

Panoramic and 3D Modality Installation Guide

for CS 8100 3D Family

Including

CS 8100 3D

CS 8100 3D Access

CS 8100 3D Select

CS 8100SC 3D

CS 8100SC 3D Access

CS 8100SC 3D Select

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Notice

The Panoramic and 3D Modality Installation Guide for CS 8100 3D Family provides information about how to install the Panoramic and 3D Modality. We recommend that you thoroughly familiarize yourself with this guide to make the most effective use of your system.

For the installation of the Cephalometric Modality see the Cephalometric Modality Installation Guide for CS 8100 Family and CS 8100 3D Family.

The CS 8100 3D Family comprises:

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

CS 8100 3D, CS 8100 3D Access and CS 8100 3D Select can be upgraded to Cephalometric Modality, when the Scan Ceph module is provided as an upgrade kit.

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



WARNING: We recommend that you consult the **"Safety, Regulatory and the Technical Specification User Guide"** before using the CS 8100 3D Family.

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Conventions in This Guide

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



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



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



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



Note: Emphasizes important information.



Tip: Provides extra information and hints.

Functional Overview

The CS 8100 3D Family comprises:

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

CS 8100 3D, CS 8100 3D Access and CS 8100 3D Select can be upgraded to Cephalometric Modality, when the Scan Ceph module is provided as an upgrade kit.

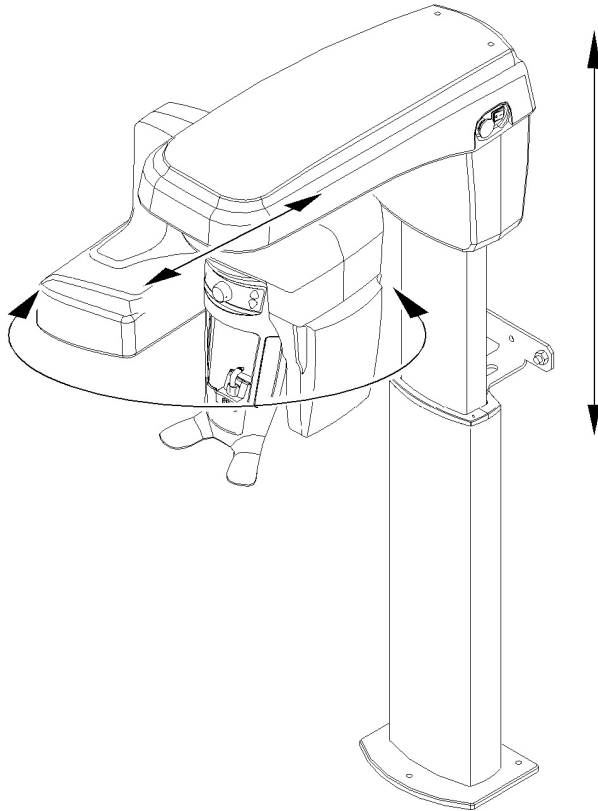
This document refers to all models as CS 8100 3D unless otherwise specified.

Mobile Components

The following figure illustrates the general overview of CS 8100 3D.

Figure 1 illustrates the up and down movement of the CS 8100 3D unit mobile component and the rotation and translation of the rotative arm.

Figure 1 CS 8100 3D Unit Mobile Components

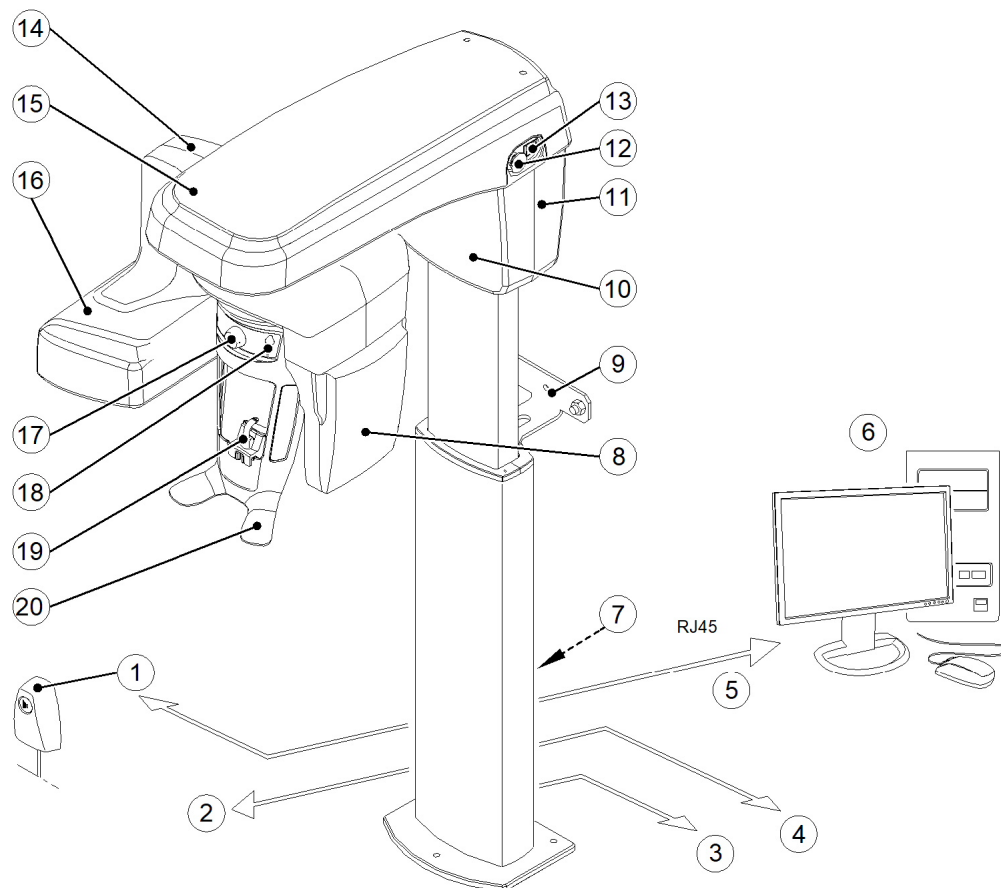


Note: Patients can enter through either the left or right side of the unit.

General Functional Components

Figure 2 illustrates the general functional components of the CS 8100 3D unit.

Figure 2 CS 8100 3D Unit Functional Components

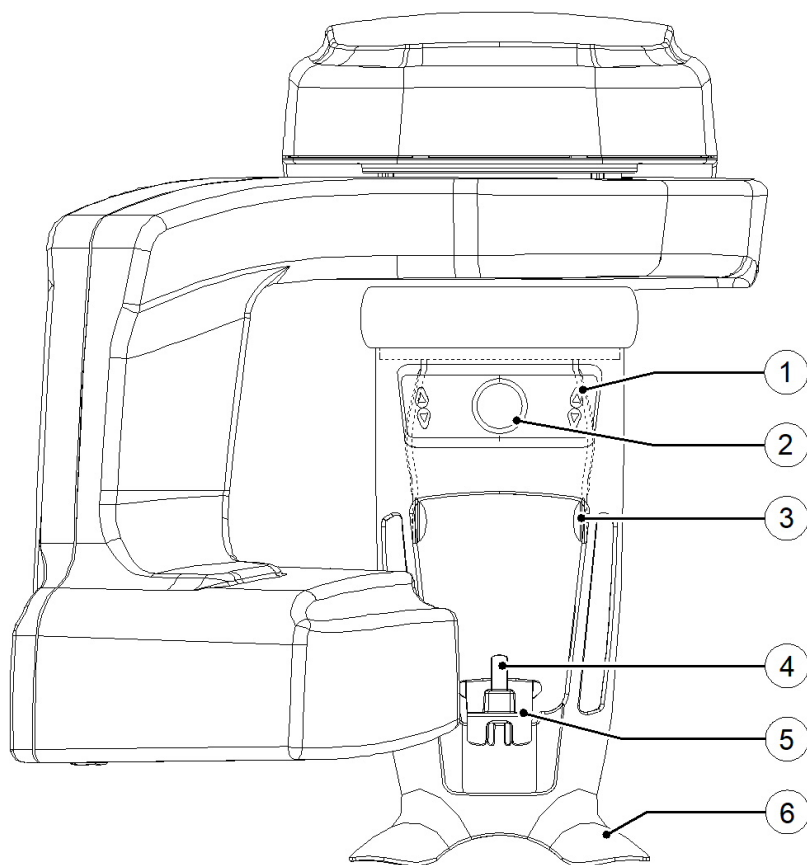


- | | |
|----------------------------------|---|
| ① X-ray remote control | ② Door safety switch |
| ③ Unit mains connecting terminal | ④ X-ray warning lamp |
| ⑤ RJ45 ethernet cable | ⑥ Computer hosting the imaging and the acquisition software |
| ⑦ Access panel | ⑧ Sensor |
| ⑨ Mounting bracket | ⑩ Front column cover |
| ⑪ Rear column cover | ⑫ Stop switch |
| ⑬ On/off switch | ⑭ Unit rotative arm |
| ⑮ Head cover | ⑯ X-ray source assembly |
| ⑰ Temple support adjustment knob | ⑱ Positioning panel |
| ⑲ Chin rest | ⑳ Head and chin rest |

Head and Chin Rest

Figure 3 illustrates the functional components of the CS 8100 3D head and chin rest.

Figure 3 Head and Chin Rest Functional Components

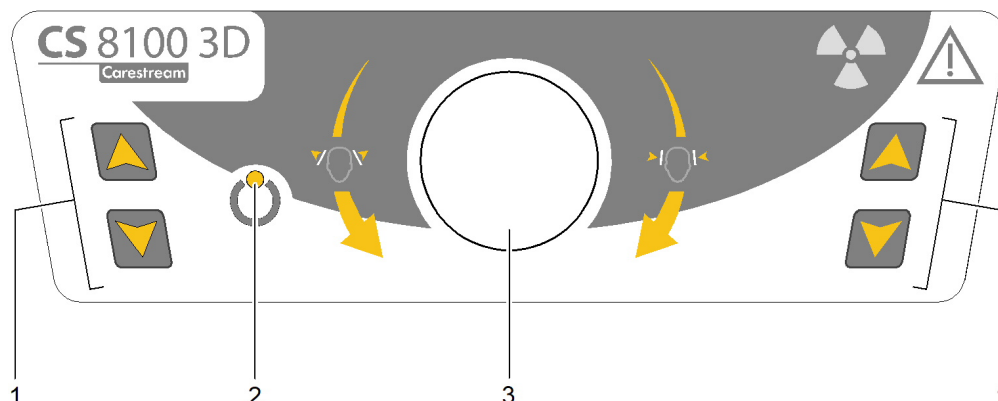


- | | |
|------------------------|----------------------------------|
| ① Positioning Panel | ② Temple support adjustment knob |
| ③ Temple support | ④ Bite block support |
| ⑤ Chin rest | ⑥ Hand grips |
| ⑦ Head restraint strap | |

Positioning Panel

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

Figure 4 Unit Positioning Panel



1 Height Adjustment buttons:

- Adjusts the height of the unit to the height of the patient.

When the unit is not in use, places the rotative arm in a parallel position to the unit head, leaving more free space around the unit.

To do so:

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

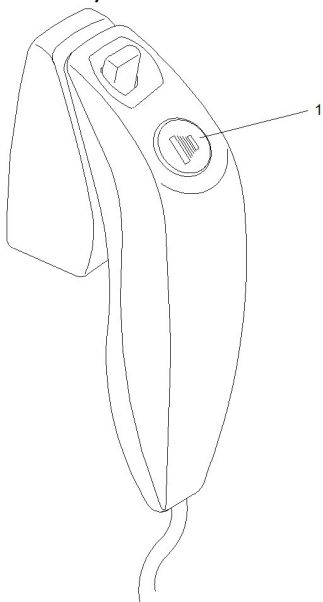
2 Ready Indicator LED: Green indicates that the unit is ready for acquisition.

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

X-ray Remote Control Overview

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

Figure 5 X-ray Remote Control

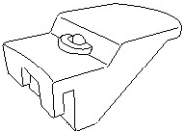
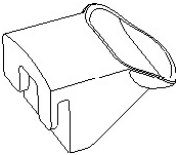
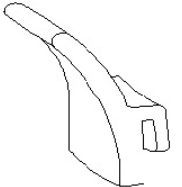
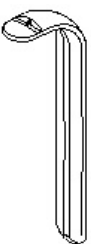
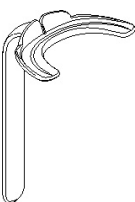
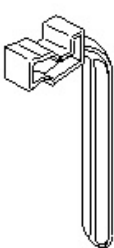
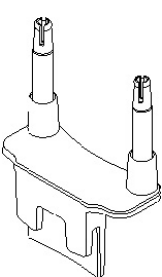


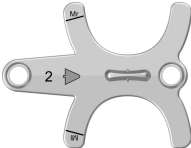
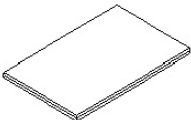
1 Exposure button: launches image acquisition.

Positioning Accessories

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

Table 1 Positioning Accessories

Accessory	Description
	Panoramic chin rest
	Sinus chin rest
	TMJ nose rest
	Standard bite block (x5)
	Frankfort guide bite block for panoramic (x3)
	Bite block for edentulous patients (x2)
	3D bite block support

Accessory	Description
	3D bite block (x4)
	3D molar bite block (x2)
	3D child bite block (x2)
	3rd Molar offset 3D bite block (x2) (for use with 5x5 MI and Mr FoV only)
	Temple support cone (for use with 3rd Molar offset 3D bite block only)
	Single use sheaths for bite block (500 pcs box)
	Single use sheaths for 3D bite block and Frankfort guide bite block (100 pcs box)

CS 8100 3D Family Packaging

Standard Packaging

When unpacking the boxes, ensure that you received the following components.

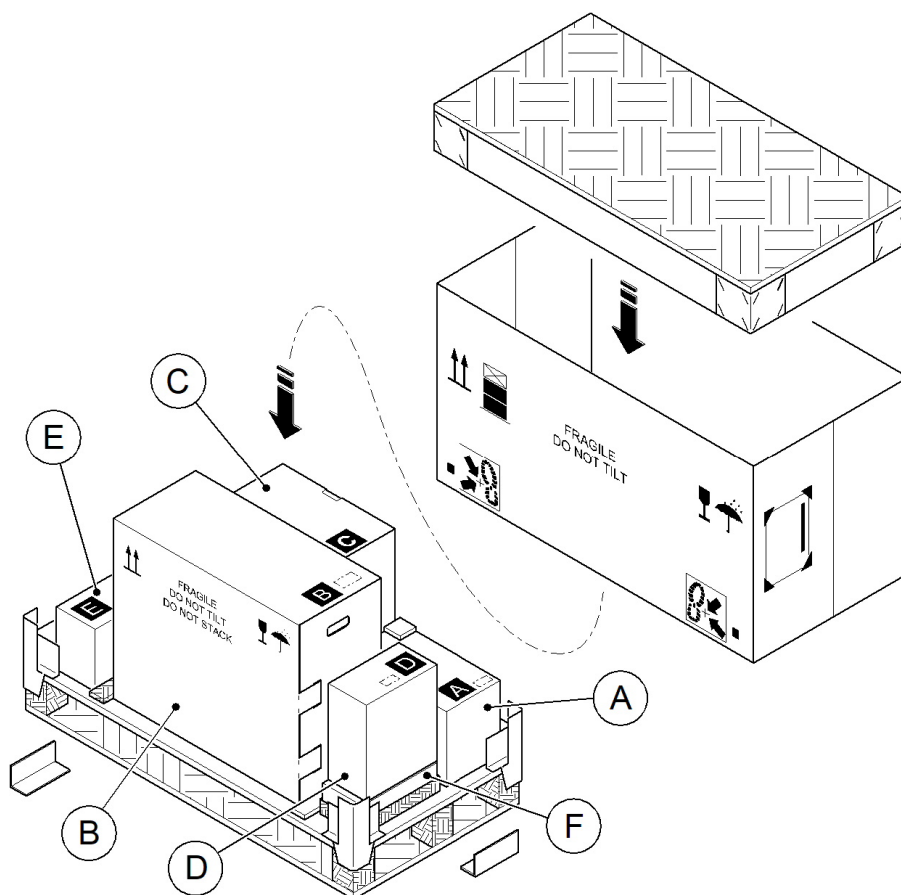


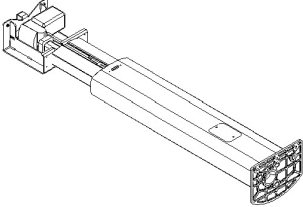
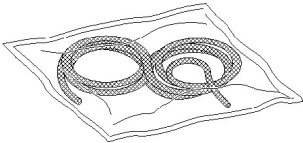
Table 2 Head Assembly Components

Box	Content	Dimension	Weight
A	System column		
B	System head Head top cover		
C	Head and chin rest		
D	Installation Kit Accessories Kit Documentation (User Guide, Installation Guide, Safety and Regulatory Guide, CD ROM)	755 (D) x 1600 (L) x 860 (H) mm 29.724 (D) x 62.992 (L) x 33.858 (H) in	± 100 kg
E	Column front cover Column rear cover Mounting bracket		

Box	Content	Dimension	Weight
F	3D counterweight blocks		

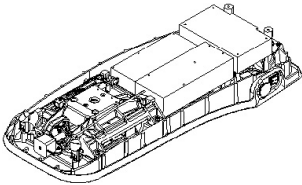
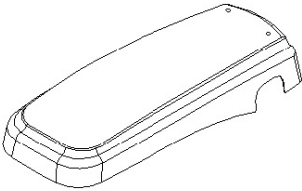
Box A Components

Table 3 Column Assembly Components

Component	Description
	Column assembly
	Cable sheath

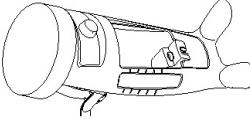
Box B Components

Table 4 Head Assembly Components

Component	Description
	System head
	Head top cover

Box C Components

Table 5 Head and Chin Rest Component

Component	Description
	Head and chin rest

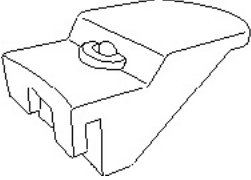
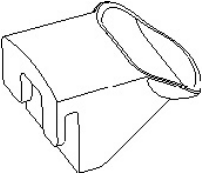
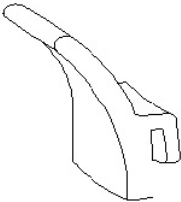
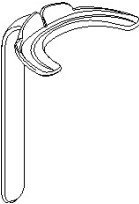
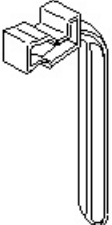
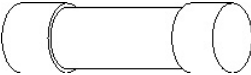
Box D Components

Box D is divided into four compartments:

- D1: Panoramic accessories kit
- D2: 3D accessories kit
- D3: Installation kit
- D4: Documentation

Compartment D1 Panoramic Accessories Kit

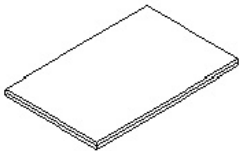
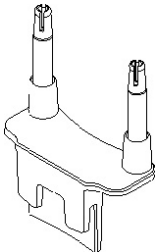
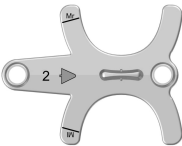
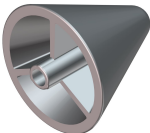
Table 6 Panoramic Accessories Kit

Component	Description
	Panoramic chin rest
	Sinus chin rest
	TMJ nose rest
	Standard bite block (x5)
	Frankfort guide bite block for panoramic (x3)
	Bite block for edentulous patients (x2)
	12 A - 5x20 - T fuse

Component	Description
	Single use sheaths for bite block (500 pcs box)

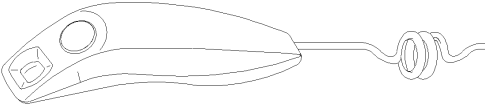
Compartment D2 3D Accessories Kit

Table 7 3D Accessories Kit

Component	Description
	Single use sheaths for 3D bite block (100 pcs box)
	3D bite block support
	3D bite block (x4)
	3D molar bite block (x2)
	3D child bite block (x2)
	3rd Molar offset 3D bite block (x2) (for use with 5x5 MI and Mr FoV only)
	Temple support cone (for use with 3rd Molar offset 3D bite block only)

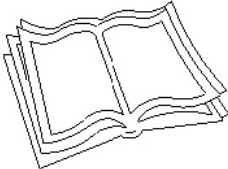
Compartment D3 Installation Kit

Table 8 Installation Kit

Component	Description
	Screws
	Exposure switch

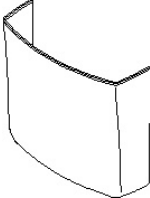
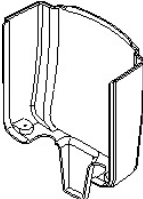
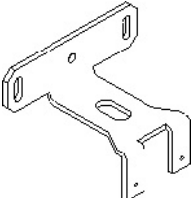
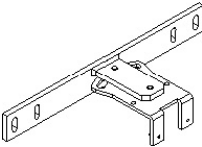
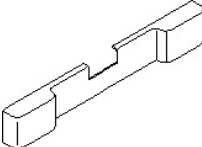
Compartment D4 Documentation

Table 9 Documentation

Component	Description
	User Guide Installation Guide Safety and Regulatory Guide
	DVD-ROM

Box E Components

Table 10 Column Accessories

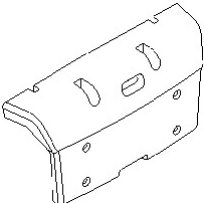
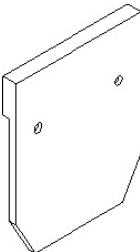
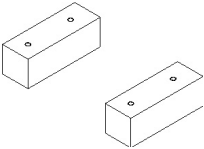
Component	Description
	Column front cover
	Column rear cover
	Mounting bracket
	Angulated mounting bracket (option)
	Angulated mounting bracket cover (option)

Box F Component

Table 11 Counterweight Block



WARNING: The counterweight is VERY HEAVY (15 kg). Ensure that you are protected from injury in case of accident.

Component	Description
	Counterweight block for CS 8100SC 3D and CS 8100 3D (upgradeable to scan ceph)
	Sensor counterweight block for CS 8100SC 3D and CS 8100 3D (upgradeable to scan ceph)
	Metal wedges for the CS 8100 3D (upgradeable to scan ceph) counterweight block

Site Preparation Before Installation



IMPORTANT: Carefully check the following requirements for the X-ray room before you place a purchase order and before installation.

Standard Compliance

Install the unit in an X-ray room compliant with all official regulations applicable to protection against radiation.

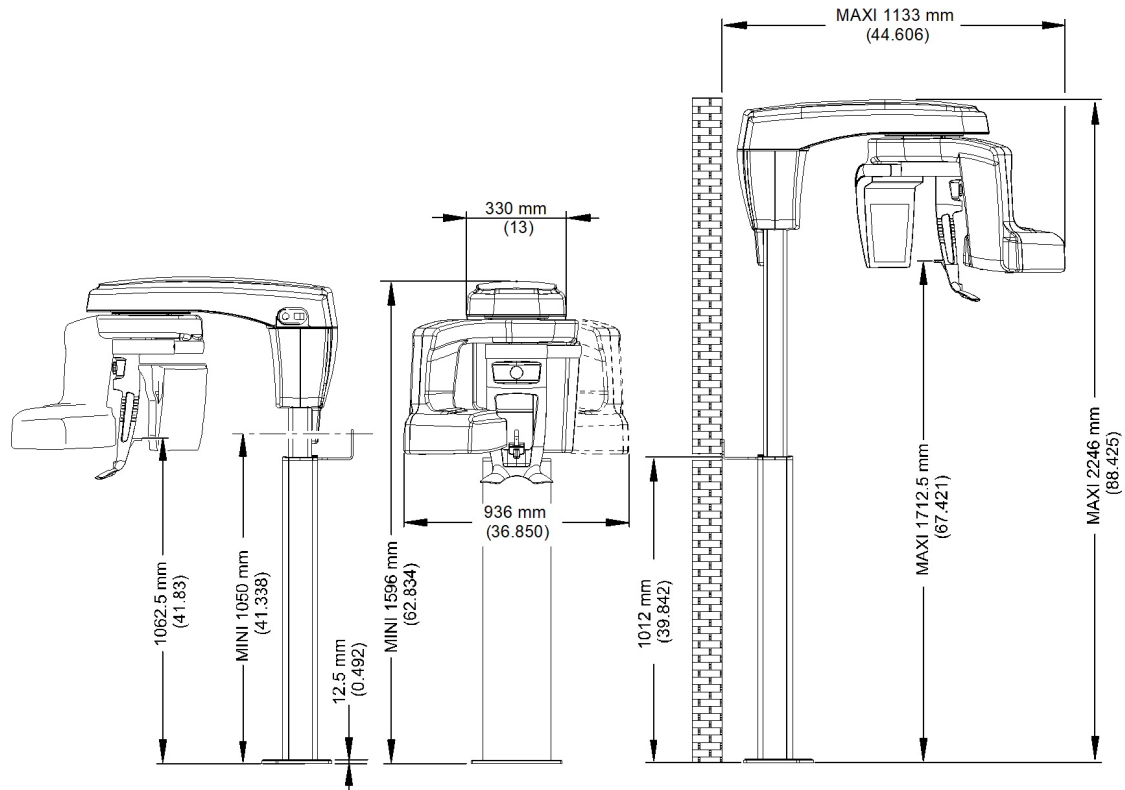
Environmental Requirements

Check the following ambient operating condition requirements of the X-ray room before installing the system:

- Temperatures: 10—35 °C (50 - 95 °F)
- Relative humidity: 30 — 80 %
- Atmospheric pressure: 700 — 1060 hpa
- Altitude: Up to 3000 m

Unit Dimensions

Figure 6 Unit Dimensions

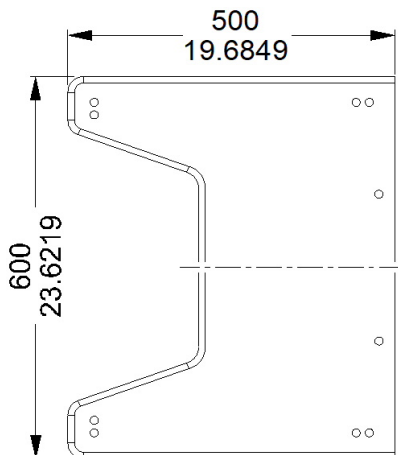


The unit dimensions illustrated in Figure 6 are as follows:

- Maximum height of the system: 2246 mm (88.5 in)
- Chin rest height: minimum of 1062.5 mm (41.83 in) and maximum of 1712.5 mm (67.421 in)
- Depth: 1133 mm (44.606 in)



IMPORTANT: If you need to add a base plate, you must add 12.5 mm (0.492 in) to the height of the unit.



Electrical Requirements

The unit operates at 100—240 V ~ 50/60 Hz.

Operating Voltages of the Unit

Nominal Voltage* (no load)	Minimum	Maximum	Minimum Line Current
100—240 V ~ 50/60 Hz	90 V ~	264 V ~	20 A



CAUTION: The power supply cable must be equipped with a connection box that ensures that it is not possible to disconnect the system from power supply without using tools. The system must be protected against any accidental disconnection.

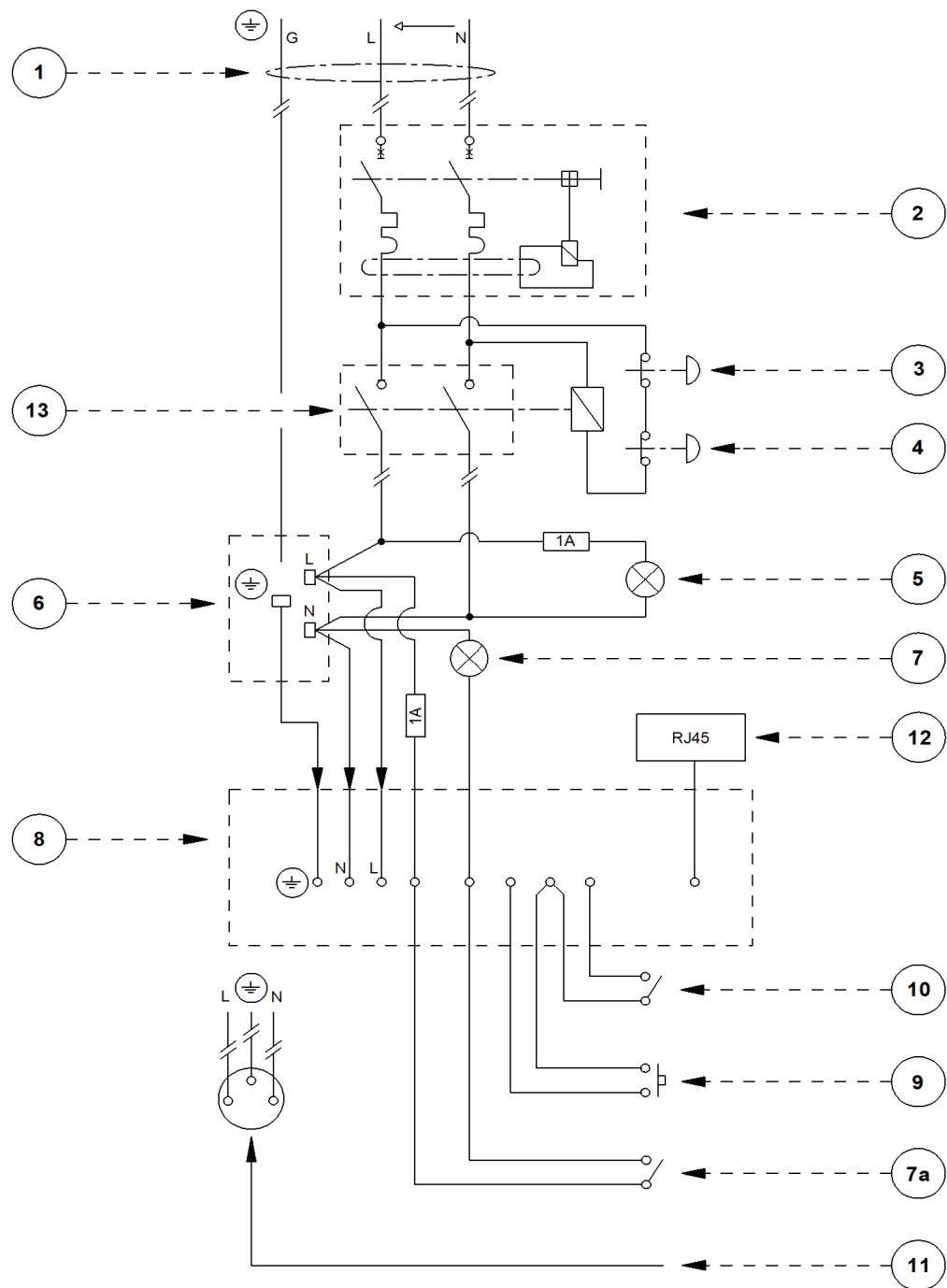
If other systems are installed on the same line, interference and voltage fluctuations can cause the radiological system to operate abnormally. We strongly recommend that a separate electrical line be dedicated to supply power to the unit.

This line must be protected by a differential circuit breaker of 30 mA and a circuit breaker with a maximum current of:

- 15 A, 16 A, or 20 A at 200—240 V ~
- 20 A at 100—130 V ~

Electrical Diagram of the X-Ray Room and the System Connections

Figure 7 Electrical Diagram of the X-ray Room and the System Connections



- | | |
|--|--|
| ① General mains | ② Differential circuit breaker |
| ③ Red-colored emergency stop push-button | ④ Red-colored emergency stop push-button |
| ⑤ Red warning lamp, power ON indicator | ⑥ System mains connecting terminal |

- ⑦ Warning lamp (X-ray emission or ready state indicator)
- ⑦a X-ray warning lamp connecting terminal
- ⑧ Column connecting terminals
- ⑨ X-ray remote control
- ⑩ Door safety switch
- ⑪ Mains outlet (for electric tools)
- ⑫ Ethernet outlet (RJ45/1)
- ⑬ Contactor

Electrical Installation Specifications

A single-phase alternating current power supply is required. The electrical installation specifications must be as follows.

Table 12 Electrical Installation Specifications

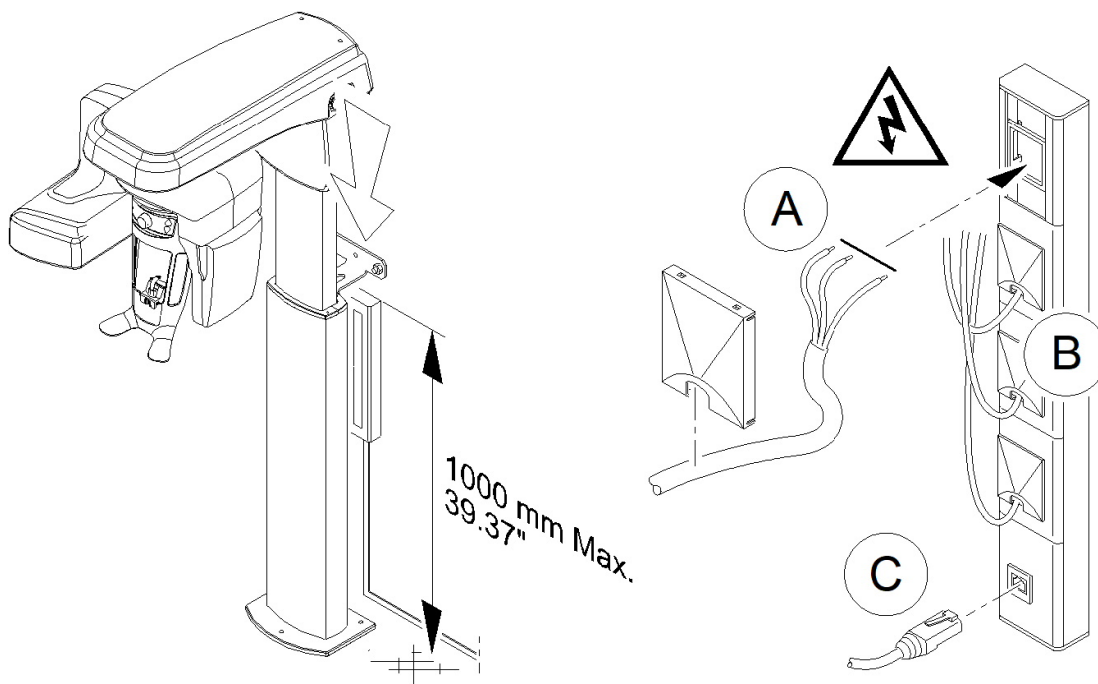
Supply Voltage	200—240 V ~	100—130 V ~	
Frequency	50/60 Hz	50/60 Hz	
Electrical Supply	6 kW	6 kW	
Line Current Required	16 A	20 A	
Cable Cross-section According to Length	For 30 m: 2.5 mm ²	For 10 m: 2.5 mm ²	
Maximum Line Impedance	0.5	0.12	
Differential Circuit Breaker (2)	30 mA	30 mA	
Maximum Current to Circuit Breaker	15 A, 16 A, or 20 A	20 A	Protect the power supply line with a differential circuit breaker that trips at maximum current.
Specification of the Two Red Colored Emergency Stop Push-buttons (3) and (4)	250 V ~ 5 A UL listed	250 V ~ 5 A UL listed	Install the stop push-buttons to simultaneously switch off the current to the active conductors of the radiological installation and exclude any other electric equipment. Locate (3) inside the X-ray room, near the unit so that the operator can quickly cut the power supply if necessary. Locate (4) outside the X-ray room, near the X-ray remote control so that the operator can quickly cut the power supply if necessary. Maintain them in the off (open) position until a deliberate action is performed.
Specification of the Warning Lamps (5) and (7)	60 W	60 W	Locate the red warning lamp (5) outside the X-ray room to indicate the system is active (one lamp at each access point). Locate the warning lamp (7) outside the X-ray room to indicate the X-ray emission or the ready state of the unit for image acquisition.
Contactor (13)	15 A, 16 A, or 20 A - 250 V ~ UL listed	20 A - 250 V ~ UL listed	
Door Safety Switch (10)	1 A - 250 V ~	1 A - 250 V ~	Optionally connect the door safety switch (9) that deactivates the X-ray remote control if the door remains open.

Recommended Wall Outlet Setup

We recommend that you install a vertical or horizontal wall outlet at the back of the column, below the mounting bracket.



IMPORTANT: The top of the wall outlet must be no higher than 1000 mm (39.37") from the floor).



- A** Main power supply outlet.
- B**
 - X-ray remote control outlet.
 - Door safety switch outlet.
 - Warning lamp (X-ray emission or ready state indicator) outlet.
- C** Ethernet cable outlet (RJ45/1).

X-ray Room Requirements



IMPORTANT: Use an appropriate wall fixing system suitable for the type of wall construction (see the examples below).

The following illustrations provide examples of wall types and fixations.

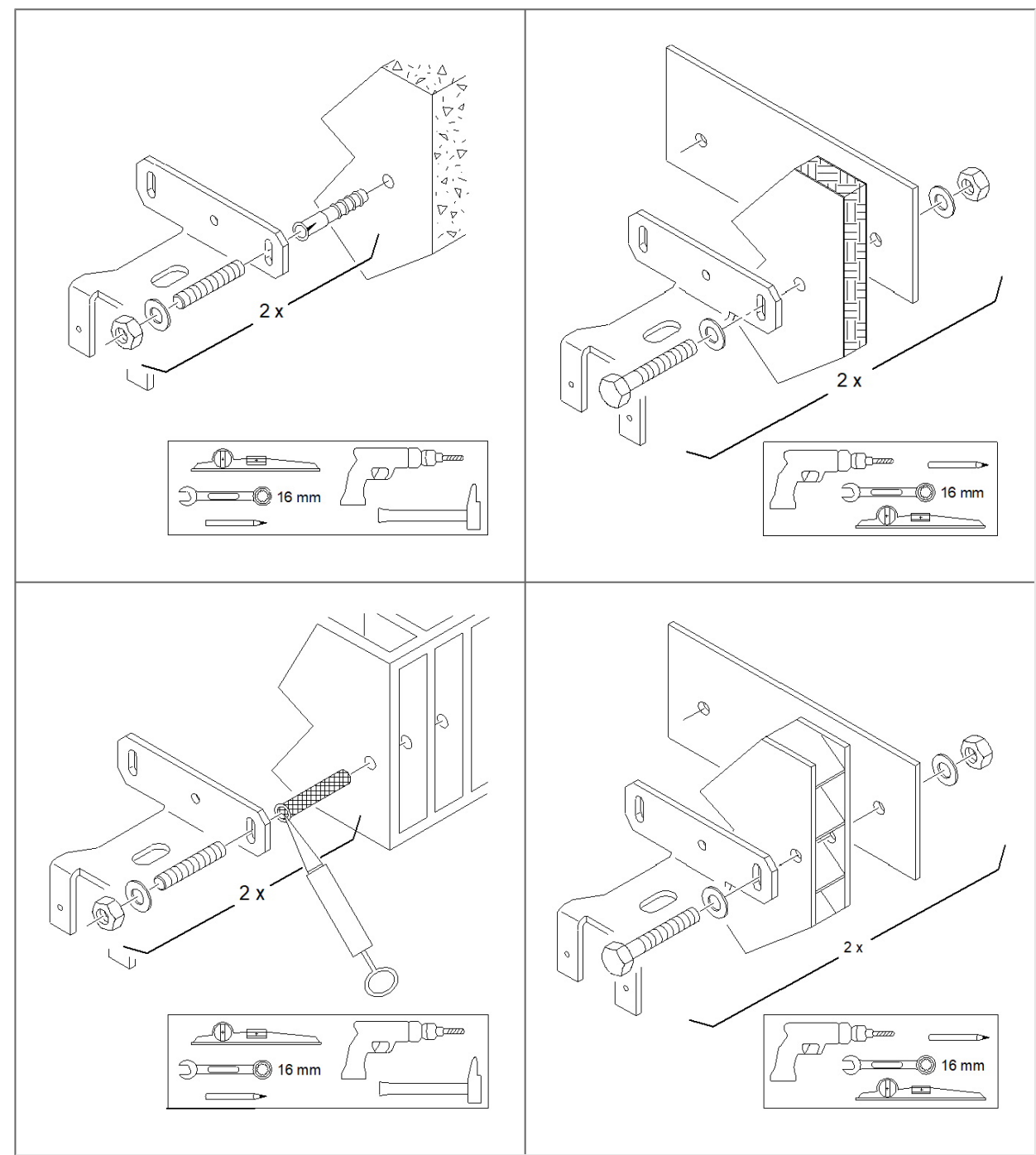


Table 13 X-ray Room Requirements

Room Components	Minimum Requirement	Comments
Width of the door	75 cm (30 in)	

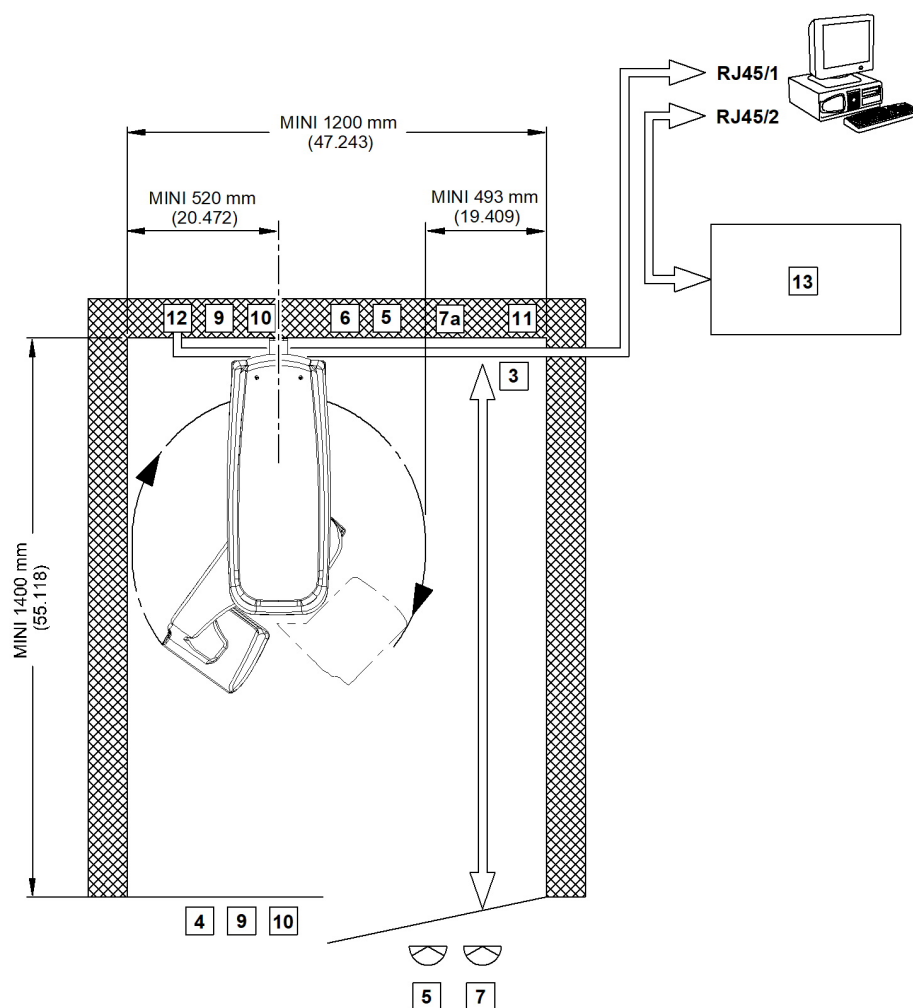
Room Components	Minimum Requirement	Comments
Height of the ceiling	240 cm (95 in)	If needed, it is possible to lower the height of the system.
Strength of the wall	Withstanding an extraction force of 150 kPa at each point of attachment.	It is the responsibility of the installer to choose an appropriate fixing system that withstands the extraction force.
Load-bearing capacity of the floor	500 kg/m ²	The floor must be solid and flat.
Required space for CS 8100 3D	1200 (L) x 1400 (D) x 2400 (H) mm 42.244 (L) x 55.118 (D) x 94.488 (H) in	
Required space for CS 8100SC 3D	2000 (L) x 1400 (D) x 2400 (H) mm 78.740 (L) x 55.118 (D) x 94.488 (H) in	



IMPORTANT: When you install the system, make sure that you provide enough space for the easy access of patients or maintenance technicians (see [Figure 8](#)).

CS 8100 3D Minimum X-ray Room Space Configuration

Figure 8 CS 8100 3D Minimum X-ray Room Space Configuration



- | | |
|--|---|
| 3 Red-colored actuator emergency stop push-button | 4 Red-colored actuator emergency stop push-button |
| 5 Red warning lamp, power on indicator | 6 Unit mains connecting terminal |
| 7 Warning lamp (X-ray emission or ready state indicator) | 7a X-ray warning lamp connecting terminal |
| 9 X-ray remote control | 10 Door safety switch |
| 11 Mains outlet (for electrical tools) | 12 Ethernet min Class 5E outlet (RJ45/1) |
| 13 Local area network (LAN), (RJ45/2) | |



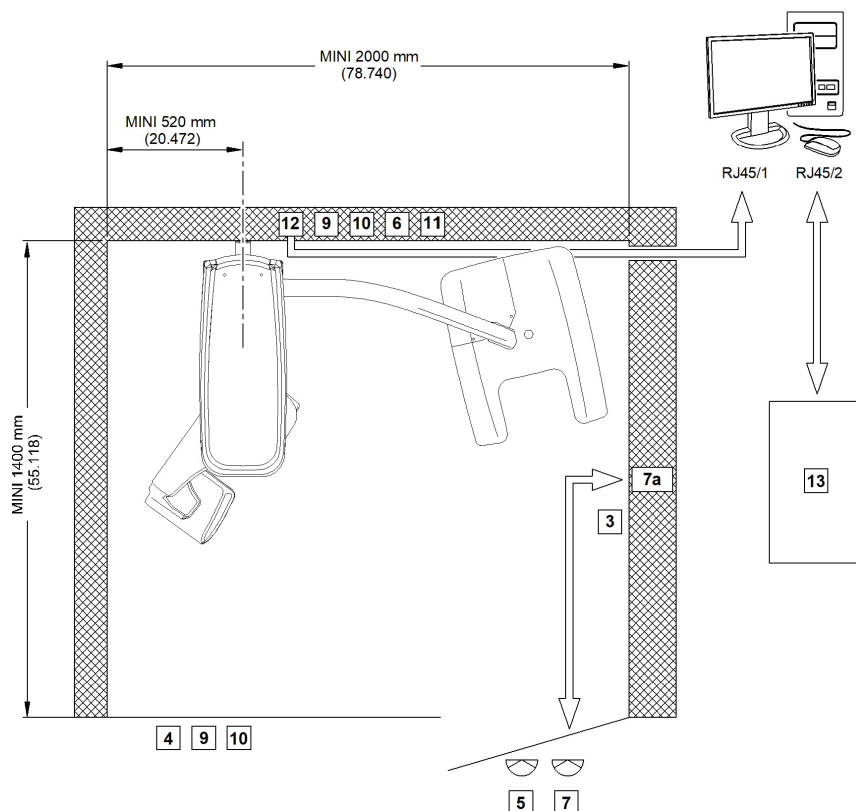
IMPORTANT: Before installing the unit in the X-ray room, you must install the following low voltage and high voltage connections separately:

- Low Voltage: (12), (9), (10)
- High Voltage: (6), (5), (7a)

CS 8100SC 3D Minimum X-ray Room Space Configuration

If you want to upgrade the CS 8100 3D to a scan ceph module, the following figure provides the required minimum X-ray room space configuration:

Figure 9 CS 8100SC 3D Minimum X-ray Room Space Configuration



- | | |
|--|---|
| 3 Red-colored actuator emergency stop push-button | 4 Red-colored actuator emergency stop push-button |
| 5 Red warning lamp, power ON indicator | 6 Unit mains connecting terminal |
| 7 Warning lamp (X-ray emission or ready state indicator) | 7a X-ray warning lamp connecting terminal |
| 9 X-ray remote control | 10 Door safety switch |
| 11 Mains outlet (for electrical tools) | 12 Ethernet min Class 5E outlet (RJ45/1) |
| 13 Local Area Network (LAN), (RJ45/2) | |

Minimum required space: 2000 (L) x 1400 (D) x 2400 (H) mm.

Minimum Computer System Requirements

The CS 8100 3D Family minimum computer system requirements are available on the Carestream Dental technician website as a separate document with an edition number. Before you intervene on a client site, see the Carestream technician web site for the latest edition of the document.



IMPORTANT: You **MUST** check that the computer system configuration is compatible with the computer system requirements for the CS 8100 3D software. If necessary you **MUST** update your computer system configuration.



IMPORTANT: CS 8100 3D **MUST** be connected to the computer using a point-to-point ethernet link and not using a LAN. The computer and the peripheral equipment must conform to the IEC 60950 standard.

Preparing the Unit Acquisition System

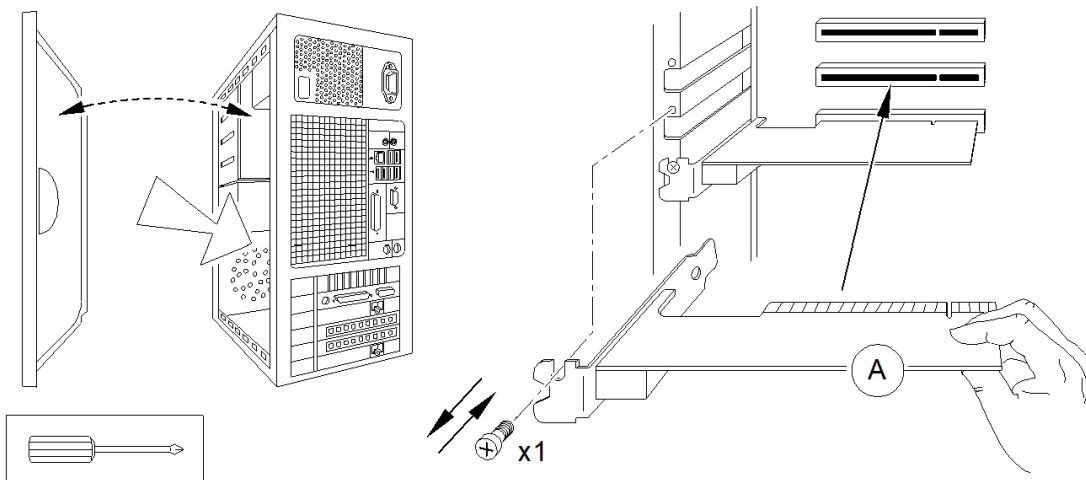
Installing the Ethernet Boards in the Computer

Before installing the ethernet boards in the computer, check that the computer is:

- Switched off
- Disconnected from the mains power supply

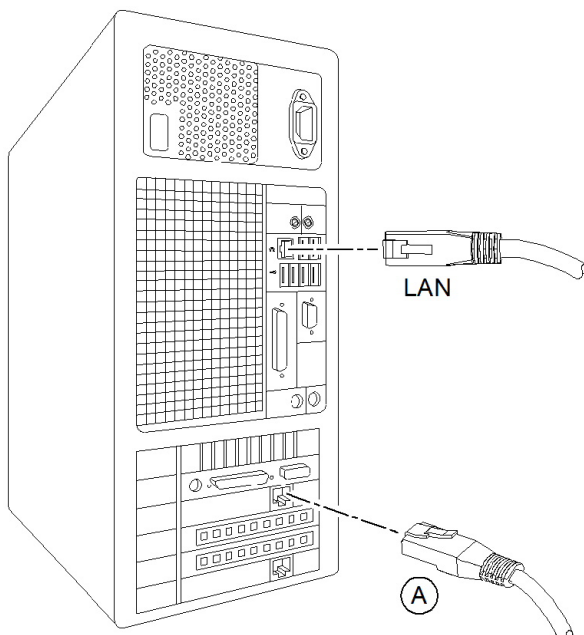
To install the ethernet boards in the computer, follow these steps:

1. Install a 1 Gbits ethernet board **(A)** (not supplied) in an unoccupied slot.



2. Connect the following ethernet cables:

- The system ethernet cable **(A)** to the 1 GB ethernet board connector.
- The LAN connection is optional.



3. Reboot the computer. Wait for Windows to detect the presence of the new boards.
4. Install the ethernet board driver provided with the board.

Installing the Imaging Software and Acquisition Interface

Before installing the CS Imaging Software, check that:

- The computer has all the necessary system requirements
- You have the software DVD-ROM

To install the CS Imaging Software, follow these steps:

1. Insert the CS Imaging Software DVD-ROM (1/2) in the DVD-ROM drive and install the software.
See CS Imaging Software documentation: *CS Imaging - Installation and Configuration Guide (SM998)*, for details of the installation procedure.
2. DO NOT install the "Drivers DVD-ROM (2/2)" in the DVD-ROM drive.
Insert instead the specific "Device Driver DVD-ROM" for your product in the DVD-ROM drive.
The Installer Language dialog box is displayed.
3. Select the installation language and click OK.
4. Follow the on-screen instructions to install the CS 8100 3D Acquisition interface or the CS 8100SC 3D Acquisition interface drivers.

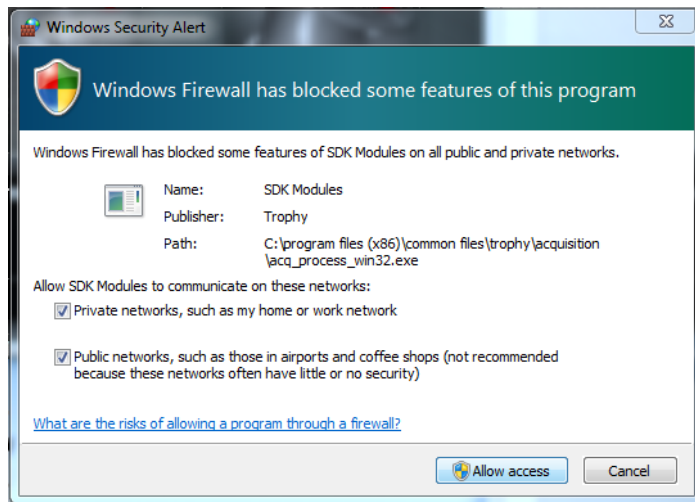
Firewall or Network Settings

You cannot access the Acquisition interface if you do not configure the firewall or network settings.

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

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

The Windows Security Alert dialog box is displayed.



2. Select Private networks and Public networks, then click Allow access.
3. Close the imaging software.
4. On your desktop, double-click  to re-open the imaging software.



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

Activating the 3D License

See the Carestream Dental technician website for information about how to activate your 3D license.

Installing the Unit

Tool Requirements

The installer must supply the following tools:

- Power drill
- Screws and heavy duty fixings
- Spirit level
- Measuring tape
- Cutter
- Metric allen keys
- Torx screwdriver
- Metric spanners



Note: The tool references mentioned in this guide are ISO tool references.

You also need to supply:

- RJ45 ethernet cable (Cat 5e min)
- Hand switch cable (2 wires)

Technical Staff Requirement

The installation requires one technician.

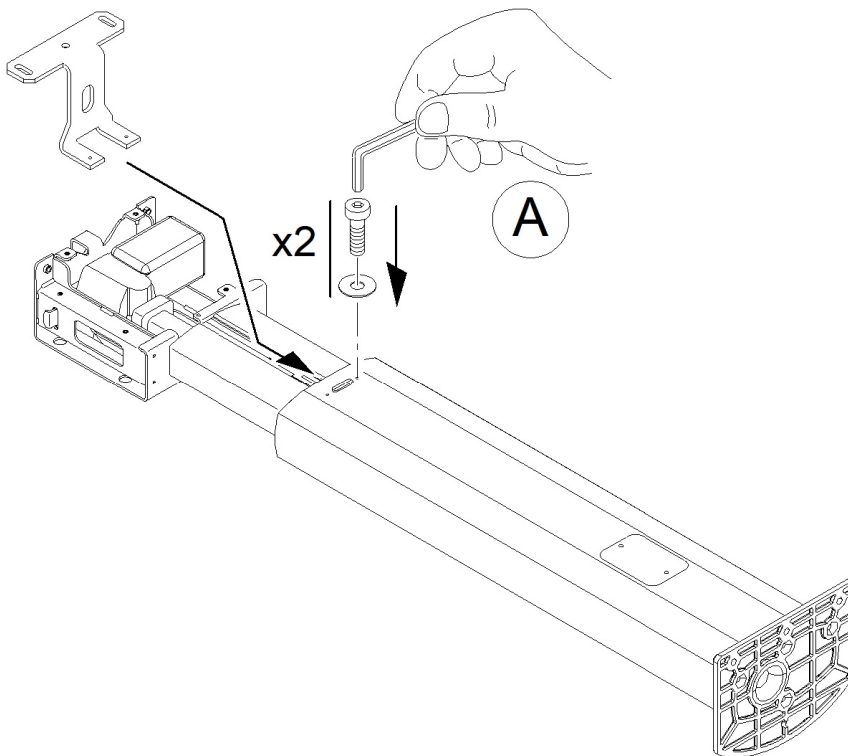
Installing the Column



IMPORTANT: Before installing the column we recommend that you install a wall outlet at the back of the column, below the mounting bracket (see [Recommended Wall Outlet Setup](#)).

To install the column, follow these steps:

1. Place the column on the floor in a horizontal position.
2. Place the mounting bracket **(A)** inside the column and fix it to the column using two screws.

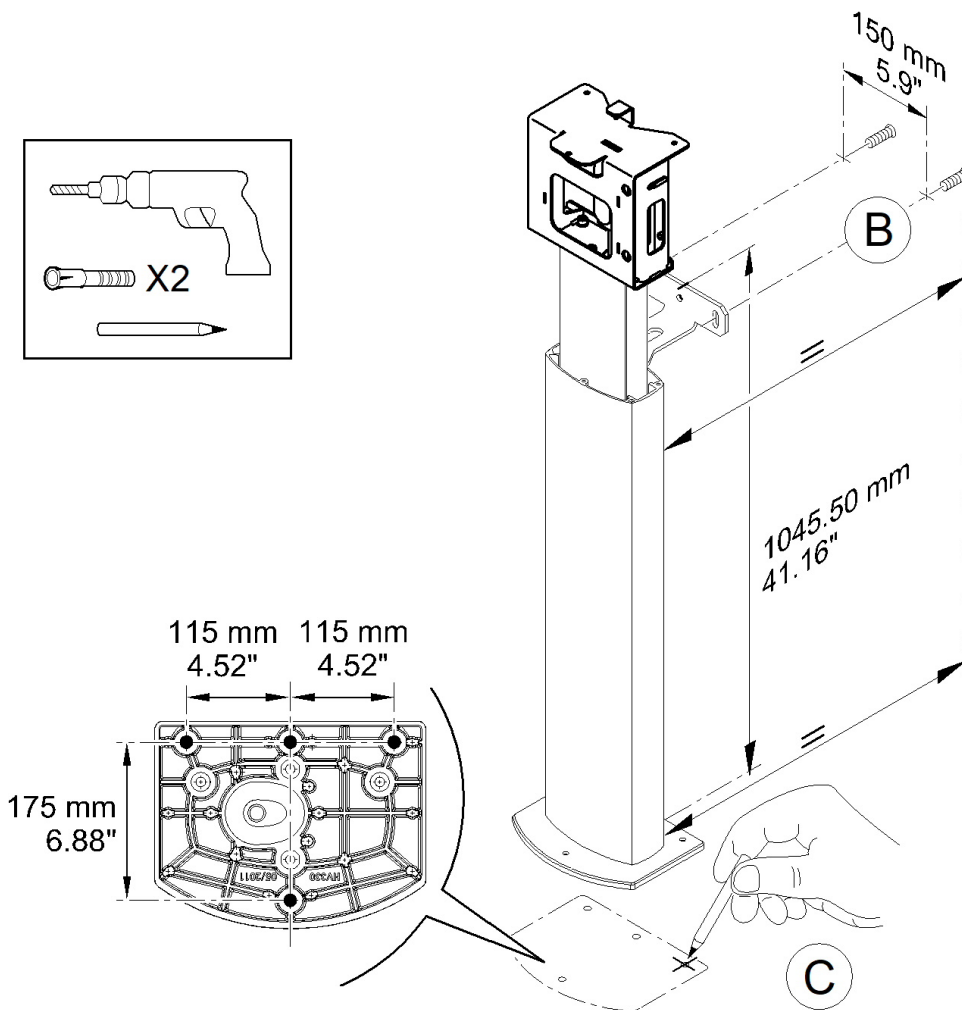


IMPORTANT: To install the unit at an angle to the wall, use the angulated mounting bracket (optional).

3. Lift the column up vertically and hold it against the wall.
You must place the mounting bracket flat against the wall.
4. Mark the position of the two holes for the mounting bracket on the wall, then move the column aside and drill the holes.
5. Insert the appropriate wall fixing system **(B)** into the two drilled holes.
The wall fixing system is not provided.



IMPORTANT: You must use an appropriate wall fixing system that is suitable for the type of wall construction to ensure that the column is firmly fixed to the wall (see [X-ray Room Requirements](#) for examples).



6. Re-position the column against the wall and place the mounting bracket on the two bolts in the wall but do not fit the nuts.
7. Mark the position of the fixing holes of the base of the column on the floor (C) then move the column aside and drill the four holes.



IMPORTANT: You must use the base plate (see [Unit Dimensions](#)) if the floor is inappropriate for technical or aesthetic reasons or if the client requests no floor fixation.

8. Insert the appropriate floor fixing system into the four drilled holes.
The floor fixing system is not provided.



IMPORTANT: You must use an appropriate floor fixing system that is suitable for the type of floor construction to ensure that the column is firmly fixed to the floor.

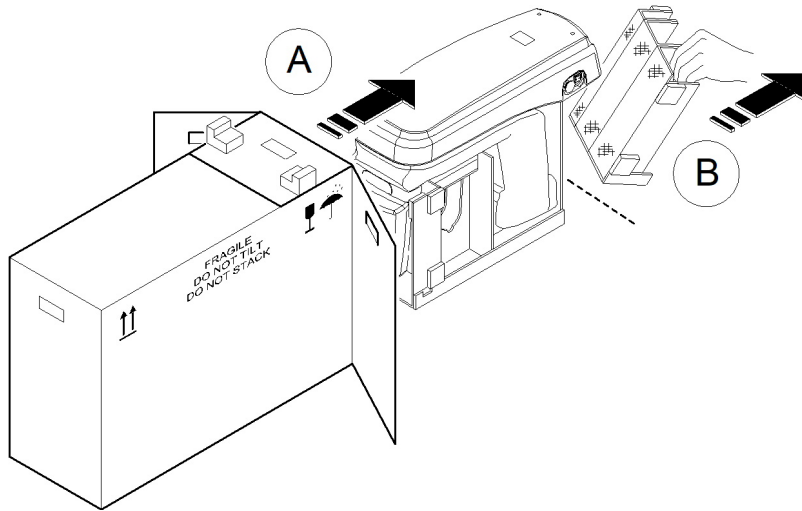
9. Re-position the column against the wall and place the mounting bracket on the two bolts in the wall but do not fit the nuts.
10. Check that the column is correctly positioned using a spirit level (D).

Installing the Head

To install the head, follow these steps:

1. Remove the head from the box by pulling and sliding it carefully along the floor using the interior packaging base

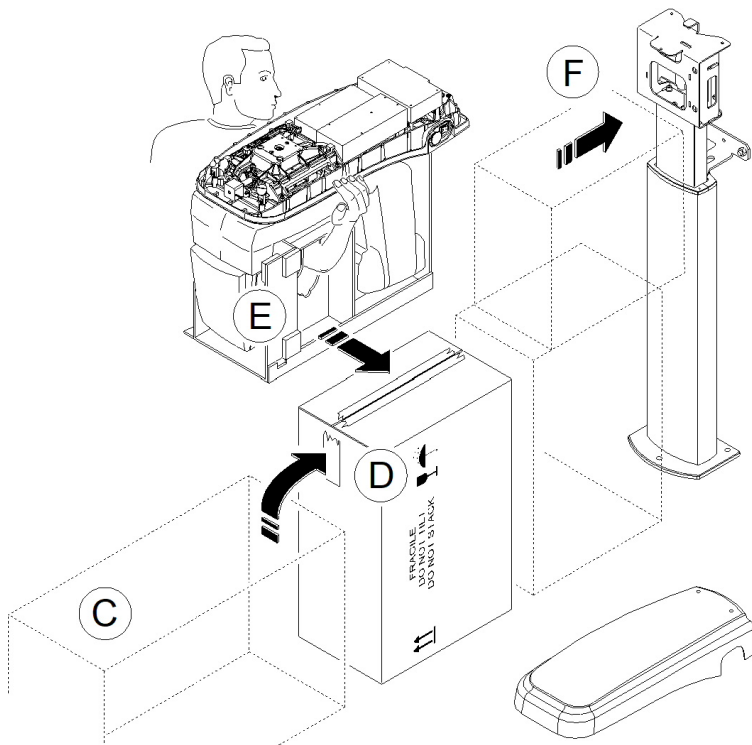
(A).



2. Remove the interior packaging (B), except for the packaging base.

3. Remove the head cover (C) and put it in a safe place.

4. Place the empty box on its end in front of the column (D).



5. Lift the head onto the empty box (E).

6. Push the box with the head on it towards the column, until it is correctly positioned for mounting (F).

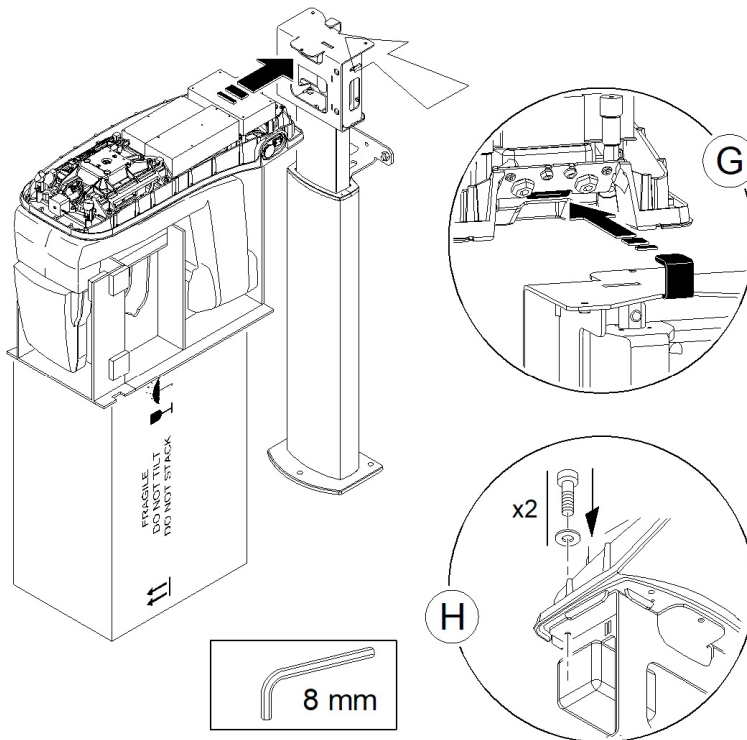
7. Mount and position the head on the hook of the column (G).



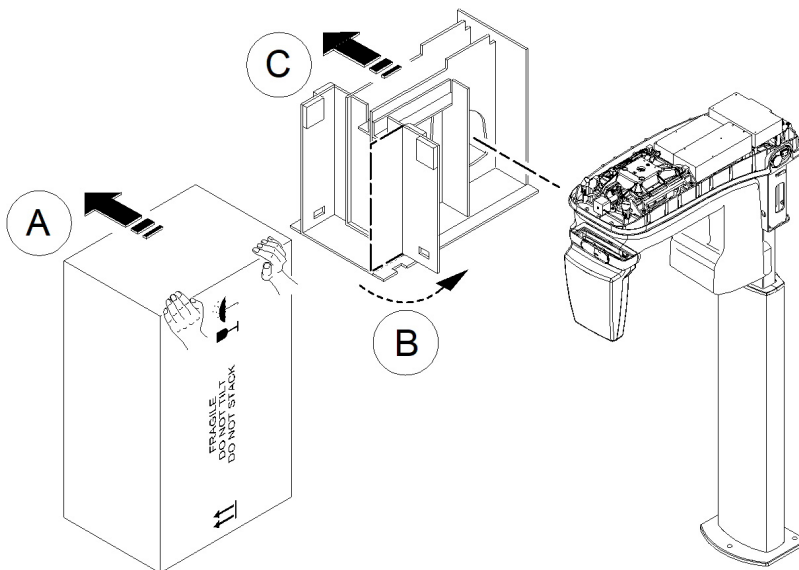
WARNING: The positioning hook is **ONLY** intended for use as a **TEMPORARY** support while you screw the head to the column. **DO NOT** use it for a longer period than this.



IMPORTANT: Make sure that you do not trap or tangle any cables.



8. Insert and tighten the two upper screws and washers (H).
9. Push the box out of the way (A).

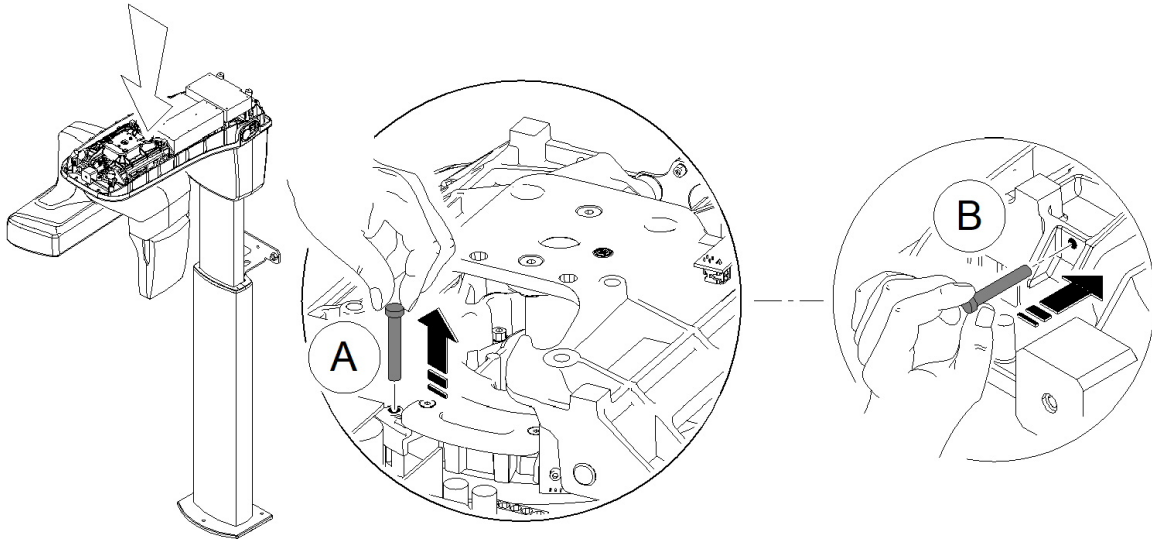


10. Undo the ribbon on top of the head.
11. Undo the packaging catch and open the flap (B).
12. Remove the head packaging (C).

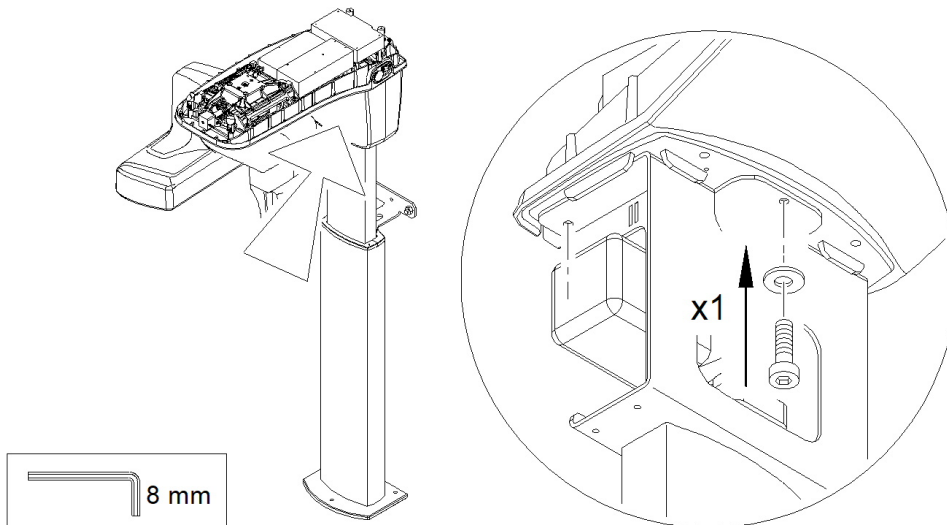
13. Remove the pin blocking the rotative movement inside the unit head **(A)** and place it carefully in its storage position **(B)**, as you will need to use the pin later for calibration.



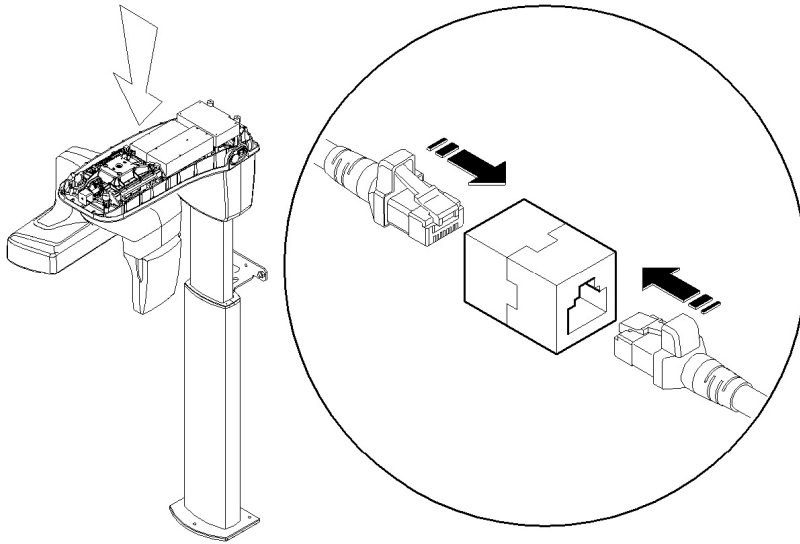
IMPORTANT: Make sure that you do not lose the transport security pin. You need it for calibration, servicing, or possible future transportation.



14. Turn the rotative arm by hand to have access to the screw hole located under the head of the unit.
15. Insert the screw and washer and tighten it.



16. Connect the ethernet cable from the computer to the ethernet coupler.



17. Connect the following cables:

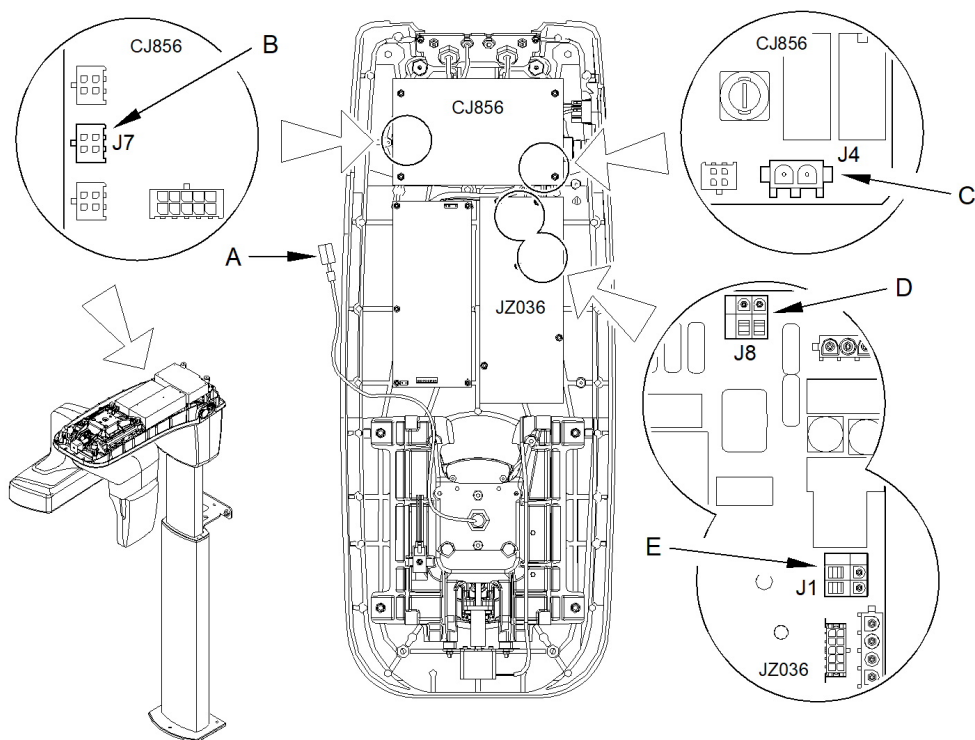


Table 14 Cable Connections

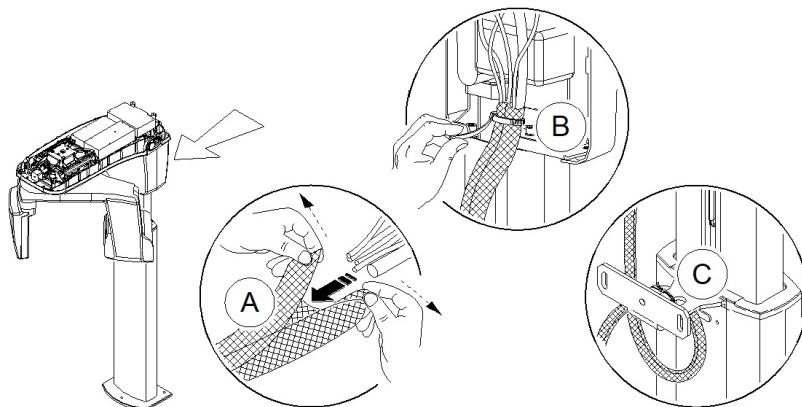
This cable...	Connects to...	On the...
A Ethernet from the computer	Ethernet coupler	Next to the motor board
B Column resistive track	J7	CJ856 motor board
C Column actuator	J4	CJ856 motor board
D Warning lamp	J8	JZ036 PFC board
E Exposure switch	J1	JZ036 PFC board



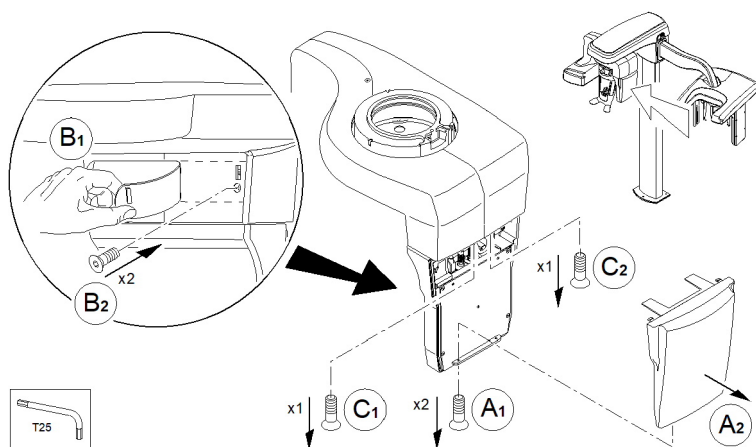
WARNING: The JZ036 PFC board is delivered with a 6.3 A - 5x20 - T fuse for the voltage rating of between 200—240 V.

If your voltage rating is 100—130 V, remove the fuse and replace it with a 12 A - 5x20 - T fuse that is in the accessories kit. See the CS 8100 3D Service Guide (SM845) for information on how to change the fuse.

18. Push the ethernet cable and the exposure cable into the feed-through hole at the top back of the head to stop them from sliding down.
19. Insert all the cables into the cable sheath (A).



20. Attach the cable sheath to the top of the column with a cable tie (B).
21. Attach the cable sheath to the mounting bracket with a cable tie (C).

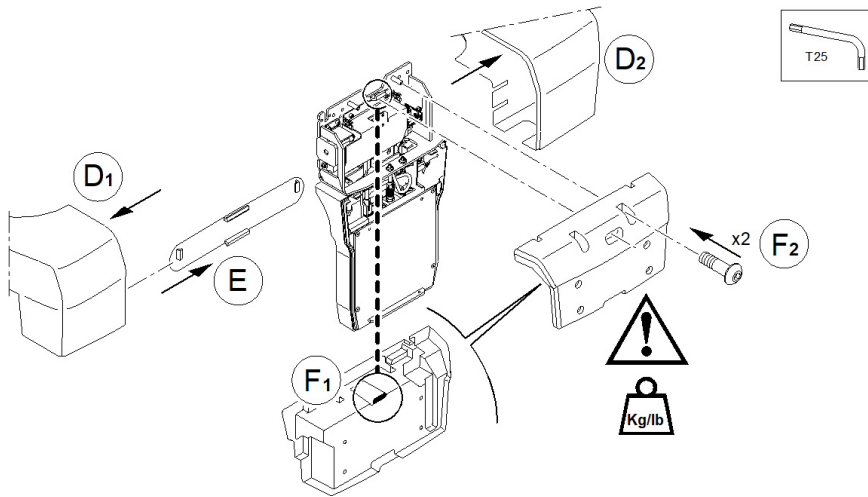


22. Remove the two screws (A₁).
23. Remove the sensor cover (A₂).
24. Carefully pull one side of the plastic strip and remove the screw (B₁). Then pull the other side of the plastic strip to remove the second screw (B₂).
25. Undo and remove the two screws (C₁) and (C₂).



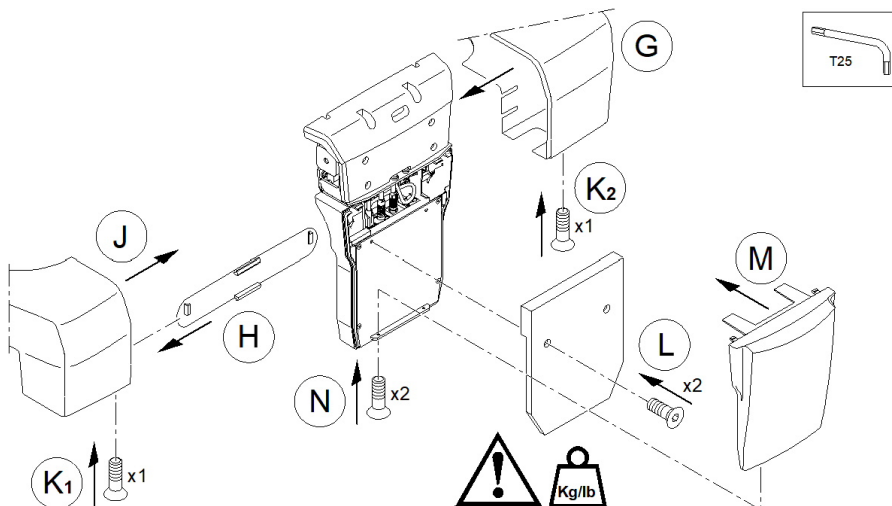
IMPORTANT: Before you carry out the next step, you must determine if your unit Serial Number is xxIMxxx (CS 8100SC 3D) or xxINxxx (CS 8100 3D upgradeable to scan ceph).

Installing the CS 8100SC 3D (Unit Serial Number xxIMxxx)



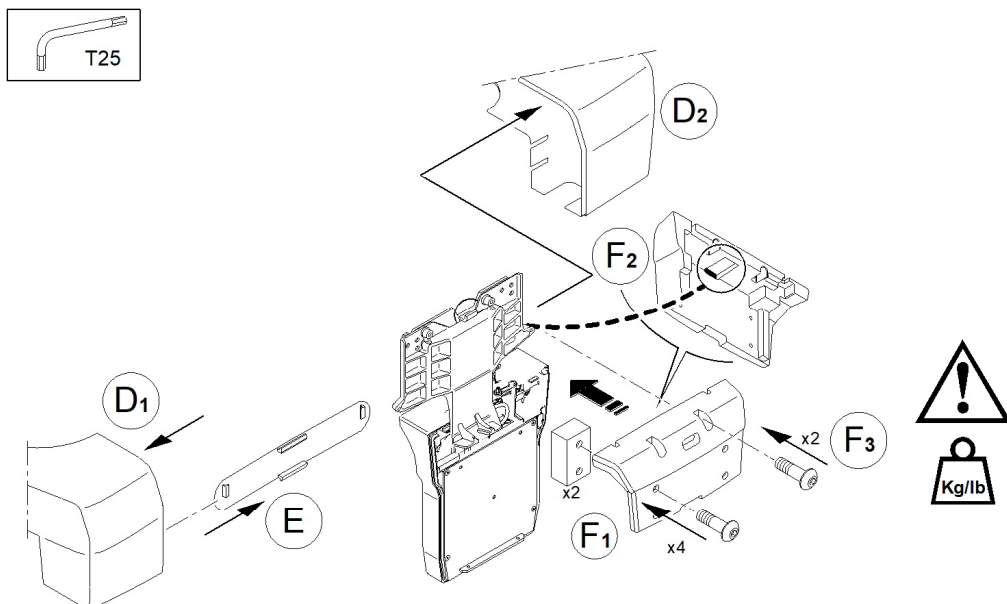
To install:

1. Remove the rotative arm covers (D₁) and (D₂).
2. Remove the collimator packaging foam.
3. Carefully pull and remove the plastic strip (E).
4. Mount the cephalometric counterweight block by placing the hole on the cephalometric counterweight block into the mounting peg on the rotative arm (F₁).
5. Insert and tighten the two screws (F₂).



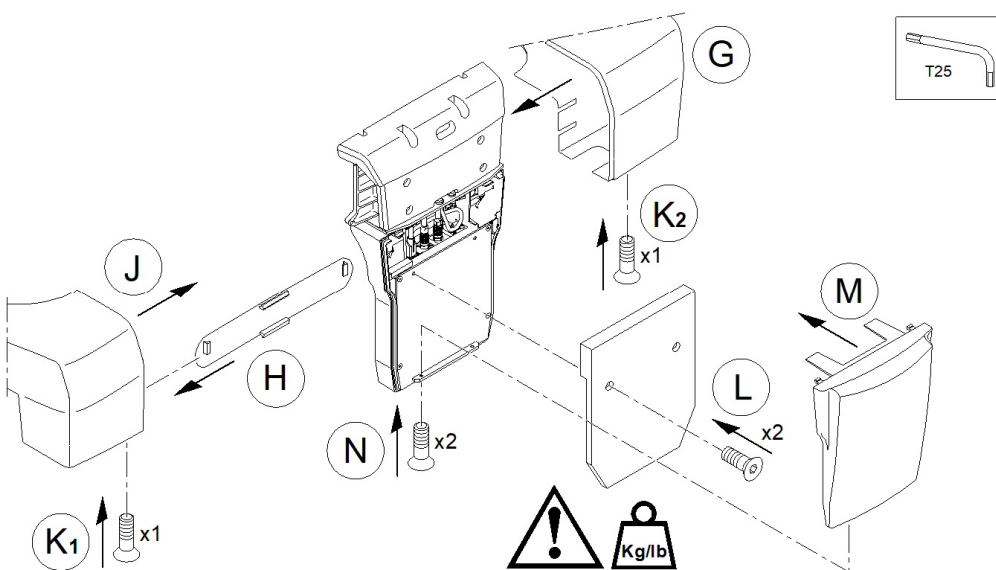
6. Replace the rotative arm cover (G).
7. Carefully replace the plastic strip (H).
8. Replace the other rotative arm cover (J).
9. Insert and tighten the two screws (K₁) (K₂).
10. Place the sensor counterweight, insert and tighten the screws (L).
11. Replace the sensor cover (M).
12. Insert and tighten the two screws (N).

Installing the CS 8100 3D Upgradeable to Scan Ceph (Unit Serial Number xxINxxx)



To install:

1. Remove the rotative arm covers (D₁) and (D₂).
2. Remove the collimator packaging foam.
3. Carefully pull and remove the plastic strip (E).
4. Place the two metal wedges, then insert and tighten the four screws (F₁).
5. Mount the cephalometric counterweight block by placing the hole on the cephalometric counterweight block into the mounting peg on the rotative arm (F₂).
6. Insert and tighten the two screws (F₃).



7. Replace the rotative arm cover (G).
8. Carefully replace the plastic strip (H).

9. Replace the other rotative arm cover **(J)**.
10. Insert and tighten the two screws **(K₁) (K₂)**.
11. Place the sensor counterweight, insert and tighten the screws **(L)**.
12. Replace the sensor cover **(M)**.
13. Insert and tighten the two screws **(N)**.

Removing the Head

When removing the unit head you must follow the steps described in the installation procedure (steps 1-18) and carry out each installation step in reverse.

The packaging provided with the unit that is used for the installation of the head must also be used when uninstalling the head. If the packaging parts required for installation and removal of the head are no longer available, spare packaging parts can be ordered.

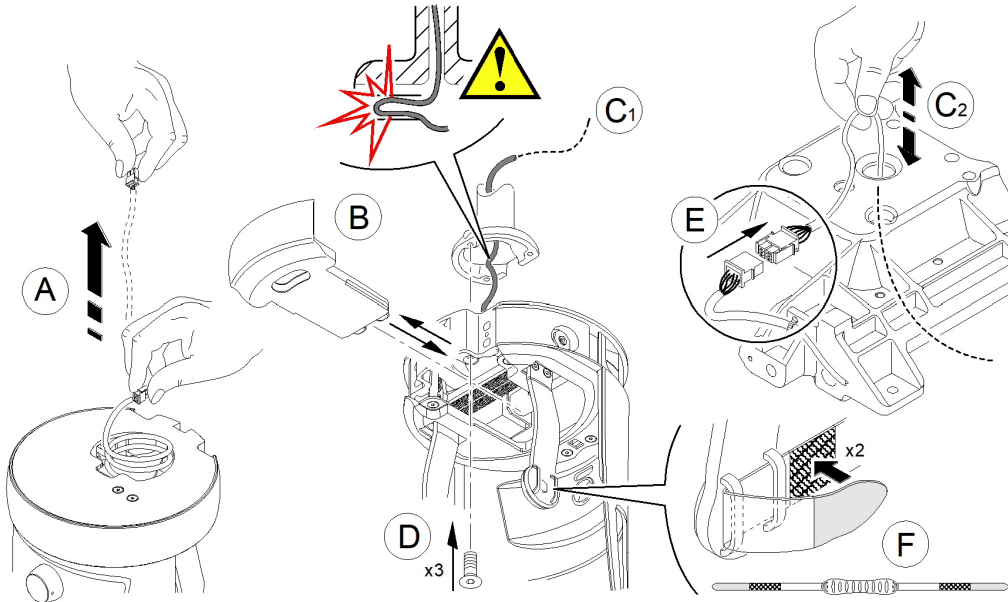


WARNING: If you remove the unit head without the necessary packaging parts, two (2) qualified technicians are required to carry out the head removal procedure.

Installing the Head and Chin Rest

To install the head and chin rest, follow these steps:

1. Hold the head and chin rest below the support bracket, then extend the CPA92-2 cable (A).



2. Slide off the plastic cover (B).
3. Push the CPA92-2 cable up through the support bracket (C₁) and gently pull it out of the top of the head (C₂).
4. Position the head and chin rest on the support bracket.



IMPORTANT: Make sure that you DO NOT trap the CPA92-2 cable between the head and chin rest and the support bracket.

5. Insert and tighten the three screws (D).
6. Gently pull the CPA92-2 cable up at the top of the head, then connect it to the CPA92 cable (for units with Serial Numbers xxIDxxx) or the CPB43 cable (for units with Serial Numbers xxIMxxx or xxINxxx) (E).
7. Fit the head restraint strap (F).
8. Replace the plastic cover (B).
9. Connect the power supply cable to the power source.

See [Recommended Wall Outlet Setup](#).



CAUTION: The power supply cable must be equipped with a connection box that ensures that it is not possible to disconnect the system from power supply without using tools. The system must be protected against any accidental disconnection.

10. Switch on the circuit breaker in the electrical cabinet.
11. Switch on the unit and press  to check if the head moves up and down correctly.



IMPORTANT: The cables that are connected to the head follow the up or down movement of the head. To protect them from physical damage, make sure they can move freely without getting trapped or tangled.



IMPORTANT: If you are installing the Scan Ceph module:

- DO NOT carry out the post-installation procedures now.
- Complete the Scan Ceph installation. See the *Cephalometric Modality Installation Guide for CS 8100 Family and CS 8100 3D Family (SM988)* for more information.
- Carry out the post-installation procedures.
- Fit the covers.

Running the Post-Installation Control

Before running the Post-installation Control, check that:

- The installation of the unit is complete
- The installation of the imaging software is complete
- You have the test tools
- The unit and the computer is on
- You have the login and password that was given to you during your CS 8100 3D training to access the Service Tools
- You have the USB connection key that contains the encrypted password for the Service Tools

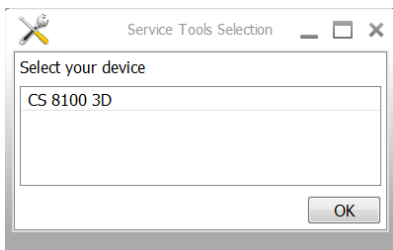


Note: If you do not have the encrypted password on your USB connection key, you can download it from the Carestream technician web site.

To run the post-installation control, follow these steps:

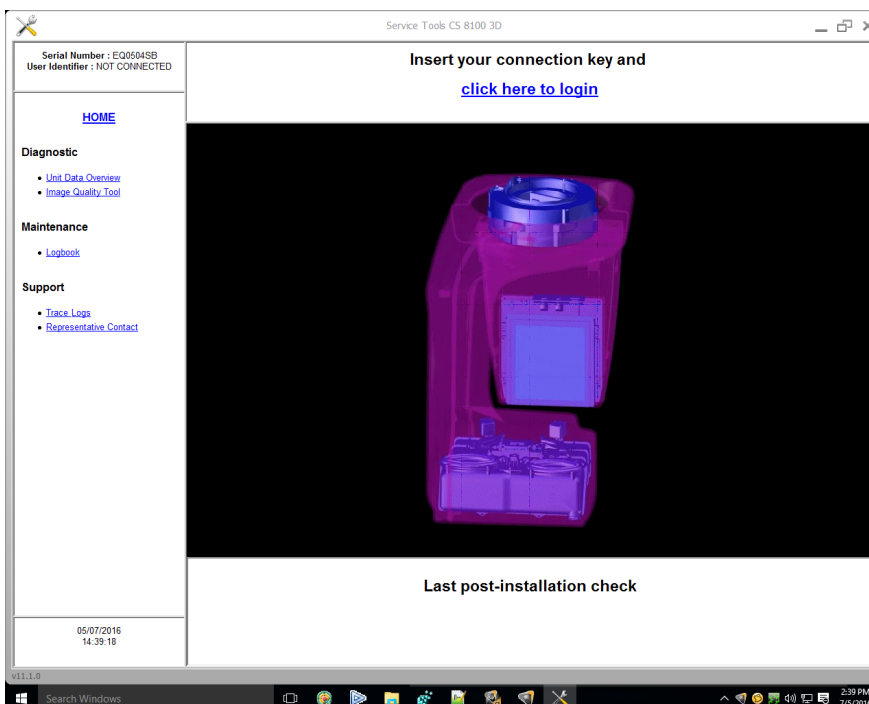
1. Click  on the desktop.

The Service Tools Selection window is displayed



2. Select CS 8100 3D and click OK.

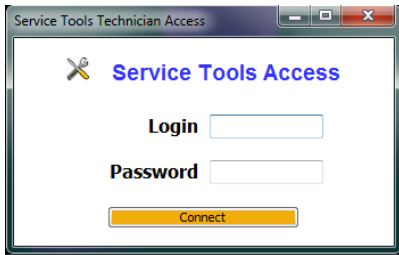
The Service Tools window is displayed.



3. Insert the USB connection key that contains the encrypted password into the computer.

4. Click [click here to login](#) at the top of the window.

The Service Tools Access window is displayed.

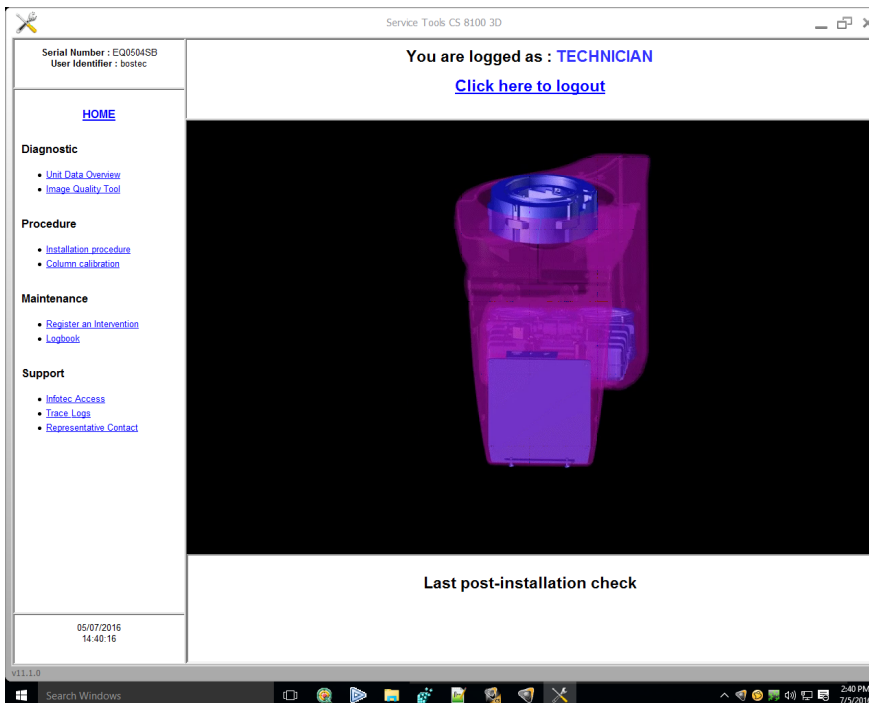


5. Enter the Login and Password that was given to you at the CS 8100 3D training course and click Connect.



IMPORTANT: The Login and Password are CASE SENSITIVE.

The main CS 8100 3D Service Tools window is displayed.



IMPORTANT: If the main Service Tools window is NOT displayed, make sure that there is no other encrypted password file (ServiceTools_Users_Crypted.dbX) on the computer.

If the following window is displayed:



- Click OK.
- Make sure that you have inserted the correct USB connection key that contains the encrypted password.
- Log in again.

6. Click Post installation procedure.

The Post Installation Procedure window is displayed.

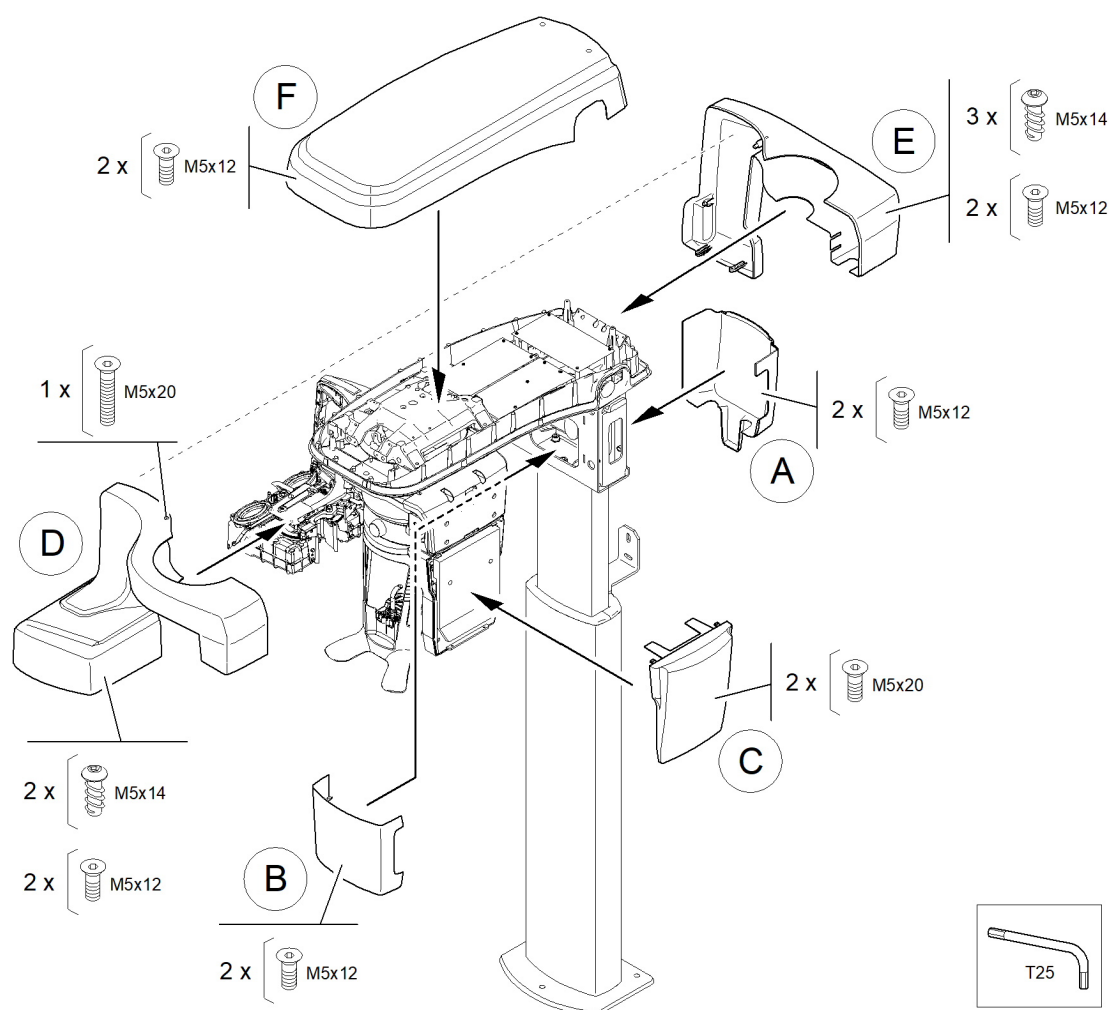
7. Read the two warnings that are displayed.
8. Choose the appropriate answer from the list about the F1 fuse on the JZ036 PFC board.

If you select No you cannot click Start in the next step.

9. Click Start and follow the on-screen instructions.

Fitting the Covers

Figure 10 CS 8100 3D (Upgradeable to Scan Ceph) covers



To fit the covers:

1. Slide the back column cover (A) into the mounting channels and insert and tighten the two screws.



IMPORTANT: Make sure that the ethernet cable and the exposure cable come out through the opening on one side of the back column cover. The power cable comes out from the opening on the other side.

2. Slide the front column cover (B) into the mounting channels and insert and tighten the two screws.
3. Fit the sensor cover (C).
4. Slide the left cover (D) onto the rotative arm then insert and tighten the five screws.
5. Slide the right cover (E) onto the rotative arm then insert and tighten the five screws.
6. Fit the top head cover (F) and insert and tighten the two screws.

Maintenance

Annual Maintenance

We recommend that a general inspection of the system should be carried out every year by an approved dental systems technician.

The inspection should cover the following points:

- Check the attachment points to the floor and the wall.
- Check all the mobile components of the system.
- Check the X-ray source.
- Make an image acquisition with the test tools and check the image.
- Check the focal trough and the symmetry.
- Check the degree of legibility of the labels.
- Check for damage to cables, covers, oil leaks, etc.

If the results of any of these inspections show any defects, and if you need to change any spare parts, see the *CS 8100 3D Family Service Guide (SM845)* to rectify any problems.

If you have identified any defects or have any doubts, do not operate the system.