the height adjustment buttons to raise the cephalostat head.

4 Open the head clamps and ask the patient to stand up straight in front of the unit.

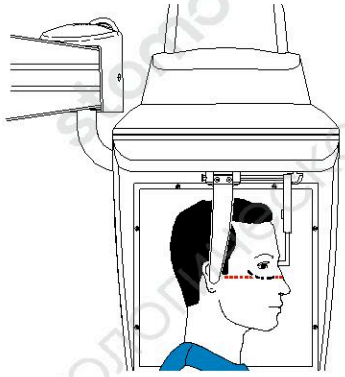
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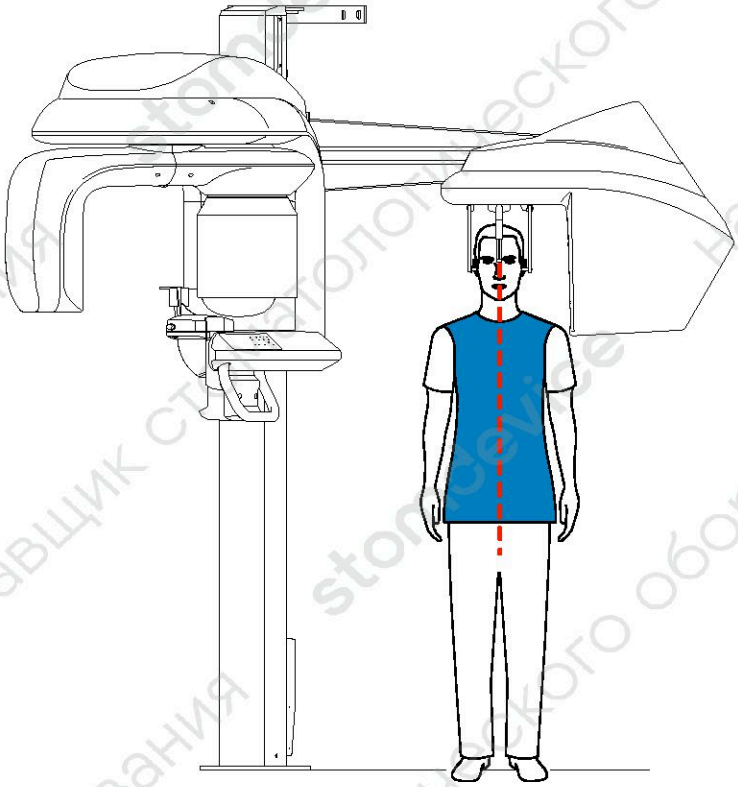
5 Press and hold the height adjustment buttons to level the ear cones to the patient's auditory canals.

6 Insert one cone gently into the patient's auditory canal. Turn the button slowly to close the arms. Insert the second cone gently into the patient's auditory canal.

7 On the control panel, click to turn ON the Frankfort laser positioning beam and align the patient.



8 Lower the nasion support to a vertical position.



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Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, remove the ear cones and the nasion support and release the patient from the unit.

Acquiring Frontal AP or PA Images

To acquire a frontal AP or PA image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 On the x-ray source assembly, set the collimator selector to AP/PA.

4 Position the head clamps manually for a frontal AP or PA exam.

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5 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane.
  - For a frontal AP exam, make sure  is active and select the acquisition format.
  - For a frontal PA exam, click  and select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

  See the user guide for your unit for information about the settings for each pane.

6 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

7 Clean the ear cones with alcohol wipes and cover with plastic sheaths, if available.

8 Ensure that the unit rotative arm is set to the patient entry position.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the control panel, press and hold the height adjustment buttons to raise the cephalostat head.

4 Open the head clamps and ask the patient to stand up straight in front of the unit in the following positions:

- For a frontal AP, facing the generator
- For a frontal PA, facing the cephalometric sensor

5 Press and hold the height adjustment buttons to level the ear cones to the patient's auditory canals.

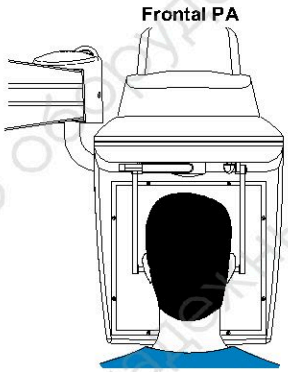
6 Insert one cone gently into the patient's auditory canal. Turn the button slowly to close the arms. Insert the second cone gently into the patient's auditory canal.

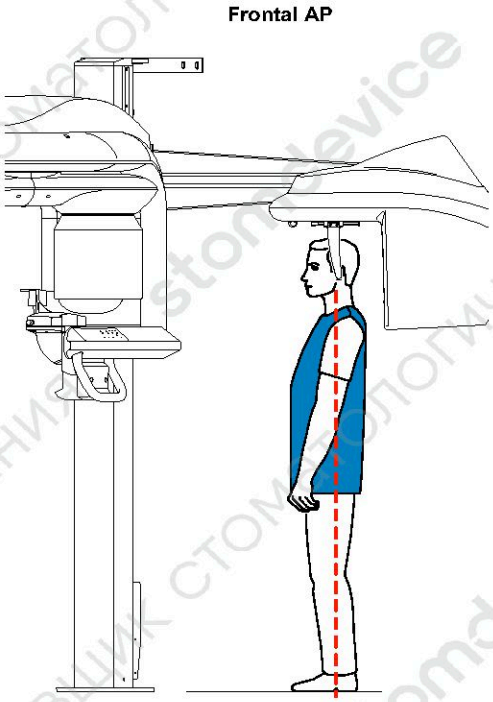
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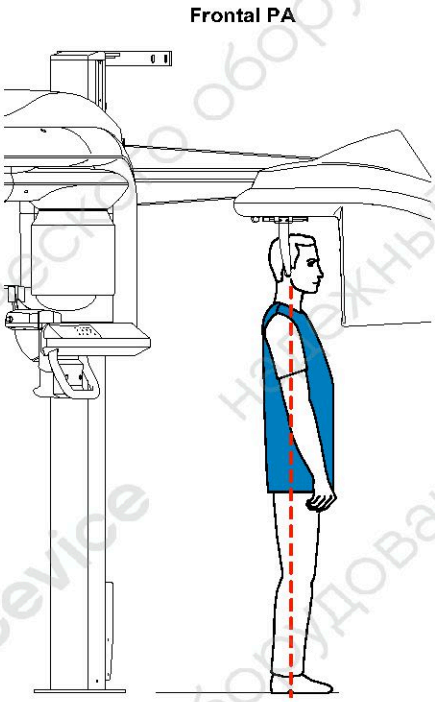
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7 On the control panel, click to turn ON the Frankfort laser positioning beam and align the patient with the beam for the frontal AP only.









Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

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To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

3 When the acquisition ends, the **Cephalometric Acquisition** window disappears, and the image is transferred to the **Imaging** window.

4 Check the image quality. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Oblique Images

To acquire an oblique image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 On the x-ray source assembly, set the collimator selector to AP or PA.

4 Position the head clamps manually for an oblique exam.

5 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Make sure  is active and click  to select the angle. Select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.
- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV – 10 mA

See the user guide for your unit for information about the settings for each pane.

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6 If the default parameter settings are not adapted to your patient type, click the **Parameter** button, and in the **Parameter** pane, select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

7 Clean the ear cones with alcohol wipes and cover with plastic sheaths, if available.

8 Ensure that the unit rotative arm is set to the patient entry position.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

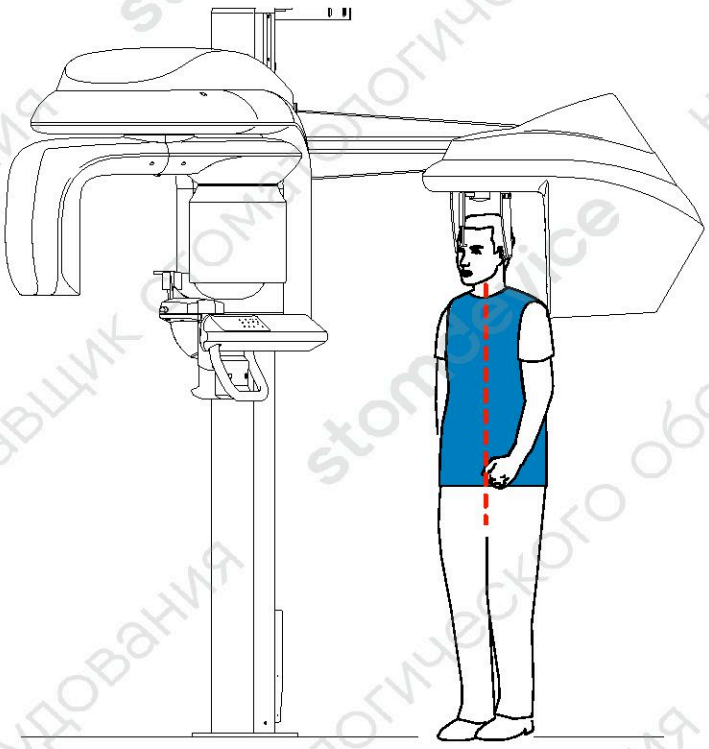
3 On the control panel, press and hold the height adjustment buttons to raise the cephalostat head.

4 Open the head clamps and ask the patient to stand up straight in front of the unit.

5 Press and hold the height adjustment buttons to level the ear cones to the patient's auditory canals.

6 Insert one cone gently into the patient's auditory canal. Turn the button gently to close the arms. Insert the second cone gently into the patient's auditory canal.

7 Lower the nasion support to a vertical position.



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Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, remove the ear cones and the nasion support and release the patient from the unit.

Acquiring Submento-Vertex Images

To acquire a submento-vertex image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 On the x-ray source assembly, set the collimator selector to AP/PA.

4 Position the head clamps manually for a frontal AP exam.

5 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Click and select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.

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- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

  See the user guide for your unit for information about the settings for each pane.

6 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

7 Clean the ear cones with alcohol wipes and cover with plastic sheaths, if available.

8 Ensure that the unit rotative arm is set to the patient entry position.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

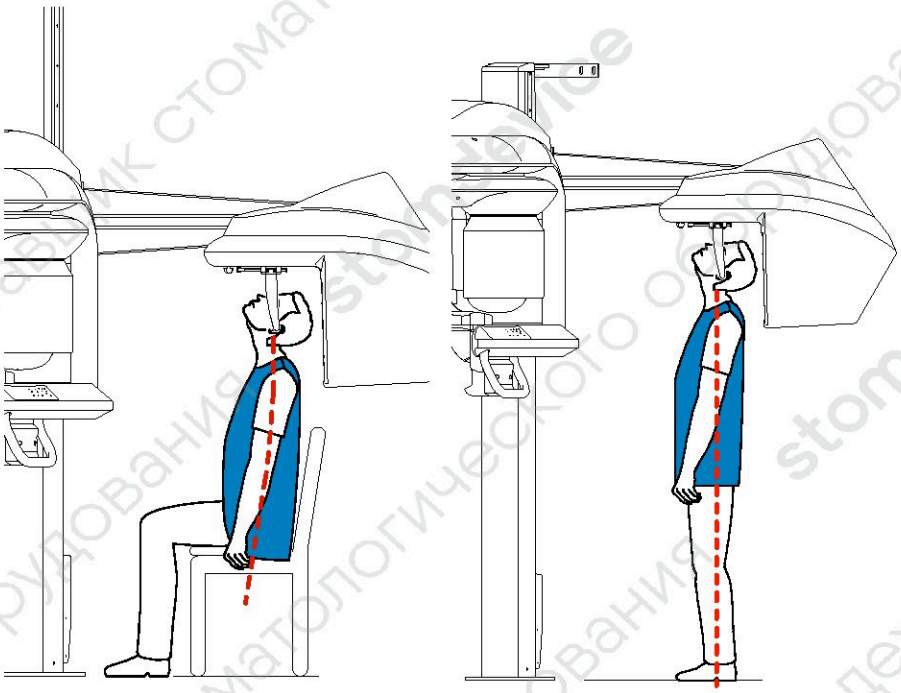
2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the control panel, press and hold the height adjustment buttons to raise the cephalostat head.

4 Open the head clamps and ask the patient to sit or stand up straight in front of the unit.

5 Press and hold the height adjustment buttons to level the ear cones to the patient's auditory canals.

6 Insert one cone gently into the patient's auditory canal. Turn the button slowly to close the arms. Insert the second cone gently into the patient's auditory canal.



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Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, remove the ear cones and release the patient from the unit.

Acquiring Carpus Images

To acquire a carpus image:

- Prepare the unit and the patient.
- Launch the x-ray and acquire the image.

Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 On the x-ray source assembly, set the collimator selector to AP/PA.

4 Start the imaging software and set the parameters in the **Cephalometric Acquisition** interface:

- Click the **Program** button to access the **Program** pane. Click and select the acquisition format.
- Click the **Patient** button to access the **Patient** pane. Select the patient type and size.

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- Click the **Parameter** button to access the **Parameter** pane. Set the following exposure parameters:
  - 70 kV – 6.3 mA
  - 80 kV – 10 mA
  - 85 kV –10 mA

  See the user guide for your unit for information about the settings for each pane.

5 If the default parameter settings are not adapted to your patient type, click the **Parameter** button and in the **Parameter** pane select the appropriate parameters. To save the new settings as the default, click  and select **Memorize settings**.

Preparing the Patient

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

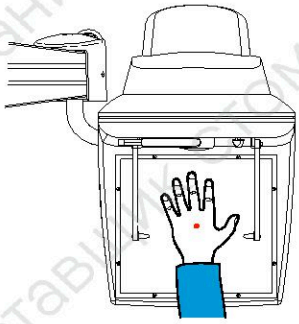
2 Ask the patient to wear a lead apron with a thyroid collar. Be sure the apron is flat across the patient's shoulders.

3 Ask the patient to:

- Stand as far as possible from the unit.
- Open the hand fully and place it flat on the middle of the sensor.

WARNING: To avoid exposure to other parts of the body, make sure the patient stands as far away from the x-ray emission range as possible.

Important: Make sure that the hand, wrist, and forearm are in a vertical position.



Acquiring the Image

Before acquiring each image, make sure that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Cephalometric Acquisition** interface.
- Accessed the **Imaging** window.

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To acquire an image:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The image is displayed in the **Preview** window of the **Cephalometric Acquisition** interface.

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

3 Check the image quality. If satisfactory, release the patient.

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Using the CS 9600 Unit

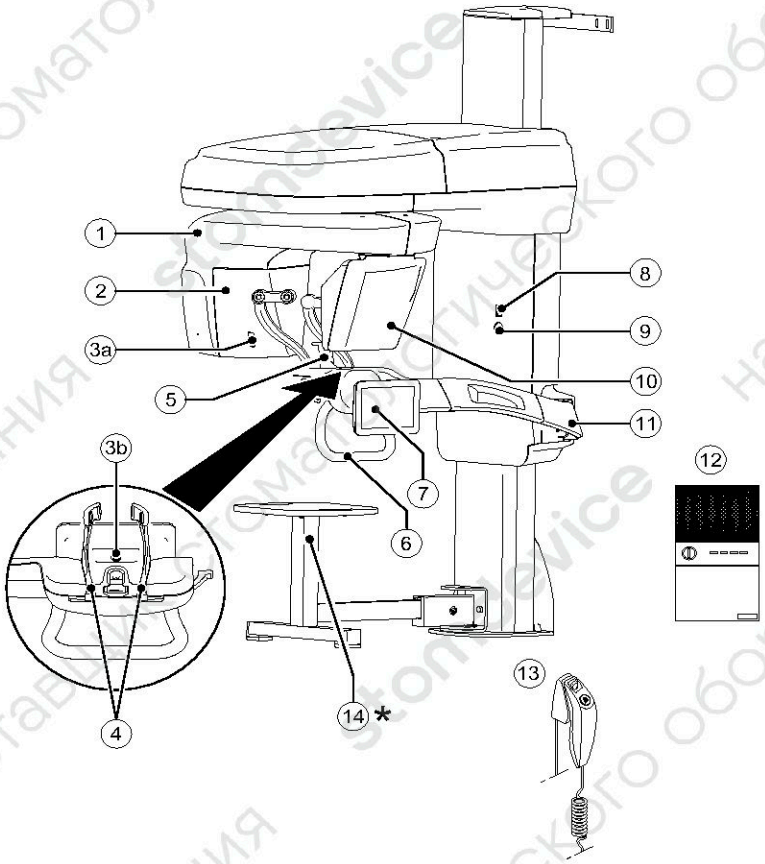
This lesson includes the following topics:

- Components of the CS 9600 Unit
- Preparing the Unit
- Acquiring 2D Images
- Acquiring 3D Images
- Care and Maintenance

See the *CS 9600 User Guide* (SMA16_Ed 01) for more information.

Components of the CS 9600 Unit

The following figure shows the components of the CS 9600:



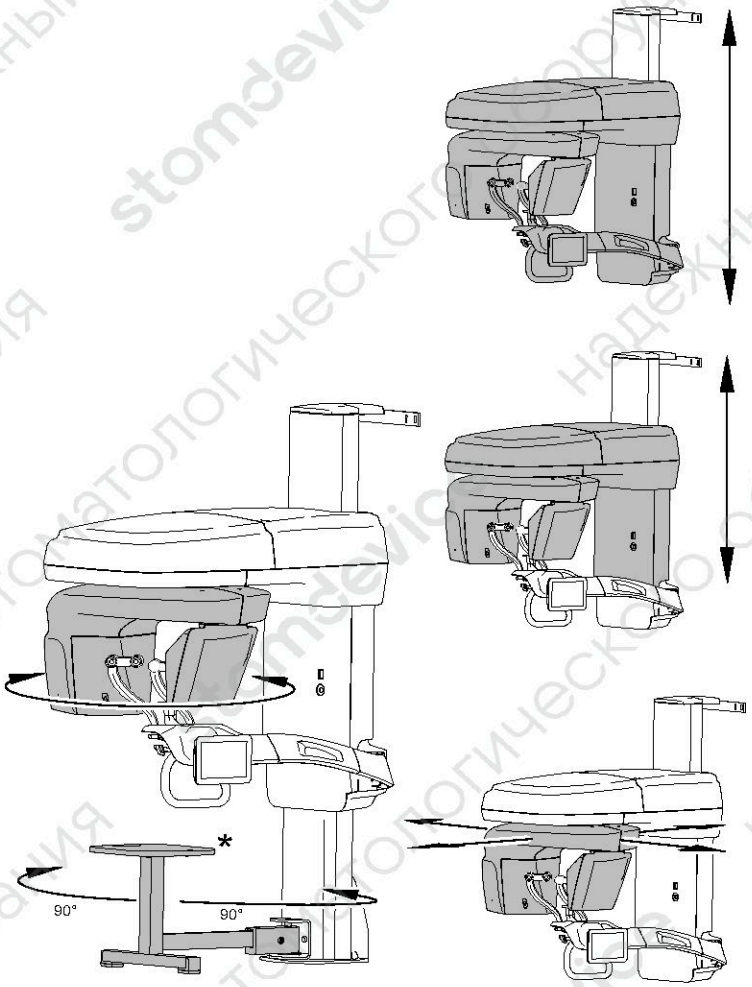
1 Unit rotative arm	6 Hand grips	11 Unit fixed arm
2 X-ray source assembly	7 Touchscreen control panel	12 CS 9600 workstation
3a&b Cameras	8 ON/OFF button	13 X-ray remote control
4 Temple supports	9 Emergency stop knob	14 Stool (*optional)
5 Chin rest base	10 Panoramic/3D digital sensor	

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Mobile Components

The following figure shows the up and down movement of the CS 9600 mobile components and the 360° rotation of the arm:

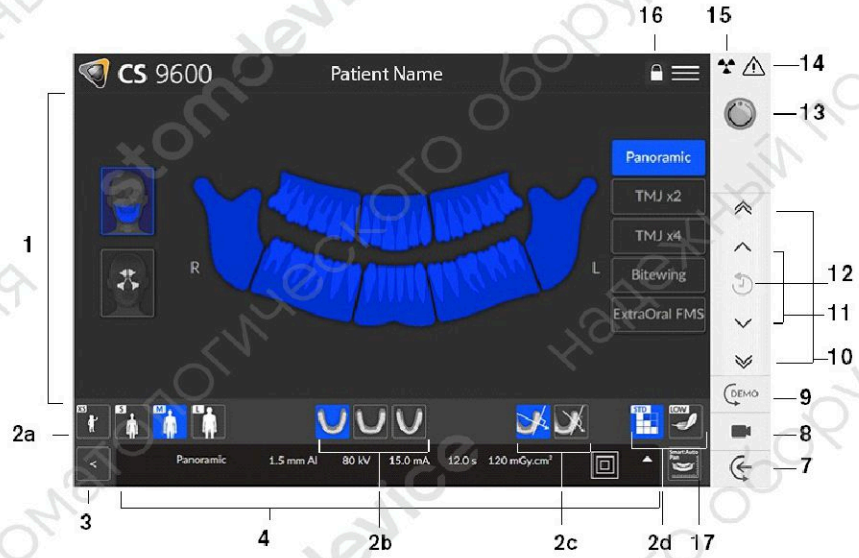


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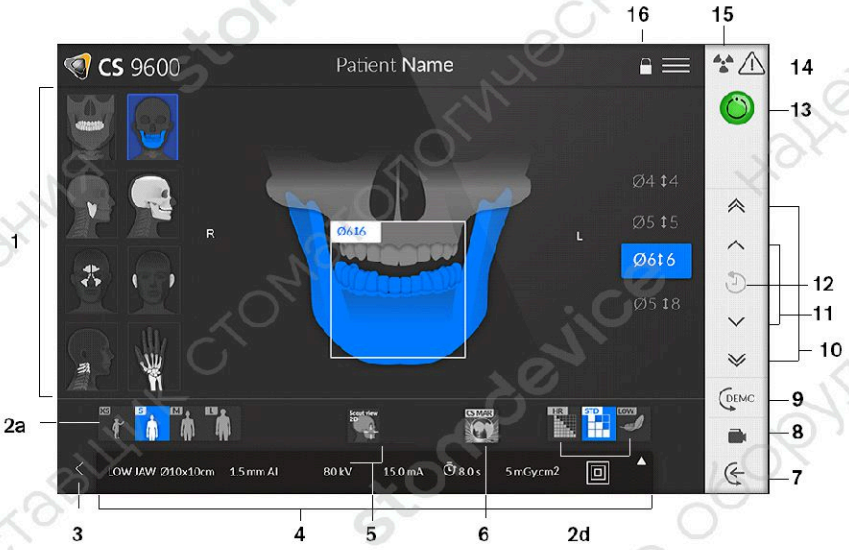
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Control Panel

The control panel is an alphanumeric, digital soft-touch console. It enables you to interact directly with the unit to carry out panoramic and 3D functions. The following figure shows the CS 9600 2D touchscreen control panel:



The following figure shows the CS 9600 3D touchscreen control panel:



Important: **R** corresponds to the right side of the patient, who is facing the operator.

1	**Program pane and Preview screen:** Displays the choice of programs.
2	**Parameters:** Displays the current acquisition parameter settings.
2a	**Patient type:** Child, adult (small, medium, large).
2b	**Dental arch morphology:** Normal, square, sharp.
2c	**Type of trajectory:** Standard or orthogonal options.

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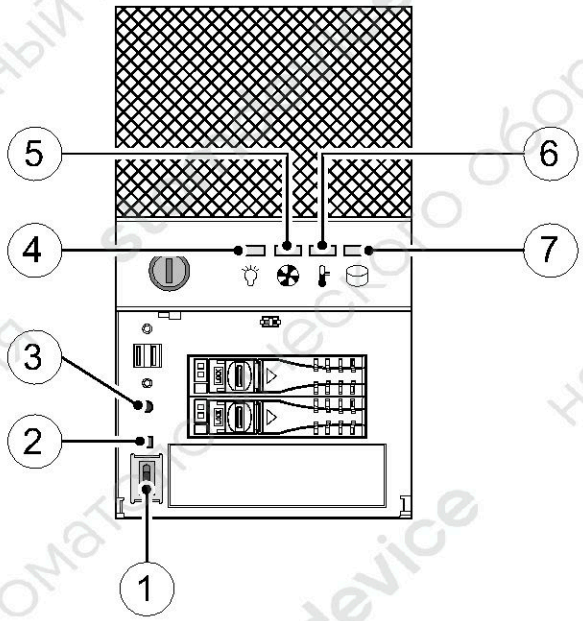
2d	**Imaging mode:** Select the mode before the exam (standard or low dose for 2D; standard, low, or high resolution dose for 3D). **Important:** See the *CS 9600 Safety, Regulatory, and Technical Specifications User Guide* (SMA17) for information on radiation protection.
3	**Exit:** Exits the acquisition interface.
4	**Exposure parameter panel:** Enables you to select and save exposure parameters.
5	**Scout view 2D:** Displays the sagittal slice view of an acquired image. **Smart auto 3D (optional):** Displays the sagittal and axial slice view of an acquired image. Recommends the patient parameters. Saves the acquisition options that you select (displayed in orange). Indicates changed parameters in orange underlining; displays new parameters in blue.
6	**CS Metal Artifact Reduction (CS MAR) filter (optional):** Avoids image distortions caused by metal from objects such as a prosthesis, screws, or dental fillings. **Note:** It is recommended that you compare MAR images with the original, unprocessed images.
7	**Patient entry:** Positions the unit in entry mode.
8	**Live positioning camera:** Enables live positioning assistance by the camera.
9	**Demo:** Enables you to demonstrate the acquisition procedures to a patient without an x-ray.
10	**Fast Height Adjustment button:** Fast adjustment of the height of the unit to the height of a patient.
11	**Slow Height Adjustment button:** Slow adjustment of the height of the unit to the height of a patient.
12	**Patient data history:** The icon displays in orange if the unit detects that a patient has been examined previously.
13	**Ready indicator:** Black–Unit is not ready to start the acquisition. Orange–Unit is preparing for acquisition. Green–Unit is ready to start the acquisition.
14	**Warning:** Indicates that you must consult the accompanying document.
15	**Ionizing radiation:** Warns you about radiation dangers: blue–x-ray is enabled; grey–x-ray is not enabled.
16	**Screen lock:** Locks the screen. Double-click to unlock it.
17	**SmartAuto Pan (optional):** 2D function that scans the patient and recommends the parameters. Saves the acquisition options that you select (displayed in orange). Indicates changed parameters in orange underlining; displays new parameters in blue.

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CS 9600 Workstation

The following figure shows the CS 9600 workstation:



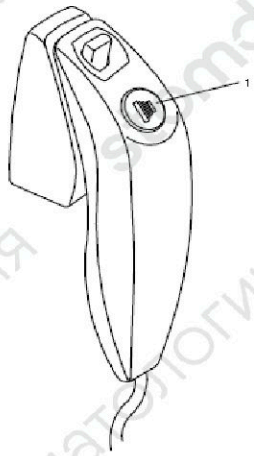
1	**ON/OFF button**
2	**Reset Signal button**
3	**System Reset button**
4	**Power LED indicator:** Blue–normal; red–abnormal
5	**Fan cooling status LED indicator:** Blue–normal; red–system fan fail; pink–CPU fan fail
6	**Chassis temperature LED indicator:** Blue–normal; red–system temperature fail; pink–CPU temperature fail
7	**Hard disk drive LED indicator:** Blue–data access

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X-Ray Remote Control

The x-ray remote control enables you to launch a radiological image acquisition using the exposure button outside the x-ray room. You must press and hold the exposure button until the end of acquisition.

Note: Premature release of the exposure button interrupts the acquisition.



1 **Exposure button**: Launches image acquisition.

Positioning Accessories

In addition to the basic components, the following panoramic accessories are delivered with the CS 9600:

- Panoramic chin rest
- TMJ and sinus chin rest
- Panoramic standard bite block
- Bite block for endentulous patients
- Frankfort guide bite block for panoramic images
- Single use sheaths for bite blocks (500 per box)
- Single use sheaths for 3D bite block and Frankfort guide bite block (100 per box)

The following 3D accessories are delivered with the CS 9600:

- 3D bite block
- 3D child bite block
- 3D bite block support
- 3D head rest
- 3D facial scanner support (optional)
- Wrist support (optional)
- Single use sheaths for 3D bite block (100 per box)

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Preparing the Unit

To prepare the unit:

1 Turn on the PC.

2 On the unit column, press the ON button and wait for the connection to the PC to be established.

3 Start the imaging software and access the **Acquisition** interface:

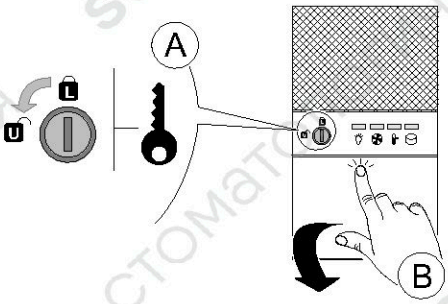
- To access the **Panoramic Acquisition** window, click .
- To access the **3D Acquisition** window, click .
- To access the **3D Facial Scanner Acquisition** window, click .

4 Reset the rotative arm to the start position, position the appropriate chin rest on the chin rest support, and cover the bite block with a hygienic barrier.

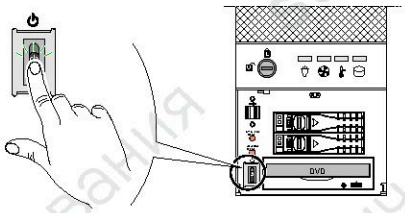
Note: If you do not use the corresponding positioning accessory,  is displayed. Click it, and the appropriate accessory appears in green.

5 Start the workstation:

- Use the key that was delivered with the workstation to unlock the trap door (A).



- Press and release the trap door to open it (B).
- Press the ON/OFF button.



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Acquiring 2D Images

You can acquire these 2D images:

- Full panoramic
- Segmented panoramic
- Bitewing
- Orthogonal panoramic, including extraoral FMS
- Lateral TMJ x2 and lateral TMJ x4
- Maxillary sinus
- Sinus AP, PA, and lateral

Acquiring Full/Segmented/Orthogonal Panoramic and Lateral TMJ Images

Use the following procedures to acquire these panoramic radiological exams:

- Full panoramic
- Segmented panoramic
- Bitewing
- Orthogonal panoramic, including extraoral FMS
- Lateral TMJ x2 and lateral TMJ x4

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the acquisition parameters:

1 In the **Panoramic Acquisition** interface:

- Select the patient type: child or adult (small, medium, large).
- Select the dental arch morphology: normal, square, or sharp.
- Select the type of trajectory: standard or orthogonal.
- Select the imaging mode: standard or low dose.

2 Click  for panoramic acquisition.

3 Select the radiological exam option:



4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 
.

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Preparing and Positioning Patients

To prepare and position an adult or pediatric patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the touchscreen control panel, press and hold the height adjustment buttons to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

4 Ask the patient to:

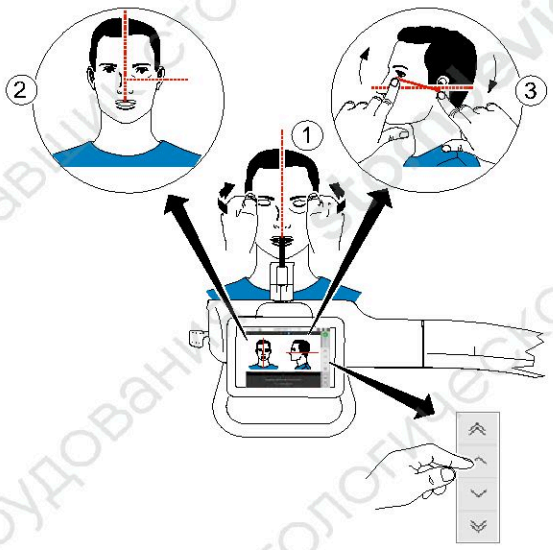
- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

5 On the touchscreen control panel, click to turn on Live Positioning Assistance.

6 Mobilize the patient head with your hands (1) using:

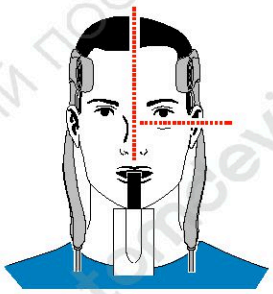
- Mid-sagittal positioning line (2) for a vertical alignment
- Horizontal positioning line (3) for a Frankfort plane alignment



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7 Immobilize the patient's head with the temple supports. Tighten the supports using the adjustors.



8 On the touchscreen control panel or workstation screen, click  to activate the optional Smart Auto Pan feature. If you want to select different parameter settings from the default Smart Auto Pan parameter settings, make your selections on the parameter display panel.

9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

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3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring Sinus Images

Use the following procedures to acquire these radiological exams:

- Maxillary sinus
- Sinus AP, PA, and lateral

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 In the **Panoramic Acquisition** interface, select the patient type: child or adult (small, medium, large).

2 Click  for sinus acquisition.

3 Select the area of interest for the x-ray image:



- **Scanning** (maxillary sinus radiological exam)
- **Waters** (sinus PA with waters orientation)
- **Lateral right** and **Lateral left** (sinus lateral)
- **Frontal AP** and **Frontal PA** (sinus AP and sinus PA with frontal orientation)

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position an adult or pediatric patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

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3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask her to sit on a stool and then adjust the height.

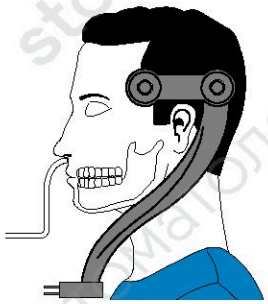
4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

5 Position the patient:

- **For the Scanning area of interest (maxillary sinus exam):**
  - Immobilize the patient's head with the temple supports. Tighten the supports using the adjustors.

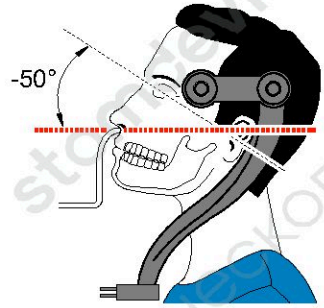


  - Select the area of interest:



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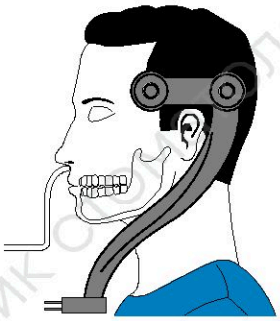
- **For the Waters area of interest:**
  - Tilt the head back.
  - Immobilize the patient's head with the temple supports. Tighten the supports using the adjustors.



  - Select the area of interest:



- **For a Lateral R, Lateral L, AP, or PA area of interest:**
  - Immobilize the patient's head with the temple supports. Tighten the supports using the adjustors.



  - Select the area of interest:



  - When you see 

, use the  buttons on the control panel to place the sensor as close to the patient as possible.

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6 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

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Acquiring 3D Images

You can acquire these images:

- 3D teeth
- 3D jaw
- 3D TMJ and maxillo facial
- 3D sinus and ear
- 3D upper cervical spine
- 3D wrist
- 3D Facial Scanner

Acquiring 3D Teeth Images

Before you acquire an image, make sure you have:

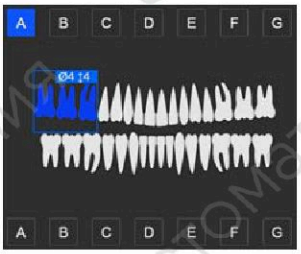
- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program and the required FoV.

2 To select the area of interest you intend to examine, click the alphabetical labels:



Note: The area of interest turns blue.

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

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3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

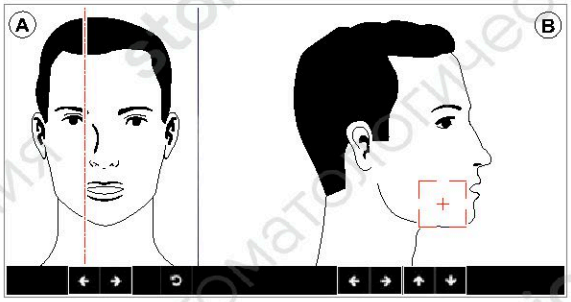
4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

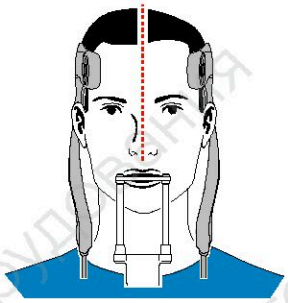
5 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

6 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).



7 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (B).

8 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



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9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

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Acquiring 3D Jaw Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program and the required FoV.

2 Click the area of interest:

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

Note: The area of interest turns blue.

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

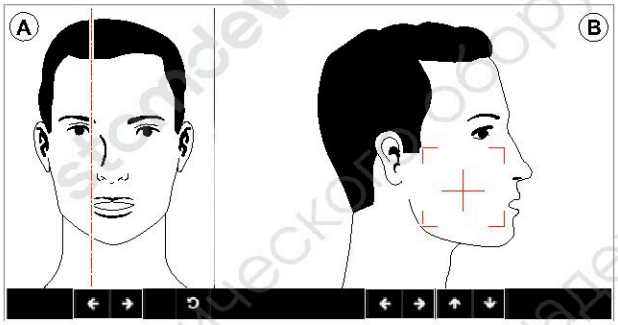
Note: Correct posture reduces the shadow of the spinal column transferred to the image.

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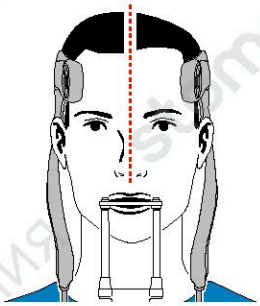
5 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

6 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).



7 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (b).

8 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

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To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring 3D TMJ and Maxillo Facial Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program and the required FoV.

2 Select the area of interest you want to examine:

-  – Bilateral TMJ
-  – Left TMJ
-  – Right TMJ

Note: The area of interest turns blue.

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

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4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask her to sit on a stool and then adjust the height.

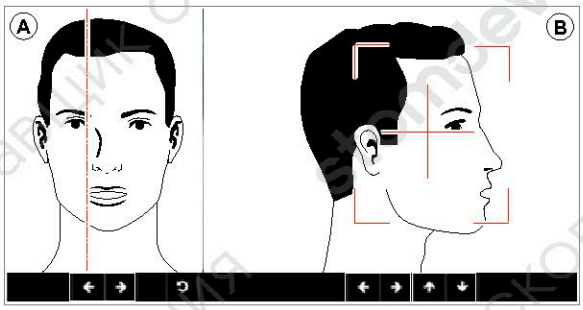
4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

5 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

6 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).

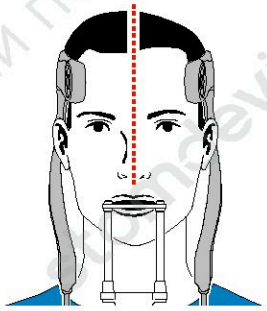


7 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (B).

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8 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

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4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring 3D Sinus Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program and the required FoV.

2 Click the area of interest you want to examine: 

Note: The area of interest turns blue.

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.

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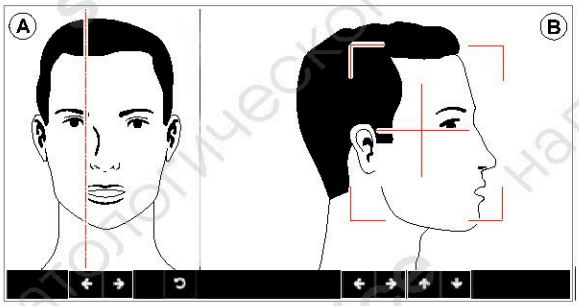
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- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

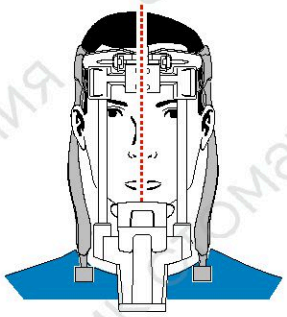
5 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

6 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).



7 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (B).

8 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

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Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring 3D Ear Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

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Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program and the required FoV.

2 Click the area of interest you want to examine:

-  – Bilateral ear exam
-  – Left ear exam
-  – Right ear exam

Note: The area of interest turns blue.

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Position the 3D head rest and 3D bite block support. Place the bite block and cover it with a protective sheath.

2 Ask the patient to remove all metal objects.

3 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

4 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

5 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and bite into the bite block.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

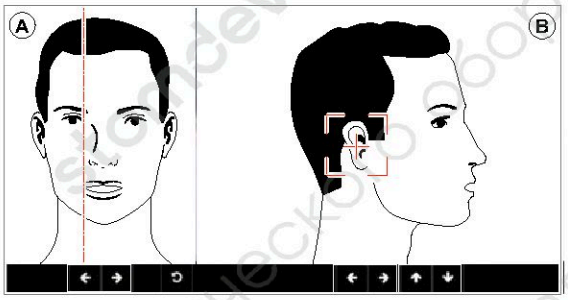
Note: Correct posture reduces the shadow of the spinal column transferred to the image.

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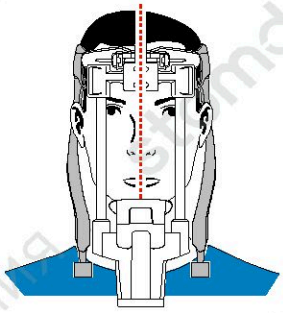
6 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

7 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).



8 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (B).

9 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



10 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

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To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

Acquiring 3D Upper Cervical Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program.

2 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

3 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Ask the patient to remove all metal objects.

2 Ask the patient to wear a lead apron. Be sure the apron is flat across the patient's shoulders.

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3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit to the height of the patient. Ask the patient to enter the unit.

Note: If the patient is tall, ask him to sit on a stool and then adjust the height.

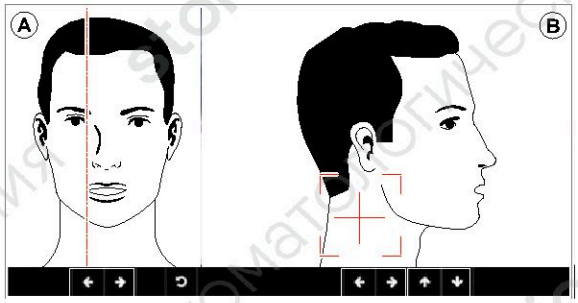
4 Ask the patient to:

- Stand up straight.
- Grip the lower handle on each side.
- Rest the chin on the chin rest support and the forehead on the forehead support.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

Note: Correct posture reduces the shadow of the spinal column transferred to the image.

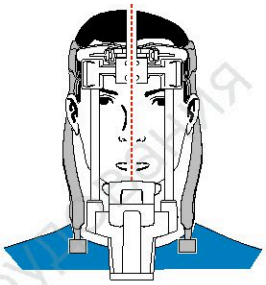
5 On the touchscreen control panel, click  to turn on Live Positioning Assistance.

6 On the workstation screen, use the  buttons or drag to select the lateral adjustment of the field of view (FoV) (A).



7 On the touchscreen control panel, use the  buttons or drag to select the axial FoV position (B).

8 Immobilize the patient's head with the template supports. Tighten the supports using the template support adjustors.



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9 Ask the patient to:

- Close the eyes.
- Remain still.
- Swallow and place the tongue against the palate.
- Breathe through the nose.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete:

- Open the temple supports and release the patient from the unit.
- Remove the hygiene barrier from the bite block and any accessories that were used.
- Reset the unit rotative arm for the next acquisition.

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Acquiring 3D Wrist Images

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 Select  as the program.

2 Click one of the following areas of interest:

-  – Left wrist exam
-  – Right wrist exam

3 In the **3D Acquisition** window, select the patient type: child or adult (small, medium, large).

4 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

Preparing and Positioning Patients

To prepare and position the patient:

1 Remove the template supports and position the wrist support.

2 Ask the patient to remove all metal objects.

3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit rotative arm to be just above the patient's head. Ask the patient to enter the unit.

4 Ask the patient to:

- Sit on the stool.
- Grip the wrist support with the hand that will be examined.
- Grip the lower handle with the other hand or place the hand in the lap.
- Position the feet slightly forward.
- Relax the shoulders.

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Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete, release the patient and reset the unit rotative arm for the next acquisition.

Acquiring 3D Facial Scanner Images with CS Face Scan

Before you acquire an image, make sure you have:

- Reset the unit rotative arm to the start position.
- Accessed the **Acquisition Interface**.

Setting the Acquisition Parameters

To set the parameters:

1 On the main toolbar of CS Imaging or in the **Image Acquisition** window, click .

2 Select the patient type: child or adult (small, medium, large).

3 If the default parameter settings are not adapted to your patient type, click  to open the **Parameter** panel and select the appropriate parameters. To save the new settings as the default, click 

.

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Preparing and Positioning Patients

To prepare and position the patient:

1 Remove the template supports and position the 3D facial scanner support.

2 Ask the patient to remove all metal objects.

3 On the touchscreen control panel, press and hold the height adjustment buttons  to adjust the unit rotative arm to be just above the patient's head. Ask the patient to enter the unit.

4 Ask the patient to:

- Place the back of the head against the 3D facial scanner support.
- Stand up straight.
- Position the feet slightly forward.
- Relax and lower the shoulders for full motion of the unit rotative arm.

Acquiring Images

Before acquiring an image, check that you have:

- Positioned the patient correctly.
- Selected the patient record.
- Accessed the **Acquisition** interface.
- Accessed the **Imaging** window.

To launch the x-ray:

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 in an emergency, release the exposure button on 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 acquisition. The Ready Indicator turns yellow, indicating x-ray transmission. The accessory position detector turns blue.

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

3 Check the image quality. If you are satisfied, click **Validate**; if you are not satisfied, click **Discard** and take the x-ray again.

4 When the acquisition is complete, release the patient and reset the unit rotative arm for the next acquisition.

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Care and Maintenance

Perform the following maintenance activities on the CS 9600 unit:

- Monthly–Wipe the outer covers of the unit with a soft, dry cloth.
- Annually–Have an authorized service technician conduct a general inspection of the unit.

Important: For information about cleaning and disinfecting the unit, see the *CS 9600 Safety, Regulatory and Technical Specifications User Guide* (SMA17).

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Using CS Intraoral Cameras

This lessons includes the following topics:

- Preparing a Camera for Use
- Understanding the Acquisition Interface
- Capturing and Viewing Still Photos
- Recording and Viewing Video

This lesson covers these Carestream intraoral cameras:

- CS 1200
- CS 1500

Preparing a Camera for Use

To prepare a camera for use:

- Disinfect the camera.
- Apply the protective sheath.
- Apply the collar, if necessary.

Disinfecting and Maintaining the Camera

The camera is not delivered in a disinfected condition, and it must be disinfected before each use. To disinfect the camera:

1 Dampen, do not soak, a lint-free cloth with 0.525% sodium hypochlorite OR use one part 5.25% hypochlorite to ten parts of water.

2 Follow the disinfectant manufacturer's instructions, and thoroughly wipe all surfaces of the camera.

3 Do not rinse the camera.

4 Allow the camera to dry in the open air for at least five minutes.

5 Make sure the camera lens is clear by wiping it with a moist lint-free cloth or lens tissue.

Follow these guidelines for all intraoral cameras:

- Store the camera in its holder between uses.
- Periodically wipe the handset with a soft, dry cloth.
- If you use a dock station, wipe it clean.
- DO NOT rinse or immerse the camera.
- DO NOT oversaturate the cloth with disinfectant.

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Applying the Protective Sheath

The protective sheath covers the camera and provides a hygienic shield for the patient. Use a new protective sheath for each patient.

The outer part of the protective sheath is a barrier for the sheath itself. Remove the outer part immediately prior to the exam. The inner part of the protective sheath is the hygienic barrier. It remains on the camera during the intraoral examination.

To apply the protective sheath:

1 Place the sheath paper-side down on a flat surface.

2 Insert the camera, with the camera window facing down, all the way into the protective sheath between the sheath's paper-backing and the white tab.

3 Hold the sheath in place by using your thumb to press the white tab gently against the camera.

4 Pull the blue tab on the front of the sheath away from the camera until the paper-backing is pulled away.

5 Discard the paper-backing, leaving the clear protective sheath on the camera.

6 Adjust the sheath, if necessary. The end should be tight to prevent blurring or fogging the image. Do not overstretch the sheath.

Important: Installing the sheath incorrectly produces poor image quality. Only one surface of the sheath is designed for optical clarity. If image quality is poor, replace the sheath, making sure it is installed correctly.

Applying the Collar

If your camera is used to perform a caries-detector examination, use the collar and follow these guidelines:

- Sterilize the collar before use. Remove dirt from all surfaces.

  Note: You can steam autoclave the collar.

- Track the number of times you use a collar. Each collar can be autoclaved twenty times.
- Place a sterilized collar over the protective sheath.

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Understanding the Acquisition Interface

An image is captured initially in the **CS Acquisition** interface.



The **Image Gallery** toolbar is near the bottom of the window. The three buttons on the right are the **Delete** button, the **Delete All** button, and the **Restore** button. The **Restore** button restores the last deleted image.



At the bottom of the window is the **Image Gallery**. It opens after a still image is captured, a video recording is stopped, or the **Review** button is clicked.

Capturing and Viewing Still Photos

After disinfecting the camera and inserting it into a protective sheath, and preparing the patient for the examination:

1 Depress the **Power** button for three seconds to turn on the camera.

2 Access the **Acquisition** interface.

3 Click the **New Intraoral Camera Image** button.

4 Open the patient's mouth, and place the camera in the patient's mouth over the area you want to view.

5 Live video appears on the **Preview** screen.

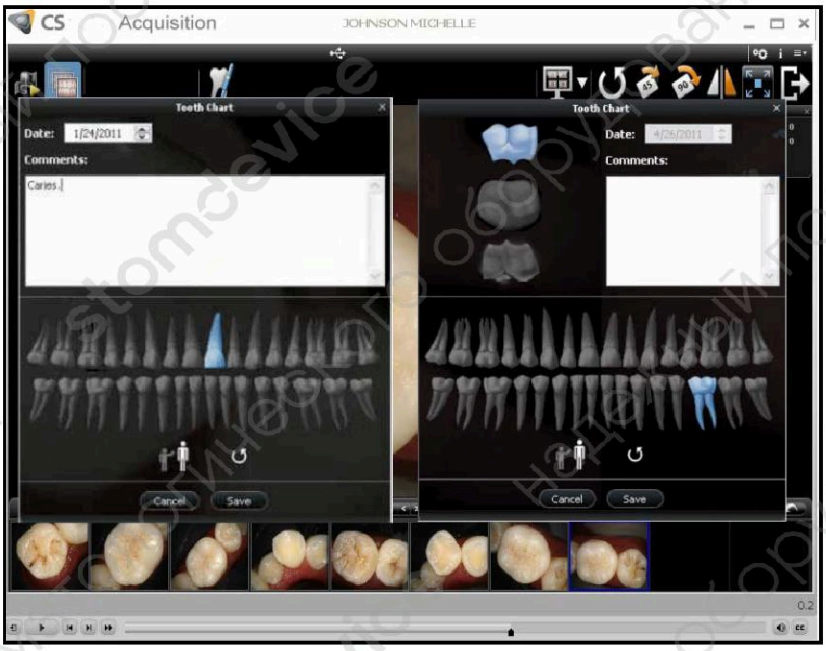
6 Press the **Capture** button on the camera, OR click the **Capture** button on the **Acquisition** interface. The **Review** window of the **Acquisition** interface shows the captured image.

7 Click the **Tooth Chart Comments** button to access the **Tooth Chart** window.

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8 Select the tooth, and write your comments in the **Comments** field.



9 Use the **Image Processing** dialogue box to manage the contrast and brightness of the image.



10 Use the **Image Gallery** toolbar to navigate, delete, or restore the image. Click the **Exit** button to close the **Acquisition** interface and return to the imaging software.

11 Remove and dispose of the sheath. Review the image.

Note: When inserted into the camera holder, the camera goes into sleep mode. It also goes into sleep mode if it is left idle for 15 minutes. To use it again, press the **Capture** button. When the camera is idle for more than an hour, it powers off.

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Recording and Viewing Video

To initiate recording of video:

1 Cover the sterilized camera with a protective sheath.

2 Press the power button on the camera for three seconds.

3 Open the patient record if you are working with a current patient; if this is a new patient, create a new patient record.

4 Double-click the patient record. The **Imaging** window is displayed.

5 Click the **New Intraoral Camera Image** button. The **Acquisition** interface is displayed.

6 Click the **General** tab, OR click the **Mode** button. The LED indicator confirms your choice.

To record a live video:

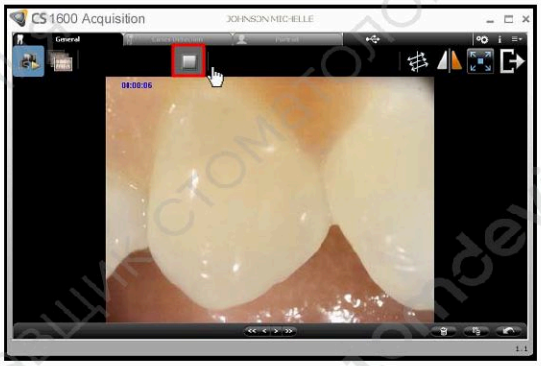
1 Open the patient's mouth.

2 Place the camera in the patient's mouth, holding the camera over the area you want to view.

3 To record, press the **Record Video** button, OR press and hold the **Capture** button for five seconds. An audible sound confirms the operation.

4 Move the camera over the tooth surfaces.

5 To stop the recording, press the **Stop** button. The **Preview** area on the **Acquisition** interface shows the video recording in real time.



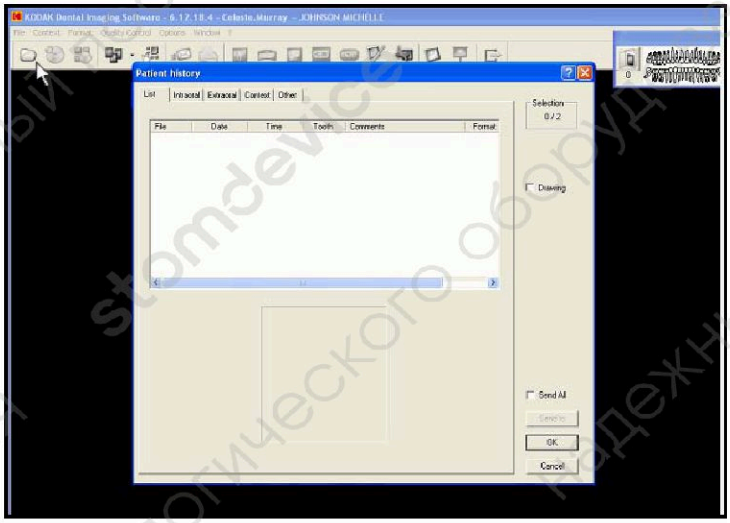
6 Use the **Video** toolbar to review the recorded video.

7 Use the **Image Gallery** toolbar to navigate, delete, or restore the most recent recording. The recorded video is saved in the **Patient History** window.

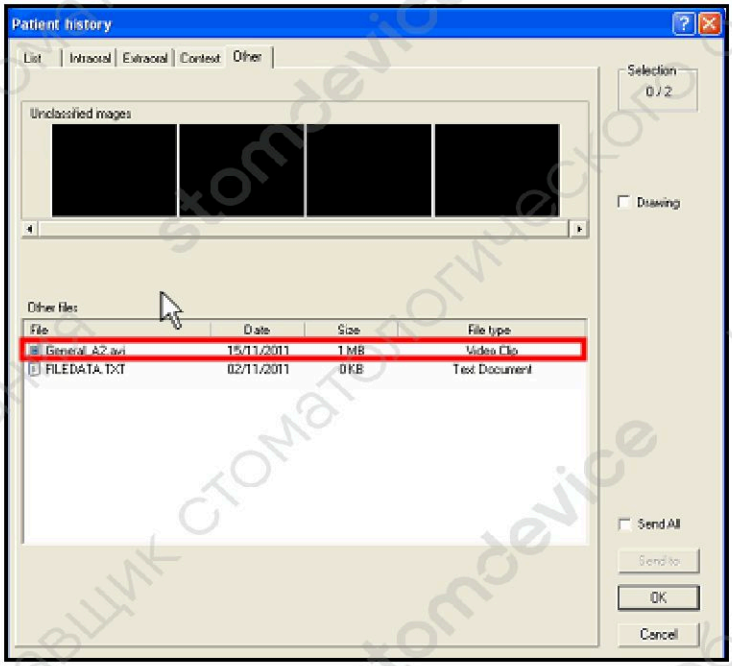
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8 To open the **Patient History** window, click the **History Open** button.



9 Click the **Other** tab. Select the AZI file.



10 Click **OK**. The **Media Play** window is displayed, and the video plays.

11 When you have finished viewing the video, close the **Media Play** window.

12 Close the imaging software.

13 Remove and dispose of the protective sheath.

To use the camera again, press the **Capture** button.

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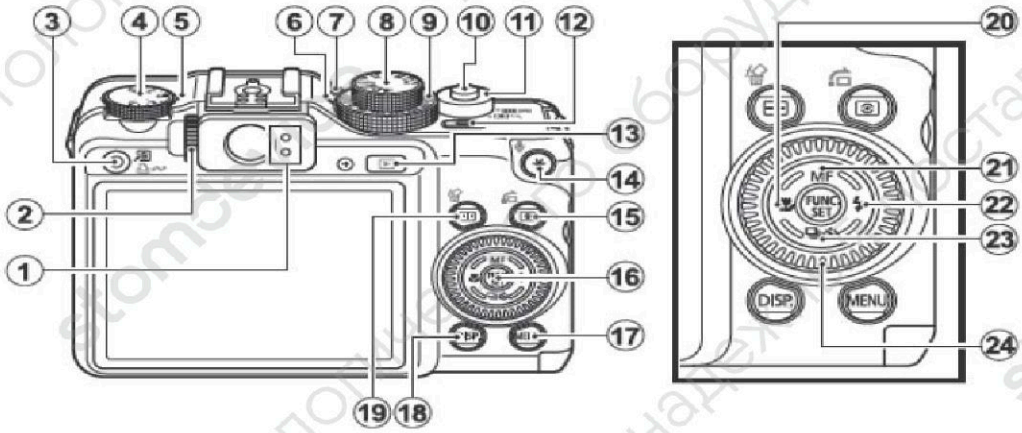
Using Digital Cameras

The following topics are included in this lesson:

- Components of the Camera
- Preparing the Camera
- Configuring Custom Settings
- Shooting Facial and Intraoral Images

This lesson describes the Canon PowerShot G10 digital camera.

Components of the Camera



The components of the camera are:

1 Indicators
2 Diopter Adjustment dial
3 Shortcut/Print Share button
4 Exposure Compensation dial
5 Exposure Compensation lamp
6 ISO Speed lamp
7 Microphone
8 Mode dial
9 ISO Speed dial
10 Shutter button
11 Zoom lever
12 On/Off button
13 Playback button
14 AE Lock/FE Lock Microphone button
15 Metering/Light button
16 Func/Set button
17 Menu button
18 Display button
19 Single Image Erase button
20 Macro button
21 Manual Focus
22 Flash indicator
23 Continuous Shooting/Self-Time button
24 Control dial

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Preparing the Camera

To prepare the camera for acquiring dental images:

1 With the camera turned off, set the **Exposure Compensation** dial to **0**.

2 Set the **Mode** dial on the top of the camera to **Av**.

3 Set the **ISO Speed** dial to **200**.

4 Turn on the camera.

5 Use the **Zoom Lever** to set the zoom factor to **5.0X**. Press and hold the **Zoom Lever** to the right. A change bar is displayed. When the bar extends to two-thirds of the line or at the end of the white line, release the **Zoom Lever**. After a few seconds, the zoom factor is displayed. If it is not 5.0X, press and release the **Zoom Lever** to the right to increase the zoom factor or to the left to decrease the zoom factor.

6 Use the **Control** dial to set the **Aperture** value to **F8**.

7 Use the **Func/Set** button, and scroll down to the bottom to select **M2** for the file size. Press the **Func/Set** button to return to live view.

Configuring Custom Settings

C1 refers to custom settings for facial images; **C2** refers to custom settings for intraoral images.

Custom Settings for Facial Images

To configure custom settings for facial images:

1 Press the **Menu** button to enter the control menus.

2 Scroll right to select the yellow **Setup Menu** tab, which has the hammer and wrench.

3 Scroll down to the **Power Saving** menu and press **Func/Set**.

4 Scroll down and press **Display Off**.

5 Scroll left until **3 min.** is displayed and press the **Menu** button to return to the main menu.

6 Scroll up until the tabs along the top appear red, yellow, and blue.

7 Scroll left to the red **Rec** menu, which has the custom silhouette.

8 Scroll down to the **Review** menu.

9 Scroll left until **Hold** is displayed.

10 Scroll down to the **Custom Display** menu.

11 Press **Func/Set** to enter the sub-menu.

12 Use the scroll direction and **Func/Set** button to select the **Shooting Info** and **Grid Lines** options for 1 and 2 columns. Leave the other options blank.

13 Press the **Menu** button to return to the main menu.

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14 Scroll down to the **Save Settings** menu.

15 Press the **Func/Set** button. Scroll right until C1 is displayed, and press **Func/Set** to save the setting for the C1 mode.

16 Press the **Menu** button to return to live camera view.

Custom Settings for Intraoral Images

To configure custom settings for intraoral images:

1 Press the **Macro** button, and scroll right to highlight the flower. Then press **Func/Set** to save.

2 Press the **Metering/Light** button, and turn the **Control** dial to set the **Metering Mode** to **Evaluative**.

3 Move the **Zoom Lever** to set the zoom to **8.5X**. Press and release the **Zoom Lever** to the right twice. After a few seconds, the zoom factor is displayed. If it is not 8.5X, press and release the zoom lever to the right to increase the zoom factor or to the left to decrease the zoom factor.

4 Press the **Menu** button.

5 Scroll up to the **Save Settings** menu.

6 Press the **Func/Set** button. Scroll right until **C2** is displayed, and press **Func/Set** to save.

7 Press the **Menu** button to return to live camera view.

Shooting Facial and Intraoral Images

To shoot a facial image:

1 Set the **Mode** dial to **C1**.

2 Stand 4-5 feet from the patient. Adjust the distance to frame the image.

3 Press the shutter button lightly to focus the image. The camera beeps twice, and the square in the middle of the display turns green, indicating the camera is focused.

4 Press the **Shutter** button fully to acquire the image.

5 Check the image on the LCD. To keep the image, tap the **Shutter** button lightly to return to the live image. If you need to retake the image, press the **Single Image Erase** button to delete it. Then retake the image.

To shoot an intraoral image:

1 Set the **Mode** dial to **C1**.

2 Hold the camera a minimum of 12 inches from the patient. Adjust the zoom to frame the image.

3 Press the shutter button lightly to focus the image. The camera beeps twice, and the square in the middle of the display turns green, indicating the camera is focused.

4 Press the **Shutter** button fully to acquire the image.

5 Check the image on the LCD. To keep the image, tap the **Shutter** button lightly to return to the live image. If you need to retake the image, press the **Single Image Erase** button to delete it. Then retake the image.

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