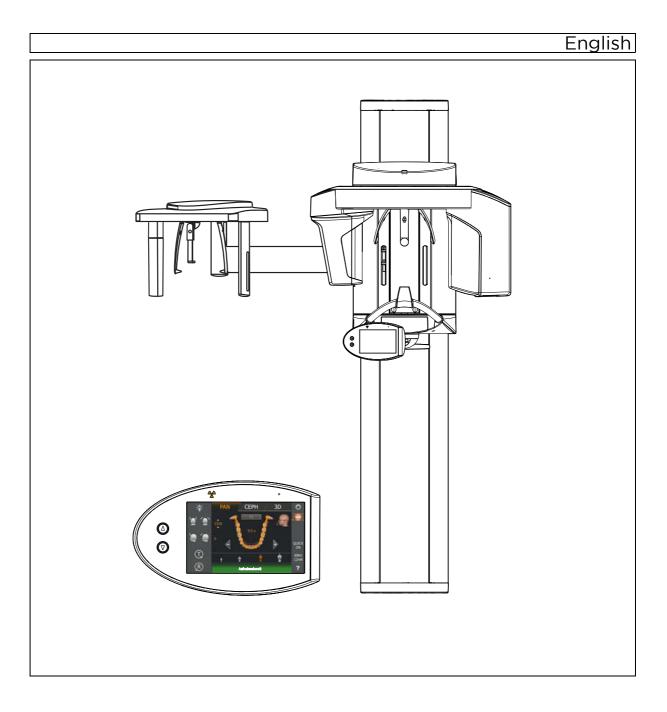
New as of:

07.2018



Orthophos SL 2D / Orthophos SL 2D Ceph Orthophos SL 3D / Orthophos SL 3D Ceph Firmware V05.12.06 / PC-Software V1.2.0

Operating Instruction



Operation

- 5.1 Acquiring the X-ray image
- 5.1.1 Switching the unit on and starting the software

5.1.1.1 Switching the unit on

Malfunctions can occur when the unit is switched on.

A patient positioned in the unit may be injured by moving parts.

Please ensure that a patient is not positioned in the unit when activating the unit and selecting the operating mode (up until the completion of sensor positioning).

NOTE

Fluctuations in temperature can cause condensation to form in the unit.

Electrical components are destroyed by short circuits.

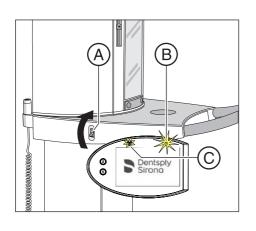
- Do not switch the unit on until the temperature of the unit has adapted to the ambient temperature and the condensation has evaporated. See the chapter on 'Technical data'.
- ✓ The unit is properly installed.
- The unit is connected to the mains.
- 1. Turn the main switch A to position I.
- 2. Wait for one minute.
- ✤ The LED (B) lights up on the Easypad.
- ✤ The radiation indicator (C) lights up for approx. one second as a functional check.
- The home screen is displayed on the touchscreen for approximately 1 minute.
- b The program selection is then displayed on the touchscreen.
- ✤ The forehead support and temple supports are completely open.

NOTE

The unit must not be switched on/off constantly.

Constant switching on and off reduces the service life of individual unit components and results in increased power consumption.

 After switching the unit off, wait for approx. 60 seconds before switching it on again.



NOTE

The surface of the touchscreen is sensitive.

The touchscreen can be damaged or its surface scratched.

- Never use pointed objects such as ballpoint pens, pencils, etc. to operate the touchscreen.
- > Only use your fingertips to operate the touchscreen.

5.1.1.2 Enabling exposure readiness in Sidexis 4

NOTE: The procedures for starting Sidexis 4, for logging in a patient, and for selecting the processing step *"Exposure"* can be found in the technical document *"Sidexis 4 Operator's Manual"* (REF *"64 47 028"*).

- ✓ Sidexis 4 must have been started.
- ✓ A patient must be logged in.
- ✓ The processing step *"Exposure"* must be selected.

	Musterfrau Maria 04/09/1983	Start Patient Exposure	Examination 🛞 Output	🥖 × 🕸 🎜 🕏
	Current Order New order	▼		
	Import	Room3	Room2	
	ImportV2 Data import w	th SL-21-C2-K2	5L-31-CR-КЗ	
Session gallery 🚆				
Session				
_/	Sirona			/ Sidexis 4

1. Select an X-ray unit for the exposure.



- ${\ensuremath{\,\mathbb k}}$ ${\ensuremath{\,\text{The}}}$ dialog for preparing the exposure appears.
- 2. Enter the indication for the exposure in the input field "Indication".
- 3. Activate or deactivate the check box "Patient pregnant".
- 4. Click on the "Start acquisition" button.
 - Sidexis 4 makes the unit ready for exposure.

5.1.2 Selecting an exposure program

- 5.1.2.1 Panoramic and bite wing exposure
- 5.1.2.1.1 Program descriptions
- 5.1.2.1.1.1 P1 Panoramic exposure

The exposure displays the full tooth region with ascending rami.



P1 A – Panoramic exposure, artifact-reduced

The exposure can be taken in an artifact-reduced format to avoid artifacts in the condylar and molar regions, and to reduce shadowing by the opposite jaw.

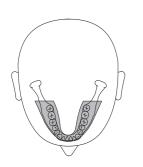


P1 C – Panoramic exposure, constant 1.25x magnification

The exposure can be taken at a constant magnification of 1.25x, for example, for implantology.







5.1.2.1.1.2 P2 – Panoramic exposure, without ascending rami

The exposure represents a reduced tooth region without ascending rami.

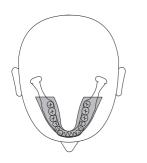


P2 A - Artifact-reduced panoramic exposure without ascending rami

The exposure can also be taken in an artifact-reduced format to avoid artifacts in the condylar and molar regions, and to reduce shadowing by the opposite jaw.

P2 C - Panoramic exposure without ascending rami at a constant magnification of 1.25x

The exposure can be taken at a constant magnification of 1.25x, for example, for implantology.



5.1.2.1.1.3 P10 – Panoramic exposure for children

The exposure represents a reduced tooth region without ascending rami. For this exposure the radiation dose is considerably reduced.



P10 A – Panoramic exposure for children, without ascending rami, artifact-reduced

The exposure can also be taken in an artifact-reduced format to avoid artifacts in the condylar and molar regions, and to reduce shadowing by the opposite jaw. For this exposure the radiation dose is considerably reduced.

P10 C – Panoramic exposure for children, without ascending rami, constant 1.25x magnification

The exposure can be taken at a constant magnification of 1.25x, for example, for implantology. For this exposure the radiation dose is considerably reduced.

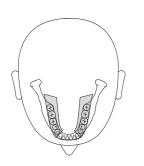
5.1.2.1.1.4 P12 – Thick slice, anterior tooth region

The exposure shows the anterior tooth region with a larger slice thickness, e.g. for implantology.

The image section can be selected for UJ/LJ.

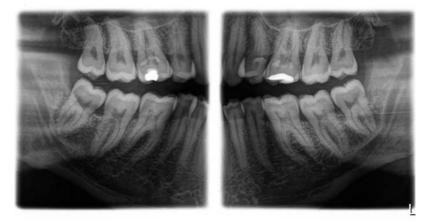






5.1.2.1.1.5 BW1 – Bite wing exposure in the posterior tooth region

The exposure displays the posterior tooth regions with an image height restricted to the bite wing and an optimized projection.



5.1.2.1.1.6 BW2 – Bite wing exposure in the anterior tooth region

The exposure displays the anterior tooth regions with an image height restricted to the bite wing and an optimized projection.





5.1.2.1.2 Preparing the exposure

Depending on the patient or the exposure program, accessory parts must be replaced and the appropriate exposure mode must be selected; see "Installation and start-up" [\rightarrow 43].

You will require the following accessories:

 Chin rest with bite block rod or bar or yellow bite block or contact segment or universal bite block or occlusal bite block.

The chin rest must **not** be used for children when using programs BW1 and BW2. The positioning is otherwise too low.

IMPORTANT

For programs BW1 and BW2, the universal bite block must **not** be used above the black marking. The positioning is otherwise too low.

- Temple supports
- Forehead support
- ➤ Insert the accessory parts to be used into the unit and pull on the relevant hygienic protective sleeves, see "Hygienic protective sleeves" [→ 40].
- Switch Sidexis to a ready-for-exposure state; see 'Switch Sidexis to ready-for-exposure state'.

5.1.2.1.3 Selecting an exposure program

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

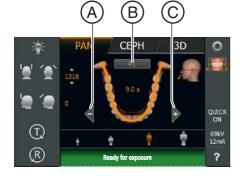
- Check that a patient is not positioned in the unit before moving it to the starting position.
- ✓ The unit is switched on and ready for exposure.
- 1. Touch the PAN symbol at the top of the touchscreen.
 - ✤ The program group PAN is selected.
- Select an exposure program. To do this, touch the arrow keys + C and -A. If a subroutine, e.g. without artifacts or 1.25x magnification, is available for this program, the program display is grayed out. Touch the program display B several times. All subroutines of the selected program are displayed one by one.
- **3.** Follow the instructions in the comment line on the touchscreen. If required, press the R key to move the unit back to the starting position.
 - ♥ The diaphragm and the sensor move into the starting position.
- ✤ The exposure program is selected.

NOTE

The PAN/3D sensor unit is rotated via a motor drive.

The gearing of the sensor unit can be damaged if it is turned by hand.

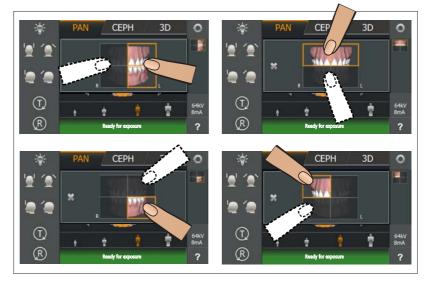
Press the R key to rotate the sensor unit back to the starting position via the motor drive. The sensor unit is always rotated in combination with the entire main rotation unit. The combisensor travels to the proper starting position for panoramic, Ceph, or 3D exposures, depending on the program group selected.



5.1.2.1.4 Setting quadrants

The exposure can be restricted to quadrants. You can select a half-view of the right or left jaw in programs P1, P2, P10 and BW1, or upper jaw/ lower jaw in programs P1, P2, P10 and P12. In P1, P2, P10, also for constant magnification and artifact-reduced view.

- Level 1 is displayed on the touchscreen.
- 1. Press the quadrant symbol (A) on the right side of the touchscreen.
 - ✤ A submenu line is opened.
- **2.** Select the desired quadrant(s). See the figure below. Quadrants can be selected as half-views or individually. Touch the quadrant field in the center to reactivate the full frame.
 - The selected quadrants are emphasized / the non-selected ones are grayed out.



3. Touch the cross on the left side of the submenu line.

or

- > Touch the quadrant symbol (A) again.
- ✤ The submenu line is closed.
- ✤ The quadrant or quadrants are set.

IMPORTANT

The program duration for individual quadrant exposures equals the program duration for half-view exposures.



5.1.2.1.5

.5 Adjusting the Quickshot function

- ✓ Level 1 is displayed on the touchscreen.
- Touch the Quickshot display A on the right side of the touchscreen.
 A submenu line is opened.

- PAN
 CEPH
 3D

 1
 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1

 1
 1
- 2. Press the *Quick On* or *Quick Off* icons on the touchscreen.
 Solution The selection is highlighted orange in the submenu line.
- 3. Touch the cross on the left side of the submenu line.
- or
 - > Touch the Quick symbol (A) again.
 - \checkmark The submenu line is closed.
- ✤ The Quickshot function is set.

5.1.2.1.6 Setting the temple width

The set temple support width changes the radiation time slightly. The slice width for different dental arches is automatically selected in P1, P2, P10 and their subprograms.





CEPH

3D

0

В

PAN

(T) (R)

5.1.2.1.7 Setting the kV/mA values

Setting the kV/mA values via the patient symbols

Preset kV/mA combinations are assigned to the patient symbols, which are selected according to the patient's size and weight. The symbols roughly correspond to child, youth/woman, woman/man, hefty persons.

- ✓ Level 1 is displayed on the touchscreen.
- > Touch the required patient symbol.
 - The selection (A) is highlighted in orange. The selected kV/mA value is displayed on the right side of the touchscreen.
- ⅍ The kV/mA value is set.

Setting the kV/mA values via the submenu line

If the preset kV/mA combinations do not provide a satisfactory result, you can also set the kV/mA values manually in all programs.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the kV/mA symbol (B) on the right side of the touchscreen.
 - \clubsuit A submenu line is opened.



- Select a kV/mA value. Touch the or + keys.
 The selected kV/mA value is displayed.
- 3. Touch the cross on the left side of the submenu line.
- or
- > Touch the kV/mA symbol (B) again.
- The submenu line is closed.
- ✤ The kV/mA value is set.

5.1.2.1.8 Positioning the patient

The patient is positioned on the unit while standing. Positioning in the seat is also possible without issue.

The height adjustment motor starts slowly and then increases its speed.

A patient positioned in the unit may be injured by moving parts.

Monitor the patient and the movement of the unit during height adjustment. To make minor corrections, press and immediately release the keys.

The light localizer consists of one Class 1 laser.

Patients and users can be blinded by the laser light localizer.

- Do not stare directly into the laser beam. Make sure that the laser beam does not meet the eyes of the patient.
- A distance of at least 10 cm must be maintained between the eye and the laser.

IMPORTANT

The image quality of volume exposures is limited by metal or other radiopaque materials located in the patient's mouth.

Ask the patient to take off all metallic objects such as glasses and jewelry in the head and neck area as well as all removable dental prostheses. The tray in front of the control mirror is used for depositing jewelry.

Tip: Reference values are shown for the height and forehead support settings, which are saved for further exposures in the additional information area of the Sidexis software.

5.1.2.1.8.1 Positioning with an occlusal bite block

The occlusal bite block sets the inclination according to the occlusal plane instead of the standard Frankfurt horizontal plane. This results in fewer overlaps in the anterior tooth region and upper jaw.

If required, the service engineer can adjust the angle to the Frankfurt horizontal plane in order to preset the Frankfurt horizontal plane (see Service Manual).

- ✓ The occlusal bite block with bite block foam is inserted in the unit. The green arrows are displayed on the touchscreen.
- ✓ The forehead support and temple supports are inserted in the unit. The hygienic protective sleeves are pulled on.
- 1. Guide the patient in front of the control mirror.

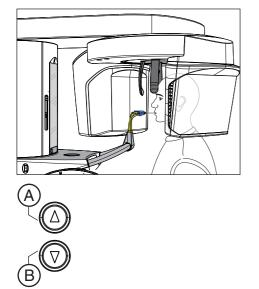
2. Set the unit height using the up **A** and down **B** keys. The height adjustment buttons are illuminated and show the direction in which the unit is to be moved by a green arrow.

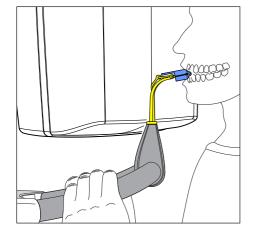
CAUTION! The height adjustment motor starts slowly and then increases its speed.

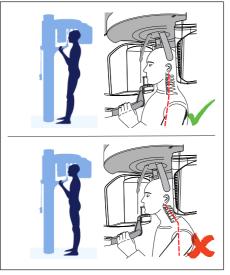
Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep.

Release the height adjustment buttons once the bite block plate and the patient's anterior teeth are at the same height.

- **3.** Guide the patient to the unit and instruct them to hold the handles with both hands.
- **4.** Instruct the patient to bite into the grooves of the bite block foam with the teeth.
 - If necessary, push the lower anterior teeth forwards until they reach a stop.

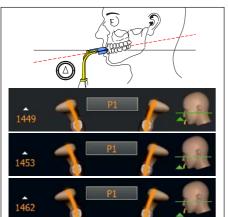






- 5. Check the position of the patient's spine.
 - Sensure that the patient's spine is slightly inclined, as shown in the diagram.

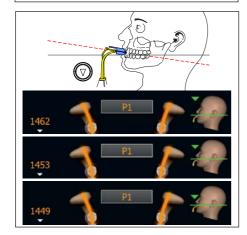
Tip: To achieve the correct positioning of the spine, ask the patient to take a small step towards the column of the unit. The patient's cervical vertebrae are thus stretched. This prevents regions of diminished density in the anterior tooth region on the X-ray.



6. Use the green arrows on the touchscreen to align the patient's head inclination until the desired position is reached. Instruct the patient to let their head rest.

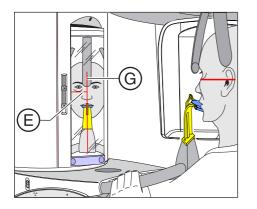
If the green arrow on the touchscreen points up, press the button for height adjustment ${\bf A}$ upwards.

CAUTION! If no change in the angle of the bite block plate is found for about 3 seconds, the height adjustment motor runs at a higher speed.





- 7. When the green arrow points downwards, press the down button B.
 - The inclination of the patient's head changes according to the height of the unit. While the angle of the bite block plate is being changed, the unit height can only travel at a very slow speed.
 - The green arrow on the head symbol indicates how far the unit height must be moved until the nominal position for head inclination is reached. The inclination of the displayed head symbol also changes accordingly.
 - Once the desired position is reached, the movement stops automatically and a beep is sounded by the user interface. The green-illuminated arrows of the height adjustment buttons light up blue.
- 8. Switch on the light localizer. CAUTION! Risk of dazzle
 - W Two red laser lines reflect on the patient's head. To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.



- 9. Align the patient with the central laser line G.
 - ✤ The laser line reflects in the center of the patient's anterior teeth or the middle of the face (mid-sagittal).

10. If necessary, check the patient's position. Briefly press the up **A** and down **B** height adjustment keys.

- 11. Press the temple support adjustment button I.
 - ✤ When you touch the patient's head, the temple supports stop automatically.
- 12. Press the forehead support adjustment key (H).
 - When you touch the patient's head, the forehead support stops automatically.

Make sure that the patient's head does not move backwards when placing the forehead support.

- **13.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- ✤ The patient is positioned in the unit.

If the occlusal bite block is stuck in the bite block holder even after the exposure is carried out and you select an exposure program that is not intended for the use of the occlusal bite block, the help message 'H307 - Change bite block ' will appear in the comment line. Insert the relevant bite block or contact segment required for the exposure. The help message disappears as soon as the occlusal bite block is removed.

IMPORTANT

In P1, P2, P10, the slice width is selected automatically for different dental arches with the temple support setting, and the radiation time is also changed slightly through this in accordance with the temple support width which is set.

5.1.2.1.8.2

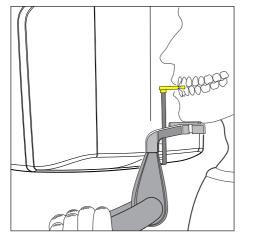
8.2 Positioning with chin rest and rod for bite block

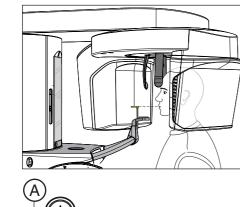
- ✓ The chin rest and bite block segment, as well forehead support and temple supports are inserted in the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Guide the patient in front of the control mirror.

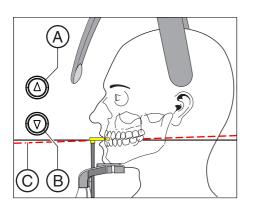
Set the unit height using the up A and down B keys.
 CAUTION! The height adjustment motor starts slowly and then increases its speed.

Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep. Release the height adjustment buttons once the patient's chin and the chin rest on the unit are at the same height.

- 3. Turn the bite block away from the patient.
 - ✤ The bite block is pointing towards the control mirror.
- **4.** Instruct the patient to place his chin on the chin rest and place both hands on the hand grips.
- 5. Turn the bite block towards the patient and instruct him to bite on the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.







- 6. Check the patient's occlusal plane **C**. Adjust the unit height using the up **A** and down **B** keys.
 - ✤ The occlusal plane is slightly inclined toward the front.

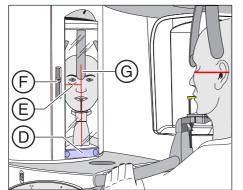
- 7. Check the position of the patient's spine.
 - Ensure that the patient's spine is slightly inclined, as shown in the diagram.

Tip: To achieve the correct positioning of the spine, ask the patient to take a small step towards the column of the unit. The patient's cervical vertebrae are thus stretched. This prevents regions of diminished density in the anterior tooth region.

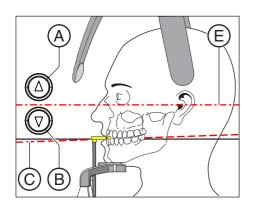
- 8. Swivel the control mirror outwards. Press the left recess on the touchbar D.
 - You can see the patient in the control mirror.

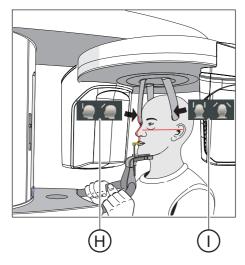


- 9. Switch on the light localizer. CAUTION! Risk of dazzle
 - W Two red laser lines reflect on the patient's head. To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.



- 10. Align the patient with the central laser line G.
 - ✤ The laser line reflects in the center of the patient's anterior teeth or the middle of his face (mid-sagittal).





 Align the patient's head according to the Frankfurt horizontal plane (E).

Tip: The Frankfurt horizontal is used as a reference plane. It runs between the upper edge of the ear canal and the deepest point of the lower eye socket edge.

- 12. Adjust the height of the light localizer using the slider F.
 - b The laser line reflects on the upper edge of the outer ear canal.
- **13.** Correct the patient's head inclination as necessary. Briefly press the up **A** and down **B** height adjustment keys.
 - The laser line reflects on the lowest point of the lower eye socket edge.
- 14. Press the temple support adjustment button I.
 - ♥ When you touch the patient's head, the temple supports stop automatically.
- 15. Press the forehead support adjustment key (H).

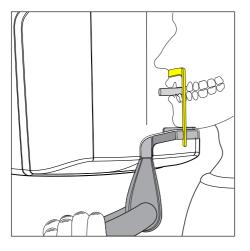
Make sure that the patient's head does not move backwards when placing the forehead support.

- **16.** Check the patient's position and make any final corrections as necessary.
- **17.** Swivel the control mirror back into place. Press the right recess on the touchbar **D**.
 - $\boldsymbol{\boldsymbol{\xi}}$ The patient can see himself in the control mirror.
- **18.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- \checkmark The patient is positioned in the unit.

IMPORTANT

In P1, P2, P10, the slice width is selected automatically for different dental arches with the temple support setting, and the radiation time is also changed slightly through this in accordance with the temple support width which is set.

5.1.2.1.8.3 P



.3 Positioning with chin rest and bar

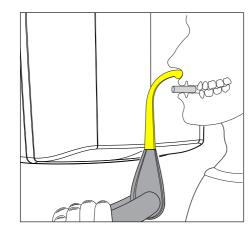
- ✓ The patient has no or only a few anterior teeth.
- ✓ The chin support and bar, and the forehead support and temple supports are inserted in the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Instruct the patient to place his chin on the chin rest and place both hands on the hand grips.
- 2. Instruct the patient to place his subnasale (the base of his nose) against the bar. If the patient's lower jaw contains anterior teeth, place the bar between his chin and his lower lip.
- **3.** Place a cotton roll between the patient's upper and lower jaw.
 - \clubsuit The patient's upper and lower jaw are aligned.
- **4.** Proceed as described under "Positioning with chin rest and rod for bite block" from step 6.

5.1.2.1.8.4 Positioning with bite block

- The yellow bite block, forehead support and temple supports are inserted in the unit.
- The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Instruct the patient to hold the handles with both hands and bite into the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.
- **2.** Proceed as described under "Positioning with chin rest and rod for bite block" from step 6.

5.1.2.1.8.5 Positioning with contact segment

- ✓ The patient has no or only a few anterior teeth.
- ✓ The yellow contact segment, forehead support and temple supports are inserted in the unit.
- The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Instruct the patient to hold the handles with both hands and place his subnasale (the base of his nose) against the contact segment.
- Place a cotton roll between the patient's upper and lower jaw.
 The patient's upper and lower jaw are aligned.
- **3.** Proceed as described under "Positioning with chin rest and rod for bite block" from step 6.



5.1.2.2 Temporomandibular joint exposure

5.1.2.2.1 Program descriptions

IMPORTANT

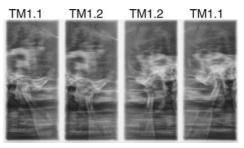
Note the information on the two-part exposure programs in the "Releasing the exposure" chapter, see "Two-part exposure programs $[\rightarrow 120]$ ".

5.1.2.2.1.1 TM1.1 / TM1.2 – Lateral view of temporomandibular joints with mouth open and closed

(Two-part exposure program)

This exposure displays the temporomandibular joints from a lateral aspect with the mouth open and closed and provides 4 views in one image.

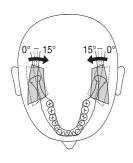
This program enables angle preselection (0°, 5°, 10°, and 15°) for the temporomandibular joint area.



5.1.2.2.1.2 TM3 – Temporomandibular joints lateral, ascending rami

The exposure shows a lateral projection of the temporomandibular joints with ascending rami, with 2 views in one image.







5.1.2.2.2 Preparing the exposure

Depending on the patient or the exposure program, accessory parts must be replaced and the appropriate exposure mode must be selected; see "Installation and start-up" [\rightarrow 43].

You will require the following accessories:

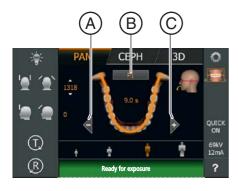
- Temporomandibular joint supports with ear holders
- Forehead support
- ➤ Insert the accessory parts to be used into the unit and pull on the relevant hygienic protective sleeves, see "Hygienic protective sleeves" [→ 40].
- Switch Sidexis to a ready-for-exposure state; see 'Switch Sidexis to ready-for-exposure state'.

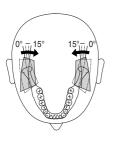
5.1.2.2.3 Selecting an exposure program

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

- Check that a patient is not positioned in the unit before moving it to the starting position.
- ✓ The unit is switched on and ready for exposure.
- 1. Touch the PAN symbol at the top of the touchscreen.
 - \clubsuit The program group PAN is selected.
- 2. Select the exposure program. Press the arrow keys + C and A.
 - ♥ The exposure program is displayed in the program display (B).
- **3.** Follow the instructions in the comment line on the touchscreen. Press the R key if necessary.
 - The diaphragm and the sensor move into the starting position.
- ✤ The exposure program is selected.





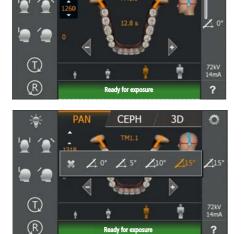
TM1

5.1.2.2.4 Adjusting the angle preselection

In the TM1 exposure program, angle $(0^\circ, 5^\circ, 10^\circ \text{ and } 15^\circ)$ can be preset for the temporomandibular joint area. This can be helpful if more detailed analyses of the temporomandibular joint are necessary, but the standard projections (0°) do not provide an optimal image.

The figure shows the direction in which the slice orientation is being swiveled during angle preselection.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the angle preselection symbol (A) on the right side of the touchscreen.
 - ♦ A submenu line is opened.



CEPH

3D

- 2. Select the corresponding angle preselection.
 - The selection is highlighted orange in the submenu line. The selected angle preselection is displayed on the right side of the touchscreen.
- 3. Touch the cross on the left side of the submenu line.
- or
- > Touch the angle preselection symbol (A) again.
- ✤ The submenu line is closed.
- \clubsuit The angle preselection is set.

IMPORTANT

When you confirm the exposure with the R key, the angle setting that was changed in the submenu line will automatically be reset to the default setting of 0°.

PAN CEPH 3D 1</

CEPH

3D

0

В

5.1.2.2.5 Setting the kV/mA values

Setting the kV/mA values via the patient symbols

Preset kV/mA combinations are assigned to the patient symbols, which are selected according to the patient's size and weight. The symbols roughly correspond to child, youth/woman, woman/man, hefty persons.

- ✓ Level 1 is displayed on the touchscreen.
- > Touch the required patient symbol.
 - ✤ The selection (A) is highlighted in orange. The selected kV/mA value is displayed on the right side of the touchscreen.
- ⅍ The kV/mA value is set.

Setting the kV/mA values via the submenu line

If the preset kV/mA combinations do not provide a satisfactory result, you can also set the kV/mA values manually in all programs.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the kV/mA symbol (B) on the right side of the touchscreen.
 - \clubsuit A submenu line is opened.



- 2. Select a kV/mA value. Touch the or + keys.
 - $\,\, \ensuremath{{\diamondsuit}}$ The selected kV/mA value is displayed.
- 3. Touch the cross on the left side of the submenu line.
- or
- > Touch the kV/mA symbol (B) again.
- ✤ The submenu line is closed.
- ⅍ The kV/mA value is set.

(T) (R)

5.1.2.2.6 Positioning the patient

The patient is positioned on the unit while standing. Positioning in the seat is also possible without issue.

The height adjustment motor starts slowly and then increases its speed.

A patient positioned in the unit may be injured by moving parts.

Monitor the patient and the movement of the unit during height adjustment. To make minor corrections, press and immediately release the keys.

The light localizer consists of one Class 1 laser.

Patients and users can be blinded by the laser light localizer.

- Do not stare directly into the laser beam. Make sure that the laser beam does not meet the eyes of the patient.
- A distance of at least 10 cm must be maintained between the eye and the laser.

IMPORTANT

The image quality of volume exposures is limited by metal or other radiopaque materials located in the patient's mouth.

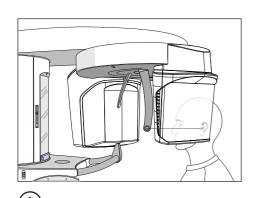
Ask the patient to take off all metallic objects such as glasses and jewelry in the head and neck area as well as all removable dental prostheses. The tray in front of the control mirror is used for depositing jewelry.

Tip: Reference values are shown for the height and forehead support settings, which are saved for further exposures in the additional information area of the Sidexis software.

5.1.2.2.6.1

Positioning for a lateral temporomandibular joint exposure

- The forehead support and temporomandibular joint supports with ear 1 holders are plugged into the unit (1 right, 2 left, see "Changing the temple supports and temporomandibular joint supports $[\rightarrow 46]^{\circ}$.
- The relevant hygienic protective sleeves are pulled over the accessories.
- **1.** Guide the patient in front of the control mirror.



2. Set the unit height using the up (A) and down (B) keys. CAUTION! The height adjustment motor starts slowly and then increases its speed.

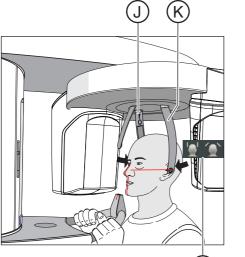
Press and hold down the height adjustment key until the unit has reached the desired height. The unit movement is accompanied by a beep.

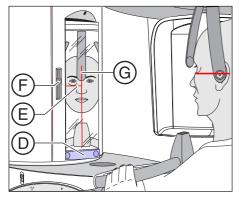
Release the height-adjustment buttons once the ear holders of the temporomandibular joint supports are at the same height as that of the patient's ears.

- 3. Instruct the patient to position himself between the temporomandibular joint supports and hold the handles with both hands.
- 4. Close the temporomandibular joint supports (J and K). Press the I key.
 - b The temporomandibular joint supports stop automatically when they come into contact with the patient's head. The patient is fixed to the unit by the ear holders.
- 5. Swivel the control mirror outwards. Press the left recess on the touchbar (D).
 - ✤ You can see the patient in the control mirror.

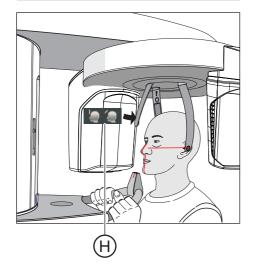


- 6. Switch on the light localizer. CAUTION! Risk of dazzle
 - 🤄 Two red laser lines reflect on the patient's head. To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.





- 7. Align the patient with the central laser line (G).
 - ✤ The laser line reflects in the center of the patient's anterior teeth or the middle of the face (mid-sagittal).



(E).
9. Adjust the height of the light localizer using the slider (F).
She have a structure of the light of the upper edge of the outer ear canal.

8. Align the patient's head according to the Frankfurt horizontal plane

- 10. Correct the patient's head inclination as necessary. Briefly press the up (A) and down (B) height adjustment keys.
 - The laser line reflects on the lowest point of the lower eye socket edge.
- 11. Press the forehead support adjustment key (H).
 - The forehead supports stop moving automatically when they come into contact with the patient's forehead. Ensure that the patient's head does not move backward when the forehead support is put in place.
- **12.** Check the patient's position and make any final corrections as necessary.
- **13.** Swivel the control mirror back into place. by pressing the right recess on the touchbar **(D)**.
 - ✤ The patient can see himself in the control mirror.
- **14.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- \checkmark The patient is positioned in the unit.

IMPORTANT

Note the information on the two-part exposure programs in the "Releasing the exposure" chapter, see "Two-part exposure programs $[\rightarrow 120]$ ".

- 5.1.2.3 Sinus view
- 5.1.2.3.1 Program descriptions
- 5.1.2.3.1.1 S1 Paranasal sinuses

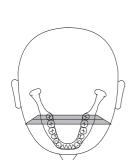
This exposure shows the paranasal sinuses e.g. for the diagnosis of orbital floor fractures.



5.1.2.3.1.2 S3 – Paranasal sinuses, linear slice orientation

This exposure shows the paranasal sinuses e.g. for the diagnosis of orbital floor fractures. The section has a linear orientation.





5.1.2.3.2 Preparing the exposure

Depending on the patient or the exposure program, accessory parts must be replaced and the appropriate exposure mode must be selected; see "Installation and start-up" [\rightarrow 43].

You will require the following accessories:

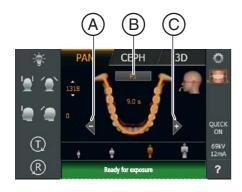
- Blue bite block or contact segment
- Temporomandibular joint supports with contact pads
- Forehead support
- ➤ Insert the accessory parts to be used into the unit and pull on the relevant hygienic protective sleeves, see "Hygienic protective sleeves" [→ 40].
- Switch Sidexis to a ready-for-exposure state; see 'Switch Sidexis to ready-for-exposure state'.

5.1.2.3.3 Selecting an exposure program

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

- Check that a patient is not positioned in the unit before moving it to the starting position.
- ✓ The unit is switched on and ready for exposure.
- 1. Touch the PAN symbol at the top of the touchscreen.
 - ✤ The program group PAN is selected.
- 2. Select the exposure program. Press the arrow keys + C and A.
 - ✤ The exposure program is displayed in the program display (B).
- **3.** Follow the instructions in the comment line on the touchscreen. Press the R key if necessary.
 - ♥ The diaphragm and the sensor move into the starting position.
- The exposure program is selected.



PAN CEPH 3D 1318 1318 14.4 5 14.4

CEPH

3D

0

5.1.2.3.4 Setting the kV/mA values

Setting the kV/mA values via the patient symbols

Preset kV/mA combinations are assigned to the patient symbols, which are selected according to the patient's size and weight. The symbols roughly correspond to child, youth/woman, woman/man, hefty persons.

- ✓ Level 1 is displayed on the touchscreen.
- > Touch the required patient symbol.
 - The selection (A) is highlighted in orange. The selected kV/mA value is displayed on the right side of the touchscreen.
- ⅍ The kV/mA value is set.

Setting the kV/mA values via the submenu line

If the preset kV/mA combinations do not provide a satisfactory result, you can also set the kV/mA values manually in all programs.

- Level 1 is displayed on the touchscreen.
- Touch the kV/mA symbol (B) on the right side of the touchscreen.
 A submenu line is opened.



- Select a kV/mA value. Touch the or + keys.
 The selected kV/mA value is displayed.
- 3. Touch the cross on the left side of the submenu line.
- or
 - > Touch the kV/mA symbol (B) again.
 - \checkmark The submenu line is closed.
- ⅍ The kV/mA value is set.

L R

5.1.2.3.5 Positioning the patient

The patient is positioned on the unit while standing. Positioning in the seat is also possible without issue.

The height adjustment motor starts slowly and then increases its speed.

A patient positioned in the unit may be injured by moving parts.

Monitor the patient and the movement of the unit during height adjustment. To make minor corrections, press and immediately release the keys.

The light localizer consists of one Class 1 laser.

Patients and users can be blinded by the laser light localizer.

- Do not stare directly into the laser beam. Make sure that the laser beam does not meet the eyes of the patient.
- A distance of at least 10 cm must be maintained between the eye and the laser.

IMPORTANT

The image quality of volume exposures is limited by metal or other radiopaque materials located in the patient's mouth.

Ask the patient to take off all metallic objects such as glasses and jewelry in the head and neck area as well as all removable dental prostheses. The tray in front of the control mirror is used for depositing jewelry.

Tip: Reference values are shown for the height and forehead support settings, which are saved for further exposures in the additional information area of the Sidexis software.

5.1.2.3.5.1

5.1 Positioning for paranasal sinus exposures

ears.

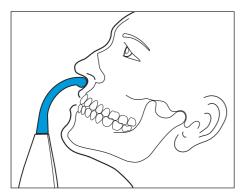
- ✓ The blue contact segment and the temporomandibular joint supports with contact pads are inserted into the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Guide the patient in front of the control mirror.

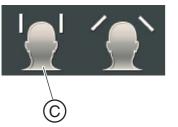
- Set the unit height using the up (A) and down (B) keys.
 CAUTION! The height adjustment motor starts slowly and then increases its speed.

Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep. Release the height-adjustment buttons once the contact pads of the temporomandibular joint supports are located above the patient's

- **3.** Instruct the patient to position himself between the temporomandibular joint supports and hold the handles with both hands.
- **4.** Instruct the patient to place his subnasale (the base of his nose) against the contact segment and tilt his head backwards as far as possible.
 - ✤ The patient's head is reclined as far as possible.

- 5. Close the temporomandibular joint supports with the key (C).
 - The temporomandibular joint supports stop automatically when they come into contact with the patient's head. The patient is fixed to the unit by the contact pads.
- **6.** Check the patient's position and make any final corrections as necessary.
- 7. Instruct the patient to exhale, place his tongue against the roof of his mouth, and to hold this position until the end of the exposure.
- The patient is positioned in the unit.

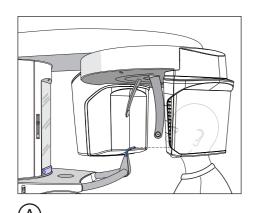




5.1.2.3.5.2

5.2 Positioning for maxillary sinus exposures using the bite block

- ✓ The blue bite block, the forehead support and temple supports are inserted in the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Guide the patient in front of the control mirror.

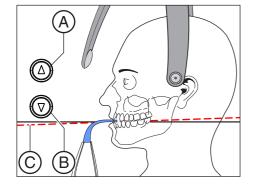


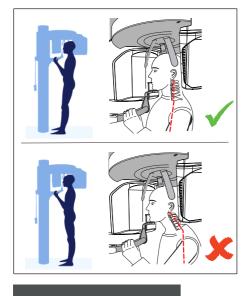
2. Set the unit height using the up (A) and down (B) keys. CAUTION! The height adjustment motor starts slowly and then increases its speed.

Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep.

Release the height-adjustment buttons once the bite block is at the same height as that of the patient's anterior teeth.

- **3.** Instruct the patient to hold the handles with both hands and bite into the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.
- 4. Check the patient's occlusal plane (C). Adjust the unit height using the up (A) and down (B) keys.
 - ${\ensuremath{\,\mathbb k}}$ ${\ensuremath{\,\mathbb k}}$ The occlusal plane is slightly inclined toward the front.

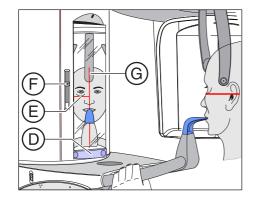




- 5. Check the position of the patient's spine.
 - Ensure that the patient's spine is slightly inclined, as shown in the diagram.

Tip: To achieve the correct positioning of the spine, ask the patient to take a small step towards the column of the unit. The patient's cervical vertebrae are thus stretched. This prevents regions of diminished density in the anterior tooth region on the X-ray.

- 6. Swivel the control mirror outwards. Press the left recess on the touchbar (D).
 - ✤ You can see the patient in the control mirror.
- 7. Switch on the light localizer. CAUTION! Risk of dazzle
 - W Two red laser lines reflect on the patient's head. To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.
- 8. Align the patient with the central laser line (G).
 - ✤ The laser line reflects in the center of the patient's anterior teeth or the middle of the face (mid-sagittal).

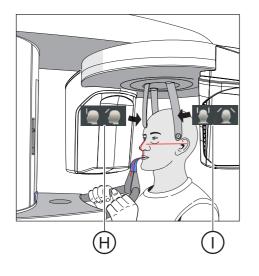


Ē

- 9. Align the patient's head according to the Frankfurt horizontal plane (E)
- 10. Adjust the height of the light localizer using the slider (F).
 - $\$ The laser line reflects on the upper edge of the outer ear canal.
- 11. Correct the patient's head inclination as necessary. Briefly press the up (A) and down (B) height adjustment keys.
 - Solution The laser line reflects on the lowest point of the lower eye socket edge.

ν

В



- 12. Press the temple support adjustment button (I).
 - ♥ When you touch the patient's head, the temple supports stop automatically.
- 13. Press the forehead support adjustment key (H).
 - ♥ When you touch the patient's head, the forehead support stops automatically.

Make sure that the patient's head does not move backwards when placing the forehead support.

- **14.** Check the patient's position and make any final corrections as necessary.
- **15.** Swivel the control mirror back into place. Press the right recess on the touchbar **(D)**.
 - ${\ensuremath{\,{\mathbb E}}}$ The patient can see himself in the control mirror.
- **16.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- \checkmark The patient is positioned in the unit.

5.1.2.3.5.3 Positioning for maxillary sinus exposures using the contact segment

- ✓ The patient has no or only a few anterior teeth.
- The blue contact segment is inserted in the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Instruct the patient to hold the handles with both hands and place his subnasale (the base of his nose) against the contact segment.
- 2. Place a cotton roll between the patient's upper and lower jaw.
 - ~~ The patient's upper and lower jaw are aligned.
- 3. Proceed as described under "Positioning for maxillary sinus exposures using the bite block [\rightarrow 81]" from step 4.

5.1.2.4 Volume exposures

5.1.2.4.1 Program description

If the panoramic X-ray unit is equipped with a 3D function unit, volume exposures can be prepared using cone-beam technology. This enables the diagnosis of section images at the axial, sagittal, and coronal level.

The Low Dose mode in programs VOL1, VOL2 und VOL3 is not available in every country.

5.1.2.4.1.1 VOL1 HD / VOL1 SD / VOL1 Low

The Easypad can be used to select one of the five volume regions:

- Anterior tooth region
- Right/left molar region
- Right/left temporomandibular joint area

The volume range on the object / field of view (FoV) corresponds to a cylinder with a diameter of approx. 8 cm and a height of approx. 8 cm. For dose reduction, the volume for upper/lower jaw exposures can be collimated to approx. 5.5cm.

SD mode (standard definition mode): Standard mode for producing a volume exposure

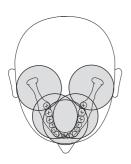
HD mode (High Definition mode):

Four times more single projections are generated in HD mode than in SD mode that can be used for finer reconstructed image quality. This can reduce typical DVT/conebeam artifacts.

Please be aware of the maximum patient dose.

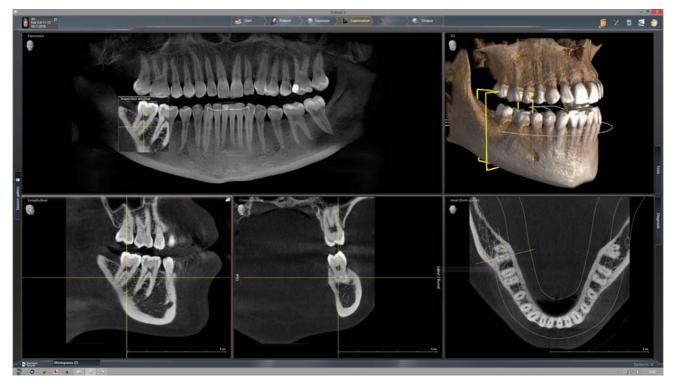
Low Dose mode:

The effective dose for the patient is reduced significantly in Low Dose mode.



VOL1 (8x8 cm)

Please note that blurring can occur in the marginal area of the cylinder. Objects are nevertheless represented in the maximum possible image quality.





5.1.2.4.1.2 VOL2 HD / VOL2 SD / VOL2 Low

The Easypad can be used to select one of the five volume regions:

- Upper jaw / lower jaw anterior tooth region
- Premolar or molar region to the left/right, up/down

The volume range on the object / field of view (FoV) corresponds to a cylinder with a diameter of approx. 5 cm and a height of approx. 5.5 cm. A smaller volume reduces the patient dose.

SD mode (standard definition mode): Standard mode for producing a volume exposure

HD mode (High Definition mode):

Four times more single projections are generated in HD mode than in SD mode that can be used for finer reconstructed image quality. This can reduce typical DVT/conebeam artifacts. HD mode offers a voxel resolution of 80µm for VOL2.

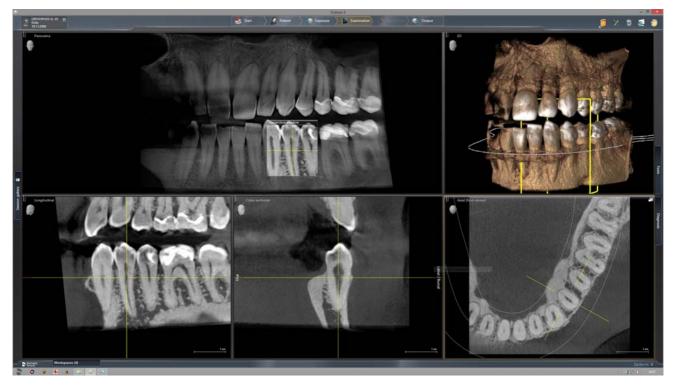
Please be aware of the higher patient dose.

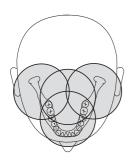
Low Dose mode:

The effective dose for the patient is reduced significantly in Low Dose mode.

VOL2 (5x5.5 cm)

Please note that blurring can occur in the marginal area of the cylinder. Objects are nevertheless represented in the maximum possible image quality.





5.1.2.4.1.3 Option: VOL3 HD / VOL3 SD / VOL3 Low

The Easypad can be used to select one of the 4 volume regions:

- Anterior tooth region
- Molar region without anterior teeth
- Temporomandibular joint area with molars right/left

The volume range on the object / field of view (FoV) corresponds to a cylinder with a diameter of approx. 11 cm and a height of approx. 10 cm. For dose reduction, the volume can be collimated for exposures of the upper jaw to approximately 7.5 cm to about 8.0 cm by selecting the lower quadrants.

SD mode (standard definition mode): Standard mode for producing a volume exposure.

HD mode (High Definition mode):

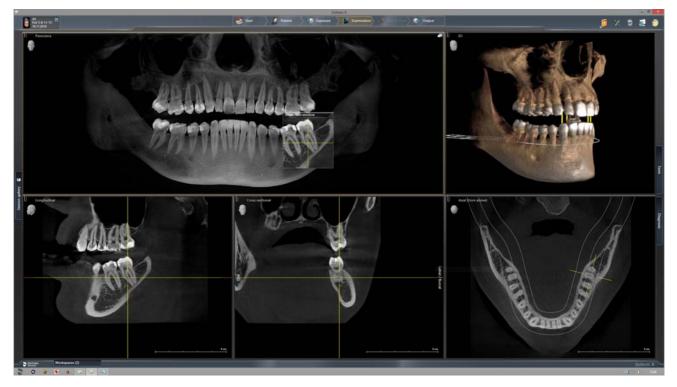
Four times more single projections are generated in HD mode than in SD mode that can be used for finer reconstructed image quality. This can reduce typical DVT/conebeam artifacts. Please be aware of the maximum patient dose.

Low Dose mode:

The effective dose for the patient is reduced significantly in Low Dose mode.

VOL3 (11x10cm)

Please note that blurring can occur in the marginal area of the cylinder. Objects are nevertheless represented in the maximum possible image quality.



5.1.2.4.1.4 Low Dose exposure mode for VOL1 Low, VOL2 Low und VOL3 Low

The Low Dose exposure mode can be selected for all volume levels (VOL1, VOL2, VOL3 (optional)) and collimations.

The only exclusions are the centers of rotation for temporomandibular joint exposures for the volume ranges VOL1 and VOL3 (the setting for the volume ranges and the collimation can be found in the chapter "Adjusting the volume area and collimation [\rightarrow 93]").

Low Dose mode:

The effective dose for the patient is reduced significantly in Low Dose mode.



5.1.2.4.2 Preparing the exposure

You will need to replace accessory parts according to the patient or exposure program.

In general, exposures of all volume areas can be made with the 3D bite block, the yellow bite block or the universal bite block. The 3D bite block or universal bite block is recommended for volume exposures. If it is not possible to work with these bite blocks, another possibility is to use the chin rest with the bite block rod or bar.

While positioning the patient, the upper and lower volume limit is shown with the light localizer on the patient's head. If it then becomes apparent that the desired exposure area is located outside of the limits of the light localizer, the patient's head can be positioned lower or higher in the beam path by using a different bite block.

If exposures are to be taken in the maxillary, temporomandibular, sinus and orbital regions, the patient can then be positioned lower accordingly with the blue bite block or the universal bite block in several layers. The proportional volume in the sinus region is thus greater.

Positioning is also possible with the universal bite block, as this can be adjusted in several stages and the wide, soft bite block foam offers increased safety against vibrations. The bite block foam is equally suitable for patients without anterior teeth.

Positioning is also possible with the occlusal bite block. The occlusal bite block sets the inclination according to the occlusal plane instead of the Frankfurt horizontal plane.

Two spherical bite blocks are available for preparing an implant drilling template for measuring scans of the upper or lower jaw. The bite block plates can be ordered from the SICAT Online Shop, www.sicat.com.

The following accessories are also required:

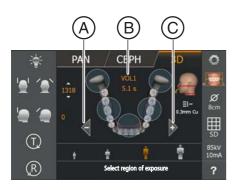
- Temple supports or temporomandibular joint supports with contact pads
- Forehead support
- ➤ Insert the accessory parts to be used into the unit and pull on the relevant hygienic protective sleeves, see "Hygienic protective sleeves" [→ 40].
- ➤ Switch Sidexis to a ready-for-3D-exposure state; see 'Switch Sidexis to ready-for-exposure state'.

5.1.2.4.3 Selecting the volume exposure

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

- Check that a patient is not positioned in the unit before moving it to the starting position.
- ✓ The unit is switched on and ready for exposure.
- 1. Touch the 3D symbol at the top of the touchscreen.
 - ✤ The 3D program group is selected.
- 2. Select the exposure program. Press the arrow keys + C and A.
 - The exposure program is displayed in the program display (B). The radiation time is displayed under the name of the exposure program.
- **3.** Follow the instructions in the comment line on the touchscreen. Press the R key if necessary.
 - The diaphragm and the sensor move into the starting position for volume exposures.
- ✤ The exposure program is selected.
- In volume exposures, the total filtration of the X-ray tube assembly is displayed below the head symbol on the touchscreen. It corresponds with 0.3 mm Cu in SD and HD modes, and to 1mm Cu in Low mode.



5.1.2.4.4 Adjusting the volume area and collimation

You can change between VOL1, VOL2, and VOL3 (optionally) depending on whether a smaller or larger volume can be used.

For volume exposures one of the predefined volume areas must be selected. By selecting the quadrants, collimation of the volume in VOL1 program can be set to a height of 5.5 cm for the upper or lower jaw area, while in VOL2 program, the height is permanently set to 5.5 cm and in VOL3 program, collimation of the volume can be set to a height of 7.5 cm for the upper jaw and 8.0 cm for the lower jaw. However, you must always select a quadrant; or, for the front upper jaw teeth or front lower jaw teeth, the upper or lower area must be selected.

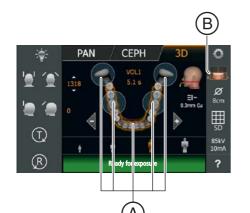
IMPORTANT

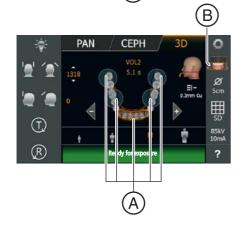
The regions shown do not correspond to the actual diameter of the volume on the touchscreen. See the figure in the section "VOL1 – Program description".

- ✓ Level 1 is displayed on the touchscreen.
- ✓ The message "H403 Switch Sidexis to ready for exposure state" appears in the comment line.
- 1. Select the desired volume area **A**. Touch one of the circles for the anterior, molar, or temporomandibular joint area (only VOL1, VOL3) in the center of the touchscreen.
 - The selected volume area is highlighted orange. According to your selection, the quadrant selection presetting B changes if necessary:

VOL1, VOL3: The quadrant selection can be used for volume collimation. Selecting the molar or temporomandibular joint region, for example, sets collimation for the upper or lower jaw region.

Press the quadrant symbol (B) on the right side of the touchscreen.
 A submenu line is opened.







- **3.** To adjust the collimation, select the lower or upper jaw in the quadrant selection.
 - ✤ The selection is highlighted in orange.
- 4. Touch the cross on the left side of the submenu line.
- or
- > Touch the quadrant symbol **B** again.
- \clubsuit The submenu line is closed.
- ✤ The volume area is selected. VOL1, VOL3: The collimation is set.

5.1.2.4.5 Selecting 3D exposure mode

HD mode (high-definition mode).

SD mode (standard definition mode)

Low (Low Dose exposure mode)

You can select the exposure mode via the selection list on the side for the volume programs.

- ✓ Level 1 is displayed on the touchscreen.
- ➤ Touch the desired exposure mode.



- PAN CEPH 3D PAN SC PAN CEPH 3D PAN SC PAN CEPH 3D PAN SC PAN SC
- The selection (A) is highlighted in orange. The selected mode is displayed on the right side of the touchscreen.
 If Low Dose mode is enabled the patient symbols are highlighted with a blue bar B.
- ✤ The desired mode is selected.

The SD and HD options can also be set in the Start settings menu by default.

IMPORTANT

The Low Dose mode is not persistent and must be selected again following each exposure if required.

5.1.2.4.6 Selecting kV/mA values

85 kV are usually emitted for volume exposures. Preset kV/mA combinations and radiation times are assigned to the patient symbols, which are selected according to the patient's size and weight. The symbols roughly correspond to child, youth/woman, woman/man, hefty persons. The kV/mA values and radiation times are preset, see also "Program values for volume exposures".

- ✓ Level 1 is displayed on the touchscreen.
- ➤ Touch the required patient symbol.
 - The selection (A) is highlighted in orange. The selected kV/mA value is displayed on the right side of the touchscreen and the radiation time is shown below the program name.
- ✤ The kV/mA value is selected.

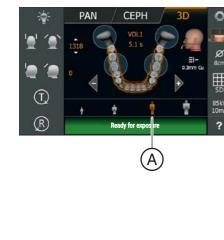
In HD exposure mode: Setting the kV/mA values via the submenu line

If the preset kV/mA combinations do not provide a satisfactory result via the patient symbols, you can also set the kV/mA values manually in all programs in HD exposure mode.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the kV/mA symbol (B) on the right side of the touchscreen.
 - A submenu line is opened.
- **2.** Select a kV/mA value. To do this, touch the arrow keys or +. Please be aware of the maximum patient dose.
 - ✤ The selected kV/mA value is displayed.



- 3. Touch the cross on the left side of the submenu line.
- or
- > Touch the kV/mA symbol (B) again.
- The submenu line is closed.
- ✤ The kV/mA value is set.



PAN

(T) (R) CEPH

0

ø

B

5.1.2.4.7 Positioning the patient

The patient is positioned on the unit while standing. Positioning in the seat is also possible without issue.

The height adjustment motor starts slowly and then increases its speed.

A patient positioned in the unit may be injured by moving parts.

Monitor the patient and the movement of the unit during height adjustment. To make minor corrections, press and immediately release the keys.

The light localizer consists of one Class 1 laser.

Patients and users can be blinded by the laser light localizer.

- Do not stare directly into the laser beam. Make sure that the laser beam does not meet the eyes of the patient.
- A distance of at least 10 cm must be maintained between the eye and the laser.

IMPORTANT

The image quality of volume exposures is limited by metal or other radiopaque materials located in the patient's mouth.

Ask the patient to take off all metallic objects such as glasses and jewelry in the head and neck area as well as all removable dental prostheses. The tray in front of the control mirror is used for depositing jewelry.

Tip: Reference values are shown for the height and forehead support settings, which are saved for further exposures in the additional information area of the Sidexis software.

In volume exposures, 2 red laser lines are emitted after switching on the light localizer. The laser lines show the upper and lower volume limit depending on the program and collimation.

2 red lines are displayed in the head symbol on the touchscreen. They indicate the limit of the volume at the bottom and at the top, and the approximate position of the light beam.

The patient should be aligned in accordance with the occlusal plane. The position can be easily corrected via the head inclination.

5.1.2.4.7.1 Positioning with 3D bite block or universal bite block

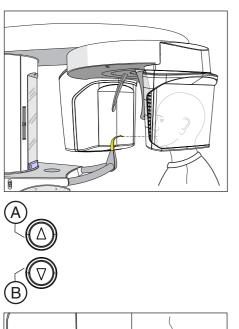
In general, exposures of all volume areas can be made with the 3D bite block, the yellow bite block or the universal bite block. The 3D bite block or the universal bite block is recommended for volume exposures, as the patient is positioned more securely. If it is not possible to work with these bite blocks, another possibility is to use the chin rest with the bite block rod or bar, see "Positioning with chin rest [\rightarrow 99]". The foam of the universal bite block is equally suitable for patients without anterior teeth.

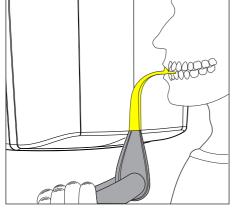
- ✓ The 3d bite block, the yellow bite block, the universal bite block and forehead support and temple supports are inserted in the unit.
- The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Guide the patient in front of the control mirror.
- Set the unit height using the up A and down B keys.
 CAUTION! The height adjustment motor starts slowly and then increases its speed.
 Press and hold down the button until the desired height is reached.

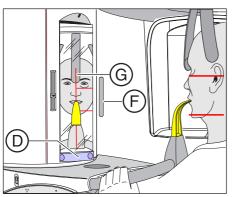
The unit movement is accompanied by a beep. Release the height adjustment buttons once the patient's mouth and the bite block are at the same height.

- **3.** Instruct the patient to hold the handles with both hands and bite into the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.

- **4.** Swivel the control mirror outwards. Press the left recess on the touchbar **D**.
 - ✤ You can see the patient in the control mirror.







5. Switch on the light localizer F. CAUTION! Risk of dazzle

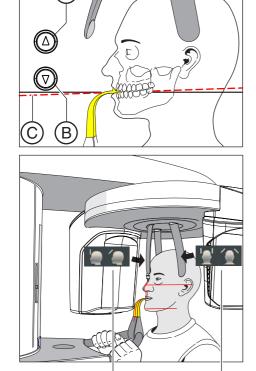
- Depending on a preselected program and collimation, the laser lines show the upper and lower edges of the volume on the patient's head. If the desired exposure area is not located within the horizontal laser lines, the blue bite block or the universal bite block must be used, see "Positioning with blue bite block or the universal bite block. [→ 100]". To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.
- 6. Align the patient with the central laser line G.
 - The laser line reflects in the center of the patient's anterior teeth or the middle of his face (mid-sagittal).
- 7. Align the patient's head as closely as possible along the occlusal plane (C). Correct the patient's head inclination as necessary. Briefly press the up A and down B height adjustment keys.

- 8. Press the temple support adjustment button I.
 - ✤ When you touch the patient's head, the temple supports stop automatically.
- 9. Press the forehead support adjustment key (H).
 - When you touch the patient's head, the forehead support stops automatically.

Make sure that the patient's head does not move backwards when placing the forehead support.

- **10.** Check the patient's position and make any final corrections as necessary.
- **11.** Swivel the control mirror back into place. Press the right recess on the touchbar **D**.
 - $\,\,{\ensuremath{\textcircled{\$}}}\,$ The patient can see himself in the control mirror.
- **12.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- The patient is positioned in the unit.

Tip: You can limit the volume by selecting individual segments using the quadrant selection, see "Adjusting the volume area and collimation $[\rightarrow 93]$ ".



5.1.2.4.7.2 Positioning with chin rest

If it is not possible to work with the 3D bite block or the yellow bite block, it is possible to use the chin rest instead. Patients without anterior teeth also can be positioned with the bar.

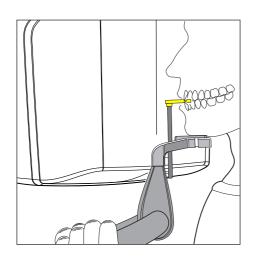
The chin rest can be used to ensure that the mandible is represented in the volume.

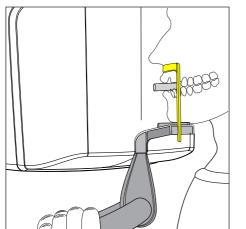
Chin rest with bite block rod

- ✓ The chin rest and bite block rod, and the forehead support and temple supports are inserted in the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Turn the bite block away from the patient.
 - The bite block is pointing towards the control mirror.
- **2.** Instruct the patient to place his chin on the chin rest and place both hands on the hand grips.
- **3.** Turn the bite block towards the patient and instruct him to bite on the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.
- 4. Proceed from step 4 as described under "Positioning with 3D bite block or universal bite block [\rightarrow 97]".

Chin rest with bar

- The patient has no or only a few anterior teeth.
- The chin rest and bar and the forehead support and temple supports are inserted in the unit.
- The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Instruct the patient to place his chin on the chin rest and place both hands on the hand grips.
- 2. Instruct the patient to place his subnasale (the base of his nose) against the bar. The patient's upper and lower jaws must be aligned above one another. If the patient's lower jaw contains anterior teeth, place the bar between his chin and his lower lip.
- Proceed from step 4 as described under "Positioning with 3D bite block or universal bite block [→ 97]".



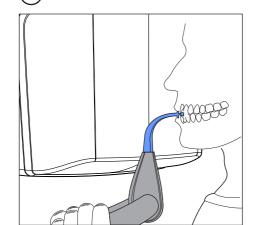


5.1.2.4.7.3 Positioning with blue bite block or the universal bite block.

For maxillary exposures with the full volume, the patient should be positioned lower with the blue bite block or universal bite block in the position marked blue; this also applies to exposures taken in the temporomandibular, sinus and orbital regions. The proportional volume in the sinus region is thus greater.

More secure positioning is possible with the universal bite block due to the wider bite area. The bite block foam is equally suitable for patients without anterior teeth.

- The blue bite block or the universal bite block and the temporomandibular joint supports with contact pads are inserted into the unit.
- ✓ The relevant hygienic protective sleeves are pulled over the accessories.
- 1. Guide the patient in front of the control mirror.



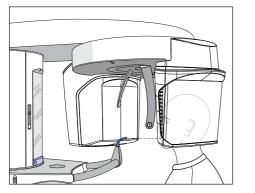
2. Set the unit height using the up A and down B keys. CAUTION! The height adjustment motor starts slowly and then increases its speed.

Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep.

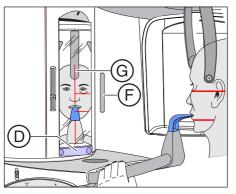
Release the height-adjustment buttons once the bite block is at the same height as that of the patient's anterior teeth.

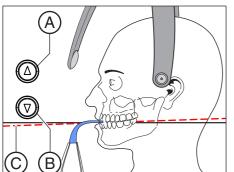
- **3.** Instruct the patient to hold the handles with both hands and bite into the bite block.
 - The patient's anterior teeth are positioned in the indentation in the bite block. If necessary, push the lower anterior teeth forwards until they reach a stop.
- Swivel the control mirror outwards. Press the left recess on the touchbar D.
 - ✤ You can see the patient in the control mirror.
- 5. Switch on the light localizer F. CAUTION! Risk of dazzle
 - Depending on a preselected program and collimation, the laser lines show the upper and lower edges of the volume on the patient's head. The desired exposure area must be located between the two horizontal laser lines.

To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.



100





- 6. Align the patient with the central laser line G.
 - Solution The laser line reflects in the center of the patient's anterior teeth or the middle of his face (mid-sagittal).

 Align the patient's head as closely as possible along the occlusal plane (C). Correct the patient's head inclination as necessary. Briefly press the up A and down B height adjustment keys.

- 8. Press the temple support adjustment button I.
 - ♥ When you touch the patient's head, the temple supports stop automatically.
- 9. Press the forehead support adjustment key (H).
 - When you touch the patient's head, the forehead support stops automatically.

Make sure that the patient's head does not move backwards when placing the forehead support.

- **10.** Check the patient's position and make any final corrections as necessary.
- **11.** Swivel the control mirror back into place. Press the right recess on the touchbar **D**.
 - The patient can see himself in the control mirror.
- **12.** Instruct the patient to exhale, place his tongue against the roof of his mouth, and hold this position until the end of the exposure.
- ✤ The patient is positioned in the unit.

5.1.2.5 Cephalometric exposures

5.1.2.5.1 Program description

Be aware of the different viewing directions in medical and dental radiology.

5.1.2.5.1.1 C1 – Posterior-anterior exposure, symmetrical

The program takes a full-format exposure from posterior to anterior. This program is suitable only for semi-axial cranial exposures. The exposure provides a cranio-eccentric overview.



5.1.2.5.1.2 C2 – Anterior - posterior exposure, symmetrical

The program takes a full-format exposure from anterior to posterior. This program is suitable only for semi-axial cranial exposures. The exposure provides a cranio-eccentric overview.

5.1.2.5.1.3 C3 – Lateral exposure

With this exposure technique, a metal scale integrated in the nose support is displayed on the X-ray exposure. Using this scale, the magnification factor in the median plane can be determined precisely via a measurement.

C3 - Lateral exposure, asymmetric

This program displays a full-format lateral view (approx. 18x23cm). This program omits the front of the patient's head.

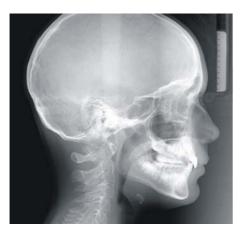


C3F - Lateral full-format exposure

This program displays a full-format lateral view (approx. 30x23cm). This program displays the whole of the patient's head.

Tip: By default, the image of the lateral exposure C3 or C3F shows the patient's face facing to the right. You can change this representation in Sidexis. *"Settings" - "General Settings" -* Representation - *"Ceph a.p./ p.a."*

Please note that all other Ceph exposures C1, C2, and C4 will then also be displayed 'mirrored', i.e. laterally reversed.



5.1.2.5.1.4 C4 – Carpus view, symmetrical



The program displays a carpus view. The carpus view is used to determine the growth stage of the body or the jaw.

5.1.2.5.2 Preparing the exposure

NOTE

The adjustment of the cephalometer may alter depending on the load.

A change in the adjustment may lead to faulty X-rays.

- ➤ Never lean against the cephalometer or the extension arm.
- Do not hang or place any objects against or on the cephalometer or extension arm.

Depending on the patient or the exposure program, accessory parts must be replaced and the appropriate exposure mode must be selected; see "Installation and start-up" [\rightarrow 43].

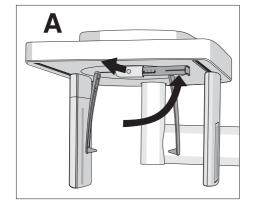
The following illustrations of the cephalometer are shown in the lefthanded arm version. They also apply for the cephalometer with a righthanded arm.

A = asymmetrical

S = symmetrical

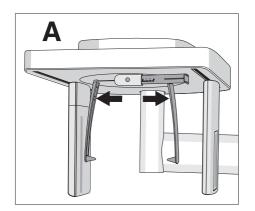
Preparing the nose support

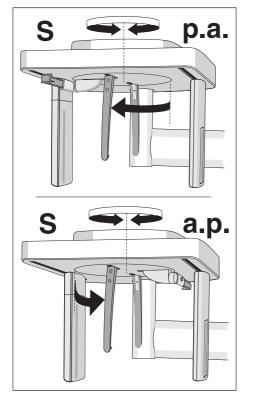
- 1. Grasp the nose support at the rotary joint.
- 2. Pull the nose support forwards until it reaches the stop.
- 3. Swivel the nose support sideways and upwards.



Move the ear plug holders

- 1. Grasp the holders at the very top with both hands.
- 2. Push the holders simultaneously outwards as far as they will go.





Turn the ear plug holders

Note that the holder for the ear plugs must be rotated by 90 degrees for symmetrical exposures and carpus exposures.

- **1.** Grasp the holders at the very top with both hands.
- **2.** Rotate the ear plug holders.
 - In posterior-anterior exposure: The nose support points towards the sensor. In posterior-anterior exposure and carpal exposures: The nose support points towards the secondary diaphragm.

Protective caps and hygienic protective sleeves

➤ Plug the protective caps onto the ear plugs and pull the hygienic protective sleeve onto the nose support, see "Hygienic protective sleeves" [→ 40].

Preparing for a 2D exposure

Switch Sidexis to a ready-for-exposure state; see 'Switch Sidexis to ready-for-exposure state'.

5.1.2.5.3 Selecting an exposure program



Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

- Check that a patient is not positioned in the unit before moving it to the starting position.
- ✓ The unit is switched on and ready for exposure.
- 1. Touch the CEPH symbol at the top of the touchscreen.
 - ✤ The CEPH program group is selected.
- Select an exposure program. To do this, touch the arrow keys + C and A. If you want to select a subprogram, such as C3F, touch the program display B repeatedly. All the subprograms in the selected program are displayed one after the other.
- **3.** Follow the instructions in the comment line on the touchscreen. Press the R key if necessary.
 - The diaphragm and the sensor move into the starting position for cephalometric exposures.
- ✤ The exposure program is selected.

5.1.2.5.4 Adjusting the collimation

In programs C3, C3 F, C1 p.a. and C2 a.p, the exposure area can be limited so that certain parts of the patient's head, e.g. the upper cranial region, thyroid gland and posterior cranial region, are not irradiated. This reduces the patient dose.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Press the collimation symbol (A) on the right side of the touchscreen.
 - ♦ A submenu line is opened.

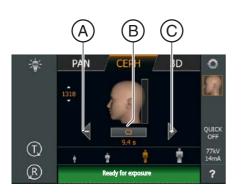
2. Select the collimation.

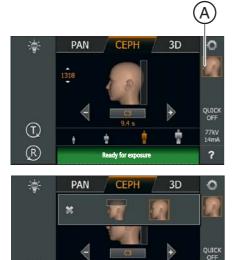
- \clubsuit The selection is highlighted orange in the submenu line.
- 3. Touch the cross on the left side of the submenu line.
- or

77kV 14mA

?

- > Press the collimation symbol (A) again.
- ✤ The submenu line is closed.
- ✤ The collimation is set.





÷.

(T)

 (\mathbf{R})

5.1.2.5.5 Adjusting the Quickshot function

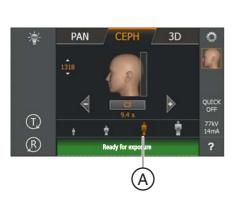
You can set whether the Quickshot function is to be switched on or off for each CEPH program. The Quickshot function reduces the exposure time by 30%.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the Quickshot display A on the right side of the touchscreen.
 - ♦ A submenu line is opened.

- Press the *Quick On* or *Quick Off* icons on the touchscreen.
 The selection is highlighted orange in the submenu line.
- 3. Touch the cross on the left side of the submenu line.
- or
 - > Touch the Quick symbol (A) again.
 - ✤ The submenu line is closed.
- ✤ The Quickshot function is set.







CEPH

3D

0

5.1.2.5.6 Setting the kV/mA values

Setting the kV/mA values via the patient symbols

Preset kV/mA combinations are assigned to the patient symbols, which are selected according to the patient's size and weight. The symbols roughly correspond to child, youth/woman, woman/man, hefty persons.

- ✓ Level 1 is displayed on the touchscreen.
- > Touch the required patient symbol.
 - The selection (A) is highlighted in orange. The selected kV/mA value is displayed on the right side of the touchscreen.
- ✤ The kV/mA value is set.

Setting the kV/mA values via the submenu line

If the preset kV/mA combinations do not provide a satisfactory result, you can also set the kV/mA values manually in all programs.

- ✓ Level 1 is displayed on the touchscreen.
- Touch the kV/mA symbol (B) on the right side of the touchscreen.
 A submenu line is opened.



PAN

×

 (\mathbf{T})

(R)

- 2. Select a kV/mA value. Touch the or + keys.
 - \clubsuit The selected kV/mA value is displayed.
- 3. Touch the cross on the left side of the submenu line.
- or

77kV 14mA

?

- > Touch the kV/mA symbol (B) again.
- The submenu line is closed.
- ♦ The kV/mA value is set.

5.1.2.5.7 Positioning the patient

The patient is positioned on the unit while standing. Positioning in the seat is also possible without issue.

This is the case, for example, if the patient is shorter than approx. 93 cm or taller than 197 cm. In this case, you position the patient on a fixed and height-adjustable chair with a short backrest.

The height adjustment motor starts slowly and then increases its speed.

A patient positioned in the unit may be injured by moving parts.

Monitor the patient and the movement of the unit during height adjustment. To make minor corrections, press and immediately release the keys.

The light localizer consists of one Class 1 laser.

Patients and users can be blinded by the laser light localizer.

- Do not stare directly into the laser beam. Make sure that the laser beam does not meet the eyes of the patient.
- A distance of at least 10 cm must be maintained between the eye and the laser.

IMPORTANT

The image quality of volume exposures is limited by metal or other radiopaque materials located in the patient's mouth.

Ask the patient to take off all metallic objects such as glasses and jewelry in the head and neck area as well as all removable dental prostheses. The tray in front of the control mirror is used for depositing jewelry.

Tip: Reference values are shown for the height and forehead support settings, which are saved for further exposures in the additional information area of the Sidexis software.

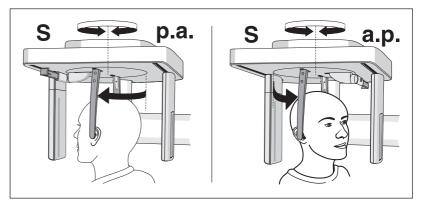
5.1.2.5.7.1 Positioning for symmetrical exposures C1, C2

- Push the ear plug holders apart.
- ✓ The nose support is swiveled upwards.
- ✓ The ear plug holders are rotated at an angle of 90° towards the sensor and the secondary diaphragm.
- ✓ The protective caps for ear plugs are inserted.
- Set the unit height using the up (A) and down (B) keys. CAUTION! The height adjustment motor starts slowly and then increases its speed.

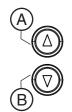
Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep.

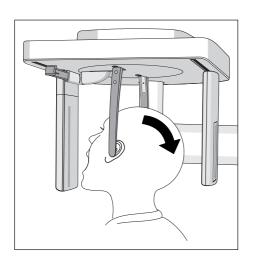
Release the height-adjustment buttons once the Cephalometer is at the same height as that of the patient's head.

- 2. Guide the patient between the ear plug holders.
 - In posterior-anterior exposure: The patient stands facing the sensor. For anterior-posterior exposure: The patient stands facing the secondary diaphragm. This position applies for both right and left-handed arms.



- **3.** Grasp the ear plug holders at the top and simultaneously slide them together.
 - The ear plugs are positioned on the patient's outer auditory passage.
- **4.** Only for program C1 p.a. and C2 a.p: Instruct the patient to tilt his head back and open his mouth as far as possible.
- 5. Instruct the patient to hold this position until the end of the exposure.
- ✤ The patient is positioned in the unit.

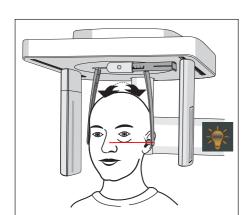


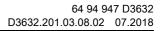


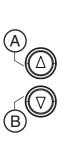
5.1.2.5.7.2 Positioning for C3 lateral exposures

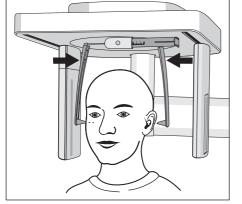
- ✓ The nose support is swiveled upwards.
- ✓ Push the ear plug holders apart.
- ✓ The ear plug holders are in a line with the sensor and the secondary diaphragm.
- ✓ The protective caps for ear plugs are inserted. The hygienic protective sleeve for the nose support is pulled on.
- Set the unit height using the up (A) and down (B) keys. CAUTION! The height adjustment motor starts slowly and then increases its speed. Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep. Release the height-adjustment buttons once the Cephalometer is at the same height as that of the patient's head.
- 2. Guide the patient backwards between the ear plug holders.
- **3.** Grasp the ear plug holders at the top and simultaneously slide them together.
 - The ear plugs are positioned on the patient's outer auditory passage.

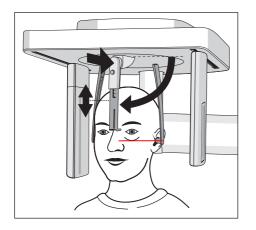
- 4. Switch on the light localizer. CAUTION! Risk of dazzle
 - A red laser line reflects on the patient's head. To switch off the light localizer, press the key again. It switches off automatically after approx. 100 seconds.
- 5. Align the patient's head according to the Frankfurt horizontal plane.
- 6. Correct the patient's head inclination as necessary. Briefly press the up (A) and down (B) height adjustment keys.
 - The laser line reflects on the upper edge of the outer auditory passage and at the deepest point of the lower eye socket.











- 7. Optional: Swivel the nose support downward and adjust it in a vertical and horizontal direction, see "Setting/inserting the cephalometer accessories" [\rightarrow 47].
 - The nose support rests on the root of the nose.
- 8. Instruct the patient to hold this position until the end of the exposure.

5.1.2.5.7.3 Positioning for carpal exposures C4

NOTE

The patient may press too forcefully against the carpus support plate.

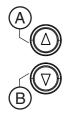
This can damage the carpus support plate.

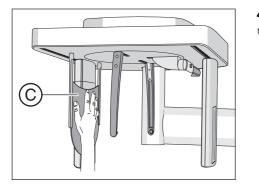
- > Instruct the patient to only press lightly on the carpus support plate.
- ✓ The nose support is swiveled upwards.
- ✓ The carpus support plate is inserted in the unit.
- ✓ Push the ear plug holders apart.
- The ear plug holders are rotated at an angle of 90 degrees towards the sensor and the secondary diaphragm. The nose support points towards the secondary diaphragm.
- 1. Guide the patient sideways into the unit.
- Set the unit height using the up (A) and down (B) keys.
 CAUTION! The height adjustment motor starts slowly and then increases its speed.

Press and hold down the button until the desired height is reached. The unit movement is accompanied by a beep.

Release the height adjustment buttons once the patient can place his/ her hand on the carpus support plate with the arm bent.

- 3. Instruct the patient to place his hand on the carpus support plate.
 - For a cephalometer with a right-handed arm: The patient's left hand is positioned on the carpus support plate. For a cephalometer with a left-handed arm: The patient's right hand is positioned on the carpus support plate. The patient's fingertips do not protrude beyond the upper edge (C). The patient's hand and arm form a line.
- 4. Instruct the patient to hold this position until the end of the exposure.
- ✤ The patient is positioned in the unit.





5.1.2.6 Pediatric exposures

Compared to middle-aged adults, children and adolescents are three times more at risk from radiation. A justifying indication requires that the health benefits of use outweigh the risk posed by radiation. Other procedures with similar health benefits that do not involve any, or only involve low-level, exposure to radiation must be preferred when weighing up the situation.

Medical radiation exposure as part of dental care provided to children and adolescents must produce sufficient benefits, whereby radiation exposure resulting from an X-ray examination is to be limited as much as can be accepted with the requirements of medical science (the ALARA principle).

Dentsply Sirona offers numerous options for reducing the radiation exposure for adults, and especially for children and adolescents, to a necessary minimum. Furthermore, there are numerous options for simplifying the X-ray applications for children and adolescents.

Please observe the detailed descriptions on these in the respective chapters of these Operating Instructions!

Dose reduction

Overview of the options for reducing doses, in particular for children and adolescents, with the Orthophos SL:

- Using child/panorama layer imaging P10, P10A, P10C.
 - The exposures present a reduced tooth region without ascending rami. In addition, exposure times are reduced and the exposure dose is cut by up to 40% compared to panorama layer imaging P1.
- Selecting the relevant patient symbol for children/adolescents.
 - The two smallest patient symbols represent the exposure values for children/adolescents. Through their reduction in the Kv/mA values for these exposure parameters, the dose is lowered accordingly.
- Selecting the Quickshot adjustment parameter.
 - In addition to the child exposures P10, P10A, and P10C, the Quickshot function can be selected for these panorama layer images. Due to the quicker cycle, the dose is reduced by up to 40% depending on the program; the image quality is reduced a little in the process.

• Collimation to the smallest possible area / FoV for 3D exposures:

2D X-ray panorama layer imaging:

- By showing the X-ray area on a quadrant, up to 30% of the dose can be saved with panorama layer imaging.
- By showing the area on a quadrant in combination with the Quickshot adjustment parameter, up to 60% of the dose can be saved.

2D X-ray Ceph exposure:

- With teleradiography, the exposure area can be shown with the programs C3 and C3 F, as well as C1 p.a and C2 a.p. This reduces the patient dose.
- In addition to this overlaying, the Quickshot adjustment parameter can also be selected in Ceph mode. This further reduces the patient dose.

3D X-rays:

- In the VOL1 volume exposure, the height of the FoV at all centers of rotation can be collimated to 5.5 cm.
- By selecting the VOL2 volume, the volume can also be reduced in diameter to 5 cm. This reduces the effective dose by approx. 30%.
- By selecting the Low Dose exposure mode, the effective dose can be reduced significantly as compared with the SD exposure mode.

Optimized X-ray applications

Overview of the options for simplifying X-ray applications for children/ adolescents with the Orthophos SL:

- Children and adolescents can often be positioned in a stiller and more stable position if they are seated. The Orthophos SL can therefore be brought down for an exposure in the seat to a bite block height of 80 cm.
- To explain the exposure and to alleviate any fears, a radiation-free test cycle can be started at any time.
- The Orthophos SL has been designed so that it functions openly and does not scare or induce fear in children and adolescents.
- There are no distressing cycle noises.
- Optimum and stable positioning options and adjustment tools prevent faulty exposures.
- The Orthophos SL does not require any target exposures to check the correct patient positioning. This means no unnecessary extra dosing.

5.1.3 Releasing the exposure

5.1.3.1 Starting the test cycle

The test cycle is executed without radiation. The test cycle is used to check that the unit is functioning correctly and to ensure that a complete, uninterrupted cycle is possible. The rotating unit stops automatically if the resistance increases.

- ✓ The unit is in its starting position. Selecting an exposure program [→ 70]
- 1. Press the T key.
 - The program enters test cycle mode. On the touchscreen, the display of the kV/mA value, the exposure time and the patient symbols is hidden. Two test cycle symbols appear.
- 2. Press the release button.
 - The test cycle is started.
- 3. Wait until the test cycle has been completed.
- 4. Press the T key again.
 - ✤ The program exits test cycle mode.

5.1.3.2 Releasing the exposure

The exposure can be released using the release button on the spiral cable or the remote control. If the unit is installed in an X-ray room, which features a door edge, and the line of sight towards the patient is guaranteed, the exposure is to be released via the remote release, see "Using remote release" [\rightarrow 126].

The unit emits X-ray radiation.

Excess exposure to X-rays is detrimental to health.

- > Use the prescribed accessories for radiation protection.
- Do not stay in the X-ray room during exposure. Move as far away from the unit as the coiled cable for the release button allows you to.

The movement of the system may be adversely affected by the patient's physical constitution, clothing, or dressings, or by wheelchairs or hospital beds.

The exposure is automatically terminated if the movement of the unit is inhibited. The exposure must be repeated.

Ensure that the movement of the unit is not impaired when positioning the patient. Before the exposure, perform a test cycle using the T key.



Prematurely letting go of the release button cancels the exposure immediately.

The exposure must be repeated.

Take care not to let go of the exposure release button prematurely. Press the release button until the end of the exposure. Note that radiation may be released several times during an exposure cycle.

The exposure memory of the unit is cleared when the unit is switched off.

Images that have not been transferred to Sidexis are irretrievably lost. The exposure must be repeated.

Wait until the exposure data have be completely transferred. Do not switch the unit off before the X-ray exposure is displayed on the Sidexis screen.

In the case of cephalometric exposures with right-handed arm, the secondary diaphragm and sensor automatically return to the starting position following exposure.

A patient who exits the unit too quickly risks injury from the moving parts.

- Be sure to explain the entire exposure procedure to the patient. The patient may leave only after the exposure has been taken and the secondary diaphragm and sensor have automatically returned from the cephalometer.
- Ceph arm on right side: Scanning operation from rear to front after the exposure, the secondary diaphragm and the sensor move automatically to the rear for the positioning of the next patient. In the left-handed arm version: Scanning operation from front to rear, secondary diaphragm and sensor remain at the rear in the position required for positioning the next patient.

AUTION

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

Check that a patient is not positioned in the unit before moving it to the starting position.

IMPORTANT

Prior to exposure, ensure that you have selected the correct exposure program. Check the program display on the touchscreen and the position of the sensor.

IMPORTANT

Premature release of a new exposure is prevented by the automatic exposure blocking function. This function is used for thermal protection of the X-ray tubes.

After the release button is pressed, the message *"Ready for exposure in "XX" seconds"* appears in the comment line of the touchscreen. The remaining cooling time is counted down and is displayed under "XX". Only after the cooling period has elapsed is it possible to release a new exposure.

- I The program settings have been made.
- ✓ The patient is positioned in the unit.
- No further auxiliary messages may be displayed in the comment line of the touchscreen. The "Ready for exposure" message must appear.

Tip: If you press the exposure release button on the remote control while the door is open, the *"Close the door"* message is displayed with the help code H321. Close the door and acknowledge the message.

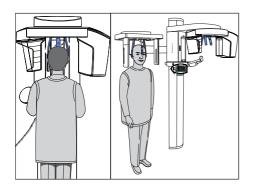
IMPORTANT

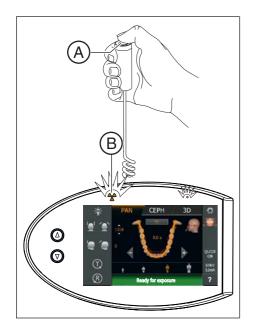
Advise the patient of what to do during the exposure and check to make sure that they comply:

- The patient must not move his/her head in any way.
- The patient's shoulders must not be hunched.

- For cephalometric images, the arms of the patient must hang down freely at the sides.

- 1. Press release button (A) and hold it down until the end of the exposure.
 - The exposure is released. "Exposure is performed" appears in the comment line on the touchscreen. During radiation, the optical radiation indicator (B) lights up on the Easypad. In addition, an acoustic signal sounds throughout the radiation. Radiation can be released several times during the exposure.
- 2. Press and hold release button **A**. Wait until a short pulsed tone sequence sounds (can be deactivated by a service engineer). The message *"Please wait"* appears in the comment line of the touchscreen followed by confirmation of the exposure data. Exposure mode, exposure program, tube voltage and current, actual radiation time and dose-area product are displayed.
 - The forehead and temple or temporomandibular joint supports open automatically.
- 3. Let go of release button (A).
 - The exposure is completed.
 - Solution The X-ray image is displayed on the PC monitor after a brief period.
- 4. Guide the patient out of the unit.







- 5. Press return key (R) on the Easypad.
 - Confirmation of the exposure data is acknowledged.
- 6. WARNING! The patient may be injured by moving parts. Press return key R on the Easypad again.
 - $\boldsymbol{\boldsymbol{\xi}}$ The rotating unit moves to the starting position.
- The unit is ready for the next exposure.

Save data; see Sidexis

Two-part temporomandibular joint exposure program TM 1.1

In the **Two-part exposure program TM 1.1**, two exposures (TM 1.1 and TM 1.2) are made.

- ✓ Once the first temporomandibular joint exposure has been released, the message "*Please wait*" appears in the comment line on the touchscreen.
- ✓ The rotating unit has automatically moved to the starting position.
- 1. Instruct the patient to open his/her mouth.
 - ⁵ The patient has opened his/her mouth without changing his/her position.
- 2. Press the release button A and hold it down until the end of the second exposure.
 - ✤ The second exposure is released. "Exposure is performed" appears in the comment line on the touchscreen.
- **3.** Wait until a short pulsed tone sequence sounds (can be deactivated by a service engineer).
 - The message "Please wait" appears in the comment line of the touchscreen followed by confirmation of the exposure data. Exposure mode, exposure program, tube voltage and current, actual radiation time, dose-area product are displayed.
- 4. Let go of release button (A).
 - ✤ The second exposure is completed. Proceed as described above starting with step 5.
 - The X-ray image is displayed on the PC monitor after a brief period.



5.1.3.3 Rescue program for issues during image transfer and raw data import

In case of unexpected network errors or exposure interruptions, there may be problems with image transfer to Sidexis 4.

There are two options available in **Sidexis 4** for transferring images, which are described below:

- The exposure data can still be found in the exposure memory of the unit and auxiliary message H420 is displayed on the Easypad; see "Unit rescue [→ 121]".
- The exposure data has been transferred from the X-ray unit, but has not yet been imported into Sidexis 4, see "Data container rescue [→ 124]".

5.1.3.3.1 Unit rescue

The exposure memory of the unit is cleared when the unit is switched off.

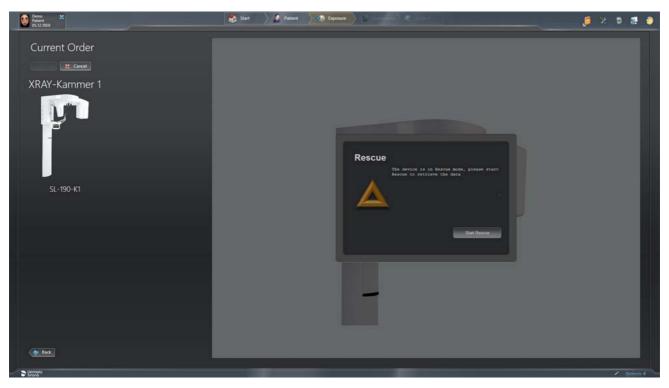
Images that have not been transferred to Sidexis are irretrievably lost. The exposure must be repeated.

- Wait until the exposure data have be completely transferred. Do not switch the unit off before the X-ray exposure is displayed on the Sidexis screen.
- ✓ The auxiliary message H420 is displayed on the Easypad.
- The X-ray exposure could not be transferred, as a network fault exists or the PC failed.

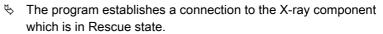
In this case, the system terminates the connection after a unitdependent time and switches to Rescue state.

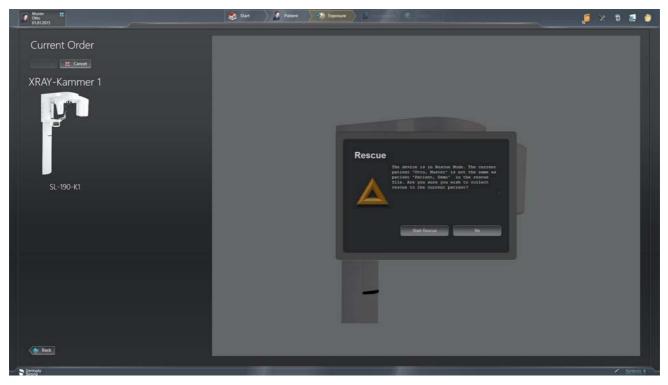
This means: That the image is not lost, but is kept in the RAM of the X-ray component by a safety mechanism until it is retrieved by Sidexis. A further exposure with this X-ray unit is blocked until this moment.

- 1. Select the X-ray unit in Rescue state.
- 2. Select the current exposure.



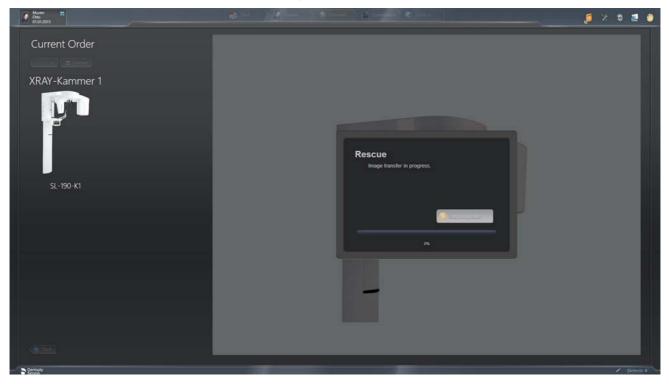
3. Click on Start rescue if the logged in patient has been X-rayed with the unit in Rescue state.





4. Click No if the patient logged in on the PC and the unit do not match.

5. Log in the patient who is in Rescue state into Sidexis 4 (see "Sidexis 4 Operator's Manual") and click on the 'Start rescue' button.



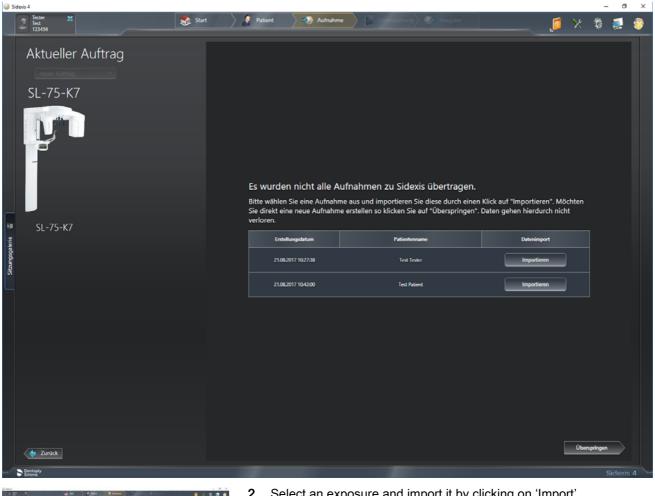
𝔄 If a connection is successfully established, data is transferred.

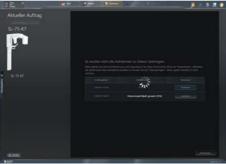
IMPORTANT

The displayed exposure may in certain circumstances indicate a lower level of quality if the exposure procedure was terminated prematurely or a data transfer problem occurred between the unit and the reconstruction server.

5.1.3.3.2 Data container rescue

- ✓ Data are available which have not yet been transferred to the Sidexis 4 database.
- 1. Start Sidexis 4.
 - ✤ The data container rescue view is displayed if when enabling exposure readiness, patient exposures are available that have not yet been imported into the Sidexis 4 database. In this case, a Unit rescue [\rightarrow 121] H420 (5.1.3.3.1) is not available. The table contains an entry for each patient exposure which has not yet been imported into the Sidexis 4 database.

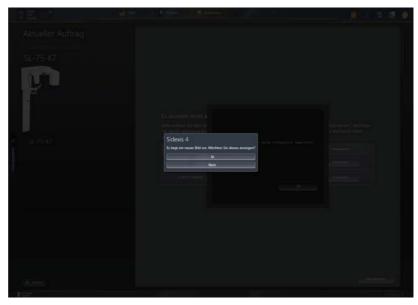


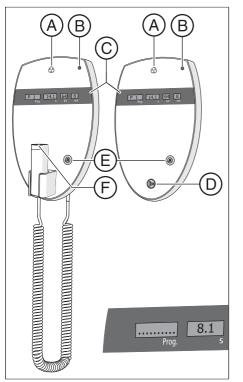


2. Select an exposure and import it by clicking on 'Import'.



- 3. If you would like to create a new exposure, click on 'Skip'.
 - You will not lose any data by doing so. You can carry out the import at a later point in time.
- **4.** Once an import is successfully completed, you can display the imported exposure.





5.1.3.4 Using the remote control

On the remote control, exposures are triggered using the release button **(D)**. If it is not possible to maintain visual contact with the patient when releasing the exposure, the release key with the coiled cable **(F)** on the X-ray unit can be removed and used on the remote control.

If the unit is ready for exposure and no auxiliary messages are displayed, the current program parameters appear on display **(C)**: Program designation, exposure time, voltage, current in the individual fields (*Prog.*, *s*, *kV*, *mA*). The exposure can be released now.

If plain-text help messages are displayed on the Easypad touchscreen, they also appear in coded form on the *Prog.* display of the remote control, alternating with the program name.

When switching on the unit, the X-ray indicator **A** lights up for a functional check for approx. 1 second.

The LED **B** lights up when the unit is on.

Use the Return key **E** to acknowledge exposures, error messages and auxiliary messages and move the rotating unit to the starting position.

If a row of dots appears in the *Prog.* field on the digital display **(C)**, this means the unit is currently in a preparatory phase (e.g. unit movements, parameter settings, program loading times, etc.). Wait until the dots disappear automatically and the system is ready for operation.

5.1.3.5 Canceling an exposure

An exposure that has been triggered can be canceled again at any time.

Pressing the R key moves the unit to the starting position.

A patient positioned in the unit may be injured by moving parts.

- Check that a patient is not positioned in the unit before moving it to the starting position.
- The exposure is released.
- 1. Let go of the exposure release button.
 - The exposure is immediately terminated.
 Message H320 appears.
 The exposure data of the terminated exposure is displayed in Sidexis.
 The radiation time and dose-area product flash.
- 2. Guide the patient out of the unit.
- 3. Press the R key.
 - ✤ The actual required radiation time is acknowledged.
- 4. Press the R key again.
 - ✤ The rotating unit moves to the starting position.
- \checkmark The unit is now ready for the next exposure.

IMPORTANT

The program settings must be checked before the exposure is repeated. Any changed program settings must be preselected again.



5.1.4 Editing an exposure

5.1.4.1 Panorama editor

The *"Panorama editor"* is available to you in *"Sidexis 4"* for editing panoramic X-ray exposures. You can make positional corrections and layer orientation adjustments using the *"Panorama editor"*.

Using the *"Panorama editor"*, only panoramic exposures that have been generated using the Sirona X-ray system *"Orthophos SL"* and the following programs can be edited:

P1, P2, P10, P12, BW1, BW2, TM1, TM3, S1, S3

NOTE: Information on the user interface can be found in the document "Panoramaeditor Operator's Manual" (REF 6544550).

5.2 Preselecting basic settings

5.2.1 Changing the basic settings and start settings

5.2.1.1 PAN program group

In level 2:

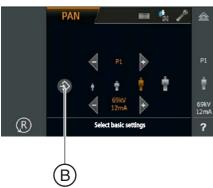
In the basic settings, the stored kV/mA values for the patient symbols can be adjusted for each program.

In the default settings, the pre-selection of the patient symbol can be changed and the enabling/disabling the Quickshot function can be preset.

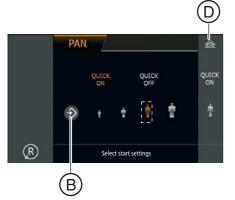
Basic settings: changing the kV/mA values of the patient symbols

- ✓ Level 1 of the PAN program group is displayed on the touchscreen.
- 1. Touch the toothed wheel **A** in the upper right corner of the touchscreen.
 - ♦ Level 2 is displayed.
- 2. Select the exposure program for which you want to change the kV/ mA value. Touch the or + arrows.
 - Solution The selected setting is displayed on the right side of the touchscreen.
- **3.** Select the patient symbol for which you want to change the kV/mA value.
- **4.** Select the kV/mA value that you want to apply to the selected program and patient symbol.
- 5. Touch the save symbol (B).
 - Symbol.
- 6. Repeat this procedure for the other patient symbols and programs.
 - Solution The settings for the kV/mA values stored for the patient symbols have been made.









Start settings: Changing the start settings for the patient symbol and selecting enabling/disabling the Quickshot function

- ✓ Level 2 of the PAN program group is displayed on the touchscreen.
- 1. Touch the diskette symbol (C) at the top of the touchscreen.
 - ✤ The start settings are displayed.

- 2. Select the patient symbol that you want to preset.
 - The selection is highlighted in orange and displayed on the right side of the touchscreen.
- **3.** Select whether the Quickshot function should be switched on or off. Press the *Quick On* or *Quick Off* icons on the touchscreen. The Quickshot function reduces the cycle time by approx. 20 to 50%, depending on the exposure program. The function is set independently of the exposure program.
 - The selection is highlighted in orange and displayed on the right side of the touchscreen.
- 4. Touch the save symbol (B).
 - b The setting is saved for the PAN program group.
- 5. Touch the double triangle D in the upper right corner of the touchscreen.

5.2.1.2 3D program group

The preselection of the 3D exposure mode and the patient symbol can be changed with the start settings.

Changing start settings for 3D exposure mode and patient symbol

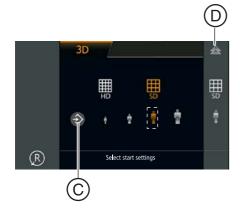
- ✓ Level 1 of the 3D program group is displayed on the touchscreen.
- 1. Touch the toothed wheel **A** in the upper right corner of the touchscreen.
 - Level 2 is displayed.



PAN

(T) (R) CEPH

- 2. Touch the diskette symbol (B) at the top of the touchscreen.
 Symbol The start settings are displayed.
- Select whether HD or SD exposure mode is preset.
 ✤ The selection is highlighted in orange.
- 4. Touch the save symbol (C).
 ✤ The setting is saved for the 3D program group.



- 5. Select the patient symbol that you want to preset.Selection is highlighted in orange.
- 6. Touch the save symbol (C). The setting is saved for the 3D program group.
- 7. Touch the double triangle **D** in the upper right corner of the touchscreen.
 - $\,\,{\ensuremath{{\S}}}\,$ The start settings are hidden, level 1 is displayed.

5.2.1.3 CEPH program group

In level 2:

In the basic settings, the stored kV/mA values for the patient symbols can be adjusted for each program.

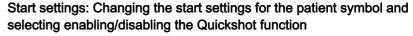
In the default settings, the pre-selection of the patient symbol can be changed and the enabling/disabling the Quickshot function can be preset.

Basic settings: changing the kV/mA values of the patient symbols

- ✓ Level 1 of the CEPH program group is displayed on the touchscreen.
- **1.** Touch the toothed wheel **A** in the upper right corner of the touchscreen.
 - ♦ Level 2 is displayed.
- 2. Select the exposure program for which you want to change the kV/ mA value. Touch the or + arrows.
 - ✤ The selected setting is displayed on the right side of the touchscreen.
- **3.** Select the patient symbol for which you want to change the kV/mA value.
- **4.** Select the kV/mA value that you want to apply to the selected program and patient symbol.
- 5. Touch the save symbol (B).
 - The kV/mA value is saved for the selected program and patient symbol.
- 6. Repeat this procedure for the other patient symbols and programs.
 - The settings for the kV/mA values stored for the patient symbols have been made.



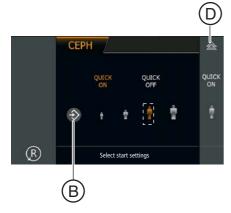




- ✓ Level 2 of the CEP program group is displayed on the touchscreen.
- 1. Touch the diskette symbol (C) at the top of the touchscreen.
 - $\hfill \diamondsuit$ The start settings are displayed.

- 2. Select the patient symbol that you want to preset.
 - Side of the touchscreen.
- **3.** Select whether the Quickshot function should be switched on or off. Press the *Quick On* or *Quick Off* icons on the touchscreen. The Quickshot function reduces the cycle time by approx. 20 to 50%, depending on the exposure program. The function is set independently of the exposure program.
 - The selection is highlighted in orange and displayed on the right side of the touchscreen.
- 4. Touch the save symbol (B).
 - The setting is saved for the CEPH program group.
- 5. Touch the double triangle D in the upper right corner of the touchscreen.
 - ✤ The start settings are hidden, level 1 is displayed.





5.2.2 Adjusting the touchscreen

A touch-sensitive click tone is issued as an acoustic confirmation following every input on the touchscreen. The click tone can be switched on and off.

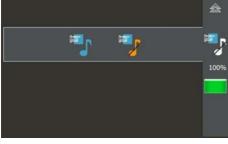
The intensity of the touchscreen display can also be adjusted depending on the current lighting conditions.

IMPORTANT

Once the PAN screen is displayed the intensity of the touchscreen display can be adjusted. This is approximately 70 seconds after the unit is switched on.

- ✓ Level 1 is displayed on the touchscreen.
- 1. Touch the question mark (A) in the lower right corner of the touchscreen.
 - Solution The display for setting the click tone and the intensity of the touchscreen display appears.
- 2. Touch the musical note icon.
 - The subline menu for the click tone is opened.
- **3.** Switch the click tone on or off.
 - The selection is highlighted in orange.
- 4. Touch the selected symbol in the right-hand column again.
 - The subline menu for the click tone closes.
- **5.** Touch the green-white field in the bottom right corner of the touchscreen.
 - The subline menu for the intensity of the touchscreen display is opened.
- 6. Set the intensity by touching the -/+ keys.
 - The intensity of the touchscreen display and the reference value over the green-white field change.
- 7. Touch the selected symbol in the right-hand column again.
 - The subline menu for the intensity of the touchscreen display closes.
- **8.** Touch the double triangle in the upper right corner of the touchscreen.
 - ✤ Level 1 is displayed.
- ✤ The click tone and the intensity of the touchscreen display are set.









5.2.3 Calling the Info screen

The Info screen lists unit data that is useful for any discussions with your service engineer.

- ✓ The touchscreen display is located on level 1.
- 1. Touch the toothed wheel (A) in the upper right corner of the touchscreen.
 - b The touchscreen display is located on level 2.
- **2.** Touch the question mark (B) in the lower right corner of the touchscreen.
 - \checkmark The info screen is displayed.
- 3. Touch the arrows (C) in the scroll bar to the right of the list.
 Scroll bar to the next or previous page of the list is displayed.
- **4.** Touch the double triangle in the upper right corner of the touchscreen.
 - \clubsuit The display changes to level 1.

5.2.4 Calling the service menu

The service menu is intended exclusively for service engineers. Service routines can be activated and unit settings incl. tests and calibrations can be performed in this menu.

- ✓ The touchscreen display is located on level 1.
- 1. Touch the toothed wheel **A** in the upper right corner of the touchscreen.
 - ♥ Level 2 is displayed.
- 2. Touch the wrench symbol (B).
 - ♥ The display for entering the service password appears.

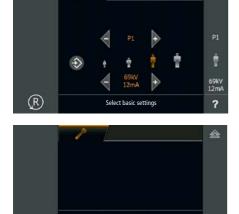
- **3.** Enter the service password as described in the Installation Instructions or in the Service Manual.
 - b The service menu is displayed after it has been accessed.
- The service menu is called.



B

📰 🔩

â



PAN



6