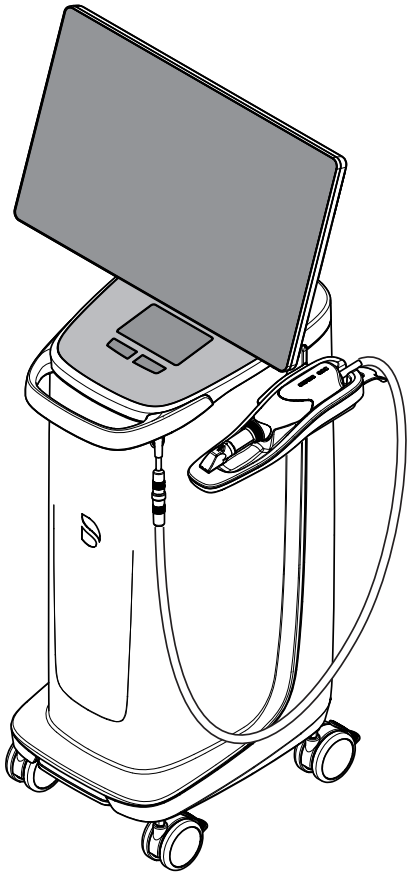
New as of: 12.2018

Dentsply Sirona

CEREC Primescan AC, Primescan AC, CEREC Omnicam AC, Omnicam AC

Service Manual

English



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1 General information

1.1 General information

Nominal line voltage ranges

The acquisition unit works in the following ranges:

Rated line voltage	100-240 V ~ / 50-60Hz
Nominal current	4.7 - 1.8 A

Wireless phone interference with medical electrical equipment

NOTE

To ensure safe operation of medical electrical equipment, the use of mobile wireless phones in practice or hospital environments is prohibited.

ESD warning label

⚠ CAUTION

Risk of injury or damage to components from electrostatic discharge

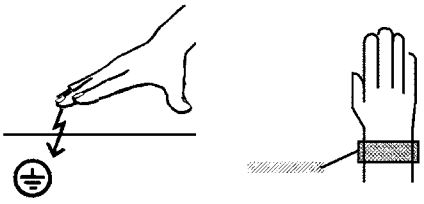
For electrical components labeled with an ESD warning label, observe the following instructions.

➢ Apply the ESD protective measures.

➢ Do not touch connector pins or sockets without applying ESD protective measures first.

➢ Do not establish any connections between these connectors without applying ESD protective measures first.

ESD protective measures



ESD protective measures include:

- Procedures for preventing electrostatic charge build-up (e.g. air conditioning, air moistening, conductive floor coverings and non-synthetic clothing)
- Discharging the electrostatic charges of your own body on the frame of the UNIT, the protective ground wire or large metallic objects
- Connecting yourself to ground using a wrist band.

Disposal

Observe the information on disposal in the relevant operating instructions.

Installation site

Observe the information on the installation site in the relevant operating instructions.

1.2 Additional information

In addition, you also require:

Wiring diagrams CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC

Order No.: "66 83 119"

CEREC Primescan AC / Primescan AC Operating Instructions

Order No.: "66 54 573/66 54 581"

CEREC Omnicam AC / Omnicam AC Operating Instructions

Order No.: "66 54 649/66 54 656"

Spares drive

(including electronic spare parts catalog)

- Order no. Spares drive: 63 21 868

Documents:

Operating the MC XL via LAN (61 90 503)

Operating MC XL via WLAN in infrastructure mode, Restoring default settings (61 90 560)

Tools

- Torx screwdriver, sizes 06, 10, 20, 30, 20 (250 mm long)
- Phillips screwdriver, size 1
- Blade screwdriver, insulated, sizes 2 and 3
- Universal tongs
- Flat tongs
- Side cutting pliers
- Open-end wrench, SW 17

Auxiliary tools & equipment

- Digital Multimeter, Accuracy Class 1
- Soldering tool for repairing cables
- Cable ties
- Teflon tape
- Fuses (recommended):

F1/F2 (2 pcs)	T8A H 250V	Order No.: 62 33 188

1.3 Structure of the document

1.3.1 Identification of the danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in these operating instructions. Such information is highlighted as follows:

⚠ DANGER

An imminent danger that could result in serious bodily injury or death.

⚠ WARNING

A possibly dangerous situation that could result in serious bodily injury or death.

⚠ CAUTION

A possibly dangerous situation that could result in slight bodily injury.

NOTE

A possibly harmful situation which could lead to damage of the product or an object in its environment.

IMPORTANT

Application instructions and other important information.

Tip: Information for simplifying work.

1.3.2 Formats and symbols used

The formats and symbols used in this document have the following meaning:

✓ Prerequisite **1.** First action step **2.** Second action step or ➢ Alternative action ↳ Result ➢ Individual action step	Prompts you to do something.
See "Formats and symbols used [→ 7]"	Identifies a reference to another text passage and specifies its page number.
• List	Designates a list.
“Command / menu item”	Indicates commands / menu items or quotations.

1.4 Safety instructions

1.4.1 Qualification of service personnel

The installation, commissioning, and repairs may only be performed by personnel authorized by Dentsply Sirona for this purpose.

1.4.2 Changes to the unit

Modifications to this unit which might affect the safety of the system owner, patients or other persons are prohibited by law!

In order to ensure product safety, this device may be operated only with original Dentsply Sirona accessories or third-party accessories expressly approved by Dentsply Sirona. In particular, only the power cable also supplied or the corresponding original spare part may be used with the unit. The user is responsible for any damage resulting from the use of non-approved accessories.

1.4.3 Electrostatic discharge

ESD warning label

⚠ CAUTION

Risk of injury or damage to components from electrostatic discharge

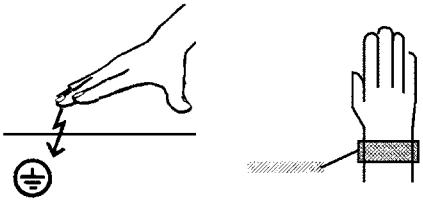
For electrical components labeled with an ESD warning label, observe the following instructions.

➢ Apply the ESD protective measures.

➢ Do not touch connector pins or sockets without applying ESD protective measures first.

➢ Do not establish any connections between these connectors without applying ESD protective measures first.

ESD protective measures



ESD protective measures include:

- Procedures for preventing electrostatic charge build-up (e.g. air conditioning, air moistening, conductive floor coverings and non-synthetic clothing)
- Discharging the electrostatic charges of your own body on the frame of the UNIT, the protective ground wire or large metallic objects
- Connecting yourself to ground using a wrist band.

Before replacing the boards, observe the ESD protective measures.

1.4.4 Ventilation slots

Under no circumstances may the ventilation slots on the unit be covered, since otherwise the air circulation will be obstructed. This can cause the unit to overheat.

1.4.5 Disconnecting the power supply

If the device must be opened during maintenance work, this may be done only after disconnection of the power supply to the device.

⚠ CAUTION

Damage/danger resulting from unauthorized alterations

Modifications to the device may only be performed following prior consultation with us. We are not liable for unauthorized alterations of any kind.

Prior to opening the unit, connecting a measuring instrument or replacing parts:

➢ **Turn the device off.**

➢ **Disconnect the power plug.**

1.4.6 Replacing parts

⚠ WARNING

Potentially lethal shock hazard when working near the power supply unit

Disconnect from the line power supply.

Check for zero potential.

Switch the device **off** and disconnect the power plug before replacing parts.

The item numbers for ordering spare parts can be found in the spare parts catalog on the combi stick.

The diagrams contained in the spare parts catalog provide a useful guide when replacing parts.

Before replacing the boards, observe the ESD protective measures.

1.4.7 Measurements

Always switch off the device before connecting the measuring instrument.

Select the correct current/voltage type and adjust the measuring range to match the expected readings.

Perform continuity tests only on devices which are switched off.

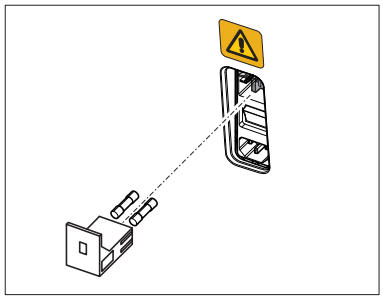
1.4.8 Important instructions after repair / maintenance

To ensure a safe operating condition for the device, the following checks must be performed after repair / maintenance:

- Any connections that may have loosened during repair must be reconnected. This applies in particular to lines for the power supply and for the protective earth conductor. The protective earth conductor resistor must be checked after attaching the covers.
  - R < 100 mΩ between components connected to the protective earth conductor and the protective earth conductor connection to the power socket.

1.4.9 Safety labels

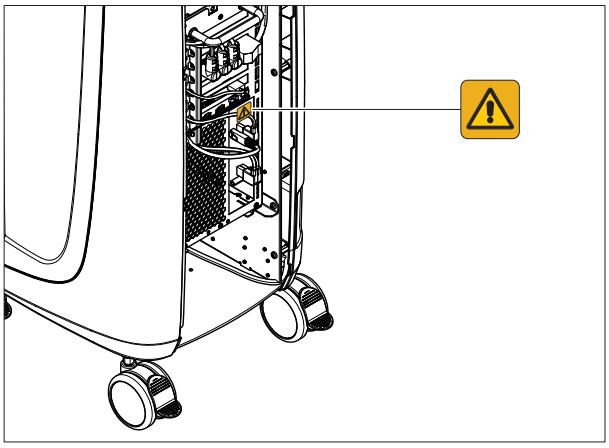
Fuses



NOTE

Use ONLY fuses of the same type!

Plug connections of external interfaces



⚠ CAUTION

Adaptation of acquisition unit to external components

Additional devices connected to external interfaces must be tested according to the relevant standards, e.g.:

EN 60601-1:2006 + Cor.:2010 + A1:2013,
IEC 60601-1 Edition 3.1:2012,
EN 61010-1:2010 based on IEC 61010-1:2010 + Cor.:2011.

They must be installed outside of the patient area (a radius of 1.5m surrounding the patient).

⚠ WARNING

Risk of electric shock

Low voltages are applied to the sockets for connecting external interfaces. In order to maintain electrical safety, the rear covers of the acquisition unit must be kept closed while it is in operation (service cover and cover on the monitor).

- ➢ Do not touch the pins of the connectors.
- ➢ When using the unit on the patient, please note that the covers on the rear side of the unit (service cover and cover on the monitor) must remain closed and voltage sources must not be accessible. The cover on the monitor must not be opened, if both USB sockets are in use or locked.
- ➢ The acquisition unit must not be operated inside of the patient area (within a radius of 1.5 m surrounding the patient) with the covers open.

NOTE

Risk of damage to the plugs/cables!

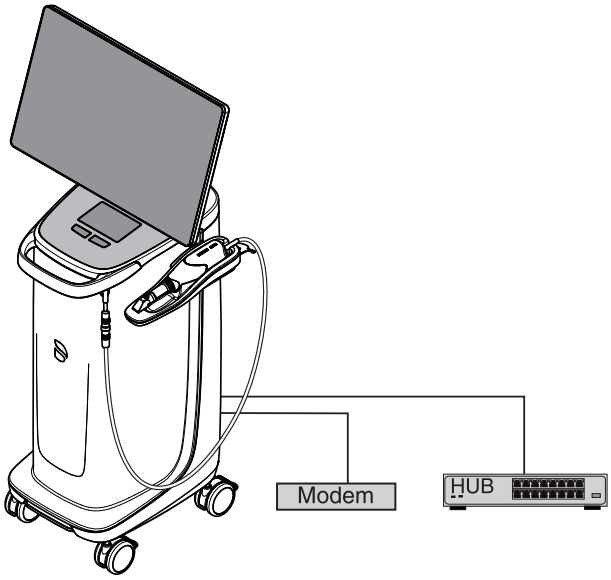
The externally connected plugs/cables may be damaged, if they are overtensioned or if the plug connections do not snap in.

- ➢ Do not pull on the cables.
- ➢ Make sure that the plug connections snap in.

1.4.10 Wireless phone interference with equipment

The use of mobile wireless phones in practice or hospital environments must be prohibited to ensure safe operation of the unit.

1.4.11 Integration in a network or connection to a modem



NOTE

Observe the following installation regulations

The following installation regulations apply to integration of the acquisition unit in a network or connection of the acquisition unit to a modem:

Network

The acquisition unit may be operated in a network only if it is connected to a HUB/switch. The hub/switch must:

- be located in the room where the acquisition unit is operated, **permanently installed**.
- be grounded via an **additional ground wire**.

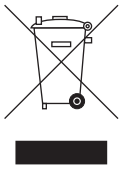
Cross-section of the protective ground wire	laid protected	2.5 mm^2
	laid unprotected	4 mm^2

Modem

At least one of the following specifications must be fulfilled in order to operate the acquisition unit on a modem:

- If a modem is connected, the acquisition unit may be operated only outside of the patient area (radius of 1.5 m surrounding the patient).
- An RS232 isolator compliant with EN 60 601-1-1 with a dielectric strength of at least 1.5 kV must be installed at the modem end in the RS232 connecting cable between the acquisition unit and the modem.

1.4.12 Disposal



In accordance with Directive 2012/19/EU and national disposal regulations regarding old electrical and electronic devices, please be advised that such items must be disposed of in a special way within the European Union (EU). These regulations require environmental friendly usage/disposal of old electrical and electronic devices. Such items must not be disposed of as domestic refuse. This has been expressed using the icon of the "crossed out trash can" since March 24, 2006, amongst other methods.

Please observe the disposal regulations applicable in your country.

1.5 Technical data

Type designation	CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC
Rated line voltage	100 - 240 VAC /50 - 60 Hz
Nominal current	5.0 – 2.1 A
Type of protection against electric shock	Class I device
Type of protection against electric shock (scanner)	Type BF applied part
Degree of protection against ingress of water	Ordinary device (without protection against ingress of water)
Degree of contamination	2
Installation category	II
Operating mode	Continuous operation

Transportation and storage conditions

In the original transport packaging, the acquisition unit withstands the following environmental conditions during transport and storage:

Temperature	-25°C to 60°C (-13°F to 140°F)
Relative humidity	10% to 75%
Air pressure	700 hPa to 1060 hPa

Operating conditions

The acquisition unit may be operated in the following environmental conditions:

Ambient temperature	10°C to 35°C (50°F to 95°F)
Relative humidity	30% to 85% No condensation
Air pressure	700 hPa to 1060 hPa
Operating altitude	≤ 3000 m

Dimensions and weight

Dimensions W x H x D	
in mm	408 (537) x 1190 x 443
in inches	16.06 (21.14) x 46.85 x 17.44
Weight	
• Total weight, approx.	38 kg (83.8 lbs)
• without monitor and battery, approx.:	31 kg (68.3 lbs)
• without battery, approx.:	36 kg (79.3 lbs)

1.6 PC overview

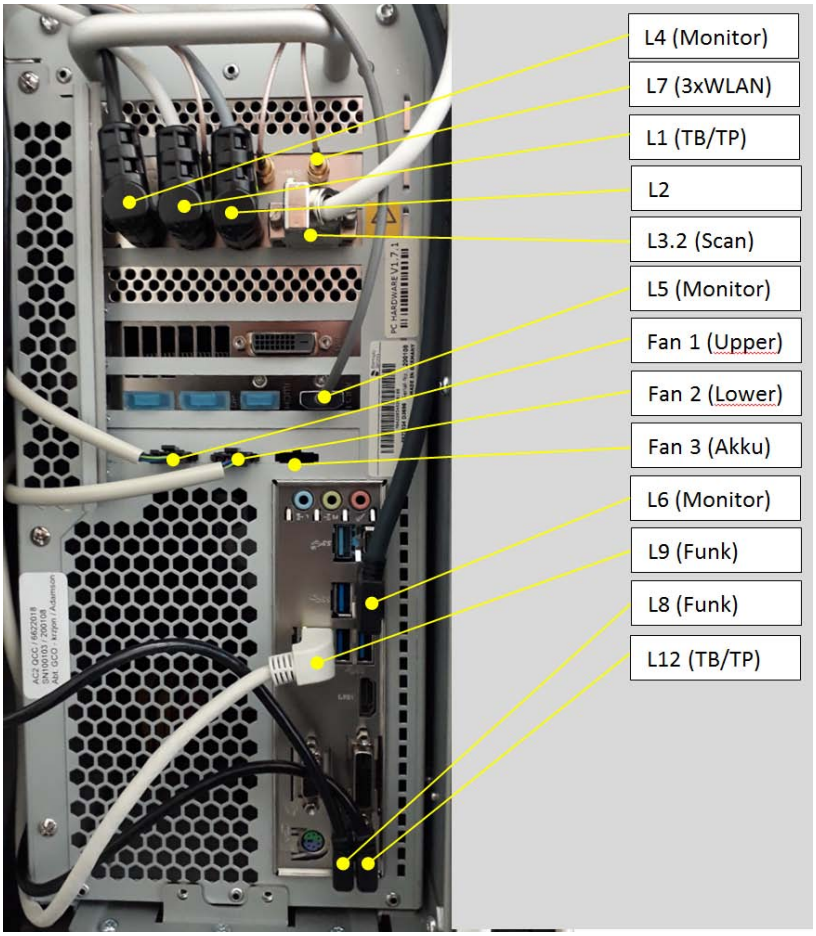
1.6.1 CEREC Primescan AC / Primescan AC components

Component	For hardware version V1.7.1
Power supply unit:	Fortron FSP650-70UA
Mainboard:	MSI Z370 PC PRO (MS-7B49 V1.0) BIOS version 1P2
Processor:	intel i7-8700
Memory:	4 x 8 GB, DDR4-2400 RAM
SSD module:	960 EVO 250 GB
Hard disk:	Seagate ST2000LX001
Graphics card:	PULSE RADEON RX 570 8 GB
Supply board:	Interface card QCC FBG, 3-E3, 6634245
Sound card:	Realtek HD Audio on-board
LAN:	GBE LAN on board
WiFi / WLAN:	TP-Link T9E Archer
Operating system:	Windows 10, 64 bit

1.6.2 CEREC Omnicam AC /Omnicam AC components

Component	For hardware version V1.1.1
Power supply unit:	Fortron FSP650-70UA
Mainboard:	MSI Z370 PC PRO (MS-7B49 V1.0) BIOS version 1P2
Processor:	intel i7-8700
Memory:	4 x 8 GB, DDR4-2400 RAM
SSD module:	960 EVO 250 GB
Hard disk:	Seagate ST2000LX001
Graphics card:	PULSE RADEON RX 570 8 GB
Supply board:	Interface card OC FBG, 2-E2, 6634229
Sound card:	Realtek HD Audio on-board
LAN:	GBE LAN on board
WiFi / WLAN:	TP-Link T9E Archer
Operating system:	Windows 10, 64 bit

1.6.3 Overview of the connections on the PC



2 Service tools

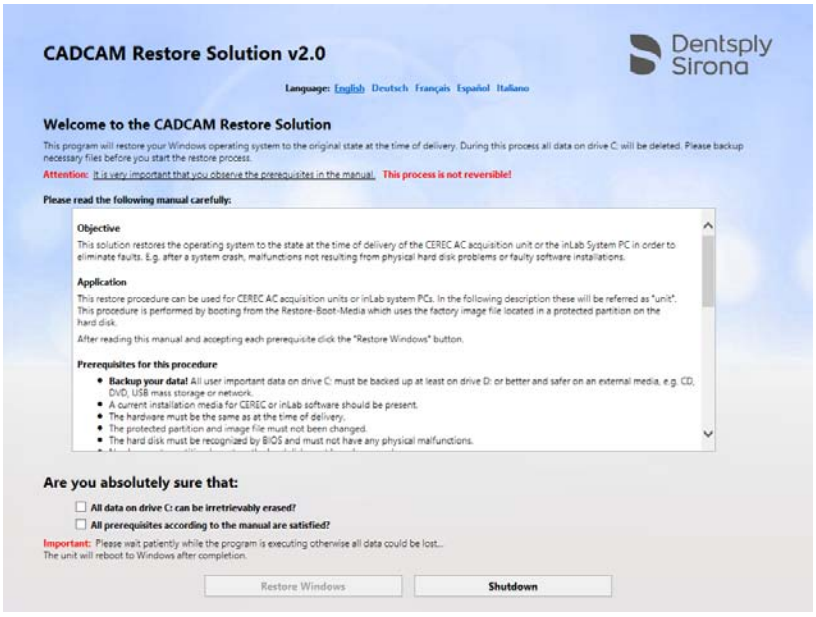
2.1 TeamViewer

For remote diagnostics and assistance through customer support from Dentsply Sirona, TeamViewer Quicksupport is preinstalled. No Internet connection is required for this.

✓ Internet connection is available.

1. Start the program by opening the "Dentsply Sirona" folder in the start menu and then selecting "TeamViewer Quicksupport".
2. If necessary, confirm any queries from the Windows user account control system that appear with "Yes" and report the ID and password displayed in the program to your counterpart.
   ↳ Your screen content is then transferred.

2.2 Dentsply Sirona Restore Solution v2.0



2.2.1 Objective

The objective of inserting the Restore Solution is to restore the software factory defaults as a means of rectifying faults; for example:

- after a system crash,
- non-physical hard disk malfunctions,
- faulty software installations.

2.2.2 Compatible PCs

Dentsply Sirona Restore Solution v2.0 is compatible with the PCs of the following devices:

- CEREC Primescan AC, Primescan AC
- CEREC Omnicam AC, Omnicam AC
- inLab 4 PC
- CEREC AC with CEREC Omnicam, CEREC AC Connect with CEREC Omnicam
- CEREC AF / AI / AF Connect / AI Connect

2.2.3 Prerequisites for performing this procedure

- USB stick with Dentsply Sirona Restore Solution v2.0 or higher.
- All important user data on the C: drive must be backed up on the D: drive as a minimum; an even better and safer option is to back it up on an external medium, such as a CD, DVD, USB mass memory, or network.
- Up-to-date installation media of the software used on the system must be available (refer to the final steps).
- The hardware must be the same as at the time of delivery.
- The protected partition and the image file must not have been changed.
- The hard disk must be recognized by BIOS and have no physical malfunctions.
- There must be no changes made to the partitions on the hard disk.

2.2.4 When can the procedure not be used?

This procedure is not suited for the initial configuring of a new hard disk.

Do not start the process if the following occurs:

- System initialization or BIOS error messages are displayed.
- The monitor display is not present.
- Trackball or touchpad of the acquisition unit are not recognized.
- Drive C: contains important data for which no backup exists.

2.2.5 It is lost:

- All data, programs, updates, and settings which the user has stored, installed, and performed are no longer available following the procedure.
- Hardware components that are subsequently installed or modified might not be recognized or may lead to error messages and malfunctions.

Patient data usually saved on the D: drive is retained in this process. For certainty, Dentsply Sirona also recommends saving this beforehand, and regularly in general.

2.2.6 Performing the restore process

2.2.6.1 Connecting the USB stick

✓ The conditions for performing this process are met (see preceding section).

1. Insert the USB stick with the Restore Solution into a USB port on the device. Ideally, a USB port directly on the mainboard should be used in this regard. With the acquisition unit, you must first open the service cover (see "Opening the service cover [→ 31]") or remove the cover in the rear wall.
2. Start the device. If the device is already running, perform a restart.

2.2.6.2 Systems without a separate keyboard

For systems without a separate keyboard (CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC with touchscreen):

- Case 1: The device boots automatically from the USB stick of the Restore Solution. Proceed with the section "Proceeding with the process [→ 21]".
- Case 2: If the device does not boot from the USB stick, but rather starts the installed Windows operating system, conned a keyboard to the device and proceed with section "Systems with a separate physical keyboard [→ 21]".

2.2.6.3 Systems with a separate physical keyboard

For systems featuring a separate physical keyboard:

1. After switching on or performing a restart, press the key which opens the boot menu repeatedly until the menu is displayed on the PC. This is generally the "F11" key, or "F8" for CEREC AC/AC CONNECT with CEREC Omnicam.
2. Select the USB stick using the cursor keys and press "Return".

2.2.6.4 Proceeding with the process

1. Wait for the startup process to complete and follow the on-screen instructions.
2. If an error message is issued following startup of the restore process, shut down the device and use a different USB port for the USB stick. Then repeat the process from the beginning. If the process fails again, either the hard disk is damaged or the correct hard disk partitions and/or the copy of the factory defaults was not found. In this case, pay attention to section "XXX YYY".
3. Following conclusion of the restore process, remove the USB stick as prompted and wait for the device to start up again.
4. Perform the final steps.

2.2.7 Final steps

You must carry out the following work upon conclusion of the restore processes in order that the device can be operated as previously:

1. Connect the device with the Internet to activate Windows. This will occur automatically if the device has a permanent connection to the Internet. In this case, the Windows updates must also be installed.
2. If the device is subsequently to be operated offline, establish a short-term Internet connection; e.g. using a mobile telephone system. Then open the Windows settings in the Start menu and click on Update and Security, then Activation on the left. Activation can be initiated here manually.
3. Install the required software (CEREC SW, inLab SW, etc.).
4. Check the interface parameters in the user software and, if necessary, configure them (see relevant user manual).

Optional:

- Restoring previously backed-up data.
- Installation of updates and additional programs (e.g. Sidexis)
- Entering the necessary personal settings (passwords, etc.)
- Installation of the software for auxiliary devices (e.g. modem, network, ISDN, etc.)

3 Scanner

3.1 Calibrating the scanner

The measurement procedure used by the system requires the use of a calibrated scanner. The CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner is calibrated ex works. Calibrate the scanner after every reinstallation and after each time that it is transported. The calibration set supplied is available for the calibration process.

In order to achieve optimum results, the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner must be allowed to warm up for 2 minutes before calibration.

Recalibrate the scanner in the following cases:

- following transport (shaking stress) or during first commissioning,
- after storage in unheated or un-air-conditioned rooms (temperature differences exceeding 30°C / 85°F),
- with temperature differences of over 15°C / 60°F between the last calibration and operation.
- In general, carrying out a calibration is the correct process in the event of errors in the acquisition process (such as poor image quality or the lack of a 3D preview). In many cases, the errors can be corrected in doing so.
- As the system may be exposed to vibration loads without knowledge of this, it should be calibrated once a month.

Starting calibration

1. In the software, navigate to the system menu and click on the *"Configuration"* button.
2. Click on the *"Devices"* button.
3. Click on the *"Calibrate"* button.
   ↳ The scanner view is displayed in one window.

Calibrating the scanner

1. Remove the protective cap from the calibration set.
2. Mount the calibration set on the tip of the scanner until it locks into place.
3. Secure the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner in the calibration set using one hand. Ensure that the external calibration set screw is fully screwed in a clockwise motion until it gently locks into place.
4. Click on the *"OK"* button.
   - The measuring process starts.
   - The software prompts you to proceed to the next latching.

5. Turn the screw counter-clockwise until you reach the next latching point.
6. Click on the *"OK"* button. Hold the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner still.
   - The software confirms the calibration process.
   - The software prompts you to proceed to the next latching.
7. Complete steps 5 and 6 a total of 11/17 times.
   - The software provides status updates on the calibration and informs you once the procedure is complete.
   - You will be prompted to measure the position of the exit window.

Measuring the position of the exit window

1. Mount the bottom side of the calibration set to the tip of the scanner.
2. Click on the *"OK"* button.
   - The calibration process is continued.
   - Once the calibration is complete, a message is displayed indicating this.
3. Confirm the message by clicking the *"OK"* button.

The CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner is calibrated.

Error message during calibration

The software indicates if an error occurs during calibration. If the calibration process resulted in errors, restart the process.

End calibration

✓ The software indicates that the calibration was completed successfully.

➢ Click the *"OK"* button.
   - The CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner is calibrated.

3.2 Color calibration

General information

NOTE

Faulty color analysis

The color analysis can be negatively impacted due to strong light incidence and it can lead to varying results.

➢ Set the scanner up so that it is not located directly in the beam path of an extreme light source (e.g., the treatment light) and not exposed to direct sunlight.

A color-calibrated scanner must be used for the color analysis.

NOTE

Observe color calibration

A color calibration may only be performed at least 20 minutes after the system start/cleaning.

The color calibration must be performed regularly.

In order to achieve optimum results, the scanner must be allowed to warm up for a few minutes before color calibration. The scanner must be color calibrated every two weeks in order to carry out a reliable color analysis. You will achieve the best results if the scanner is color calibrated immediately before scanning a new case.

Carry out a color calibration also after changing a sleeve.

Heavily scratched sleeve window may not be used for a color analysis.

Storing a color-calibration set

The color-calibration set must be stored in its packaging in a dry place which is protected from light. It must be used with a disinfected scanner as the color-calibration set must itself not be disinfected. If dust accumulates on the inside of the color-calibration set, it must be carefully removed using compressed air.

Switch on the color analysis

1. In the software, navigate to the system menu and click on the *"Configuration"* button.
2. Click on the *"Devices"* button.
3. Select the *"Shade Detection"* option.
   - You can choose between various color systems (*"Shade Guide Selection"*).
   - You can decide whether you would like to be notified in 14 days when the color calibration is needed again.
4. Confirm the changes below with *"Ok"*.
5. Click the *"Color Calibration"* button and carry out the color calibration.

Color-calibrating the scanner

NOTE

Only use color calibration set with clean, dry CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner

In order to achieve optimum results, the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner must be clean, disinfected and dry before color calibration.

➢ Make sure that the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner is clean, disinfected and dry.

1. Remove the color-calibration set from the packaging.
2. Use the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner to scan the QR code on the underside of your color-calibration set. In order to do this, you must hold the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner still in front of the QR code so that it is completely visible in the picture. If the QR code appears to be shiny, hold the scanner at more of an oblique angle in order to avoid any glaring light and to make it easier to scan the codes. If the QR code is recognized, the next *"Please mount color calibration set"* step appears.
   This step of the QR code scan is skipped during the subsequent color calibration and the serial number of the color-calibration set is thus displayed. If this does not match the serial number printed on your color-calibration set, click on the *"Rescan QR Code"* button and scan the new QR code.
3. Mount the color-calibration set on the tip of the scanner until it locks into place.
4. Click on the *"Ok"* button.
   - The measuring process starts. Do not move the CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner or the color-calibration set during this time.
   - The software provides status updates on the calibration and informs you once the procedure is complete.

Ending the color calibration

✓ The software indicates that the color calibration was completed successfully.

1. Click on the *"Ok"* button.
   - The CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner is now color-calibrated.
2. Remove the color-calibration set from the scanner and place it back in the packaging.

Error message during color calibration

The software indicates if an error occurs during color calibration. If the color calibration contained an error, ensure the following:

- The color-calibration set is free of dust
- The color-calibration set was mounted correctly
- The CEREC Primescan / Primescan / CEREC Omnicam / Omnicam scanner exit window is clean

➢ Then restart the color calibration.

Do not continue using a damaged color-calibration set; instead, contact your distributor to purchase a new one.

Replacing the color calibration set

NOTE

Regularly replacing the color calibration set

In order to achieve optimum results, the color calibration set must be replaced regularly.

➢ Observe the following:

Please note that the color calibration set

- can only be used with CEREC SW software ≥ 5 or Connect SW ≥ 5.
- can only be kept for use for a maximum of 2 years. You can find the expiry date at the bottom of the color calibration set container. Previous storage may mean that the period for use has been reduced to less than 2 years.
- can only be used for one year after the container has been opened. Write the date that the container was opened on the container after "Opened on _____" using a waterproof pen and do not use after one year.

The color calibration set may no longer be used once either of the two periods has expired.

The software notifies you that the color calibration set needs to be replaced with a new set before the color calibration expires.

Once the color calibration set has expired the software notifies you that a color analysis can only be carried out based on old calibration data.

Please contact your dealer for replacements for the color calibration set.

4 Repair

4.1 General information on assembly

⚠ DANGER

Potentially lethal shock hazard

People can be injured or electrical components of the unit destroyed.

➢ Switch off the unit **prior** to beginning work.

➢ Pull out the power cable.

NOTE

Accessories

For reasons of product safety, this product may be operated only with original Dentsply Sirona accessories or third-party accessories expressly approved by Dentsply Sirona. The user is responsible for any damage resulting from the use of non-approved accessories.

NOTE

If cable is kinked or twisted.

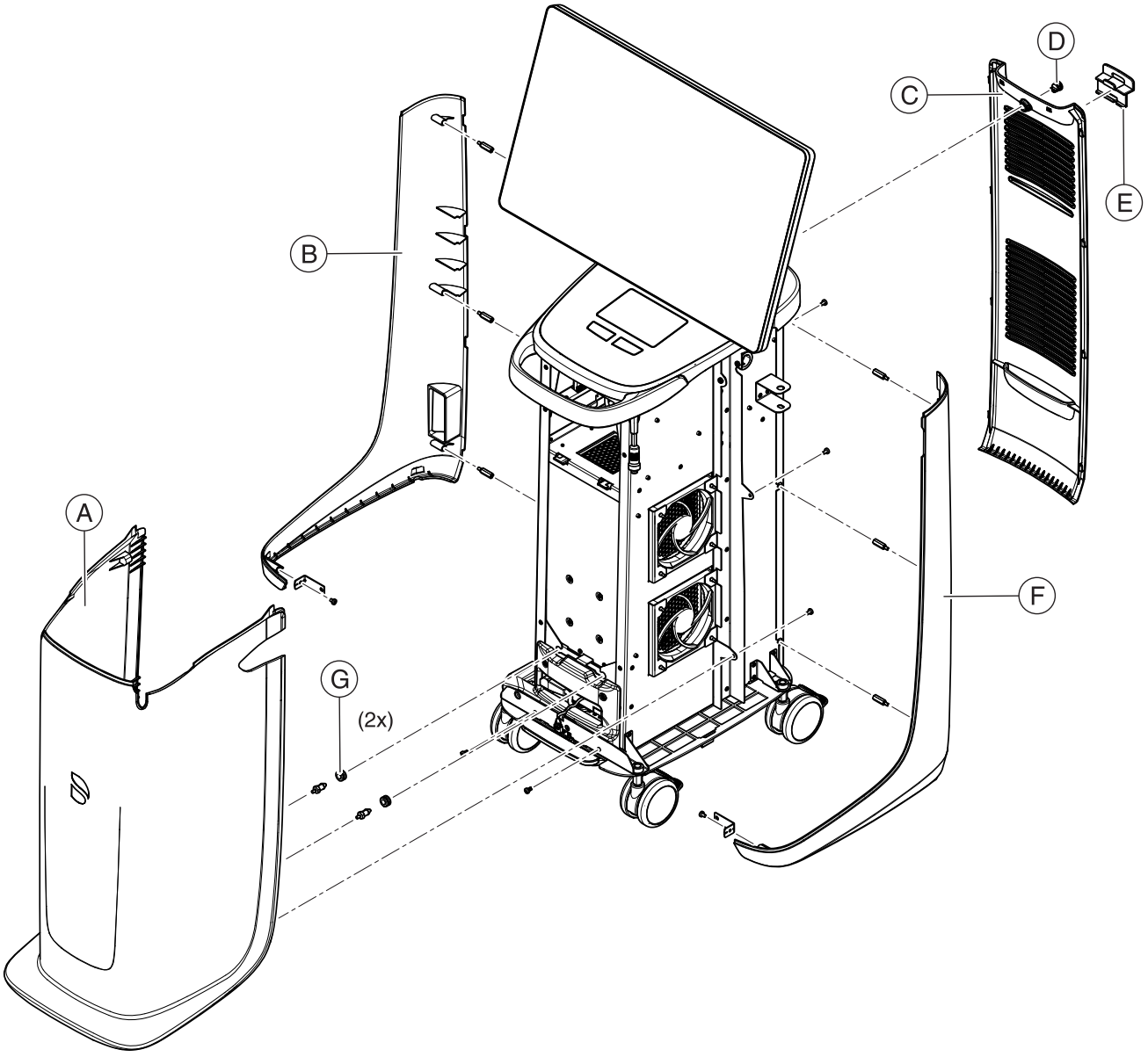
Kinking or twisting can cause the wires in the cable to break. The cable must be replaced.

➢ Ensure that electrical lines do not become kinked or twisted.

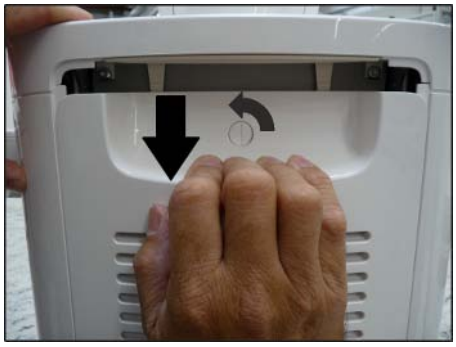
4.2 Removing covers and holders

4.2.1 Removing and installing covers

4.2.1.1 Cover overview

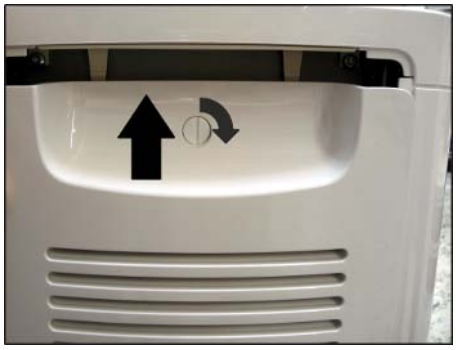


4.2.1.2 Opening the service cover



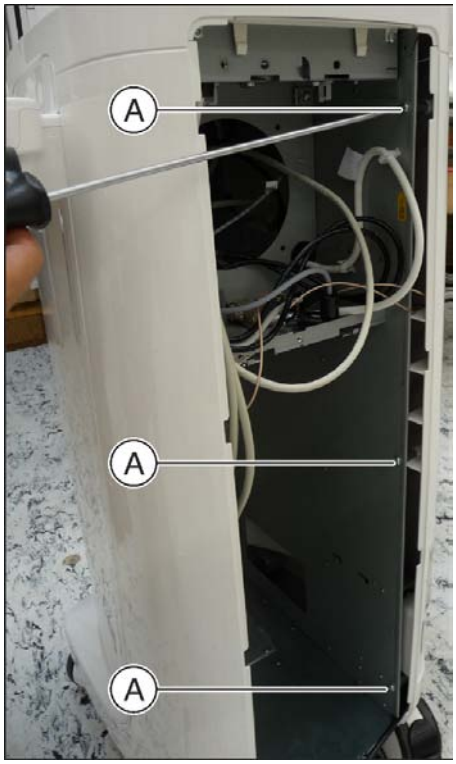
1. Turn the turning bolt with a screwdriver (> 5) or another suitable implement (a coin or suchlike) approx. 90° counterclockwise up to the stop. The slot of the turning bolt must be in a vertical position in an opened state.
2. Press down the service cover as far as it will go and remove it.

4.2.1.3 Closing the service cover

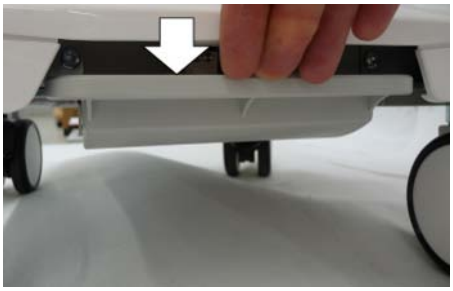


1. Put the service cover back in position and push it up as far as it will go.
2. Turn the turning bolt with a screwdriver (> 5) or another suitable implement (a coin or suchlike) approx. 90° clockwise up to the stop. The slot of the turning bolt must be in a horizontal position in a closed state.

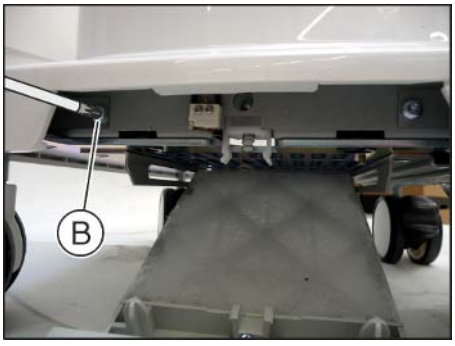
4.2.1.4 Left cover



1. Unscrew the 3 screws (**A**).



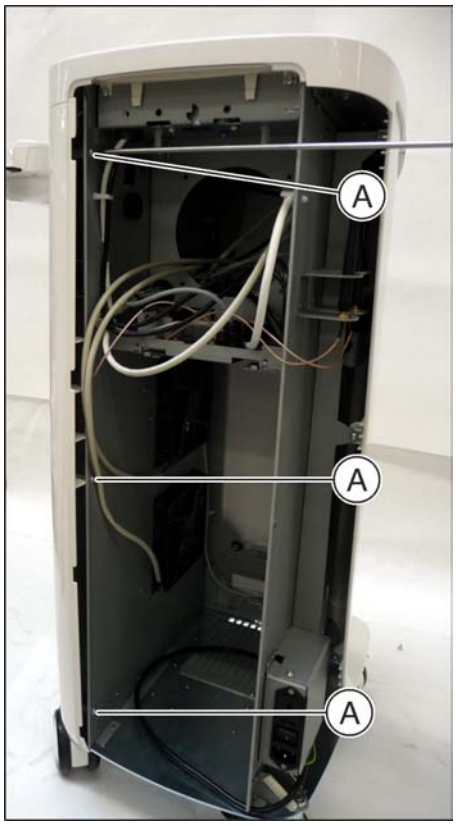
2. Flip the footswitch down.



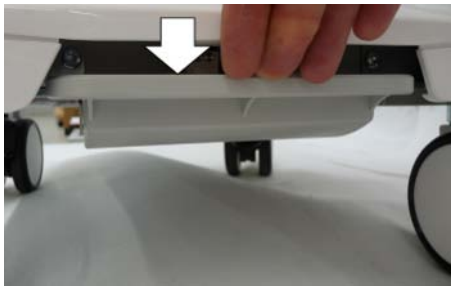
3. Unscrew the left screw (**B**).

4. Remove the left cover by pulling it out downwards slightly and then to the rear.

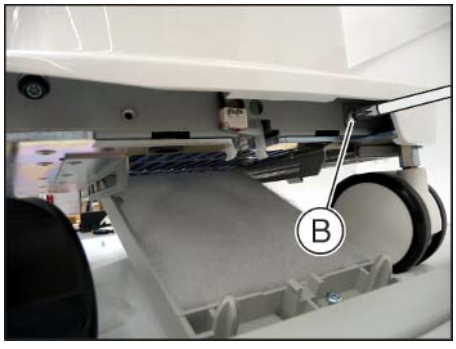
4.2.1.5 Right cover



1. Unscrew the 3 screws (**A**).



2. Flip the footswitch down.

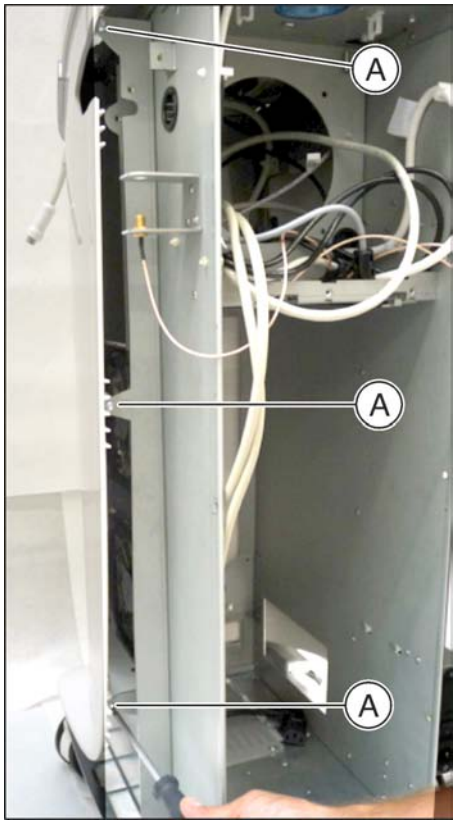


3. Unscrew the right screw (**B**).

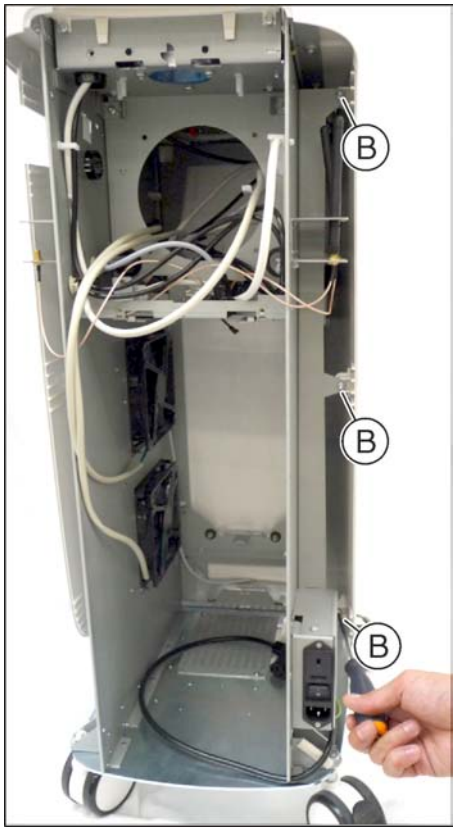
4. Remove the right cover by pulling it out downwards slightly and then to the rear.

4.2.1.6 Front cover

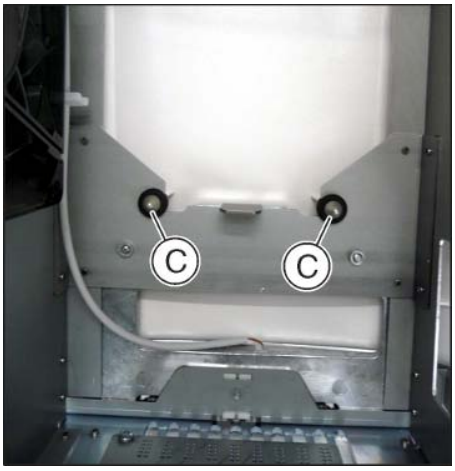
IMPORTANT
First remove scanner holder or handle In order for the front cover to be able to be removed, the scanner holder must first be removed. Alternatively, the front handle can be removed beforehand, then the scanner holder can stay in its position.



1. Unscrew the 3 screws (**A**).



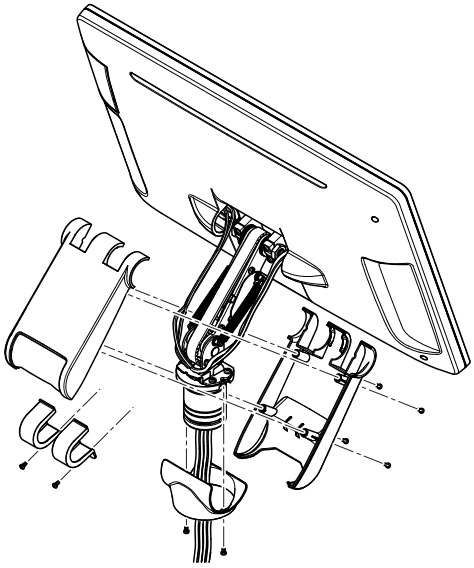
2. Unscrew the 3 screws (**B**).



3. Press the 2 Pilz connectors (**C**) from behind out of the grommets. Alternatively: Loosen the cover by pulling on the bottom part of the front cover until the Pilz connector audibly disengages.

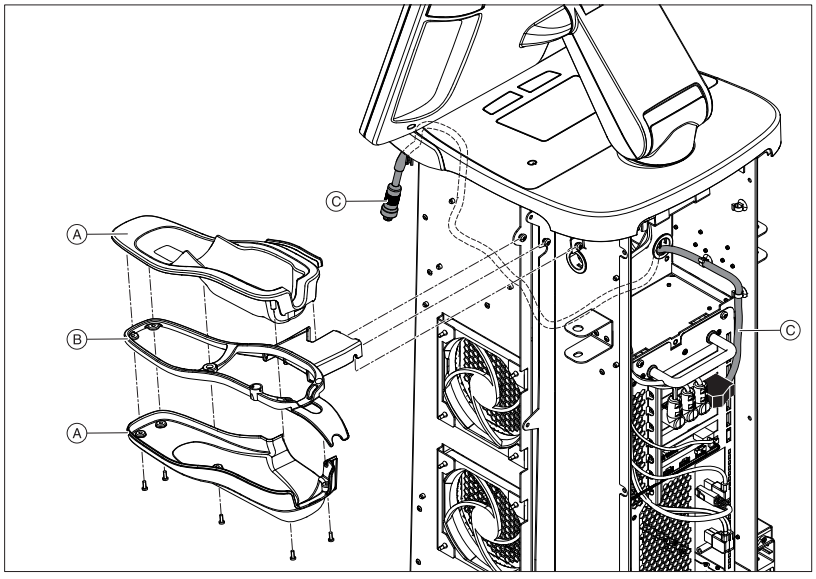
4. Paying attention to the scanner cable, press the front cover downwards slightly and pull it forwards and out.

4.2.1.7 Replacing the kinematics cover



1. Unscrew 2 screws and remove cover bearing flange.
2. Unscrew 4 screws and remove bottom arm cover.
3. Unscrew 2 screws from cable fixings and remove.
4. Remove front arm cover; it may be necessary to move the kinematics a little to do so.
5. Unscrew 2 screws and remove monitor bearing cover.
6. Reassembling everything in reverse order, when doing so note the following. If possible, fix cable back in the cover in the same position in which it was found. Exercise great care in this process. During the swiveling movement, neither may tension be applied to the cable nor may protruding cable inhibit the swiveling movement.

4.2.2 Replacing the CEREC Primescan / Primescan scanner holder

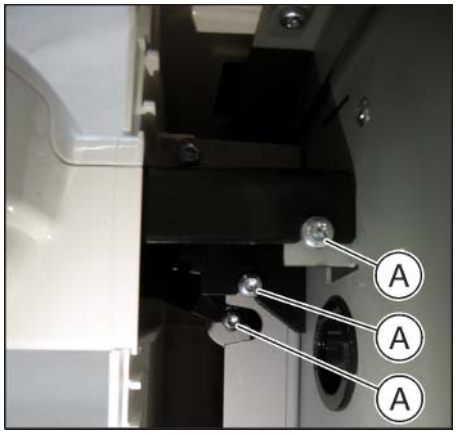


A	CEREC Primescan / Primescan scanner holder cover parts set	B	CEREC Primescan / Primescan scanner holder
C	CEREC Primescan / Primescan internal scanner cable		

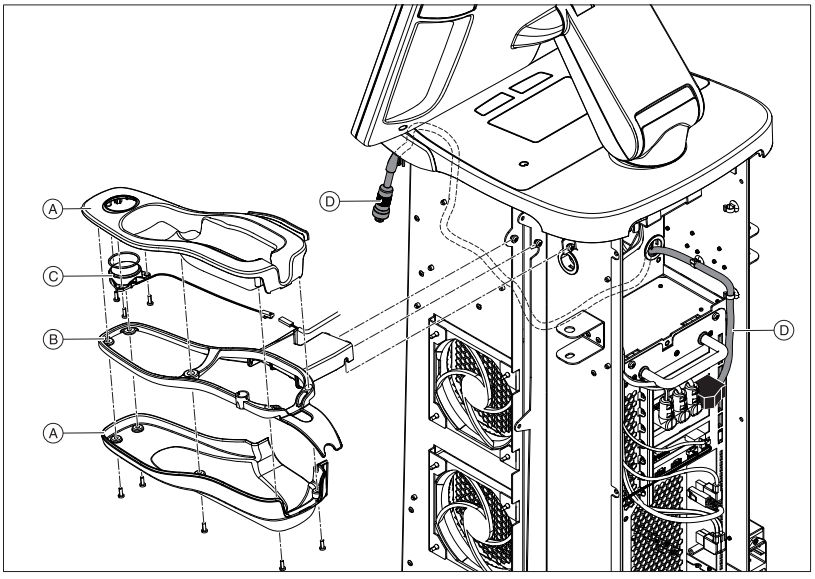
✓ The service cover is open (see "Opening the service cover [→ 31]").

✓ The right cover is removed (see "Right cover [→ 33]").

1. Detach the scanner connector from the scanner cable and set the scanner aside safely.
2. Unscrew the 3 screws (**A**) from the device and remove the scanner holder laterally from the device.
3. Insert the new scanner holder and firmly screw the three screws onto the device .



4.2.3 Replacing the CEREC Omnicam / Omnicam scanner holder

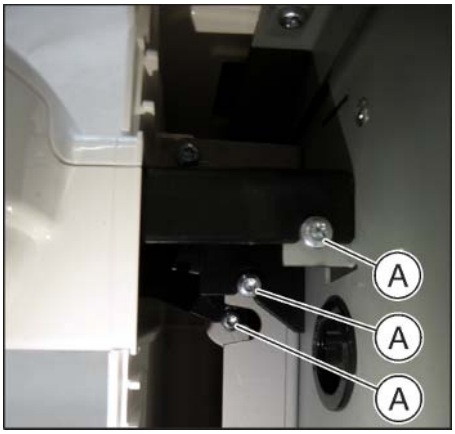


A	CEREC Omnicam / Omnicam scanner holder cover parts set	B	CEREC Omnicam / Omnicam scanner holder
C	Heater	D	CEREC Omnicam / Omnicam internal scanner cable

✓ The service cover is open (see "Opening the service cover [→ 31]").

✓ The right cover is removed (see "Right cover [→ 33]").

1. Unscrew the scanner from the scanner cable and set the scanner aside safely.
2. Unscrew the 3 screws (**A**) from the device and remove the scanner holder laterally from the device. When doing so, detach the connector of the heater cable.
3. Insert the new scanner holder. When doing this, reinsert the connector of the heater cable and firmly screw the three screws onto the device. Ensure that the heater cable does not get crushed.



4.3 Replacing parts (without removing covers)

4.3.1 Replacing parts (without removing the service cover)

4.3.1.1 Replacing the main fuse

⚠ DANGER

Potentially lethal shock hazard

People can be injured or electrical components of the unit destroyed.

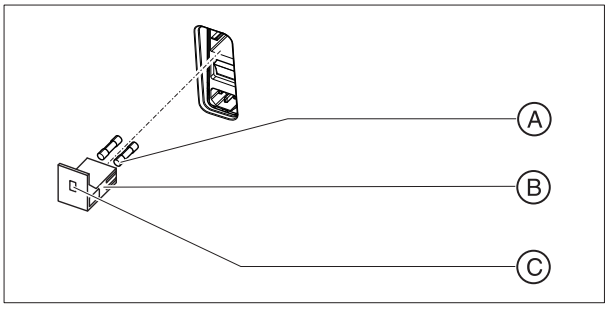
➢ Switch off the unit **prior** to beginning work.

➢ Pull out the power cable.

NOTE

Fuse type

Use only fuses of the same type in the fuse module!



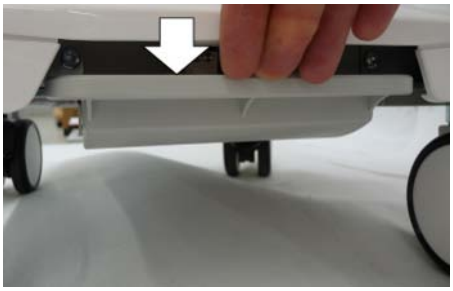
A	Main fuses	C	Window
B	Fuse module		

Fuses: T8A H 250V Order No. 62 33 188

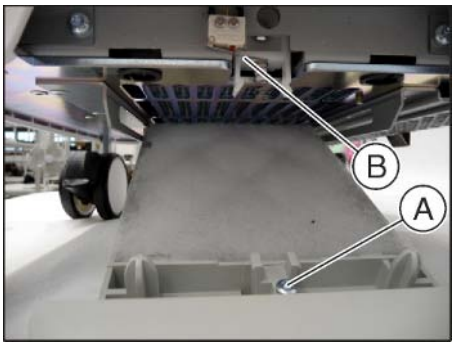
✓ The power plug must be disconnected.

1. Unlatch the fuse module with a screwdriver and pull the module out.
2. Replace the defective fuses.
3. Reinsert the fuse module until it locks in place.

4.3.1.2 Adjusting the footswitch



1. Flip the footswitch down.



2. Turn the adjusting screw (**A**), until (when the footswitch is in a closed state) it audibly actuates the tab (**B**) of the microswitch.

3. The optimum switching point is reached when the clearance of an engaged but not actuated footswitch is approximately 6–7 mm.

4.3.1.3 Replacing double castors

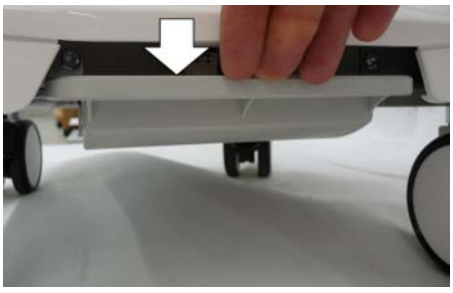
1. Remove the scanner from the holder and set it safely aside. For a device with a trackball, remove the trackball from the spherical recess.
2. Carefully turn the device over onto a soft foam base onto the service cover. In this process, hold on to the monitor tightly so that it does not tilt to the side uncontrollably.
3. Remove the defective double castor with an open-end wrench (SW 17).
4. Screw the new double castor on tight.

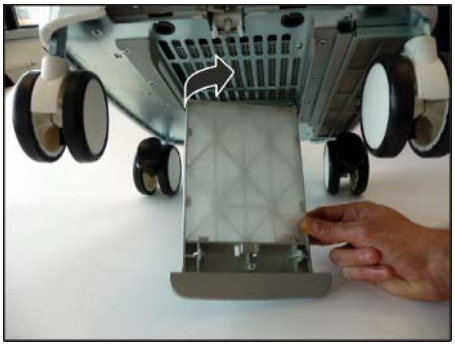
4.3.1.4 Replacing the monitor USB cover

1. Open the monitor USB cover.
2. Remove the monitor USB cover by using your left hand to bend the cover in the center from the inside to the outside slightly, while at the same time using your right thumb to push the cover to the left out of the top pivot.
3. Insert the new monitor USB cover diagonally into the bottom pivot and press to the right until it is locked in the top pivot.

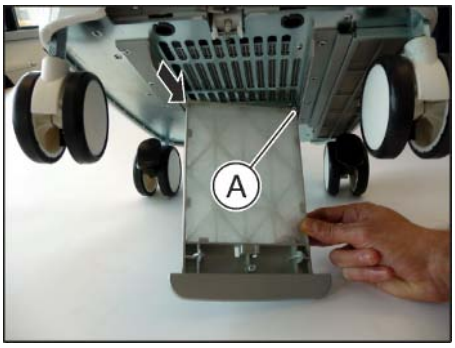
4.3.1.5 Replacing the footswitch

1. Remove the scanner from the holder and set it safely aside. For a device with a trackball, remove the trackball from the spherical recess.
2. Flip the footswitch down.





3. Detach the footswitch by pulling it out diagonally out of the guide rail. To do this, lift the device up slightly and carefully at the front or turn it over onto a soft base onto the service cover. In this process, hold on to the monitor tightly so that it does not tilt to the side uncontrollably.

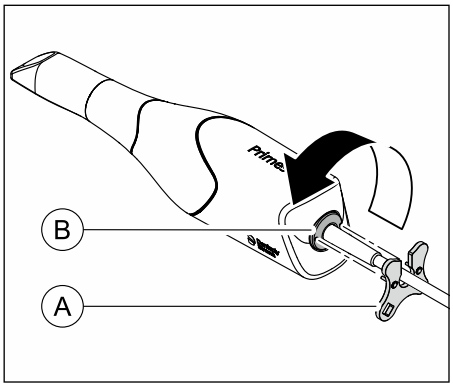


4. First insert the new footswitch in position (A) diagonally.
5. Then insert the footswitch on the left side diagonally in the rail and move it back into the correct position up to the stop.
6. Insert a new air filter if needed.
7. Latch the footswitch in.
8. Adjust the footswitch's switching point with the adjusting screw (see "Adjusting the footswitch [→ 40]").

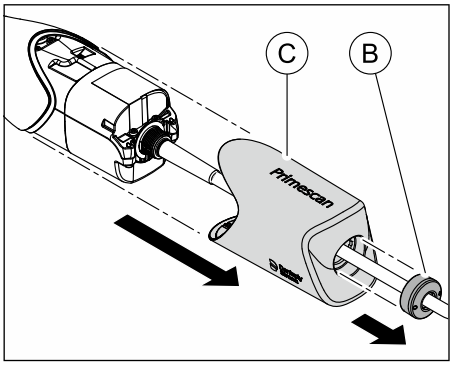
4.3.1.6 Replacing the camera cable

IMPORTANT
Perform the replacement of the camera cable in a dust-free environment.

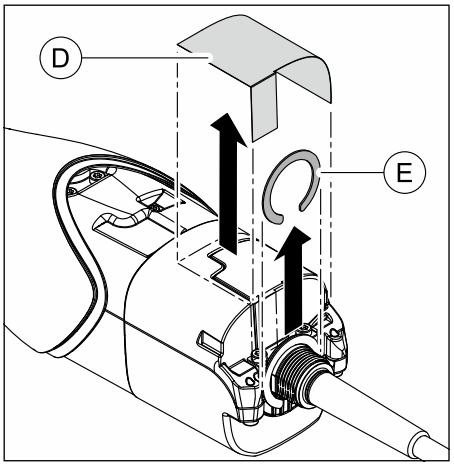
Primescan



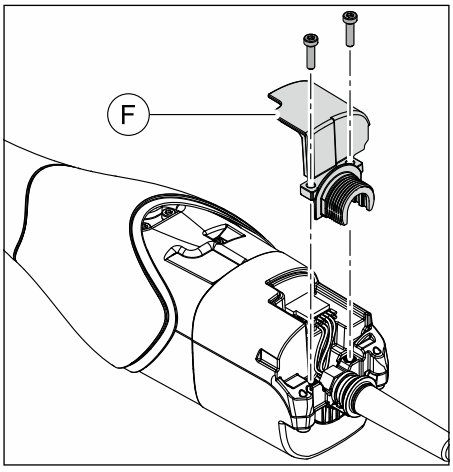
1. Attach the tool (A) (REF 6399229) to the cover nut (B) with the two pins.
2. Release the cover nut (B) manually with the aid of the tool.



3. Remove the cover nut (B).
4. Take the camera cover (C) off the camera.

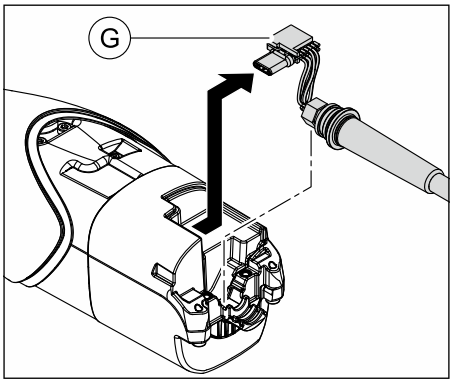


5. Remove the dust protection sticker (D). The sticker is no longer required and can be disposed of.
6. Remove the spacer (E).

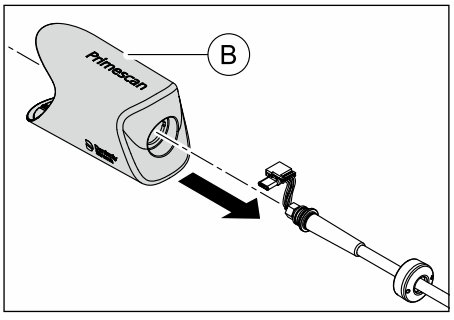


7. Release the two screws and remove the strain relief cover (F) from the camera housing.

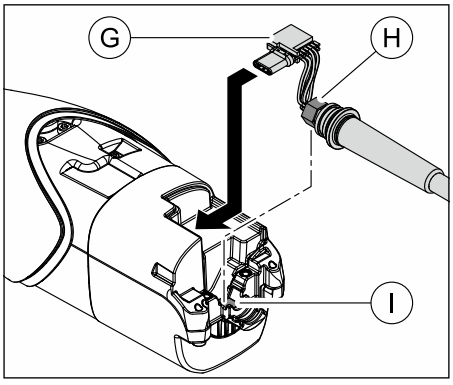
IMPORTANT
Ensure that no dust particles penetrate into the interior of the camera.



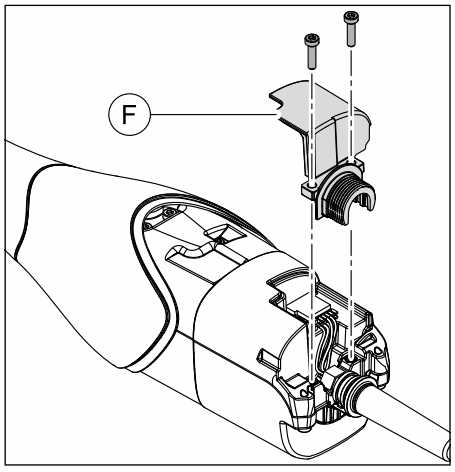
8. Carefully disconnect the USB connector (G) from the camera and remove the old camera cable.



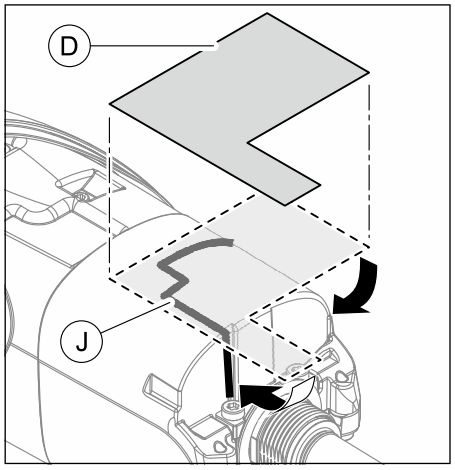
9. Detach the camera cover (B) from the old camera cable and push it over the new camera cable.
The old camera cable is no longer required and can be disposed of.



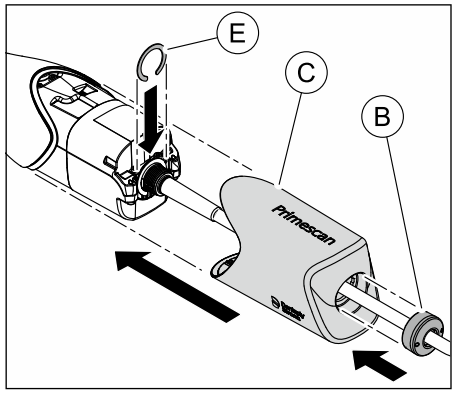
10. Insert the USB connector (G) of the new camera cable into the USB socket of the camera.
Note: The USB connector in the USB-C Format can be inserted in both possible orientations.
11. Place the hex (H) of the new camera cable with a flat side downwards onto the EMC adhesive pad (I) of the camera housing.



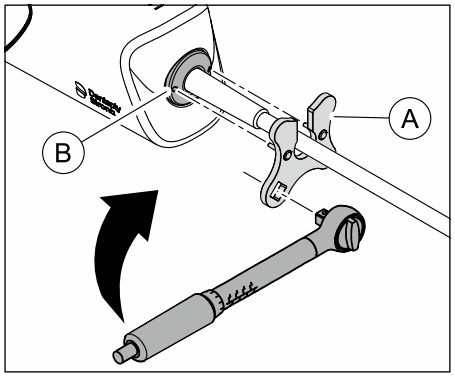
12. Place the strain relief cover (F) onto the camera housing and fix it with the two screws (tightening torque: 30 Ncm).



13. Place the dust protection sticker (D) supplied in the package into the depicted position on the camera housing and stick it down firmly.
    Make sure that the gap (J) between the camera housing and the strain relief cover is covered by the sticker.

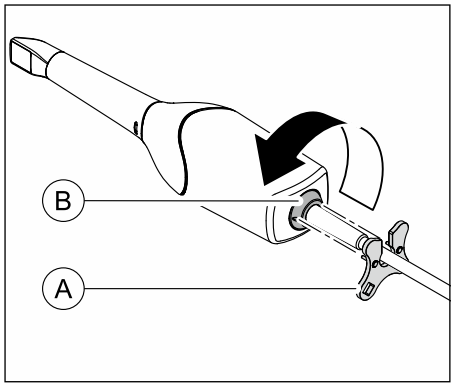


14. Attach the spacer (E).
15. Attach the camera cover (C) onto the camera.
16. First turn the cover nut (B) manually onto the thread on the camera.

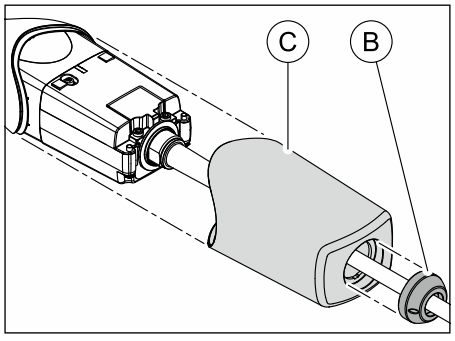


17. Attach the tool (A) (REF 6399229) to the cover nut (B) with the two pins and turn it using a torque wrench (tightening torque: 2.5 Nm).

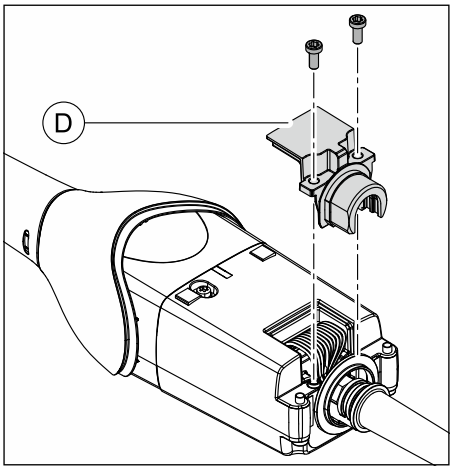
Omnicam



1. Attach the tool (A) (REF 6399229) to the cover nut (B) with the two pins.
2. Release the cover nut (B) manually with the aid of the tool.

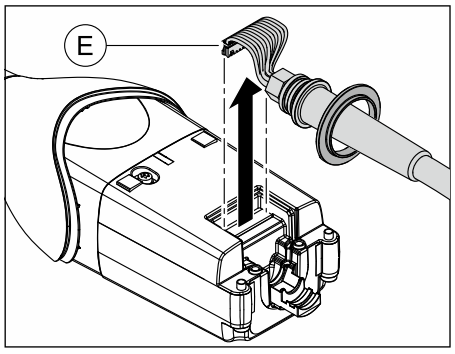


3. Remove the cover nut (B).
4. Take the camera cover (C) off the camera.

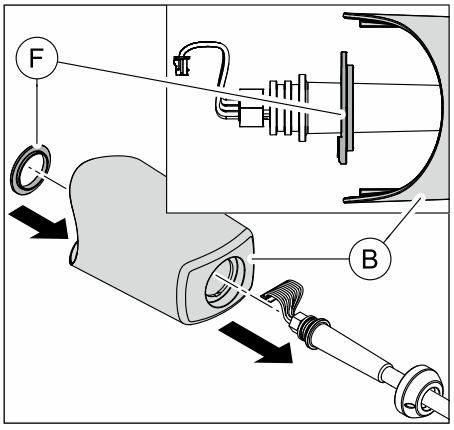


5. Release the two screws and remove the strain relief cover (D) from the camera housing.

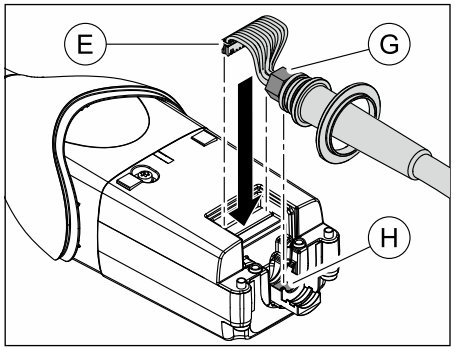
IMPORTANT
Ensure that no dust particles penetrate into the interior of the camera.



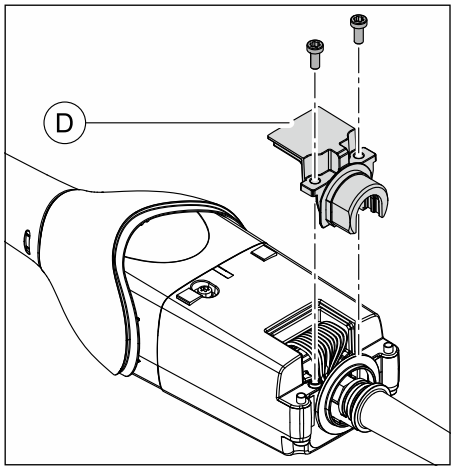
6. Carefully disconnect the connector (E) from the camera and remove the camera cable.



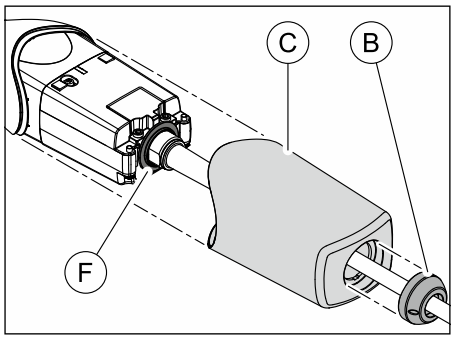
7. Detach the spacer (F) and the camera cover from the old camera cable and push it over the new camera cable in the order presented.
   Pay attention to the correct alignment of the spacer, as depicted in the illustration.
   The old camera cable is no longer required and can be disposed of.



8. Insert the connector (E) of the new camera cable into the socket of the camera.
9. Place the hex (G) of the new camera cable with a flat side downwards onto the EMC adhesive pad (H) of the camera housing.



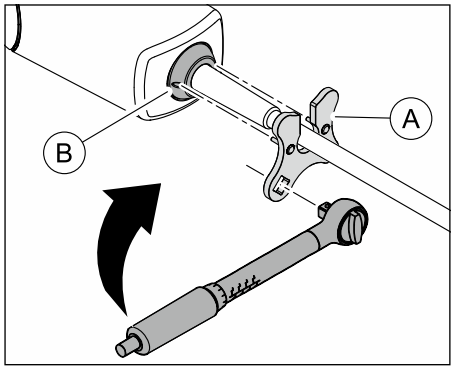
10. Place the strain relief cover (D) onto the camera housing and fix it with the two screws (tightening torque: 30 Ncm).



11. Push the spacer (F) onto the camera housing.
Make sure that the thick part of the spacer is pointing downwards.

12. Attach the camera cover (C) onto the camera.

13. First turn the cover nut (B) manually onto the thread on the camera.



14. Attach the tool (A) (REF 6399229) to the cover nut (B) with the two pins and turn it using a torque wrench (tightening torque: 3.2 Nm).

4.3.2 Replacing parts (by removing the service cover)

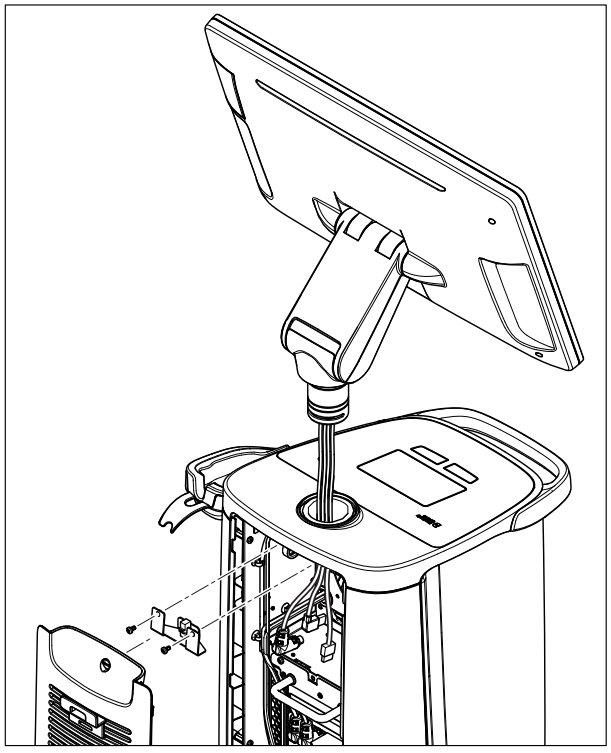
4.3.2.1 Replacing the monitor

NOTE

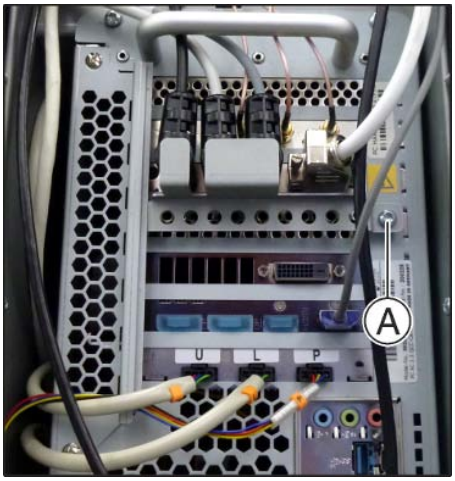
Risk of damage to the display caused by mechanical impact.

➢ Do NOT subject active display area to any mechanical pressure.
➢ NEVER touch active display area with sharp or pointed objects.

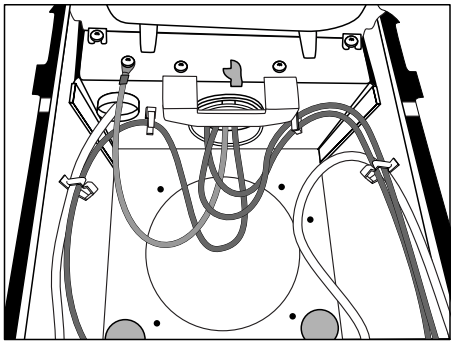
Removing the monitor



1. Open the service cover (see "Opening the service cover [→ 31]").
2. Loosen and remove the monitor brake (2 screws).

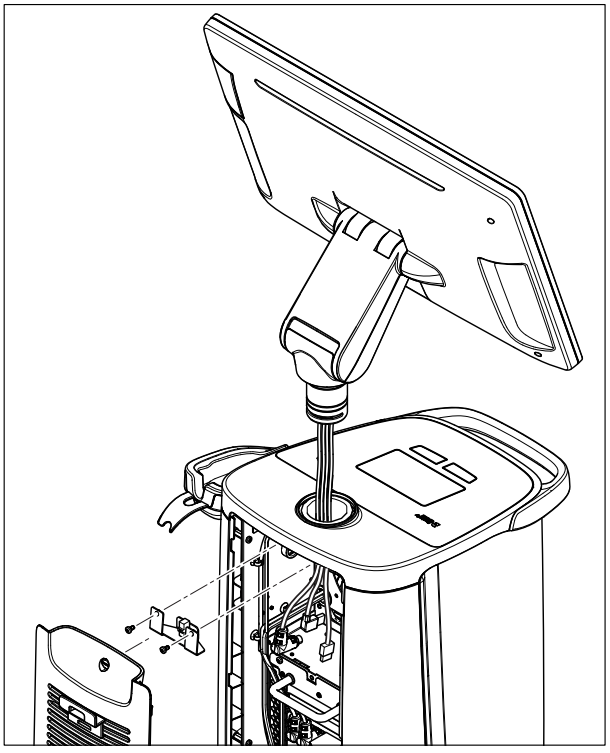


3. Unscrew the locking plate mini DIN connector (1 screw **A**).
4. Detach the three cables that run from the monitor to the PC from the PC and unscrew the ground cable.



5. Release the monitor cables from the clips.
6. Remove the monitor in an upward motion.

Installing the monitor



1. Guide the 4 monitor cables through the opening and insert the monitor.
2. Route the 4 monitor cables as follows: HDMI cable and USB cable on the right; ground cable and cable (**L4**) with mini DIN connector on the left.

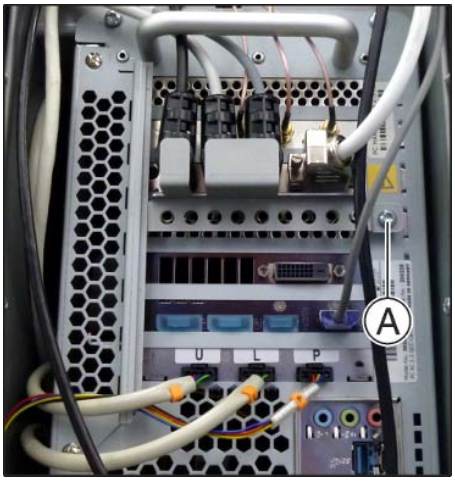
3. Screw the monitor brake on again as shown with the 2 screws.

4. Insert the eyelet of the ground cable (**L14**) as shown between the screw head and tooth washer. Fasten the ground cable using the screw.

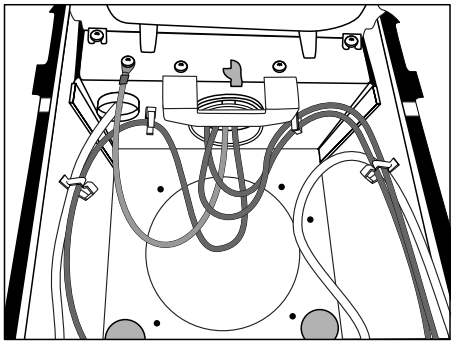
5. Route the cable (**L4**) behind the handle and insert the mini DIN connector into the socket (**X101**) of the supply board.

6. Insert the USB connector.

7. Insert the HDMI connector.



8. Re-tighten the locking plate mini DIN connector with 1 screw (**A**).



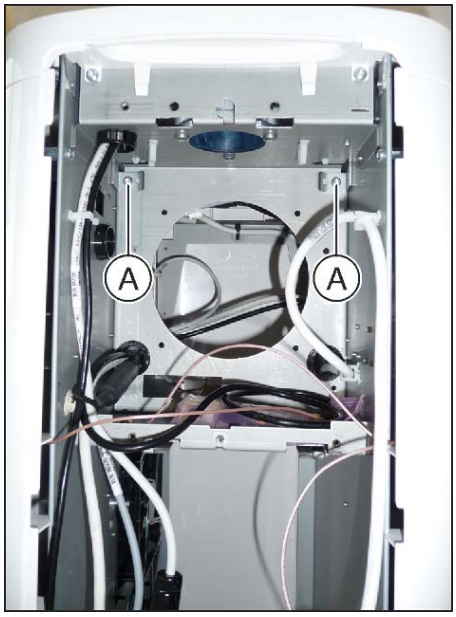
9. Route the cables as shown and clip them into the holders.
10. Close the service cover (see "Closing the service cover [→ 31]").

4.3.2.2 Control unit

4.3.2.2.1 Removing and inserting the control unit

Removal

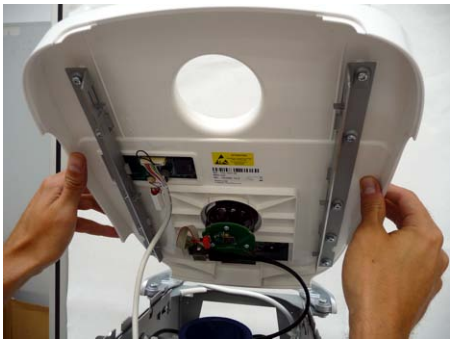
✓ The monitor is removed; see "Replacing the monitor [→ 49]".



1. Unscrew the fastening screws (**A**) from the locking plates.

2. Use the blade screwdriver as a lever and push the locking plate back up to the stop.

3. Use the blade screwdriver as a lever and push the locking plate back up to the stop.
4. Remove the trackball (if the configuration provides for it) and set it safely aside.



5. Raise the complete control unit upwards slightly and carefully.
6. Detach the USB connector and the connector of cable **L1**.
7. Remove the control unit.

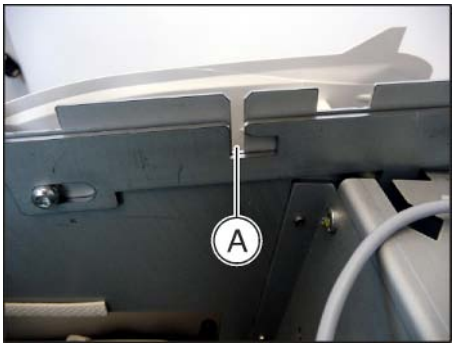
Installation

NOTE

When performing the following installation steps, make sure that all plug connections snap in place correctly.

1. Hold the control unit raised up slightly over the acquisition unit.

2. Attach the USB connector and the connector of cable **L1** and route the cable as shown.

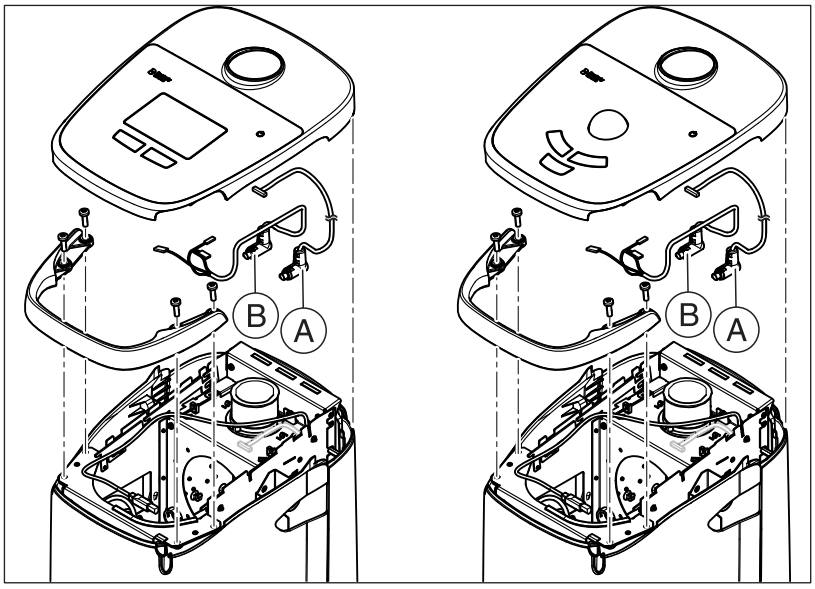


3. Bring the locking plates into the correct position for the insertion of the control unit. The gap (**A**) must be open (as shown).

4. Push the left locking plate forwards up to the stop and then screw it back on again with the screw. Perhaps help things along by simultaneously pressing the control unit downwards slightly on the relevant side.
5. Push the right locking plate forwards up to the stop and then screw it back on again with the screw.
6. Reinstall the monitor; see "Replacing the monitor [→ 49]".

4.3.2.2.2 Removing and inserting the control unit cable

✓ The monitor is removed; see "Replacing the monitor [→ 49]".



1. Raise the complete control unit carefully upwards slightly (see "Removing and inserting the control unit [→ 53]").
2. Disconnect the plug connections of the control unit cable (**A**) and remove the control unit cable.

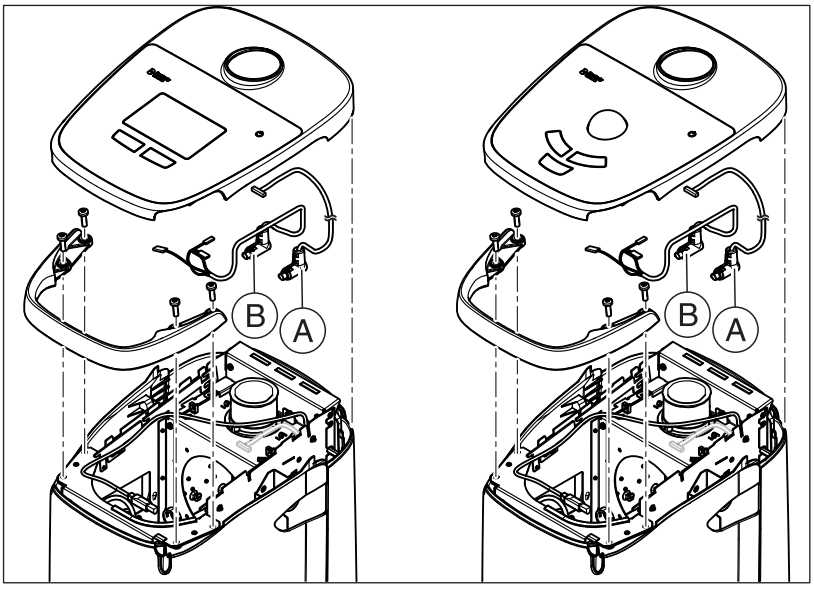
NOTE

When performing the following installation steps, make sure that all plug connections snap in place correctly.

3. Route the new control unit cable (**A**) and re-establish the plug connections.
4. Attach the control unit and screw it down (see "Removing and inserting the control unit [→ 53]").
5. Reinstall the monitor; see "Replacing the monitor [→ 49]".

4.3.2.2.3 Removing and inserting the interface cables

✓ The monitor is removed; see "Replacing the monitor [→ 49]".



1. Raise the complete control unit carefully upwards slightly (see "Removing and inserting the control unit [→ 53]").
2. Disconnect the plug connections of the interface cable (**A**) and remove the interface cable.

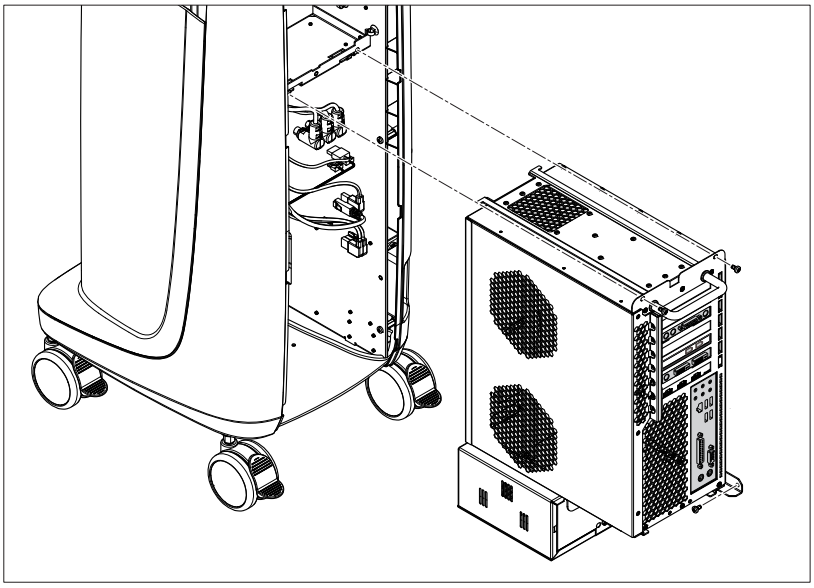
NOTE

When performing the following installation steps, make sure that all plug connections snap in place correctly.

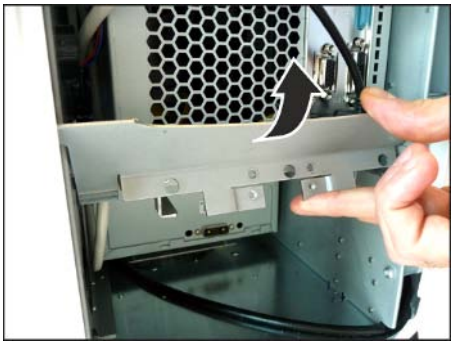
3. Route the new interface cable (**B**) and re-establish the plug connections.
4. Attach the control unit and screw it down (see "Removing and inserting the control unit [→ 53]").
5. Reinstall the monitor; see "Replacing the monitor [→ 49]".

4.3.2.3 Replacing the PC including the power supply unit

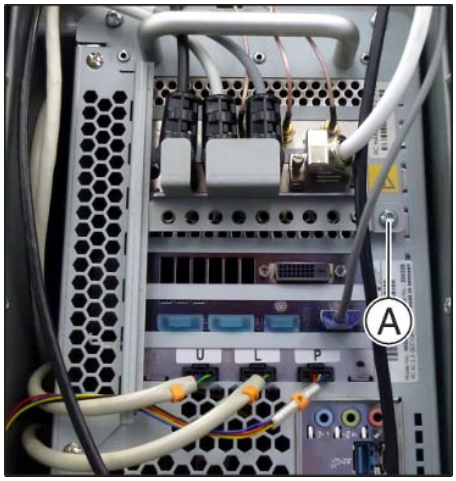
Removal



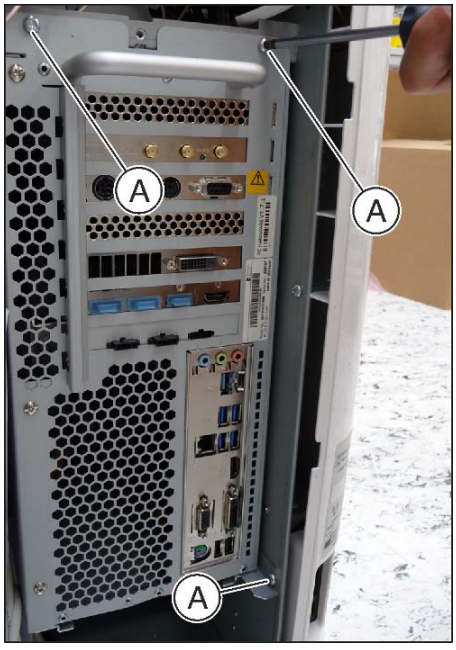
1. Open the service cover (see "Opening the service cover [→ 31]").
2. If the option is available, remove the battery (see "Replace battery (optional) [→ 64]").
3. Unscrew the partition plate (2 screws).



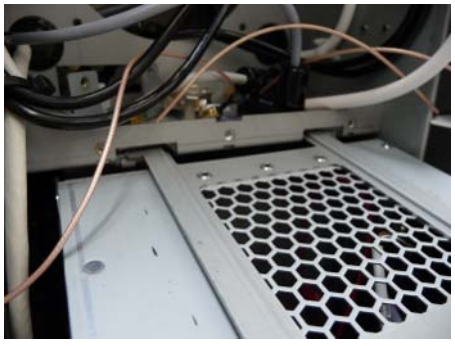
4. Remove the partition plate (as shown).



5. Unscrew the locking plate mini DIN connector (1 screw **A**).
6. Remove all connectors from the PC.



7. Unscrew the 3 screws (**A**).
8. Pull out the PC by the handle up to the safety stop. When doing so, check the fan cables.



9. Raise the PC up slightly to remove it from the housing and pull it out carefully and completely.

10. Detach the connector of the power supply from the rear side of the power supply unit.

Installation

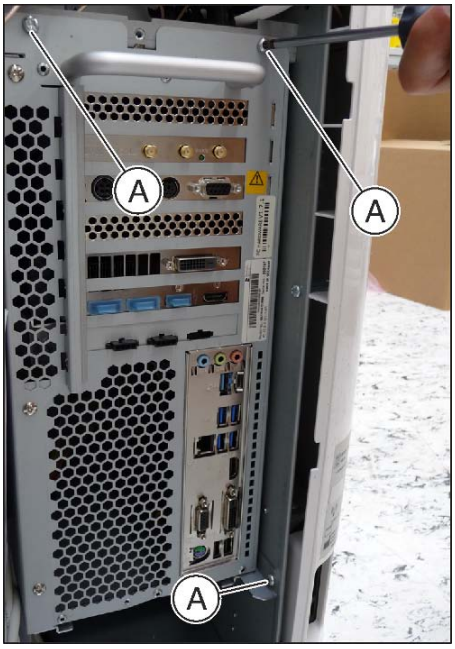
1. Insert the connector of the power supply into the socket of the rear side of the power supply unit.
2. Hang the PC in the track intended for this purpose.

NOTE

Cables can be damaged.

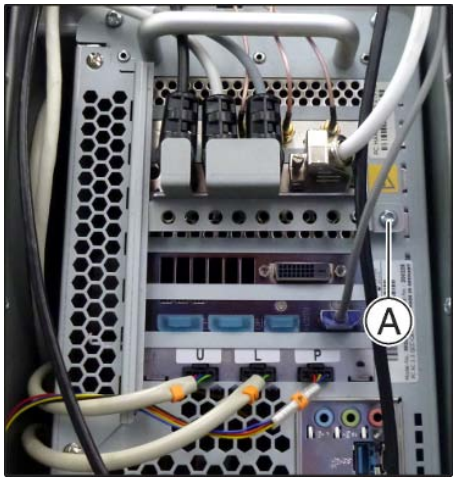
Pay attention to the cables when inserting and moving the PC. The cables must never become kinked or jammed.

3. Push the PC completely into the acquisition unit.

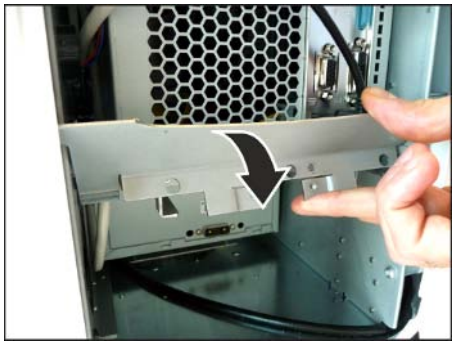


4. Fasten the PC to the acquisition unit with the 3 screws (**A**).

5. Insert all connectors as shown (for connector assignment, see "Overview of the connections on the PC [→ 18]").
6. Route the cables and clip them into the holders.



7. Re-tighten the locking plate mini DIN connector with 1 screw (A).



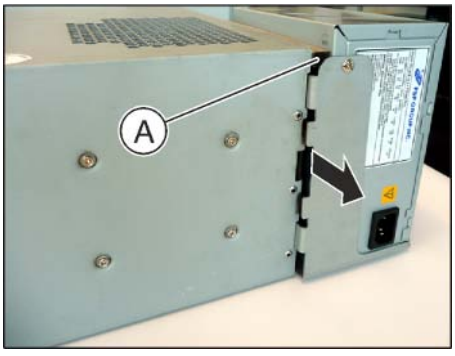
8. Install the locking plate as shown.

9. Screw on the partition plate (2 screws).
10. If the option is available, install the battery again (see "Replace battery (optional) [→ 64]").
11. Close the service cover (see "Closing the service cover [→ 31]").

4.3.2.3.1 Replace PC power supply

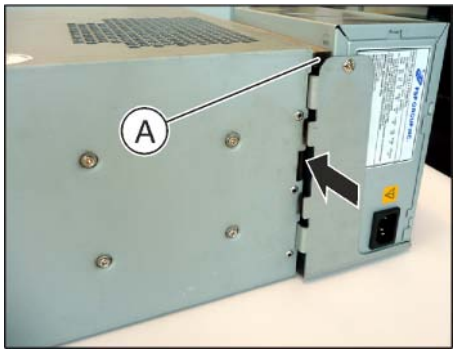
✓ The PC is removed (see "Replacing the PC including the power supply unit [→ 58]").

1. Turn the PC on its side.
2. Remove the 2 fastening screws.



3. Pull out the power supply unit out of the guide tabs. In doing so, make sure the foam rubber strip (**A**) does not become damaged.

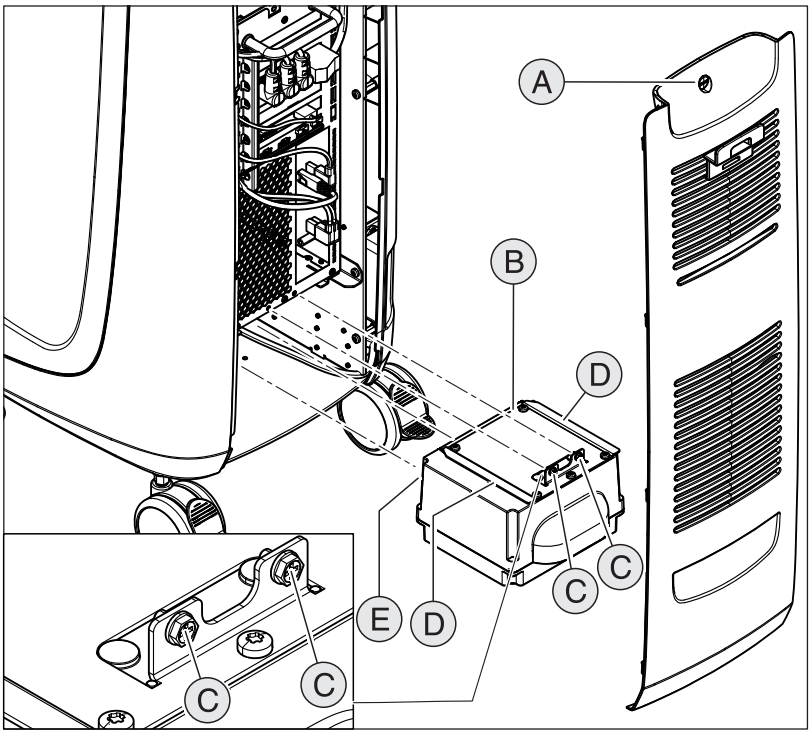
4. Disconnect the 4 plug connections and dispose of the defective power supply unit.
5. Connect the 4 plug connections from the new power supply unit together.



6. Plug the new power supply unit into the guide tabs. Make sure that the foam rubber strip (**A**) is not dislocated through the insertion of the power supply unit.

7. Screw the power supply unit on tight with the 2 fastening screws.

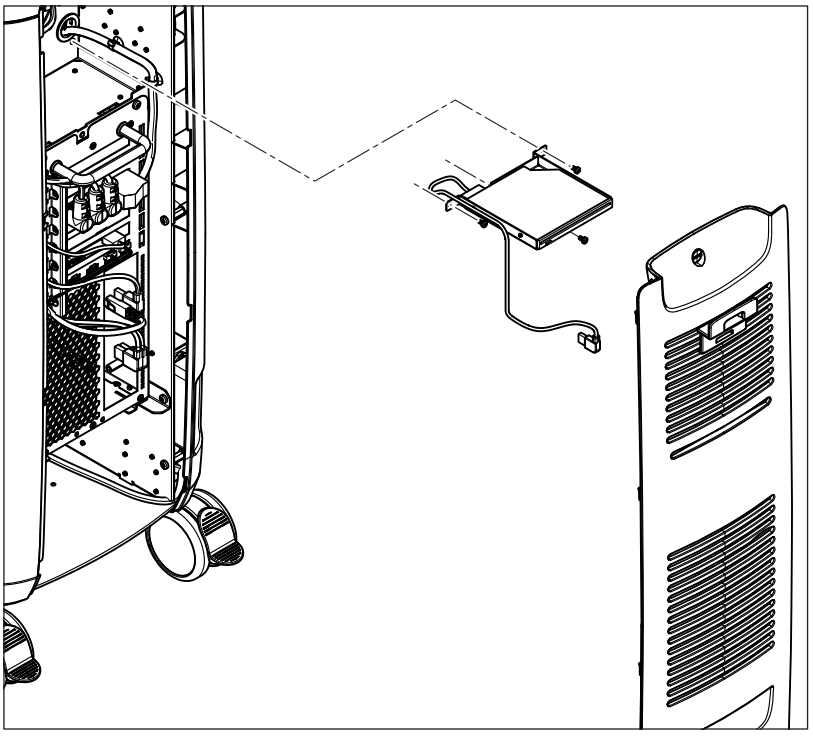
4.3.2.4 Replace battery (optional)



A	Service cover	D	2 guide rails
B	Storage battery	E	2 guide pins
C	2 fastening screws		

1. Open the service cover (see "Opening the service cover [→ 31]").
2. Remove the 2 fastening screws (**C**).
3. Remove the storage battery.
4. Slide in the new storage battery using the guide rails and guide pins up to the stop and screw it in place with 2 fastening screws (**C**).
5. Close the service cover (see "Closing the service cover [→ 31]").

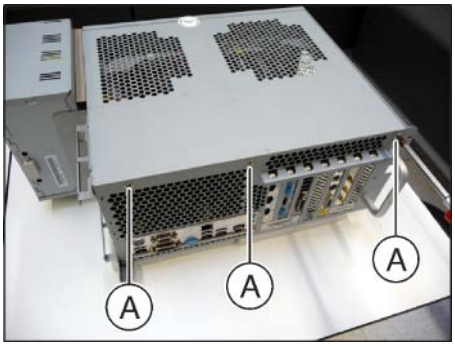
4.3.2.5 Replacing the DVD drive (optional)



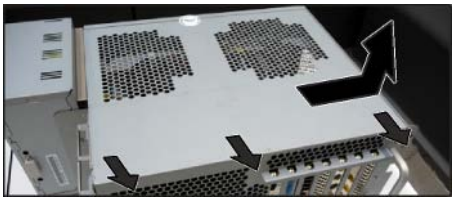
1. Open the service cover on the rear side (see "Opening the service cover [→ 31]").
2. Detach the DVD drive connector.
3. Unscrew the 3 fastening screws and pull out the DVD drive with the retaining plate.
4. Detach the three M2 screws and remove the DVD drive from the retaining plate.
5. Install the new DVD drive in the retaining plate.
6. Slide in the new DVD drive using the guide rails up to the stop and screw it in place with the 3 fastening screws.
7. Attach the DVD drive connector.
8. Insert the service cover and lock it (see "Closing the service cover [→ 31]").

4.3.2.6 Opening the PC

✓ The PC is removed (see "Replacing the PC including the power supply unit [→ 58]").



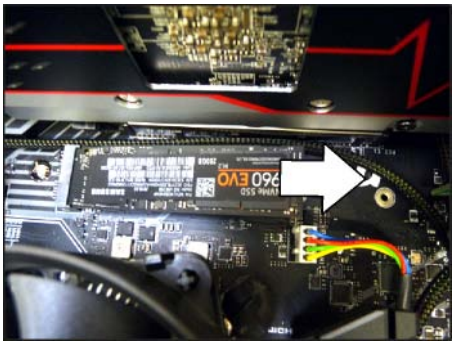
1. Turn the PC onto its side as shown.
2. Unscrew the 3 screws (**A**).



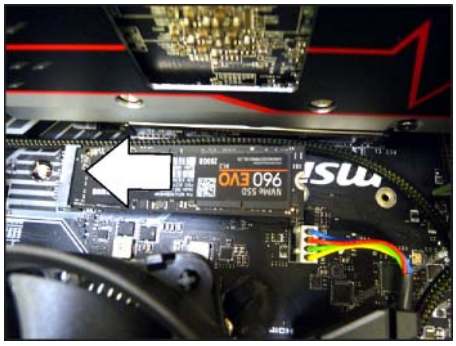
3. Push the cover forwards approximately 2 cm. In this process, the seal will tear.
4. Lift up the cover on the right side slightly and pull it out to the right.

4.3.2.7 Replacing the SSD module

1. Open the PC (see "Opening the PC [→ 66]").
2. Unscrew the fastening screw.
   ↳ The SSD module springs upwards on the right-hand side.



3. Pull out the SSD module to the right.



4. Insert the new SSD module and push it downwards on the right side.

5. Screw the SSD module down tightly with the fastening screw.
6. Close the PC (see "Closing the PC [→ 70]").

4.3.2.8 Replacing the hard drive

1. Open the PC (see "Opening the PC [→ 66]").
2. Unscrew the 4 screws from the rear side.

3. Detach the 2 connectors.
4. Attach the 2 connectors to the new hard drive.
5. Screw the new hard disk down onto the rear side with the 4 screws.
6. Close the PC (see "Closing the PC [→ 70]").

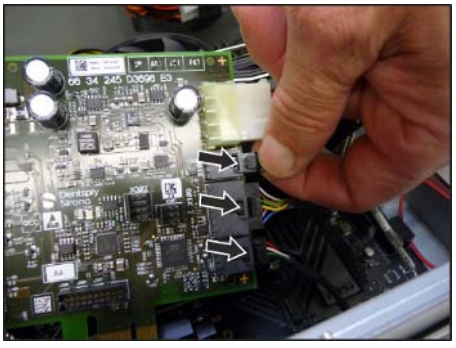
4.3.2.9 Replacing the WLAN card

1. Open the PC (see "Opening the PC [→ 66]").

2. Remove the screw from the PCI slot plate and pull the WLAN card up and out of the PC.
3. Insert the new WLAN card in the slot.
4. Fasten the slot plate with a screw.
5. Close the PC (see "Closing the PC [→ 70]").

4.3.2.10 Replacing the interface card

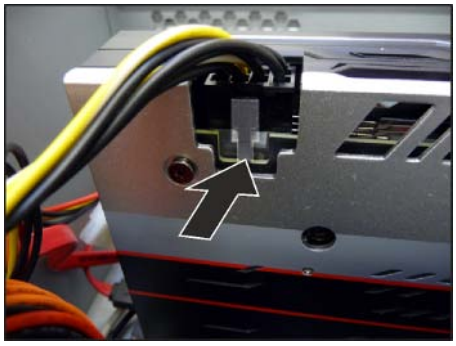
1. Open the PC (see "Opening the PC [→ 66]").
2. Remove the screw from the PCI slot plate and pull the interface card up and out of the PC.



3. Detach the 4 connectors (1x white and 3x black). Make sure to release/press the lock for the 3 black connectors first.
4. Attach the 4 connectors to the new interface card.
5. Insert the new interface card into the slot.
6. Fasten the slot plate with a screw.
7. Close the PC (see "Closing the PC [→ 70]").

4.3.2.11 Replace the graphic card

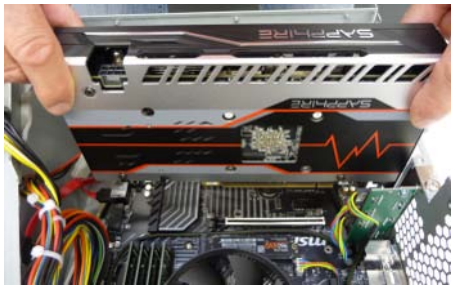
1. Open the PC (see "Opening the PC [→ 66]").
2. Unscrew the 2 screws (**A**)
3. Lift up the attachment bracket and swing it to the side.



4. Press the connector lock and pull the connector out.

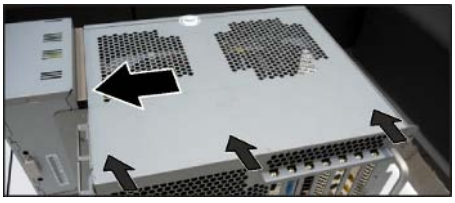
5. Remove the 2 screws of the PCI slot plate.

6. Press the socket lock downwards.

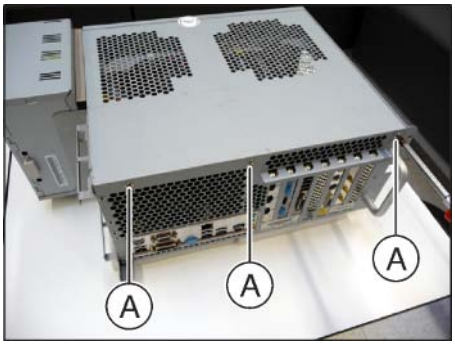


7. Pull the graphics card up and out of the PC.
8. Insert the new graphics card into the slot and lock it.
9. Fasten the slot plate with 2 screws.
10. Insert the connector until it latches.
11. Screw the attachment bracket back on with 2 screws (**A**).
12. Close the PC (see "Closing the PC [→ 70]").

4.3.2.12 Closing the PC



1. Insert the cover so that a gap of roughly 2 cm is kept at the rear. Then tilt the cover down.
2. Then slide the cover backwards up to the stop.



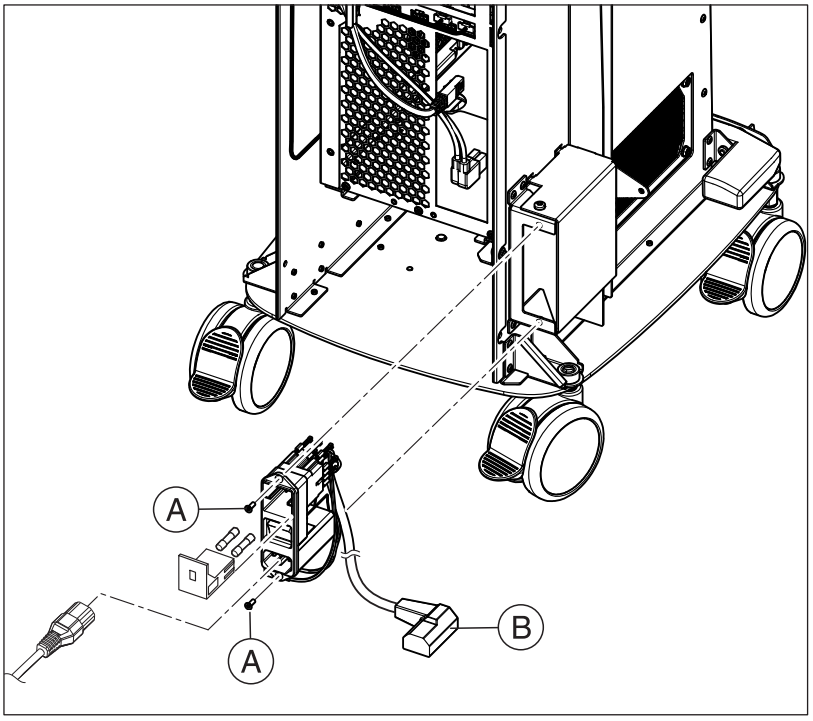
3. Screw down the cover using 3 screws (**A**).

4. Attach the technician's conformity seal provided as shown.

4.4 Replacing parts (whereby the removal of covers is necessary)

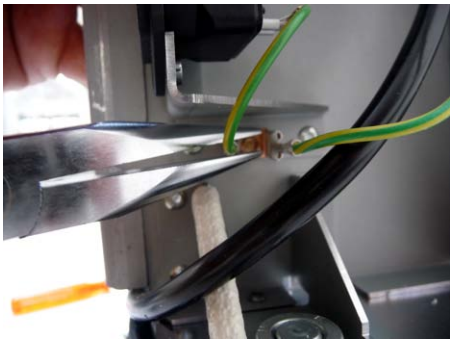
4.4.1 Completely replacing the power input

- ✓ The power plug is disconnected.
- ✓ The cover is detached (see "Removing and installing covers [→ 30]").
- ✓ The PC is removed (see "Replacing the PC including the power supply unit [→ 58]").



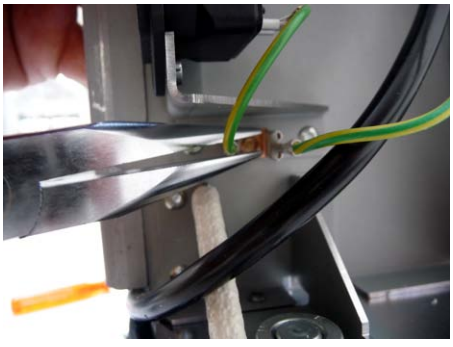
1. Detach the connector (**B**) from the power plug, but leave it in the device.
2. Unscrew the screw of the plate cover.

3. Lift up the plate cover at the bottom and take it out.



4. Pull both cable lugs off with needle-nosed pliers.

5. Unscrew the 2 screws (**A**) and remove the power input.
6. Insert the new power input and screw it tight with the 2 screws (**A**).



7. Attach both cable lugs with needle-nosed pliers.

8. Insert the plate cover at the top and tilt it downwards.

9. Screw on the screw of the plate cover.
10. Plug the connector (**B**) back in again.
11. Reinstall the PC (see "Replacing the PC including the power supply unit [→ 58]").
12. Reinstall the covers (see "Removing and installing covers [→ 30]").
13. Plug in the power plug again.

4.4.2 Replacing the fan

✓ The cover is detached (see "Removing and installing covers [→ 30]").

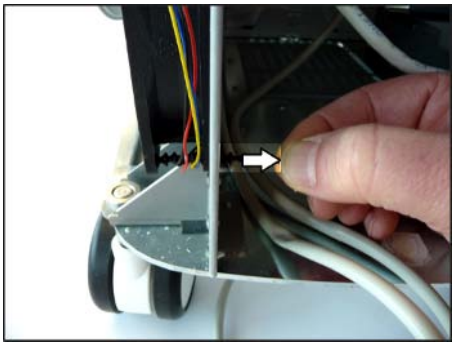
✓ The PC is removed (see "Replacing the PC including the power supply unit [→ 58]").

1. Pull the fan sleeve with fan inwards and out.
2. Remove the defective fan from the fan sleeve and insert the new fan into the sleeve.
3. Insert the 4 knobs of the fan sleeve into the holes and fasten the sleeve by pulling on the knobs until they latch into the holes.
4. Reinstall the covers (see "Removing and installing covers [→ 30]").
5. Reinstall the PC (see "Replacing the PC including the power supply unit [→ 58]").

4.4.3 Replacing the fan power pack.

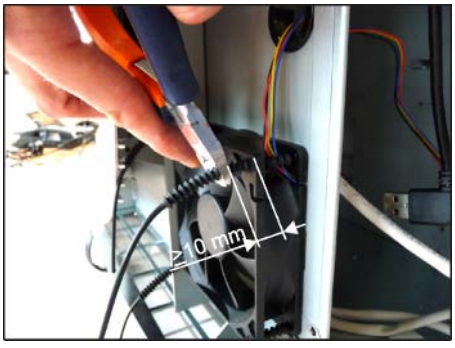
✓ The right cover is detached (see "Removing and installing covers [→ 30]").

✓ The PC is removed (see "Replacing the PC including the power supply unit [→ 58]").



1. Pull the 4 fastening pins inwards and out and detach the fan.

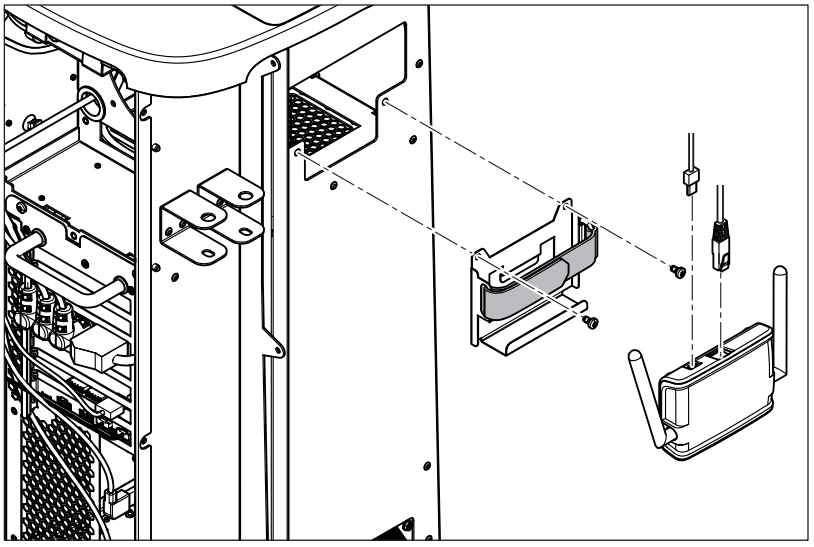
2. Hold the new fan over the fan opening.
3. Pull the 4 supplied fastening pins into the holes on the chassis and on the fan until the heads are on the inside of the chassis.
4. Route the cables through the opening into the chassis interior.



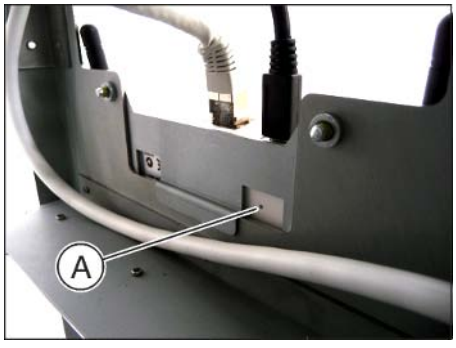
5. Shorten the 4 fastening pins so that around 10 mm protrude at the fan.
6. Reinstall the right cover (see "Removing and installing covers [→ 30]").
7. Reinstall the PC (see "Replacing the PC including the power supply unit [→ 58]").

4.4.4 Replacing the radio module

✓ The entire cover is detached (see "Removing and installing covers [→ 30]").

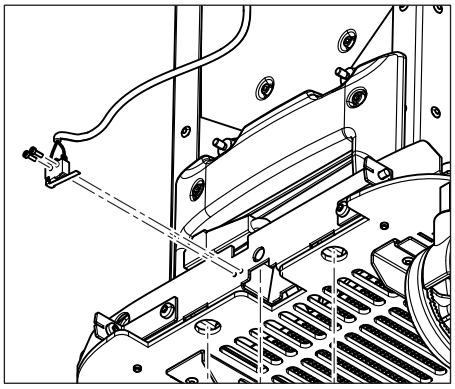


1. Detach the USB connector of the cable (**L8**) from the radio module.
2. Detach the connector of the data cable (**L9**) from the radio module.
3. Open the Velcro fastener and remove the radio module.
4. Place the new radio module into the retaining plate and fix it with Velcro fastener.
5. Plug the USB connector of the cable (**L8**) into the radio module.
6. Plug the connector of the data cable (**L9**) into the radio module.
7. Reinstall the covers (see "Removing and installing covers [→ 30]").



Tip: You can reset the radio module by inserting a thin object (e.g. a paper clip) into the hole (**A**) in the inside of the plate frame.

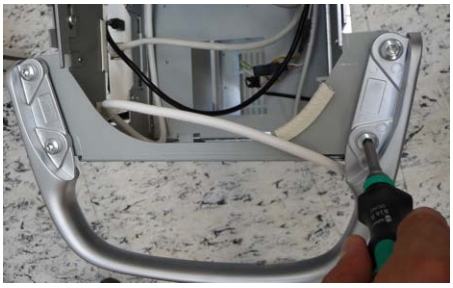
4.4.5 Replacing the footswitch cable



✓ The entire cover is detached (see "Removing and installing covers [→ 30]").

1. Unscrew the switch (2 screws).
2. Unplug the connector at the other end of the cable and take the cable out.
3. Insert the new footswitch cable and attach the connector.
4. Screw the switch back on with 2 screws.
5. Adjust the footswitch's switching point with the adjusting screw (see "Adjusting the footswitch [→ 40]").
6. Reinstall the covers (see "Removing and installing covers [→ 30]").

4.4.6 Replacing the handle

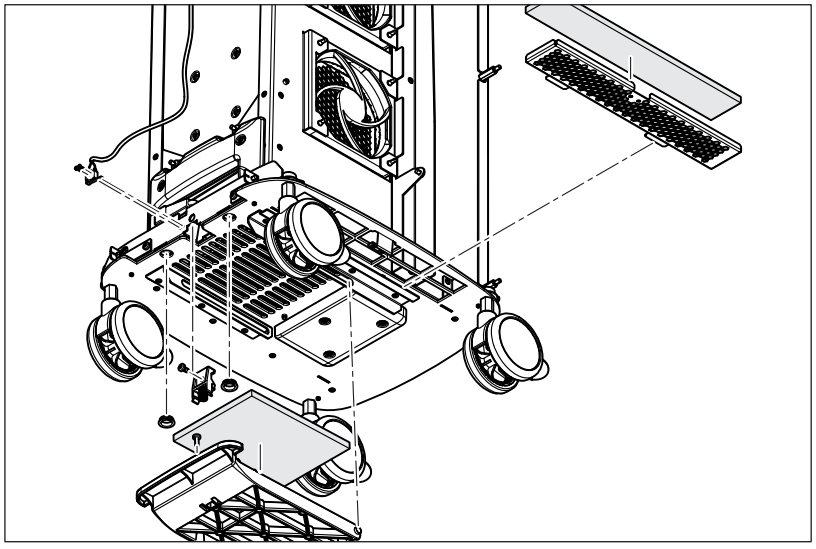


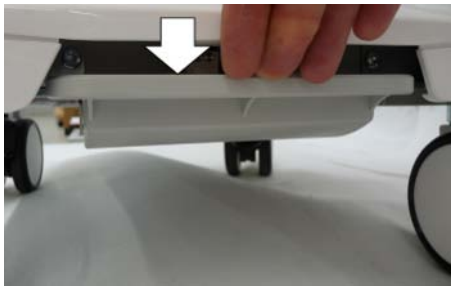
✓ The control unit is removed (see "Removing and inserting the control unit [→ 53]").

1. Remove the four screws and then take off the handle.
2. Take the new handle and push the 8 spacers into the holes in the handle from both sides.
3. Screw on the new handle with the four screws.
4. Reinstall the control unit (see "Removing and inserting the control unit [→ 53]").

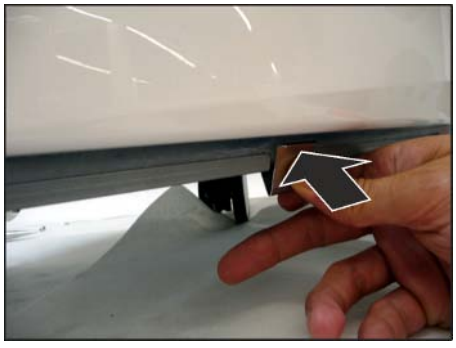
5 Maintenance

5.1 Replacing/cleaning the filter





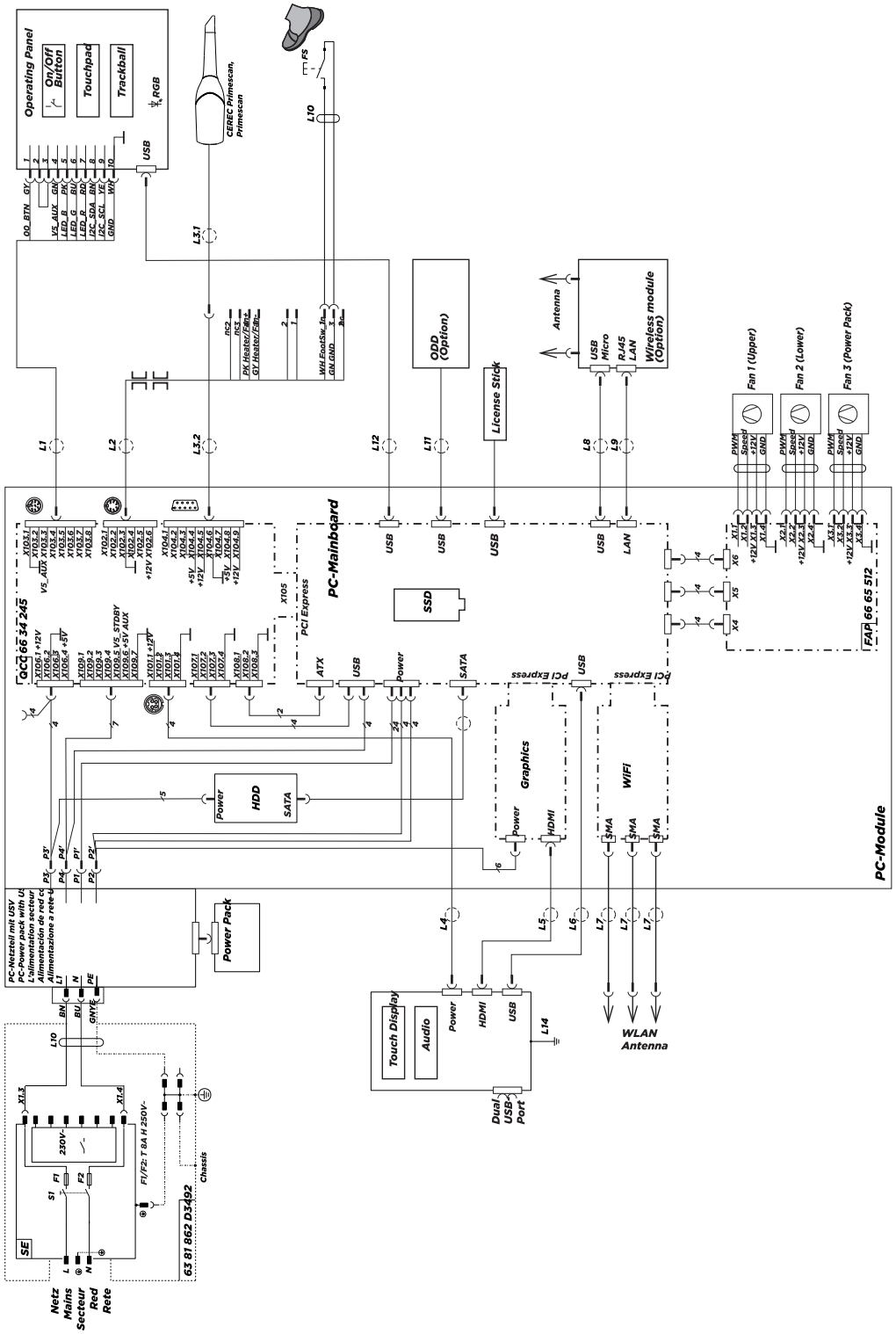
1. Flip the footswitch down.
2. Pull out the filter.
3. Place a new filter on the footswitch surface.
4. Close the footswitch again.



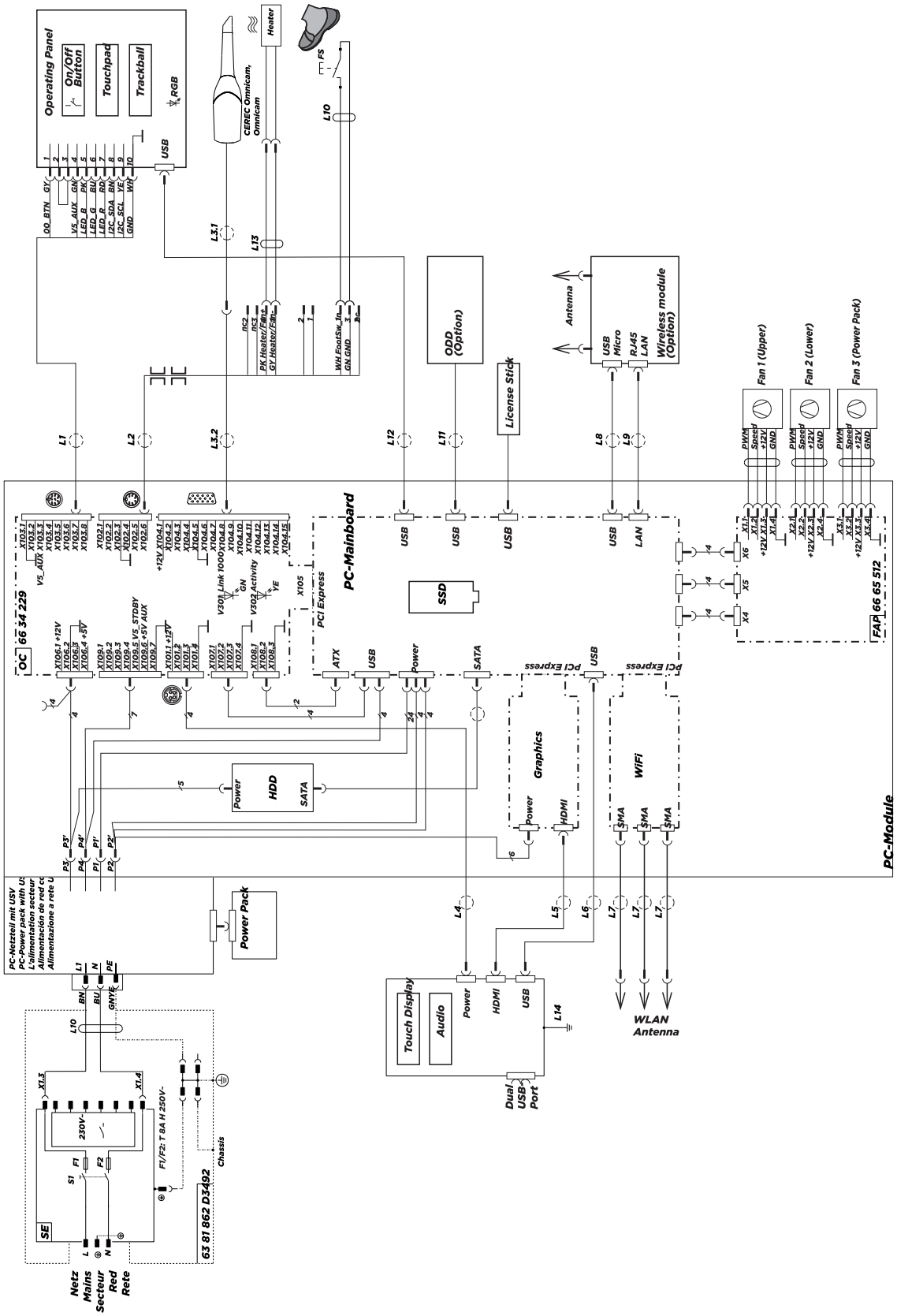
5. Open up the lengthways cover by pushing the lateral spring plate.
6. Remove the metal grille and clean it (e.g. with a vacuum cleaner).
7. Insert the cleaned metal grille and close the cover shut until the lateral spring plate latches in.

6 Circuit diagrams

6.1 CEREC Primescan AC / Primescan AC



6.2 CEREC Omnicam AC / Omnicam AC



7 Re-test

7.1 When is the re-test carried out?

The acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC must be re-tested every time repair/ retrofitting work affecting one of the following components is completed:

- PC
- PC power supply
- Camera
- Camera cable

A re-test must always be carried out at least every 36 months.

7.2 Description of device type

The acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC is a class I device with a detachable power supply cord. The camera is a type BF applied part.

7.3 To be carried out on completion of the test

1. Visual inspection
2. Protective ground wire resistance
3. Device leakage current
4. Insulation resistance
5. Functional test

7.4 What the test steps involve

7.4.1 Visual inspection

- Check that the device labels are present and legible
- Do the fuses inserted comply with the prescribed rated fuse current and fuse type?
- Are all covers intact? There must be no visible gaps between the covers that could result in injuries or via which contact could be made with electrical components located inside the device.
- There must be no visible damage to any of the cables.
- There must be no scratches penetrating the surface of the display screen.
- There must be no cracks or chips on the prism.

7.4.2 Protective ground wire resistance

The protective ground wire resistance of the power cable (measured from plug to socket) must be ≤ 100 mΩ.

The protective ground wire resistance between components connected by the protective ground wire and the protective ground wire connection to the power socket must ≤ 100 mΩ.

The protective ground wire resistance from the power input of the acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC to the PC rear panel must be ≤ 200 mΩ.

The protective ground wire resistance from the power cable plug to the PC rear panel must be ≤ 300 mΩ.

7.4.3 Device leakage current

The device leakage current must be measured in relation to the PC rear panel. In the case of direct measurement under normal conditions it must be ≤ 0.1 mA. In the case of a first fault (protective ground wire disconnected), it must be ≤ 0.5 mA.

7.4.4 Insulation resistance

Since the camera is an applied part and does not have a patient connection, when re-testing is carried out, the insulation resistance is measured instead of the patient leakage current. An instrument able to provide a test voltage of 500 VDC must be used to take the measurement.

The insulation resistance is measured between:

- Protective ground and metal part at the front of the camera lens

In both cases, the insulation resistance must be ≥ 0.1 MΩ.

7.4.5 Functional test

1. Once the above test steps have been completed, restore the acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC to normal operating conditions.
2. Switch the acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC on for the functional test.
3. Once booting is complete, start the CEREC application.
4. Take a camera shot of the calibration piece suspended from the camera.
   ↳ The resulting image must not exhibit any surface defects.

The re-test is now complete.

If any of the test criteria have not been met, the acquisition unit CEREC Primescan AC / Primescan AC / CEREC Omnicam AC / Omnicam AC must be repaired accordingly.

➢ Record the completion of the test steps in the test report. The test reports are recorded in a separate document in the relevant national language and can be accessed via the partner portal by quoting the material numbers listed below.

Language	Material number
German	6698547
English	6702281
French	6702299
Spanish	6702307
Italian	6702323
Swedish	6702315
Russian	6702331
Danish	6702349
Norwegian	6702356
Dutch	6702364
Finnish	6702372
Japanese	6702380
Portuguese	6702398
Korean	6702406
Chinese	6702414

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